

The Role of Semantic Head and Constituent Position in the Processing of Root Compound Nouns: Evidence from Normal and Broca Aphasic Subjects

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Abstract

The role of semantic head and constituent position in processing and representation of root compound nouns comprised of noun-noun was studied in this article. For this purpose, the performance of three people (two men and one woman) with Broca aphasia was studied through naming and repetition of endocentric and exocentric root compound nouns taken from the Ph.D. dissertation of Xabbaz (2006). Easier processing of simple and compound nouns' repetition compared to their naming proved that repetition processing was different from naming. Moreover, easier processing of root compound nouns in comparison with simple ones showed the role that morphological structure plays in processing.

The occurrences of errors in one constituent of compound nouns (the initial or final constituent) and also in the whole compound (both initial and final constituents) confirmed that semantic head had no role in processing compound nouns. More errors of people with Broca aphasia in initial constituents, compared to the final constituents of endocentric (head-initial and head-final) and exocentric root compound nouns in confrontation naming, indicated that constituent position has a role in the processing of root compound nouns. Moreover, fewer errors of final constituents compared to initial constituents of compound nouns in repetition task provides an account of the easier processing of nouns' final constituents and supports the role of constituent position in the repetition process too. The distribution of errors in initial, final, and both constituents (the whole) of root compound nouns is an indication of their hierarchical and flat processing in naming and repetition tasks.

Analyzing the correct answers of people with aphasia in confrontation naming and repetition revealed that they had better performance in repetition than naming. The repetition of their simple nouns also was better than their naming. Moreover, they had better performance in repetition and naming of simple nouns in comparison

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with compound ones. The finding of easier processing of simple and compound nouns' repetition compared to their naming processing proved that auditory repetition and confrontation naming were processed differently. Moreover, easier processing of simple nouns compared to compound ones indicated that the structure of words played an important role in processing of words. In other words, words with complex structures are processed more difficultly than words whose structures are simple.

Regarding the fact that the head and its position are separate from each other in exocentric root compound nouns and none of the constituents are heads; this independence shows the role of constituent position in both hierarchical and flat processing of compound nouns. If the head final compound nouns, whose heads are located in words' final, have an easier processing, it is expected that the exocentric nouns will be processed in the same way. In other words, since none of the constituents of exocentric compound nouns are heads, it is expected that both constituents will be processed at the same degree of easiness, but contrary to this expectation, analyzing the errors which are produced by people with Broca aphasias showed that the distribution of errors were not different from endocentric compound nouns. This means that although none of constituents of exocentric compound nouns are heads, like endocentric ones, their final heads are processed more easily

Moreover, the fewer errors of these constituents show the important role of constituent positions in processing. In addition, this finding displays the role of compound nouns' final heads too. It also reveals that the processing of exocentric and endocentric compound nouns are the same. The distribution of errors in initial and final, or both constituents of compound nouns simultaneously shows the hierarchical and flat processing of confrontation naming. On the other hand, the higher number of occurrences of errors in both constituents of root compound nouns demonstrates that the flat processing is more frequent than the hierarchical one in naming these stimuli. This finding is in accordance with what Marelli, Crepaldi & Luzzatti (2009) found in processing of compound words. The distribution of errors in initial, and final or both constituents of compound nouns produced by people with aphasia proves that both the flat and hierarchical processing occur in repetition. Moreover, the higher occurrences of errors in initial and final head constituents of compound nouns compared to the whole compounds (both constituents) of these nouns shows that the frequent processing is hierarchical in repetition. This finding is in accordance with what El Yagoubi, Chiarelli, Mondini, Perrone, Danieli, & Semenza (2008) claimed on potential impact of headedness in processing of nouns in Italian.

Keywords: Semantic head, Constituent position, Dual-route, Endocentric, Exocentric