

WHAT IS THE PLACE OF THE MIND IN NATURE?

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Slides available via the “Blog” section of my website

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UNIVERSITETET
I OSLO



Forskningsrådet

- Over the last few weeks you've examined aspects of **knowledge** and **ignorance**, **explanations**, and **appearance** and **reality**.
- Next week you'll look at **space** and **geometry** as an example of what we can know (and how!).
- This week concerns one of the most **complex** things we know of in the world (the **mind**) and how it interacts with **the world**.

- We encounter many different kinds of **entities** in our daily life.
- We have **very good** scientific theories about many of these objects!
- We also seem to encounter other **minds** (assuming we're not in some far out sceptical scenario!) and we are all aware of **ourselves** qua minds.
- We also seem to be able to **communicate** and **understand** claims about each others minds to some degree!
- "I'm **enjoying** this coffee!"
- "Marit Bjørgen won **because** she was **determined**"

MAIN AIMS FOR TODAY.

1. Examine two views about the nature of the mind (**materialism** and **dualism**), and some arguments for and against each.
2. Talk a little about how our **concepts** can influence how we interact with the world.

SCIENCE AND THE MIND

THE MIND-BODY PROBLEM

DESCARTES' ARGUMENT

ELISABETH'S REDUCTIO

THOUGHTS AND CONCEPTS

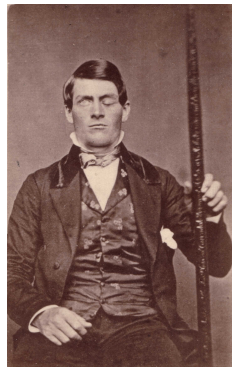
SUMMARY

OBSERVATION.

Science has **come a long way**; some advances in cognitive science and neurobiology are **staggering**.

- This might lead you to think that the study of the mind is **just** the study of a particular **physical object**, namely the **brain**.
- This idea is often coupled with a **fundamentalism** in science: That all science is explained by the study of some **fundamental particles** and their behaviour.
- But reducing all science this way is **controversial**.
- Even if there aren't **reductions**, there **may** be limits to what brain science can tell us about the mind.
- But let's start by discussing some **successes**.

- Example of Phineas Gage (1823–1860)
- Railroad construction worker who suffered injury from iron rod destroying much of his **left frontal lobe**.
- Sufficient **personality** change for his friends and acquaintances to say that he was “no longer Gage”.
- Case where neurobiological change **seems** to have effect on personality.



- Numerical cognition: Ability to reason with small arithmetical consequences and **neurobiological correlates** is now far better understood than 100 years ago.
- You can see a **somewhat hypothetical** (and now rather outdated!) picture on the right.
- This is a clear case of **scientific progress**.
- **Lots** of interesting work to be done regarding this work and the epistemology of mathematics!

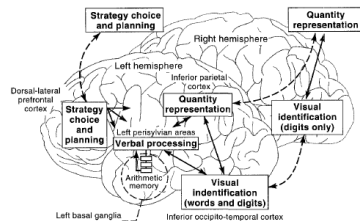


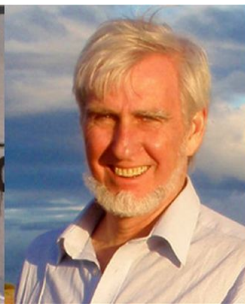
Figure 7.3. A partial and still hypothetical diagram of cerebral areas involved in number processing. Both hemispheres can manipulate Arabic numerals and numerical quantities, but only the left hemisphere has access to a linguistic representation of numerals and to a verbal memory of arithmetic tables. (After Dehaene and Cohen 1995.)



Edvard I. Moser, PhD



May-Britt Moser, PhD



John Michael O'Keefe, PhD

- Work of May-Britt Moser, Edvard Moser, and John O'Keefe awarded the Nobel Prize in physiology/medicine in 2014.
- Found cells in two connected regions of the brain (hippocampus and the entorhinal cortex) that form a **positioning system**.
- These cells are **often affected** in patients with Alzheimers.
- This link between **neurobiology** and **mental states**, helps to **explain** why such patients struggle to navigate the world.

- Why bring all this up?
- Well the following answer is tempting:
- *The study of the mind is just the study of the brain, which is a particular physical object.*
- This is a legitimate philosophical position!
- But it is far from obvious.

- **Point 1.** Showing a **close connection** is not **sufficient** to show that two things are the **same**.
- Consider a **light switch** and a **light bulb**.
- There is a **close** (indeed **causal**) connection between the bulb lighting up and the switch being flipped.
- But this does not mean that the bulb is **the same** as the light switch.
- The two **can be separated**.
- More needs to be done to show that **everything** about the mind can be explained in terms of what goes on in the brain.



- **Point 2.** There are **puzzles** to be resolved.
- An example from Frank Jackson ('What Mary Didn't Know')
- Suppose Mary has been kept in a room her whole life where **everything** is black-and-white.
- She is given access to **all the information** she wants (in black-and-white of course), and being inquisitive and intelligent, learns the whole of brain science (maybe even she proposes some **new** and **correct** theories of her own).
- **Question.** If Mary is released from the room, and sees the colour **red** for the **first time**, does she learn something **new**?
- If yes, then it **seems** like not everything that can be known about the mind can be known by brain science alone.
- **Note:** Philosophically **controversial** example!

- These problems about what **can be known** via science feed into questions regarding the **Mind-Body Problem**.
- This concerns the relationship between **mental entities** (e.g. beliefs, emotions etc.) and **physical entities** (e.g. atoms, molecules, neurons etc.).
- **Two rough** responses:
- **Materialism.** Mental entities are **reducible** to physical entities.
- **Dualism.** Mental entities are **not reducible** to physical entities.
- **Note:** Materialism is not **always** a brain-state materialism, could be nerves, gut, external physical objects, just **everything** appealed to has to be physical.
- **Note:** Dualism is the **likely** outcome of views that ascribe some immortal soul (e.g. religious views, Plato in the *Phaedo*).

We can be a bit more **subtle** regarding our characterisation of materialism and dualism.

SUBSTANCE MATERIALISM/DUALISM

Substance Materialism. All things are material things.

Substance dualism. Mental things (including ourselves) are **not** material things.

PROPERTY MATERIALISM/DUALISM

Property Materialism. All mental states are identical to material states.

Property Dualism. Some mental states are fundamentally different from material states.



- Descartes was an avowed **dualist** (I'll leave you to work out which).
- But he knew a **bit** about the brain (and a **a lot** for the time).
- This **meshes** well with the role of the *Meditationes* and his general philosophical outlook.
- Sometimes, especially if you focus only on the philosophy, Descartes can come across as a bit of a **mystic**.
- But he's really a **philosophically interested scientist** (those two disciplines weren't even clearly separated at that time) and was trying to found his **physics** and a **complete understanding** of the world with his work.
- This **includes** the role of the brain, see *De Homine*.

RENATUS DES CARTES
DE
HOMINE
FIGURIS
ET
LATINITATE DONATUS

A
FLORENTIO SCHUYL,
*Inclitæ Urbis Sylvæ Ducis Senatore, & ibidem
Philosophiæ Professore.*



LVGDVNI BATAVORVM,
Apud PETRYM LEFFEN & FRANCISCVM
MOYARDVM.
c1616c1xii

- Descartes **metaphysics** is one on which there is:
- **Matter/material**. **Physical** ‘stuff’ **extended** in 3-dimensional space. **Unthinking**.
- **Mind**. **Immaterial**, composed of **thoughts** and **minds**, does **not** have extension.

- Part of Descartes' arguments for dualism rests on a **conceivability** argument.
- **Premise 1.** I can **doubt** the existence of the material world, including my own body. (This is in the *Meditationes*.)
- **Premise 2.** I **cannot** doubt the existence of my mind (this is the *cogito*).
- **Premise 3.** Something I can doubt (e.g. the body) **cannot** be the same as something I cannot doubt (e.g. the mind).
- **Conclusion.** Therefore, the mind is **not** identical to the body.

- **Aside:** This is a form of **modal** argument.
- We look at what the **possibilities** are, given some **relevant space of possibilities**.
- This kind of reasoning is employed **a lot**.
- **Example.** You want to know if **somebody should be convicted** for a crime. You envisage all the **relevantly possible** situations, and find that there is no/a possibility that absolves them. You do/don't **convict**.
- **Example.** You want to know if a physical theory is **reasonable**. You envisage what happens in certain cases (e.g. when an object passes into a black hole) and find them **physically implausible**. You **decrease** your confidence in the theory.
- The use of such reasoning is **widespread** but **controversial**!
- Note that we need to be able to latch on to the **correct** space of possibilities, and **reason** about them.

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- Elisabeth of Bohemia (1618–1680), philosopher who corresponded with many prominent intellectuals of the time.
- Very much a **polymath**: Studied philosophy, astronomy, mathematics, jurisprudence, history, languages, painting, music, dancing
- Her critique of Descartes **anticipates many** of the concerns held by later philosophers.

- The issue concerns the **interaction** of the body with the mind.
- We **know** that there is a close connection between the external world and the mind.
- I **wanted** a cup of coffee, and I therefore **set in motion** a chain of events, now I have the cup of coffee, and it produces sensations of **deliciousness** in me.
- Given that, under Descartes metaphysics, the mind has no extension, how do we **explain** these interactions?

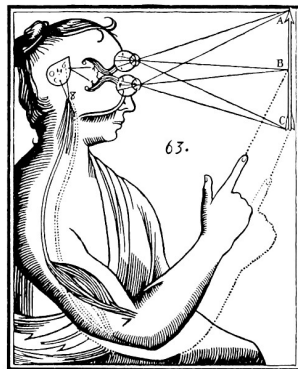
- First letter: According to **Descartes'** physics changes in movement are caused by one thing **pushing** another.
- How this movement occurs is a function of the **physical properties** of the physical things.
- But the mind has **no** physical properties.
- So **how** does it do any pushing?

- Elisabeth employs a form of **reductio ad absurdum**:
- **Premise 1.** The mind causes changes in the body (datum).
- **Premise 2.** Causing changes in the body requires physical contact with the body. (Descartes' mechanics)
- **Premise 3.** Physical contact is possible only between two material objects. (Descartes metaphysics)
- **Premise 4.** The mind is not a material object. (Dualism)
- **Step 5.** The mind does not cause changes in the body. (from 2-4)
- **Contradiction!** So one of our premises must be **wrong**:
Why not dualism?

- Descartes' response: Attack **Premise 2** (casuation requires physical contact).
- Perhaps there is a version of **causation** that is distinct from **material causation**.
- Example: Suppose that **heaviness** of an object is a real quality (a force that pulls towards the centre of the earth).
- Then heaviness can **cause** e.g. objects to fall, without it being a kind of "collision".
- Descartes hopes to eliminate heaviness in terms of talk about bodies, but he thinks that it **illustrates** what might be possible.
- Elisabeth's response: The analogy is inapt since **immaterial** and **material** is of a far different kind compared to **body** and **heaviness**.
- **Problems** going the other way too; if the body can transfer thoughts to the mind, then there must be something mental in the body.

- There are **other** arguments in the letters, and further back-and-forth!
- I encourage you to **follow this up**!
- But I hope you've got an idea of how **argumentation** can proceed, setting out arguments **clearly** and then **identifying** faulty premises, **rebutting** counterarguments etc.
- Subsequent thinkers (e.g. Spinoza, Berkeley, Leibniz) were **very engaged** with the kinds of issues raised by Elisabeth.
- Certainly Descartes **himself** (as you can see in the correspondence) thought these issues were **important**.
- He also provided a **theory** of how the mind and body interact (see depiction right); the body exchanges information with the mind via the pineal gland.

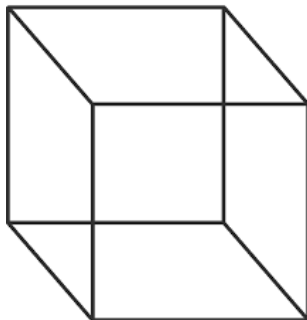
- **Question.** What do **you** think about the **possibility** (or **actuality**) of different kinds of dualism?
- **Note:** Various forms of dualism are **still held** by **both** philosophers and neuroscientists (it's an **open** issue!).



- I want to close with a different remark about the way the mind **interacts** with the world.
- It is commonly assumed (especially in the period in which Elisabeth and Descartes were communicating) that there is **agreement** on the way the world is to us.
- You and I **uncontroversially** latch on to the same stuff when we speak, and have **shared meanings**.

- But there is a sense in which **the way the world seems** and **what we mean** is partly determined by the **concepts** we have.
- Recall **Kuhn**: There we had the notion of a **paradigm** (a particular cohesive scientific framework).
- Kuhn held that there is **incommensurability** between paradigms: Members of different paradigms literally **mean different things** and **misunderstand each other** when they talk.
- e.g. It might be that a proponent of heliocentrism and geocentrism **mean different things** and the world **seems different** when they talk about “planets” (Better but more complicated example: Moving from classical to relativistic physics.)

- Kuhn compares this to a **gestalt switch** (e.g. Necker cube/duck rabbit).
- **Moral:** The way the world seems might be an **interaction** between physical and mental entities (**whatever** you think of the reduction) and so we have to be **careful** when we communicate.
- How confident are you, when involved in an argument on a topic, that you and your interlocutor have enough **shared semantic content** to progress in the argument?



- This session we've seen:
- The distinction between varieties of **dualism** and **materialism**.
- A bit of **metaphilosophy**: As exemplified by Elisabeth and Descartes, there are different kinds of **argumentative strategies** you can employ, setting out assumptions clearly is **important**.
- This isn't just in **philosophy**!
- A final closing note: This is the **last** lecture I'll give this semester.
- I've been **very** impressed with the student questions: **Keep at it!**

Tusen takk!