

Colloque DIVIDNORM

*Metacognitive diversity across cultures:
advances and perspectives*



École normale supérieure, 45, rue d'Ulm 75005 Paris

May 31, 2016, Amphithéâtre Rataud.

June 1st, 2016, Salle des Actes.

Program

Tuesday, May 31

8:45 - Welcome coffee

9:00-9:30 - Presentation of the workshop (**Joëlle Proust**, IJN)

Chair: **Pierre Deléage** (EHESS, Paris).

9:30-10:30 - **Asher Koriat** (University of Haifa): "Subjective confidence, self-consistency, and social consensus".

10:30-10:45 - Coffee break

10:45-11:30 - **Fabrice Clément** (UNINE, Neuchatel): "The impact of consensus in beliefs formation: Some developmental and cross-cultural elements for a global reflection".

11:30-11:55 - Comments by **Daniel Haun** (University of Leipzig)

11:55-12:15 - General discussion

12:15-14:15 - Lunch break

Chair: **Uta Frith** (University College London)

14:15-14:55 - **Shoji Itakura** (University of Kyoto): "Nonverbal theory of mind: Evidence in Japanese children".

14:55-15:20 - Comments by **Athanasios Chasiotis** (Tilburg University)

15:20-15:40 - General discussion

15:40-16:15 - Coffee break

16:15-17:15 - **Sunae Kim** (Sanbaci University): "Cross cultural studies on young children's metacognition".

17:15-17:25 - Comments by **Asli Ozyurek** (Max Planck Institute for Psycholinguistics, Nijmegen)

17:25-17:45 - General discussion

Wednesday, June 1st

Chair: **Sid Kouider** (ENS, Paris)

9:00-10:00 - **Chris Frith** (University College London): "The social relevance of explicit metacognition for perception and action".

10:00-10:15 - Coffee break

10:15-11:15 - **Terry Eskenazi & Amelie Jacquot** (ENS, Paris): "Social influences on metacognitive evaluations in France and in Japan".

11:15-11:40 - Comments by **Dan Bang** (University College London)

11:40-12:00 - General discussion

12:00-14:00 - Lunch break

Chair: **Jérôme Dokic** (EHESS, Paris)

14:00-14:30 - **Olivier Le Guen** (CIESAS, Mexico): "Metacognition in Yucatec Mayan Children."

14:30-15:00 - **Martin Fortier** (ENS, Paris): "Metacognition in supernatural thinking: A probabilistic approach".

15:00-15:25 - Comments by **Pierre Deléage** (EHESS, Paris)

15:25-15:45 - General discussion

15:45-16:15 - Coffee break

16:15-17:00 - **Nicholas Shea** (King's College London): "Metacognition about concepts".

17:00-17:45 - **Joëlle Proust** (IJN, ENS, Paris): "Cross-cultural diversity, folk epistemology and metacognition".

Abstracts

(ERC DIVIDNORM – May 31 & June 1st, 2016, ENS, Paris)

Fabrice Clément (UNINE, Neuchâtel)

The impact of consensus in beliefs formation: Some developmental and cross-cultural elements for a global reflection.

Consensus is an important way to evaluate the epistemic validity of statements, notably when subjects are not able to check by themselves the validity of their content. During the Dividnorm project, we had the opportunity to test the “epistemic weight” of consensus for preschoolers. The main results will be summarized and we will present recent results comparing how children from France and Japan react when they had the opportunity to observe a consensus that was far less reliable than a dissenter. When they had to choose between an unreliable consensus and a reliable dissenter, we will show that Japanese and French children did not take exactly the same decision. These results tend to show that epistemic norms are influenced by the culture children grow in.

Terry Eskenazi (LNC, ENS Paris) & **Amélie Jacquot** (LNC, ENS Paris)

Social influences on metacognitive evaluations in France and in Japan

Social influences on decisions and behaviour have long been studied, however little is known whether metacognitive processes are also susceptible to social influence. In the first part of the talk, we will present a set of behavioural studies, which demonstrated an impact of social feedback on retrospective metacognitive evaluations (i.e. decision confidence), even when the feedback was implicit and entirely unreliable, at the expense of metacognitive accuracy. We will then continue with an fMRI study, which revealed this time an impact of retrospective metacognitive evaluations (i.e. decision confidence) on social feedback processing. The results of parametric analyses revealed that different neuronal populations of the posterior medial frontal cortex (known for its involvement in error detection), are sensitive, on the one hand, to positive feedback with decreasing levels of confidence, and on the other hand, to negative feedback with increasing levels of confidence. We will discuss the respective role of these neuronal populations in decision making.

In the second part of our talk, we will present a set of behavioural cross-cultural studies which investigated if social influences on metacognition are subject to cultural variability. Indeed, cultural values are known to influence how people construe themselves and their relation to the world, and therefore may influence social cognition and contextual self-judgments. We compared the effects of non-verbal social cues (facial expressions and gaze) on confidence judgments of French and Japanese participants, known to be shaped by different cultural values (individualism and collectivism, respectively) after having performed a first order task. Overall, the behavioural data indicated that Japanese and French participants' confidence is influenced by (even unreliable) social feedback. In some experimental contexts, this effect was greater in Japanese than French participants. Interestingly, we reported also different facial electromyographic activity in French and Japanese participants in response to social feedback while they assessed their confidence. French participants showed facial reactions in response to the information provided by a competent agent while Japanese participants showed facial reactions in response to information provided by an incompetent agent. This result will be discussed regarding the cross-cultural differences in the interdependent/dependent view of self.

Martin Fortier (IJN, ENS, Paris)

Metacognition in supernatural thinking: A probabilistic approach

The metacognitive study of supernatural thinking can follow at least two paths. (1) The first consists in examining the diverse epistemic norms that govern the acceptance of supernatural claims. (2) The second focuses on how supernatural beliefs change the way noetic feelings are interpreted and used in self-regulation. In this presentation, some aspects of these two paths will be investigated through a specific case study.

Ethnographic evidence suggests that detecting supernatural agency in ordinary events crucially depends on probabilistic reasoning. I will argue that the specific kind of probabilistic reasoning at stake can be best described using Jean-Louis Dessalles' theorizing of Kolmogorov's work on complexity as well as his theorizing of relevance and unexpectedness. Indeed, I will show that most instances of supernatural inferences to be found in the ethnographic literature can be characterized as cases of discrepancy between (high) generation-complexity and (low) description-complexity. I will subsequently examine the links between this probabilistic model of supernatural thinking and some noetic feelings and epistemic norms that play a central role in metacognition. I will finally explain why this line of research can help us better understand the diversity of metacognition.

Chris Frith (University College London)

The social relevance of explicit metacognition for perception and action.

If metacognitive representations are defined as representations of the properties of cognitive processes, then we should distinguish between implicit and explicit metacognition. At the sub-personal (implicit) level, behaviour is affected by many metacognitive properties, such as precision of sensory signals, without awareness. However, some of these properties become available at the personal (explicit) level. Examples include, perceptual fluency, action selection fluency, and mental effort. These are properties of cognitive processes that are experienced subjectively and can be reported to others.

There is, however, considerable leeway in how we report and interpret these experiences. Our behavioural response to metacognitive signals depends upon how we interpret them and this interpretation can be influenced by others and by our cultural environment more generally. For example, we use our experience of action to justify our behaviour and learn to feel responsibility and regret. We can also translate our sensory experience into reports of confidence that can create advantages either for the group or for the individual. Rather than being a problem, the malleability of our explicit metacognition has a critical role in enabling sharing of subjective experience and in the development of cultural norms.

Shoji Itakura (University of Kyoto)

Nonverbal theory of mind: Evidence in Japanese children

There is an argument regarding whether the development of false belief reasoning is universal across cultures. Many studies have supported the universal development of false belief understanding. Callaghan et al. (2005) reported that children in five cultures could not pass the false belief task until they were between four and five years of age, and that the development trend was similar across cultures. Several studies, however, had shown that Japanese children might have a one to two year delay in false belief understanding (see Naito and Koyama, 2006). We investigated whether this delay is genuinely due to the children's difficulty with false belief reasoning, or whether the verbal questioning technique underestimates the competence of the participants. We

gave 4- and 5-year old Japanese children a verbal and nonverbal false belief task. The results showed that the children performed significantly better in the nonverbal task than in the verbal task. In addition, 5-year-olds performed significantly above chance in the nonverbal task, but not in the verbal task. These results suggest that Japanese children show difficulty with false belief tasks because verbal tasks may underestimate their competence.

Sunae Kim (Ludwig Maximilian University of Munich)

Cross cultural studies on young children's metacognition

In this talk, I will first present 3- and 4-year-old German children's sensitivity to their own ignorance as revealed in their informing decisions and uncertainty gestures in contrast to the overestimation of their knowledge in their verbal judgments. In the latter half of the talk, I will present data on cross-cultural differences and similarities with respect to metacognition and mind reading. Theoretically it is argued that mindreading, children's false belief understanding more specifically, is related to children's explicit metacognitive abilities. A few recent studies report empirical evidence for this. We intended to extend the prior research and further systematically investigate the relationship between mindreading and metacognition via a cross cultural investigation. To this aim, we tested 4-year-old German and Japanese children's implicit and explicit forms of metacognitive abilities as well as false belief understanding. We found that Japanese and German children equally displayed a gap between implicit and explicit forms of metacognitive abilities. By contrast, they differed in their mindreading abilities. The cross cultural findings shed light on the relationship between metacognition and mindreading.

Asher Koriat (University of Haifa)

Subjective confidence, self-consistency, and social consensus

What is the basis of subjective confidence in our knowledge and judgments? Why are confidence judgments generally accurate in discriminating between correct and wrong responses? According to the self-consistency model, the process underlying subjective confidence in one's beliefs has much in common with that underlying statistical inference about the outside world. Participants retrieve a small sample of cues from their memory, and their confidence reflects an assessment of the likelihood that the decision reached is true of the entire population of cues. Because the population of cues associated with an item is largely shared across participants with the same experience, subjective confidence taps the collective wisdom, and hence tends to be higher for consensual responses than for nonconsensual responses. The confidence/accuracy correlation is generally positive because collective wisdom tends to lean towards the correct answer. However, it is negative when collective wisdom is biased in favor of the wrong answer. The theory has implications for several issues including choice replicability, social conformity, group decisions, and the wisdom of crowds.

Olivier Le Guen, (CIESAS, Mexico)

Metacognition in Yucatec Mayan Children.

This talk will present recent experimental evidence about Yucatec Mayan children's metacognitive abilities. Granting that German and Japanese children have been shown by Kim et al.' (2016) study to have a different sensitivity to what they know when reporting knowledge or informing another person, it is worth investigating whether this contrast is also present in children from a non-industrial society. Adapting Kim et al.'s 2016 study, we have explored whether 3,5 to 5 years old children 1) report that they know (or don't) and 2) are (or not) willing to inform another person in three conditions: when they have (a) full knowledge, (b) partial knowledge and (c) no

knowledge of the location of an object.

The children have also been subjected to a version of the False Belief Task in which they are asked to deceive another person. This task is used as a comparative method to test how Yucatec Mayan children are managing other's beliefs. This method is inspired by anthropological considerations relative to the cultural management of epistemicity among the Yucatec Mayans.

Joëlle Proust (Institut Jean Nicod)

Cross-cultural diversity, folk epistemology and metacognition

Does cross-cultural diversity influence metacognition, and if so, in which way? Noetic feelings, such as the feeling of knowing, the feeling of being right, or the tip of the tongue, seem to be present in all human groups. Recent studies, in addition, have found evidence for universal epistemological intuitions across cultures. On the other hand, there is a striking cross-cultural divergence in socially recognized methods for reducing uncertainty and/or gaining knowledge – see the gap between, on the one hand, divination and palm reading, and, on the other, controlled methods of hypothesis testing. How could one and the same system of evaluation endorse so widely different, and indeed incompatible, epistemic practices? We will discuss various factors involved in such practices, such as the relative weight culturally attributed to perceptual evidence and verbal testimony, the type of fluency relied upon, the comparative sensitivity to consistency and to informativeness, and the role of expertise and authority in individual epistemic decision.

Nicholas Shea (King's College London)

Metacognition About Concepts

Concepts are the constituents of thought and underpin much personal level reasoning. They also allow us to 'project' properties we have learnt about one object to new objects. For example, I might interact with something I have classified under my CAT concept and learn that it purrs when stroked. When subsequently encountering another object that is classified under CAT I can form the expectation that it will purr if stroked. Reasoning and 'projection' are two core uses of concepts.

Some concepts are more dependable than others for these purposes. This paper will suggest that thinkers often make use of a sense of how dependable their concepts are. Such 'feelings of dependability' are not explicit higher order beliefs about a concept, but a form of what has been called 'procedural metacognition' (Proust 2013 *The Philosophy of Metacognition*). Metacognition has been studied in relation to many cognitive processes, prominently memory and decision making, but it is little-studied in relation to concepts.

Concepts could be a fruitful area in which to study to the cultural diversity of metacognition, since the metacognitive feelings associated with cognate concepts in different cultures are likely to differ. This paper, formulated at a preliminary stage of investigation, makes a *prima facie* case that there is metacognition of concepts, in the form of a non-conceptual representation or feeling of dependability that is associated with the use of many concepts. It makes some suggestions about cultural variation in concept metacognition and goes on to explore some philosophical applications of the idea that there is metacognition of concepts.