

Lingering Misinterpretation in Garden-path Sentences in Native and Non-Native Speakers

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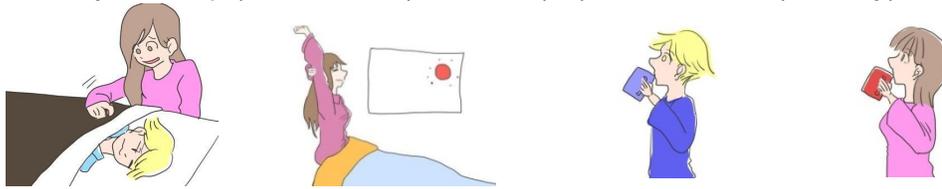
Native (L1) and non-native (L2) English speakers often misinterpret temporarily ambiguous garden-path sentences (e.g., “While Mary dressed the baby played.”) and persist with the initial interpretation (“Mary dressed the baby”) rather than the globally correct interpretation (“Mary dressed herself”) after reanalysis [1,4]. L1 studies show this lingering misinterpretation results from a failure in erasing the initial misinterpretation from memory, rather than an inability to complete reanalysis of the temporarily ambiguous NP (“the baby”) as the main clause subject rather than the theme of the subordinate clause verb [6]. Regarding L2ers, previous studies have shown L2ers have more difficulty recovering from garden paths than L1ers [4, 5]. However, it has recently been claimed that, like L1ers [6], L2ers attempt to reanalyse the critical NP successfully during online reading [3]. This raises the possibility that L2 reanalysis difficulty results from a failure in erasing the initial misinterpretation, as in L1ers [2,6]. We report two experiments (40 L1 English speakers and 40 upper intermediate-advanced L2 speakers of various L1 backgrounds in each) examining this issue.

In Experiment 1 (Ex1), participants read 24 sentences like (1). Only reflexives absolute transitive and reciprocal verbs were employed for the subordinate clause verb. (1a) requires reanalysis due to the absence of the comma while (1b) does not. One of two picture pairs was shown after each sentence, and the participant had to pick which picture they felt best matched the sentence. One picture pair, illustrated in (2a), tapped reanalysis of the subordinate clause verb (“the lady woke herself up” vs “the lady woke up her husband”), whereas the second pair, as in (2b), assessed reanalysis of the temporary ambiguous noun phrase as the main clause subject. In Experiment 2 (Ex2), adapted from [6], participants read 24 sentences like (3) while their eye-movements were monitored. Ex2 was conducted at least one week before Ex1. The first sentence in (3a/3c) is ambiguous, while (3b/3d) are unambiguous controls. (3a/b) and (3c/3d) further manipulated the continuation sentence. In (3a/b), the continuation sentence is consistent with the correct analysis of the first sentence (“the mother was dressing herself”). In (3c/d), the continuation (“the mother was dressing her son”) is inconsistent with this correct analysis but is consistent with the initial misinterpretation. If misinterpretation lingers, inconsistency may be attenuated in (3c), as the continuation matches the initial (but globally incorrect) interpretation of the first sentence, compared to unambiguous (3d). If readers leave the first sentence with the initial (incorrect) misinterpretation in (3a), continuation sentences may also elicit longer reading times in (3a) than (3b).

Ex1 found a main effect of ambiguity with lower accuracy rates in ambiguous than unambiguous sentences. This main effect was modulated by a marginal two-way interaction with group, as L2ers answered more incorrectly than L1ers in the ambiguous condition. For Ex2, analyses showed significantly longer reading times for ambiguous (3a/c) than unambiguous sentences (3b/d) at the disambiguating verb (“dressed”) of the first sentence in regression path and total viewing times as evidence of garden paths. In the second continuation sentence, there was also a two-way interaction between ambiguity and consistency in regression path duration due to reduced reading times for ambiguous than unambiguous sentences in the inconsistent conditions, indicating lingering misinterpretation. Analyses also revealed a main effect of consistency in total viewing times as inconsistent sentences elicited increased reading times, irrespective of ambiguity.

Taken together, the results show that L1 and L2 speakers often misinterpret garden-path sentences with L2ers having more difficulty recovering from garden paths than L1ers. Although no L1/L2 differences appeared in Ex2, reduced inconsistency effects suggest that like L1ers, lingering misinterpretation in L2ers seems to be at least partly attributed to a failure in erasing the initially assigned misinterpretation.

- (1a) After the lady woke up her husband in the apartment drank some coffee.
- (1b) After the lady woke up, her husband in the apartment drank some coffee.
- (2a) the lady woke up (her husband) (2b) The husband (the lady) drank some coffee



- (3a) When the mother dressed her son at home called the dog. It was clear that the mother was dressing herself formally for an important ceremony.
- (3b) When the mother dressed, her son at home called the dog. It was clear that the mother was dressing herself formally for an important ceremony.
- (3c) When the mother dressed her son at home called the dog. It was clear that the mother was dressing her son formally for an important ceremony.
- (3d) When the mother dressed, her son at home called the dog. It was clear that the mother was dressing her son formally for an important ceremony.

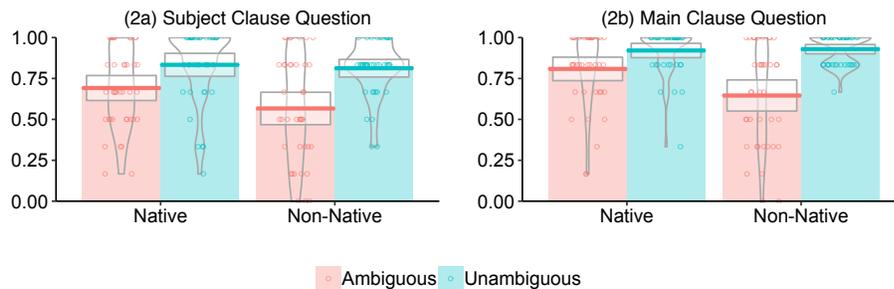


Figure 1. Proportion of correct responses in Ex1

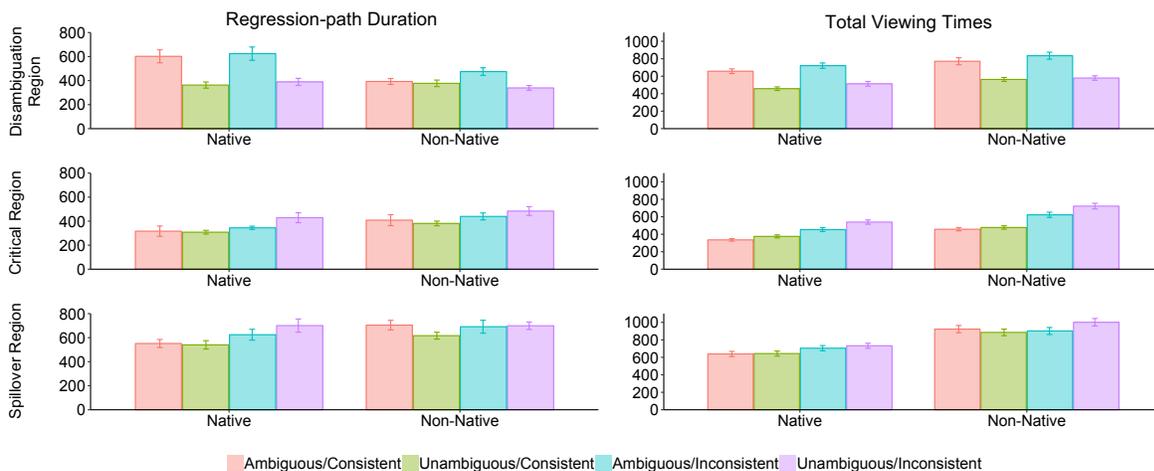


Figure 2. Reading times in Ex2. Note: Disambiguation Region = “dressed”, Critical Region = “herself/her son”, Spillover Region = “formally for an”

References [1] Christianson et al. (2001), *CP*, 42, 368–407; [2] Cunnings (2017), *BLC*, 20, 659–678; [3] Fujita & Cunnings (2018), *31st CUNY*; [4] Jacob & Felser (2016), *QJEP*, 69, 907–925; [5] Pozzan & Trueswell (2016), *BLC*, 19, 636–643; [6] Slattery et al. (2013), *JML*, 69, 104–120.