Physicalism

In a nutshell

Everything (mental) is physical!

Related to other doctrines, including materialism, often interchanged, but have slightly different histories.

Brief questions

1. What are some intuitive motivations for physicalism?
2. How is it related to behaviorism?
3. How does it differ?

Ways of being a physicalist

Can cash out the relationship of mental states to physical ones in whole host of (not necessarily mutually exclusive) ways:

Physicalism

1. Identity variety
   1.1 Type
   1.2 Token
2. Reduction
   2.1 Eliminative
   2.2 Reductive
   2.3 Nonreductive

Ramachandran 2005, ch. 1–2

- Face blindness (prosopagnosia)
- Capgras syndrome
- Phantom limb
Type vs. Token Physicalism

Terminology
What is meant by the term *type*? How does it differ from a *token*?

Type Physicalism
*Each type of mental state is identical to a particular type or kind of physical state.*

Token Physicalism
*Each token of mental state has a physical realization.*

Ways to be a reductionist

Reductive/Eliminative physicalism
Mental states are a mere fiction; part of a ‘folk psychology’ that can be eliminated once neuroscience is complete enough; Mental states map onto or reduce entirely to physical ones.

Nonreductive physicalism
All is physical, but mental states cannot be explain solely in terms of physical ones.

Eliminative/Reductive physicalism

- Does reductionist neuroscience presuppose the very mental constructs it wants to explain away?
- Does understanding the neural substrate explain mental phenomenon?
Nonreductive physicalism

Mental reality without the bloat!

- Strong, but non-reductive, relation between mental and physical.
- Mental events are dependent on physical ones; *supervene*, in philosophical parlance.

Example

The sensation of pain is associated with firing of particular types of nerves, including c-fibers. How would the reductionist explain this? How about the nonreductionist?

Consciousness and common sense

It is just a plain fact about the world that it contains conscious mental states and events, but it is hard to see how mere physical systems could have consciousness. . . . It is easy enough to imagine a universe without it, but if you do, you will see that you have imagined a universe which is truly meaningless.

(Searle 1984, 16)

Group discussions

Take any ONE of the unique disorders described in Ramachandran (2005) in chapters 1-2, which includes Capgras syndrome, phantom limbs, synesthesia, blindsight, anosognosia (lack of insight), etc., in which damage to the brain is associated with specific behavioral deficits, and briefly relate the patients’ particular experience to the physicalist viewpoint. In other words, are the unique experiences expected or supported under Physicalism? Why or why not?

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Face blindness (prosopagnosia)

Damage to fusiform gyrus in temporal lobe results in inability to recognize faces, but spares other visual and cognitive functions.

http://www.youtube.com/watch?v=vwCrxomPbtY#t=42s
Face blindness (prosopagnosia)

Brief question
What struck you about the interview? What strategies did she use to attempt to overcome her condition?

- In addition to developmental prosopagnosia, there are also congenital forms of the condition.
- Sufferers often don’t realize they lack the ability to recognize faces. Remind anyone of Umwelt?

Capgras’ syndrome

Amygdala
Anatomical area associated with emotional learning, stimulated by arousal, related to many disorders.
- Increased response for social phobia
- Decreased response for psychopathy

Capgras syndrome
Close friends, family members, or even emotionally significant objects are perceived as impostors. Only affects visual processing.

Phantom limbs

“A sailor accidentally cut off his right index finger. For forty years afterwards he was plagued by an intrusive phantom of the finger rigidly extended, as it was when cut off. Whenever he moved his hand towards his face – for example, to eat or scratch his nose – he was afraid that this phantom finger would poke his eye out. (He knew this to be impossible, but the feeling was irresistible.) He then . . . lost all sensation of having any fingers. The phantom finger disappeared too.”

_The Man who Mistook his Wife for a Hat; Oliver Sacks. p. 67._

Phantom limbs

The syndrome
Perceive sensation from missing organ.

http://www.youtube.com/watch?v=CTSNphMzEot=4m

Remapping of sensory areas
Phantom limbs arise from re-mapping of sensory areas associated with the arm to those of the face

Organization of motor strip (Penfield)
Phantom limbs

Mirror box therapy
Nerve damage prior to amputation can result in a “paralyzed phantom limb” causing chronic pain.

Getting visual feedback of other limb allows the brain to remap pain signals and reduce pain.

Next time

Functionalism
A competitor to physicalism; a mental state does not depend on any particular physical state, but rather the role it plays in the cognitive system.

Turing test
Functionalism applied to computers; Alan Turing famously devised a test to answer whether machines can show intelligent behavior. Ascribe intelligence to a machine if we cannot reliably distinguish it from a human.

- Cunningham, 2000, pp. 38-53
- Turing, 1950