

Is Robots' Mind still cold?

The ontological basis for robots to have phenomenal
consciousness and qualia
beyond psychological functions

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This is a revised version of the previous one
you can find in my KU repository

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A physical world where robots can have
qualia

What are qualia?

- Qualia are essentially “quality” of sensory experiences, or “feeling” as you feel something. “Pain” in your tooth, “sweet” of a cake, “glaring” of the sun in the sky, etc.

Qualia are completely subjective and first-person phenomena. You cannot find them as objective phenomena even in your own brain.

Privateness of Qualia

- Strong scent of lily...Is “scent” you feel the same as “scent” I feel? This cannot be answered at all unless I were you.
- What is it like to be a bat? (T. Nagel)
- What is this when we say seeing red is nothing other than this?

Are qualia required by physiological (/causal) explanations of pain?

- Functional-mental states of pain are certain causal roles which sustain a link of “inputs(injury) → internal states (belief and desire) → outputs (behavior) ”
- playing this causal role = excitement of certain nervous system (in human)
- But where do “sensations of pain” appear in this explanation?

Qualia don't exist as physical things
anywhere in the physical world.

- Nowhere.
- Any event of neurophysiological level is not required to be essentially “sensation of pain”.

D. J. Chalmers argues;

- Inverted Qualia
- Absent Qualia
- Philosophical Zombies

Causal Closure of Physical World

- Every physical event (an effect) has some physical event (a cause) which is sufficient to cause it.
- You wouldn't jump out of this physical world, however deeply you descend the chain of the causes of any physical event.

Floating free from Physical World

1. The mental as qualia or phenomenal consciousness would bring over-determination if considered as a cause of physical phenomena (event, state, or property) because of causal closure.

2. Though, qualia and phenomenal consciousness emerge depending on physical phenomena.

And they don't appear at random or unintelligibly...nomological danglers (Feigl)

Supervenience

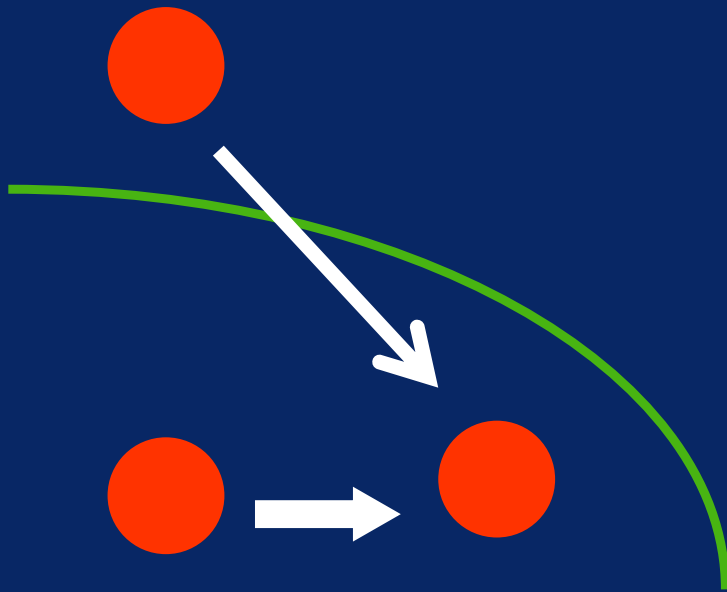
Supervenience (SV) is a covariant relation or a covariant depending relation between two properties.

- A thesis of Non-reductive Physicalism Mental properties(/states) supervene on physical properties(/states).
- Perfect copies of a physical body are perfect copies of its mind and phenomenal consciousness.

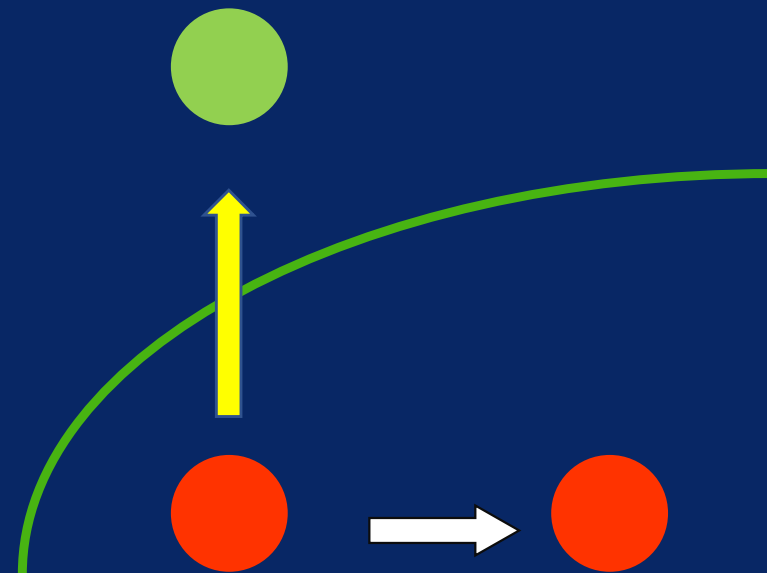
Two Relations

Causation

Supervenience



over-determination



Functional Properties and Qualia

- Many of mental properties (belief, desire, intention, feeling, etc.) are functional properties.
- Even sensations (pain, visual sensation, auditory sensation, etc.) have aspects of functional properties as information processing.
- So, the united whole of functional properties of the mental is the functional consciousness.
- But qualia(/phenomenal consciousness) are fundamentally different from functions. . . . They are phenomenal properties.

Why not Identity of Properties?

This is why we assert non-reductive physicalism.

- Reductive physicalism → any mental property is identical to some physical one.
- pain = firing of C fiber (certain neurophysiological state in human brain)
↓
- Any organism without C fiber (octopus, earthworm, or alien) cannot have pains, because if $a = b$ and $b \neq c$, then $a \neq c$.

Multiple Realization

- Functionalism \rightarrow Mental properties are functional properties realized in many different materials.
- M = a mental property(/state) “want to go to New York”.
- P = a subvenient(/base) property(/state) to realize M .
- A mental state is realized by a disjunction of subvenient states.
- $M_x \Leftrightarrow (P1_x \vee P2_x \vee \dots \vee Pn_x)$

Robots not yet, soon?

- If mental properties as functional are multiply realized, minds can be realized also by non-biological things made from metals, plastics, and electronic devices etc.
- For this end, every function in mind and body of humans has to be explicated completely both in neurosciences and cognitive sciences.
- According to physicalism, robots with functional minds are possible.

Do robots also have qualia?

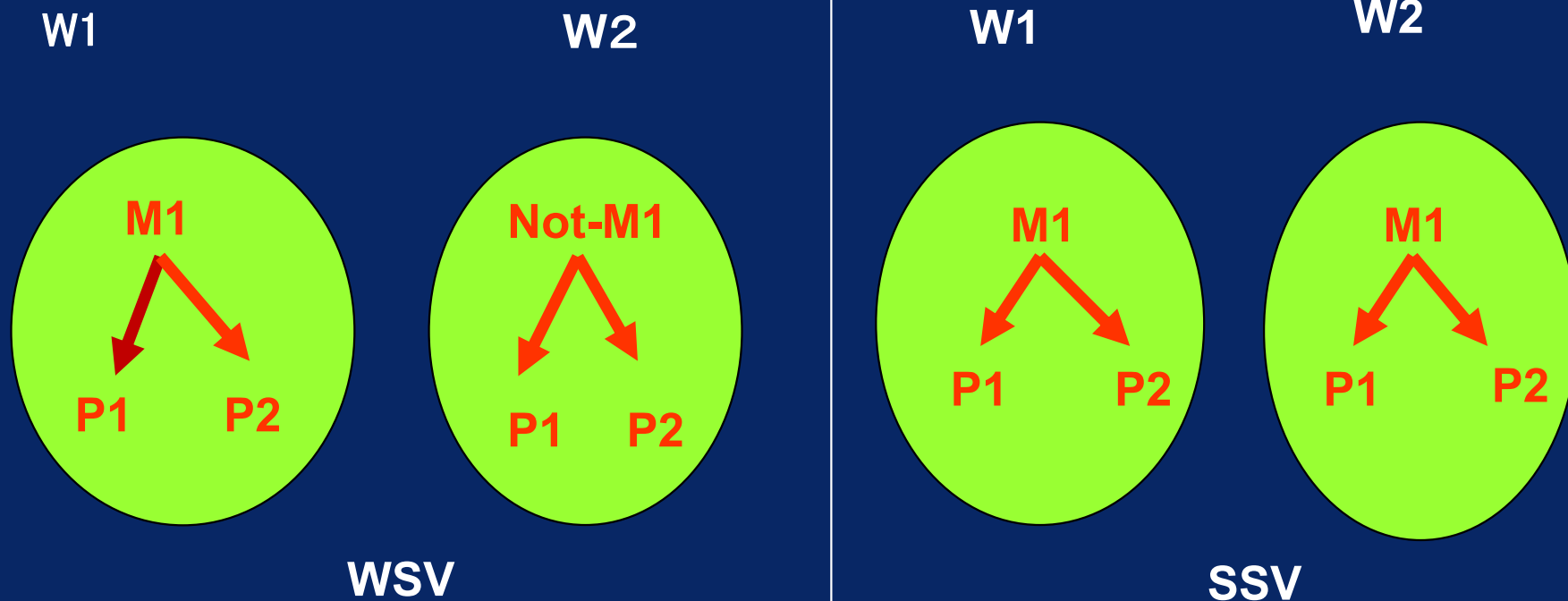
- Physicalism guarantees that qualia supervene on physical properties.
- But if we don't presuppose physicalism, it wouldn't be sure that qualia supervene on "physical" properties. And there is no strong arguments showing that qualia supervene on "functional" properties, because there is no causal relations that turn functions into base properties of "qualia-supervenience".

Are robots which are enjoying qualia possible?

→ Insisting "No" would imply irrationality.

Weak SV and Strong SV


Strength of SV represents a degree of necessity



Range of possible worlds where SV holds

- The difference of weak SV and strong SV →
Whether SV holds within only one possible world or
across any two arbitrary possible worlds
↓
- Physicalism would lose its point if it merely claims a
thesis of weak SV.

intermediately strong SV

- But, there is a SV relation which is stronger than weak SV, and weaker than strong SV. This is our thesis.
- This SV does not hold either in only one possible world (accidental coincidence), nor in all possible worlds (unconditional necessity).
- Like our natural laws in general, this SV holds only within a certain range of possible worlds (a weak necessity).  Physicalism as a contingent truth
- If SV is truly a primitive relation, there would be no reductive answer to why that SV holds within such and such a range of possible worlds.

Is SV a primitive relation?

$SV \neq$ identity relation, and $SV \neq$ causal relation

→ SV is a primitive and fundamental relation of the world which cannot be explained by any other relations.

Two questions remain;

Is there really such a primitive relation as SV ?

If so, how wide could be the range of possible worlds where SV holds, and why that range?

Unfortunately, they are not answered sufficiently in this presentation.

Impossibility of Zombie Robots

- Zombie robots ••• having exactly the same cognitive functions as humans without any qualia or phenomenal consciousness.

“Philosophical zombies” are the same in this respect.

Impossibility of zombie robots is not logical one.
Somewhere in the logical space of all possible worlds, there are possible worlds where zombie robots exist.

→ The implausibility of zombie robots comes from the incoherence of cognitive functions and subjective experiences

From Reports of Sensations to First-person Judgments

- Functional cognitive robots make reports of his own sensory experiences → “I see vivid blue .”

If this report is the same as ours in the same situation, there would be no reason to assume inverted qualia or absent qualia in him other than our disgust against him as a machine.

- Compare to the case of other humans around you.
- Please imagine a bizarre case where there is a blue car in the street and that robot says “I see a blue car in the street”, but in fact it has “red qualia”.

**Incoherence of cognition and private experience . . .
Unreasonable assumption about him**

From First-person Judgments to Subject of Experience

- Functional cognitive robots make a report of his own first-person experiences →
“I am sad without any friends”
- This report depends on his first-person experiential contents rather than his third-person observation on his own internal mechanism.



He is already a “subject of experience”.

Worlds where Robots have Minds

It is self-refuting in our world to say that functional cognitive robots are zombie robots.



“I am a zombie robot.” → If this is true,
he could not be a subject of experience. ←
It is our world that gives robots their qualia.

Property Dualism in Physicalism (1)

(Actual World as A Possible World)

- Physicalism as a contingent truth (rather than a necessary truth)
 - There are at least following classes of possible worlds in a logical space of all possible worlds.

(A): A class of possible worlds where substance monism and property monism hold.

They are possible worlds where only physical individuals and physical properties exist.

Property Dualism in Physicalism (2)

- (B): A class of possible worlds where substance monism and property dualism hold.
- They are possible worlds where any mental individual e.g. a soul is identical to some physical one, but any mental(=phenomenal) property is not identical to any physical one.
- (C): A class of possible worlds where substance dualism and property dualism hold.
- They are possible worlds where any mental individual, e.g. a soul is not identical to any physical one, and any mental (=phenomenal) property is not identical to any physical one

Property Dualism in Physicalism (3)

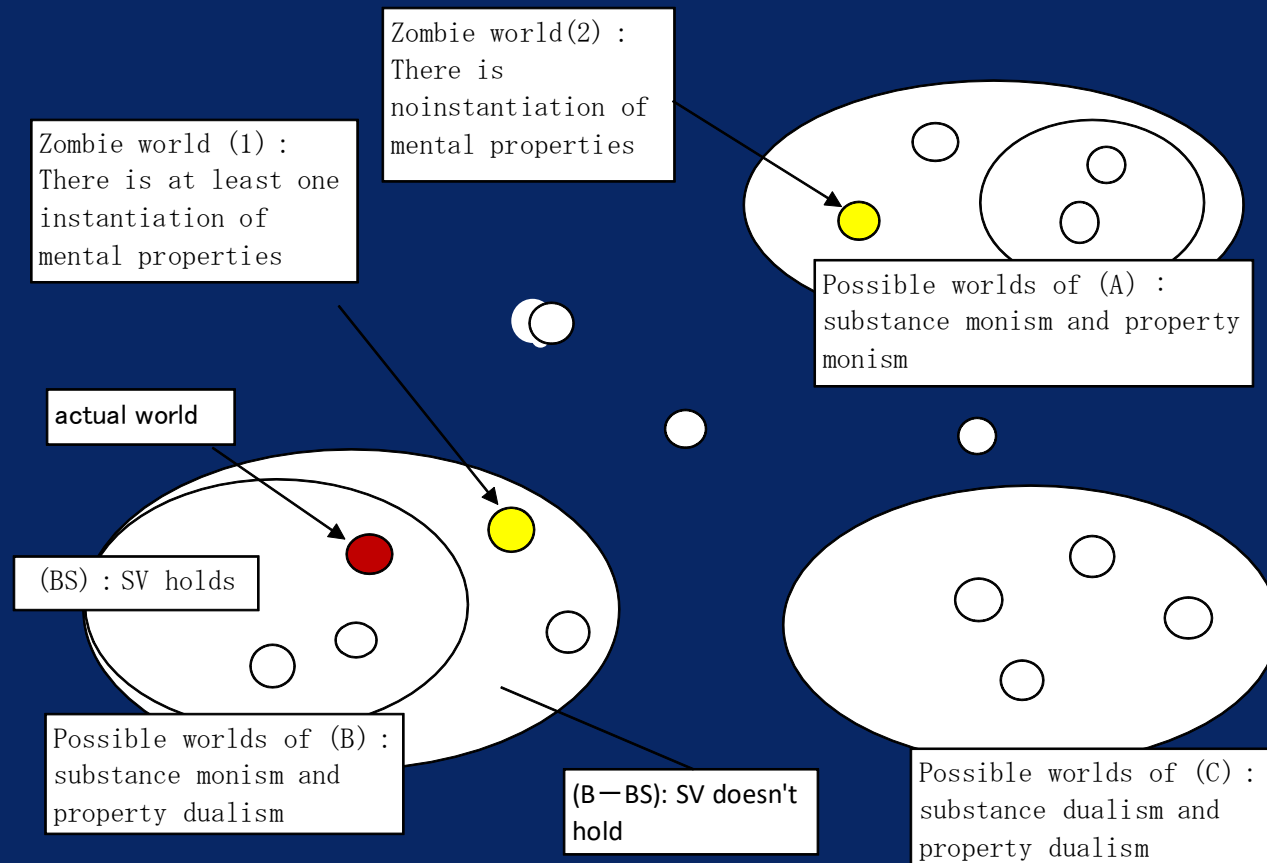
- Possible worlds of (B) are divided into two groups:

(BS): where SV of mental properties on physical properties holds. In other words, physicalism holds here.

(B – BS): where this SV doesn't hold, and physicalism fails here.

- My proposal of physicalism with property dualism → Our actual world is one of possible worlds among (BS).

The Location of Actual World in All Possible Worlds where Physicalism Holds



Zombie Robots worlds are far, far away from the Actual World

In possible worlds of (BS) → where “any mental individual is identical to some physical one.” & “SV of the mental (=phenomenal) on the physical holds.”

So, existence of zombie robots in possible worlds of (B – BS), where that SV doesn't hold, doesn't imply the falsity of physicalism in our actual world.

Chalmers' assumption that physicalism must be a necessary truth was groundless, therefore his counter argument against physicalism failed.

How to make Qualia Robots

- We can make only physical things.
- But qualia and phenomenal consciousness are not physical.

So,

- Making functional cognitive robots.
 - This is the only way to make qualia robots.
 - The rest work is to be done by the world.
-
- Our world is a world that gives qualia to functional cognitive robots.

Then, what would philosophy show?

- Philosophical thinking is trying to explain every truth of sciences, all kinds of our experiences, and all of common sense as “coherently” as it can.
- Philosophy is trying to give us the most rational and plausible explanation (/picture) of what kind of possible world our actual world is.

End.