

Inter-disciplinary studies of ToM religion & inter-species ToM

Religion & inter-species ToM

Experiments

- o Contact me if you have not signed up for an experiment or if you cannot find one.
- o 19th and 20th November

Readings

- Boyer, P. (2003). Religious thought and behaviour as by-products of brain function. *Trends in Cognitive Sciences*, 7(3), 119–124. doi:10.1016/S1364-6613(03)00031-7
- Norenzayan, A., Gervais, W. M., & Trzesniewski, K. H. (2012). Mentalizing deficits constrain belief in a personal God. (T. Zalla, Ed.) *PLoS ONE*, 7(5) =, e36880
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *The Behavioural and Brain Sciences*, 4, 515, 526.

- o Primates
- o Avian species
- o Canines

Areas covered:

- o Agency detection
- o Empathy – consolation and fairness
- o Experience projection



Inter species – primates

Two main camps

Povinelli et al



Chimps possess a behavioural rather than a true mentalistic understanding of others

Tomasello et al

Chimps do understand psychological states in others and the question is: which ones and to what extent



Department of Developmental and Comparative Psychology

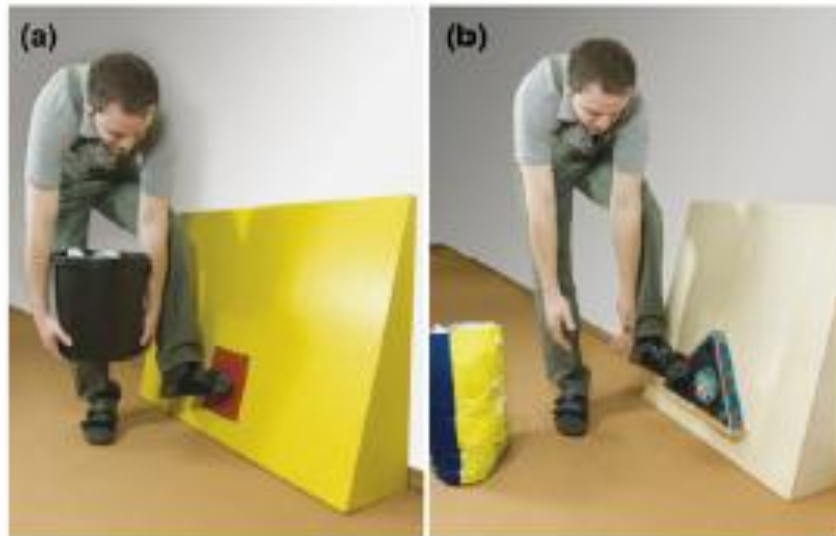
The Department of Developmental and Comparative Psychology investigates cognitive and social-cognitive processes in humans and their nearest primate relatives. Of special interest are the uniquely human cognitive, social-cognitive, and symbolic processes involved in cultural learning and creation. The department has three main areas of research: the Ontogeny of Human Social Cognition, the Acquisition of Language, and Primate Cognition.



Call, J., & Tomasello, M. (2008). Does the chimpanzee have a theory of mind? 30 years later. *Trends in cognitive sciences*, 12(5), 187–92.



- They understand goals and intentions of others as well as hold perception and knowledge of others.



TRENDS in Cognitive Sciences

Figure 1. Turning on the light with the foot because (a) E wanted to or (b) E had to (because his hands were occupied) in the Buttelmann, *et al.* [28] experiments.

Frans de Waal – Moral behaviour in monkeys



Frans de Waal

Sharing of states of mind through bodily communication? (versus cognitive)

Immediacy of emphatic responses: empathy-feeling of another one's state not based on cognitive deduction.

Bottom-up view

Povinelli Chimps lab

- o Chimps only understand surface level behaviours
- o Study on joint attention: 1 year olds, 2 year olds and chimpanzees
- o Social prompt
- o Physical prompt

- o Similarities: 1 year olds and chimps only showed carry over effect in the event with social cues
- o Differences between 1 year olds and chimps: social communication



Romero, T., Castellanos, M. a, & de Waal, F. B. M. (2010). Consolation as possible expression of sympathetic concern among chimpanzees. *Proceedings of the National Academy of Sciences of the United States of America*, 107(27), 12110–5.



Fig. 1. Chimpanzees spontaneously console distressed individuals by means of friendly body contact. Loudly screaming after having lost a fight against a rival, an adult male (right) is approached by a juvenile who puts an arm around him. Photograph by Frans de Waal.

ToM??

- o goals and intentions of others
- o perception and knowledge of others

- o But no evidence of False Belief understanding

Inter species – avian: western scrub-jays



- o Counter strategies used to prevent pilfering of their cached food from others:
- o Behind barriers
- o Use shade and distance to reduce what others can see
- o Use numerous caching sites
- o **Recaching** when observed or after stealing another's cache

Experience projection

- Recaching- experience projection.
Simulation by mental attribution of other birds since naïve birds do not do this?

Inter species – avian: native New Zealand Robins



Agency detection



Fig. 1 A robin makes his choice in a sequential number task

Agent detection



Dogs and the yawn contagion



- o Only after 7 months of age

Campbell et al. 2009:

empathy, involuntary identification and motor mimicry



Religion



Religion

- o Religion is a collection of belief systems, cultural systems, and world views that relate humanity to spirituality and, sometimes, to moral values
- o Largely about intentional agents that one **does not physically encounter**.
- o Possible that- Representation of supernatural agents activates and modifies inference systems involved in the representation of ordinary human agents.

Beliefs and Behaviours

- o Prayers
- o Rituals

Rituals: risk aversion, seek favours...



Mauritius, April 2012



Mauritius, April 2012



Anthropomorphism

attribution of human characteristics (or characteristics assumed to belong only to humans) to other animals, non-living things, phenomena, material states, objects or abstract concepts, such as organizations, governments, spirits or deities.

Differentiate between attribution of...

- o Physical only characteristics
- o Or physical and mental/ emotional/ psychological characteristics



Agent versus agency



Norenzayan et al.

- o Religious believers intuitively conceptualize deities as intentional agents with mental states who anticipate and respond to human beliefs, desires and concerns.
- o Believers intuitively treat gods **as intentional agents** with mental states who enter into social relationships with humans, using supernatural powers to assuage existential concerns, respond to human desires, and monitor their social behaviour



Mentally representing supernatural beings (and their mental states) requires mentalizing capacities.

o Agency detection



EToM

- Shares many of the core mechanisms behind everyday social cognition



ToM in other species: bottom-up or top-down?

Imitation, agent detection, experience
projection, empathy

ToM in religion: anthropomorphism, agency
detection