

# Who's an animal?

## An examination of human thought and animal language

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*A human foetus, with no more human feeling than an amoeba, enjoys a reverence and legal protection far in excess of those granted to an adult chimpanzee. Yet the chimp feels and thinks and ... may even be capable of learning a form of human language.<sup>1</sup>*

The debate over the ethical treatment of animals, and the extent to which altruism plays a role therein, is informed by the kinds of thoughts and feelings we attribute to them. Why is it for one group of people acceptable to consider animals as “raw meat”, and therefore have no difficulty seeing them treated with striking cruelty, while another group goes to incredible lengths, including intimidation and threats of violence to other humans, to free chickens from their too-small pens? The question of whether or not animals can be said to think is significant and relevant to society because it has consequences for how we treat them in farming and research. Legal and moral decisions made on the basis of discussions surrounding this topic can have knock-on effects in economics, law, the environment and medicine.

In this essay I will look at what research has revealed about how some animals communicate, and what this might tell us about whether or not it can be said that they use language. I will then ask the questions, what are the differences between animal communication and human language? And based on what we know about animal behaviour, can we say that animals are thinking when they communicate?

We might begin by asking what is physically going on in our brains when we speak, and compare that to what we know about animal brains. Lecours demonstrated that while we rely heavily on the Broca's and Wernicke's areas of the temporal cortex when speaking, localization to those areas is not absolute.<sup>2</sup> And Griffin notes that similar areas of the brain are present in other mammals.<sup>3</sup> It was thought that the lateralization of speech control in the

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<sup>1</sup> Dawkins, *The Selfish Gene* (1989) p.10

<sup>2</sup> Lecours et al., 1984

<sup>3</sup> Griffin, *Animal Minds* (2001), p. 146

left temporal cortex was responsible for our superior mental ability based on language,<sup>4</sup> however research has shown that the lateralization of control of singing in songbirds has some parallels to the lateralization of human speech control.<sup>5</sup> Griffin concludes that “human mental superiority, enormous as it is, does not seem to be based on any single, unique feature of neuroanatomy.”<sup>6</sup> It seems that we must accept that there are animals in possession of neuroanatomical mechanisms which share properties with our own.

It should not surprise us then to observe certain animals in nature using what would appear to be language. Chickens have a repertoire of distinct sounds which they use to warn other chickens of specific threats.<sup>7</sup> Dawkins argues that this type of behaviour arises not only from the “will” of the gene to survive to the next generation, but also to protect the same genes present in other chickens nearby.<sup>8</sup> Why else would a chicken risk its own safety to warn others of the danger? When seen in this light we could interpret these warnings as mechanistic utterings over which the chicken has no conscious control; the sounds it makes are nothing more than an expression of the chicken’s genes. Griffin refers to something he calls “groans of pain” – involuntary sounds made by a living thing which are “merely emotional signals devoid of any meaning except to convey the state of arousal of the caller.”<sup>9</sup> The rumbling stomach of one animal in a group may have a behavioural effect on the others, but this would not imply that by making that sound the hungry animal is consciously communicating with them. Such, suggests Griffin, may be all animal sounds. We might even be tempted to see some human communication as involuntary, in the sense that we are not always able to consciously control the things we say.<sup>10</sup>

In order to assess whether or not the chicken is consciously making a particular sound, we might wonder if the chicken could make that sound even if the emotional state associated with it with is not present. Charles Munn presents us with compelling evidence that birds are indeed capable of doing so: he made observations of a bird in the Amazon using a predator alarm call deceptively to trick another bird into abandoning its chase of an insect it was about

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<sup>4</sup> *ibid.*, p. 143

<sup>5</sup> McCasland, 1987

<sup>6</sup> Griffin, *Animal Minds* (2001), p. 146

<sup>7</sup> Evans, Evans and Marler, 1993

<sup>8</sup> Dawkins, *The Selfish Gene* (1989)

<sup>9</sup> Griffin, *Animal Minds* (2001), p. 160

to capture.<sup>11</sup> The conclusions we might draw from this are interesting – is this an instance of language used as a means to control the behaviour of another being? Could the bird carrying out the deception be said to have a superior intellect, or possess a higher order of intentionality perhaps bordering on consciousness? Donald Davidson reminds us that animal communication is stimulus-bound, as it pertains only to the perceptually accessible features of the environment.<sup>12</sup> The trickery of the bird, while demonstrating a certain amount of cleverness, is a direct result of what it perceives in its immediate vicinity. We would be hard pressed to imagine a chicken making a warning sound as a joke, as a person might shout “fire!” in a crowded theatre.

There is an aspect of human language which encompasses more than just the ability to lie: we can use natural language to tell stories which exist only in our imagination. This comes down to our ability to misuse a tool which was initially used to communicate reality – languages don’t exist to write literature but still we do. Did new uses for language help to transform not only the language itself but also the minds of its users? The mathematician A. N. Whitehead writes: “By relieving the brain of all unnecessary work, a good notation sets it free to concentrate on more advanced problems, and in effect increases the mental power of the race”.<sup>13</sup> Did abstract language in some way relieve our minds of some of the drudgery of existence, such that we could concentrate on more advanced problems? What kinds of evolutionary pressures would have to exist in order for this kind of transformation to take place?

Primates exist in complex social environments, and there is evidence that this has had an impact on the kinds of communication that has developed among certain species. The screams of juvenile rhesus macaques convey information about the social status of the antagonist.<sup>14</sup> Threat-grunts of female Old-World monkeys may function as “vocal alliances” in nepotistic support systems to maintain their family’s rank.<sup>15</sup> So there would seem to be social agreement within some primate groups on what certain vocalizations mean, and these kinds of

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<sup>10</sup> *ibid.*

<sup>11</sup> Munn, 1986

<sup>12</sup> Davidson, 1974

<sup>13</sup> quoted in Cajori, *A History of Mathematical Notations* (1929) p. 332

<sup>14</sup> Gouzoules, Gouzoules and Marler, 1984

<sup>15</sup> Cheney and Seyfarth, 2007

agreements have their parallels in human societies. In Japanese, you must take into account the social status of both the person you are speaking to and the subject you are speaking of. Searle points to the social agreement of what the symbol of a unit of currency can mean<sup>16</sup>. The actual buying properties of a €100 note do not exist “inside” the note itself, rather they exist in the social reality that declares and agrees on its properties. So could we say that the calls and screams of animals are symbols for a deeper level of social agreement between the members of a species? Even if this is so, it does not really bring us any closer to an understanding of whether or not animal language can be equated with animal thought. But it might tell us something about how we came to adopt the idea of agreeing on symbolic meaning in our evolutionary past.

An astonishing characteristic of human language is the speed of its evolution. Dawkins places humans in a separate category of animal based on the fact that we possess special kinds of replicators called *memes*.<sup>17</sup> Memes propagate themselves in much the same way as genes do, but do so through imitation instead of through sperms and eggs. Things such as culture and language are transmitted between individual minds and change over time as a result of evolutionary pressures. Dramatic changes can take place within just a few generations: Dawkins uses as an example the difference between Chaucer’s English and our own. However, memetic evolution seems not to be restricted to humans. Jenkins describes how saddleback bird songs evolve in a way which is analogous to the evolution of human language.<sup>18</sup> This raises an interesting question: if human language and thought developed as a result of evolutionary forces, could we imagine that under certain circumstances some other species of animal may at some time in the future evolve in a similar way? And this leads us to the question of what environmental pressures we were exposed to in our evolutionary history which forced us to develop human language and thought.

While we may never be able to answer this in a satisfactory way, Dennett’s *intentional stance* might provide some insight.<sup>19</sup> Adopting an intentional stance speeds up the act of decision when confronted with complex survival or social situations. A mouse which can predict the actions of a cat stands a better chance of survival. A human male which can

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<sup>16</sup> John Searle, *The Construction of Social Reality* (1995)

<sup>17</sup> Richard Dawkins, *The Selfish Gene*, (1989) p. 189

<sup>18</sup> Jenkins, 1978

predict the behaviour, or guess the emotional state of a female stands a better chance of mating with that female. What makes this idea compelling from a Darwinian perspective is that evolutionary “arms races” can develop, during which extraordinary advances in genetic development and variety play out. The male peacock’s feathers evolved because female peacocks would only mate with the male who put on the most impressive display. Perhaps it is not too fanciful to think that somewhere in our past there was an intra-species arms race – a primordial “battle of the sexes” – during which humans who were more adept at elegant thought and communication had a higher chance of transmitting their genes to the next generation.<sup>20</sup> This view becomes more plausible if we consider human culture, language and thought as being phenotypic expressions of the gene.<sup>21</sup>

This all seems to go against an interpretation one might adopt of Davidson’s discussion of communication and language,<sup>22</sup> which sees human thought as different from animal thought in *kind*, not in *degree*. Hofstadter proposes that the difference lies in the fact that at some point during our evolution we developed a category system in our language which was *arbitrarily extensible*.<sup>23</sup> Concepts could be nested within each other, and that nesting could go on to arbitrary degrees. We might compare this to what Dennett refers to as *higher-order intentionality*.<sup>24</sup> Humans are capable of nesting intentionalities to absurd levels: “he knew that I knew that she thought that he might wish that they believed he was falling in love.” Our ability to parse this complex sentence into an understandable thought might be telling us something about how our minds evolved to cope in complex social situations.<sup>25</sup> In other words, the social environment in which we lived might have grown to a level of complexity wherein individuals who were best at understanding and anticipating the thoughts of others in the group would stand a better chance of passing on their genes to the next generation.

Can animals think as humans do? No. While we do see an enormous variation in thought-like processes between different species of animals, from the mechanistic

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<sup>19</sup> Dennett, 1987

<sup>20</sup> Susan Blackmore, in *The Meme Machine* (2000), points to the fact that artists, musicians and poets seem to be more successful at acquiring mates than average humans.

<sup>21</sup> Richard Dawkins, *The Extended Phenotype* (1982)

<sup>22</sup> Davidson, *Thought and Talk* (1974)

<sup>23</sup> Hofstadter, *I am a Strange Loop* (2007) p. 83

<sup>24</sup> Dennett 1987

<sup>25</sup> Dawkins, *The God Delusion* (2006) p. 183

intentionality of cockroaches to the intricate social nuances which some birds and primate species possess, there seems to be an enormous gap between these kinds of processes and human thought. Can humans think like animals? Yes, since there seem to be some remarkable evolutionary leftovers in our species. When we scream with fright are we not giving a warning call to those around us? And are we not sometimes prone to Griffin's "groans of pain"? We might then ask: if an individual were to lose that which we define as the uniquely human characteristic of thought, as a result of accident or illness, are we to care for her in a hospital? Euthanize her? Or lock her in a cage in order to study the allergic effects of cosmetics on her skin?

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## References

- Blackmore, S. J. *The Meme Machine* (Oxford: Oxford University Press, 2000)
- Cajori, F. *A History of Mathematical Notations*, Volume II (La Salle, Illinois: Open Court Publishing Co., 1929)
- Cheney, D.L., Seyfarth, R.M. *Baboon Metaphysics: The Evolution of a Social Mind* (Chicago: University of Chicago Press, 2007)
- Davidson, D. "Thought and Talk" in Samuel Guttenplan, ed., *Mind and Language: Wolfson College Lectures 1974* (Oxford: Clarendon Press, 1974)
- Dawkins, R. *The Extended Phenotype* (Oxford: W. H. Freeman, 1982)
- Dawkins, R. *The Selfish Gene* (Oxford: Oxford University Press 1989)
- Dawkins, R. *The God Delusion* (Boston: Houghton Mifflin Co., 2006)
- Dennett, D. C. "True Believers: The Intentional Strategy and Why it Works," *The Intentional Stance* (Cambridge, MA: MIT Press, 1987), 13-36
- Evans, C.S., Evans, L. & Marler, P. "On the meaning of alarm calls: functional reference in an avian vocal system," *Animal Behaviour* 46 (1993): 23-38.
- Gouzoules S., Gouzoules H., Marler P. "Rhesus monkey (*Macaca mulatta*) screams: representational signalling in the recruitment of agonistic aid," *Animal behaviour* 32 (1984): 182-193
- Griffin, D. R. *Animal Minds* (Chicago: University of Chicago Press 1992)
- Hofstadter, D. R. *I am a Strange Loop* (New York: Basic Books 2007)
- Jenkins, P.F. "Cultural transmission of song patterns and dialect development in a free-living bird population" *Animal Behaviour* 26 (1978): 50-78
- McCasland, J.S. (1987) "Neuronal control of bird song production," *Journal of Neuroscience*, Vol 7 (1987): 23-39
- Munn, C. A. "Birds that 'cry wolf'," *Nature* 319 (1986): 143 - 145
- Nespoulous JL, Joannette Y, Béland R, Caplan D, Lecours AR. "Phonologic disturbances in aphasia: is there a "markedness effect" in aphasic phonetic errors?" *Advances in neurology* 42 (1984): 203-14
- Searle, J. *The Construction of Social Reality* (New York: The Free Press; Harmondsworth, Middlesex: Penguin Books, 1995)