Structural priming data from languages with variable word order such as Dutch or Japanese suggest that speakers do not only tend to repeat the phrase structural realization of their utterances (Bock, 1986), but that they also tend to preserve the linearization of the resulting phrases. In some of the studies (Hartsuiker, Kolk, & Huiskamp, 1999; Yamashita & Chang, 2006), thematic roles and their phrase structural realizations are confounded such that one does not know whether priming in these studies occurs at the conceptual or the positional level of sentence production.

The present study, in German, aims at disentangling these factors by pairing primes and targets that differ in phrase structure but are potentially parallel in the order of thematic roles. Prepositional object (NP PP) structures served as primes. The object NP was marked for accusative and referred to a theme whereas the PP referred to a recipient. The relative order of the critical constituents was manipulated (ACC PP vs. PP ACC).

Targets presented for sentence generation consisted of non-alternating double object (NP NP) verbs and three vertically aligned nouns (e.g., zeigen Vater Kind Haus ‘show father child house’). The position of the critical nouns was varied. Either the potential recipient (e.g., Kind, ‘child’) was presented above the potential theme (e.g., Haus, ‘house’) or the order was reversed. Responses were coded as to whether they displayed dative before accusative (DAT ACC) or accusative before dative (ACC DAT) word order.

Participants mostly produced structures that displayed DAT ACC order (91%). Responses were submitted to a Generalized Linear Mixed Model (Baayen, 2008) with prime structure and noun position as fixed variables and participants and items as random variables. There was a significant effect of prime structure ($p < .05$) showing that there were more responses with ACC DAT order after ACC PP primes than after PP ACC primes. Moreover, there was a significant effect of noun position ($p < .01$) indicating that in their responses the participants tended to preserve the order in which the nouns were presented. Including the interaction terms did not improve the model.

There are several conclusions to be drawn from the data. First, they add to the evidence that the production of word order variants can be primed even when they only differ in case marking but not in phrase structure. Second, as primes and responses did indeed differ in phrase structure, an account in terms of structural priming at the positional level (Hartsuiker, Kolk, & Huiskamp, 1999) can be ruled out for our data. Third, primes and responses tended
to share the order of thematic roles and therefore add to the evidence for structural priming at the conceptual level (Bernolet, Hartsuiker, & Pickering, 2009). Finally, as there were relatively more marked ACC DAT responses after canonical ACC PP primes than after marked PP ACC primes (cf. Lenerz, 1977), our data indicate that an information structural account cannot be reduced to the notion of relative markedness of the resulting structures.

References: