

# Aphasia and the Challenge of Writing

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av

Ingrid Behrns

Fakultetsopponent:  
Professor Inger Moen  
Institutt for lingvistiske og nordiske studier  
Universitetet i Oslo

This thesis is based on the following papers:

- I. Behrns, I., Ahlsén, E. & Wengelin, Å. Aphasia and Text Writing. Under revision.
- II. Behrns, I., Hartelius, L., Wengelin, Å. & Olsson, M., B. A Comparison of Written and Spoken narratives in Aphasia. Submitted.
- III. Behrns, I., Ahlsén, E. & Wengelin, Å. (2008). Aphasia and the Process of Revision in Writing a Text. *Clinical Linguistics & Phonetics*, 22, 2, 95-110.
- IV. Behrns, I., Hartelius, L. & Wengelin, Å. (in press). Aphasia and Computerised Writing Aid Supported Treatment. *Aphasiology*.



UNIVERSITY OF GOTHENBURG

## Abstract

*Background* Writing difficulties are usually one of the integral symptoms of persons with aphasia. Earlier research based on studies of the spelling of single words has yielded interesting results. This work includes analyses of texts and text production.

*Aim* The general aim of the thesis, which includes four studies, was to describe the characteristics of the writing process in aphasia.

*Materials and methods* The participants in the first three studies were a group of six men and two women with aphasia (the A-group) in the age range of 28 to 63 years (mean age 42.5 years) and a reference group (the R-group) consisting of five women and five men in the age range of 21 to 30 years (mean age 23.5 years). One of these studies also included 60 untrained raters. The participants in the fourth study were three individuals with aphasia, two men and one woman (aged 53, 56 and 59, respectively). The participants wrote two narratives and told one of them orally. Not only the final texts but also the revision phases were analysed. The analysis related to variables reflecting vocabulary, syntax and narrative structure. The narratives were also subjected to holistic assessment by the untrained raters. The intervention study had a single-subject ABA design replicated across the three participants. All writing tasks were carried out on a computer and key-stroke logging was used for the collection and analysis of the data.

*Results* The A-group wrote stories with a lower production rate and more word-level errors than the R-group, and also had more difficulties revising their texts. Narrative structure was not as good in the A-group's texts, but the most essential parts of the narrative were included; their written versions were in fact rated as more coherent and easier to understand than their spoken versions. Story length and the proportion of word-level errors to some extent predicted ratings, but not necessarily in the sense that fewer errors and longer stories predicted a higher rating. The intervention study showed that training with computerised writing aids improved writing in different ways.

*Discussion* The narratives produced by the participants with aphasia were characterised by linearity as a result of their use of short T-units with few subordinate clauses and simple syntax. The study of the revision phase revealed the same pattern: every word and sometimes every character was checked before the participants continued writing. Writing a narrative was a time-consuming task for the participants with aphasia, but the stories they eventually produced were explicit enough to meet the demands of the written medium. Regular training was effective and compensated for some of the difficulties.

*Clinical implications* Written language should be included in aphasia assessment and in planning for rehabilitation since it opens up a wider range of possibilities to communicate.

*Keywords:* Aphasia, writing ability, writing process, text writing, narrative, spoken language, discourse, revision, key-stroke logging, single-subject design, training, computerised writing aid