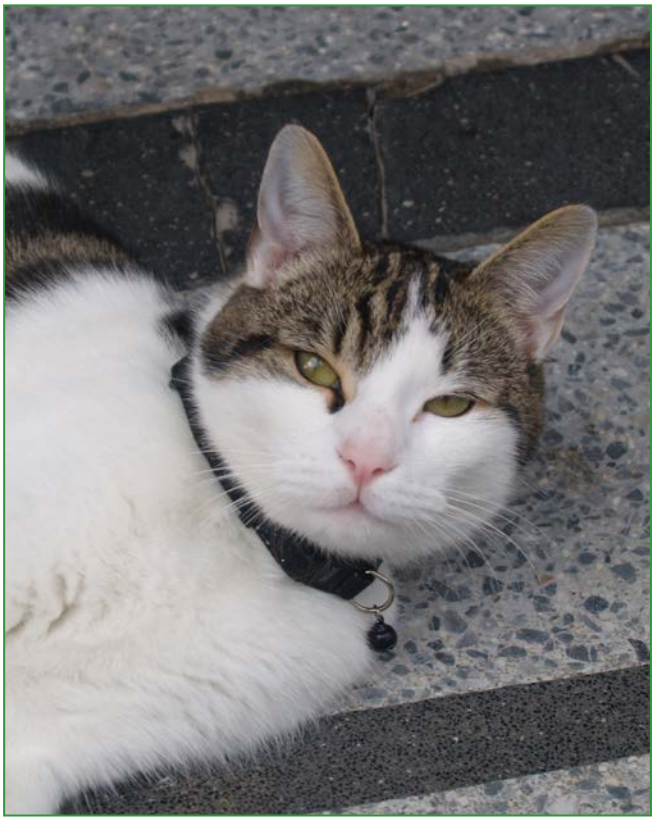
CHAPTER 6 HOW ANIMALS COMMUNICATE

Communication involves transmitting information to others. The information which is transmitted can be a message, meaning, signal, and so forth. The information may be sent and detected using a variety of different sensory modalities. Animals use communication to interact with members of their own species by using code that they understand and can easily interpret. They also communicate with other species, including humans. Humans communicate with one another both verbally and non-verbally using body language. Animals may use vocalisations and also non-vocal means of communication. However, animals can also convey messages using senses which humans do not possess.

Introduction

We know what another human means by the nod of their head, a hand gesture, or the raising of an eyebrow. We can read another person's non-verbal communication even better if we know them well. Often, humans can read the non-verbal communication of their pet or farm animals, and vice versa. The cat sat at their feet staring at them probably wants to sit on its owner's lap. The dog scratching and whining at the door is trying to indicate to its owner that it wants to go outside. Animals know how to get their message across to humans e.g. a bird may come into the kitchen and repeat the same noise it used when it was a chick to indicate that it is hungry. Animals can also understand messages from humans, where a click of the tongue may mean "follow me" or a toss of the head can mean the same thing.

As with other aspects of animal behaviour, communication serves a purpose. It has evolved in different ways in different species.



What is Communication?

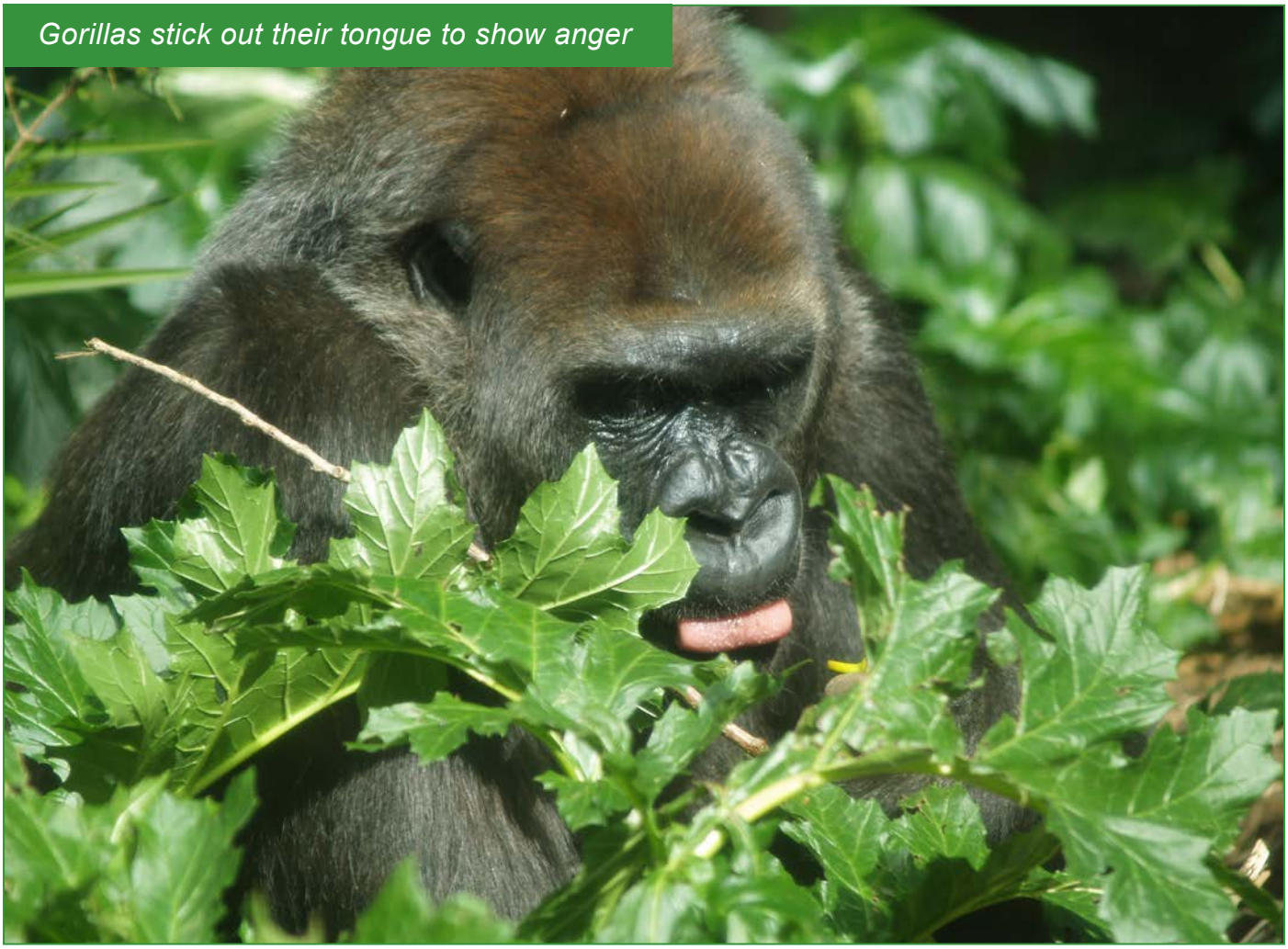
Communication amongst animals is a form of transferring information. This information may be transmitted in a number of different ways so as to create an effect on the others. Amongst the most commonly known methods of communication are:

- Verbal
- Visual
- Olfactory
- Auditory
- Vibration
- Electrical

The purposes behind different forms of communication vary greatly. Communication is an interaction with other individuals with the intention of receiving a reaction. In most cases, communication is beneficial to the sender however this is not always the case. In some instances communication can be detrimental to the welfare of the sender. For instance, an animal's call can alert predators to its whereabouts.

Some have argued that communication allows the sender to manipulate the receiver by affecting how they behave towards them. Others have suggested that communication is a mutual process which benefits both the sender and the recipient.

Gorillas stick out their tongue to show anger



Types of Animal Communication

Communication should not be confused with language - which refers to human forms of verbal communication. Although many people use the word ‘language’ to refer to animal communication, no animals use words. ‘Animal language’ might be used loosely to describe any form of communication where animals transmit a message to attain a desired result with a specific intention.

Rather than speaking like humans, sign language has developed as a key form of communication amongst great apes. In fact, primates don’t seem to have proper control of their lower jaw or tongue, and their vocal cords are not developed enough to pronounce “words” as humans do. Instead, their highly evolved movements and manual dexterity have become important factors in communication. They use sign language to express their needs, thoughts or objections towards certain objects or situations. Sign language may be observed in primates through the use of gestures, for example, supplication – when asking for something e.g. food, an object, and so on.

Primates have been taught to communicate with humans in various ways. Some of the acquired learning experiences include the use of special keyboards where they push buttons with different symbols that represent different words, which are spoken out loud by another computer connected to this keyboard.

Communication in Primates

As well as living in social groups, communication is very important to primates. In chimpanzees, for example, vocal and visual communication is very important. They use a range of facial expressions and postures. Their hairless faces allow facial expressions to play a role in close contact communication. Examples include:

- Full closed grin (a response to frightening stimuli which leads to a fear response in others)
- Lip flip
- Sneer
- Pout

Primates convey information through visual signals by changing the shape of their mouth and facial muscles to produce an expression on their face. Some theorists have argued that this is one of the factors that led to the development of verbal communication in humans. Other theorists have argued that these sophisticated facial expressions, and variations of them, make it easier for primates to recognise individuals, and especially to correctly pick out their parents.

As well as facial expressions, primates use their body stance and position to provide information to others. A submissive position includes extending the hand, bobbing and crouching. Aggressive positions include the individual trying to appear larger than they are. To do this they may stand on two feet (bipedally), hunch their shoulders, and wave their arms. They

might also drum on trees by beating their hands and feet against them so as to produce a dramatic display.

Primates also use sounds to create signals when they interact with another individual, or as a group. Drumming is also used in this way. Chimpanzees drum during displays, interactions with other chimpanzees, when arriving at a large food source, and when travelling.

Primates use vocal communications to show a range of intentions and emotional states. Vocalisations can also affect the behaviour of the individuals that hear the call. The 'pant-hoot' is an important form of vocal communication in chimpanzees. This is often heard in adult individuals and tells others about social excitement, food enjoyment and sociable feelings. The pant-hoot has four parts:

- It starts with soft hoots.
- Then, there is an increase in volume and higher pitch, and a series of quick pants.
- This is followed by the climax of the call which is made up of screams and occasionally barks.
- Then the screams die down into soft hoots.

Another type of call known as a 'pant-grunt' is used to show submission towards more dominant individuals.

'Distance calls' are used to tell others about food sources or danger and to establish the location of other groups in the area. It can be given whilst travelling, feeding and meeting other communities.

The 'bark' is also occasionally heard. The 'short bark' tends to be used during hunting and the 'tonal bark' is given to indicate danger, such as when large snakes are spotted.

Wolves howl to call other wolves from their pack.

Communication in Dogs

Dogs communicate through sounds, scent, body posture and facial expressions. Scent is their main means of communication as it's their most highly refined sensory ability. The chemical pheromone secreted in the scent is what dogs actually respond to. Pheromones are mainly present in the dogs saliva, faeces, urine, vaginal and preputial secretions, and in their tail glands (including anal, perianal and dorsal). They influence a dog's immediate responsive behaviour towards other dogs. For example, when a dog cocks its leg or sniffs the urine of other dogs, it is finding information on the other dog's reproductive condition, and its authority and power.

Communication in Birds

Birds seem to communicate with one another using birdsong primarily to defend their territories and to attract a mate. The dawn chorus is considered to occur because during dawn there is little light to look for food and many insects are not yet active, so birds use this time to let other birds know where their territory is. It also means that males can let females of the same species know where they are. Different species may have more than a dozen different types of call each of which are believed to serve a slightly different purpose.

Birds seem to be born with an innate capacity to sing but their songs are honed through learning during a critical period soon after birth. It seems that there is slight variation from one area to the next in terms of the songs each species uses. They have a kind of 'dialect'. These dialects are picked up through imitation of other birds and passed down through generations.

Birdsong has been found to be processed in one side of the brain much like language in humans. However, this does not imply that birdsong is a type of language as such.