The memorization of complex items – a cross-linguistic comparison

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1 Introduction

Whether or not morphology represents a separate grammatical domain distinct from syntax has been a controversial issue for a couple of decades. While some researchers emphasize contrasts between the two (e.g. Di Sciullo & Williams 1987; Bisetis & Schiötz 1999), others deny a fundamental distinction between morphology and syntax (e.g. Lieber 1992; Haspelmath 2011). Looking at adjective-noun (AN)/noun-adjective (NA) constructions in German, English and French, we see that structural criteria such as inflection, stress and spelling are appropriate to distinguish compounds (morphological products) from phrases (syntactic products) only in German (e.g. German: Roter Hirsch (special kind of deer) versus roter Hirsch (any deer that is red); English: red DEER (special kind of deer) versus red DEER (any deer that is red); French: cerf rouge (special kind of deer) versus cerf rouge (any deer that is red)). What do we actually know about the cognitive nature of these products? Kotowski, Biter and Härzl (2014) compared German AN compounds with AN phrases and revealed stronger memorization effects for compounds.

2 The current study

Goal

The following questions are based on the two observations that (1) no reliable structural criteria exist to distinguish compounds from phrases (AN/NA) in English and French and that (2) Kotowski et al. (2014) found differences in memorization between compounds and phrases (AN) in German: Do AN/NA constructions differ in German, English and French in terms of memorization? If they do, what does this difference tell us about the nature of these products in these three languages?

Assumptions

German prefers a morphological route (compounds) to realize new complex lexical concepts (Blicking 2010; Häning 2010), whereas French favors a syntactic route (phrases) (Van Goethem 2009). English might use both routes (cf. Cantair-McCarthy 2005 for a view on English compounding as neither morphological nor syntactic). Assuming that a German item like Blaumotor is a compound, what is the grammatical nature of its possible translation equivalents blue motor (English) and moteur bleu (French)?

Design

Native speakers of German, English (group English A = only complex AN items with initial stress; group English B = only complex AN items with non-initial stress), and French participated in a memorization experiment on three days (day 1, day 4, day 8). On each day, the experiment consisted of a memorization and a recall phase. In the memorization phase, subjects were asked to memorize novel/non-lexicalized complex items (AN in German and English, AN or NA in French, e.g. Blaumotor/blue motor/moteur bleu) and, as a baseline, real nouns (e.g. Architekt/architect/architecture) of their respective native language (same items on each day). In the recall phase (lexical-decision paradigm), subjects responded to items that they memorized in the memorization phase (response = yes) as well as to items that they did not memorize (response = no).

Main hypotheses

No significant difference should be found between the real nouns (baseline) across languages but a significant difference should occur between the complex AN/NA items across languages.

Selected results

4x2x3 repeated-measures ANOVAs for response time for subjects (F1) and items (F2) included only the memorized items, only correct responses and no outliers. Using the independent variables LANGUAGE (German, English A, English B, French), ITEM TYPE (complex items (AN and NA), real nouns) and DAY (1, 2, 3), we found no significant interaction of LANGUAGE x ITEM TYPE x DAY (p > .05) but a significant interaction of LANGUAGE x ITEM TYPE (p < .01 (F1), p < .001 (F2)). Post-hoc tests for F2 revealed no significant difference between the French and German real nouns (p > .05) and no significant difference between the real nouns of the groups English B and English A (p > .05). Looking at the complex items (AN and NA) (post-hoc tests for F3), however, we found a significant difference between French and German (p < .05) and between English B and English A (p < .05). Furthermore, a significant difference existed between the real nouns and the complex items (AN and NA) in English A, English B and French (p < .001) but not in German (p > .05) (post-hoc tests for F3).

Discussion and conclusion

We consider the fact that the German subjects responded faster to the complex items than the French participants (remember that there was no significant difference for the real nouns between French and German) to show the memorization efficiency of morphological products in comparison to syntactic phrases. The “word-like” nature of the German complex items is also supported by the fact that these items did not significantly differ from the German real nouns.

In English, complex items with initial stress were responded to slower than complex items with non-initial stress. This result seems to contradict the first result (French versus German) because compounding in English has been associated with initial stress (Chomsky & Halle 1968; Marchand 1969). However, this result can be explained by referring to the default stress pattern of English complex AN items, which is non-initial stress (Giegerich 1992). Also, five of six English complex AN items in this study were semantically compositional (according to the results of a post-test with native speakers of English). In a follow-up study, we are currently investigating whether the interaction of stress (initial versus non-initial) and semantic compositionality (compositional versus non-compositional) influences the memorization of complex AN items in English in order to determine the grammatical nature of these products.

References