

Hagoort, P., & Van Berkum, J. J. A. (2007). Beyond the sentence given. *Philosophical Transactions of the Royal Society. Series B: Biological Sciences*, 362, 801-811.

A central and influential idea among researchers of language is that our language faculty is organized according to Fregean compositionality, which states that the meaning of an utterance is a function of the meaning of its parts and of the syntactic rules by which these parts are combined. Since the domain of syntactic rules is the sentence, the implication of this idea is that language interpretation takes place in a two-step fashion. First, the meaning of a sentence is computed. In a second step, the sentence meaning is integrated with information from prior discourse, world knowledge, information about the speaker and semantic information from extra-linguistic domains such as co-speech gestures or the visual world. Here, we present results from recordings of event-related brain potentials that are inconsistent with this classical two-step model of language interpretation. Our data support a one-step model in which knowledge about the context and the world, concomitant information from other modalities, and the speaker are brought to bear immediately, by the same fast-acting brain system that combines the meanings of individual words into a message-level representation. Underlying the one-step model is the immediacy assumption, according to which all available information will immediately be used to co-determine the interpretation of the speaker's message. Functional magnetic resonance imaging data that we collected indicate that Broca's area plays an important role in semantic unification. Language comprehension involves the rapid incorporation of information in a 'single unification space', coming from a broader range of cognitive domains than presupposed in the standard two-step model of interpretation.

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