The influence of focus markers on word processing and word recall in a second language

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Introduction

When adults listen to a foreign language, what makes them turn their attention to certain words, and what makes it easier for them to remember these words? The present study investigated the influence of focus marked by prosody (pitch accent) and syntactic (clefted sentence structure) on word processing and word recall in German learners of English, with the aim of examining the effect of these focus markers on processing focus structure in a second language (L2). Accent and focus facilitate word processing in first language processing (L1) (Cutler, 1976). Also, there is a processing advantage for words focussed by a preceding question (Cutler & Fodor, 1979).

Recently, effects of predicted accent and of focus marked by accent were observed for monolingual listening (Akker & Cutler, 2003) only, when listeners had no knowledge of the experimental design (this, tested in the L2 only), but not when tested in a comparative L1-L2 design. Still, this showed that L2 learners were able to exploit both prosodic structure and sentence semantics.

Research questions of the present study:

- Does focus by pitch accent and focus by syntactic marking facilitate word processing in the L2?
- Is there an effect of prosodic and syntactic focus marking on word recall?
- Do features of the target itself (e.g., word length, position in the sentence) influence the learners' performance?

Experiments & results

Experiment I: Processing words which are prosodically marked for focus

- 88 sentences presented in 3 focus conditions in German and English, with recordings done in each language by a single talker. Example of English sentences (target word underlined, sentence accent in bold print):

  Broad focus on the target: “Gulls are competing everywhere with fishermen for fewer and fewer fish.”
  Narrow focus on the target: “Gulls are competing...” (Akerk & Cutler, 2003)
  Narrow focus not on the target: “Gulls are competing...” (Akerk & Cutler, 2003)

- 24 targets (inverted bird names), balanced for word length (1-3 syllables), and position (initial medial final)

- Method: Word probe detection task. After a block of four sentences, the target word was presented and subjects indicated, whether or not they had heard the word in the previous sentences. The latencies and accuracy of correct recognition were recorded.

- Participants: 60 native German learners of English, listening to German and to English sentences; 10 native English controls. Each condition was presented 20 times in the conditions with narrow focus on target/not on target. Due to an experimental mistake only 2 controls were tested in broad focus condition, these results are excluded from the analysis.

Results of the German subject group

- No effect of target position or target length, no interactions.
- More accurate recognition of targets occurring in final position in German (F(2,38)=5.209, p<.05)
- No effect of target position or target length, no interactions.
- Better word recall in Narrow focus condition in the non-native task, but not significant.

Results of the German subject group

- Overall, English items were better recalled (grand mean 52.6%) than German items (grand mean 44.4%).
- Context had no effect on word recall in German or English. In Experiment II, we investigated the effect of focus marked by syntactic structure on word processing and word recall.

Discussion & conclusions

In Experiment I we investigated the effect of focus marked by prosody. We found that focus had no effect on the speed of language processing, which is in line with earlier findings of Akker & Cutler (2003). The accuracy scores of word recognition indicated that narrow focus tends to facilitate word recall in non-native listening. The results also showed that listeners exploit cues like target position in their native language, but that these strategies did not seem to extend to L2 processing in general, as performance varied between focus conditions.

In Experiment II we examined the effect of focus marked by syntax. An advantage of focusing by a question was confirmed only for processing time in native listening; more speech input did not seem to generally help the learners in their L2.

In Experiment III we will investigate the influence of lexical focus markers on L2 word processing and word recall.

Experiments & results

Experiment II: Processing words which are syntactically marked for focus

- 40 sentences presented in two context conditions (+/- preceding context question, e.g., “Which animal is looking...”, in German and English, balanced for syntactic structure (clefted/non-clefted) and accent (+/- accent on the target)

- Method: phoneme detection task. Subjects were asked to press a key as soon as they heard the phoneme /r/ in the sentences. Then all sentences were separated in written recall test, with each of the sentences four possible choices of (target bearing) words, e.g., choices for target “fräulein” - “fräulein” - “fräulein” - “tüllelele - tüllelele - tüllelele -

- Participants: 40 German learners of English per context condition, 10 native controls

Results of the German subject group

- Overall, English items were better recalled (grand mean 57.6%) than German items (grand mean 44.4%).
- Context had no effect on word recall in German or English; a preceding question did not facilitate word recall.
- Syntactic structure: Across context conditions, word recall in the German condition was better for items occurring in non-clefted structures than for items occurring in non-clefted structures (F(1,159)=29.0, p<.05)

Discussion & conclusions

In the L1 listening condition with context, syntactic marking of focus added a further advantage in processing time.

Focus signaled by a cleft structure did not facilitate word recall in either the L1 or L2. In fact, cleft sentences seemed to impede rather than facilitate word recall in the L2. It could be that the complexity of such structures draws too much on the learners’ processing resources.

Furthermore, results indicated that additional focal accent by clefting could further speed up processing of accented words in the L1, but not in the L2.

In our next experiment (Experiment III, in progress) we will investigate the influence of lexical focus markers on L2 word processing and word recall.

References

