Today read she the paper: An ERP study of the processing of word order in Swedish L2

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Introduction

Word order causes problems in a second language (L2), and potentially more so when the first language (L1) word order differs from the L2. However, behavioural studies show mixed results.51 Neurocognitive studies suggest that native-like morphosyntactic processing only occurs when the L1 and L2 share morphosyntactic features (‘positive transfer’) and when violations occur within rather than across phrasal boundaries.52 However, few studies have examined basic word order processing in closely related languages. This study targets processing of the common verb-second word order (+V2), i.e., a finite verb in second position in main clauses initiated by non-subjects [1] in L2 Swedish.

We ask whether the L2 processing of V2 word order is affected by the L1 word order, comparing learners from an L1 with German vs. without [English] V2; the frequency of the sentence initial adverb, high (idag today) vs. low (hemma at home); the length of the prefield, long (idag hos Maria today at Maria’s vs. short idag today).

We compare Swedish L1 speakers to advanced German and English L2 learners of Swedish, matched for age of acquisition and proficiency. We examine behavioral measures of timed acceptability judgments and ERPs.

We predict more target-like processing when the learners’ L1 shares the V2 structure with the target language, with high frequency adverbs, and with shorter prefields.

Results & Discussion

All groups showed overall sensitivity to V2 violations, but the patterns differed over frontal electrode sites. The English learners (+V2) showed a frontal positivity in contrast to Swedish native speakers and German learners (+V2), suggesting that L1 L2 similarity affects L2 word order processing.

Native speakers showed the typical biphasic pattern for word order violations; i.e., LANP500, but only with long prefields. Short prefields yielded a medial anterior negativity and a posterior negativity followed by a LANP500. This pattern differs from our predictions and previous morphosyntactic results, suggesting a build-up of expectations with long prefields.

German learners (+V2) showed similar patterns to the native speakers but only with the frequent adverbial, anterior and a posterior negativity followed by a LANP500 for long prefields, and only the posterior effects for short ones. In contrast, English learners (+V2) did not show these frequency and length effects. The results from the acceptability judgment task differed slightly from the ERP results. Native speakers were overall more accurate and faster L2 learners who, critically, did not differ. Longer prefields also yielded more accurate responses.

Conclusion

The current study has extended previous neurocognitive research on morphosyntax to word order processing, and crucially has shown that structural L1/L2 similarities make L2 processing more target-like as evidenced by the ERP results, even if behavioral measures display no such influence.

Participants

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Paradigm

V2 violations in native speakers, Ger (+V2), and Eng (-V2) learners

All groups showed an effect of V2 violations. Although there were no differences in the posterior effects in any of the windows, differences in polarity and amplitude were established over frontal sites in all time windows.

The main effect of group over frontal sites was driven chiefly by the differences between native speakers and English learners (+V2, 300-500 ms). English learners also differed from German learners (+V2, 300-500 ms). All groups differed from each other 900-1000 ms.

Behavioral results

Native speakers made more accurate and faster judgments in comparison to L2 learners. All groups were faster at judging sentences with long prefields.