The effects of (in)direct speech on aphasic discourse comprehension

Rimke Groenewold[1,2]

Roelien Bastiaanse[1]

Lyndsey Nickels[2]

Mike Huiskes[1]

[1]*Center for Language and Cognition Groningen (CLCG), University of Groningen*

[2]*ARC Centre of Excellence in Cognition and its Disorders (CCD), Macquarie University*

Introduction

In conversation, direct reported speech (e.g., '*John said: "I'm hungry!"'*) is assumed to constitute a *demonstration* of a reported utterance, whereas its indirect reported speech counterpart (e.g., *'John said that he was hungry'*) provides a *description* of what was said (Clark & Gerrig, 1990). The distinction between direct and indirect speech exists in many languages and has been a major focus in linguistic studies. Direct speech constructions are perceived as more vivid and perceptually engaging than their indirect speech counterparts (Wierzbicka, 1974; Macaulay, 1987). In this study, we examine the effects of direct speech on aphasic discourse comprehension in Dutch. The additional communicative "layers" (e.g., intonation, facial expression, and gesture) that go along with direct speech may facilitate language comprehensibility. In addition, its grammatical characteristics may contribute to the comprehensibility of speech. Direct speech is distinguished from indirect speech in that the pronouns, spatial and temporal references, and verb tenses are appropriate to the reported context rather than the current one (Holt, 1996). In addition, in Dutch, indirect speech requires a subordinate construction, whereas direct speech does not. Since individuals with aphasia are known to have difficulties with subordinate constructions (Menn & Obler, 1990; Bastiaanse & Jonkers, 1998; Bastiaanse, Hugen, Kos & Van Zonneveld, 2002), Dutch direct speech constructions may be easier to comprehend than indirect speech constructions.

Methods

Participants

The aphasic subgroup consisted of 24 Dutch individuals (19 male) with mild to moderate aphasia. Criteria for selection of the individuals with aphasia were (1) medical diagnosis of brain damage, (2) no audiologically or medically documented hearing impairment, (3) diagnosis of aphasia by a speech pathologist using standardized tests, and (4) time post-onset ≥3 months. The individuals with aphasia ranged in age from 41 to 82 years (*M*=57.4, *SD*=13.5).

The Non Brain Damaged (NBD) subgroup consisted of 16 individuals (7 male) who were matched for age, gender, and educational level to the aphasic subgroup. Criteria for selection of the NBD subjects were

(1) no documented history of brain damage, and (2) no audiologically or medically documented hearing impairment. NBD subjects ranged in age from 35 to 76 years (*M*=53.4, *SD*=12.0).

Materials and procedures

Each subject was tested in a single session of approximately 50 minutes for the aphasic and 25 minutes for the NBD subjects. The aphasic participants were administered the Token Test to get an indication of the aphasia severity.

DIRECT SPEECH COMPREHENSION TEST

Both the aphasic and the NBD subjects performed the iPad-based Direct Speech Comprehension (DISCO) Test. The test, which was developed specifically for this study, consists of 1 practice and 6 target videos, during which short stories are told. The target stories can be subdivided into 3 story lines each with two stories, one using direct speech and the other using indirect speech. All participants were presented with both conditions of a story line (i.e., direct speech and indirect speech), without hearing the same story twice. This design allowed us to draw comparisons both within and between groups.

The stories had an average length of 217 words (*SD*=22.8), 19 utterances (*SD*=1.9), and an average Flesch Reading Ease Score of 80 (*SD* =2.1), indicating that they were (very) easy to understand. To rule out the effect of order, 12 different presentation lists were created.

After each of the stories the participants heard 8 questions, which they could answer with “yes” or “no” touching a response button that appeared on the screen. This method ruled out possible confounds from language production difficulties.

The DISCO scores reflect the proportion of correctly answered questions per condition type (0-1.0).

Results

For all participants the proportion of correctly answered items per story was calculated, resulting in 6 scores per participant. The aphasic subgroup (n=24) had an average score of 0.80 (*SD*=0.10), and the NBD subgroup’s (n=16) mean score was 0.90 (*SD*=0.06). In order to examine the effects of group (aphasic, NBD) and condition type (direct, indirect), we conducted an ANOVA using a repeated measures design. There was a significant main effect of listener type: the NBD group performed better than the aphasic group, $F(1, 38) = 12.18$, $p = .001$. In addition, there was a significant main effect of condition, $F(1, 38) = 4.22$, $p < .05$. A paired t-test split for groups showed that in the case of the aphasic subgroup there was a significant effect of condition type: they scored better on the direct speech condition (*M*=0.83, *SD*=0.13) than on the indirect speech condition (*M*=0.77, *SD*=0.11), $t(23) = 2.27$, $p = .03$. No such effect was found for the NBD subgroup, $t(15) = .74$, $p = .47$. A negative correlation between the Token Test and DISCO scores was found ($r = -.67$, n = 24, $p = .00$), indicating that preserved comprehension is associated with high DISCO scores.

Discussion

Previous studies have suggested that direct speech constructions may facilitate language comprehensibility since they are perceived as more vivid than their indirect speech counterparts. In this study, the effects of direct speech constructions on aphasic discourse comprehension were examined. The experimental design allowed us to make direct comparisons between the comprehensibility of stories told using direct speech and those with indirect speech. For the aphasic subgroup we found an effect of condition type: the stories that were told using direct speech proved easier to comprehend than the stories with indirect speech. A possible explanation for this finding is the occurrence of additional "layers" of communication that often accompany direct speech constructions, such as intonation and facial expression. Another possible account is the difference in grammatical complexity: in Dutch, unlike direct speech, indirect speech requires subordinate constructions, which are known to be difficult for particularly agrammatic aphasic individuals. A repetition of this study in English will provide us with insight into the role of the grammatical characteristics of the two construction types.

References

Bastiaanse, R. Hugen, J., Kos, M. & Zonneveld, R. van (2002) Lexical, morphological and syntactic aspects of verb production in Dutch agrammatic aphasics. *Brain and Language, 80,* 142-159.

Bastiaanse R, Jonkers R. (1998). Verb retrieval in action naming and spontaneous speech in agrammatic and anomic aphasia. *Aphasiology 12*(11): 951-969.

Clark, H. H., & Gerrig, R. J. (1990). Quotations as Demonstrations. *Language, 66*, 764-805.

Holt, E. (1996). Reporting on Talk: The Use of Direct Reported Speech in Conversation. *Research on Language and Social Interaction, 29* (3): 219-245.

Macaulay, R. (1987). Polyphonic monologues: Quoted Direct Speech in Oral Narratives*. IPRA Papers in Pragmatics, 1,* 1-34.

Menn, L., & Obler, L. K. (Eds.) 1990. *Cross-language data and theories of agrammatism in Agrammatic aphasia: A cross-language narrative sourcebook* (pp. 1369–1389). Philadelphia: John Benjamins.

Wierzbicka, A. (1974). The Semantics of Direct and Indirect Discourse. *Linguistics, 7,* 267- 307.