

## **TACTICAL DECEPTION IN WILD BONNET MACAQUES, *MACACA RADIATA***

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Tactical deception involves the display by an actor of certain behaviours, drawn from its normal repertoire, in situations where they are likely to be misinterpreted by the audience; this usually leads to some tangible benefit for the actor with or without some corresponding cost to the audience. All such manipulative acts are thus functional, and most cases of primate deception can be included in this category.

A total of 128 events of deceptive social interactions was observed in the three troops of bonnet macaques over a period of four years. Individuals in all the troops exhibited comparable levels of deception, ranging from an average of 0.0025 to 0.0060 acts/h/individual, but differed widely with regard to the social situations – competition for food, mates and grooming partners, as well as aggressive interactions – during which tactical deception was displayed.

Bonnet macaques also displayed a remarkable individual variation in the performance of deceptive acts. Some individuals exhibited a very high frequency of these behaviours, at levels significantly greater than that shown by others. Such deceptive abilities also appeared to be independent of age and dominance ranks of the actors. Moreover, there were striking differences in the distribution of deceptive acts across the 15 categories of deception commonly displayed. The simple types of deception shown included concealment by hiding behind a physical barrier or away from the troop, by inhibiting interest in an object and by ignoring; distraction by calling, by threat, and by close-range behaviour; creating a neutral or a positive image; and deflection to third party. Some deceptive behaviours were complex, involving a rapid sequence of simple deceptive acts; these included concealment by hiding behind a physical barrier and by inhibiting interest in an object; concealment by inhibiting interest in object and distraction by close-range behaviour; distraction by leading and by calling; distraction by threat and by close-range behaviour; concealment by hiding behind a physical barrier, distraction by close-range behaviour and by threat.

Human-like deception requires that the actor who signals information creates a false belief in the audience. The signaler thus needs to recognise that the audience's mind can be in a state of knowledge that is different from one's own and that it is possible to alter and hence, control others' mental states without necessarily changing one's own. Are the deceptive acts displayed by nonhuman primates truly intentional in this sense, attributable to a theory of mind? Does the actor actually attempt to alter the mental states of another individual through its deception? Or, has experience simply taught the deceiver the use of certain behavioural strategies that, in particular situations, lead to predictable responses from the audience and thus allow the actor to achieve a desired goal?

The fact that certain individuals are more adept at deception and that the ability to deceive is independent of other individual attributes, including age, indicate that many of these acts could involve mentalism on the part of the actor rather than simple behaviour analysis (since the latter would usually imply that rates of deception would increase with age and/or experience). Individuals who deceived at relatively higher levels also did so in many more different categories. Such individuals, thus, may have indeed been better cheaters with perhaps greater insights into the power of manipulative behaviour than other individuals. This was particularly illuminated by a young subadult male who displayed 9 of the 16 acts of deception performed by the 8 males of that troop; remarkably, these 9 acts belonged to 9 different categories of deception!

Several events of deception by the macaques involved acts of physical concealment in which the actor either simply hid from the target behind some physical object or performed a behaviour surreptitiously behind a barrier, occasionally leaning out to inspect the target individual. This kind of visual perspective-taking, estimating what would be visible from another individual's point of view, has also been documented in other primates, notably chimpanzees and baboons. This ability to recognise and utilise the geometric perspective of another individual has earlier been equated to being able to represent correctly another individual's mental representation in one's own mind.

Most study individuals did not invariably use deceptive strategies in apparently identical situations, a result not expected if these acts were being performed in response to certain behavioural contingencies alone. Another form of volitional control of deception involved the display of very different categories of deceptive acts at enhanced levels by certain adult males following changes in the social environment – when they emigrated out of one troop and joined a neighbouring one. A major difference that these individuals faced in the two situations was that of their dominance ranks, which fell drastically once they had joined the new troop. The perception of their specific positions in the rank hierarchy in the respective troops as well as the changing demands of the new social milieu may have thus triggered a completely different repertoire of deception in these two males.

If indeed some acts of tactical deception displayed by bonnet macaques truly involves mentalism, such manipulation is likely to be intentional, involving some recognition of the mental states of the audience. This would mean, in simple terms, that an individual performs a deceptive act in order to change the belief system of the audience; it can then take advantage of the false belief that it has generated to achieve a particular personal goal.

## **FURTHER READING**

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