Lies, Lies, Lies…in nature?

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Everyone lies. Teenagers lie about what they did last night, women lie about how many cookies they ate, and men lie about how much time they actually spend in the gym. But does your dog lie to you? Or more specifically, *can* your dog lie to you?

Deception in animals is a topic of great interest. We often see it in the coloration of species. For example, the bright bands of a coral snake warn potential predators that it is poisonous. However, some non-venomous snakes use this to their advantage and by mimicking these bands they gain protection. In humans, this is analogous to stereotyping. People often assume that just because a man is large and has lots of tattoos and piercings he is dangerous. However, this is often untrue.

So-called "tactical deception" is much more rare in nature. This type of lying, which is primarily seen in humans, involves normal acts that are done in such a way that they are misinterpreted. Furthermore, this misinterpretation allows one individual to take advantage of the other. A commonly cited example is the 'broken wing display' of many ground-nesting birds. In this instance, when a potential predator approaches, the mother bird feigns an injury to draw attention away from the much more vulnerable eggs or chicks.

Jakob Bro-Jørgensen and Wiline Pangle from the University of Liverpool studied this type of deception in the African savannah among the topi. These medium sized antelope have a 45-day breeding period where males stake out and defend territories. Meanwhile, the females, who are sexually receptive for only one of these days, move through the territories in groups looking for the most appealing males. The males, therefore, are inclined to keep females from leaving their territory.

The way that topi guard females may be through their alarm snorts. On the African savannah, there is an abundance of large predators, including lions, leopards and hyenas. In order to deal with this, the topi have developed an interesting method of deterrence; they stare directly at the potential threat and with ears up, they snort as a warning, saying, "I see you." Since many predators rely on surprise ambushes to capture their prey, the topi's method can be affective in deterring them from an attack. Furthermore, when one topi emits an alarm snort, those nearby take notice and become alert.

But do the topi use these important alarm snorts to lie to females near them? This is the question that Bro-Jørgensen and Pangle were interested in answering. To do this, they conducted extensive preliminary observations of the topi during the mating season to determine when false and true alarm snorts were used and in what contexts.

After analyzing nearly 275 hours of observational data, the researchers found several interesting patterns. To begin with, they found that true and false alarm calls were nearly identical in their frequency and duration. Additionally, they discovered that males almost always emitted false alarms when sexually receptive females were near. In contrast, males snorted significantly less when non-receptive females were near. Finally, they also found results that suggested that males tend to use false alarms when females are attempting to leave their territory.

Next, they performed a playback experiment. This test involved broadcasting over speakers the previously recorded false and true alarms toward females, in order to determine if they could discriminate the difference between the two types of warnings. As a control, the experimenters also broadcast a non-alarm sound that males emit to ensure that the females were not simply responding to the presence of the speakers.

The results of this experiment also supported their hypothesis that male topi lie to females about the presence of predators in order to keep them in their territory. Females could not distinguish between the false and true alarms, but reacted significantly less to the non-alarm sound. Furthermore, females tended to remain in the male's territory after hearing a false alarm, and males copulated significantly more after retaining the females in their territory. Therefore, the combined data indicate that topi lie to retain females within their territory. Presumably, this leads to further attempts to mate, and thus, more offspring.

The author mentions that these snorts, like many other non-sexual signals, may be especially susceptible for use as a means to lie. This is because the potential cost of ignoring true alarms is so much greater than the cost of heeding a false alarm. That is, calling the male's bluff has a chance of leading to death. In this case, it seems that, on the female's part, it is better to be safe than sorry.

Despite all this, the question still remains; does the topi know it is lying? The word 'lying' is charged with all kinds of negative connotations that suggest a malicious intent. Perhaps the male topi in question may lack the capacity to understand why grunting makes females return. This question certainly warrants further investigation, but the answer may still be far off, as it is very difficult to measure motives in non-human animals. With all this in mind, it is safe to assume that your dog can lie to you; the question remains if he actually does.