Cross-linguistic variation in the memorization of complex expressions

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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. In the lexicalist tradition, researchers emphasize contrasts between both (c.f. e.g. Bisetto & Scalise 1999; Di Sciullo & Williams 1987), whereas representatives of the syntactic view deny a fundamental distinction between morphology and syntax (c.f. e.g. Haspelmath 2011; Kremers 2011). In a recent study, Kotowski, Bier and Härtl (2014) compared German adjective-noun compounds (morphological compounds) with adjective-noun phrases (syntactic compounds) and revealed stronger memorization effects for compounds, which the authors interpreted as a reflex of compounds to be more prone to be memorized/lexicalized in comparison to phrases.

2 The current study

Research question

In how far can the hypothesized categorical difference between compounds and phrases be speculated to have cognitive implications from a cross-linguistic perspective?

Assumptions

German seems to prefer a morphological route to realize new complex lexical concepts, that is, it utilizes compounds in this respect (cf. Bücking 2010; Hüning 2010; Schlücker 2012), whereas French can be argued to favor a syntactic route, that is, it primarily employes phrases here (cf. Di Sciullo 2005; Van Goethem 2009; Zweigenburg 1992). English is presumably “located between” German and French and, therefore, is likely to use both routes (cf. Carstairs-McCarthy 2009; Di Sciullo 2005).

Design

Native speakers of German, English, and French participated in an auditory learning study on three days. On each day, the experiment consisted of a memorization and a recall phase. In the memorization phase, subjects were asked to memorize novel complex items (adjective-noun for German and English, adjective-noun or noun-adjective for French, e.g. Blaumotor/blau motor/moteur bleu) and real nouns that did not contain more than one free morpheme (called simplex items in the following; c.f. Archi十条ArchitecteArchitecte) of their respective native language. 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). We examine RESPONSE TIME and RESPONSE ACCURACY (dependent variables). Our independent variables are LANGUAGE (German, English A = complex items with initial stress), English B = complex items with non-initial stress), ITEM TYPE (complex, simplex), DAY (1, 2, 3), and LEARNING STATUS (learned, unlearned). Items were balanced across languages for frequency (simplex items and constituents of complex items), duration, number of syllables, and lexicalization/learning function.

Hypotheses

1. Learned items are recognized faster than unlearned ones.
2. Simplex items are recognized faster than complex ones.
3. Learned items are recognized faster over time.
4. No significant difference occurs for simplex items across languages.
5. A significant difference occurs for complex items across languages (greatest memorization effect for the German items).

Preliminary results (only response times ≤ 300 ms and ≤ 2500 ms, only correct responses)

Hypotheses 1 and 2 have been confirmed. Considering only the difference between day 1 and 3, hypothesis 3 has been validated. Considering only the difference between day 3 and 4, hypothesis 3 has been validated. Considering only the difference between day 1 and 3, hypothesis 4 has been validated. Considering only the difference between day 3 and 4, hypothesis 5 has been validated.

Preliminary conclusion

The German complex items (learned) were responded to faster than the French complex items (learned), there was no significant difference between the German simplex items (learned) and the French simplex items (learned) and the German complex items (learned), but the French complex items (learned) did not significantly deviate from the German simplex items (learned), whereas the French complex items (learned) significantly deviated from the French simplex items (learned). These results might be due to the fact that the German complex items are word-like in nature and memorized in a similar way to the German simplex items, whereas the French complex items should be considered to be phrases as they deviate from the French simplex items in terms of memorization.