

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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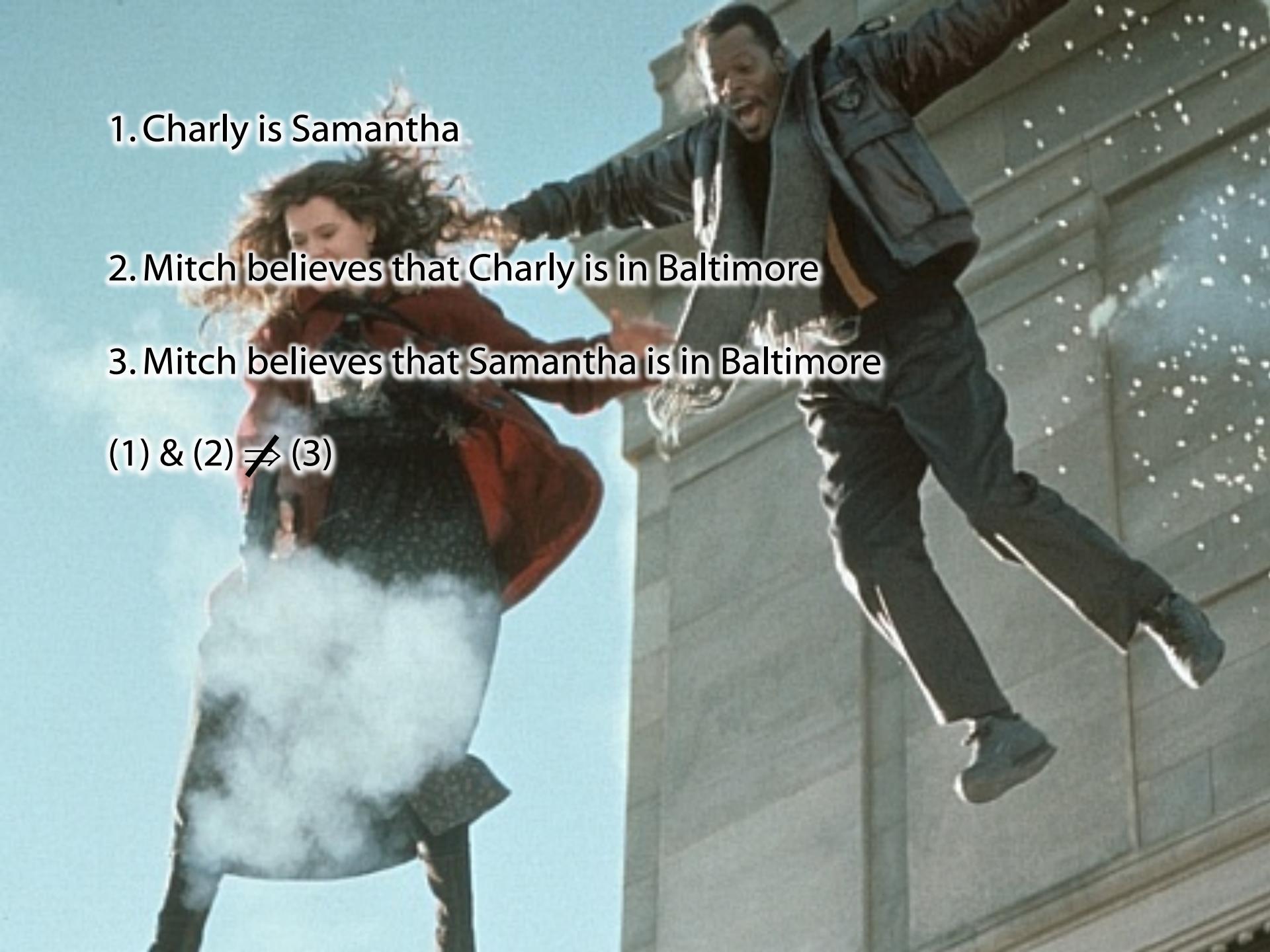
signature limits

1. Charly is Samantha

2. Mitch believes that Charly is in Baltimore

3. Mitch believes that Samantha is in Baltimore

(1) & (2)  $\not\Rightarrow$  (3)



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  3. Mitch believes that Samantha is in Baltimore
- (1) & (2)  $\not\Rightarrow$  (3)
4. Mitch registers <Charly, Baltimore>
  5. Mitch registers <Samantha, Baltimore>
- (1) & (4)  $\Rightarrow$  (5)

Subjects represent  
registration only

*pass*

*fail*

Subjects represent  
beliefs

*pass*

*pass*

False belief  
about location

False belief  
about identity











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registration only

*pass*

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Rubio, Richardson & Butterfill



Rubio, Richardson & Butterfill



Rubio, Richardson & Butterfill



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Rubio, Richardson & Butterfill



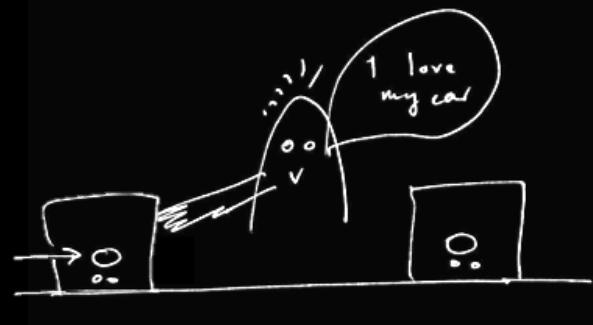
Rubio, Richardson & Butterfill

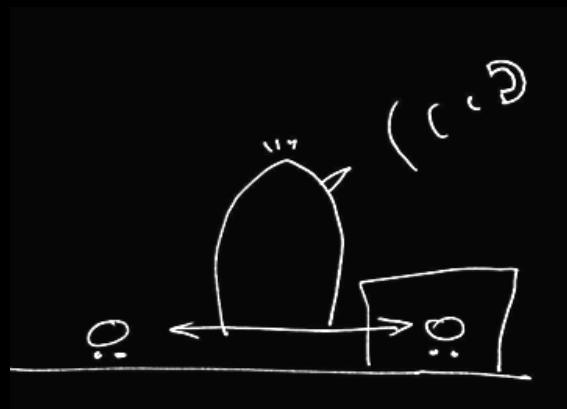
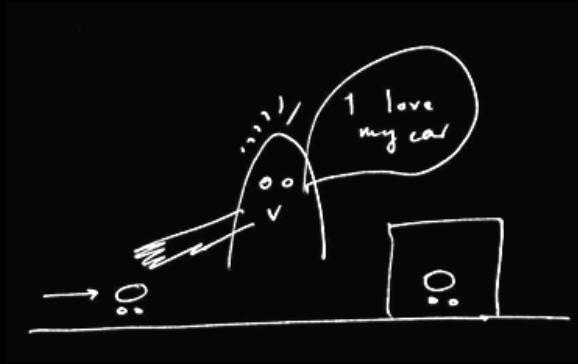
we predict Ss  
will look here  
she believes  
her car is here

I want  
my car

her car is here

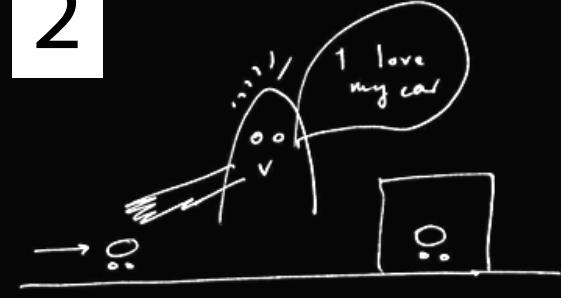
Rubio, Richardson & Butterfill



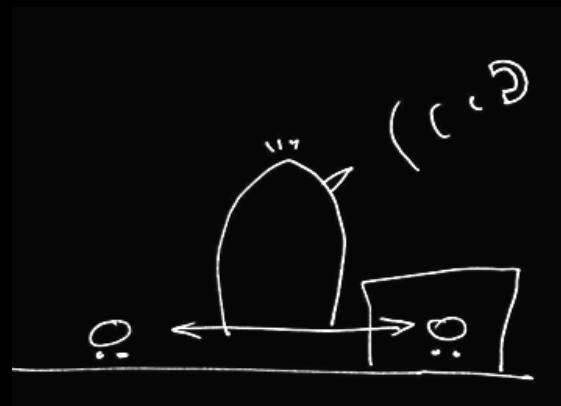
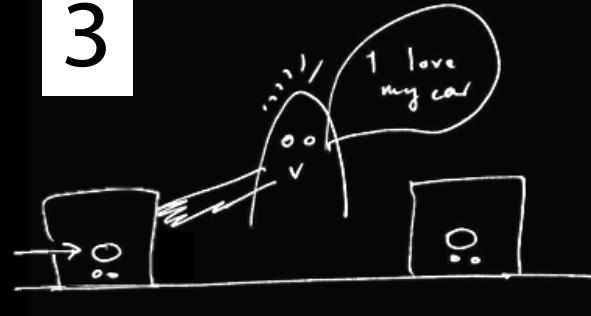


Rubio, Richardson & Butterfill

2



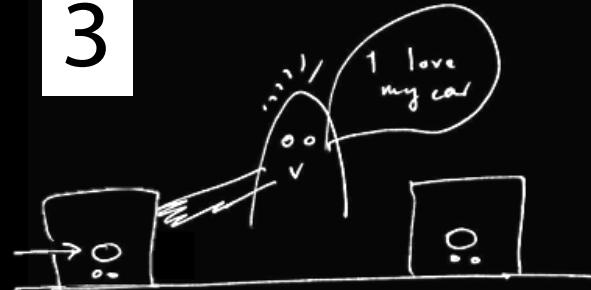
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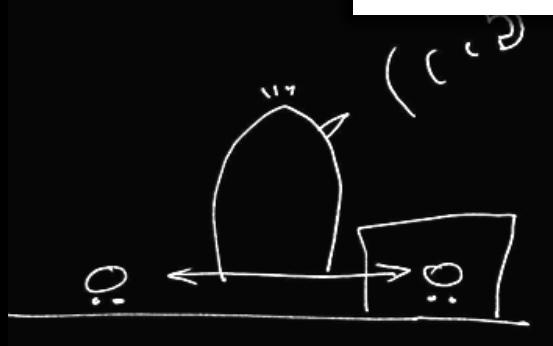
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3



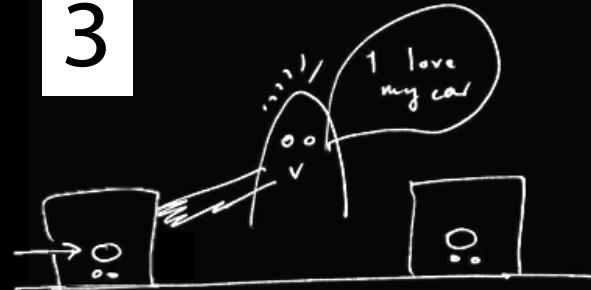
belief:  $2 \approx 3$



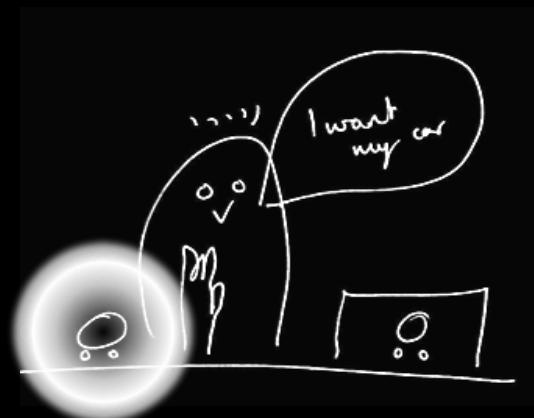
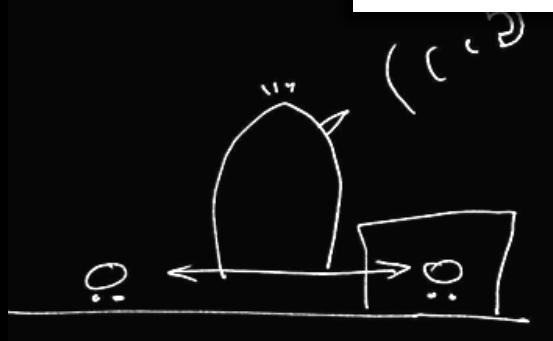
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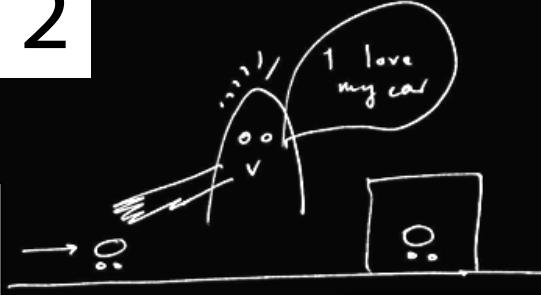
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Rubio, Richardson & Butterfill



2



3

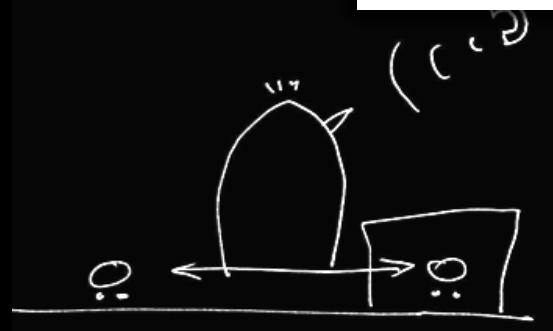


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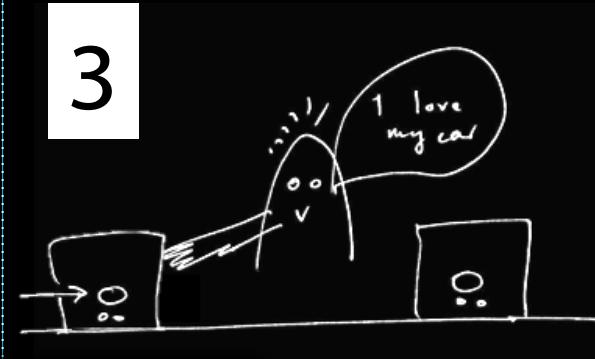
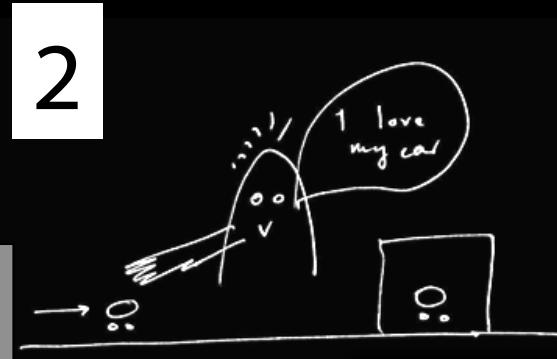
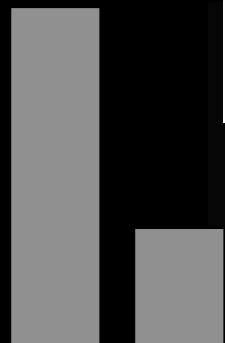
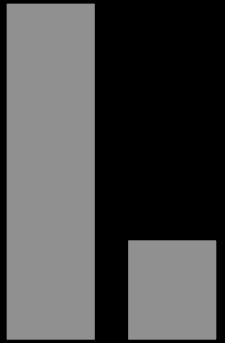
left right

2

3

belief:  $2 \approx 3$ 

Rubio, Richardson &amp; Butterfill



left right

2

left right

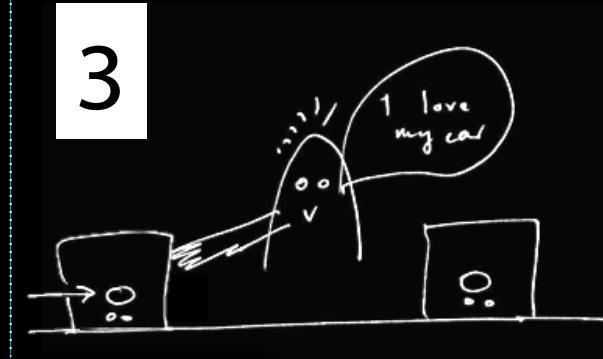
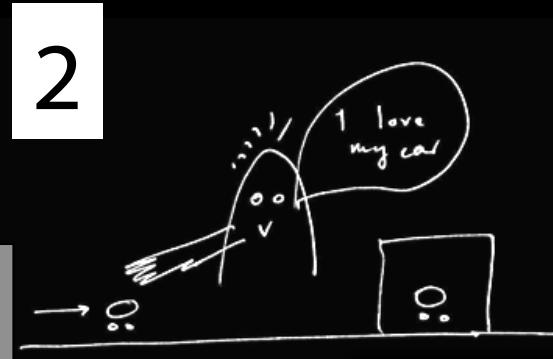
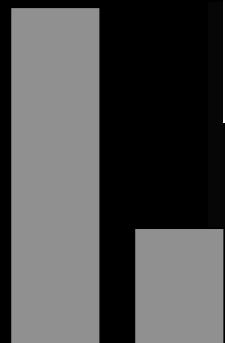
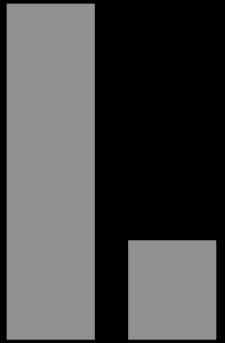
3

belief:  $2 \approx 3$



registration:  $2 \not\approx 3$





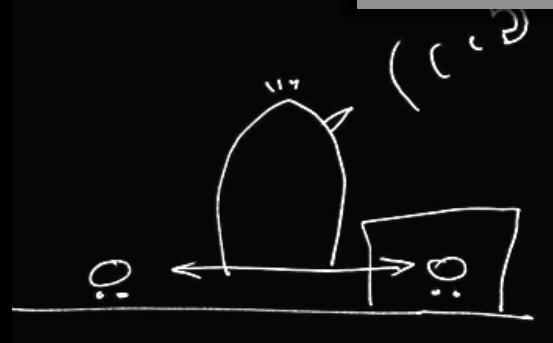
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3

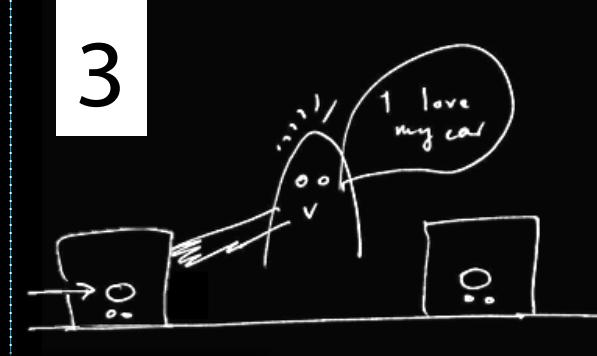
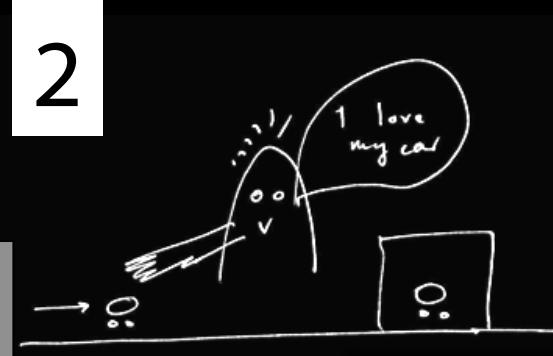
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Rubio, Richardson & Butterfill



left right

2

left right

3

belief:  $2 \approx 3$



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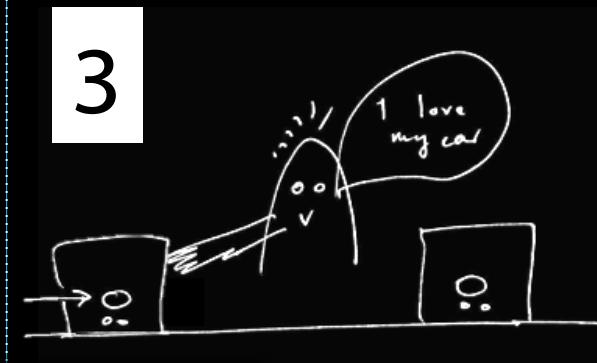
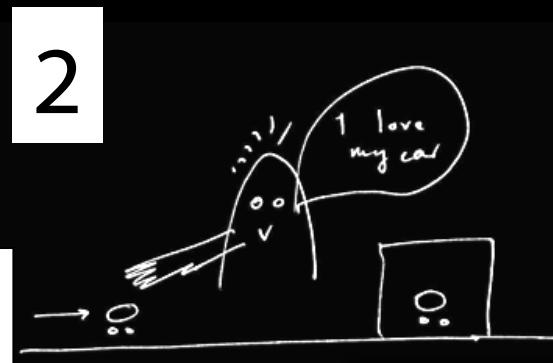
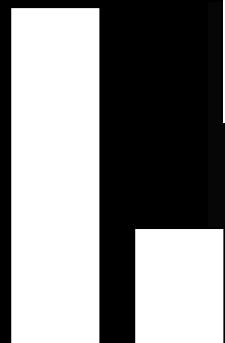
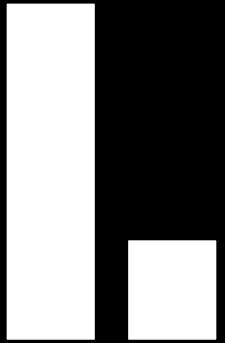
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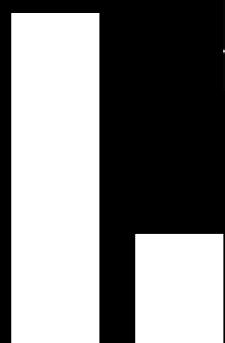
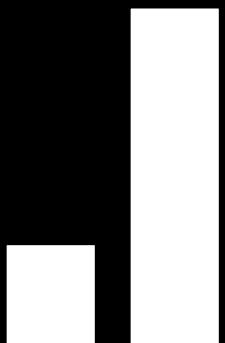
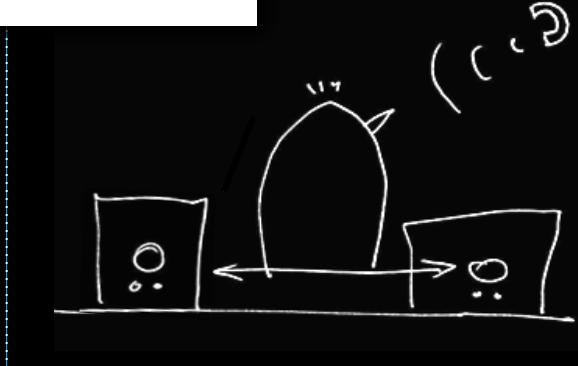
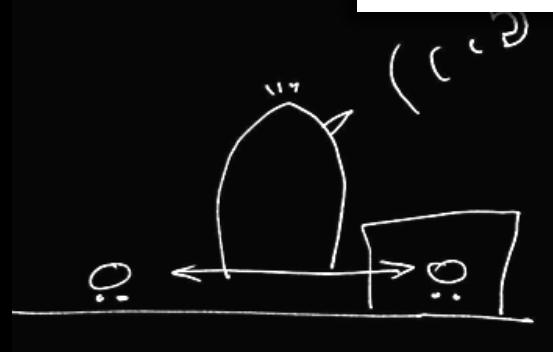
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2

3

belief:  $2 \approx 3$



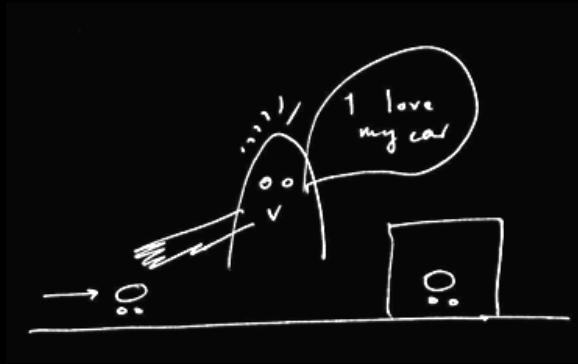
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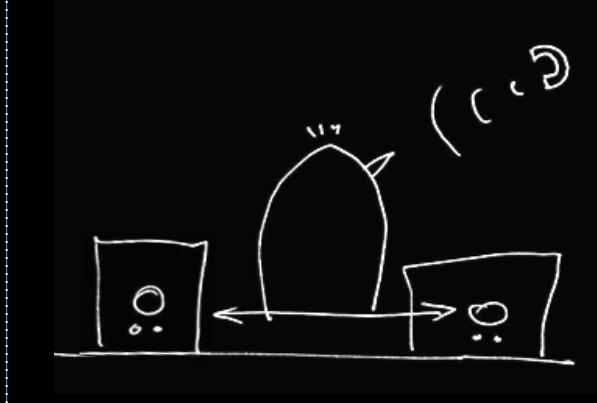
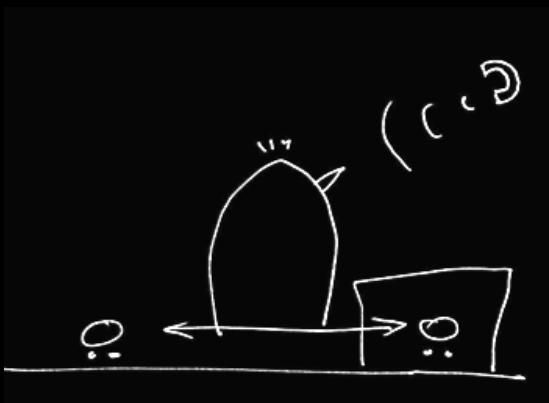
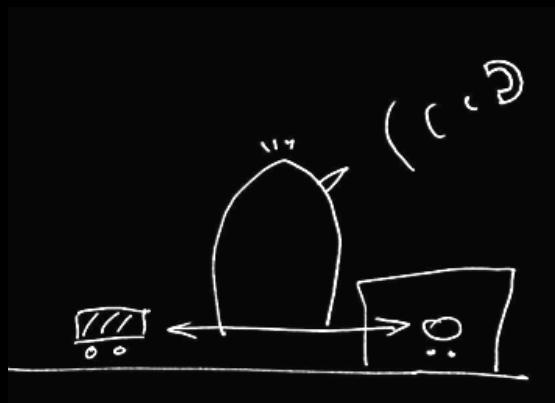
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3

registration:  $2 \not\approx 3$



Rubio, Richardson & Butterfill



Rubio, Richardson & Butterfill

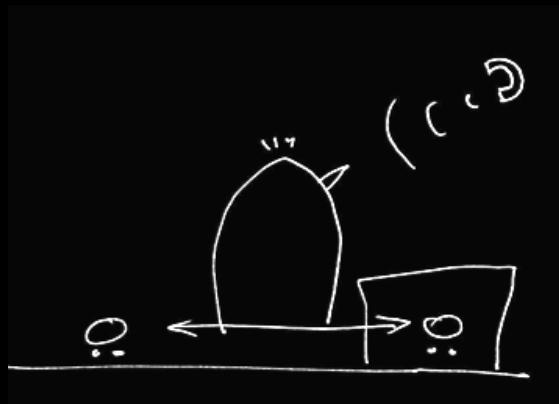
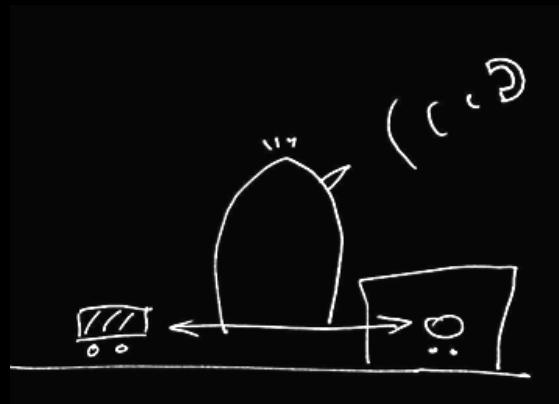
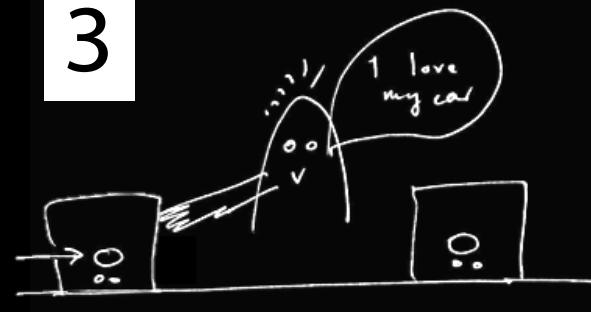
1



2



3



1



2



3



belief:  $2 \approx 3$

registration:  $2 \not\approx 3$

belief:  $1 \not\approx 2$

registration:  $1 \approx 2$





# challenge

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

# puzzle

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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# puzzle

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

joint action (ability  
to share goals)

minimal theory of  
mind cognition

understanding  
communicative intent

communication by  
language

full-blown theory of  
mind cognition

other stuff

other stuff



"We ... use the acronym ToM, to refer to any cognitive system, whether theory-like or not, that predicts or explains the behaviour of another agent by postulating that unobservable inner states particular to the cognitive perspective of that agent causally modulate that agent's behaviour."

(Penn & Povinelli 2007:732)

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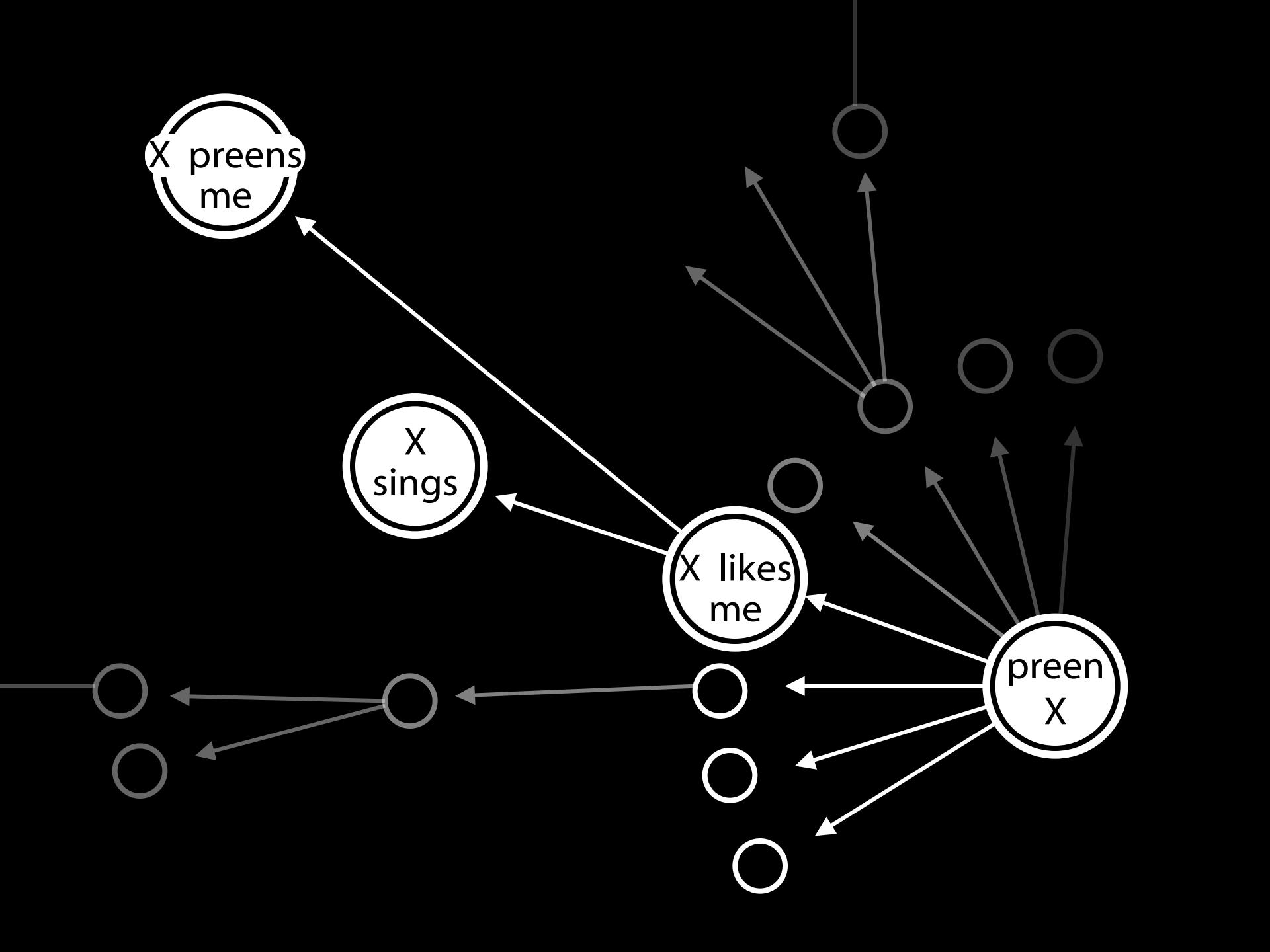
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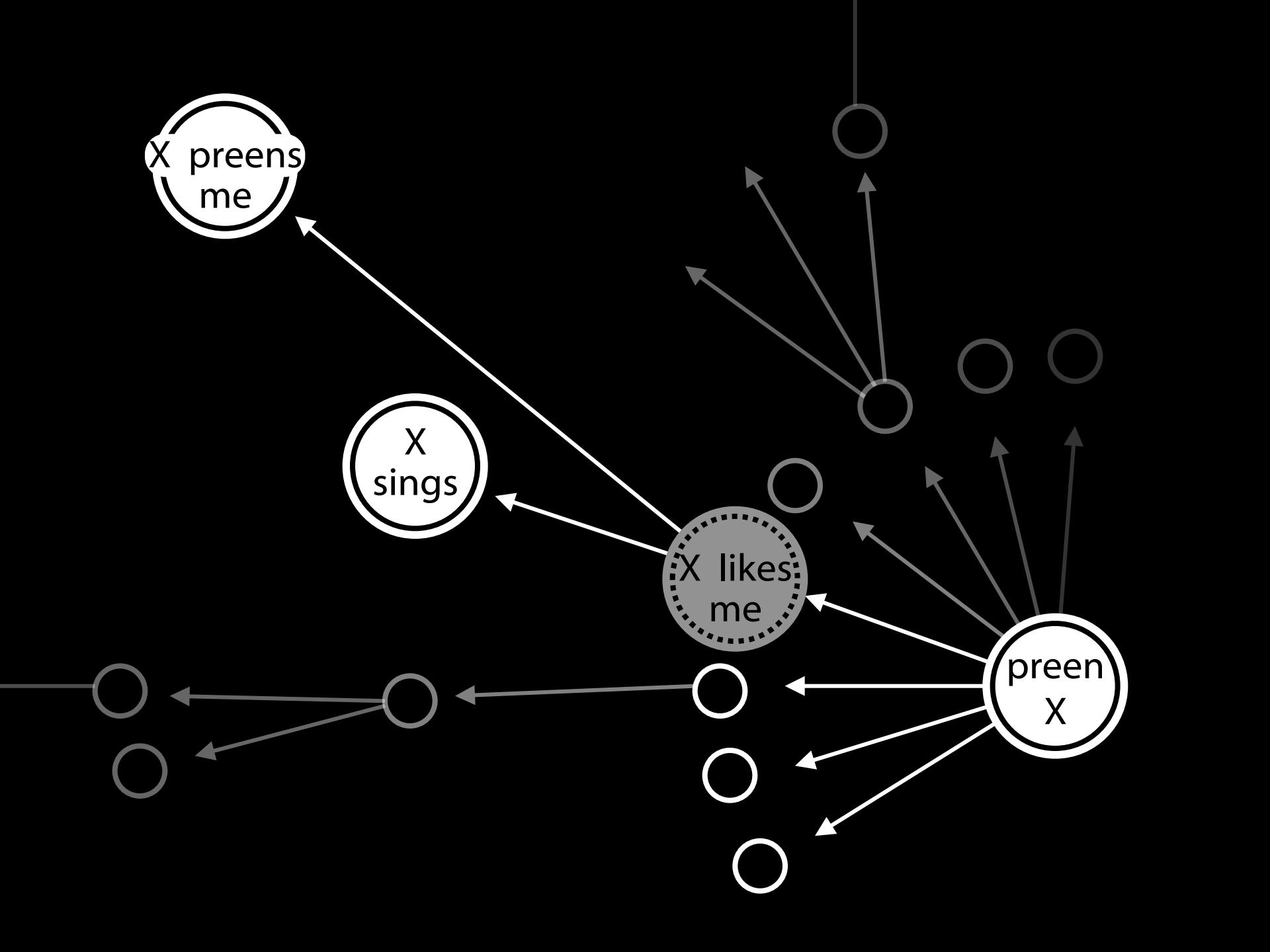
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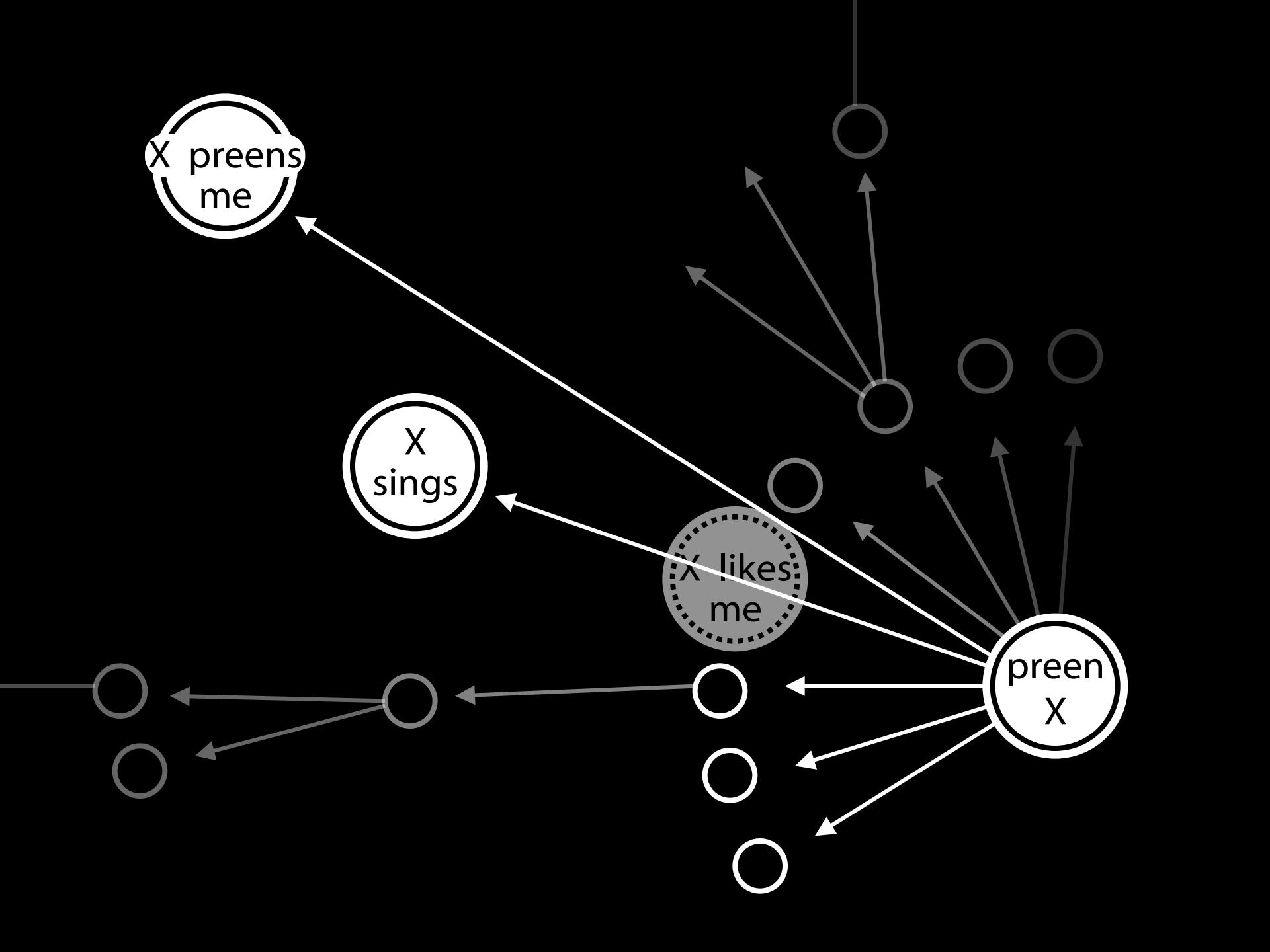
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“chimpanzees understand ... intentions ... perception and knowledge ... Moreover, they understand how these psychological states work together to produce intentional action”

(Call & Tomasello 2008:191)



“our fundamental understanding of [...] knowledge is that it is something whose possession by an individual can properly be explained by reference to [...] ways of coming to know.”

(Cassam “What is Knowledge?”, forthcoming)

