



Joint Action and the Emergence of Mindreading

# **Interacting Mindreaders**

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# challenge

Explain the emergence, in evolution or development, of sophisticated forms of mindreading.

# conjecture

The existence of abilities to engage in joint action partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)



# challenge

Explain the emergence, in evolution or development, of sophisticated forms of mindreading.

# conjecture

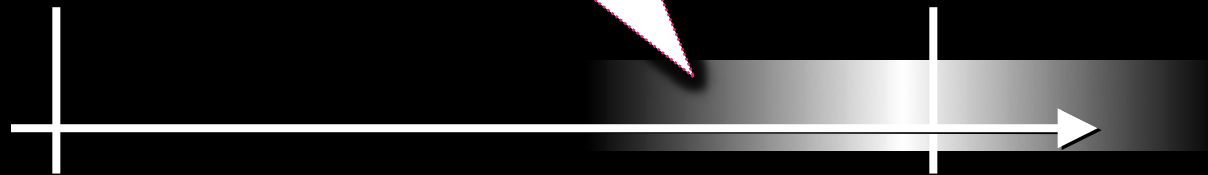
The existence of abilities to engage in joint action partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)

# 3<sup>rd</sup> objection

But how does it work?

4 months: categorical  
perception of phonemes

3-4 years: phoneme  
judgements



/r/

/p/

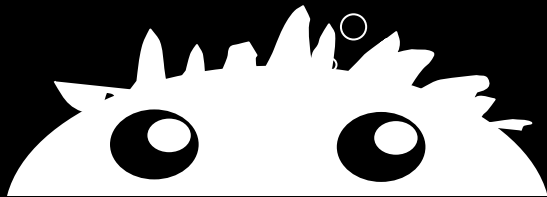
a question

reciprocity

She thinks  
I think ...

reciprocity

He thinks ...

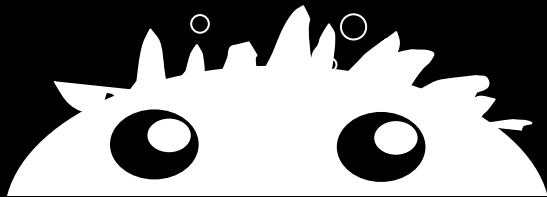


She thinks  
I think ...

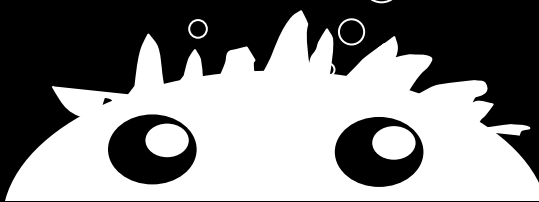
He thinks  
I think he  
thinks ...

reciprocity

He thinks ...







He thinks  
I think he  
thinks ...

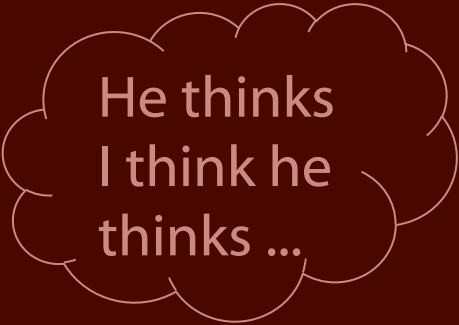


He thinks ...

reciprocity

She thinks  
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thinks I  
think ...

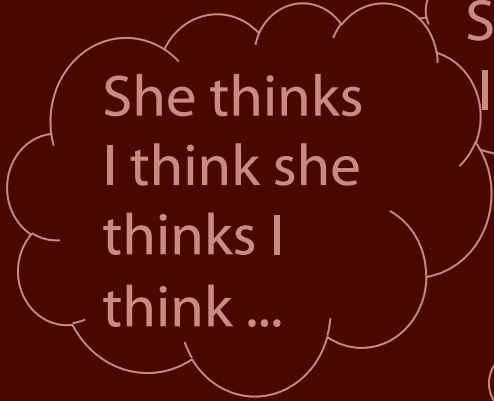
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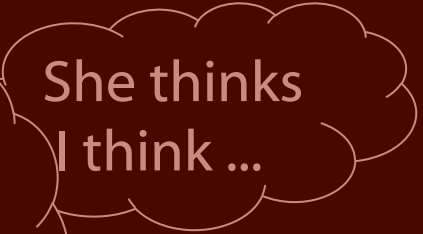
He thinks  
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He thinks ...

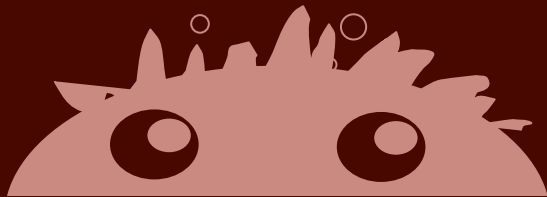


She thinks  
I think she  
thinks I  
think ...



She thinks  
I think ...

reciprocity  
without escalation?



goal ascription

'an action can be explained by a goal state if, and only if, it is seen as the most justifiable action towards that goal state that is available within the constraints of reality.'

(Csibra & Gergely 1998)

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1. action  $a$  is directed to some goal;
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1. action  $a$  is directed to some goal;
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The problem of opaque means

failed reach



point



*source: Hare & Tomasello (2004)*

**your-goal-is-my-goal**

## **your-goal-is-my-goal**

1. You are willing to engage in some joint action\* or other with me
2. I am not about to change the single goal to which my actions will be directed.

Therefore:

3. A goal of your actions will be the goal I now envisage my actions being directed to.

[\*in at least the minimal sense associated with distributive goals]

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## Applications

- pram



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- pram
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- communication

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“to understand pointing, the subject needs to understand more than the individual goal-directed behaviour. She needs to understand that ... the other attempts to communicate to her ... and ... the communicative intention behind the gesture”

(Moll & Tomasello 2007)

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Csibra's 'two stances':

Teleological and referential action interpretation 'rely on different kinds of action understanding'

These are initially two distinct 'action interpretation systems' and they come together later in development

Csibra (2003, p. 456)

The problem of false belief



contents

actual

believed

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North

owl

cat

South

cat

owl



# challenge

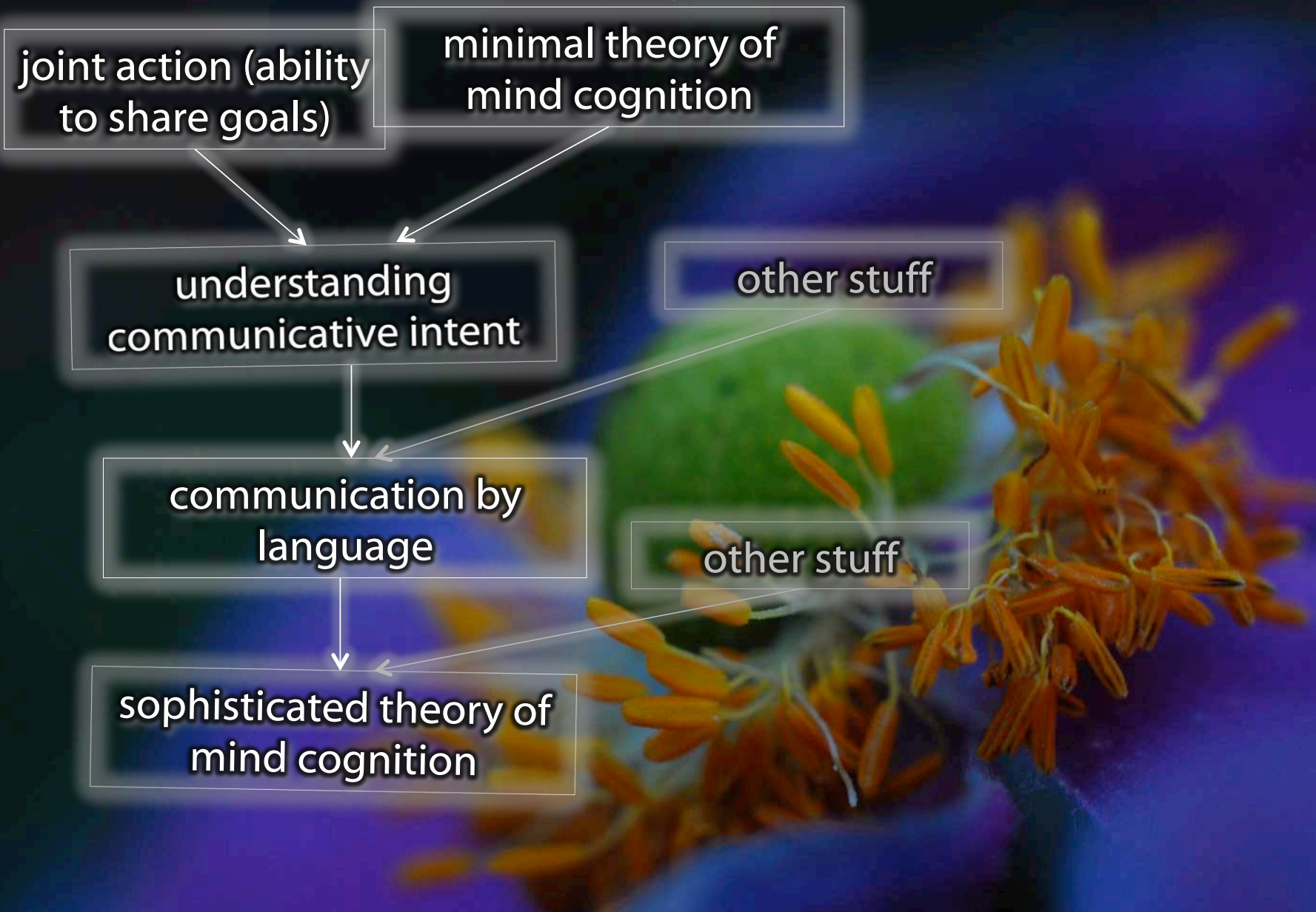
Explain the emergence, in evolution or development, of sophisticated forms of theory of mind cognition.

# conjecture

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# 3<sup>rd</sup> objection

But how does it work?



joint action (ability to share goals)

minimal theory of mind cognition

understanding communicative intent

other stuff

communication by language

other stuff

sophisticated theory of mind cognition



