

# Rethinking animal minds and meanings: towards an interdisciplinary understanding of nonlinguistic thought and communication

Berlin, May 12th-13th 2016

A joint interdisciplinary WiKO/St.Andrews Workshop.

*AHRC Rethinking Mind and Meaning Project*

—Thursday May 12th—

10-10:30. JC Gomez, D. Ball, V. Kersken, A. Seed. University of St. Andrews.

## ***Introduction to the workshop: rethinking animal mind and meaning through interdisciplinary collaboration.***

The last decades have seen important changes in the way we understand animal communication. The view that animal signals consisted essentially of affective, reflex-like stimuli and responses was replaced by a view of animal communication as flexible and considerably “cognitive.” Primates and other species demonstrated apparent referential understanding of vocal signals, and studies with apes suggested communicative intentionality in their use of gestures. However, it was never clear what sort of knowledge and understanding of reference and intentionality was being attributed to animals, and the last years have seen attempts at revisiting the initial interpretations. What sort of meaning is animal meaning? Has the cognitive side of animal signals not been exaggerated at the expense of the affective and emotional sides? Is affective/emotional communication necessarily less complex and non-referential? And what is the relation between animal communication and human language evolution? The aim of this workshop is to explore ways of rethinking animal meaning and communication in the wider context of rethinking the minds of nonverbal creatures.

10-30–11:45. Klaus Zuberbühler, Université de Neuchâtel & University of St. Andrews.

## ***Vocal communication in primates: is there really reference and intention?***

Human language is largely a vocal behavior but its evolutionary origins remain elusive. Although vocalizations are also the main way by which nonhuman primates communicate and interact socially it has been difficult to demonstrate direct transitions from non-linguistic primate vocal communication to human language. Primates produce and perceive sounds by specialized anatomical and neural structures also present in humans. Compared to humans, however, nonhuman primates are severely limited in the control they have over vocal production, which restricts their ability for rapid sound combinations and vocal learning. But language is also a cognitive capacity. Here, there is good evidence that primates understand others' calls as given by specific individuals to specific events or as part of specific social interactions. In great apes, callers can take the past history with their audience into account, by suppressing, exaggerating and socially directing their calls in seemingly strategic ways. But there is no clear evidence that primates, apart from humans, perceive others as governed by complex mental states, especially knowledge, during acts of communication, nor that they are motivated to actively convey knowledge relevant to their audience. There is also no clear indication that primates use vocalizations for the sole purpose of social bonding, as a primary means to interact socially. The current hypothesis is that these differences in cognitive ability and social motivation have prevented the evolution of flexible and combinatorial vocal communication in nonhuman primates.

(Coffee break)

11:45-1pm. Julia Fischer, German Primate Center, Göttingen.

## ***What does it all mean? Revisiting the alarm calls of vervet monkeys***

Trying to uncover the roots of human speech and language has been the premier motivation to study the signalling behaviour of nonhuman primates for several decades. Focussing on the question of whether we find evidence for linguistic reference in the production of nonhuman primate vocalizations, I will first discuss how the criteria used to diagnose referential signaling changed over time, and will then turn to the paradigmatic case of semantic communication in animals, the alarm calls of vervet monkeys. A recent in-depth analysis of the original material revealed that while the alarm calls could be well distinguished, calls of similar structure were

also used in within- and between-group aggression. This finding is difficult to reconcile with the idea that calls denote objects in the environment. Furthermore, nonhuman primates show only minimal signs of vocal production learning, one key prerequisite for conventionalized and symbolic communication, and the structure of calls in different populations or closely related species is highly conserved. In conclusion, any continuity between nonhuman primate and human communication appears to be found at the level of the processing of signals. I will discuss how the consideration of both cognitive and affective processing may contribute to a richer understanding of nonhuman primate communication.

1-2pm. Lunch

2-3:15pm: Cat Hobaiter. University of St. Andrews

***Without words: investigating meaning in great ape gesture***

Signal meanings in animal communication have generally been identified as the information exchanged between individuals. Using this approach, non-human primate signals are suggested to encode a rich range of information. In human language meaning has been treated differently. We focus not just on the information encoded in the signal or its effect on the receiver, but on what the signaller intended to communicate. With increasing evidence that non-human great apes share our capacity for intentional goal-directed communication, we can begin to ask the question of what great ape signals mean in the linguistic sense. But where to start? Can we ever 'interview an animal in its own language'? Given that intended meaning is an internal mental state, what are the external, measurable features of a communicative event that we can use to decode meaning? I will describe the communication of great apes and the evidence that ape gestures are used towards a specific recipient with a specific goal in mind. I will examine the case for meaning in gestural communication, whether individual gesture forms can be said to have specific semantic meanings and, if so, whether these are consistent across signallers.

3:15-4:30pm: Ulf Liszkowski, Universität Hamburg.

***Complexities and origins of prelinguistic communication***

I will outline the debate about 'rich' and 'lean' views on human infants' and great apes' prelinguistic communication. I will then present recent and new evidence which reveals that complexities of human communication can be traced back into the second half of infancy. These forms of infant prelinguistic communication differ from those of ape communication. Differences pertain to levels of illocutionary forces and referential intentions. I will then discuss the origins of 1-year-olds' complex communication skills from evolutionary and social-cultural perspectives. In new studies we find that both cognitive and social-cultural factors influence the ontogenetic emergence of referential communication. I conclude that a species-unique deep motivational orientation toward others, indeed a need to belong to others, formed a unique ontogenetic niche in which individual activity is immersed in social activity, leading to the social cognitive processes and social interactions characteristic of humans.

4:30-5:30 **Coffee and General Discussion**

—Friday May 13th—

10-11:15. P. Gardenfors and Anders Högberg. WiKo.

***On the evolution of teaching***

We trace some of the steps in the evolution of teaching by a combination of a theoretical reconstruction of the cognitive and communicative requirements for different types of teaching and an analysis of animal and archaeological data. There is a wide divergence between different disciplines concerning what is meant by teaching. Instead of aiming for a unique definition of teaching, we present a series of levels of teaching that require increasing capacities of mindreading and communication on the part of the teacher and the learner. First of all, we separate non-intentional teaching from intentional. As regards non intentional teaching, we discuss facilitation (scaffolding) and approval/disapproval and analyze examples from non-human species. Our main focus, however, is intentional teaching. We distinguish between the following levels: (1) intentional approval/disapproval, (2) drawing attention, (3) demonstrating, (4) communicating concepts, and (5) explaining relations between concepts. Since all levels occur among modern humans, whereas only the basic levels have been found in other species, we hypothesize that level after level has been added during the evolution of teaching. One empirical question is what evidence there is among non-human species concerning approval/disapproval and drawing attention. Another is what archaeological evidence one can find for when the different levels of teaching emerge in the hominin line.

11:15-11:30. Coffee break.

11:30-12:45: Manuel Bohn & J. Call., Max Planck Institute for Evolutionary Anthropology.

***Non-Linguistic Reference to Absent Entities***

In a series of studies we investigated if and how pre-linguistic infants and great apes communicate about absent entities. In our setup participants had the opportunity to point to the former location of an object to request more objects of the same kind. In the first part we looked for evidence indicating that participants intended to obtain a specific kind of object when pointing to the empty location. In the second part we investigated whether participants would adjust their pointing to the empty location to previous interactions with the person they requested from. More specifically we manipulated whether this person had previously seen the content of the now empty location and whether this person had previously provided additional objects. In my talk, I will present the results of these empirical studies and relate them to social-cognitive theories of human communication.

1:00-2:00: lunch

2:00-3:00: D. Bar-On and R. Moore, WiKo

***Pragmatic Interpretation, Signaler-Receiver Asymmetries, and the Evolution of Language***

In recent years, several researchers have converged on the idea that a pragmatic understanding of communication can shed an important light on the topic of the evolution of language. Some authors couple this idea with the claim (prevalent among theorists of language evolution) that there are fundamental asymmetries between signalers and receivers in non-human animals (and primates in particular). For example, in the case of primate vocal calls, signalers are said to produce signals unintentionally and mindlessly, whereas receivers are thought often to engage in contextual interpretation to derive the significance of signals. Some theorists combine the pragmatic perspective with asymmetry claims in order to derive a specific conception of the theoretical task facing theories of language evolution. We argue that, in the current literature, claims about signaler-receiver asymmetries are often confused. This is partly because there are two quite different conceptions of pragmatics in play in current debates, which, moreover, generate related but importantly different accounts of the explanatory target for accounts of the evolution of language. By distinguishing the different conceptions of pragmatics in play, we hope to clarify a number of conceptual debates in the language evolution literature, in order to help specify more precisely the proper explanatory target for language evolution research.

3:00-4:30: **Coffee and General discussion**

4:30. **End of Workshop.**