

A solution to the enigma of pointing in non human primates

Over the last few years a lot of ink had been spilled about the capacities of different animals to follow pointing (see Miklósi & Soproni, 2006 for a review). Regarding primates (i.e. non human primates), the accepted conclusion was that they didn't naturally follow pointing gestures. This has been questioned by a recent result of Hauser and colleagues (2007) showing that wild rhesus monkeys spontaneously follow a human pointing gesture. I will suggest here a new hypothesis to explain this and other apparently discrepant findings. I can be subdivided into three points.

1) Why do several animals follow pointing gestures? Animals that have been shown to follow pointing gestures either belong to domesticated species or have had extensive contact with humans, humans often being their sole purveyor of food (see the list in Miklósi & Soproni, 2006). In that case, it should be expected (i) that these animals would expect humans to be a relevant source of information regarding the location of food and (ii) that they would have no reason to mistrust humans. These animals can therefore allow their attention to be guided by humans. They don't have to understand what the pointing gesture means, only that the side that's pointed at is more relevant.

2) Why don't primates follow pointing gestures? The strategy used by other animals is fairly low level, so the problem can hardly be cognitive. It is much more likely to be a strategic problem: primates who follow pointing gestures too eagerly could easily be manipulated (Hare, Call, & Tomasello, 2006) by others to do things that go against their best interest (going away from food, towards danger, etc.). Instead, primates use a much more sensible and complex rational approach when trying to understand the behavior of their conspecifics (Wood, Glynn, Phillips, & Hauser, 2007).

3) Why do primates sometimes succeed? I will argue that when their attention is ostensibly drawn by another individual, primates can refrain from trying to understand the other's behavior in terms of rational action and can instead let their attention be guided towards the most relevant action linked to the target of the pointing. When the target is another individual, they may attack him (see the natural observation of Hauser et al., 2007; see Byrne, 2003 for evidence of a similar behavior in baboons), when it's an object they go towards it (the experimental settings of Hauser et al. 2007). Several other

results are coherent with this view: when the experimenter attracts the attention of a chimpanzee, she is likely to follow her gaze to find the baited box, even though she wouldn't otherwise (Call, Agnetta, & Tomasello, 2000). After having grabbed an adult's attention (something they do artfully, Tomasello, Call, Nagell, Olguin, & Carpenter, 1994), young chimpanzees can use pointing in order to make the adult understand what they want (be tickled for instance) (Tomasello, Gust, & Frost, 1989). In all of these cases, the fact that their attention was ostensibly drawn helps solve the strategic problem of pointing: if harm ensues, the individual who had attracted attention can easily be blamed.

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