

## Meaning potentials in words and gestures

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This paper addresses the question of what and how gestures and speech, respectively, contribute to the interactive co-construction of meaning.

A point of departure of the paper is the notion of “meaning potential” which we apply to both unimodal gestures and vocal-verbal units, as well as to multimodal vocal-gestural units, Allwood (2003). The aim of the paper is to explore the interaction of iconic and indexical meaning potentials for gestures with the symbolic meaning potential of words in creating actual contextually relevant meaning. The study focuses on the semantic contributions of speech and gesture, especially in sequences involving “Own Communication Management” (OCM), i.e., choice and change operations in speech production.

Two main questions are addressed in this study:

- How can we use a description of multimodal OCM to explore a theory that hypothesizes a merging of the meaning potentials of words and gestures in spontaneous communication?

Meaning potentials can be indexical, iconic or symbolic (cf. Peirce 1934). Whereas meaning potentials for words are mostly symbolic, meaning potentials for gestures are more often indexical and iconic. This means that the meaning potentials for words and gestures can be of fairly different types and the study presents ways of combining them in multimodal communication.

For example, the word “big” has a symbolic meaning potential of different, concrete and abstract realizations in relation to context, e.g. to the noun it determines (e.g. a big house, a big bird, a big loss etc.). A gesture with the palms held towards each other at a distance of 30 cm has an iconic meaning potential of showing a length or size, holding something etc., and a pointing gesture towards an object has an indexical meaning potential of the object in itself or any of its properties, e.g. color, size etc. If the word “big” with its symbolic meaning potential is combined with a gesture having an iconic or indexical meaning potential, the meaning potentials of the word and the gesture interact in determining the range of the combined meaning potential and the actual meaning of the whole multimodal expression.

Context is as essential for the interpretation of polysemous gestures as it is for polysemous words. Since gestures often have more extensive meaning potentials than words, context becomes even more important for understanding their content.

The study contains a theoretical analysis of meaning potentials in speech and gesture separately and in combination, using as empirical support an analysis of gestures and speech in video-recorded spoken informal discussions and narrations.

The empirical part is based on gesture expressions and accompanying or succeeding words in our databases of gesture and speech in OCM 200 sequences and 200 sequences of fluent speech with accompanying gestures. As an experimental substudy, we presented imitations of

gestures produced in the databases and asked subjects to write down the word they thought had been produced in relation to the gesture in the database. Based on our analysis of the database, we identified a number of gesture patterns with indexical and iconic relations to verbal expressions.

The theoretical part addresses the question of how speech and gesture are related in interaction. Theoretically, this question relates, for example, to evolutionary and cognitive perspectives on multimodality in communication (cf. Allwood, 2008). Practically, it relates to application areas, such as rhetoric, the design of embodied communicative agents (Allwood and Ahlsén, 2009) and compensatory strategies for communication disorders (Ahlsén, 2011).

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