Reanalysis processes in non-native sentence comprehension

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Studies show non-native speakers (L2ers) misinterpret garden-path sentences like (1b) more frequently than native speakers (L1ers) [3,4]. One account of this is that L2ers have a reduced syntactic processing ability [1]. Alternatively, reanalysis may be complete but L2ers have difficulty erasing the initial interpretation from memory [2]. To clarify L2ers’ reanalysis processes, we conducted two experiments with 40 intermediate-advanced L2ers and 40 L1 English speakers.

In Experiment 1 (Ex1), participants read 24 ambiguous (1b) and unambiguous (1a) sentences and answered comprehension questions like (2), which tap reanalysis of the subordinate clause (2a) and main clause (2b). In Experiment 2 (Ex2), adapted from [5], participants read 24 sentences like (3) while their eye-movements were monitored. (3a/3b) are ambiguous while (3c/3d) are unambiguous. Additionally, the gender relation between the reflexive and its antecedent was matched (‘Ken's dad/himself’) in (3a/3c) and mismatched (‘Ken's mum/himself’) in (3b/3d). We expected lower accuracy rates (Ex1) and longer reading times (Ex2) for ambiguous sentences. If syntactic reanalysis is complete, we expected similar gender mismatch effects in (3a/b) and (3c/d). If reanalysis is incomplete in either group, we expected reduced/absent gender mismatch effects in ambiguous (3a/b) than unambiguous (3c/d).

In Ex1, accuracy rates were significantly lower in ambiguous sentences. In Ex2, reading times were significantly longer in ambiguous sentences at the disambiguating verb (‘decided’). A significant main effect of gender was observed at the reflexive (‘himself’), with longer reading times following gender mismatches, in the absence of interactions with ambiguity. Effects did not interact with group in either experiment, suggesting reanalysis is syntactically complete in both groups.

In contrast to previous results [3,4], L2ers did not misinterpret garden-path sentences more than L1ers. For both groups, the primary source of difficulty appeared to be persistence of the initially-assigned interpretation in memory, rather than an inability to complete syntactic reanalysis.
(1a) After Mary dressed, the boy in the house started cleaning the room.
(1b) After Mary dressed the boy in the house started cleaning the room.
(2a) What happened? 1. Mary dressed herself 2. Mary dressed the boy
(2b) Who started cleaning the room? 1. Mary 2. The boy
(3a) After the neighbour visited Ken's dad decided to prepare himself a cold drink.
(3b) After the neighbour visited Ken's mum decided to prepare himself a cold drink.
(3c) After the neighbour visited, Ken's dad decided to prepare himself a cold drink.
(3d) After the neighbour visited, Ken's mum decided to prepare himself a cold drink.

References