Semantic transparency of compound nouns in native and non-native speakers.
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When acquiring a second language, L2 learners have to learn new vocabulary and to integrate the new L2 representations into the mental lexicon. Research on the structure and development of the bilingual mental lexicon has mainly concentrated on factors like cognate status, concreteness, and language proficiency, which are supposed to influence bilingual representations and/or processing. To date, research has also mainly focused on monomorphemic words. How polymorphemic words, such as compounds, are represented in the bilingual mental lexicon is less explored (but see Platz-Schliebs, 1995, Lowie, 1998, Levy, Goral, & Obler, 2005, and Nicoladis, 2006).

Compounds vary in their *semantic transparency*, that is, the strength of the relationship between the meaning of the whole compound and the mening ofits constituents. If the meaning of a compound is clearly related to the meaning of its constituents, such as *snowball* is to *snow* and *ball,* the compound is (*semantically*) *transparent*. If the meaning of a compound is not clearly related to the meaning of its constituents as in *pineapple* and *pine* or *apple*, the compound is (*semantically*) *opaque*. If the meaning of a compound is only clearly related to one of its two constituents, as in *strawberry* (*berry*) or *jailbird* (*bird*), the compound is *partially transparent*. Interestingly, native speaker judgements have been shown to be quite consistent in classifying compounds as transparent-transparent (*snowball*), transparent-opaque (*jailbird*), opaque-transparent (*strawberry*) or opaque-opaque (*pineapple*).

Our study explores the representation of German compounds in native and non-native speakers, focusing on two main questions:

1. How do L2 speakers perceive the semantic transparency of L2 compounds, compared to L1 speakers?

2. Does the perceived semantic transparency change with increasing L2 proficiency, and if so, how and why?

Forty native speakers of German (*L1 German*) and forty late bilinguals with German as L2 and Russian as L1 (*L1 Russian*) performed an off-line semantic transparency rating task on forty German compound nouns. Analogous to previous studies we used a rating scale from 1 to 7 — with 1 indicating the weakest relation and 7 the strongest one. Participants were asked to rate the semantic transparency for both head and modifier, by indicating the strength of the relationship between the meaning of the compound (e.g. *snowball*) and the meaning of its constituents (*snow* and *ball,* respectively) on a scale from 1 to 7. For the two groups we calculated mean transparency ratings for head and modifier.

In general, the L2 speakers' perceptions of the compounds' semantic transparency resembled the L1 speakers' perceptions: correlations for mean transparency ratings between the *L1 German* and *L1 Russian* groups, amounted to .90 for the modifier and .92 for the head, respectively. Paired t-tests revealed that there was a significant difference between the semantic transparency ratings for the compound heads ($p < .02$), with native speakers of Russian perceiving compound heads on average as less transparent than native speakers of German. The difference in semantic transparency ratings for the compound modifiers was not significant ($p = .74$).

In order to research the development of L2 semantic transparency, we divided the *L1 Russian* group into two, based on the participants mean scores for self ratings in reading, writing, speaking and comprehension skills. The twenty participants in the *L1 Russian Advanced* group rated themselves higher on all four macro skills, as they had aquired German at a younger age, and had been living in Germany for a longer period of time than the twenty participants in the *L1 Russian Intermediate* group.

We calculated mean transparency ratings for the *L1 Russian Advanced* and *L1 Russian Intermediate* groups separately. The *L1 Russian Intermediate* group rated the modifiers' transparency lower than the *L1 Russian Advanced* group did, and that pattern was reversed for the head ratings: the intermediate group rated the heads' transparency higher than the advanced group did.

These results suggest that more advanced L2 speakers might perceive the meaning of L2 compounds on a qualitatively different basis than less advanced L2 speakers. For less advanced speakers a compound's head might be the most salient constituent, and therefore perceived to be contributing more to the compound's meaning. Advanced speakers, however, may start to pay more attention to the specifying *modifier* and assess its relation to the compound's meaning as the stronger one due to their more differentiated vocabulary. To illustrate this point, to a beginning learner of English, the constituent *book* in *cookbook* and *phonebook* might seem relatively transparent. With increasing language proficiency and the addition of other compounds sharing the same constituent such as *chequebook, logbook, matchbook, notebook*, and *yearbook* to one's vocabulary, the meaning of *book* might become increasingly abstract, fuzzy, and therefore less semantically transparent within compounds, whereas the differentiating role of the various modifiers might gain more importance.

To summarize, we found significant differences between L2 and L1 speakers' ratings, with L2 speakers perceiving compound heads on average as less semantically transparent than L1 speakers. Within the group of L2 speakers a developmental shift in transparency ratings emerged. Less advanced L2 speakers rated the compounds' heads as relatively more transparent compared to the modifiers, while more advanced L2 speakers displayedthe opposite pattern. This developmental head-modifier shift in perceived semantic transparency provides the first evidence for L2 compounds undergoing representational changes during language learning.

References

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