HOW CAN MINDS UNDERSTAND EACH OTHER ?

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MINDREADING

Social human interaction crucially requires mindreading

We ascribe mental states (beliefs, desires,…) to others…

…and predict and make sense of behavior of others

But how do we actually do mindreading?

TWO COMPETING THEORIES

Theory theory

- We entertain and apply a "folk-psychological" theory
- Concepts like belief or desire + laws/generalizations
- ***Example:*** If a person P desires some object O, and if she believes that by doing action A she gets O, then she does A.
- Mindreading is an "**inferential process**"

Simulation theory

- Use own psychology to do a simulation…
- …and then ascribe the result to the other
- No representations involved

I'll argue in this talk that simulation theory collapses into theory theory

ELEMENTS NEEDED FOR EACH THEORY

Theory theory

(THEO-1) Input in the form of **ascriptions of mental states** or behavior to the target person, as well as **beliefs in laws or generalizations** of causal relations between mental states and behaviors.

(THEO-2) A factual reasoning mechanism.

(THEO-3) Output in the form of **ascriptions of mental state or behavior** to the target person, as the result of some inferential process in the factual reasoning mechanism.

Simulation theory

(SIM-1) Inputs in the form of **pretend beliefs about mental states** or behaviors of the target person.

(SIM-2) Our own cognitive decision-making system.

(SIM-3) Outputs in the form of **pretend decisions** that are then transformed into mental state or behavior ascriptions to the target person.

see Goldman, 2006:26-29

COLLAPSE ARGUMENTS (1)

To make a mindreading simulation, I need to have a belief that I am sufficiently similar in the relevant aspects to the target subject.

This belief plus the last inferential step to the ascription of a state to the target person makes simulation theory-like.

COLLAPSE ARGUMENTS (1)

- To make a mindreading simulation, I need to have a belief tha relevant aspects t
- This belie the ascriptior makes simulation theory-like.

Only affects last step, so no collapse of the previous simulation steps into theory.

COLLAPSE ARGUMENTS (2)

Simulation requires quarantining the simulated states from the real states of the simulating person

There are two possible ways to implement quarantine.

1. Pretend beliefs could be special types of beliefs running through the real decision-making system. In this case, pretend states must follow the same computational connections as real states. The only conceivable explanation for that is, according to P&B, that they were evolutionarily designed to do so. But then they *represent* those computational connections, rather than *replicate* them. So we have a collapse of ST into TT.

2. It could be that real beliefs run through the decision-making system in an "off-line mode." But P&B think this is implausible phenomenologically. There are two models for running our cognitive system off-line: sleep, and hypnosis. But in both cases, we don't stay "attuned to reality". However, when we read minds, we stay attuned to reality. Hence, the off-line mode option is not feasible.

see Perner&Brandl (2009)

COLLAPSE ARGUMENTS (2)

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There are two possible ways to implement quarantine.

!. Pretend b… …nning through the real decisio… …tates must follow the same co… …The only conceivable … …, that they were evolutionari… …*esent* those computatio… …m. So we have a collapse of S…

It could be that connection do not represent laws, hence no theory.

2. It could b… …on-making system in ar… …nplausible phenomenol… …ng our cognitive system off-li… …es, we don't stay "attuned to … …we stay attuned to reality. He… …ible.

Maybe the parts of the brain responsible for staying "attuned to reality" are not involved in simulation.

TYPES OF SIMULATION

Two ways to simulate the pressure-temperature relationship in a gas-cylinder

THEORY DRIVEN SIMULATION

-> Via a mathematical model (Boyle's law)

TARGET

PROCESS DRIVEN SIMULATION

->Via a second, relevantly similar gas-cylinder

A BETTER COLLAPSE ARGUMENT ?

Even process driven simulation is (minimally) theory application

- Simulation *qua* simulation presupposes that there is some law **embodied** by the simulation device
- The law is not explicitly represented, but we ***defer*** to the device, as having embodied the appropriate law
- Hence a law is represented – deferentially - (as well as inputs and outputs to the simulation process)
- Hence simulation is theory application

OBJECTION

Allowing for deferentially represented laws makes the notion of "theory" too thin

Reply:

By analogy:

- Deferential use of the concept "arthritis" does not imply I have no concept of arthritis at all
- Those who use the word have a minimal understanding of it (e.g. that it is an illness, that doctors know about it, etc.)
- On relies on the expert to fill the details in
- "Meaning externalism": not all meaning is explicitly represented in the head
- We merely "cognitively outsource" the relevant law

APPLICATION TO MIND READING

<u>Concern:</u> But mind-reading is often sub-personal (unconscious and automatic)

-> Imagine a gas cylinder as a permanent companion.

It's use gets automated and becomes a reliable function (e.g. input pressure is lawfully related to output temperature).

Organism RELIES deferentially on lawful connection of input and output. That is a PRESUPPOSITiON of such a law

There are two cases and in both there is a representational belief-like state, namely a tacit presupposition that a law exists:

1) **LEARNED: gas cylinder case applies straightforwardly**

2) **INNATE: evolutionarily "learned" (just longer timescale)**

SIMULATION AS "COGNITIVE OUTSOURCING" STRATEGY WITHIN THE APPLICATION OF A "THEORY"