

How to construct a Minimal Theory of Mind

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A black and white photograph of two young children, a boy and a girl, standing close together against a dark background. The boy, on the left, has light-colored hair and is wearing a patterned long-sleeved shirt under dark overalls. He is smiling and looking towards the camera. The girl, on the right, also has light-colored hair and is wearing a dark top with small patterns. She is also smiling and looking towards the camera. They appear to be in a playful or happy mood.

challenge

Explain the emergence, in evolution or development, of full-blown theory of mind cognition.

A black and white photograph of two young children, a boy and a girl, standing close together and smiling. The boy is in the foreground, wearing overalls, and the girl is behind him, wearing a patterned dress. They appear to be in a joyful, playful mood.

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Explain the emergence, in evolution or development, of full-blown theory of mind cognition.

conjecture

We need to understand how theory of mind cognition could come in degrees.

“chimpanzees understand ... intentions ... perception and knowledge ... Moreover, they understand how these psychological states work together to produce intentional action”

(Call & Tomasello 2008:191)



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“our [typical adult humans’] fundamental conception of what it is to know that P is itself an explanatory conception [...] we think of S’s knowledge that P as something that can properly be explained by reference to what S has perceived or remembered or proved or ...”

(Cassam 2007:356)



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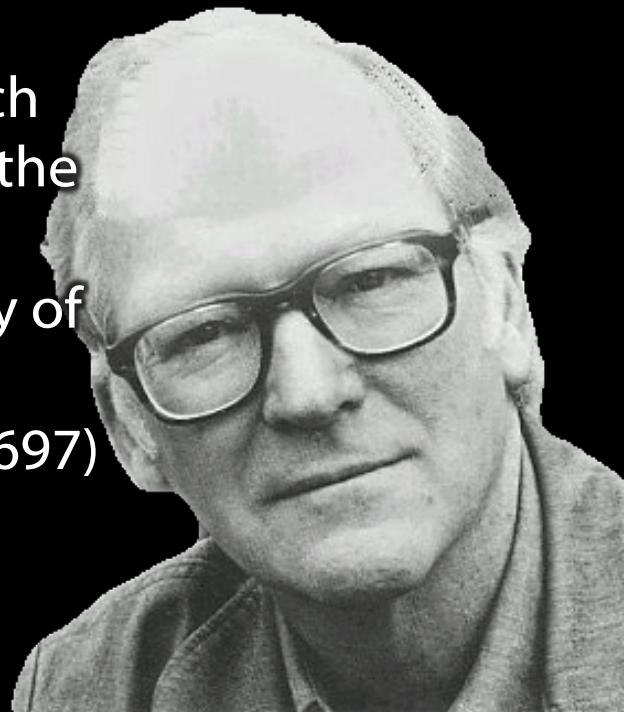
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obstacle

Grasp of everyday psychological concepts like belief, desire, knowledge and intention is all-or-nothing.

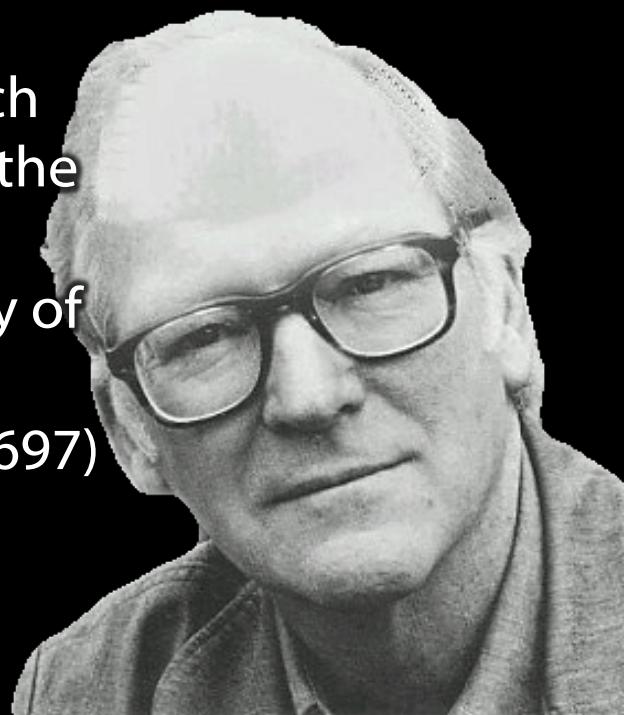
“We are stuck with our two main ways of describing and explaining things, one which treats objects and events as mindless, and the other which treats objects and events as having propositional attitudes. I see no way of bridging the gap”

(Davidson 2003:697)



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puzzle

Theory of mind *abilities* are widespread



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18-month-olds point to inform, and predict actions based on false beliefs

(Liszkowski et al 2006)

(Onishi & Baillargeon 2005;
Southgate et al 2007)

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Scrub-jays selectively re-cache their food in ways that deprive competitors of knowledge of its location

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 - development tied to acquisition of executive function and language
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- working memory

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Propositional attitudes ...

cause actions

resemble “intervening variables” linking environment to behaviour

have contents which may be true or false

have contents which may refer to non-existent entities

are involved in uncodifiably complex causal interactions

have contents which are individuated by senses, not only by referents

are associated with normative requirements

are individuated in terms of their interlocking roles in causal and normative explanations of thought and action

...

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What could infants, chimps and scrub-jays represent that would enable them, within limits, to track others' perceptions, knowledge, beliefs and other propositional attitudes?

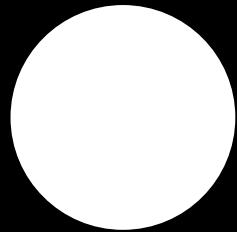
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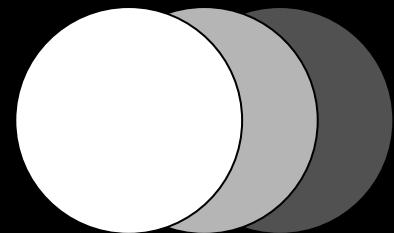
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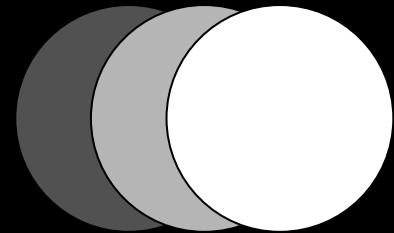
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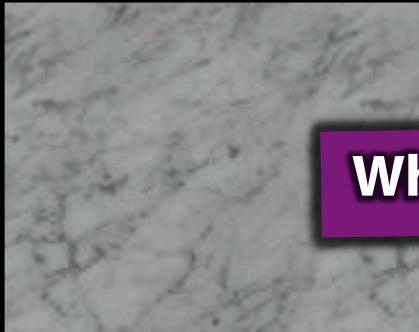
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Where is the ball?



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Where is the ball?

puzzles

What could enable chimps and jays represent that knowledge of others' beliefs and other's propositional attitudes?

RT / looking time



Other's belief
True

Other's belief
False

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challenge

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What could infants, chimps and scrub-jays represent that would enable them, within limits, to track others' perceptions, knowledge, beliefs and other propositional attitudes?

challenge

Explain the empirical evidence for evolution or development of the capacity of mind cognition.

puzzle

What could infants, chimps and other primates know about the world? What would enable them, within limits, to learn about the world? How do they learn about the world? What are the limitations, if any, on what they can learn?



