

Input evidence vs. linguistic knowledge: Establishing new lexical entries during reading

In two experiments, we explored the properties of lexical entries of new words acquired during reading. In particular, we were interested whether readers immediately establish complex lexical entries based on their general knowledge of a given language, or whether new mental representations are idiosyncratic in the sense that they contain only linguistic information directly evident in the linguistic context in which the new word appears.

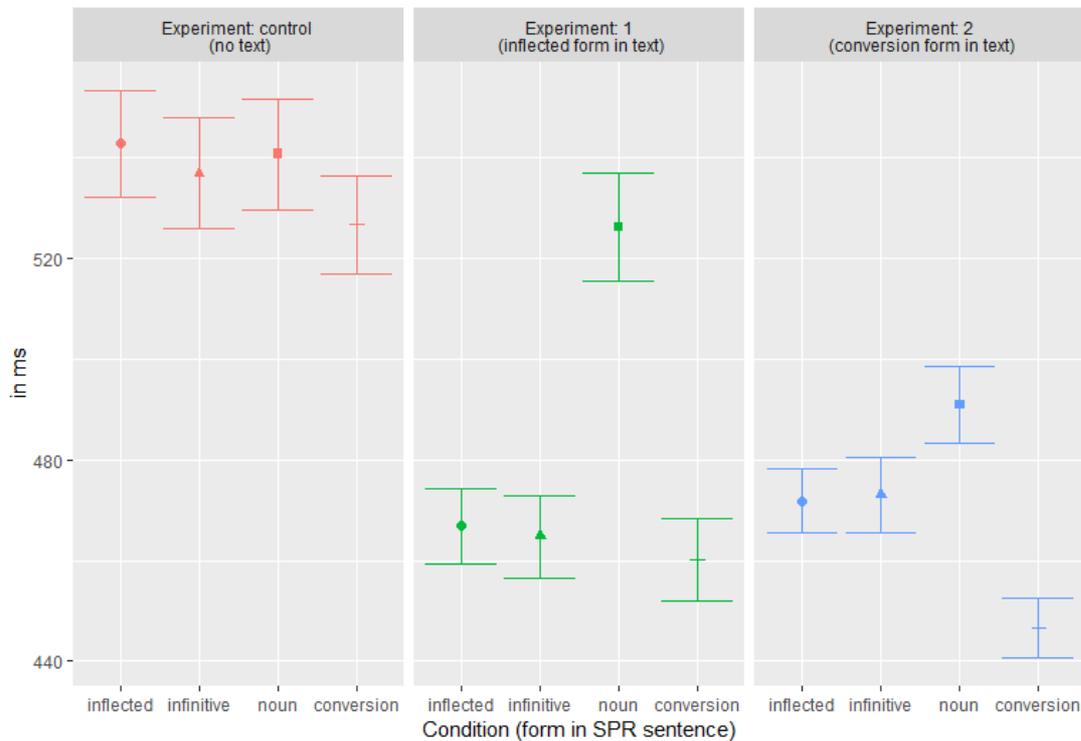
For this purpose, we focussed on verb-noun conversion in German. Any German infinitive form of a verb like *SPIELEN* ('to play') can be converted into a form-identical deverbal noun like *das SPIELEN* ('the playing'). This process is highly productive, and any German verb can be turned into an uncountable, neuter (with respect to gender) noun this way. Though the mental representation of conversion nouns is still controversial, the most recent research supports the hypothesis that German deverbal conversion nouns are nested as word-category specific subentries under a more central, basic lexical entry of the verb (Bauer & Valera, 2005). The question we ask in our study is whether readers who encounter a particular form of a new word in a text (e.g. an inflected verb form in 3rd person plural) establish only a flat lexical entry of that verb, or whether they are able to establish a complex lexical entry containing also the more peripheral subentry for the conversion noun based on linguistic generalisation (for which they do not find any evidence in the immediate linguistic context).

In two experiments, German native speakers (48+48) read 25 short texts in each of which an unknown word occurred twice: In Experiment 1 as a conjugated verb form, in Experiment 2 as a deverbal conversion noun. After each text, participants read several sentences in self-paced reading manner, one of them being in one of four critical conditions containing the same unknown word as either a (1) conjugated verb form, (2) an infinitive, (3) a deverbal conversion noun, or as (4) a countable derived noun in dative plural (*mit den SPIEL-E-N*, 'with the plays/games'). There was also a control experiment, in which participants (40) read the same self-paced reading without the presentation of preceding text contexts. The analyses of the reading times on the critical unknown word and its spill over regions revealed no differences between the conditions in the control experiment. In Experiment 1, the encounter of a conjugated verb form in the preceding text lead to faster reading times (compared to the control experiment) in all conditions except the unproductive condition (4), for which a representation with a separate lexical entry is assumed. In Experiment 2, all conditions yielded faster reading times than the control experiment. Fastest reading times were observed in condition (3) in the spill-over region, i.e. for the same form that had appeared in the previous input. Reading times for conditions (1) and (2) were also faster as in the control experiment, but slower than in condition (3), while slowest reading times were observed in condition (4).

The results indicate that participants are able to establish complex lexical entries and generalize their structure beyond evidence in immediate input based on broader linguistic knowledge (Exp 1). At the same time, the position of the encountered form in the lexical entry's structure turned out to be a significant factor, too: all related nodes seem to profit equally well when a more central form of the entry is encountered (inflected verb form, Exp1). In contrast, encounter of a more specific, peripheral form of a lower node-level (conversion forms, Exp 2) leads to strongest processing benefits for this specific form, but to less pronounced processing benefits for related, more central forms of the lexical entry. In addition, the contrast to a potential lexical competitor (noun condition) was also more evident in Experiment1 than in Experiment 2.

RT for New Word at Spill-Over Region

(means with error bars)



Example Sentences (self-paced reading part, new word bold):

inflected: ROLAND UND SEINE ZWEI SCHWESTERN **BELFEN**, BEVOR SIE IHR ZIMMER ENDLICH AUFRÄUMEN.

‘Roland and his two sisters BELFEN bevor they finally clean up their room.’

infinitive: ROLAND UND SEINE ZWEI SCHWESTERN WOLLEN **BELFEN**, BEVOR SIE IHR ZIMMER ENDLICH AUFRÄUMEN.

‘Roland and his two sisters want to BELFEN bevor they clean up their room.’

countable noun: ROLAND UND SEINE SCHWESTERN GENIESSEN DIE ZWEI **BELFEN**, BEVOR SIE IHR ZIMMER ENDLICH AUFRÄUMEN.

‘Roland and his two sisters enjoy two BELFEN (pl.) bevor they clean up their room.’

conversion : ROLAND UND SEINE ZWEI SCHWESTERN GENIESSEN DAS **BELFEN**, BEVOR SIE IHR ZIMMER ENDLICH AUFRÄUMEN.

‘Roland and his two sisters enjoy the BELFEN (‘BELF-ing’) bevor they clean up their room.’

Note: Existing, low frequency words, whose approximate meaning could be derived from the contexts, were replaced by pseudowords to guarantee that participants have never encounter them. (L2 experiments are planned as well.)