



**BBC** NEWS TECHNOLOGY

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5 July 2013 Last updated at 12:24 GMT

**Human gestures perplex Asimo, Honda museum robot guide**

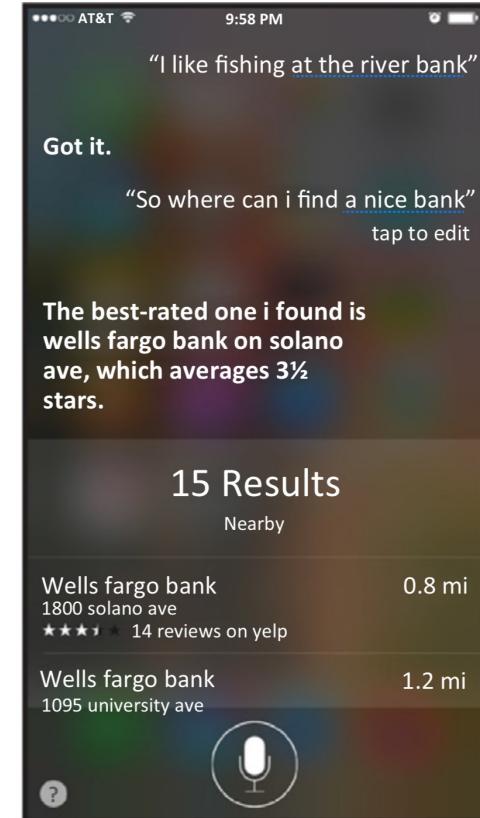
Honda's popular robot Asimo faced problems with gesture recognition on its first day as a museum guide at the Miraikan science museum in Tokyo.

The machine struggled to differentiate between museum-goers raising their hands to ask a question and raising their hands to take photos, Associated Press reported.

It is "working" as a tour guide at the museum for the next four weeks as a trial.

Asimo is reported to have had problems identifying arm gestures





9:58 PM  
"I like fishing at the river bank"

Got it.

"So where can i find a nice bank"  
tap to edit

The best-rated one i found is wells fargo bank on solano ave, which averages 3½ stars.

15 Results  
Nearby

Location	Distance
Wells fargo bank 1800 solano ave	0.8 mi
★★★☆☆ 14 reviews on yelp	
Wells fargo bank 1095 university ave	1.2 mi

Why is this not an issue for us, humans?

# Fribbles



## Preparation

- Create playgroups of 4
- Each person makes a note sheet, 1, 2, .., 8  
(the Fribbles are named A, B, ..., H)



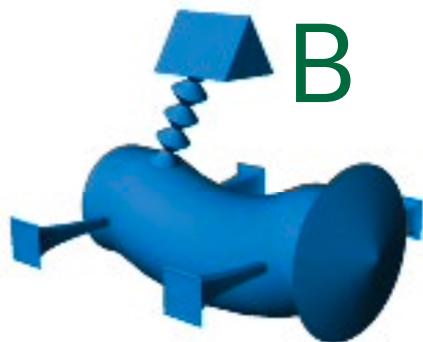
1
2
3
4
5
6
7
8

## Fribble names

A



B



C



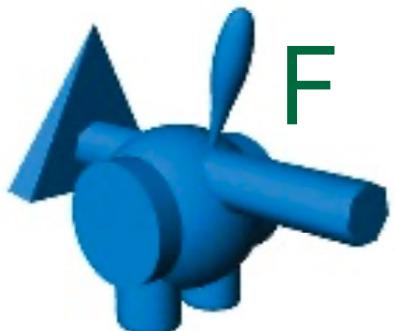
D



E



F



G



H



## Round I

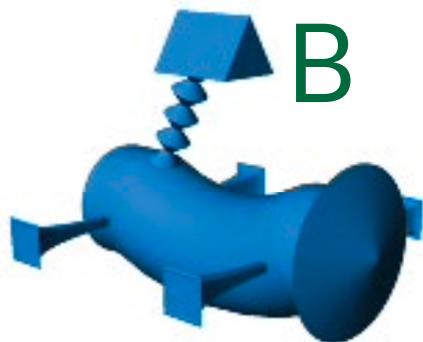
- Distribute the 8 same-colored Fribbles (2 per person)
- The first person describes one of their two Fribbles (without showing the Fibble or ever mentioning any of the Fribbles' names)
- Others can ask for clarifications, then write down the presumed Fibble (A, B, .., H)
- Second person goes, and so on, until all 8 have been described (over two rounds)

## Fribble names

A



B



C



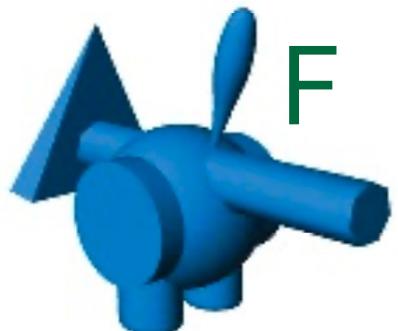
D



E



F



G



H





## Observations I

- We humans can rapidly converge on a new reference for an object, flexibly putting even existing words to new use

What did you observe?



## Round II

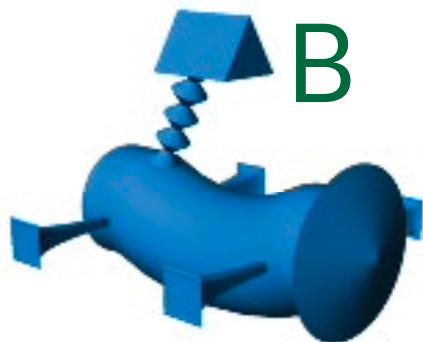
- Same as round I, but shuffle the Fribbles.  
Everyone gets two again

## Fribble names

A



B



C



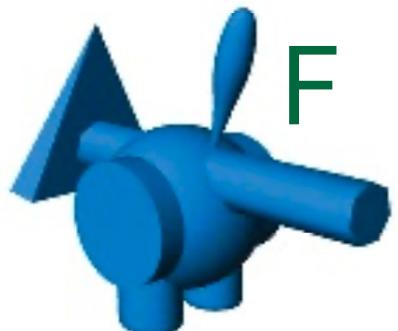
D



E



F



G



H



## Observations II

- Communicative history helps in achieving mutual understanding of the references
- Simplification of *conceptual pacts*

What did you observe?

## Round III

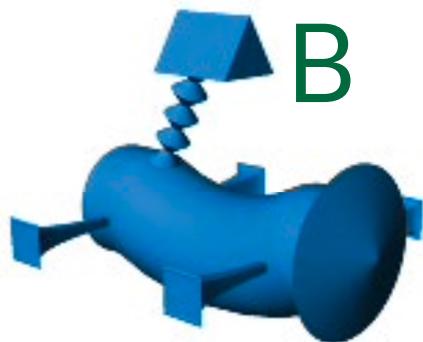
- Same as rounds I & II, but shuffle the groups such that 2 players from group A form a new group with 2 players from group B

## Fribble names

A



B



C



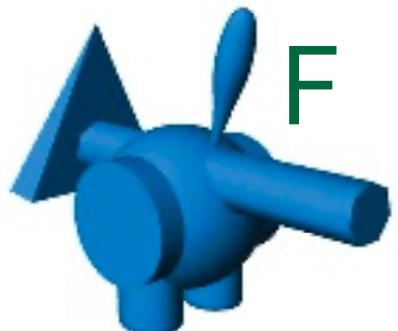
D



E



F



G



H



## Observations III

- Again, communicative history helps
- Pair-specificity of the *conceptual pacts*
- Assumptions about background knowledge

What did you observe?

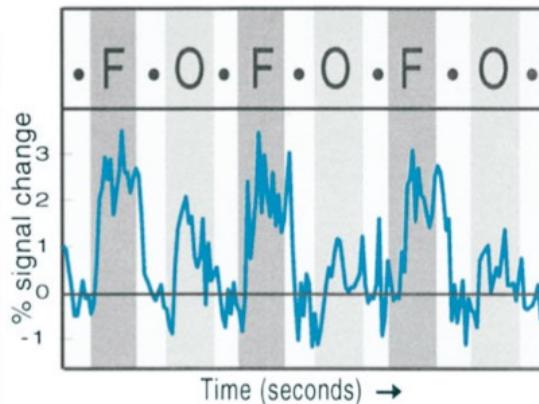
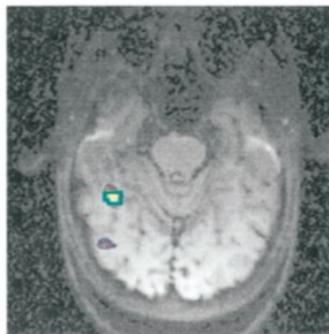
## 1. Motivation for studying human interaction

Status quo, dark matter of social neuroscience

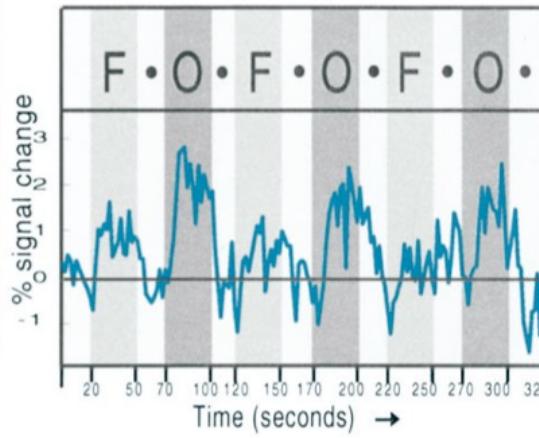
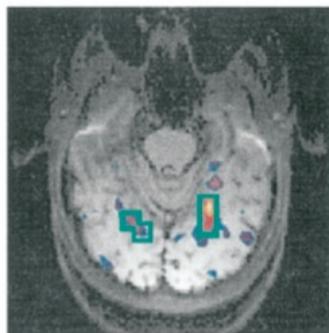
## 2. Course expectations

# Recognition of social stimuli

1a. Faces &gt; Objects



1b. Objects &gt; Faces



The Journal of Neuroscience, June 1, 1997, 17(11):4302–4311

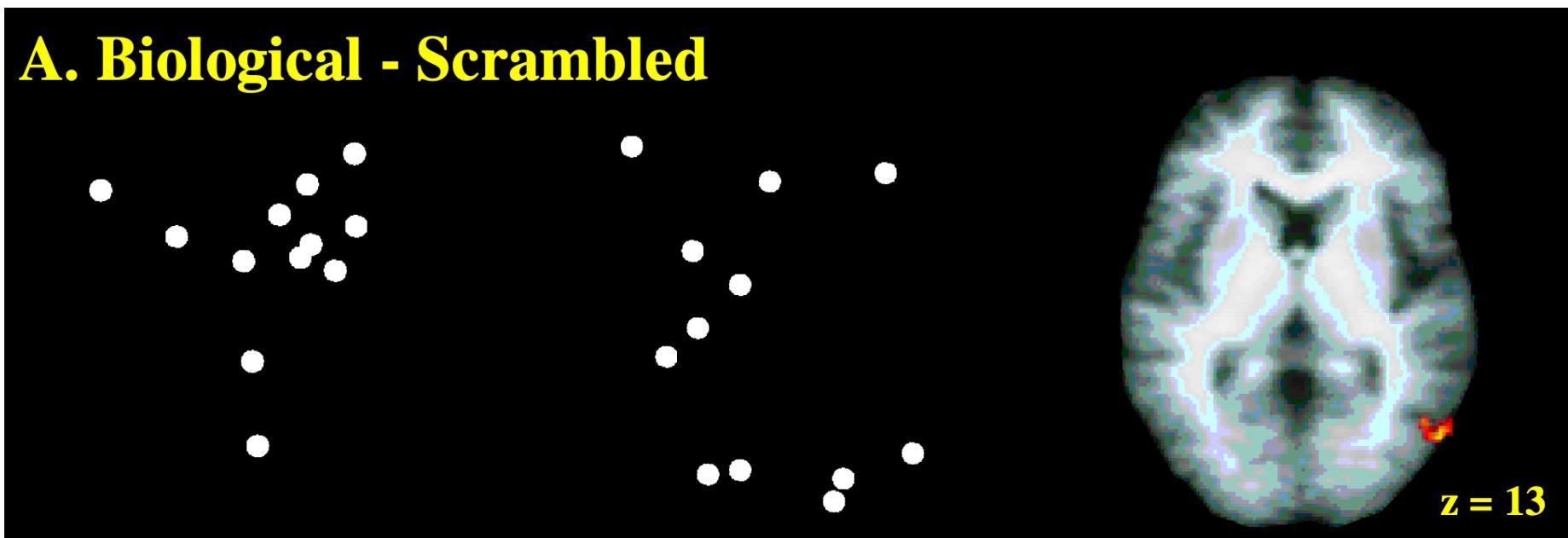
**The Fusiform Face Area: A Module in Human Extrastriate Cortex Specialized for Face Perception**

Nancy Kanwisher,<sup>1,2</sup> Josh McDermott,<sup>1,2</sup> and Marvin M. Chun<sup>2,3</sup>

Status quo of social neuroscience

# Recognition of social stimuli

## A. Biological - Scrambled



**Brain Areas Involved in Perception of  
Biological Motion**

E. Grossman, M. Donnelly, R. Price, D. Pickens, V. Morgan,  
G. Neighbor, and R. Blake

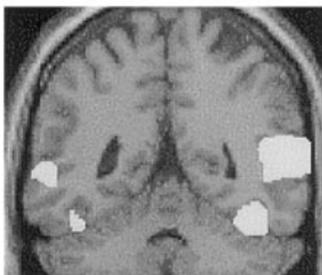
Status quo of social neuroscience

# Attribution of mental states

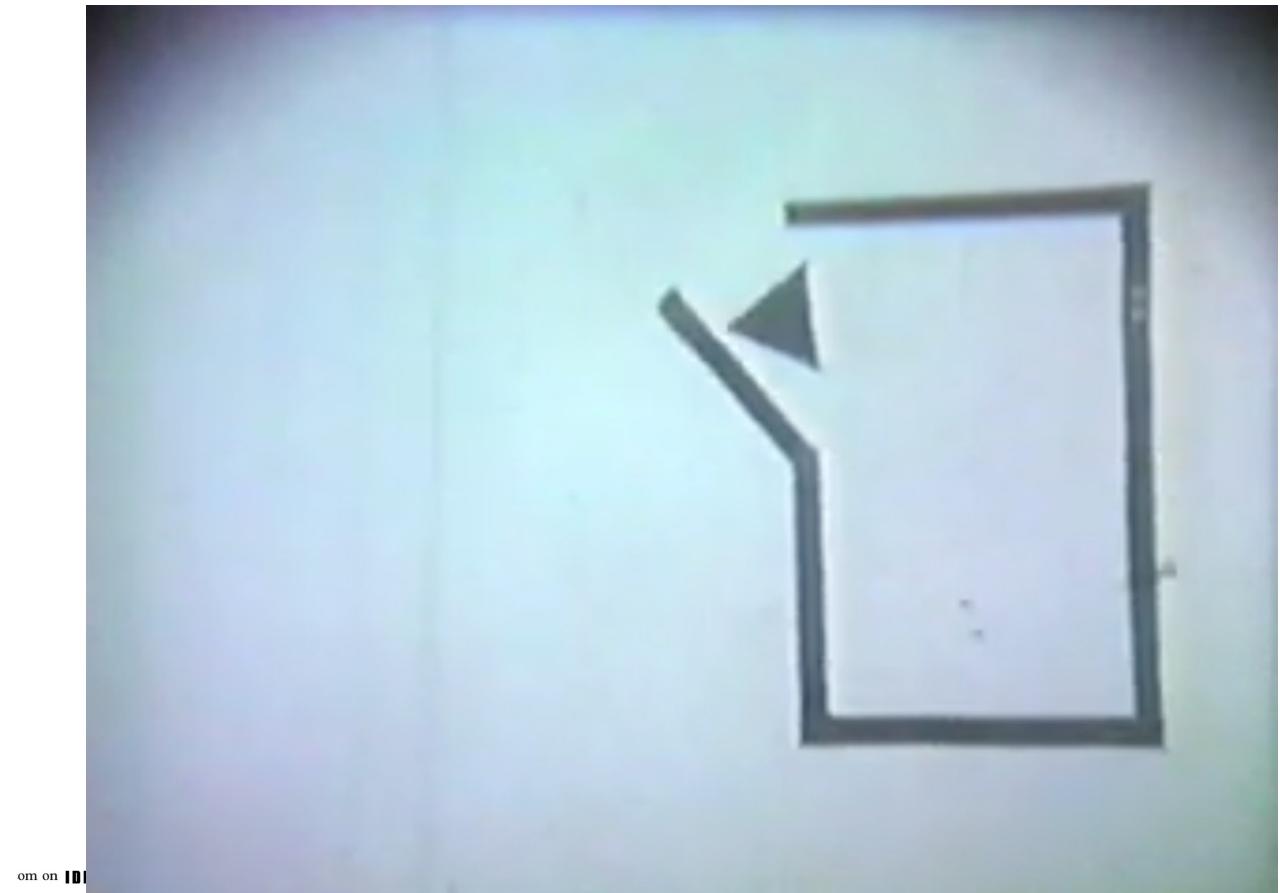
A



B



C

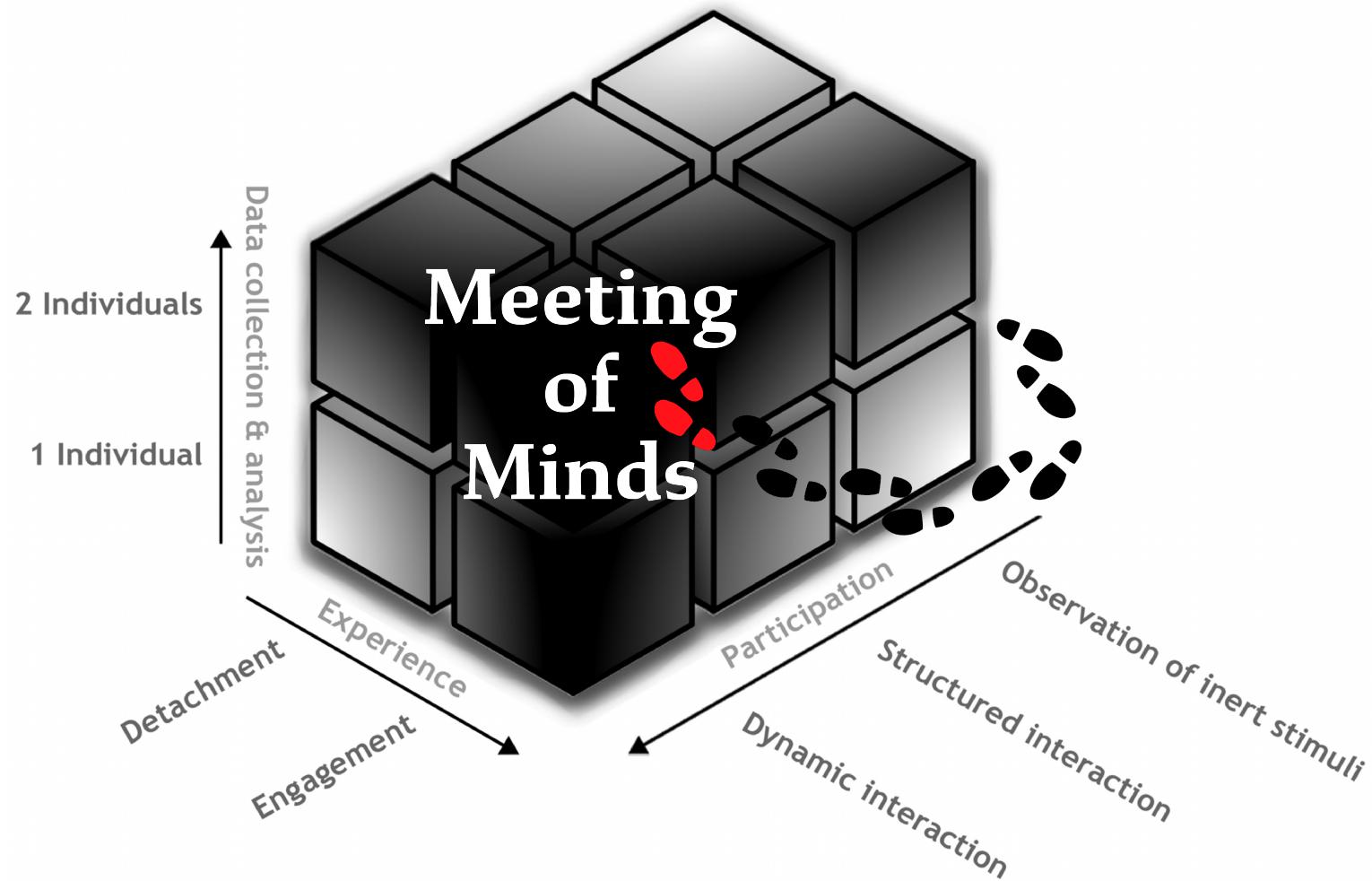
NeuroIm  
doi:10.10

Movement and Mind: A Functional Imaging Study of Perception and Interpretation of Complex Intentional Movement Patterns

Fulvia Castelli,\* Francesca Happé,† Uta Frith,\* and Chris Frith‡

Status quo of social neuroscience

# The “dark matter” of social neuroscience



Adapted from Schilbach & Timmermans, 2013

## 1. Motivation for studying human interaction

Status quo, dark matter of social neuroscience

## 2. Course expectations



**[stolkarjen.github.io/human-interaction](https://stolkarjen.github.io/human-interaction)**



## Module I:

- Paper review
- Exam
- Exam questions (4)

## Module II:

- Research project

- In the real-world, e.g., conversation analysis
- In the lab, e.g., interpersonal synchrony, online communication, autistic misalignment
- In simulated scenarios, e.g., artificial agents
- On social media, e.g., conceptual pacts on Twitter/Reddit
- More on this later, in Module 2



- Humans share a *special interactional capacity* that enables them to use *any* tool, including language and gestures, as a communicative signal
- Social neuroscience has largely focused on how individuals process social stimuli, *isolated from the context of interaction* with others
- Accordingly, how exactly *human minds meet* in interaction, also the *dark matter* of social neuroscience, has remained largely elusive

- Beyond Alexa and Siri