

The Distinguished Self

Chris Frith

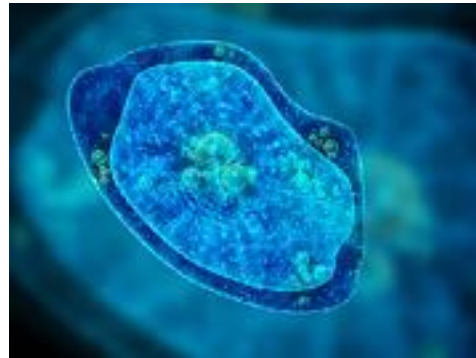
Wellcome Trust Centre for Neuroimaging at UCL
Institute of Philosophy, University of London

The Human Mind Conference
The Møller Centre, Churchill College, Cambridge, 27-29 June 2017

Individuals and Groups

the third person view

Individual



Group



Distinguishing self and other

the first person view

Cause?

Self

Other

me

other

re-afference

self-propelled agent

biological motion

agent with goals

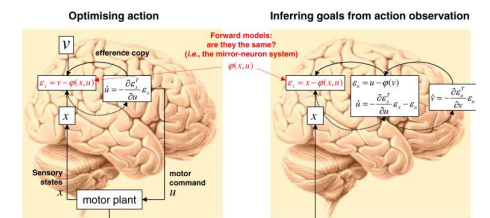
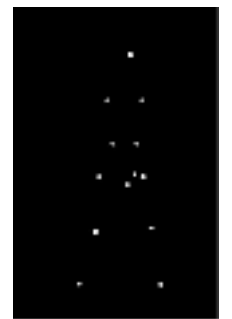
predictive coding

agent with preferences

hierarchical Bayes

agent with beliefs

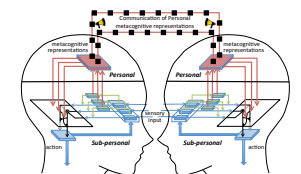
explicit metacognition



Player 2

	Rock	Paper	Scissors
Rock	0	-1	1
Paper	1	0	-1
Scissors	-1	1	0

Player 1



Individuals are eager to align the self with the group

Spatial alignment

Herding, flocking



Goal alignment

Emulation



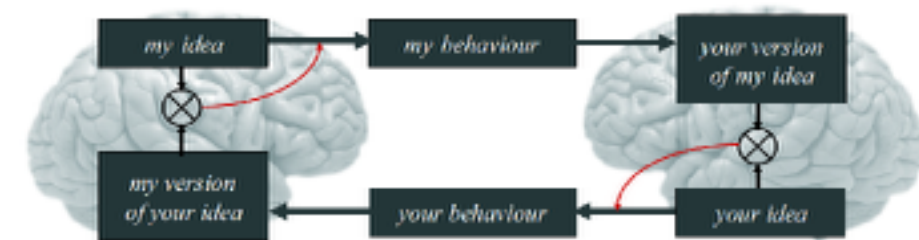
Preference alignment

In-group fashions



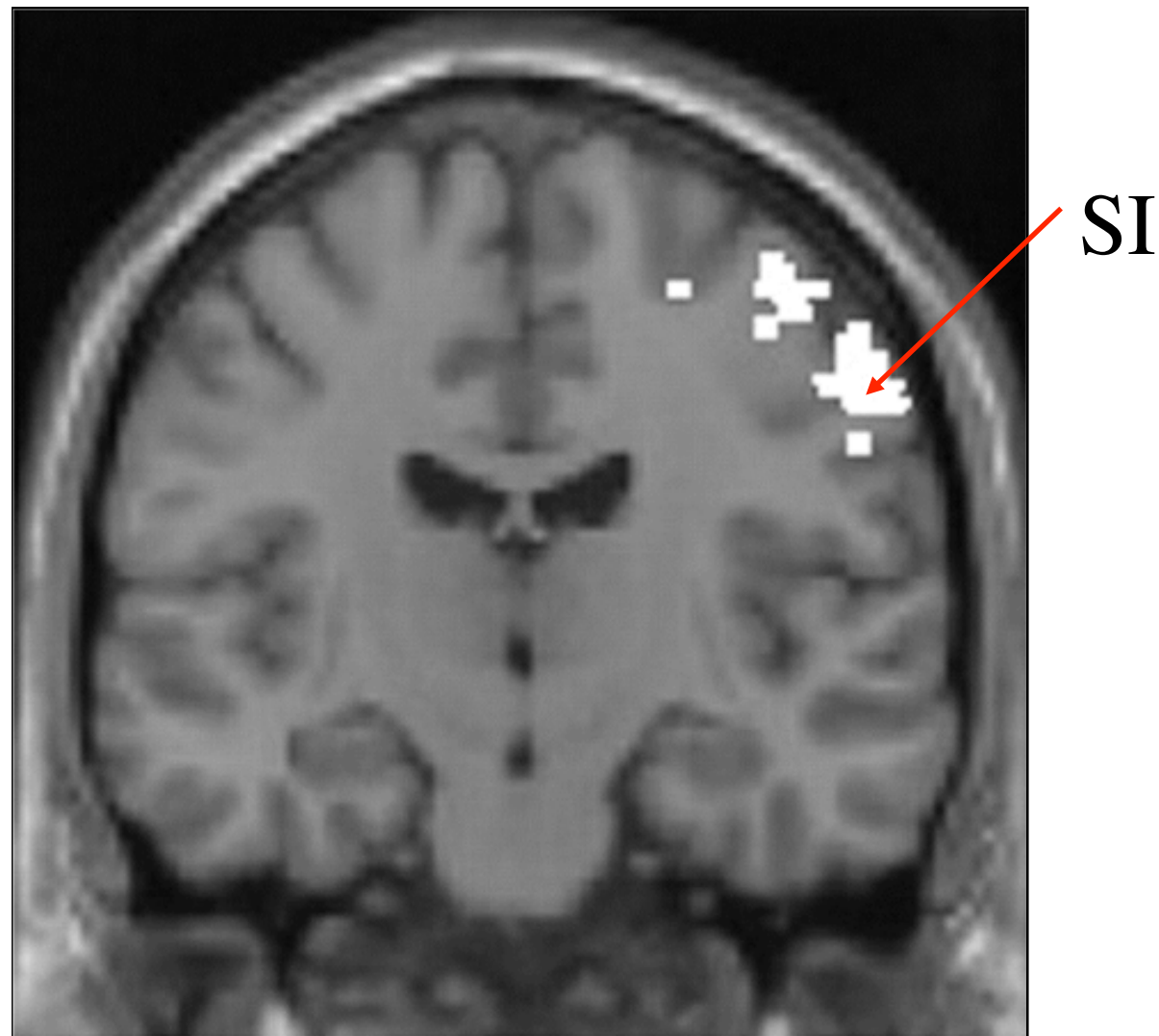
Belief alignment

Understanding



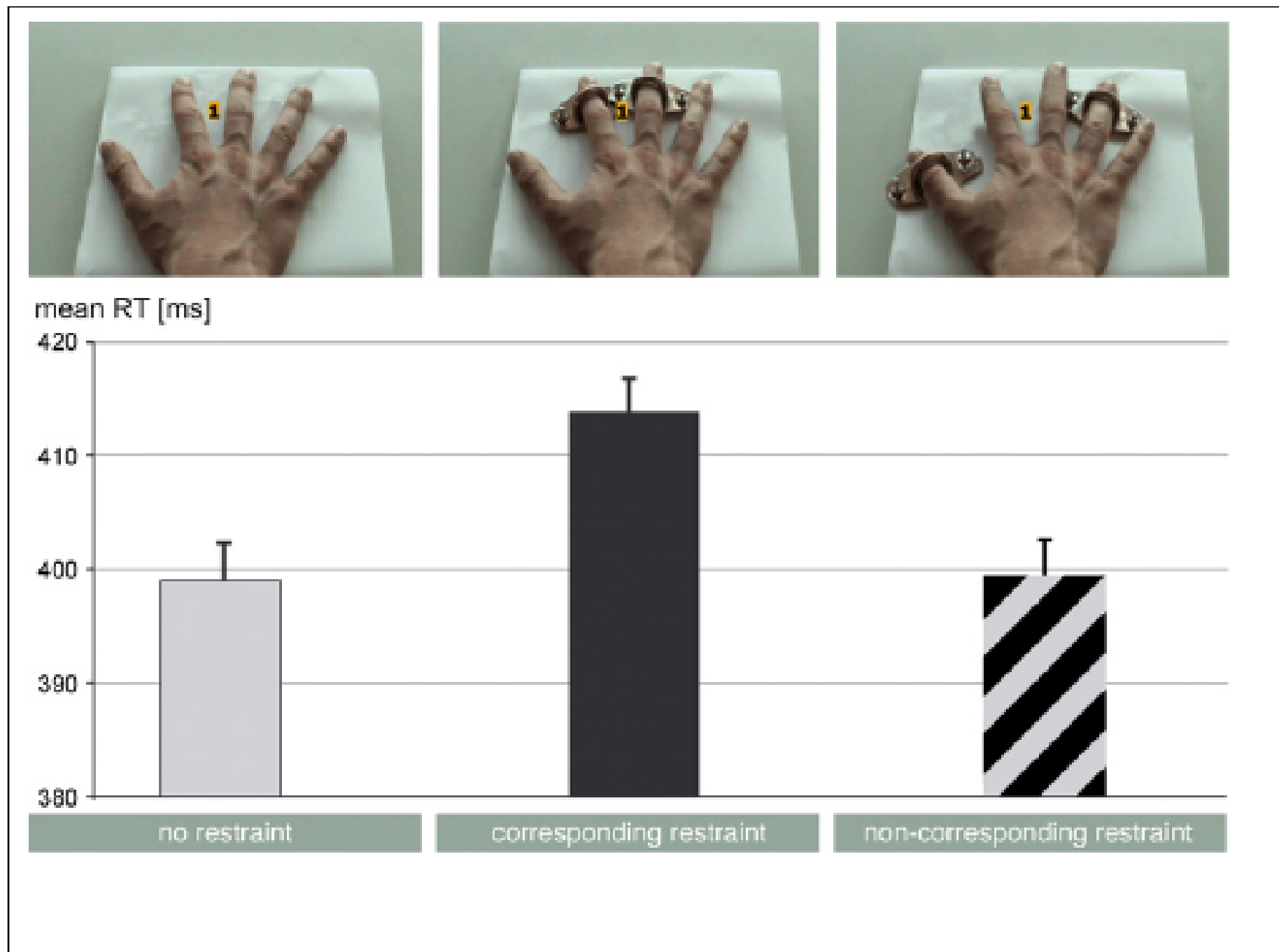
We are more aligned with the group than we realise

We share the experience of touch



These brain regions are active when we feel our face being touched
and when we see someone else being touched on the face

We share the restrictions of others



Advantages of being aligned with a group

All animals learning by imitating others

foraging for food: *sticklebacks, starlings, &c.*

mate selection: *fruit flies, guppies, quails, humans?*

imitating actions: *mongooses, meerkats, primates*

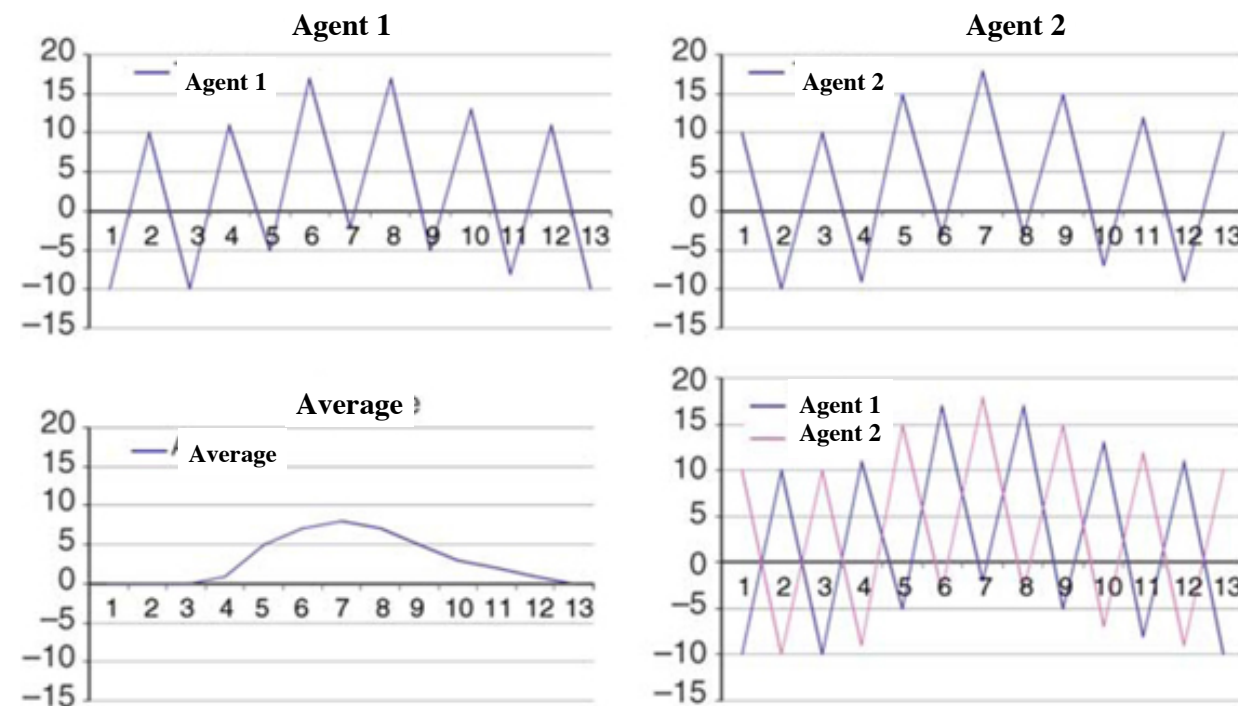
fear conditioning by observation: *monkeys, humans*

gaze following: *ravens, goats, dogs, primates*

Spatial alignment creates advantages from being part of a group

A shoal of fish can follow a trail of scent that is too weak a signal for an individual fish to follow

Berdahl et al *Science* 2013

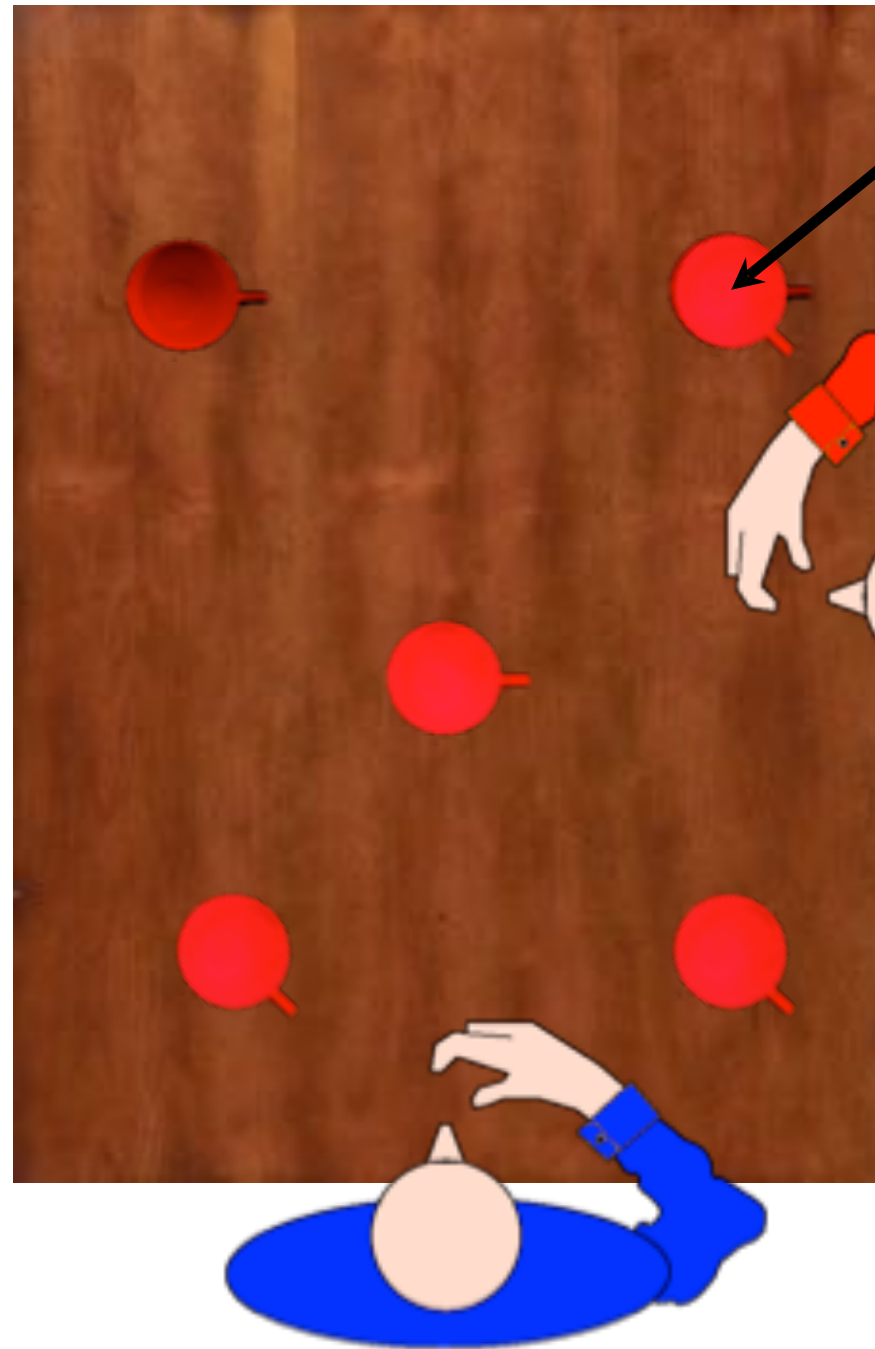


The alignment tendency produces tight angular distributions within groups, & dampens the stochastic effects of individual sampling errors. As a result, more school members orient up the gradient than in the comparable asocial case.

Grunbaum *Evol Ecol* 1998

Alignment of affordances prepare us for group action

The bright cups are within reach of both members of the group



The affordance of this cup is increased for Mr. Blue because Mr. Blue has a high affordance for him

This is a an example of representation in the we-mode

The contagious effects of the experiences and actions of others align us with our group and prime group goals rather than selfish interests

We give more money to charity after our movements have been imitated

van Baaren et al *Psychol Sci* 2004

But only if we are unaware of the mimicry

**But to retain the advantages of being
part of a group we have to remain
distinguished selves**

Group cohesion depends upon trust

Trust depends upon the reputation of individuals

“Nature, when she formed man for society . . . taught him to feel pleasure in their favorable, and pain in their unfavorable regard. { } It is chiefly from this regard to the sentiments of mankind, that we pursue riches and avoid poverty.”

Smith Theory of moral sentiments 1759

Anonymity impairs group behaviour

Anonymity

can reduce charitable giving by 25%

Alpizar et al J Public Econ 2008

can increase likelihood of free riders in a common goods game

Milinski et al Nature 2002

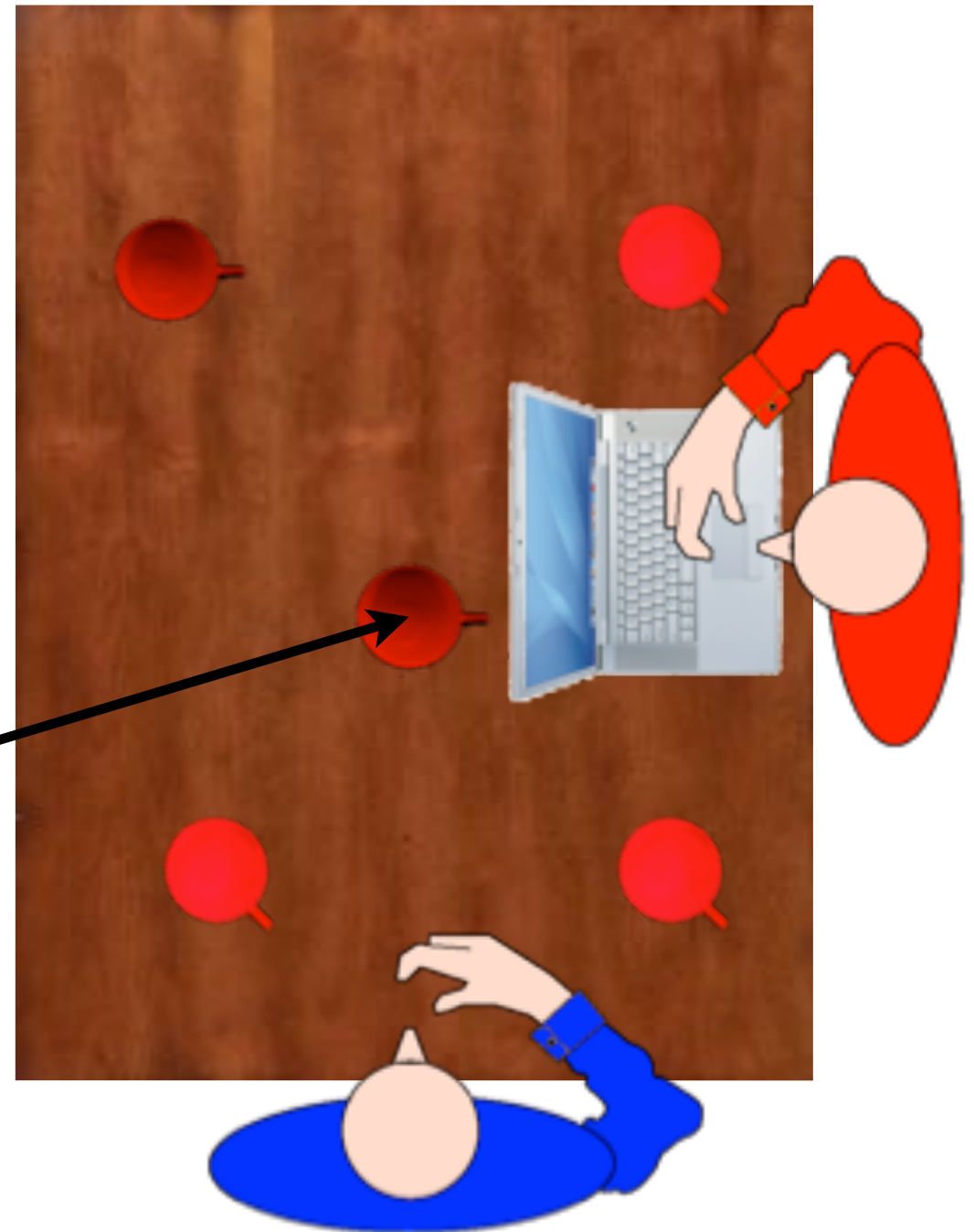
Alignment can impair group behaviour

The *Hidden profile* effect:
Decisions are dominated by
information that group
members hold in common.
Valuable information held by
individuals is ignored

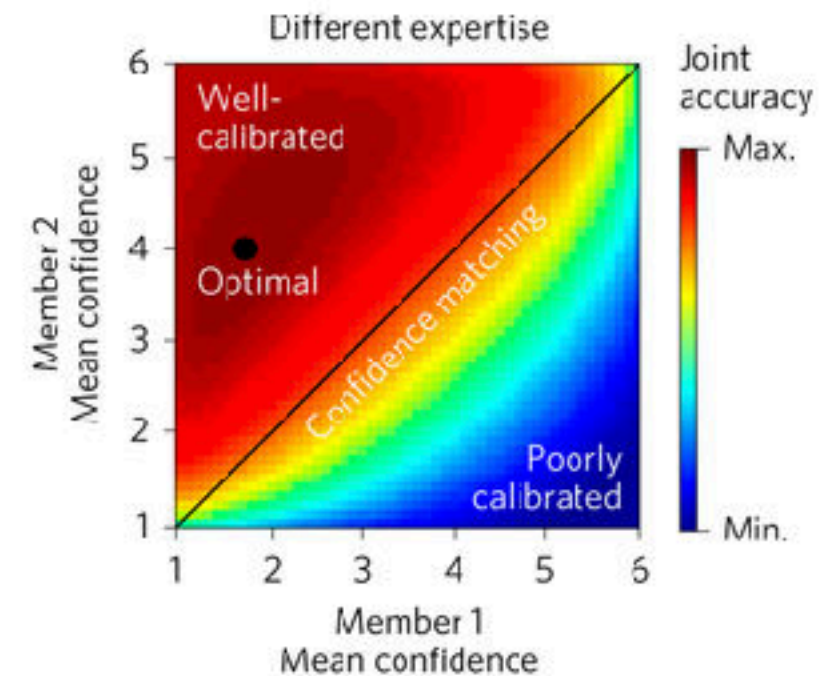
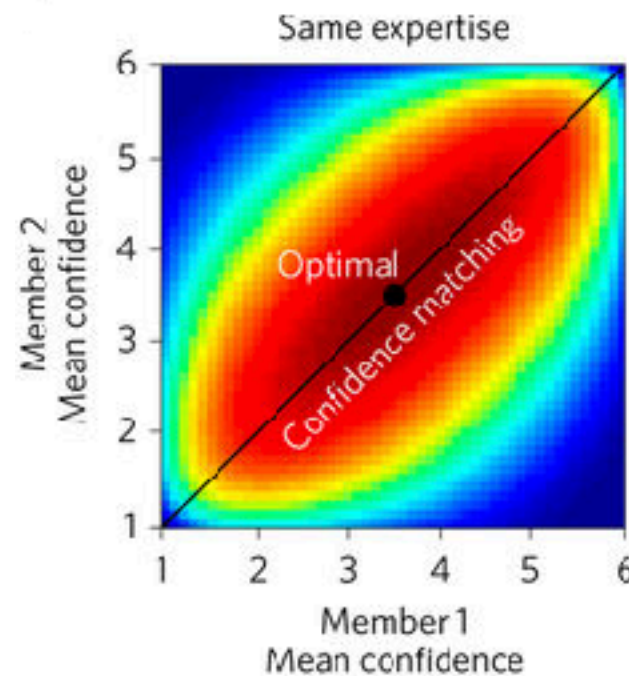
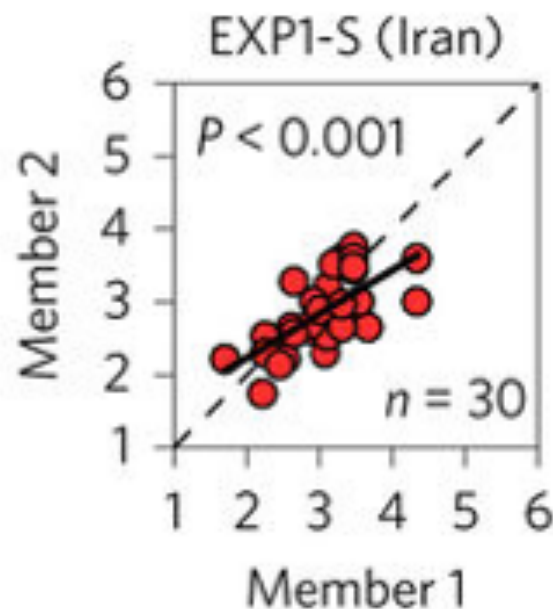
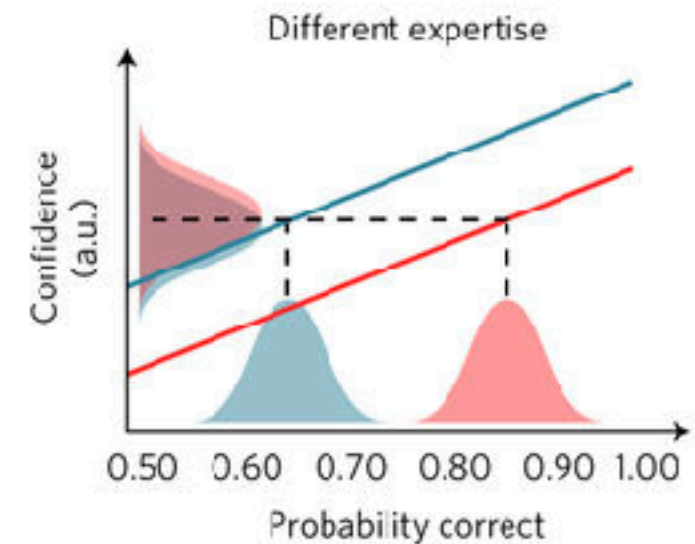
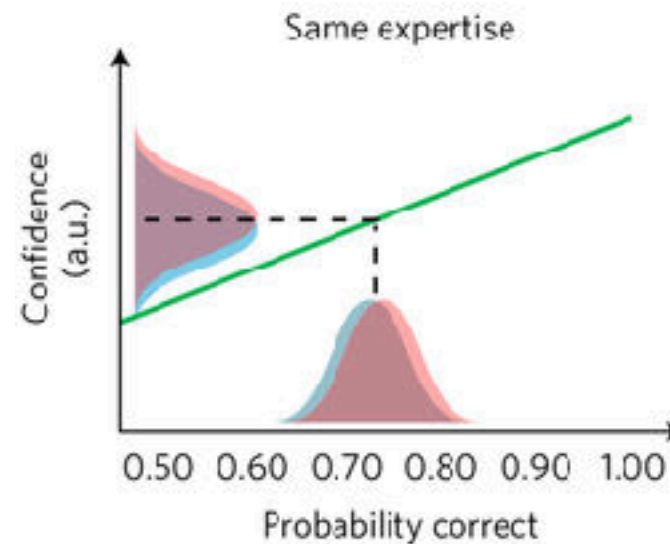
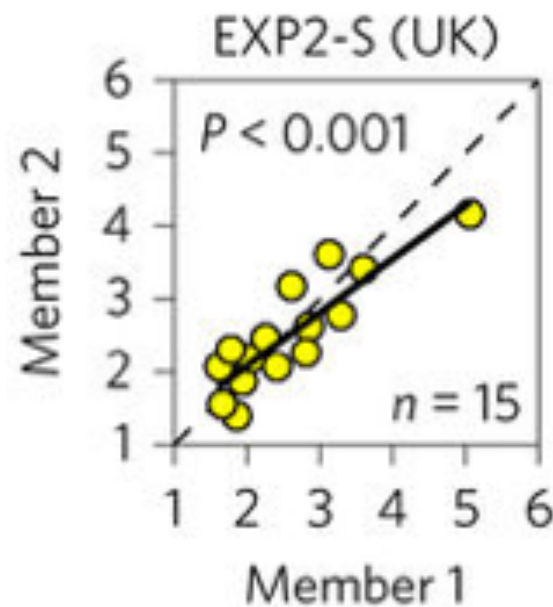
Stasser & Titus *JPSP* 1985

The affordance of
this cup is reduced
for Mr Blue
because Mr Red
can't see it

Samson et al *J Exp Psychol* 2010



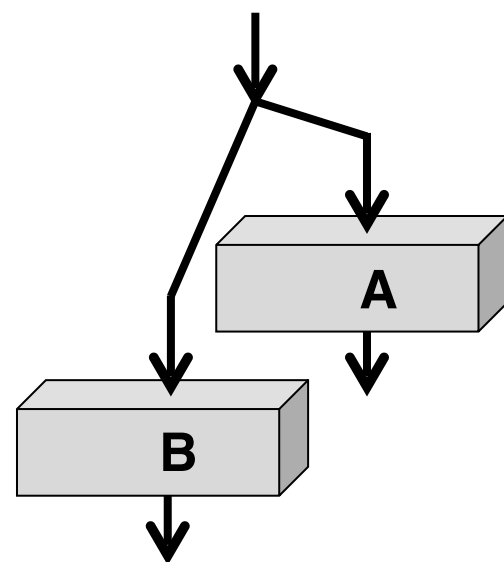
Alignment of confidence can reverse the advantages for group problem solving



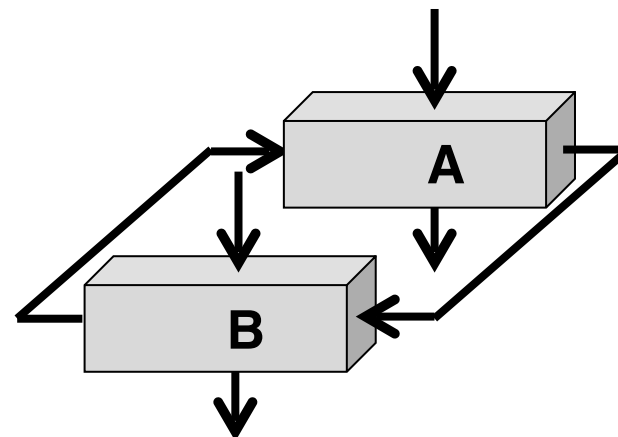
people align their confidence ratings

when expertise differs the group advantage is lost

Individual identity is needed for the mutual adaptation needed for we-mode interactions



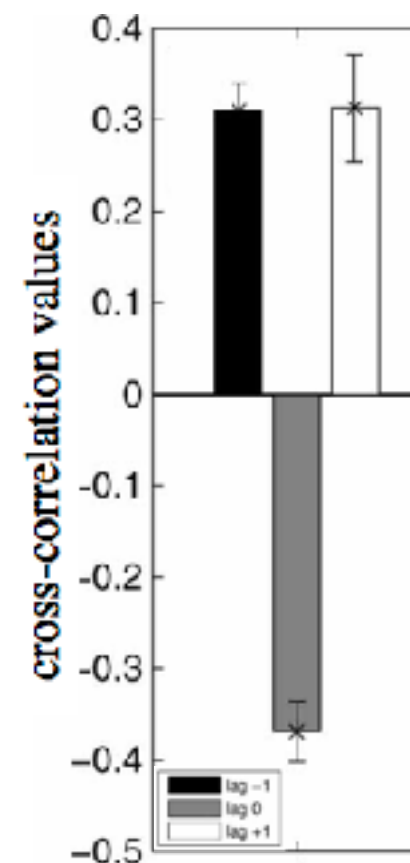
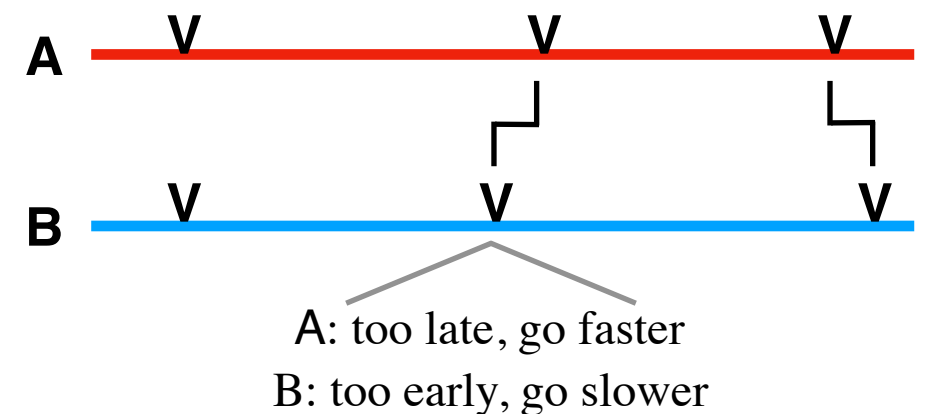
aligned
no interaction



aligned
two-way interaction
we-mode

Gallotti et al *Conscious Cogn* 2017

synchronised tapping



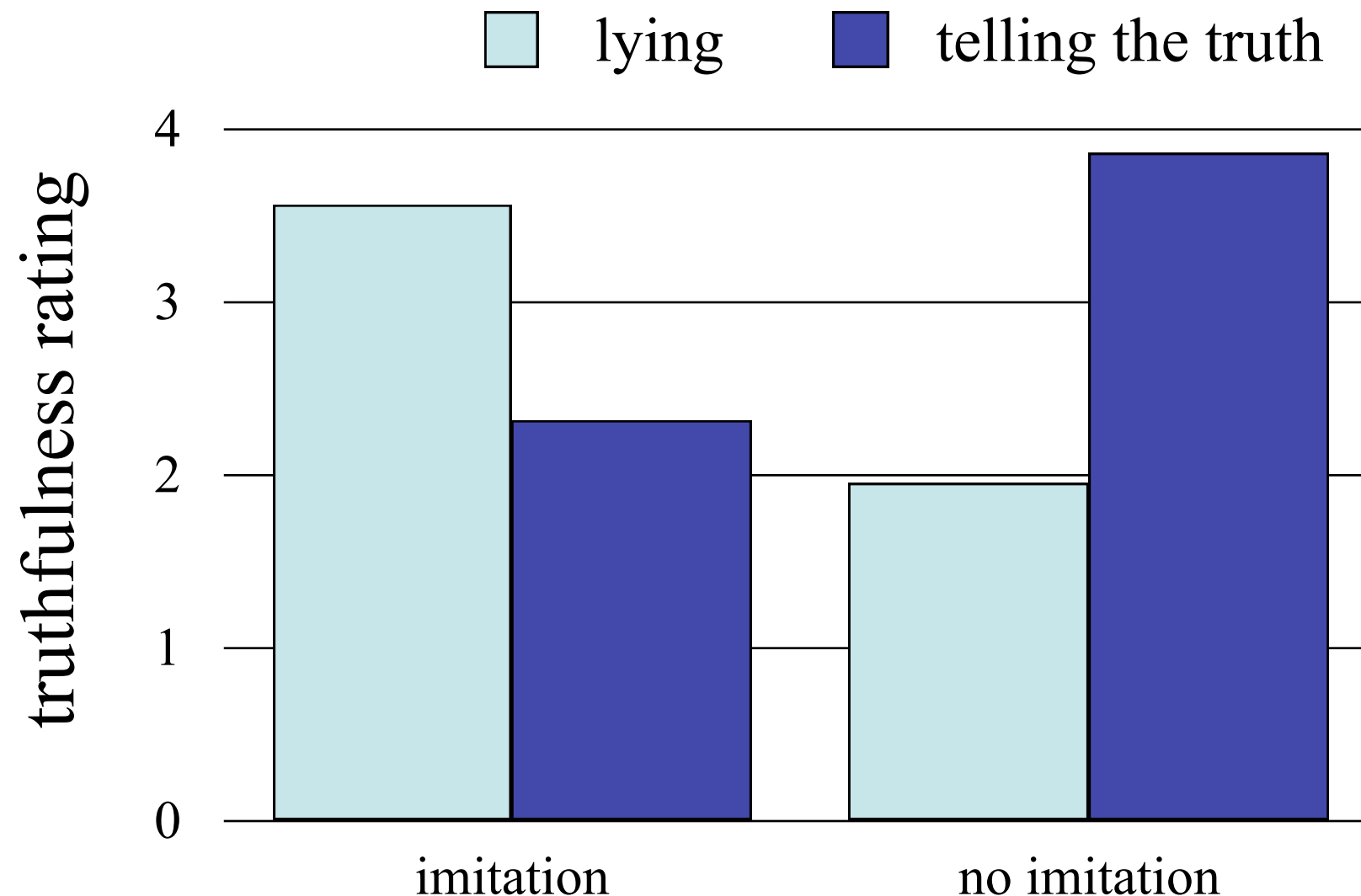
*Partners must
keep track of
who was late
and who was
early*

Characteristic
negative cross-
correlation at
lag 0

Konvalinka et al *Q J Exp Psychol* 2010

Maintaining a distinction between the self and the other is a key function of the mentalising system

Alignment and mentalising are opponent systems



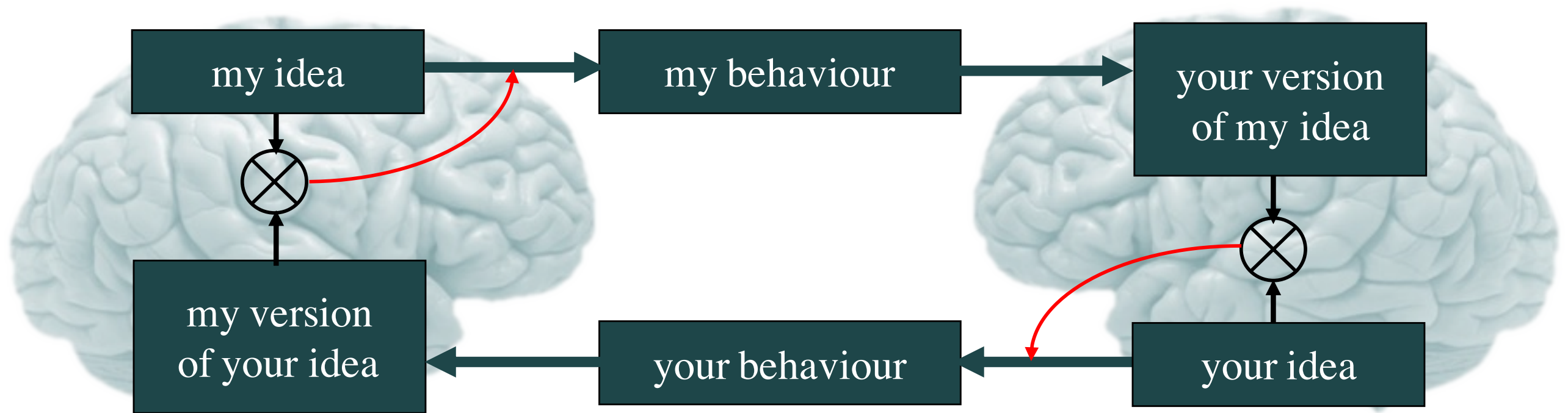
Imitation interferes with the detection of deception

Stel et al *Psychol Sci* 2009

There is a correlation between mentalising ability and the inhibition of imitation

Spengler et al *Soc Neurosci* 2010

**To reach mutual understanding
we need to keep track of whose idea is whose**



A predictive coding formulation of the Hermeneutic Circle

Friston & Frith *Conscious Cogn* 2015

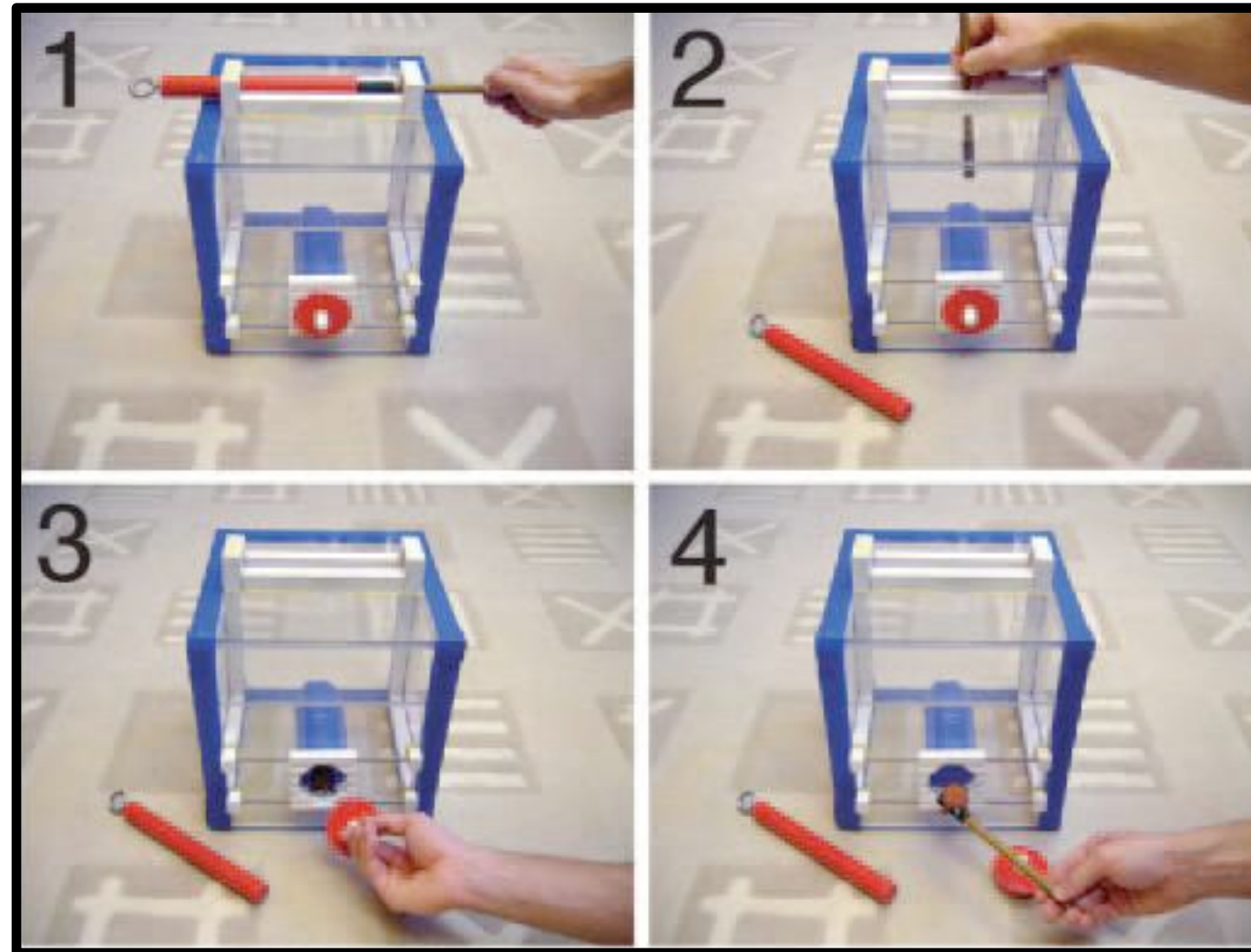


*But we want to share our
ideas and beliefs to create
groups with a special
form of alignment*

**Humans mimicry goes
beyond what is required
to achieve the same goals**

**We indulge in mimicry
for its own sake**

Over-imitation



Lyons et al, PNAS, 2007

Steps 1 & 2 are not necessary to get the reward

Children imitate all 4 steps, even when it is against their interests

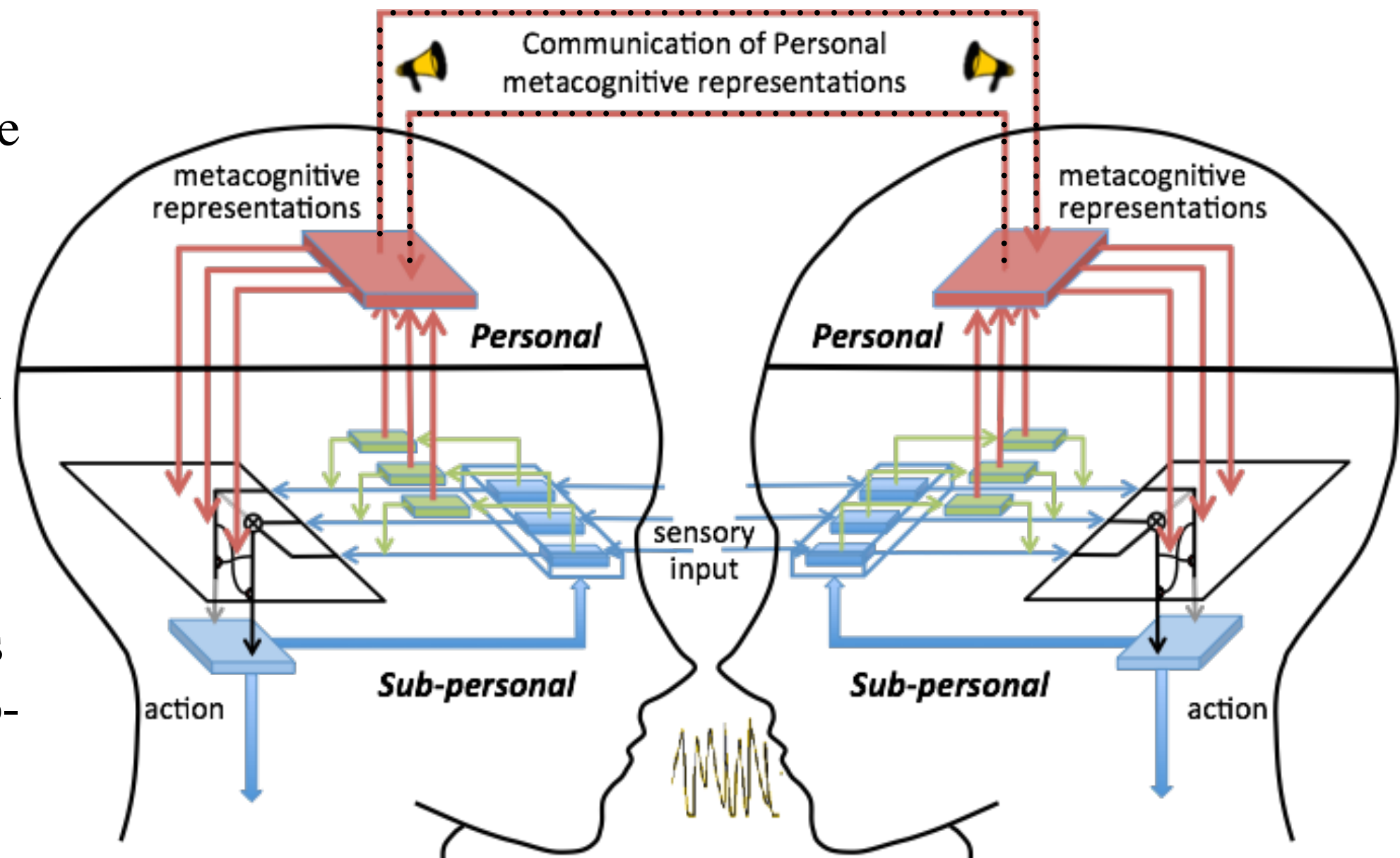
Adults over-imitate even more

Chimpanzees do not over-imitate (they are more 'rational')

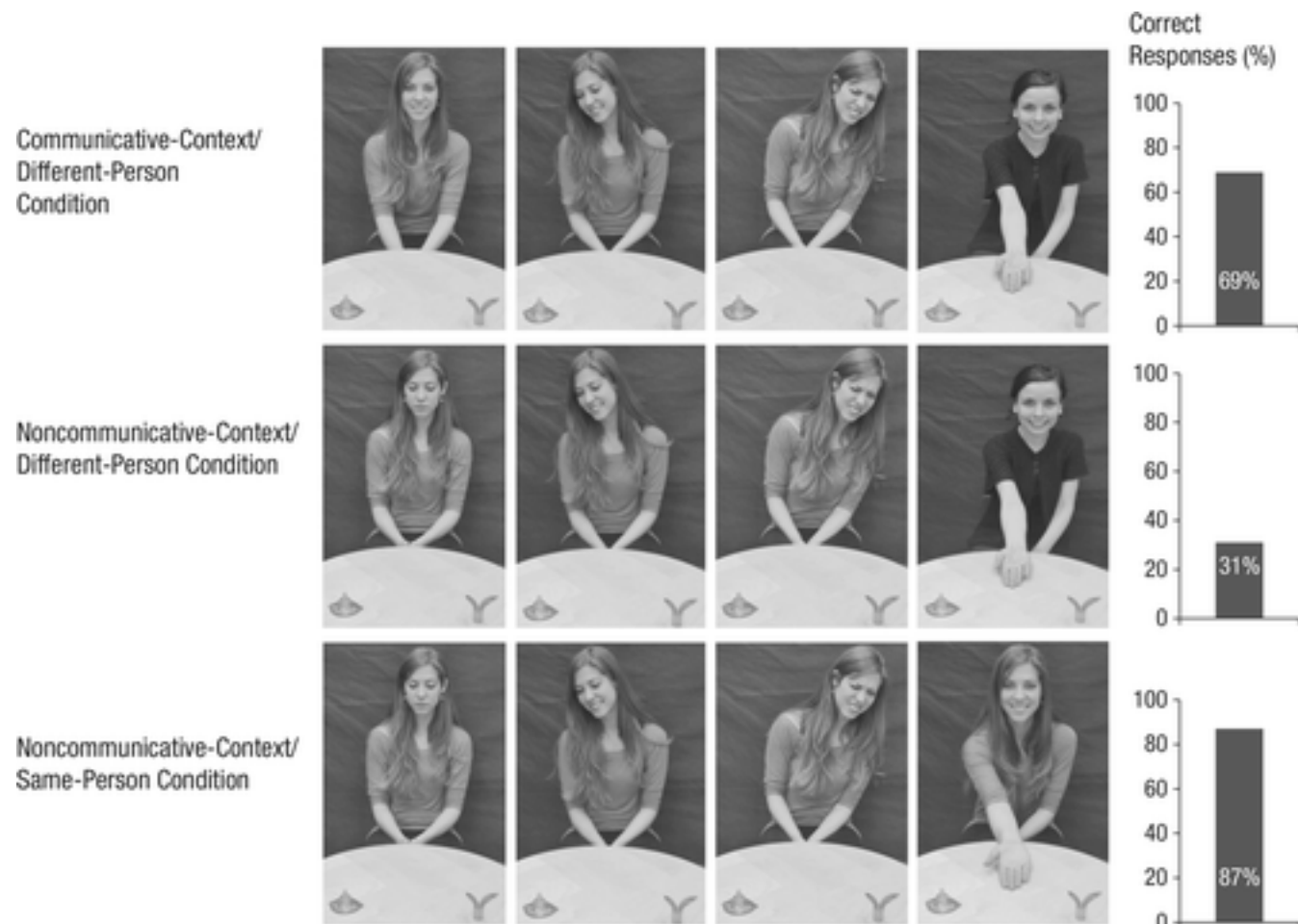
Sharing beliefs and learning how *we* do things is enabled by explicit metacognition

signals arising from sub-personal cognitive processes are converted into representations that can be communicated

communications are converted into signals that can modulate sub-personal cognitive processes



We learn about shared beliefs and what *we* do through explicit communication



ostensive gesture - display of liking - *what we like*

no gesture - display of liking - *what she likes*

no gesture - display of liking - *what she likes*

Egyed et al *Psychol Sci* 2013

Explicit metacognition generates cumulative culture

**Learning, not how to do things,
but how *we* do things**

“Most Englishmen would scorn to kiss and embrace one another or to gesticulate freely, if only because Frenchmen do these things” (McDougall, 1926)

**We mimic because we want to be part of
a special group**

*If I have achieved my aim of being a
distinguished self*

it is because I am now part of a special group

The Human Mind Project



Queen Square
Bloomsbury

Senate House
Bloomsbury

*Thank you
for your explicit and
metacognitive
attention*



Karl Friston



Mattia Gallotti



Dan Bang



Bahador
Bahrami



Nick Shea



Ivana
Konvalinka



Cecilia
Heyes



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