This deposit contains data from three studies, all conducted to investigate the development of expertise in word reading skill.

Study 1 contains two experiments, reported in full by Tamura, Castles and Nation (2017). Children learn new words via their everyday reading experience but little is known about how this learning happens. We addressed this by focusing on the conditions needed for new words to become familiar to children, drawing a distinction between lexical configuration (the acquisition of word knowledge) and lexical engagement (the emergence of interactive processes between newly learned words and existing words). In Experiment 1, 9-11-year-olds saw unfamiliar words in one of two storybook conditions, differing in degree of focus on the new words but matched for frequency of exposure. Children showed good learning of the novel words in terms of both configuration (form and meaning) and engagement (lexical competition). A frequency manipulation under incidental learning conditions in Experiment 2 revealed different time-courses of learning: a fast lexical configuration process, indexed by explicit knowledge, and a slower lexicalization process, indexed by lexical competition. Materials are included in the paper (and its supplementary materials) both of which are Open Access.

Study 2 is an experiment reported by Pagan and Nation (2019). This examined whether variations in contextual diversity, spacing and retrieval practice influenced how well adults learned new words from reading experience. Eye movements were recorded as adults read novel words embedded in sentences. In the learning phase, unfamiliar words were presented either in the same sentence repeated four times (same context) or in four different sentences (diverse context). Spacing was manipulated by presenting the sentences under distributed or non-distributed practice. After learning, half of the participants were asked to retrieve the new words and half had an extra exposure to the new words. Although words experienced in diverse contexts were acquired more slowly during learning, they enjoyed a greater benefit of learning at immediate post-test. Distributed practice also slowed learning, but no benefit was observed at post-test. Although participants who had an extra exposure showed the greatest learning benefit overall, learning also benefited from retrieval opportunity, when words were experienced in diverse contexts. These findings demonstrate that variation in the content and structure of the learning environment impacts on word learning via reading.

Study 3 is an experiment reported by Pagan et al. (under review). It investigated semantic diversity – a metric that captures variations in previous contextual experience with a word – influences children’s lexical decision and reading aloud. The effects of semantic diversity and frequency on children’s reading of words embedded in sentences were explored via recordings of their eye movements. If semantic diversity and frequency reflect different aspects of experience that influence reading in different ways, they should show independent effects and perhaps even different processing signatures during reading. Forty-nine 9-year-olds read sentences containing high/low frequency and high/low diversity words, manipulated orthogonally. We observed independent main effects of both variables, with high frequency and high semantic diversity words being read more easily in target-word analyses. Sentence-level analyses indicated that semantic diversity influenced the overall ease of sentence processing whereas frequency did not. These results show that variations in the amount and nature of contextual experience influence how easily words are processed during reading.