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The role of semantically rich gestures in aphasic conversation

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Introduction

Gestures play an important role in everyday communication (Kendon, 1997). They provide additional information to conversation partners about the meaning of verbal utterances and help to clarify even abstract concepts. There is evidence that gestures are not simply produced for the benefit of the listener but also support the speaker (Krauss, Chen, & Chawla, 1996; McNeill, Cassell, & McCullough, 1994). The relationship between speech and gesture is of great theoretical interest. Indeed the strong ties between speech and gesture have stimulated discussions about the neurological links between the modalities and the possible gestural origins of language.

Because of the importance of gesture in communication, several studies have investigated the use of gestures in aphasia (see Rose, 2006 for review). It is important to know how people with aphasia (PWA) use gesture as an accompaniment to speech, as a compensatory modality and during word-finding difficulties. Such knowledge can contribute to potential treatment regimes and may point to strategies that can assist everyday communication. Studying gesture use in people with compromised language can also contribute to the theoretical debate about the relationship between the modalities.

Most studies to date have focused on the effects of gesture in structured naming tasks, rather than in more natural conversation.

Methods

Aims

This study examines the natural conversational use of gestures in aphasic speech and addresses several research questions. This presentation focuses only on the following research questions:

(1) To what extend to PWA and neurologically healthy participants (NHP) employ semantically rich gestures (i.e., gestures that convey stand alone meanings or reflect an aspect of the spoken discourse)? What impact does their semantic competence have on gesture production?
(2) Do semantically rich gestures take different roles during conversation (facilitative, communicative, augmentative, compensatory)?
(3) Do different topics, for example, narrative (i.e., telling about a life event) and procedural (i.e., describing a process) elicit different gesture patterns?

Procedures

Language and conversation data of 20 PWA and 21 NHP have been collected. Extensive background testing of PWA has been done including tests of lexical semantics and non-verbal semantics.

Conversation samples of eight minutes in total have been collected. Video samples have been transcribed and analysed for gesture production, speech production and word-finding difficulties. Semantically rich gestures (e.g., they reflect concrete or abstract reference in the discourse (iconic, metaphoric and air writing & number gestures) or convey meaning in their own right (pantomime and emblem gestures)) were contrasted with semantically empty gestures (e.g., they refer to places or objects (deictic gestures) or mark speech rhythm (beat gestures). The roles of semantically rich gestures were coded to determine if participants are using gesture mainly to supplement speech, to replace speech or to facilitate lexical retrieval.

The following methods are being used in the analysis:

(1) All semantically rich gestures are identified within the conversation.
(2) Semantically rich gestures which occur during a word finding difficulty (i.e. which occur within three seconds of word finding behaviour and before the next utterance) will be either categorised as being facilitative or communicative.
   a. If the word finding difficulty is resolved, the gesture will be categorised as being *facilitative*.
   b. If the word finding difficulty is not resolved (by the speaker), the gesture will be categorised as being *communicative*.
(3) All other semantically rich gestures will be either categorised as being augmentative or compensatory.
   a. If a gesture occurs alongside speech and supplements it, it is considered as being *augmentative*.
   b. If a gesture is produced to replace speech, it will be categorised as being *compensatory*.

Results

The data analysis is on-going and results for both PWA and NHP will be available for presentation at the conference.

Preliminary results indicate that PWA used significantly more semantically rich gestures than semantically empty ones ($t(15) = 5.229$, $p < .05$). Surprisingly, the semantic impairment did not correlate with the use of semantically rich gestures ($r_s = .053$, n.s.; $r_s = .171$, n.s.). Overall, semantically rich gestures took different roles ($X^2(3) = 34.956$, $p < .05$). Most semantically rich gestures were produced during a procedural than a narrative conversation ($t(15) = -2.538$, $p < .05$).

Discussion

Semantically rich gestures play an important role in conversation for PWA. They can take different roles with many gestures being produced alongside speech (augmentative gestures) and those facilitating lexical access (facilitative gestures). Only a small number of gestures replace speech (compensatory gestures). Finding out more about the different roles of gestures in speech production, helps us to better understand the relationship between language and gestures. This is vital for gestures to be implemented into aphasia therapy.

References

Kendon, A. (1997). Gesture. *Annual Review of Anthropology, 26*, 109-128.

Krauss, R. M., Chen, Y., & Chawla, P. (1996). Nonverbal behavior and nonverbal communication: What do conversational hand gestures tell us? In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 389-450). Diego, USA: Academic Press.

McNeill, D., Cassell, J., & McCullough, K.-E. (1994). Communicative effects of speech-mismatched gestures. *Research on Language and Social Interaction, 27*(3), 223-237.

Rose, M. L. (2006). The utility of arm and hand gestures in the treatment of aphasia. *Advances in Speech-Language Pathology, 8*(2), 92-109.