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Processing of Compounds in Native and Nonnative Speakers of Turkish

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Compound processing has a particular place in the psycholinguistic literature since it contributes to our understanding of the mental representation/processing of multimorphemic words – an issue that has not yet been completely resolved. Compounds allow researchers to examine whether constituency, frequency and semantic transparency play a fundamental role in the processing of multimorphemic words [1]. Studies on compound processing revealed that semantic transparency and headedness are two factors influencing constituent morpheme activation in different languages [4,6]. In the context of second language (L2) acquisition, a proficiency-based reliance on semantic transparency and headedness was observed [7]. Previous research on processing of Turkish is limited and the findings are inconclusive as to the extent of decomposition in accessing inflected and derived forms [2,3,5].

The present study investigates the processing of noun-noun compounds in L2 Turkish, a language with right-headed and productive compounding. In a masked priming experiment, 71 L1-English learners of Turkish (35 advanced and 36 intermediate-level learners) and 73 Turkish monolinguals were tested. The stimuli consisted of 10 transparent-transparent, ‘*kuzeydoğu*’ (northeast) (*kuzey*=north, *doğu*=east); 10 partially-opaque, ‘*büyükelçi*’ (ambassador) (*büyük*=big, *elçi*=delegate), 10 pseudocompounds (‘*fesleğen*’, ‘*basil*’, *fes*=fez; *leğen*=bowl/pelvis), and 60 monomorphemic words, ‘*kaplumbağa*’ (turtle), together with 90 nonwords. The prime-target pairs were presented in three conditions: (i) Constituent 1 (*kuzey*–*KUZEYDOĞU*), (ii) Constituent 2 (*doğu*–*KUZEYDOĞU*), and (iii) Unrelated (*çanta* ‘bag’–*KUZEYDOĞU*). All items were matched on length and frequency. The test had three versions so that no participant saw the same target more than once.

A 2 x 3 x 3 Mixed ANOVA for the RTs revealed a significant main effect of word type ($F=239.016$; $p<.001$), prime type ($F=5.402$; $p<.006$), group ($F=252.449$; $p<.001$), the interactions between word type and group ($F=78.103$; $p<.001$) and word type and prime type ($F=3.277$; $p<.043$). The native speakers of Turkish processed the words significantly faster than intermediate and advanced L2 groups ($p<.001$); and the advanced group was significantly faster than the intermediate group ($p<.001$). Compound words were processed significantly more slowly than noncompounds ($p<.001$) by all groups. A further analysis of compounds revealed a significant difference only between Constituent 2 and Unrelated Prime ($p<.003$), suggesting the facilitative role of Constituent 2 in all groups; however, for noncompounds, no priming effect was observed.

A second 2 x 3 x 3 Mixed ANOVA was conducted only for compound words and the results revealed a significant main effect of word type ($F=11.798$; $p<.002$), prime type ($F=6.445$; $p<.003$), group ($F=228.578$; $p<.001$) and the interaction between word type and group ($F=4.964$; $p<.009$). Partially-opaque compounds were processed significantly more slowly than transparent-transparent compounds ($p<.002$), but this difference was only significant for intermediate level learners ($p<.001$). A pairwise comparison among prime types revealed a significant difference only between Constituent 2 and Unrelated Prime ($p<.001$), indicating that Constituent 2 facilitated lexical access for both partially-opaque and transparent-transparent compounds for all groups.

Overall, findings reveal that Constituent 2 (the head) facilitated lexical access in Turkish compounds not only in native but also in nonnative speakers of Turkish. In addition, the findings suggest that semantic transparency does not play a significant role in processing Turkish compounds.

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