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(Mis)interpretations of implausible passive sentences pattern with N400 amplitudes

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Abstract

Representations formed during language comprehension do not always accurately reflect the linguistic input, but are sometimes just good enough (Ferreira et al., 2003). Here, we examined the electrophysiological correlates of such heuristic processing. Participants were presented with passive sentences where the plausibility of the fillers of the agent and patient thematic roles was manipulated. As expected, they made more errors in the interpretation of implausible sentences (e.g., The doctor was treated by the patient). Intriguingly, N400 amplitudes patterned with (mis)interpretation, with increased amplitudes to the second noun in correctly processed implausible sentences, and equally small amplitudes in plausible sentences and in incorrectly interpreted implausible sentences. These results are in line with the view that N400 amplitudes reflect the change in an initial heuristic representation of sentence meaning (Rabovsky et al., 2018), but seem difficult to explain by accounts suggesting that the N400 reflects lexical retrieval (Brouwer et al., 2017).