

Using Structural Priming to Study Grammatical Representations in Language Production

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Language Production

 To speak people have to

- Plan what they want to say (> concept)
 - Formulate, i.e. put this concept into linguistic structures (words, morphemes, word order etc.)
 - Articulate
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Linguistic Formulation

- Which linguistic, in particular syntactic, structures play a role in formulation (e.g. phrase structure)?
 - One way to study the nature of mental syntactic representations is to make use of *syntactic priming*
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What is Syntactic Priming?

□ What is priming?

- Mental pre-activation of a linguistic structure (phonological, lexical, etc.)

□ What is syntactic priming?

- People tend to reuse sentence structures they have perceived or produced before (Bock, 1986)
 - If there is a syntactic choice (e.g. active/passive), there is a tendency to repeat
 - It is therefore also possible to systematically influence people's choice of sentence structures
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Why does that help?

- What can be primed is supposed to play a role in the mental representation of language
 - Given that all other effects are controlled for, syntactic structure must be relevant in the mental formulating of language
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Study: Motivation

- It has been shown that word order can be primed (V-AUX vs. AUX-V)
 - Taken as argument for a linearisation stage

 - But the order of what exactly?
 - Cannot be the words themselves
 - Parts of speech?
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Study: Rationale

□ German Ditransitives

- Prepositional Object Construction (PO)
 - Er schickt den Brief an die Frau ('He sends the letter to the woman')
 - Double Object Construction (DO)
 - Er schickt der Frau den Brief. ('He sends the woman the letter.')
 - Shifted (scrambled) DO (DOsh)
 - Er schickt den Brief der Frau. ('He sends the letter (to) the woman.')
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Study: Rationale

Der *Cowboy* *schickt* [*dem* *Clown*]_{NP}
the.masc.sg.nom cowboy sends the.masc.sg.dat clown

[*den* *Brief*]_{NP}.
the.masc.sg.acc letter

'The cowboy sends the clown the letter.'

Die *Ballerina* *leiht* [*das* *Buch*]_{NP}
the.fem.sg.nom ballerina lends the.neu.sg.acc book

[*dem* *Taucher*]_{NP}.
the.masc.sg.dat diver

'The ballerina lends the book (to) the diver.'

Study: Rationale

- Do DO and DOsh prime each other because they share (surface) phrase structure (V-NP-NP)?
 - Does DO only prime DO and DOsh only DOsh?
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Methods Experiment 1

- 32 native German speakers

 - Ditransitive sentences in 4 conditions
 - PO prime
 - DO prime
 - DOsh prime
 - Intransitive prime
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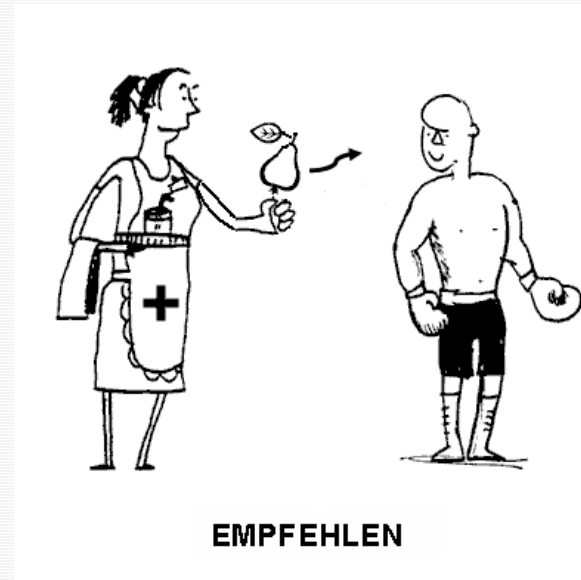
Methods Experiment 1

□ Prime

Der Mönch reicht den Hut dem Soldaten.
(‘The monk hands the hat (to) the soldier.’)



□ Target



Results Experiment 1

- Word order priming for DO and DOsh despite of same syntactic categories of phrases (NP-NP and NP-NP)
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Results Experiment 1

- What else could have caused the effect?
 - Maybe the order of the animate and the inanimate referent? (Bock et al. 1992)
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Experiment 2

Der Entführer verschafft die Prinzessin dem Cowboy.

(‘The kidnapper gets the princess (for) the cowboy.’)



Conclusion

- Results support the existence of a mental representation concerned with the mere ordering of sentence parts in language production
 - Might be determined or influenced by semantics (thematic roles)
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Thank you!
