Abstracts

Orthographic learning, fast and slow

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From the spoken word recognition literature, it is now clear that word learning evolves over time and can be characterized in phases. Leach and Samuel (2007) proposed an important distinction between lexical configuration, defined as the initial acquisition of word knowledge via episode memories, and lexical engagement, the comparatively slower emergence of interactive processes between newly learned words and existing words. This distinction has not been applied in detail to orthographic learning and the question of how children acquire new written words. This is important given that by mid-childhood, most new vocabulary is acquired via independent reading: after reading Harry Potter, children know something about quidditch, expelliarmus and aingingein. This talk will describe a series of training experiments that consider the time course of orthographic learning in children, as they encounter new words via their encounters with text.

Word learning: The long and the short of it

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Decades of language research have led to the understanding that we form robust and usable representations of words essentially immediately after exposure. This view of word learning as an encoding issue has been challenged more recently by research suggesting that slower, sleep-associated consolidation processes lead to some of the properties that we expect of language we know well. Now we are getting to the point where we need a better understanding of the long and the short of language learning: what is independent of consolidation, what is dependent on consolidation, and why? In this talk I will try to address these questions. I will present studies suggesting that children and adults benefit from sleep in terms of their ability to retain and use newly learned words. These effects can be explained by a recent model of language learning and processing in which sleep facilitates systems consolidation of the representations of new vocabulary. Recent studies of grammar learning and lexical ambiguity, in which the role of sleep in retention depends on the nature of the material, suggest that this model can be further refined.
Acquisition of novel spoken form is rapid and seamless, yet research with adults suggests integration of novel and existing knowledge (measured by engagement in lexical competition) requires a consolidation period associated with sleep (e.g., Dumay & Gaskell, 2007). These findings are well-explained by neural models of learning in which sleep provides an opportunity for hippocampal information to be fed into long-term neocortical memory. The talk will provide an overview of a programme of research which investigated whether this time-course dissociation also characterises word learning in children between the ages of 5 and 12 years old (Henderson, Weighall, Brown & Gaskell, 2012, 2013) and considers the influence of different training regimes (e.g., learning from stories, learning in the presence/absence of semantic information) and existing vocabulary size on the time course of lexical integration (Henderson, Weighall Devine & Gaskell, 2015; Weighall, Henderson, Barr & Gaskell, under review). Our results suggest that children, like adults, require a period of offline (sleep-associated) consolidation in order to establish newly learned words in the lexicon. These findings hold true across a range of different paradigms. However, our results also suggest different aspects of word learning follow different time courses. Furthermore, a richer established body of vocabulary knowledge may support consolidation and integration of new vocabulary.