

# Workshop international

## *L'animalité : cognition, conscience et évolution*



**19 et 20 octobre 2018**

### **Vendredi 19 octobre**

Université de Nantes  
Bâtiment Censive, C248  
Chemin de la Censive du Tertre

### **Samedi 20 octobre**

MSH Ange-Guépin  
Salle de conférence B  
5, Allée Jacques Berque

### **Programme**

#### **Friday 19 October**

**10.00 - Ali Boyle (Cambridge)** *The Impure Phenomenology of Episodic Memory*

Abstract: Episodic memory has a distinctive phenomenology: it involves 'mentally reliving' a past event. It's been suggested that if episodic memory is characterised in terms of this phenomenology, it will be 'impossible to test' for it in animals - because this is to characterise it in terms of its 'purely phenomenological features', which cannot be detected in nonverbal behaviour. I argue that this is a mistake. The phenomenological features of episodic memory are impure phenomenological features, which can be detected in animal behaviour. So, insisting on a phenomenological characterisation of episodic memory does nothing to damage the prospects for detecting it in nonhuman animals.

**11.30 - Joëlle Proust (Institut Jean Nicod, ENS Paris)** *Non-human metacognition and intentional content*

Non-humans such as primates, rodents, and pigeons seem to be able to reliably predict or evaluate their own performance in perceptual or memorial tasks. Comparative psychologists and philosophers have strongly disagreed about the informational basis of this capacity: is it merely based on predicted reward, or does it depend on metarepresentations of first-order states? Psychological and neuroscientific evidence suggests that neither of these views is correct. Nonhuman metacognition seems rather to be based on activity-dependent predictions associated with first-order cognition, i.e., on the dynamic aspects of the mind-brain activation that a given task triggers, independently of its particular cognitive content. The implications of these findings for the representational structure of procedural metacognition will be discussed.

**14.30 - Valérie Dufour (IPHC, Strasbourg)** *Can non-human primates and corvids take others, time and risk into account when engaging in a reciprocal interaction*

Social settings often create competition, but it also offers many opportunities to cooperate between group members. The benefit can be mutual if individuals reciprocate. However, behaving in a reciprocal manner can be very demanding cognitively speaking especially if individuals try/need to keep score of what has been given and received. It can require several cognitive capacities such as understanding that others also have needs (not necessarily similar to yours), that favors or help are not always exchanged on an immediate basis, and that there is a risk of failed cooperation if unreliable individuals are involved. In this talk, I will develop these three facets of what animals (mostly primates and corvids) understand of reciprocal interactions. We will see that, by contrast with human societies, calculated reciprocity is barely within reach of non-human beings.

**Workshop international organisé par Bruno GNASSOUNOU,  
Vincent LEIGNEL, Michael MUREZ et Joulia SMORTCHKOVA  
Avec la participation financière du CPER D12L2S**



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### 16.00 - Philippe Lusson (NYU Paris) *Learning from animal coordination*

Controversies about animal cooperative and coordinated behavior cast a spotlight on assumptions about the cognitive machinery necessary for collective action. Where lab studies find that even our closest primate relatives lack the full-fledged understanding of other minds necessary to share mental states, field descriptions of their cooperative behavior are often couched in language that suggests or assumes shared intentions. The debate about chimpanzee group hunts is characteristic of the assumptions about collective action that underlie both positions. Recent work has been done to recast the group hunts as by-product mutualism without shared intentions. However, the individualistic story that emerges remains crucially incomplete. Instead of siding with either view, I argue that chimpanzee and other animal cooperative behaviors give us reasons to review our conceptual assumptions, and that neither a shared-intention explanation nor an individual-strategizing explanation is likely to succeed. The concepts to elaborate in order to understand these animal behaviors may then also offer useful tools for a new approach to some human ones.

### Saturday 20 October

### 10.00 - Jonathan Birch (LSE) *The Evolution of Perspective*

Although it may be impossible to tell when exactly «the lights came on», we can make progress towards understanding the evolution of conscious experience by understanding the evolution of the basic functional capacities that any animal must possess if it is to have anything like conscious experience as we know it. One such capacity is the capacity to have a perspective (or point of view) on the world, which requires, at minimum, the capacity to represent relations between external objects and oneself. I argue that the nematode worm *C. elegans* has a minimal form of this capacity: *C. elegans* is able to steer smoothly towards the source of an attractive odour, guided by an internal representation of the direction of the odour gradient in relation to its body. This suggests a basic form of perspective may be common to all bilaterian animals. With the evolution of distance vision, this capacity was elaborated in various ways.

### 11.30 - Ludovic Dickel (EthoS, Caen) *Intelligence and cognition in Mollusks?*

Since antiquity, animal intelligence captivates, and causes strong debates between people interested in Nature. Ideological conflicts about mentalism in animals were radicalized at the beginning of the 20th century between the powerful school of reductionism in science and the evolutionary biologists. These lasts were, in some way, more likely to consider continuity in mind between humans and animals. In this confusing period of time for behavioural biologists, research on cephalopods\* emerged, leading to fascinating discoveries. Octopus and cuttlefish show extraordinary learning skills and unique behavioural plasticity in invertebrates. Among others, these results have encouraged the scientific community to enlarge research on general cognition to these invertebrates. Cephalopod species are now the only invertebrates to be considered "sentient"; since 2013, they are protected by the European Directive on animal welfare for animal use in laboratory conditions. This talk will consider both the history of concepts in cognitive ethology and the evolution of the societal representation of cephalopods.

\*octopus, cuttlefish and squids

### 14.30 Trix Cacchione (Bern) *Essentialism and trans-temporal identity judgment in human infants and great apes*

Human reasoning is characterized by psychological essentialism. In reasoning about objects we distinguish between deep essential properties that define the objects' kind and identity and superficial properties that objects of a given kind usually share such as their appearance. If you change essential properties, you change the objects' identity. Superficial properties, in contrast, can be changed without altering the identity of the object in question. Painting a tiger like a crocodile, e.g., does not turn it into a crocodile.

Essentialist reasoning has been amply documented in adults and older children from age four (Cimpian et al., in press; Gelman, 2003; Keil, 1982). Little is known so far, however, about the roots of psychological essentialism, both ontogenetically and phylogenetically. In particular, it is unclear whether psychological essentialism is based on the acquisition of linguistic means (such as kind terms) and is therefore uniquely human, or whether it is a more fundamental cognitive capacity possible without language. In a series of experiments we addressed this question in human infants and non-human apes. In particular, we explored whether sortal object individuation in these subjects already involves essentialist modes of thinking.

### 16.00 - Jeremy Kuhn (Institut Jean Nicod) *Formal semantics of primate communication*

Experimental primatology over the last 40 years has produced a rich body of results regarding the way in which non-human primates use and understand calls. In this talk, I describe recent efforts to use analytical methods from contemporary linguistics to analyze these complex data sets, focusing in particular on the semantics of primate calls. These formal tools allow us to disentangle a number of contributing factors to the 'meaning' of call sequences, including (a) lexical meaning, (b) compositional properties, and (c) extra-linguistic ('pragmatic') factors regarding what is said, when it is said, and what is not said. A number of generalizations appear as we look across several species. We focus in some depth on the case of male Campbell's monkey alarm calls, which may be modified with a final '-oo' sound that appears to attenuate the meaning of the calls it attaches to.

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