Case and gender in predictive language processing

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In language processing, case marking disambiguates the thematic functions of verbal arguments, and gender information on determiners and pronouns serves to narrow referential choices. Traditionally, psycholinguists have studied how listeners integrate case and gender to revise or adjust an unfolding parse. Recent research has shown that listeners also proactively predict upcoming information in a hearer’s utterance according to different linguistic (e.g. case and gender) and non-linguistic (e.g. associative) cues.

In this talk, I present a series of eye-tracking experiments in the visual-world paradigm on the predictive processing of case and gender in native and non-native German to address the following questions:

- What is the grain size of prediction according to case and gender? Do listeners compute grammatical relations or do they predict according to probabilistic associative relations between case and gender-marked determiners and nouns?
- How do listeners deal with multiple cues? Do case and prosody interact in generating predictions?
- What is the stability of grammatical prediction? How do native and non-native listeners compute grammatical gender cues when they become inconsistent and variable?

I will show, first, that the parser favors grammatical computation over probabilistic association, but employs associative relations when the grammar licenses various options. Second, the parser rapidly adapts to changes in the availability and reliability of grammatical cues in the input by demoting the status of inflection in on-line comprehension. The results will be discussed in the context of current psycholinguistic approaches to (predictive) language processing.