

# Variation of language and communication in chimpanzees (pan troglodytes) and bono...

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Many species can communicate with one another although they have very distinct means of communication. Communication has often been used as a characteristic to define what makes us human (Fröhlich, Kuchenbuch, Müller, Fruth, Furuichi, Wittig, Pika, 2016). There are many ways of communicating with an individual, such as talking or hand signals. Any form of communication or language is needed for survival, especially in the animal kingdom. Chimpanzees (*Pan troglodytes*) can communicate with one another by signaling others of danger through auditory and visual signals (Dezecache, Crockford & Zuberbühler, 2019). Without any type of communication, there can be negative consequences for the animal.

The purpose of researching language and communication in animals is to show how there can be many distinct forms of communication. Contrary to the general belief that vocals are a key player in communication, gestures are the primary means of communication (Fröhlich et al., 2016). The first study “Unpeeling the layers of language: Bonobos and chimpanzees engage in cooperative turn-taking sequences” aims at changing the perception that humans are the only living organisms capable of a cooperative conversation (Fröhlich et al., 2016). Indeed, other researchers have argued that the main difference of language between humans and the rest of the animal kingdom is the lack of cooperation in their communication (Fröhlich et al., 2016).

However, this study hypothesizes that the ways of living greatly influence our communication styles and are defined by interactional intelligence which is not limited to humans (Fröhlich et al., 2016). They also wanted to find out if bonobos are a good species to study the roots of human language (Fröhlich et al., 2016). The study “The development of communication in alarm

contexts in wild chimpanzees” displays how communication is impacted by previous knowledge of a situation, it is a learned behaviour from elders. These studies help to further explore how communication is not constricted to human vocabulary.

To test the hypothesis of the first study, the scientists observed the interactions between a mother and her infant of two species living in the wild (Fröhlich et al., 2016). They chose to focus on chimpanzees (*Pan troglodytes*) and bonobos (*Pan paniscus*) because they are the most related species to humans (Fröhlich et al., 2016). The criteria observed were that the conversation took place between different parties, with an alternation between them, adjacently placed and ordered (Fröhlich et al., 2016). They also took into account the body orientation, the gaze, as well as the distance at the start of the exchange between the two animals (Fröhlich et al., 2016). The research in the second study focused on young chimpanzees in the Budongo Forest Reserve in Western Uganda, whether they are dependent on their mother (infancy) or just beginning to find independence (juvenile) (Dezecache et al., 2019). An imitation spider that resembled an unknown species that was not found on the reserve was manipulated by a human out of sight to view how the young chimpanzees would react to the danger (Dezecache et al., 2019). This method will aim to find out how these young chimpanzees will communicate while there is danger nearby (Dezecache et al., 2019).

The first study found that all the pairs frequently communicated to one another in exchanges like a request and an answer, as well as participation

frameworks (Fröhlich et al., 2016). The latter is used to describe how an animal indicates to whom his gestures are addressed, for example by looking at the recipient (Fröhlich et al., 2016). They observed that not only did the mother and infant regularly have such exchanges, but they took place at approximately the same pace as human conversation (Fröhlich et al., 2016). It also demonstrates how the mother had different ways of communicating the same messages to her infant. (Fröhlich et al., 2016). Although the two species had some similarities in communication styles like the organization or the cooperative nature of their exchange, they also have differences (Fröhlich et al., 2016). Chimpanzees spend more time negotiating while bonobos tend to anticipate the outcome (Fröhlich et al., 2016). The findings of the second study mention two main ways chimpanzees communicate danger to their peers (Dezecache et al., 2019). The first way was through making some sort of auditory noise which can sound like whimpering or shouting (Dezecache et al., 2019). This form of communication within chimpanzees claimed to be more effective with age (Dezecache et al., 2019). To identify different types of hollering and what they mean, there must have been a previous association with that sound to a danger (Dezecache et al., 2019). An older chimpanzee can identify what is dangerous and how to translate that danger to a fellow chimpanzee. The second way chimpanzees communicate danger was through eye contact that would go to and from the danger repeatedly, known as gaze alterations (Dezecache et al., 2019). The use of both methods was common in both young chimpanzees and older chimpanzees.

In conclusion, human and animal communication resemble each other far more greatly than previously thought by scientists. There is no limit to what communication or language involves. The techniques vary throughout different species, each with their own ways of interacting with one another. By observing them, we can better understand the evolution of human conversation.