

9.916
Agents & Actions

Today's Lecture

Why do people cooperate?

- Evolved cooperator genes
- Acquire normative beliefs
- Caring about others welfare

How do people cooperate?

- action perception
- mental state attribution
- communication & teaching

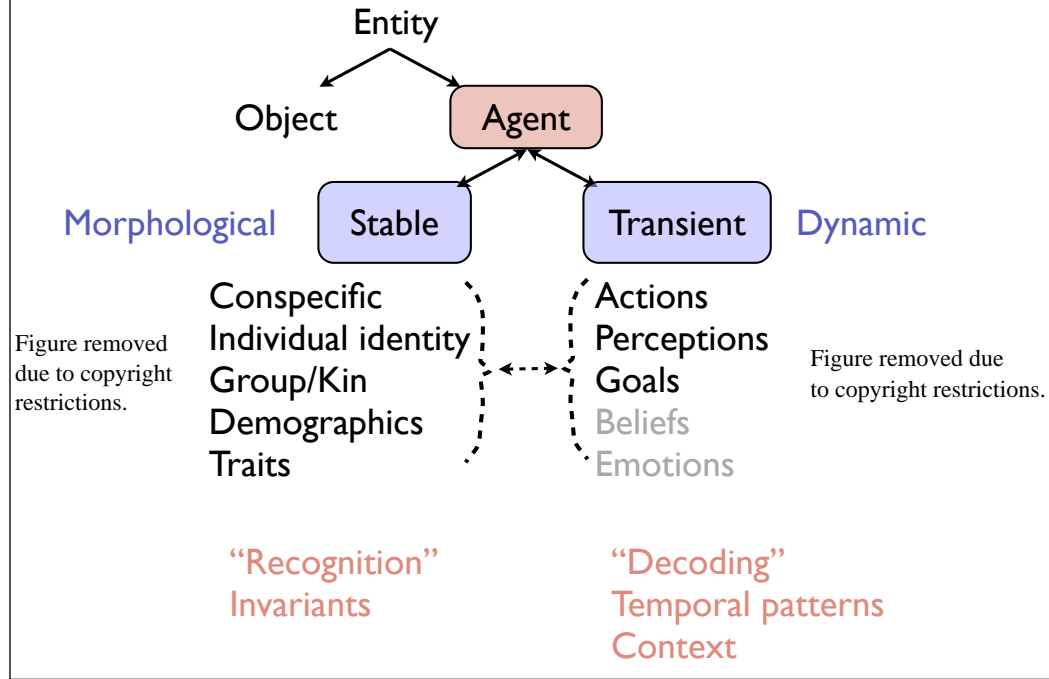
*Other's actions are more than spatiotemporal patterns;
they reflect, and predict, internal states*

What information about others do we get from vision?

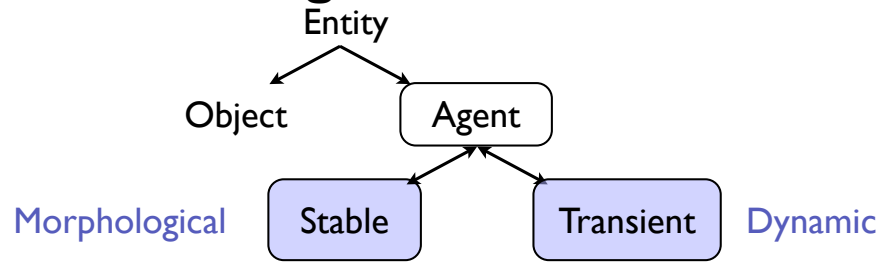
How do we perceive perception?

Role of motor representations in understanding goals?

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Neonate social preference: morphological and dynamic cues

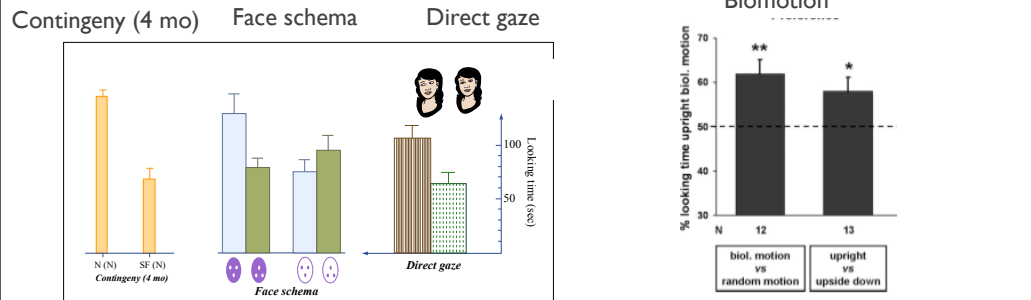
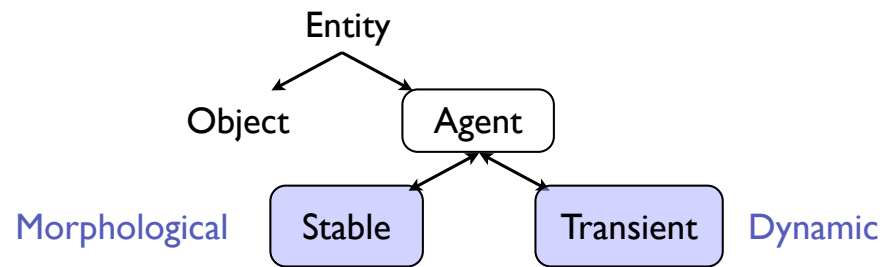


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Distinct Neural Mechanisms?

Faces:

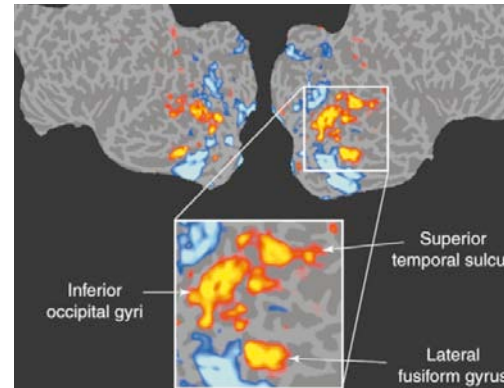
FFA - morphology/identity

STS - dynamic

Bodies:

EBA - morphology/identity?

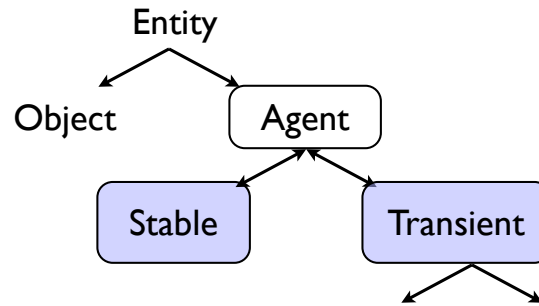
STS - dynamic



e.g. Haxby et al 2000

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How people cooperate
Understanding others

Perception /
Attention

Goal-
directed

*More than just spatio-temporal pattern;
Clue to internal states / future events*

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Perception / Attention

Detect that an entity can perceive its environment

- *morphology: eyes*
- *behaviour: contingency on distal environment*

Development:

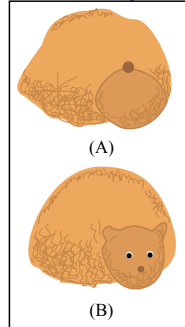
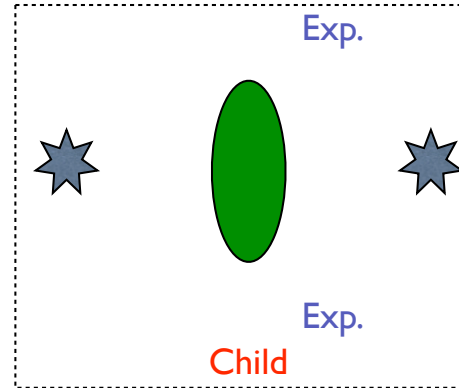


Figure by MIT OpenCourseWare.



<i>Follow gaze?</i>	Eyes	Not
Contingent		
Not		

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Perception / Attention

Detect that an entity can perceive its environment

- *morphology: eyes*

- *behaviour: contingency on distal environment*

Neurons code direction of attention:

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Perception / Attention

Detect that an entity can perceive its environment

- *morphology: eyes*
- *behaviour: contingency on distal environment*

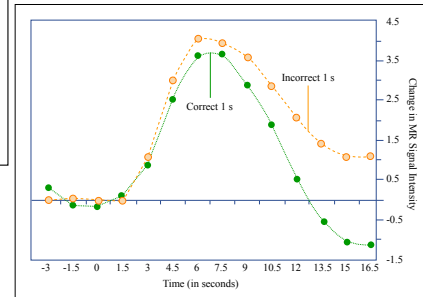
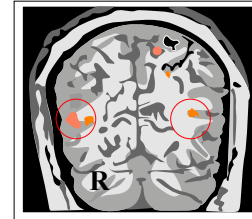
Neurons code contingency on environment?



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Pelphrey et al 2003, 2005



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Goal-directed

Role of 1st-person experience / motor representations?

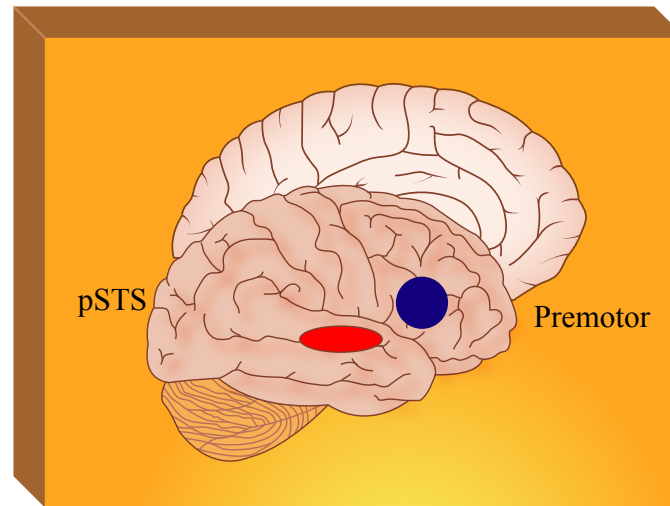


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Goal-directed

Role of 1st-person experience / motor representations?

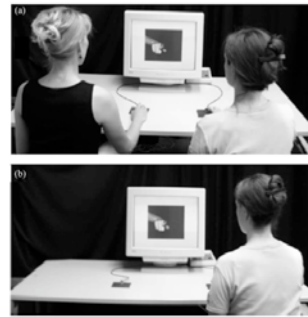
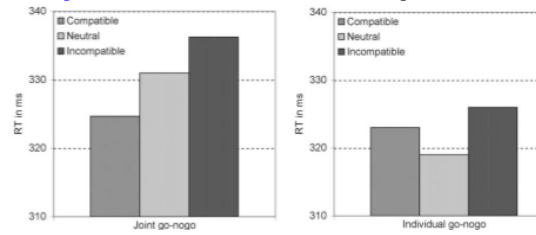


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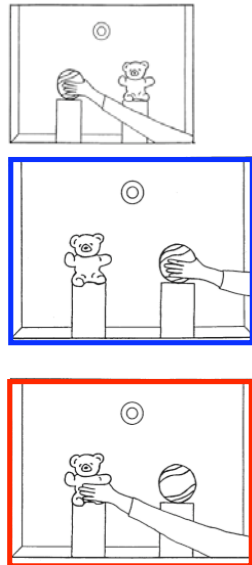
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Kohler et al 2002, Sebanz et al 2003

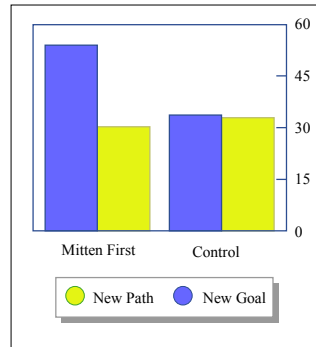
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Goal-directed

Role of 1st-person experience / motor representations?



200s play with velcro mittens



Motor experience necessary for perceiving goal-directed action?

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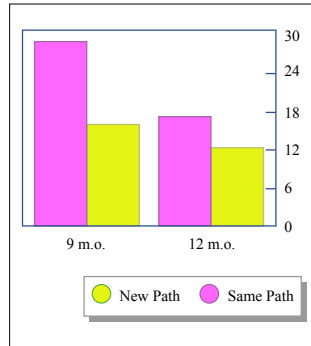
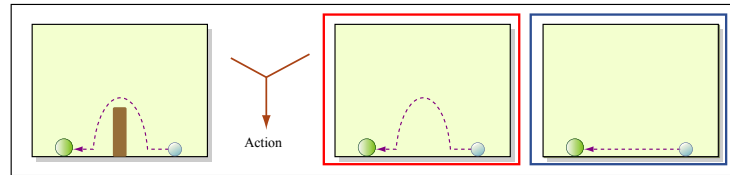
Somerville, Woodward, Needham 2005

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Goal-directed

Role of 1st-person experience / motor representations?



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+ 6 m.o.

*Motor
experience
NOT necessary
for perceiving
goal-directed
action?*

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9.916 Special Topics: Social Animals
Fall 2009

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