

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 syntax (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).

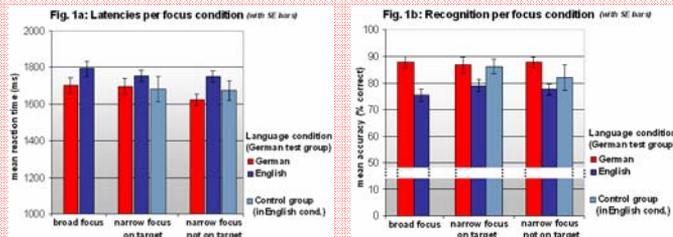
Experiments & results

Experiment I: Processing words which are prosodically marked for focus

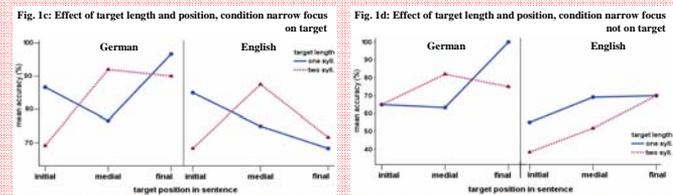
- 48 sentences presented in 3 focus conditions in German and English, with recordings done in each language by a single talker. Example of English sentences (target word underlined, sentence accent in bold print):

Broad focus on the target: „Gannets are competing everywhere with fishermen for fewer and fewer fish.”
 Narrow focus on the target: „Gannets are competing...”
 Narrow focus not on the target: „Gannets ... everywhere with **fishermen** for fewer ...”
 (for phonetic analyses of the material of Experiment I and II, see van de Vijver et al., 2006)

- 24 targets (invented bird names), balanced for word length (1 syll. / 2-3 syll.) and position (initial/medial/final)
- Method: Word probe detection task
 After a block of four sentences a target word was played 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 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, their results are excluded from the analyses.



Results of the German subjects in the native (German) and the non-native (English) language task
 Focus condition (Fig. 1a): No significant effect on the processing speed in both the listeners' L1 and L2.
 Accuracy scores (Fig. 1b): Better word recall in Narrow focus condition in the non-native task, but not significant.



Narrow focus on the target (Fig. 1c)
 German: More accurate recognition of targets occurring in final position in German [F(2,38)=5.209, p<.05].
 Target length was not significant, but interacted with target position [F(2,38)=4.358, p<.05].
 English: No effect of target position or target length, no interactions.

Narrow focus not on the target (Fig. 1d)
 German: Recognition of items in final position better [F(2,38)=3.261, p<.05].
 Target length was not significant, but interacted with target position [F(2,38)=4.166, p<.05].
 English: Recognition of items in final position better [F(2,38)=3.261, p<.05].
 Target length was not significant and target length did not interact with target position.

Discussion & conclusions

In Experiment 1 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 2 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.

Recently, effects of predicted accent and of focus marked by accent were observed for non-native listening (Akker & Cutler, 2003) only, when listeners had no knowledge of the experimental design (thus, 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:

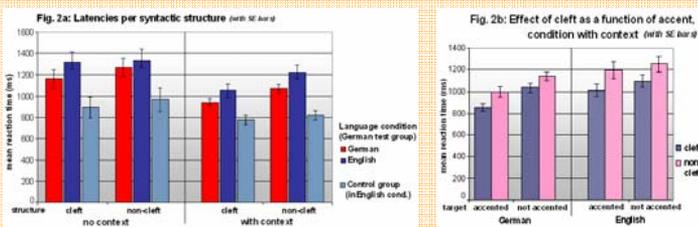
- Does focus by pitch accent and focus by syntactic marking facilitate word processing in the L2?
- Is there an effect of prosodic and syntactic focus marking on word recall?
- Do features of the target itself (e.g., word length, position in the sentence) influence the learners' performance?

Experiment II: Processing words which are syntactically marked for focus

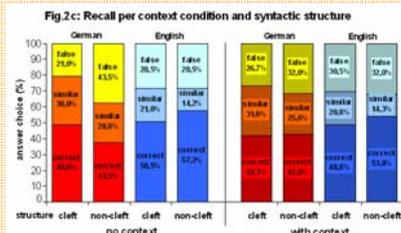
- 40 sentences presented in two context conditions (+/- preceding context question, e.g., "Which animal is looking ...?"), in German and English, balanced for syntactic structure (clefted/non-clefted) and accent (+/- accent on the target):

Cleft, accent on the target: "It's the frail tulbul that is now looking for juicy fruit."
 Cleft, target not accented: "It's the frail tulbul that is now looking ..."
 Non-cleft, accent on the target: "A hunter held a famous reeber in his shoddy shed."
 Non-cleft, target not accented: "A hunter held a famous reeber in his ..."

- 20 target words (bisyllabic, accent on first syllable) in sentence medial position
- Method: phoneme detection (target /b/) and multiple choice recall test
 Subjects were asked to press a key as soon as they heard the phoneme /b/ in the sentences. Then all sentences were repeated in written recall test, with in each of the sentences four answer choices of (target bearing) words, e.g., choices for target "reeber": reeber - reeler - tadde - taffe
 classification of answer: correct similar false false
- Participants: 40 German learners of English per context condition, 30 English controls



Results of the German subject group
 Context: Faster processing of items with context than without in German [F(1,78)=5.34, p<.05], not in English (Fig. 2a).
 Syntactic structure: Cleft sentences were faster processed only in the German condition with context [F(1,78)=6.64, p<.05].
 Accented items occurring in clefts were faster processed than accented items occurring in non-clefts only in the German condition with context [F(1,78)=6.64, p<.05], (Fig. 2b).



Word recall (Fig. 2c):
 Overall, English items were better recalled (grand mean 52.6%) than German items (grand mean 44.4%).
 Context condition 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 English task was better for items occurring in non-clefted sentences than for items in clefted sentences [F(1,158)=4.29, p<.05].
 There was no effect of clefting on word recall in German.

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.