Morphology as processed by the human brain

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ÚFAL week of Doctoral Students

Morphology

- the study of how words are formed in a language

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jazykovědeckými

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http://www.rooneybin.com/wp-content/uploads/2014/02/1200276-Cartoon-Of-A-Confused-Brain-Mascot-With-A-Question-Mark-Royalty-Free-Vector-Clipart.jpg

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(fully listing approach)

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- morphological priming (Morris, 2007; Kazanina, 2008, Feldman, 2009; Smolka, 2007)

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- ? border between storage and decomposition ?
  - (Baayen, Dijkstra, & Schreuder, 1997; Frauenfelder & Schreuder, 1992; Schreuder & Baayen, 1995, in Kazanina, 2008)

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No representation of morphology
(distributed connectionist approach)

- no decomposition
- interplay of meaning and form
  - (e.g., Gonnerman, Seidenberg, & Andersen, 2007)

Experimental methods

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- functional magnetic resonance imaging (fMRI) (e.g., Bozic & Marslen-Wilson, 2003, Meinzer, Lahiri, Flaisch, Hannemann, & Eulitz,

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- functional type of affix (e.g., Bozic & Marslen-Wilson, 2003; Leminen et al, 2013)
  - inflection x derivation
  - some studies: inflections prime as much as the lemma itself

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- clear-cut or graded effects?
  tested for derivations only
  (Gonnerman et al, 2007)

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- further study: sentence stimuli

antidisestablishmentarianism

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Topics of interest - representations of affixes / grammatical categories

Affix priming

- derivational suffixes (e.g., Dunabeitia, Perea, & Carreiras, 2008)
- inflectional suffixes??

Smolík, 2010

vrba – žena
pána – žena
duše – žena

Set of grammatical features

- feature representation of grammatical categories (Leminen, & Clahsen, 2014)
- conditions with varying degree/kind of violation
- violations of syntactic vs. morphological structure

Dali ženám květiny.
Dali ženům květiny.
Dali ženách květiny.

Topics of interest
- words with several morphemes

Effects of complexity

- calculation of meaning should be slower than for monomorphemic controls
- processing load as a function of complexity? (Meinzer et al., 2009)
- processing of highly complex words vs. less complex ones

  hračkářský – studentský

Problems in morphology research

- words studied mostly in isolation
  - but: Lueck, Hahne, & Clahsen, 2006; Penke, 2004
- generalising over experiments
  - interactions? (Amenta, 2012)
- varying definitions of influencing factors
- most studies on English/German
  - but: Polish (Szlachta, Bozic, Jelowicka, & Marslen-Wilson, 2012), Finnish (Leminen et al., 2013)