

Dialogue on Animal Language

by Dr. Richard van de Lagemaat
richardvl@inthinking.co.uk

DOLLY: I have just been to the zoo, and I was wondering: do you think that animals have language?

GUY: Animals? Hmm... Well, as it stands that is a badly formulated question.

DOLLY: What do you mean?

GUY: The word “animal” covers a spectrum of living beings, ranging from amoeba and worms at one end to apes and human beings at the other. When you ask, “Do animals have language?”, I could answer that since that we are animals, and since what we do is *by definition* language, then it is trivially true that animals have language. Nevertheless, I doubt that amoeba have a lot to say for themselves.

DOLLY: Well, apart from human beings, you would surely agree that most animals communicate with each other in one way or another - either through noises, or scents, or bodily movements. To take a well known example, bees perform a “dance” to convey information about the distance and direction of nectar sources to their fellow workers. And that surely is a rudimentary form of language.

GUY: I think we need to make a distinction here between language and communication. I would say that while bees certainly communicate with one another, they do not have language.

DOLLY: What is the difference?

GUY: Well, language is a *subset* of communication, and while all language is a form of communication, it is not the case that all forms of communication are language.

DOLLY: I would have said that the words “language” and “communication” are pretty much synonymous.

GUY: No! There are many forms of communication that no one would call language. For example, when you turn your car key in the ignition, the car starts, but no one would say the car *understands* that you want it to start. While information is certainly communicated, the communication in question is purely mechanical and has nothing to do with language.

DOLLY: As sometimes happens, our disagreement here seems to be about the meanings of words. My understanding of the word “communication” is derived from the Encyclopedia Britannica which defines it as “the exchange of meanings between individuals through a common system of symbols.” You seem to be using it in a much broader sense to include purely mechanical communication.

GUY: Well, let’s not get bogged down in semantics. My point is that bees respond to one another in an essentially mechanical way. In any case, since all they can “talk” about is nectar, it would, to say the least, be misleading to describe their dance as a form of language.

DOLLY: But how do you know that nectar is all they can talk about?

GUY: Well, given that bees have only primitive brains, I think it’s a safe bet that they don’t spend much time discussing the meaning of life.

DOLLY: O.K. To move the discussion forward, why don’t we focus on higher animals, such as monkeys? Do you think that monkeys have language?

GUY: No! I believe that language is unique to human beings.

DOLLY: But given that we evolved from chimpanzees and share 99% of our genes with them, we should surely take seriously the idea that they might have abilities similar to our own?

GUY: The fact that we share 99% of our genes with chimpanzees doesn’t tell us anything - the remaining 1% could make all the difference. Moreover, our brains account for a much bigger proportion of our body weight than do chimp brains, and a bigger relative brain size is a good indication of greater intelligence.

DOLLY: Well, let’s take a look at some of the scientific evidence. Take the case of vervet monkeys. Scientists have discovered that their alarm calls vary according to the predator that threatens them. The leopard alarm call, eagle alarm call, and snake alarm call are all different from each other, and elicit different responses from members of the group. When the monkeys hear the leopard alarm call they climb into the trees, when they hear the eagle alarm call they hide in the undergrowth, and when they hear the snake alarm call they look around in the grass. This surely proves that they have *words* for “leopard”, “eagle”, and “snake”, and that they understand what these words mean.

GUY: It proves no such thing! What your example shows is that vervet monkeys can communicate with one another about matters that are important for their survival. Rather than attribute understanding to them, I think their behaviour is best explained in terms of stimulus and response. Just as Pavlov’s dogs were conditioned to salivate whenever they heard a bell ring, so the monkeys are reacting automatically to various alarm calls. Understanding does not come into it - it is simply a matter of a particular call triggering

a particular response.

DOLLY: O.K., so what about the various experiments in which chimpanzees have been taught American sign language? One of the first stars of such experiments was a chimp called Washoe who successfully learnt more than a hundred words of sign language.

GUY: Well, from what I've read about this experiment, Washoe's main concern was with getting food and being tickled. Drilling a chimpanzee in a few bits of sign language doesn't seem so very different from training a hungry rat to press a lever that releases food.

DOLLY: You are not doing justice to the remarkable linguistic abilities shown by these chimps. For example, their ability to talk about absent objects shows that they are not simply reacting automaton-like to things in their immediate environment. Similarly, the fact that they sometimes tell lies in order to mislead their trainers suggests that rather than responding instinctively to various cues, they are using signs intentionally. Perhaps most impressive of all, they demonstrate genuine creativity by inventing new combinations of signs. To give a few examples, Washoe came up with the constructions "open food eat" for a refrigerator, "hot metal blow" for a cigarette lighter, and "listen drink" for Alka Selzer. Such creativity proves that far from responding mechanically, Washoe had a genuine understanding of the meanings of these signs.

GUY: I think you will find that more recent research has cast doubt on the validity of these experiments. According to some observers, Washoe's trainers became so emotionally involved with their subject that they lost the ability to be objective and were often simply *projecting* sign language onto Washoe's random hand movements. In the view of Steven Pinker of MIT, Washoe may actually have known as few as 20 signs. Compare that with human beings whose vocabularies consist of literally thousands of words.

DOLLY: Your talk about lack of objectivity shows that you don't really understand how social science works. You simply cannot study apes with the same dispassionate objectivity with which you can study rocks - at least, not if you want to teach them language. If you were trying to teach your child language, how far do you think you would get if you tried to do it objectively and without emotional involvement? Not very far, I'll bet! It's the same with apes. You can only teach them language if you have some kind of emotional rapport with them.

GUY: Perhaps you are right about that; but my point is that once you have made an emotional connection with an ape, you may be too keen to attribute skills to it that it does not really possess. Just as I think parents are not the best judges of their childrens' intelligence, so I doubt that someone who has spent years working with an ape can look at what is happening dispassionately.

DOLLY: You know, I'm beginning to think that you do not really have an open mind on

this topic, that you have already decided that chimps do not have language, and that you are not willing to accept any evidence that goes against your belief.

GUY: Not, at all! I am sceptical about the claims concerning primate language because I know that people have a tendency to project human qualities on to animals and that they find it difficult to be objective about them.

DOLLY: Well, let's take the more recent experiments conducted by Sue Savage-Rumbaugh on bonobo chimps. Rather than sign language, she taught her chimps to communicate using a keyboard with more than 200 symbols on it, each representing a particular word; and she has achieved results with her star pupil, Kanzi, at least as impressive as those of Washoe. Since replacing signs with a keyboard gets rid of any ambiguity about how we interpret what is going on, I don't think you can dismiss this evidence so easily.

GUY: But what exactly does it prove?

DOLLY: It proves that Kanzi has a grasp of semantics and understands the meanings of words. When his trainers say to him things like, "Please go to the office and bring back the red ball", he does just that. What's that if it is not understanding?

GUY: Once again, I would say that it is the ability to respond to signals as the result of training.

DOLLY: Listen, they set up an experiment in which Kanzi was given 600 sentences *he had never heard before*, and he was able to respond correctly to them in over 75% of cases. That is as good as what is achieved by a two and a half year old child. You can't explain that away in terms of mere training.

GUY: Even so, there is still a huge gulf between what a two year old child can do, and what a mature user of the language can do.

DOLLY: Well, at least you seem to be admitting that these chimps have a rudimentary form of language similar to that possessed by children.

GUY: I am admitting no such thing! Look, I don't think you have grasped my main point. Sure, these chimps are clever, and their trainers are dedicated; but basically they've just been taught a bunch of party tricks that don't have a whole lot to do with language. All they are doing is responding to cues from their trainers in order to get rewards. Language proper has something called syntax - rules for joining words together to form complex sentences - words like "but", "and", "or", "not" and "because" which enable us to articulate complex thoughts. Animals don't have language because they don't have syntax. When we use language, we don't just talk about our immediate desires or objects in our environment. We can formulate abstract thoughts, talk about the distant past and future, and meditate on the meaning of life. Even the people who

work with chimps and gorillas readily admit that their subjects can do none of these things.

DOLLY: You know, you keep raising the bar. You said vervet monkeys were just reacting to signs, so I gave the example of Washoe and his creative use of language. You questioned the validity of that evidence, so I then gave you the example of Kanzi where the evidence is beyond question. Now you suddenly redefine what you mean by language. I am not claiming that what the chimps can do is the *same* as what you and I can do: I am claiming that it is *sufficiently similar* to deserve the name of language.

GUY: Sufficiently similar? I don't think so! To describe what these chimpanzees do as a form of language is like describing what champion long jumpers do as a form of flight. The best athletes may be able to jump more than 8 metres, but no matter how hard they train - or how many illegal drugs they take - they will never be able to fly like an eagle flies. And just as human beings are not built for flight, so chimpanzees are not built for language.

DOLLY: I think your analogy is misleading and simply confuses the issue. As I said earlier, my impression is that you have decided in advance of the evidence that animals do not have language, and this makes me wonder about your motives. Perhaps you will feel more comfortable about exploiting animals if you can convince yourself that there is an unbridgeable gulf between human beings and the rest of the animal kingdom

GUY: Listen, I, too, am opposed to the exploitation of animals and I believe in animal rights. However, the reason that animals have rights derives from the fact that they are able to feel pain, and it has nothing to do with whether or not they have language. So instead of trying to project human qualities onto animals, why don't you just accept that they are different from us?

DOLLY: Well, perhaps you should remember what you said at the beginning of the discussion - namely, that we, too, are animals. In any case, this particular animal is getting tired. Perhaps it is time to stop.