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Summary of dissertation
„Case studies of oral and written language production in patients with aphasia and dementia“

The present thesis presents studies on oral and written language production of patients with aphasia and dementia. The studies are carried out in the paradigm of cognitive neuropsychology. Chapter 1 provides a discussion of the assumptions and methods in cognitive neuropsychology.
Chapter 2 presents the detailed study of a patient with “dynamic aphasia”. “Dynamic aphasia” is an impairment of fluent speech production which is usually observed after frontal lobe lesions. The functional deficit has been localized at the level of pre-verbal message generation of Levelt’s (1989) production model. Here, it is argued that the patient’s impairment can be localized at the level of Levelt’s “macroplanning” and that his “microplanning skills” (and, thus, verbal planning *per se*) are preserved.
Chapters 3, 4 and 5 present data on lexical access in aphasic speakers and speakers with dementia. The theoretical background is discussed in chapter 3. Three common models of lexical access (Levelt et al., 1999; Dell et al., 1997; Caramazza, 1997) are discussed. In chapter 4, a group study of aphasic speakers is described testing the assumptions of Levelt et al.’s model. The results, an interaction of semantic errors and errors of omission with lexical-semantic neighborhood, speak against Levelt et al.’s position and favor cascading or interactive models of lexical access.
Chapter 6 introduces writing as a further modality of language output. A patient with deep dysgraphia, MD, is presented who gave different answers in a double naming task (oral, then written object naming). This speaks against Levelt et al.’s assumption that lexical selection is carried out at the modality-independent lemma level. In addition, it is argued that age of acquisition is a better predictor of spelling success than word frequency.
Chapter 7 presents an analysis of MD’s segmental spelling errors. It is observed that letter substitutions preserve the target letter’s status of consonant or vowel. This observation is taken as evidence for syllabic representations in the writing system constraining segmental spelling errors. Alternative positions, e.g., of Jonsdottir et al. (1996) are discussed.
In chapter 8, the origin of MD’s so-called “fragment errors” is investigated. Fragment errors are a common error in the writing of deep dysgraphic patients, and three positions have been advocated regarding the underlying mechanisms. One position assumes rapid decay of activation in the buffer while a second positions assumes an impairment of lexical control nodes. One further position holds that the deficit should be localized at the semantic level and that processing is cascading rather than modular. In a number of tests of MD, the latter position is supported.
Chapter 9 finally presents another single case study of the aphasic patient MO. MO suffers from surface dysgraphia. In spelling, MO makes use of a sublexical writing route which results in a large number of phonologically plausible errors. MO was dictated phrases which contained “phonological words” which did not correspond to morphological boundaries. MO frequenctly spelled the words of the phrases as a single word and left out segments which could not be heard (e.g., writing “Kannst Du?” as <kannstu>). It is argued that MO uses ‘phonological words’ in his sublexical spelling. ‘Phonological words’ have been postulated by Levelt and co-workers as a product of syllabification during the production of multi-word utterances.
In sum, the results highlight the relevance of cognitive neuropsychological studies for models of unimpaired (“normal”) speaking and writing.