

Abstract for the Annual Meeting of XPrag in Göttingen: MoLCINS

The project MoLCINS investigates whether one-step or two-step models of comprehension characterise on-line language processing best. According to one-step models, linguistic and pragmatic knowledge is simultaneously integrated during language comprehension. By contrast, two-step models assume that linguistic information is processed in a first step, where meaning is computed based on the linguistic knowledge of the listener or reader. It is only after the context-independent meaning of an utterance has been computed that in a second step general world knowledge of the comprehender is taken into account. A particularly promising way to explore the different predictions of one-step versus two-step models is to investigate the processing of affirmative versus negated sentences. Negation has certain pragmatic inferences; typically, negative statements are uttered when the negated proposition was either explicitly mentioned before by one of the discourse partners, or at least constitutes a plausible assumption in the respective context (Clark & Clark, 1977; Colston, 1999; see also Moeschler, 1992). Consequently, negation is often employed to communicate deviations from the previous assumption or expectation (e.g., Givon, 1978). For a listener, a negative sentence such as “*not p*” therefore often communicates that *p* is considered false by the speaker as well as that the speaker thinks that the listener may believe that *p*. Accordingly, when uttered in a context in which the listener indeed believes *p*, or at least can understand why the speaker may think so, the negation is pragmatically felicitous and should be relatively easy to process. In contrast, when uttered in a context in which the listener did not believe *p*, and cannot find reasons why the speaker may think so, then negating *p* is pragmatically infelicitous and should lead to comprehension difficulties.

The interesting question in our context concerns the time course of these pragmatic effects during on-line comprehension processing. Do listeners or readers take into account the pragmatic aspects of negation already early on in the comprehension process, or are the corresponding pragmatic inferences drawn only at a later point in time, possibly during a second step that takes place after the context-independent meaning of a sentence and its truth conditions have been determined?

In order to investigate these questions, we build upon well-established experimental paradigms and sets of materials which have been successfully used in the past to examine sentence processing. Right now, our main focus lies on determining which of these paradigms and materials best suits our purposes. We have started out by adapting materials that Rayner, Warren, Juhasz, and Liversedge (2004) originally used in an eye-tracking study. To test the German versions of these sentences and to identify potential shortcomings with them, we performed a self-paced reading study. Participants saw three types of sentences describing an action conducted by an individual (plus fillers): the first type employed plausible themes (*Hannes benutzte ein Messer, um die großen Zwiebeln für das Abendessen gestern zu hacken*), the second type employed implausible themes (*Hannes benutzte eine Axt, um die großen Zwiebeln für das Abendessen gestern zu hacken*), and the third type employed anomalous themes (*Hannes benutzte eine Luftpumpe, um die großen Zwiebeln für das Abendessen gestern aufzupumpen*). Our results show longer reading times towards the end of the sentence for anomalous sentences in comparison to plausible and implausible sentences. In the next step, we plan to use the affirmative and also negative versions of the sentences in an eye-tracking study to learn more about the time course of the integration of negation as well as of plausible, implausible and anomalous information.

Another question we address in our project concerns the integration of non-linguistic information such as the age or gender of the speaker. To this end, we adapted a study by van Berkum et al. (2008) in which information about the speaker (e.g., his gender or his social status) was given through his voice. In our currently on-going study, we employ a self-paced reading paradigm in which participants see a picture of a woman, a man, or a child. To the right of the picture, a sentence

appears word by word. The sentences differ with regard to whether they are typical for a certain gender, or whether they are typical for a certain age. A sentence can therefore be typical for a woman (e.g., *Um beim anderen Geschlecht besser anzukommen, rasiere ich mir **meine Beine** sehr gründlich*) vs. a man (e.g., *Um beim anderen Geschlecht besser anzukommen, rasiere ich mir **meinen Bart** sehr gründlich*), or it can be typical for a child vs. an adult (e.g., *Jeden Abend packe ich **meinen Schulranzen** für den nächsten Morgen* vs. *Jeden Abend packe ich **meine Aktentasche** für den nächsten Morgen*). This allows us distinguishing between compatible trials (the sentence is typically pronounced by a person of the same gender or age as the person depicted in the photo) and incompatible trials (the sentence is atypical for a person of the same gender or age as the person depicted in the photo). We expect shorter reading times on the critical word or for the whole sentence for compatible in comparison to incompatible sentences. If the expected results show up, we will employ negated versions of similar materials to further investigate the temporal integration of extralinguistic information and the pragmatic aspects of negation.

References

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