

How do we define deception?

Animals Can Tell Fibs



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The ability to deceive others has appeared relatively recently in the evolutionary process. Deceptive behavior is a skill possessed by sophisticated animals, and it developed independently in several different species

In terms of biology, deception is similar to mimetism, i.e. the capacity to imitate natural elements or other organisms. It may be also compared to mimicry, which takes place when a defenseless organism deceives enemies into thinking it is something else, e.g. a venomous or thorny species. Mimetism and mimicry occur widely throughout the animal kingdom, and may involve alteration of body color, development of a special organ, or a change in behavior to make the animal look like a dangerous species. However, these are not enough to be considered deception. So what must an animal do to be considered a good trickster?

Why do some animals cheat others?

It all boils down to behavior: an animal has to do something to mislead another animal. The reasons for doing this are a completely different matter, which would require us to discuss hypotheses about cognitive processes and could serve as the topic for a whole new article. So let's just assume that deception is an action aimed at deceiving an observer.

Modern research on animal minds, which interprets deception in terms of mental processes, dates back to the 1990s and involved a departure from narrowly understood behaviorism. Major researchers including Griffin, Gallup,

and Burghardt assumed that since the neural organization, i.e. the structure of the brain, is similar in all mammals, including humans, it is quite possible that the overall organization of mental processes in people and other mammals is similar. In 1998, Griffin announced that consciousness in animals was an avenue of research just as important as animal cognition, and a large part of his work is devoted to the type of behavior referred to as deception.

As with all other behaviors, the ability to deceive developed in the course of evolutionary process as something beneficial. If we compare primates to corvids (birds in the crow family), which are very distant species in terms of scientific classification, we will soon discover that they display complex cognitive mechanisms that are in many ways similar. However, the issue of what mental mechanisms regulate deception is still hotly debated. Povinelli, Bering, and Giambrone argue that the evolution of an ability to interpret the rich network of ancestral primate behaviors in mentalistic terms (called the "theory of mind") may simply turn out to be a specialization of a single lineage of bipedal hominids, i.e. us humans. And it was this specialization that may ultimately have left humans and chimpanzees understanding nearly identical behaviors in radically different ways.

Nevertheless, deception isn't always good. Certain species display gaze-direction and gaze-following abilities, which help them to obtain information. However, this creates an opportunity to deceive others in order to divert their attention away from an object or clue. In some animals, like certain pack-hunting canids such as dogs, wolves, or coyotes, giving false clues runs the risk of being expelled from the group. Bekoff refers to this phenomenon as wild justice. The animals quickly learn to play fair because there are serious consequences for breaching other members' trust. Moreover, the penalty may be administered publicly if someone is caught cheating his companions. In biological terms, such a penalty constitutes the "cost" incurred by such an individual, which has a direct impact on his



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adaption, thus leading to eradication of deception in the course of evolution.

Tactical deception

The ability to tactically deceive others is closely associated with individual differences – individuals within a group differ from one another in terms of social status or character. Tactical deception occurs in various animals, but the bottom line is that it always involves high cognitive complexity. One of the examples of tactical deception is alteration of skin color in cuttlefish, which normally use it as a way of communication. Cuttlefish are capable of simultaneously sending different messages to different observers. For example, a male communicating with other males in the presence of a female may concurrently send two signals: a “masculine” mating signal to the female, and a “feminine” signal to his rivals to mitigate aggression. Research on domestic pigs has shown that individuals who know the location of food try their best to make it difficult for others to find it: they simply pretend that the food is somewhere else. Females of the western marsh harrier may sometimes display mating behavior towards a male just to steal away his prey, then take it back to hatchlings they have had with another male – their nesting mate. Rooks, when stowing their food, frequently check whether anyone is watching. When they discover they are being observed, they only pretend to stash away their morsels, whilst not actually hiding anything. The most spectacular

examples of animal deception, however, have been observed in primates. Koko, the world’s most famous female gorilla, was taught sign language by her trainers and uses it to communicate with people. At one time Koko damaged the sink by tearing a metal element from it. When the trainer came, she signed “the cat did it” and pointed at the cat as the perpetrator.

Don’t trust your friends

Although the dog is often called man’s best friend, many people who have a dog sometimes sense that their animal is intentionally misleading them. Such behavior is strongly undesired, for instance, in a relationship between a K9 police officer and the dog he/she has been assigned to. Unlike when people keep animals as pets, such a professional relation serves a specific purpose, which requires mutual understanding and trust of both partners. Therefore, a K9 police officer must be immune to any attempts at deceptive shenanigans by his/her four-legged partner. So what does it take to become a K9 officer? As part of a multidisciplinary team, we surveyed 600 K9 police officers by asking them to fill out personality questionnaires and take emotional intelligence tests. Our survey found these individuals exhibited low neuroticism and were highly conscientious, more outgoing, a little less open to new experiences, and slightly more conciliatory than the general population. As far as emotional intelligence is concerned, K9 officers were found to have greater self-control and deeper

In the relationship between a police officer and police dog, there is no place for cheating. Being a good K9 officer requires a specific set of personal characteristics

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understanding of emotions. Interestingly, this profile matches the personality characteristics of high-performing police officers described by Detrick and Chibnall in their 2006 article. It seems that the evaluation of man-animal relationships can tell us a lot about our susceptibility to manipulation.

How do others do it?

Manipulation, which is closely linked to an ability to understand the emotions of others and to model those emotions in our own mind, is a very important step in human development. It usually appears in children when they are about 3.5–4 years old. The development of this feature is a consequence of the acquisition of executive functions, which in turn are linked to the development of the youngest area of the neocortex in evolutionary terms – the frontal lobe.

The ability to deceive cannot exist without the ability to understand a social partner's intentions, motives and knowledge. As Trojan puts it, "...behaviorally complex deceptions seem to have a lot in common with 'mind reading' – a mental game played on different levels of recursiveness, where the deceiver risks being outwitted by his victim, hence he must judiciously choose to use false messages only in specific circumstances".

Currently, the phenomenon of animal deception is being investigated from the standpoint of new examples of its evolution, with corvids and large sea mammals at the forefront of such research. Research on birds, which are evolutionarily the youngest vertebrates and very distant from mammals, allows us to examine the cognitive complexity of animals whose brains are organized fundamentally differently than in mammals. The cetaceans (large sea mammals), in

turn, can give us a lot of comparative data on the processes occurring in mammals whose neocortex differs from that of in primates. These are cases of convergent evolution, i.e. the independent development of similar behaviors in animals whose brains are differently formed. It should be therefore concluded that such behaviors must have been important in terms of adaptation, and were one of the ways of dealing with issues that emerged in interactions with other group members. We hope that new research technologies will soon allow us to better investigate the social behaviors and cognitive processes found in other species.

Animals are just as good as people at cheating others – there's no doubt about it. The question is now to what extent this phenomenon can be explained in terms of higher mental functions. ■

Further reading:

- Detrick P., Chibnall J.T. (2006). NEO PI-R Personality Characteristics of High-Performing Entry-Level Police Officers. *Psychological Services*, 3, (4). 274–285.
- Kaleta T., Pisula W., Fiszdon K., Kondrakiewicz P. (2011). Individual differences in police dog handlers. *Polish Psychological Bulletin*, 42 (2). 52–55.
- Bugnyar T. (2013). Social cognition in ravens. *Comparative Cognition & Behavior Reviews*, 8. 1–12.
- Marino L. (2002). Convergence of complex cognitive abilities in cetaceans and primates. *Brain, Behavior and Evolution*, 59, (1–2). 21–32.
- Trojan M. (2013). *Na tropie zwierzęcego umysłu* [Tracking Down the Animal Mind]. Warsaw: Scholar.
- Radner D. (1999). Mind and Function in Animal Communication. *Erkenntnis*, 51. 129–144

Until recently, we underappreciated birds' ability to read the behavior of others and – consequently – to act deceptively. Corvids (birds in the crow family) have become one of the most interesting groups of animals for researching such capabilities



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