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# Language and Gesture Evolution

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## Introduction

In humans, gestural communication is closely intertwined with language: adults perform a variety of manual gestures, head movements and body postures while they are talking, children use gestures before they start to speak, and highly conventionalized sign systems can even replace spoken language. Because of this role of gestures for human communication, theories of language evolution often propose a gestural origin of language. In searching for the evolutionary roots of language, a comparative approach is often used to investigate whether any precursors to human language are also present in our closest relatives, the great apes, because of our shared phylogenetic history. Therefore, the aim of this symposium is to present recent progress in the field of language evolution from both a developmental and comparative perspective and to discuss the question if and to what extent a comparison with nonhuman primates is suitable to shed light on possible scenarios of language evolution.

## Gestural Communication in Wild Chimpanzees (Cat Hobaiter)

The gestural communication of great apes has provoked considerable interest by demonstrating striking evidence for the flexible and intentional use of a large communicative repertoire, key aspects of human language. We have recently expanded the extensive work in captivity, with the

first systematic study of gesture in a wild ape. In this presentation I will describe the gesturing of free-ranging chimpanzees in the Budongo forest, Uganda. Here we find that chimpanzee gestures are used in intentional communication by individuals of all ages, across a wide range of contexts, including evolutionarily urgent ones. I will discuss possible explanations for the combination of gestures into sequences, including: a) persistence following failed communications, and b) the idea that young chimpanzees may employ sequences as a fail-safe strategy to explore and fine-tune a very large repertoire of available forms, down to a more specific repertoire in regular use. I will examine flexibility in gestural communication, considering: a) whether or not gestures have specific meaning, b) if this is consistent across signalers, and c) whether or not the extent of flexibility in gestural repertoire varies with factors such as social context.

## What Can Gestures of Nonhuman Primates Tell us About Language Evolution? (Katja Liebal)<sup>1</sup>

Theories of language evolution usually argue for a unimodal origin of language, either gestural or vocal. Many of them draw on comparative evidence of the communicative

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<sup>1</sup> This work has greatly benefited from discussions with Katie Slocombe, University of York, and Bridget Waller, University of Portsmouth. See also Slocombe, K.E., Waller, B.M., & Liebal, K. (2011). The language void: The need for multimodality in primate communication research. *Animal Behaviour*, 81(5), 919-924.

abilities of our closest relatives, the nonhuman primates. In this presentation, we will summarize the results of a systematic review of the literature on gestural communication in nonhuman primates covering the past 40 years and compare it with the main findings of studies on facial and vocal communication. We demonstrate that research into vocal, gestural and facial behaviors has very different theoretical and methodological approaches and as a result, comparisons of communicative patterns across modalities are problematic. We suggest that a multimodal approach to primate communication is essential to understand the complexity of nonhuman primates' communicative systems and to identify phylogenetic precursors to human language as part of a multi-modal system.

### **From Homesign to Sign Language: Creating Language in the Manual Modality (Susan Goldin-Meadow)**

Imagine a child who has never seen or heard any language at all. Would such a child be able to invent a language on her own? Despite what one might guess, the answer to this question is "yes". I describe congenitally deaf children who cannot learn the spoken language that surrounds them, and have not yet been exposed to sign language, either by their hearing parents or their oral schools. Nevertheless the children use their hands to communicate—they gesture—and those gestures, called homesigns, take on many of the forms and functions of language. I first describe the properties of language that we find in homesign. I next consider properties of language that homesigners can and cannot develop by comparing their linguistic systems to those developed by deaf individuals in Nicaragua. Thirty years ago large numbers of homesigners were brought together for the first time and Nicaraguan Sign Language (NSL) was born; NSL continues to develop as new waves of children enter the community and learn to sign from older peers. I end by taking an experimental approach to when gesture does and does not take on linguistic properties. I examine hearing individuals asked not to speak and instead communicate using only their hands. Although these silent gesturers can create some properties of language on the spot, they do not create all of the properties that homesigners develop over time.