

Facilitating sentence comprehension by syntactic priming

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Producing or comprehending sentences with certain syntactic structures increases the likelihood that the same syntactic structures will be used in production (Bock, 1986). There is an ongoing discussion on whether this effect, called syntactic priming, can influence comprehension as well. The effect is significant in that it provides a way to test the activation of abstract categories during processing. Previous work demonstrated effects of syntactic priming on acceptability judgments and the interpretation of ambiguous sentences (Luka & Barsalou, 2005; Branigan, Pickering, & McLean, 2005). Arai, Gompel, and Scheepers (2007) demonstrated priming of anticipatory eye movements in comprehension if the prime and target sentences shared lexical material. It has not been tested whether syntactic priming can facilitate the speed of comprehension process. The present study addressed this question using the self-paced reading task. Three types of Czech stimuli were used:

(1) a. Prime:

Skrýtou	cestu	najde	kapitán.	/	Starý	kapitán	najde	cestu.
Hidden	path _{acc}	finds	the captain _{nom}	/	The old	captain _{nom}	finds	the path _{acc}

b. Target:

Štěně		postrčí	<i>unavený</i>	<i>osel</i>	<i>u vrat.</i>
A puppy _{nom-acc-ambiguous}	pokes	the tired	donkey _{nom}	at the gate.	

(2) a. Prime:

Dědeček	daroval	hračku	vnučovi.	/	Dědeček	daroval	vnučovi	hračku.
Granddad	gave	toy _{acc}	grandson _{dat}	/	Granddad	gave	grandson _{dat}	toy _{acc}

The granddad gave a toy to his grandson / his grandson a toy.

b. Target:

Básník	daroval	<i>kabelku</i>	<i>manželce</i>	<i>důležitého</i>	<i>nakladatele.</i>
Poet	gave	purse _{acc}	wife _{dat}	important _{gen}	publisher _{gen}

The poet gave a purse to the wife of an important publisher.

(3) a. Prime:

Vítr	může	zlomit	strom.	/	Vítr	zlomí	strom.
The wind	can	break	the tree.	/	The wind	breaks	the tree.

b. Target:

Žena	<i>může</i>	<i>vyprat</i>	<i>prádlo.</i>
The woman	can	wash	the clothes.

In two types of items (2, 3), there was a lexical overlap between primes and targets. The dependent variable was the total reading time for the portion of the target sentence differing structurally from the prime sentence (italicized portion in the examples).

Reading times were significantly faster in the items with matching sentence structures in two of the three sentence types: Acc-Nom sentences (1) and sentences with modals (3). The results indicate that syntactic priming can facilitate the speed of sentence processing, but the effect is not universal. Contrary to the findings of Arai et al. (2007), no priming was found in sentences with datives even in the presence of lexical overlap. This may be due to the difference between English and Czech dative

structures, but the present paper argues for a different interpretation. It is proposed that syntactic priming in comprehension only occurs in sentences that require syntactic revisions or complex conceptual integration. Unlike in production, however, mere variations in word order cannot be primed in comprehension. A preliminary test of this hypothesis is provided, showing correlational relationship between the difficulty rating and the strength of the effect.

Bibliography

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