

L2 Learners' Processing of Ambiguous Relative Clauses: Evidence from Off-line and On-line Tasks

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1 Introduction

By comparing L2 learners' off-line and on-line processing of sentences which are ambiguous between reduced relative clause resolution and main verb resolution, the present experiment provides evidence that L2 learners' processing difficulties are not necessarily due to a lack of competence or of access to Universal Grammar, but rather to performance factors.

In recent studies with L2 learners, processing difficulties have been discussed as an explanation for the fact that even immersed and highly advanced L2 learners do not show native-like performance (e.g. White 1989, Juffs 1998a, 1998b, 2006). Such a finding raises questions about the nature of L2 learners' processing strategies and whether these are due to a lack of grammatical competence, to insecurity in processing or to a lack of working memory capacity. Another question is whether it is possible for L2 learners to acquire native-like processing strategies. To answer these questions, a comparison of off-line and on-line processing measures with learners of different proficiency levels is expedient.

2 The present experiment

In the present study on-line and off-line processing of the reduced relative clause ambiguity are investigated with two groups of non-immersed German L2 learners of English. The structure investigated is the so-called main-verb/reduced relative clause ambiguity:

(1) The horse raced past the barn fell.

The parser first analyses these sentences as transitive sentences, which leads to a surprise or "garden-path" effect when the main verb *fell* is encountered.

2.1 Participants and materials

Participants of the first learner group (n=22) had learned English at school for 11 years on average and had never lived in English-speaking countries. Participants of the second group (n=22) had learned English for 15 years and had lived in English-speaking countries for 8 months on average. The control group consisted of 22 native speakers of English. Participants were tested in an off-line grammaticality judgement task and an on-line self-paced reading task. The materials consisted of unambiguous sentences as in 2), ambiguous sentences with a good cue as in 3) and ambiguous sentences with a bad cue as in 4). Ambiguous and unambiguous sentences with main verb resolution as in 5) and 6) were included as distractors.

The brown sparrow seen by the hungry cat pecked at an insect.

The brown sparrow noticed on an upper branch pecked at an insect.

The brown sparrow noticed almost every day pecked at an insect.

The brown sparrow noticed an insect on a high branch.

(2) The brown sparrow saw an insect on a high branch.

The difference between unambiguous and ambiguous sentences lies in verb morphology. The differences between the two ambiguous structures lies in the post-ambiguity cue, which makes a transitive reading highly unlikely in (3), whereas it does not contribute to the disambiguation in (4).

2.2 Results

Detailed analyses of the results show that differences between learners and native speakers were insignificant in the grammaticality judgements, but highly significant in the self-paced reading task. This suggests that differences between L2 learners and native speakers might generally be attributed to diverging processing strategies.

To investigate the nature of these diverging processing strategies, on-line reading times were analysed in more detail. Overall reading times were longer for L2 learners than for native speakers. Reading times were longest for the least proficient group, but both learner groups showed very similar patterns. All groups experienced a garden-path effect in that reading times in the ambiguous sentences 2) and 3) significantly differed for the ambiguous verb and the disambiguating main verb. The fact that the garden-path effect was strongest after a bad cue suggests high sensitivity to extra-syntactic factors such as verb morphology and post-ambiguity cues.

In the cue-region, especially in the unambiguous condition, L2 learners' reading times were surprisingly high. This finding is discussed with regard to context-sensitive parsing models (MacDonald 1994) and to theories of shallow syntactic processing in L2 learners (Clahsen & Felser 2006). Since the structures under investigation differ in English and German, L1 influence is also discussed as an

explanation for the findings. The similar patterns for both learner groups suggest that L2-specific strategies do not subside with increasing proficiency.

Conclusion

The comparison between off-line and on-line task confirms the dissociation between parsing mechanisms and grammatical knowledge found in previous studies with immersed learners. Both groups of non-immersed learners tested in the present study gave highly native-like grammaticality judgements. Their patterns in the on-line reading task deviated from those of the native speaker control group. Thus the results of the present study indicate that learners use L2 specific parsing mechanisms which are not due to a lack of grammatical competence.

References

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