

Phrasal frequency and literacy as predictors of on-line processing and comprehension of English subject-verb agreement

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This paper presents experimental evidence suggesting that word frequency and reading experience-related predictors modulate online processing and comprehension of subject-verb agreement constructions by adult native speakers of English. The experiment measures participants' eye fixation and regression saccades behaviour, reaction times, and response accuracy in a forced-choice task using an audio-visual eye-tracking paradigm. Participants completed a battery of tasks, including Literacy Rating Scale (Tarone et al. 2013), Reading Time Estimates (Acheson et al., 2008) and the UK Title Recognition Test (Marschark et al. 2011), alongside an Agreement Judgement Task (designed by co-authors, adapted from e.g., Veenstra et al. 2014).

The AJT involved matching an aurally presented subject phrase with one of two images – simple shapes (e.g., stars, circles) of easily distinguishable colours – presented on screen, see Figure 1, below. Each subject phrase consisted of a determiner and a head noun (singular or plural), followed by a preposition (e.g., 'with' or 'next to'), followed by a determiner and a local noun (singular or plural). Participants heard 42 test sentences, counterbalanced across two types. Type 1 in which the 'intervening' local noun and the verb match in number (e.g., 'The stars with the circles are blue'), and Type 2 in which the 'intervening' local noun and the verb do not match in number (e.g., 'The star with the circles is blue'). These types of SVA construction are considerably more frequent in writing than in speech (Miller et al. 1998), with Type 2 producing more attraction errors in previous elicitation tasks (Bock et al. 2001; Dabrowska & Becker 2020).

Data is being analysed using R package (R Core Team 2022) with the help of linear mixed effects models and generalised additive models. Preliminary analysis indicates that participants with lower literacy take longer processing sentential cues and make more attraction errors. These preliminary findings therefore support usage-based research showing frequency and experience effects in the online comprehension of canonical and non-canonical constructions (Farmer et al. 2012, MacDonald & Christiansen 2002, Street & Dabrowska 2014; Street 2017), as well as more recent research on native speakers' detection and production of agreement attraction errors (Dabrowska & Becker 2020).

The data also add to previous usage-based studies demonstrating how linguistic and attentional processes interact (Tomlin & Myachykov 2015), as well as complementing early corpus-based studies by providing evidence from on-line processing that native speakers are sensitive to the observed distributions (Miller et al. 1998).

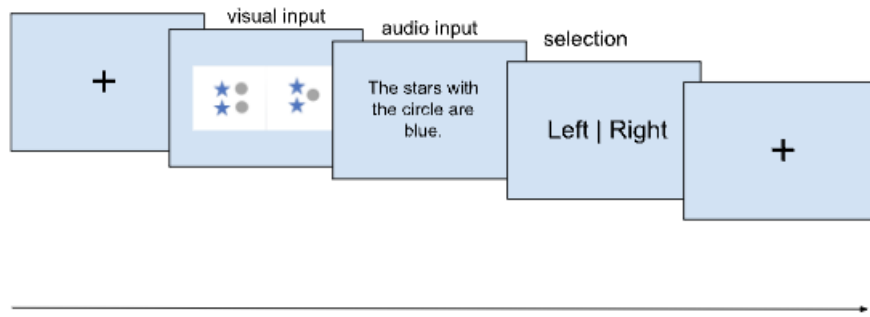


Figure 1. A single trial in the current Agreement Judgement Task

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