

Interactions of bottom-up information and top-down lexical priors in reading English two-constituent compounds

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The theory of Naive Discrimination Learning (NDL, Baayen et al. 2011, Baayen & Ramscar, 2015) makes it possible to derive, from large corpora, measures of the support that compounds receive from the visual input, as well as measures of the prior availability of the meanings of compounds and their constituents (Baayen et al., in press). These measures are correlated with frequency of occurrence, but unlike straightforward frequency counts, they provide a tool for teasing apart top-down from bottom-up processes.

We will report an eye-tracking study (Hendrix, 2016) of English compounds read in connected discourse, using a large eye-tracking corpus that we compiled.

Analyses of single-fixation versus multiple-fixation reading indicate that successful (single-fixation) reading is dominated by the bottom-up support for the meanings of the compound and its constituents, whereas multiple-fixation reading emerges as the consequence of an initial misfixation too early in the word. As a consequence of this misfixation, initially only the meaning of the modifier becomes available, effectively garden-pathing the system towards a contextually inappropriate interpretation. At subsequent fixations, top-down knowledge is called upon to recover from this garden path.

References

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