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# Developmental Social Cognition

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# What mechanisms mediate early emerging social cognitive skills?

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Sensitivity to social cues

Experience dependent direct matching

Teleological reasoning



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## Newborn infants - Prefer direct over averted gaze



## Newborn infants – Imitate facial expressions





## 2 – 4 months – Gaze following

Direct gaze  
(interaction)



Gaze shift  
(head & eyes)

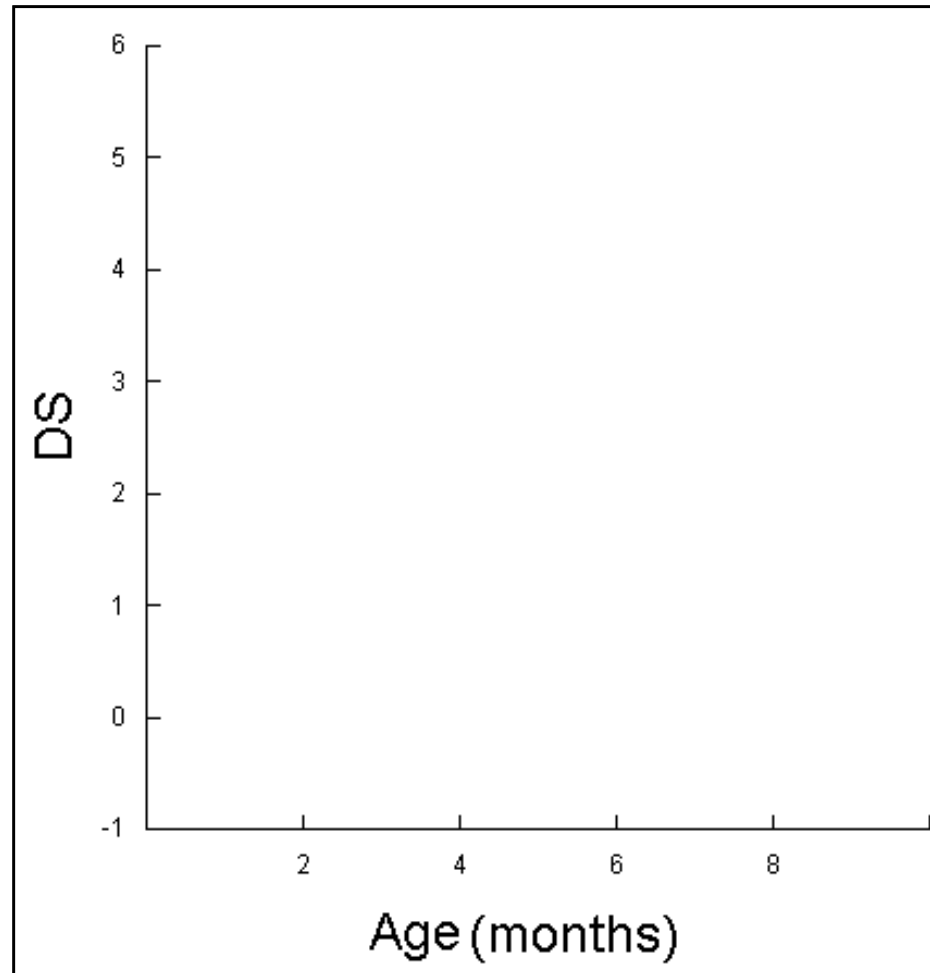


Object fixation  
(no interaction)



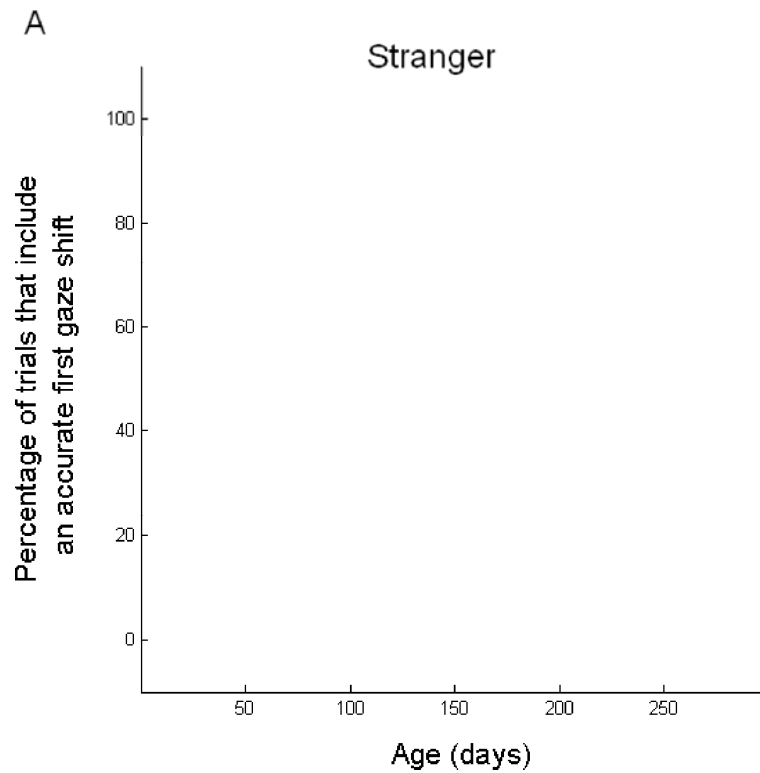


## 2 – 4 months – Gaze following





## 2 – 4 months – Gaze following





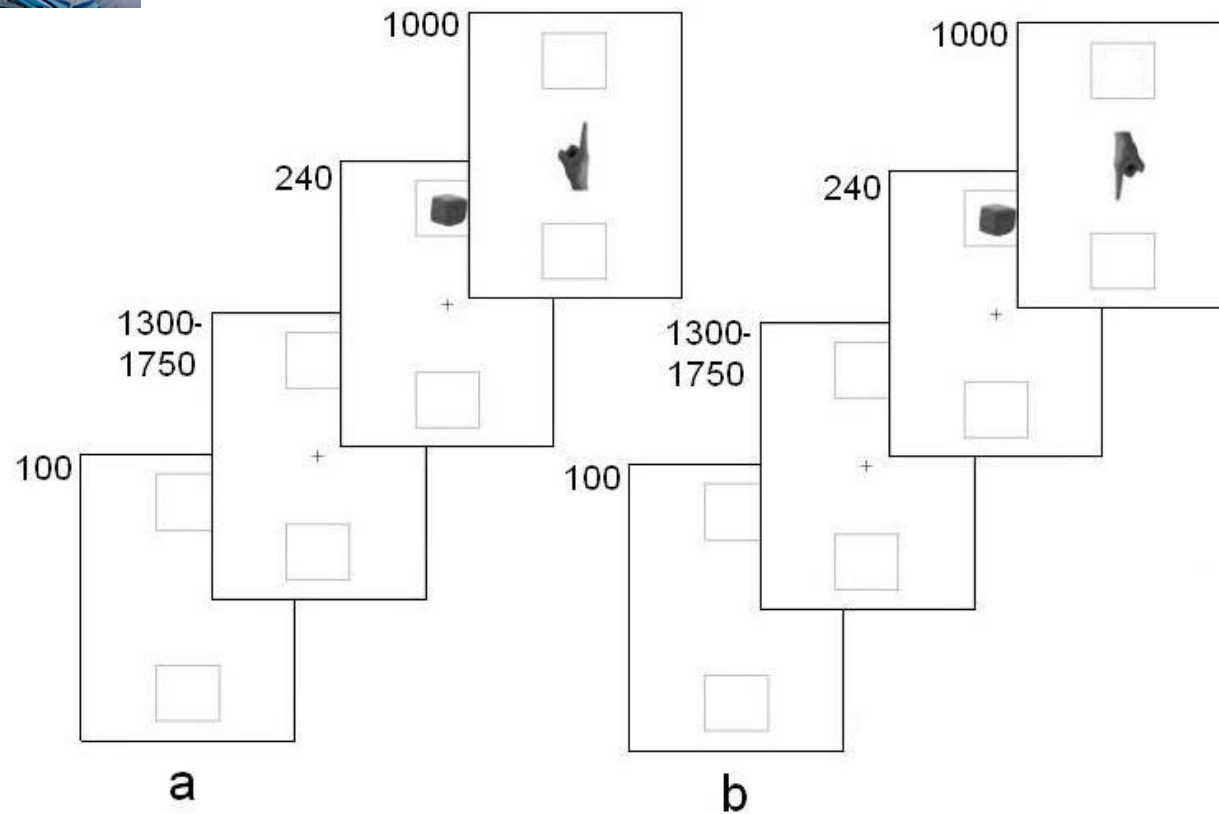
The presence of communicative signals are  
paramount early in development!

For example – direct gaze, present from birth...



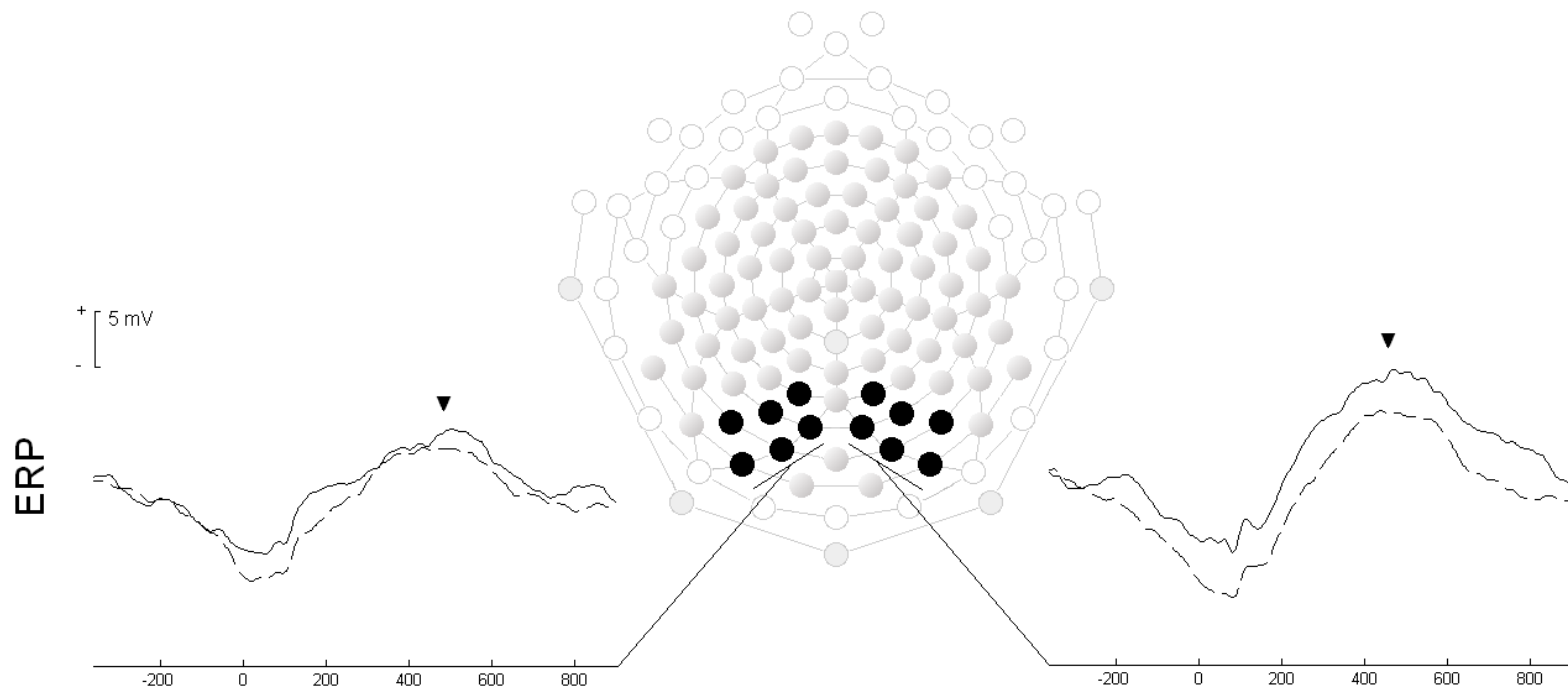


## 8 months – pointing comprehension





## 8 months – pointing comprehension





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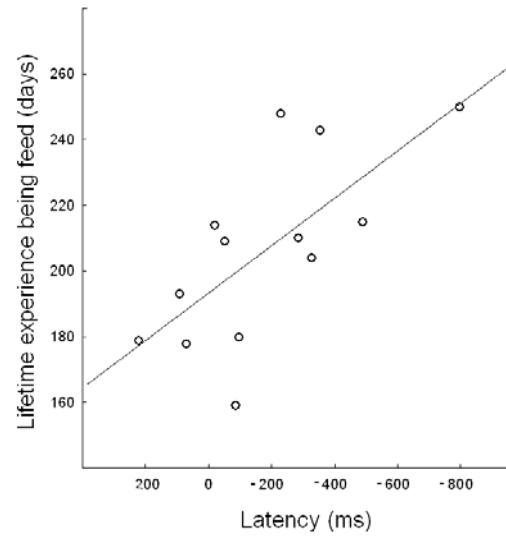
Infants actively interpret social events  
by predicting the goal of others ongoing actions.



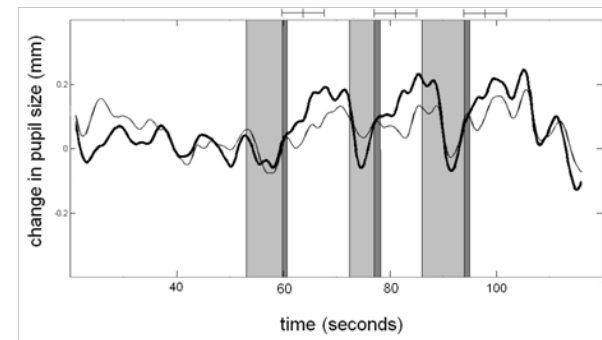
Age (months):	Predict:	Control:	Experience dependency
6	Eating	Self- propelled spoons	Anecdotal



12 months



4, 6, and 12 months





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Multiple processes:

Experience dependent direct matching

Teleological reasoning

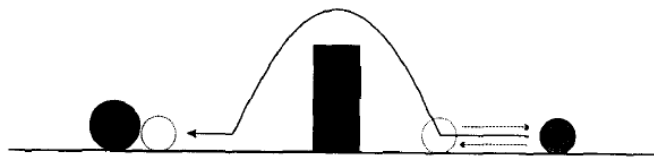


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## Action Understanding

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Habituation phase



9-month-olds – Surprised when the animated object does not take the rational path.

Suggests that infant apply concept of rationality to movements of non-human agents.



Infants are born with a small repertoire of social preference and abilities

Facilitate social interactions and action understanding

Teleological processes are present early on

Detection of goal directed events

Experience dependent direct matching

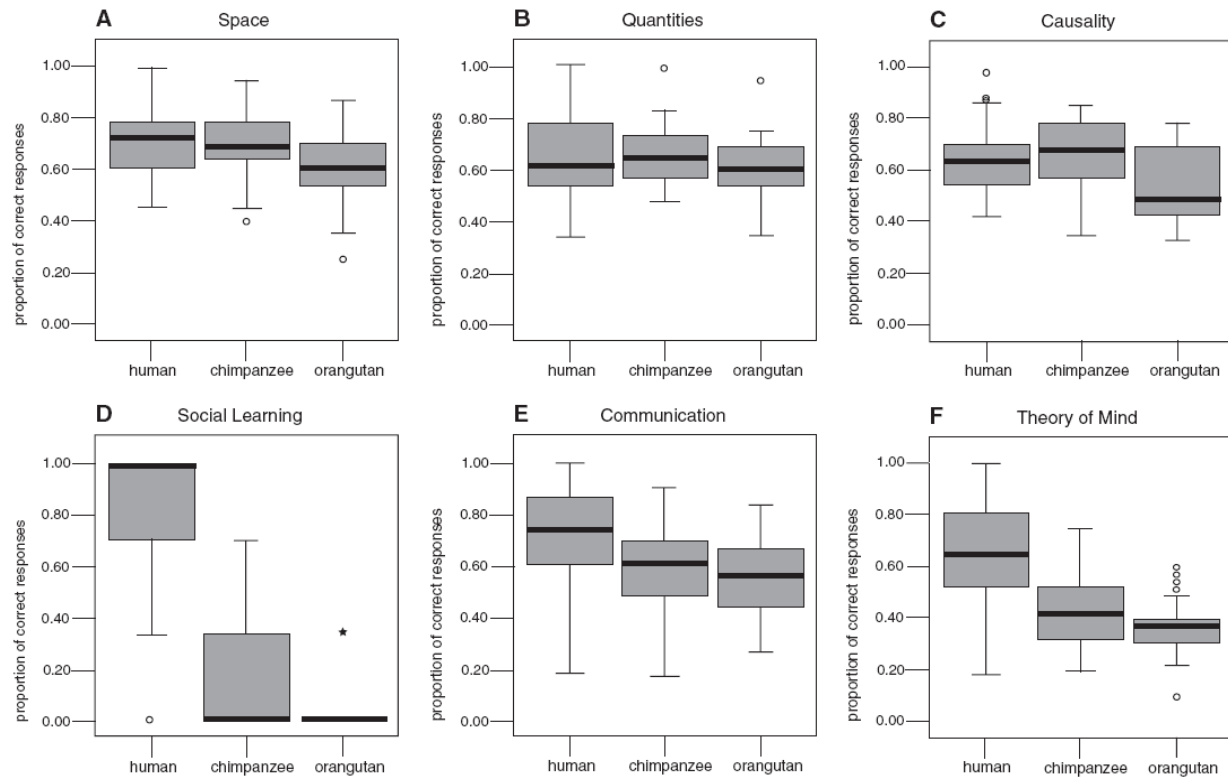
On-line goal anticipation





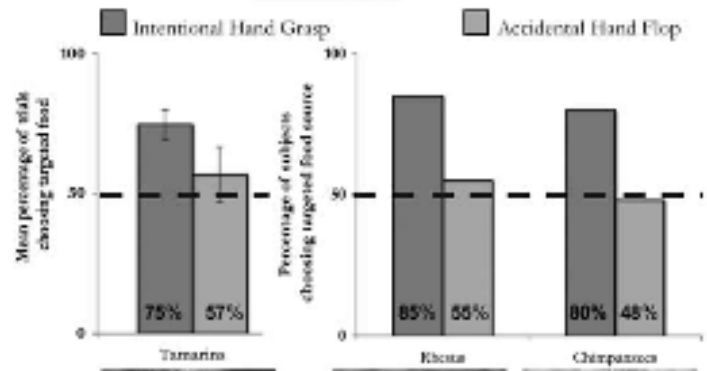
# Social Cognition in Primates and Preverbal Infants

10 year old chimpanzees, 6 year old orangutans, & 2.5 year old children





# Teleological Processes in Monkeys



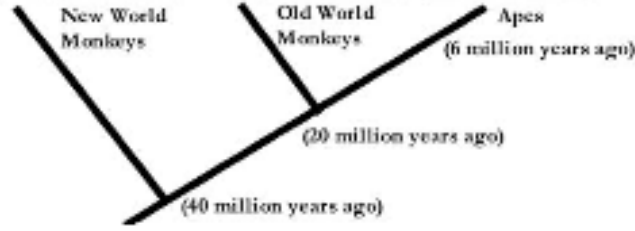
New World Monkeys



Old World Monkeys



Apes  
(6 million years ago)

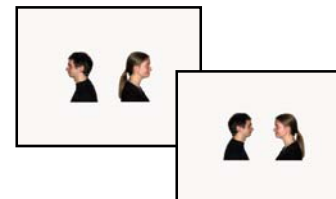




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Future directions:

How do infants understand social interactions.





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Eye tracking



EEG / ERP



NIRS

