A comprehensive approach to the analysis of narrative discourse production by Greek speakers with aphasia


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Background

Narrative discourse is a form of connected speech that has received extensive attention in aphasia research. Early studies on narrative production of speakers with aphasia (SWA) report disruption at a microlinguistic (intrasentential) level, which includes impairment in phonological, syntactic or semantic skills, but relative preservation of skills at a macrolinguistic (suprasentential) level in terms of sequences of events and actions (e.g., Glosser & Desser, 1990).

More recent studies on mildly impaired SWA have emphasized the clinical importance of narrative discourse analysis (Armstrong, 2000; Olness et al., 2002; Doyle et al., 1998; Wright et al., 2005). The measurement of narrative discourse is important for the assessment of SWA, because production of narratives is necessary for relaying the relationships between events and characters in everyday life, and because SWA appear impaired in narrative discourse compared to speakers without aphasia. Studies have shown preservation of story structure and reduction of hierarchically organized information, as well as a reduction of language complexity at both the sentence and the discourse level (e.g., Ulatowska et al., 1981, 1983). Nevertheless, the complex interrelationship between sentence-level and discourse-level phenomena has received much less attention and has not been adequately addressed.

Assessment tools including a variety of measures and elicitation tasks for narrative discourse production are needed for the analysis of this interrelation.

Aims

The current study aims to integrate the microlinguistic and macrolinguistic levels of analysis in narrative production and to place narrative analysis in the context of cognitive and linguistic evaluation in aphasia. Specifically, we propose a valid assessment tool for a comprehensive approach to the analysis of narrative discourse production.
Materials

An extensive battery of narrative tasks was designed to include a combination of elicitation techniques based on previous research (McNeil et al., 2007; Menn et al., 1994; Nicholas & Brookshire, 1995; Ulatowska et al., 1983). The elicitation conditions were designed to provide different degrees and types of support and were (a) unaided self-generation of a narrative on a personal, emotionally loaded topic, (b) story production based on a picture sequence, (c) story retelling after presentation of a picture sequence with concurrent reading of the story, (d) story retelling after listening to a story. To support these elicitation conditions the following set of materials was put together: 1) For the self-generated narrative, the SWA are asked to relate the story of their stroke with as much associated information as possible. 2) For the picture-based narrative, 6 original color pictures were drawn (A5 size) depicting a sequence of events related to a party, corresponding to seven main ideas/events that need to be transmitted in order for the narrative to provide a complete account of the situation. 3) For the picture-supported retelling, a novel passage in the fairytale genre was created, composed of 345 words in 69 propositions supporting 10 main ideas/events. 4) An associated set of 5 color pictures was drawn to depict key points in the narrative; these remain visible, in their correct sequence, during listening to and retelling of the story. 5) For the listening-only retelling, a presumably known narrative (Aesop’s tortoise and hare fable) was composed of 74 propositions presenting 10 main ideas/events with 350 words.

Passages were recorded by a male native speaker at a normal speech rate of approximately 4.7 syllables per minute, lasting about 2.5 minutes each.

Indices of performance

Narrative productions are examined at the microlinguistic and macrolinguistic levels. Macrolinguistic-level analyses include (a) structural and propositional analyses, such as main ideas related, organization, sequencing, coverage of primary (orientation-action-resolution)
and secondary (abstract-evaluation-coda) narrative elements; (b) analyses of selective linguistic devices of evaluation across tasks based on Labov (1972) and Ulatowska & Olness (2007); and (c) measures of language complexity across elicitation tasks. Microlinguistic-level analyses include (a) fluency measures (mean length of utterance; syllables per minute), (b) grammaticality measures, and (c) syntactic complexity measures appropriate for the Greek language.

**Pilot testing**

The elicitation tasks were administered to 4 native Greek speakers without aphasia (1 female and 3 males, 41–53 years old, with secondary education) to ensure that they are reasonably but not overly demanding and that the intended content was adequately related in the provided text and pictures. These volunteers produced 136–158 words in 27–29 utterances containing 31–38 propositions including 3 structural elements and all 10 main events in sequence for the picture-based sequence. Corresponding numbers for the picture-supported retelling (and listening-only retelling, in parentheses) were 213–244 (277–286) words, 28–30 (37–48) utterances, 41–50 (58–69) propositions, 6 structural elements, and 9–10 main events. A female speaker with mild fluent aphasia according to an evaluation with a Greek adaptation of the BDAE was also able to produce all or the great majority of main events in each task, at the macrolinguistic level, despite mild impairment at the microlinguistic level.

**Conclusion**

This study presents a methodological approach to the integration of two levels of narrative analysis. The proposed set of tasks for the elicitation of narrative discourse production is complete and sensitive to various levels of analysis, allowing evaluation of interrelations between and within individual speakers. Pilot testing indicates that speakers without aphasia (and a speaker with mild fluent aphasia) can fully respond to the elicitation requirements and produce grammatically and structurally well formed narratives, supporting the validity of the
proposed battery. Thus, this set of tasks complements a comprehensive research battery for
the evaluation of aphasic performance in Greek that also includes neuropsychological,
linguistic, functional and imaging measures.

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