## Using structural priming to investigate linguistic representations underlying processing

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The psychology of language has traditionally encountered much opposition when it attempts to constrain linguistic theory – whether in relation to the reality of transformations (e.g., J.A. Fodor et al., 1974) or the reality of empty categories (e.g., J.D. Fodor, 1989). Because of this, it has often "retreated" into discussing issues of processing without tackling the underlying issues of linguistic representation.

Here we argue that structural priming (Bock, 1986) provides a method of addressing linguistic representation (i.e., is a form of "experimental linguistics"), as proposed by Branigan et al. (1995). A great deal of recent work has used it to determine the mechanism of language production and (to a lesser extent) comprehension. We contend that this research is also highly suggestive about linguistic representations and how they are linked, and most importantly provides a clear method for a great deal of future work on these issues.

Perhaps most importantly, the research suggests that priming is sensitive to different levels and components of linguistic representation. There is good evidence for *syntactic priming*, in studies that have systematically ruled out explanations in terms of prosody, lexical repetition, thematic repetition etc. Moreover, priming occurs between constructions that are syntactically similar but have unrelated constructional meaning, and across word-order variations in which meaning is identical. In addition, priming occurs for idiomatic constructions and constructions with inappropriate or novel verbs, suggesting that constructions are represented independently from lexical items.

However, recent research also reveals non-syntactic structural priming. For example, people tend to persist in the assignment of emphasis (topichood) to particular thematic roles, in the order of thematic roles (e.g., theme-recipient), in the assignment of thematic roles to functions (e.g., theme as direct object), in the assignment of animacy (or predicability) to grammatical functions or linear order, in the assignment of quantifier scope, and probably with an operation associated with complement coercion.

We argue that the data support the existence of a single, "shallow" surface syntactic representation, which includes grammatical function information and linear order, together with a single semantic representation that includes information about thematic roles and quantifier scope. The evidence does not support intervening levels of LF, DS, F-structure, or dominance-without-precedence. It also suggests that syntactic information is not "projected from the lexicon".

Finally, we discuss cross-linguistic priming as evidence in the context of universality. The strength and ubiquity of such priming suggests that many constructions "count" as the same in different languages. However, priming also occurs between constructions that are different in the two languages and also supports shared semantic representations.

Overall, we argue that structural priming has only just started to investigate linguistic representation, and that it is not limited to resolving issues about processing. It provides an implicit method based on similarity between utterances that provides a useful alternative to grammaticality judgments. Among other things it is potentially able to discriminate among contentious linguistic analyses, and we briefly illustrate this with the Mandarin *bei* construction.