

Abstract

Psycholinguistic models of speech production distinguish between four major processing stages. During the first stage, conceptualisation, a lexical concept is chosen, followed by retrieval of the corresponding lemma (syntactical and semantical) information. The conceptualisation stage can be separated in two different sub-stages: macro – and micro planning. The first phase, macro planning, contains choosing an idea/intention and the linguistic ordering of this idea within a sentence. The linearization problem that occurs here is usually solved by using a chronological order strategy. This means that an event which occurred first in time is also mentioned first in speaking. We investigated this by letting subjects create chronologically ordered sentences (sentences starting with 'After') and sentences where this strategy was violated (sentences starting with 'Before'). During micro planning, ideas are translated into preverbal messages by means of accessible concepts. A topic can either be un-accessible ('new') or accessible ('already known') for a listener. One strategy a speaker can use to indicate to a listener that a topic is already known is reduction; speakers tend to reduce the size of referential expressions when a topic is repeated. We investigated this by letting subjects create utterances where two new topics were introduced (nominalization) and sentences where one topic was introduced and repeated (pronominalization). In order to gain initial understanding of the neural correlates underlying macro- and micro-planning processes, I employed event-related potentials (temporal information) as well as slow event-related functional magnetic resonance imaging (spatial information). Both methods revealed differences in conceptualisation difficulty, on a P300 component for the ERP experiments (for the unnatural order condition (macro-planning) and the pronoun condition (micro-planning) and in the bilateral inferior frontal cortex and left middle and superior temporal cortex for the two fMRI studies (for the unnatural order condition and the noun condition).