Morphology and Grammatical Class

Noun and Verb Roots in Italian Complex Words

davide.crepaldi1@unimib.it
www.davidecrepaldi.net/wordpress/category/research/

UNIVERSITA' DEGLI STUDI DI MILANO BICOCCA

Davide Crepaldi
MoMo Lab, Department of Psychology, University of Milano-Bicocca, Italy
Lisa Saskia Arduino
LUMSA University and ICST, CNR, Roma, Italy
Claudio Luzzatti
Department of Psychology, University of Milano-Bicocca, Italy

BACKGROUND

Morphologically complex words are broken down into their constituting morphemes during visual identification (e.g., Grainger et al., 1991; Taft & Forster, 1975).

A substantial amount of experimental evidence suggests that grammatical class is an organizing principle of the human lexical system (e.g., Hillis & Caramazza, 1995; Luzzatti et al., 2002; Mahon et al., 2007).

No morphological theory addresses the issue of how grammatical class is implemented in the visual word identification system (e.g., Baayen et al., in press; Crepaldi et al., 2010; Gonnerman et al., 2007; Rastle et al., 2004).

RESEARCH QUESTION

Do nouns and verbs sharing their roots (e.g., *depart*, *departure*) contact the same morpheme representation? Or rather we have separate, grammatical class specific representations for noun and verb roots like *depart-*?

PREVIOUS STUDIES

Laudanna et al. (1989; 2002) suggest separate representations, as they found that nouns and verbs sharing their roots inhibit each other in lexical decision tasks. But they tested unrelated words with homographic roots (e.g., ***port***e, doors, and ***port***are, to carry), rather than truly related nouns and verbs.

Relevant data on genuine morphological relatives were obtained in Hebrew (Deutsch et al., 1998; Frost et al., 1997). Related nouns facilitate each other when they share a root (e.g., *ta**kl**it*, a record, and *ha**kl**a**t**a*, a recording), but not when they share a word pattern (e.g., ***ta**kl**it***, and ***ta**rg**i**l*, an exercise). Related verbs instead facilitate each other in both cases.

On the basis of these data, Deutsch et al. (1998) propose a model whereby noun and verb roots share their representations, although they never tested cross-class morphological priming directly.

EXPERIMENT 1

Assessing cross-class morphological priming

Methods

- 61 participants
- Reading task
- Main design:

(camminata - CAMMINARE vs. mozzarella - CAMMINARE)
(the) walk - TO WALK; mozzarella - TO WALK

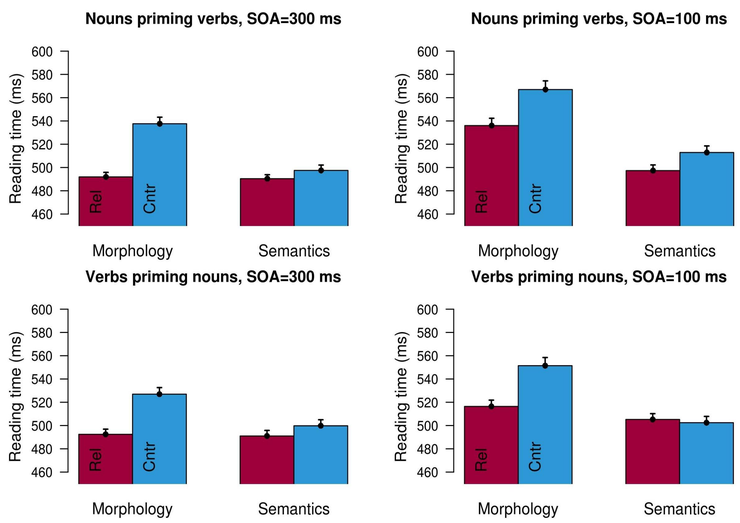
vs.

(passo - CAMMINARE vs. borsa - CAMMINARE)
(the) step - TO WALK; bag - TO WALK

- We also checked for the role of SOA (100 ms vs. 300 ms) and for priming direction (nouns priming verbs vs. verbs priming nouns)
- Related and control primes were matched pairwise for written and spoken frequency, and for length in letters and in syllables

Results

Genuine cross-class morphological priming is observed, independently of SOA and prime direction



EXPERIMENT 2

Assessing the role of orthography and phonology

Methods

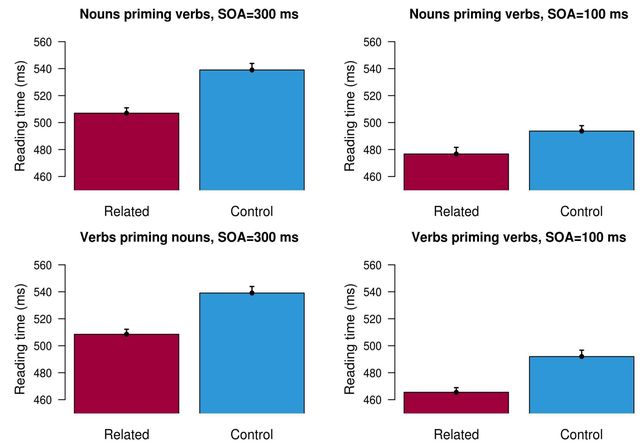
- 28 participants
- Main design:

camminata - CAMMINARE vs. cammello - CAMMINARE
(the) walk - TO WALK; camel - TO WALK

- No semantic control as Exp 1 was clear-cut in this respect. Any other detail is identical to Exp 1.

Results

Identical to Exp 1. No role for orthography and phonology.



CONCLUSION

Genuinely related nouns and verbs **facilitate** each other in word naming, indicating that **noun and verb roots share their representations**.

These data are in line with Deutsch et al.'s (1998) proposal. Although cross-class priming has never been shown directly in Hebrew, there seems to be interesting converging evidence from languages with completely different morphological systems.

REFERENCES

Baayen et al. (in press), Psychological Review. Crepaldi et al. (2010), Journal of Memory and Language, 63, 83-99. Deutsch et al. (1998), Journal of Experimental Psychology: LMC, 24, 1238-1255. Frost et al., (1997), Journal of Experimental Psychology: LMC, 23, 829-856. Gonnerman et al. (2007), Journal of Experimental Psychology: General, 136, 323-345. Grainger et al. (1991), Journal of Memory and Language, 30, 370-384. Hillis & Caramazza (1995), Journal of Cognitive Neuroscience, 7, 369–407. Luzzatti et al. (2002), Brain and Language, 81, 432–444. Mahon et al. (2007), Journal of Experimental Psychology: LMC, 33, 503–535. Rastle et al. (2004), Psychonomic Bulletin & Review, 11, 1090-1098. Taft & Forster (1975), Journal of Verbal Learning and Verbal Behavior, 14, 638-647.