Meaning-to-form mapping in adjective-noun compounds: a contrastive approach

Although there is ample work on the semantics of compounds in specific languages (cf. Levi 1978 for English and Fanselow 1981 for German), as well as high level semantic classifications of compounds that can be applied to many languages (cf. Scalise & Bisetto 2009), there is little work comparing the specifics of meaning-to-form mapping across languages in detail (but cf. Pepper 2020 for noun noun compounds). This paper aims to fill this gap by investigating semantic patterns in the domain of adjective-noun compounds across closely related languages, English and German. In particular, we are exploring whether patterns in the meaning-to-form mapping in one language have correspondences in the other language. The focus of this study is on metaphor and metonymy due to their fundamental importance for concept formation. This is a first step in teasing apart language-idiosyncratic patterns from more pervasive general patterns that are either cognitively and/or historically motivated.

Methods: We used the set of metaphoric and metonymic adjective-noun (AN) combinations from Schlücker (2014) which contains 73 compounds and 122 lexicalized phrases, e.g. *Rotbart* 'redbeard' (metonymic), *lahme Ente* lit. lame duck, 'slowpoke' (metaphoric). We classified all formations for the most frequent semantic domains of the two constituents (COLOR, BODY PART, CLOTHING, ANIMAL NAMES). For English, we retrieved all AN combinations from CELEX (Baayen et al. 1993), including only simple AN combinations. We classified items with initial stress as compounds, and those with end-stress as lexicalized phrases. We used the semantic domains dominant in the German dataset to classify and subset the English dataset, yielding 44 compounds and 56 phrases.

Results: Table 1a shows the distribution of the German data classified by type of shift and construction. There is an almost categorical mapping from meaning to form: metonymic combinations are encoded in compounds, metaphoric combinations, regardless of whether just the modifier or the head is shifted, map to lexicalized phrases. Table 2a shows the distribution of the shifts by the four most frequent semantic domains of their constituents: color terms for the adjectives, and names of animals, body parts, and pieces of clothing for the nouns. Here, only the names of body parts and of animals show clear patterns, with the former almost exclusively occurring in combinations with metonymic shifts, the latter with metaphoric shifts. Color adjectives occur across all conditions. Table 1b shows the corresponding type of shift/form distribution in the English dataset, and Table 2b the classification of shift type by the same semantic domains. While the metonymic shifts exhibit, similar to German, an almost categorical preference for compounds, the association of metaphoric shifts with phrases is still very strong, but clearly not categorical. For the semantic domains, only the animal names emerge with a strong link to metaphoric shifts, mirroring the pattern in the German data. The color adjectives are markedly less associated with metonymic shifts in comparison to the German pattern, but again occur across all conditions.

Discussion: Strikingly, in both languages the availability of two distinct forms is exploited to distinguish between metonymic and metaphoric shifts, for German in an almost categorical fashion. And in both languages, the mapping goes in the same direction, with the construction that is most dissimilar to ordinary AN phrases being used for metonymic shifts. The situation is less clear for the mapping of the semantic domains of the constituents, with only the animal names showing a clear preferences for metaphoric shifts, and consequently phrases (cf. the parallel *heilige Kuh*/*sacred cow*). Intriguingly, the color terms occur in both types of constructions and across all shift types. Closer analysis reveals that this is linked to the different additional properties of color terms themselves, which can themselves carry extended metaphoric meanings (*green* for youth/spring) or be used as symbols (*red light*) but are also highly distinctive and less subjective than many other adjective subgroups (Scontras et al. 2017).

	Compound	Phrase
metonymic combination	66	5
metaphoric modifier	2	59
metaphoric head	5	58

Table 1a: Distribution of German AN combinations across form and types of semantic shifts

	Compound	Phrase
metonymic combination	24	1
metaphoric modifier	9	17
metaphoric head	11	38

Table 1b: Distribution of English AN combinations across form and types of semantic shifts

	Metonymic (71)	metaphoric modifier (61)	metaphoric head (63)	Total (195)
COLOR (A)	28	20	14	62
BODY PART (N)	53	1	5	59
CLOTHING (N)	5	0	3	8
ANIMAL NAMES (N)	0	1	19	20

Table 2a: Distribution of German AN combinations across shift types and semantic domains of their constituents

	Metonymic (25)	metaphoric modifier (26)	metaphoric head (49)	Total (100)
COLOR (A)	13	23	26	62
BODY PART (N)	18	0	14	32
CLOTHING (N)	2	0	3	5
ANIMAL NAMES (N)	0	2	15	17

Table 2b: Distribution of English AN combinations across shift types and semantic domains of their constituents

References

Baayen, R. H., R. Piepenbrock, and L. Gulikers (1995). CELEX2 LDC96L14. Web Download. Philadelphia: Linguistic Data Consortium.

Fanselow, G. (1981). Zur Syntax und Semantik der Nominalkomposition (Linguistische Arbeiten 107). Tübingen: Niemeyer.

Levi, J. N. (1978). The syntax and semantics of complex nominals. New York: Academic Press.

Pepper, S. (2020). The typology and semantics of binominal lexemes: Noun-noun compounds and their functional equivalents, University of Oslo PhD dissertation

Schlücker, B. (2014). Grammatik im Lexikon. Adjektiv+Nomen-Verbindungen im Deutschen und Niederländischen (Linguistische Arbeiten 553). Berlin, Boston: De Gruyter.

Scalise, S. and A. Bisetto (2009). The classification of compounds. In R. Lieber and Šteckauer (Eds.), The Oxford Handbook of compounding, Oxford Handbooks in Linguistics, pp. 34–53. Oxford: Oxford University Press.

Scontras, G., J. Degen and N. D. Goodman. (2017). Subjectivity predicts adjective ordering preferences. Open Mind 1, 53–65.