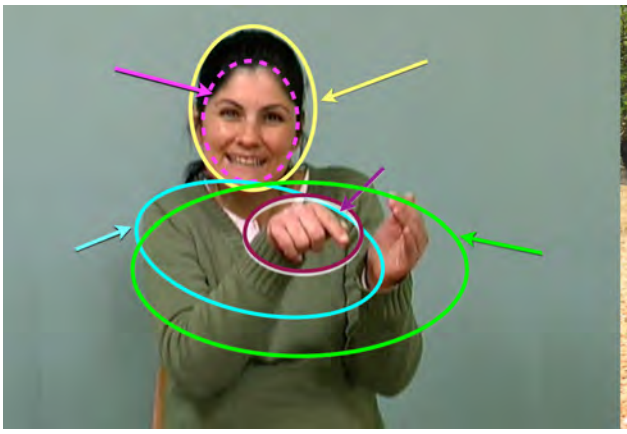


WHAT IS COMPOSITIONALITY IN LANGUAGE, WHERE DID IT COME FROM, AND CAN WE FIND IT IN THE COMMUNICATION OF OTHER SPECIES?

An Evolang satellite workshop, April 16, 2018 (Torún, Poland)

A defining property of human language is compositionality: our capacity to combine and recombine meaningful units to create and interpret innumerable complex meaningful expressions. How did this capacity arise and evolve? In this workshop, we approach this issue from a multidisciplinary perspective.

The uniqueness of language has been repeatedly challenged by comparative studies with other species, such as birds, which recombine melodic units, and non-human primates, which combine elements to create multimodal signals. However, to date, evidence for combination and recombination of **meaningful** signals in other species is vanishingly scarce. Another illuminating realm of investigation is spontaneously arising sign languages, which, unlike spoken languages, can be studied from the earliest stages, offering novel insight into the emergence of compositionality. Finally, all human language is accompanied by gesture, generally regarded as an ancient communicative system that is an inherent component of contemporary language. What is the relation between gesture and compositionality?

The workshop seeks the roots of compositionality as the quintessential property of language by bringing together researchers from linguistics, gesture, sign languages, evolutionary biology, and primate communication.

Confirmed speakers:

Sotaro Kita (University of Birmingham, UK) (title TBA)
Katja Liebal & Linda Oña (Free University of Berlin)
Compositionality in chimpanzee communication?. *Abstract below*
Kate Mesh, Rose Stamp & Svetlana Dachkovsky (University of Haifa). *Abstract below*
Pointing toward grammaticalization: Conventionalization of pointing in emerging sign languages. *Abstract below*
Wendy Sandler (University of Haifa, Israel)
The Body as Evidence for Compositionality
Marieke Schouwstra (University of Edinburgh, Scotland) Building meanings: Compositionality of human language, and its evolution. *Abstract below*
Klaus Zuberbühler (University of St. Andrews, Scotland) (title TBA)

Abstracts:

Marieke Schouwstra (University of Edinburgh, Scotland)
Building meanings: Compositionality of human language, and its evolution.

Compositionality is seen as a key feature of human language, It describes the mechanism by which complex structures and complex meanings are related to each other: the meaning of a complex expression is determined by the meanings of its constituents and the way in which they are put together. This characterization has been a firm assumption among many linguists, but it is not the only possible view on language. I will describe the linguistic and philosophical background of the principle of compositionality, by sketching why human language is often described as compositional, and what the alternatives might be. Subsequently, I will look briefly at how cultural evolution experiments can help us answer the question how compositionality came about.

Kate Mesh, Rose Stamp & Svetlana Dachkovsky (University of Haifa).
Pointing toward grammaticalization: Conventionalization of pointing in emerging sign languages.

The pointing gesture is understood to be one of the earliest means of directing atten tion to objects and locations, in both ontogenesis and phylogenesis (Butterworth & Morissette, 1996). Pointing is not accomplished by the hands alone; it appears in a composite of bodily signals, including gaze direction, head and torso move ment, and facial expressions, among others (Hadjikhani et al, 2008; Kita, 2003).

Researchers studying signed languages have proposed a grammaticalization chain for pointing, originating in points toward present, concrete entities and ending with points toward empty space that serve such abstract functions as establishing refer ence and marking relative clauses (Pfau & Steinbach, 2006). However, little empiri cal evidence has been accrued to support the claims made about the development of abstract pointing functions during signed language emergence.

We present such evidence, drawing from a dataset of co-speech gestural pointing as well as pointing signs from four emerging sign languages of varying ages and stages of development. We find that multiple signals in the pointing composite—including gaze direction, head movement, and internal movement of pointing signs—are reduced or eliminated during the development of abstract pointing. The manual component that remains is free to be incorporated into new composite linguistic constructions.

Katja Liebal & Linda Oña (Free University of Berlin)
Compositionality in chimpanzee communication?

Chimpanzees produce a variety of communicative signals in social interactions with their group members. Morphologically, many of these signals resemble human forms of communication and especially research into language evolution is highly interested in finding commonalities and differences between various features of language and non-human primate communication. One important feature of human language, compositionality, lends language a high degree of flexibility and is thought to be a uniquely human characteristic. Few existing studies in non-human primates investigate if the combination of different signals (e.g., different call types) creates new meanings (Arnold & Zuberbühler, 2006). Traditionally, many of these studies use a unimodal approach. Recently, several short-comings of a unimodal approach have been recognized and the number of studies on great ape species, which use a multimodal approach, are increasing both in captivity and in the wild (e.g. Hobaiter et al. 2017, Wilke et al. 2017). Although uniquely human, the question arises whether precursors and thus the root of compositionality, is situated in non-human communicative systems or even in more basic evolutionarily prior expressive behaviors, like bodily displays. In order to investigate this, we studied multimodal expressions in our closest-living relatives, the chimpanzees. We collected data on dyadic interactions in two semi-wild chimpanzee groups in different social contexts. In this study, we document the use of combinations of specifically gestures and facial expressions and whether the contextual usage

has an influence on the response behavior of the recipient. We found a tendency for some signal combinations to modify the signal function depending on their specific form and contextual usage. However, it is premature to report strong conclusions about the existence of compositionality in chimpanzee communication, nor do we exclude the possibility of its existence. We discuss the limitations of this study and point to future directions.