

## **Distinctive features of human language**

Animal language and Great ape language:

A number of features, many of which were described by Charles Hockett and called design features set human language apart from communication used by non-human animals.

Communication systems used by other animals such as bees or apes are closed systems that consist of a finite, usually very limited, number of possible ideas that can be expressed. In contrast, human language is open-ended and productive, meaning that it allows humans to produce a vast range of utterances from a finite set of elements, and to create new words and sentences. This is possible because human language is based on a dual code, in which a finite number of elements which are meaningless in themselves (e.g. sounds, letters or gestures) can be combined to form an infinite number of larger units of meaning (words and sentences). However, one study has demonstrated that an Australian bird, the chestnut-crowned babbler, is capable of using the same acoustic elements in different arrangements to create two functionally distinct vocalizations. Additionally, pied babblers have demonstrated the ability to generate two functionally distinct vocalisations composed of the same sound type, which can only be distinguished by the number of repeated elements.

Several species of animals have proved to be able to acquire forms of communication through social learning: for instance a bonobo named Kanzi learned to express itself using a set of symbolic lexigrams. Similarly, many species of birds and whales learn their songs by imitating other members of their species. However, while some animals may acquire large numbers of words and symbols,<sup>[note 1]</sup> none have been able to learn as many different signs as are generally known by an average 4 year old human, nor have any acquired anything resembling the complex grammar of human language.

Human languages differ from animal communication systems in that they employ grammatical and semantic categories, such as noun and verb, present and past, which may be used to express exceedingly complex meanings. It is distinguished by the property of recursivity: for example, a noun phrase can contain another noun phrase (as in "[[the chimpanzee]'s lips]") or a clause can contain another clause (as in "[I see [the dog is running]]"). Human language is the only known natural communication system whose adaptability may be referred to as modality independent. This means that it can be used not only for communication through one channel or medium, but through several. For example, spoken language uses the auditive modality, whereas sign languages and writing use the visual modality, and braille writing uses the tactile modality.

Human language is unusual in being able to refer to abstract concepts and to imagined or hypothetical events as well as events that took place in the past or may happen in the future. This ability to refer to events that are not at the same time or place as the speech event is called displacement, and while some animal communication systems can use displacement (such as the communication of bees that can communicate the location of sources of nectar that are out of sight), the degree to which it is used in human language is also considered unique.