

### NEUROSCIENCE

## Prediction and validation

*eLife* 7, e33468 (2018)



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That the brain is a ‘predictive machine’, constantly predicting the next input, is an influential theory in cognitive science. Widely cited evidence for this idea came from research into language comprehension, including an influential 2005 study by DeLong and colleagues. But some of the conclusions of this study have been questioned. How much do we really predict?

A new publication led by Mante Nieuwland and based on collaboration between 23 researchers reports concerted attempts from 9 laboratories to fully replicate the findings of the 2005 paper. The original study concluded that listeners automatically predict both upcoming nouns (for example, ship/airplane) and articles (for example, a/an). The new set of studies validated the key finding that listeners predict the nouns in a sentence, but did not provide strong evidence that articles are predicted as well.

This supports the view that prediction in the domain of language processing may be less comprehensive than previously suggested. Further research will need to clarify the extent of prediction as well as its neural signatures.

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Published online: 31 May 2018

<https://doi.org/10.1038/s41562-018-0362-z>