

# Discourse based lexical anticipation during language processing: prediction or Priming?

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Results of a recent experiment by Van Berkum et al. suggest that Dutch listeners can use prior discourse to make online predictions about upcoming words. In the present event related potential (ERP)-experiment we examined whether this effect of anticipation is based on message-level discourse content, or on simple associative word-word priming.

Subjects read mini-stories such as “After she drank the holy water the crippled woman was healed. It was a real...”. Each story was composed in such a way that subjects expected a specific noun at this point (e.g. “miracle”), which had been determined in a prior paper-and-pencil test. In Dutch, the inflection of the preceding adjective (“real”) depends on the gender of this noun. To test whether people anticipate this specific upcoming noun, we compared ERPs evoked by adjectives with inflections that were inconsistent with the gender of the expected noun to ERPs evoked by consistently inflected adjectives. To test the hypothesis of message-level prediction versus word-word priming, we altered half of the constraining context sentences so that they did not create any specific expectation anymore, but still contained the same prime-words, as in “After she drank the holy water the crippled woman wasn’t healed. It was a real..”.

When the discourse-sentences were highly constraining, adjectives with unexpected inflections showed a widely distributed ERP-effect when compared to adjectives with expected inflections. This effect was not present in the priming-only sentences. These results suggest that anticipation is not dependent on individual lexical primes, but on the entire message the discourse conveys.

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