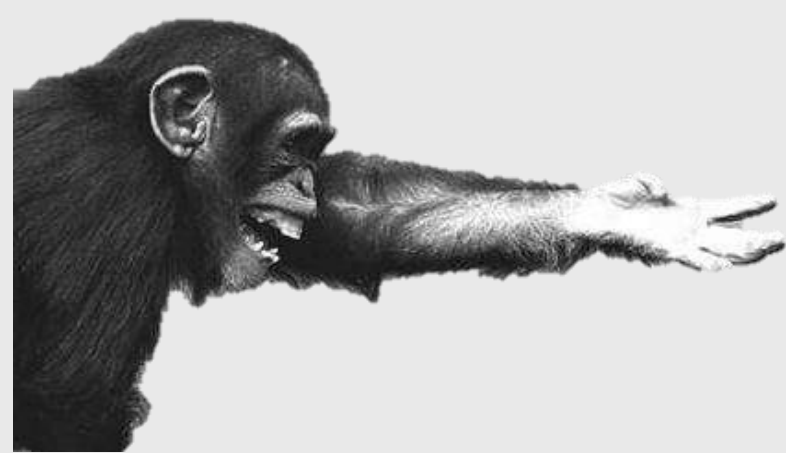


# Communicative gestures in 8-12 months infants: a phylogenetically comparable approach



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## Introduction

The cognitive processes underlying the language capacity could have evolved from a gestural-visual modality of communication. Several studies have shown that chimpanzees' gestural communication resembles the one found in human infants at a pre-linguistic stage.

The main field of research in human gestures is focused on the function of these communicative acts, classifying them in deictic and representational gestures. Deictic gestures are the first gestures to emerge and seem to have a primordial role in pre-verbal communication.

To contribute to methodologically comparable approaches in studies on human and non-human primates, this study focused on the firsts communicative gestures of human infants using the descriptive approach typically found in the communicative research on non-human primates, great apes in particular.

## Material and Methods

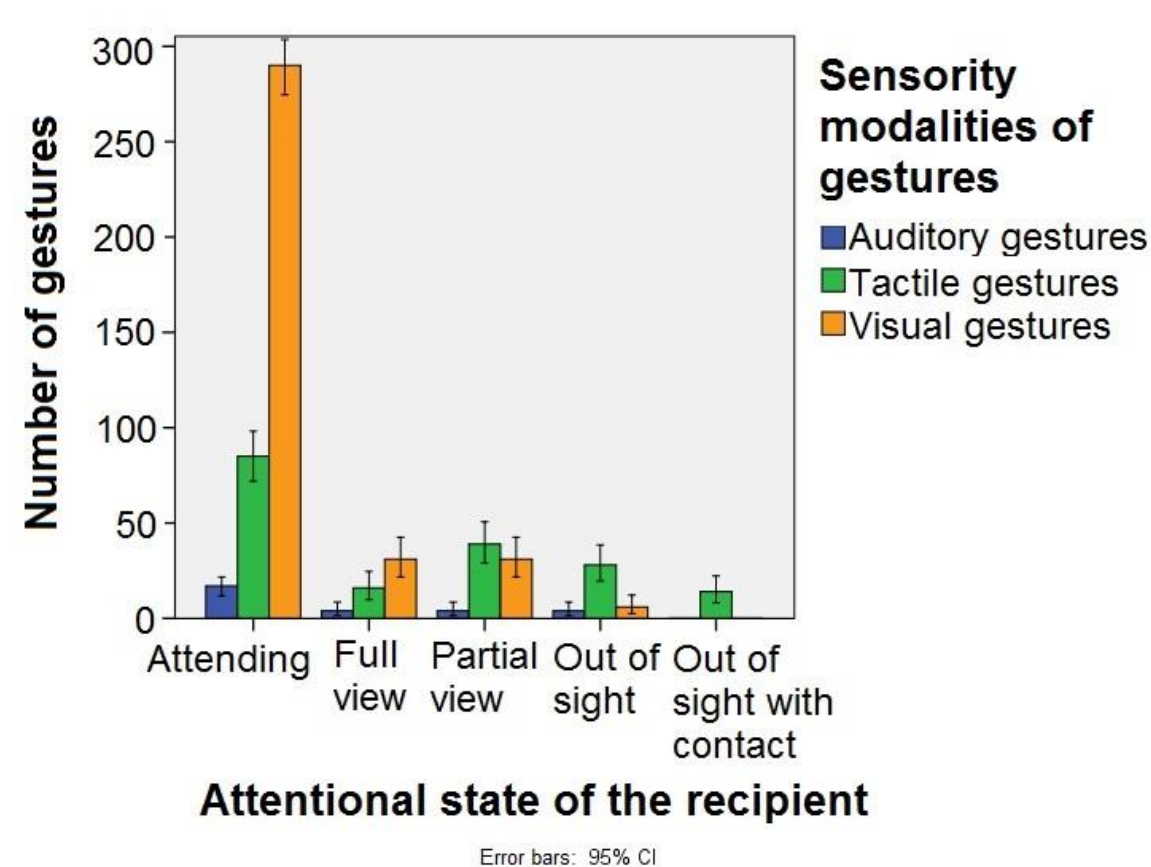
The sensory categories of the first communicative gestures of 8 European-learning infants between 8 and 12 months were analyzed.

Behavioral data were collected using 10 minutes focal sampling, with a total of 5 hours of recording on each subject, over a 3 months period.

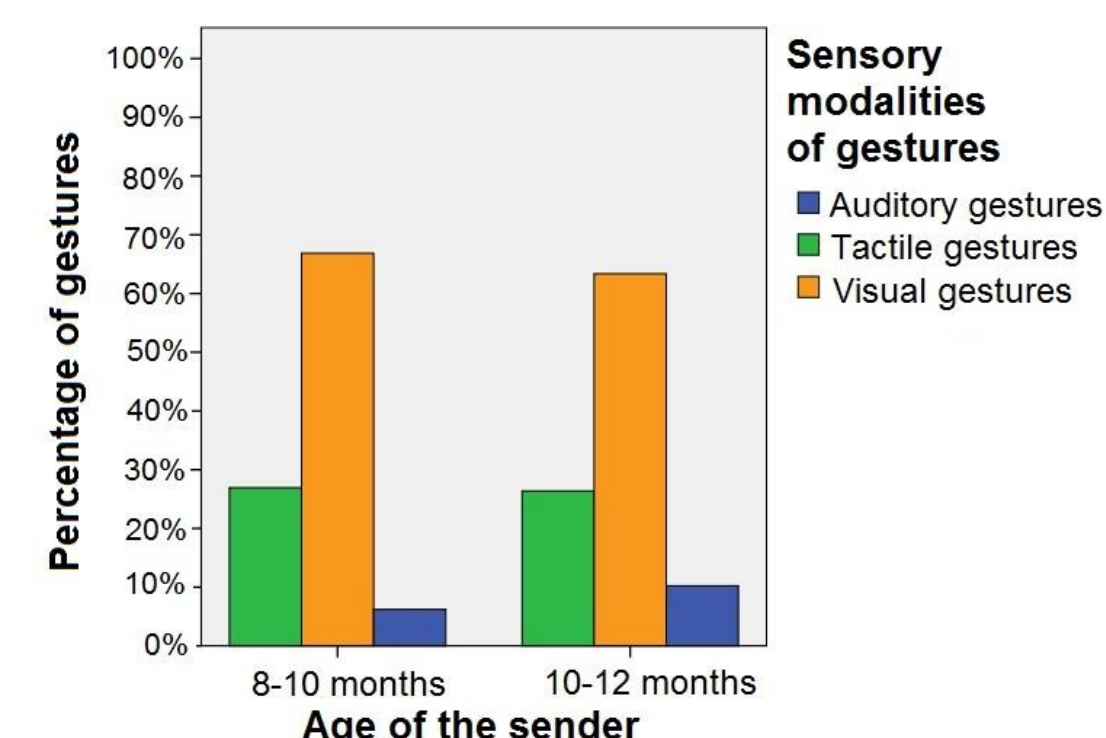
The use of the different **sensory categories** was examined, as well as how these categories varied depending on the **gender** of the sender, and on the **attentional state** of the audience. Finally we also analyzed **gesture efficacy** in function of age of the recipient, and how **sensory categories developed in time**.

## Results

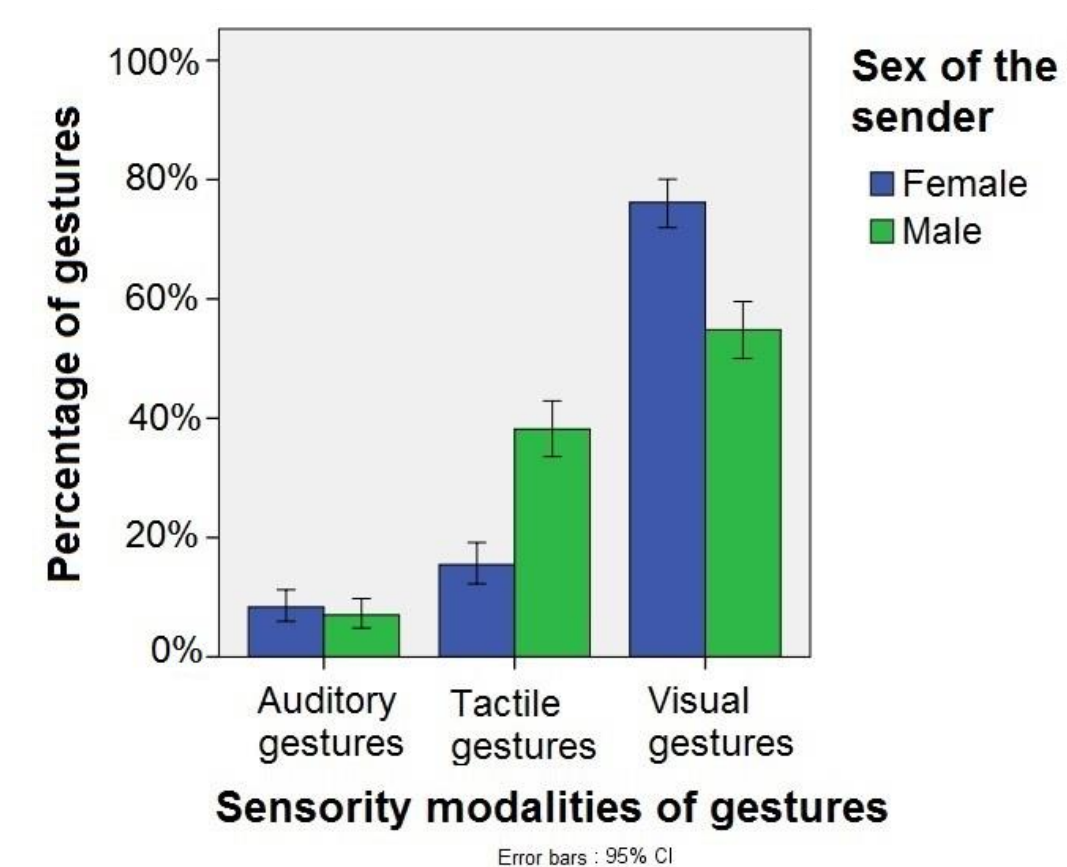
Human babies show a higher number of visual gestures (65,59%), followed by the tactile modality (26,74%), and finally by a small amount of auditory gestures (7,67%).



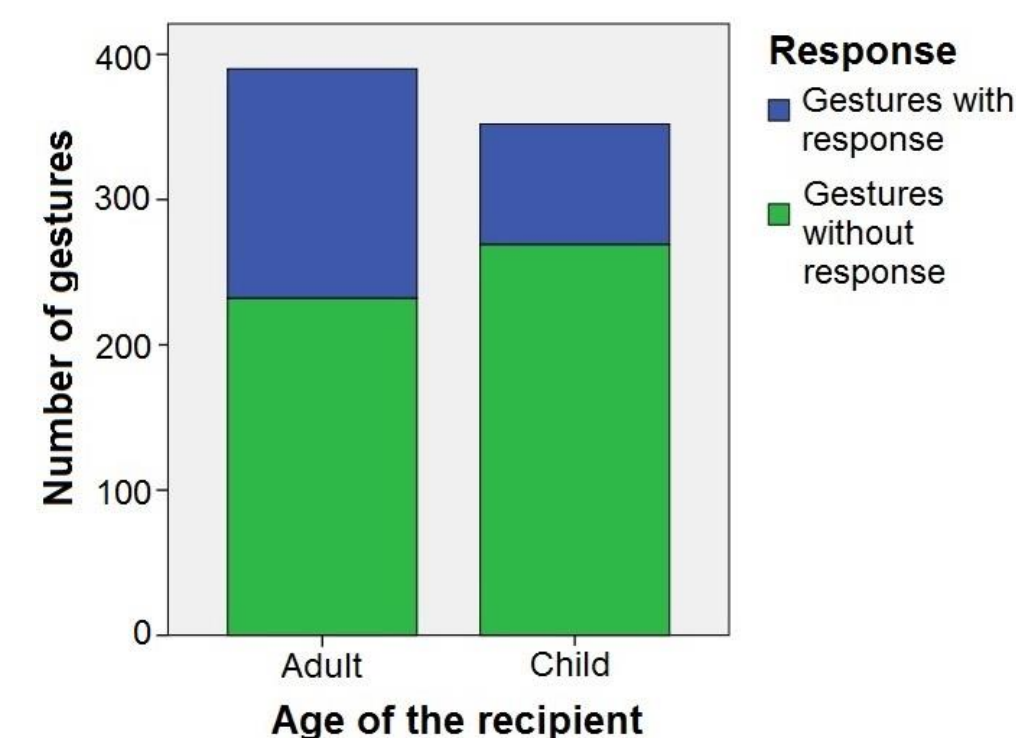
Visual gestures were mainly used when the recipient was attending, contrasting with the auditory and tactile modalities that were more often chosen when the recipient was out of the field of view of the sender.



There were no significant differences in the use of sensory categories between 8-10 months' and 11-12 months' infants.



In relation to gender, girls gesticulate more than boys. Girls used more visual gestures and boys have preferred the tactile modality more than girls.



Gestures were more likely understood as communicative acts when directed to other children rather than to adults.

## Conclusion

A comparison with studies on communicative gestures of human phylogenetic closest relatives [Schneider et al., 2012] suggests a continuity in the preference of the perceptive channels used in gestural communication at a pre-verbal stage.

The majority of gestures use the visual channel, followed by the tactile modality and then by the auditory gestures. The number of gestures varies according to the gender of the sender: females gesticulate more in humans, contrary with what occurs in chimpanzees. As it

happens in some non human primates, the attentional state of the audience is taken into account. The number of gestures seems not to vary according to the age of the sender, but the efficiency of gestures seems related with the age of the recipient.

This study may provide important insights into some evolutionary aspects of language. A gestural theory of the origin of language is supported by the results, but the possibility that language could have evolved from a multimodal domain cannot not be discarded.

## References

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