

On the Lexical Representation of Nominal Compounds: Evidence from Continuous Naming in English

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Background: Two opposing accounts have been proposed to explain the lexical storage and processing of compound nouns in spoken production (single vs. multiple lemma) [1, 2]. Moreover, recent data from the continuous picture naming task with compound targets in German point to the activation and retrieval of constituent lemmas during compound production, and hence support the multiple lemma account [3, 4]. However, whether the cross-linguistic differences between English and German in the occurrence, frequency and morphological productivity of compounds [5] compared to simple nouns affect the type of morpho-lexical representation of compounds has not been tested previously. Our study used the continuous picture naming task with noun-noun compound targets in English (e.g., *spiderflower*) to examine whether the constituent morphemes (*spider* and *flower*) are accessed separately at a lexical-syntactic level (lemma) during compound production.

Method: In the continuous picture naming task, members of different semantic categories, such as *bee*, *ant*, and *spider* for the category *INSECTS* are named in a seemingly random order, separated by unrelated objects from other categories (i.e., lags). Participants' naming latencies increase with each additional member of a semantic category, an effect that is typically located at a lexical-semantic level and called cumulative semantic interference [6, 7]. In line with a recent continuous naming study from German [3], we tested whether cumulative semantic interference would be observed for noun-noun compounds in English that are categorically related by their first (modifier) constituents but that are unrelated overall (e.g., *beeswax*, *anthill*, *spiderflower* for *INSECTS*) as well as the first constituents (e.g., *bee*, *ant*, *spider*) as simple noun controls. This effect would point to a multiple-lemma representation [2] of compounds in English. Picture-naming latencies were collected in an online experiment via Gorilla [8] with a large group of healthy adult English speakers (n= 61, 28 female, mean age: 29 years, range: 19-36 years).

Results: Our results show robust cumulative semantic interference for simple nouns (control condition) with only three exemplars per category, which replicates earlier findings with five category members each [3, 6, 7]. Moreover, a similar cumulative semantic interference effect was obtained for overall unrelated compounds with categorically related modifier constituents.

Discussion: Our data indicate a multiple lemma structure [2] of compound nouns in English and partially replicates earlier findings from German [3]. The results of the exploratory compounds-only analysis present a contrasting pattern in relation to the semantic transparency of the head and the modifier constituents of compounds. The implications of these analyses will also be discussed in relation to the cross-linguistic differences in bi-morphemic compounds between English and German [5].

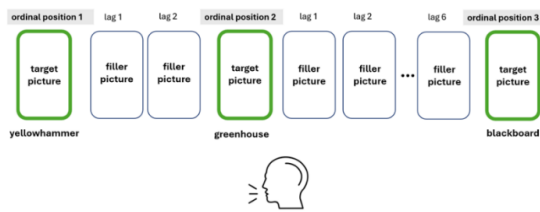


Figure 1: An Example Sequence of Continuous Picture Naming for Compounds in the Category of COLORS.

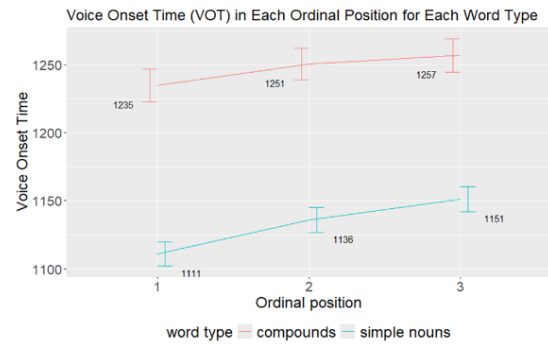


Figure 2: Voice Onset Time (VOT) Means and Standard Errors in milliseconds in Each Ordinal Position for Each Word type.

The icon “speech” in Figure 1 is by EKA YS from [Noun Project](#) (CC BY 3.0).

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