

Conversational Repair of Word-Finding Difficulty

Alison Ferguson

How do partners in conversation with aphasic individuals guess the words being sought, so that they are able to supply missing words or to provide prompts and cues?

As word-finding difficulty is the most prominent characteristic of aphasia (Benson, 1979), it is not surprising that conversation partners frequently supply words for aphasic people (Lubinski, Duchan, & Weitzner-Lin, 1980). Strategies to assist this process have been targeted in therapy (Flowers & Peizer, 1984; Golper & Rau, 1983). However, research on conversations between second-language learners and native speakers shows the same phenomenon (Carter, 1988; Day, Chenoweth, Chun, & Luppescu, 1984; Giacobbe & Cammarota, 1986), as does research on conversation between normal speakers (Tannen, 1989).

When a conversation partner assists someone who is having word-finding difficulty, the process can be viewed from an interactional framework (Faerch & Kasper, 1983, 1984, 1986) as a receptive strategy (see Figure 1), for although it may involve the partner in producing the word, or in assisting the other to produce the word, this assistance arises from the partner's role as listener (Grimshaw, 1980) and depends upon the listener's cognitive processes for analysis and control of linguistic knowledge (Bialystok, 1990). That is, in order to be able to supply the word, or to prompt the speaker to supply the word, the listener must first be able to develop some hypothesis about what word is being sought.

This study takes a descriptive, sociolinguistic and ethnomethodological approach (Hammersley & Atkinson, 1983) to examining the phenomenon of supplying words in natural conversation, taking into account the perspective of the interactants (Ferguson, 1989). This view considers supplying words to be one of the ways coherence in conversation is built through the combined efforts of both partners (Clark & Wilkes-Gibbs, 1986; Hopper, 1983), since one partner's guess depends on the preceding text of both partners and also contributes to the ongoing development of the text.

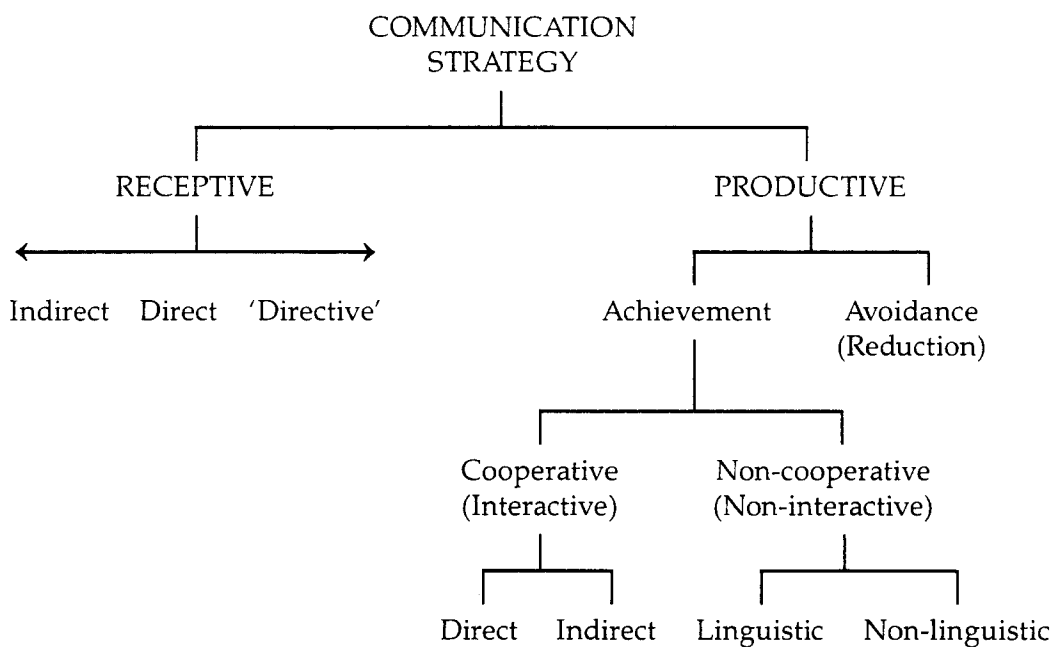


Figure 1. Communication Strategy from an Interactional Framework (Based on the work of Faerch & Kasper, 1983, 1984, 1986).

We investigated the frequency and success of supplying words in conversation for normal/normal and normal/aphasic dyads and compared the supplying of words by familiar with less familiar partners. Also, the resources available in the preceding text, which may have contributed to the success of the guess, are analyzed.

METHOD

Subjects and Data Collection

Seven aphasic volunteer subjects were selected because referring speech pathologists described them as having "mild to moderate fluent aphasia" resulting from a single left cerebrovascular accident (CA). Subjects were living in their own homes, spoke English as their first language, and reported no difficulty hearing. (See Table 1). There were also 14 normal subjects, 7 of whom were familiar (F) with the aphasic subject (spouses), and 7 of whom considered themselves less familiar (LF) with the aphasic subject (friends or relatives who were not living with the aphasic subject). All normal subjects spoke English as their first language, lived in their

TABLE 1. DESCRIPTION OF APHASIC SUBJECTS

<i>Sub- ject</i>	<i>Age (years)</i>	<i>Sex</i>	<i>Years of Education</i>	<i>Time Post Onset</i>	<i>PICA</i>	<i>CADL</i>
					<i>Overall Average (Porch, 1981)</i>	<i>Score (Holland, 1980)</i>
A	66	M	10	4 years	11.69	125
B	75	M	10	20 months	10.85	103
C	60	M	8	4.5 years	13.07	128
D	71	M	9	10 months	11.71	112
E	60	M	13	4 years	13.31	126
F	60	M	14	5 months	13.70	128
G	60	F	8	10 months	13.01	126

TABLE 2. DESCRIPTION OF NORMAL SUBJECTS

	<i>Familiar with</i>							<i>Less Familiar with</i>						
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>
Age (years)	68	72	56	66	54	61	61	71	51	33	65	53	26	37
Sex	F	F	F	F	F	F	M	M	F	M	F	F	M	F
Years of Education	9	9	11	9	10	11	8	8	9	17	9	10	12	10

own homes, and reported no history of brain damage or difficulty hearing (see Table 2).

The data were drawn from 21 audiotaped conversations between pairs of subjects in the aphasic subjects' own homes, in the absence of the researcher. Subjects were informed that the aim of taping was to obtain as natural a sample of conversation as possible, and although topic was not controlled, conversations referred to immediate past or future personal events and news items. Subjects were instructed to spend 10-15 minutes in conversation with each partner: aphasic with familiar, aphasic with less familiar, and familiar with less familiar.

Data Analysis

Following transcription, instances of supplying words (see Appendix A for definition and Appendix C for example) were identified from among the trouble-indicating behaviors of hypothesis forming, using extensions to the ethnomethodological approach as described by Roberts, Simonot, Bremer, and Vasseur (1988).

In order to identify comparable troubles in conversation, an operational definition (see Appendix B) of a trouble spot was derived, based on those

sequences of trouble-indicating behaviors that were agreed upon by the researcher and another speech pathologist during reliability trials. Trouble spots represented those instances in which partners explicitly commented on the difficulties the speakers were experiencing and made at least two guesses in an attempt to resolve the difficulties. Thus, trouble spots represented moments when problems had escalated enough to become of concern to both partners.

Whether assistance in supplying words had been explicitly requested or not was determined by referring to preceding turns. The success of supplying words was determined by whether the guess was accepted or rejected in next-turn responses (see Appendix C for example). This use of next-turn responses to determine effectiveness follows the ethnomethodological approach of looking to the interactants' accounts of behavior (Schegloff, Jefferson, & Sacks, 1977), rather than relying on externally derived and pre-determined measures of effectiveness such as duration and accuracy (Linebaugh, Margulies, & Mackisack, 1985; Yorkston, Beukelman, & Flowers, 1980).

The resources available in the text preceding the guess were analysed by identifying the semantic relationships of the words supplied to those in the preceding text, based on the systemic-functional approach (Halliday, 1985; Halliday & Hasan, 1976; Halliday & Hasan, 1985). The main relationships considered were the lexical associations of Superordinate (Category), Co-hyponym (Category member), and Same Word (Repetition). Other collocational relationships were also identified. (Collocation is a broad term covering the likelihood of co-occurrence of lexical items in a text [Halliday & Hasan, 1976].) In addition, a set of descriptors was derived, incorporating previous work in the area of aphasia (Goodglass & Baker, 1976; Milton, Tunstall & Wertz, 1983) to describe other co-textual cues—Location, Attribute, Function, Phoneme.

Reliability

Interjudge agreement among the researcher and two speech pathologists for identification of trouble-indicating behaviors (including hypothesis forming) was determined on a third of the transcripts that were randomly selected. After a one-hour training session, interjudge agreement averaged 84% (range 80%–93%) point-to-point agreement for presence or absence of trouble. Interjudge agreement averaged 96% (range 88%–100%) for type of trouble-indicating behavior.

Interjudge agreement between the researcher and another speech pathologist for identification of supplying words (from the hypothesis-forming trouble-indicating behaviors), provided with written instructions only, was 86% point-to-point agreement. In preliminary reliability trials, inter-

judge agreement between the researcher and a speech pathologist with previous training in the systemic-functional approach, for identification of available textual resources, was 100% point-to-point agreement.

Results

Overall, for all of the conversations the rate of occurrence of trouble-indicating behavior was 1 per minute between normal and aphasic speakers, and 0.4 per minute between normal speakers. No differences were found between familiar and less familiar subjects. The percentage of normal speakers' hypothesis-forming of the total trouble-indicating behaviors for all of the conversations was greater when talking with the aphasic subjects (33.5%, $n = 245$) than when talking with the normal subjects (16.9%, $n = 172$). No difference was found for familiarity.

Of the 28 trouble spots identified, 26 arose between normal and aphasic speakers, and 2 between normal speakers. At those trouble spots involving normal and aphasic speakers, it appeared that less-familiar subjects were more likely to produce hypothesis forming behavior than were familiar subjects (who by contrast tended to produce more metalinguistic comment, see Table 3).

There were 43 instances of supplying words, occurring at 23 of the 28 trouble spots. Of these instances 37 (86.0%) were supplied by the normal partner, for the aphasic partner, while on only 2 (4.7%) occasions did the aphasic subjects supply the word for the normal partner. On 4 (9.3%) occasions the normal subjects supplied words for each other. The less-familiar subjects provided most of the supplied words for the aphasic subject (70.7%), as opposed to the familiar subjects (29.3%).

To summarize, both the frequency of trouble spots and the frequency of hypothesis-forming were greater between normal and aphasic speakers than between pairs of normal speakers, and no difference was found for familiarity. However, at the trouble spots less-familiar subjects were more likely to use hypothesis-forming and to supply words than were familiar subjects.

Of the 43 instances of supplying words, 9 (20.9%) involved providing a prompt for the word, rather than supplying the word itself.

Approximately half (44.2%) of the supplied words were explicitly requested by the partner, the others either being preceded by no evidence of word-finding difficulty or by more subtle indicators such as minimal disfluency. Familiarity had no apparent effect, nor did familiarity appear to affect whether the guess was accepted or rejected.

Table 4 presents the percentages and types of textual resources available to the guesser for 26 rejected and 31 accepted guesses, while for the other 6 guesses no available resources were identifiable.

TABLE 3. PERCENTAGE OF TYPES OF TROUBLE INDICATING BEHAVIORS AT APHASIC/NORMAL TROUBLE SPOTS

<i>Trouble Indicating Behaviors</i>	<i>Aphasic</i> (<i>N</i> = 85)	<i>Familiar</i> (<i>N</i> = 46)	<i>Less Familiar</i> (<i>N</i> = 50)
Reprise/ Minimal Disfluency	61.2%	17.4%	14.0%
Meta- linguistic Comment	28.2%	39.1%	14.0%
Hypothesis Forming	9.4%	43.5%	72.0%
Lack of Uptake/ Continuation	1.2%	0%	0%

TABLE 4. RESOURCES AVAILABLE IN THE TEXT PRECEDING THE GUESS

<i>Type</i>	<i>Rejected</i> (<i>N</i> = 26)	<i>Accepted</i> (<i>N</i> = 31)
Location	15.4%	12.9%
Attribute	11.5%	19.4%
Function	0	3.2%
Phoneme	7.7%	16.1%
Lexical Associates:		
Superordinate	23.1%	6.5%
Co-hyponym	30.8%	3.2%
Same word	7.7%	12.9%
Other Collocation	3.8%	25.8%

It appeared that the availability of preceding lexical associates such as superordinate or co-hyponym resulted in a greater proportion of rejected guesses. On the other hand, the availability of preceding lexical items that bore looser collocational relationships with the guess appeared to result in a greater proportion of accepted guesses.

DISCUSSION

While familiarity with the speaker did not appear to affect the overall frequency of supplying words in conversation, the results suggested that when trouble escalated into a trouble spot, less familiar subjects were more likely to supply words than were familiar subjects. One interpretation of this finding is that the degree of face-threat (Brown & Levinson, 1987) involved in supplying words for another person may be countered by other social conversational needs, such as keeping the conversational traffic moving (Goffman, 1971).

The appearance in natural conversation of prompts for the word rather than supplying the full word is of clinical interest. While therapeutic intervention might explain the use of prompts by familiar subjects, it is less likely to explain such use by less familiar subjects.

Of particular interest was the relative lack of success of semantic field cues, which have been viewed traditionally as effective strategies to assist guessing. The use of such specific strategies to guess the word sought may be more appropriate within controlled clinical settings or in other situations where it is acceptable for the partners to spend the time systematically narrowing down the choices within the semantic field.

On the other hand, the findings suggest that collocation may play a more significant role in partners' ability to guess words than has been previously recognized. More research is needed to increase our understanding of how collocation operates in assisting in the supplying of words. However, at this point, our findings suggest support for therapeutic strategies involving topic control (Martin, 1981) and the need for further development of broader discourse management strategies (Coupland, Coupland, Giles & Henwood, 1988) when seeking to facilitate partner communication strategies.

CONCLUSION

This research illustrates how listeners help build the overall coherence of conversation by the interactional receptive strategy of supplying words. To supply words, the listener uses the preceding text and by supplying words, the listener contributes to the further development of the conversation.

ACKNOWLEDGMENTS

The author wishes to acknowledge C. N. Candlin, Macquarie University, for his supervision of the PhD research in progress of which this paper

forms a part; Christine Sheard for her early direction and ongoing support; Beth Armstrong for her helpful comments on previous drafts of this paper; the speech pathologists who assisted in the development of this research—Judy Evans, Elisabeth Harrison, Sally Jefferies, Belinda Kenny, Bernadette Mannes, Miranda Moore, Kerry Plumer, and Leanne Togher; and the volunteer subjects.

REFERENCES

- Benson, D. F. (1979). *Aphasia, alexia, and agraphia*. Livingstone, UK: Churchill.
- Bialystok, E. (1990). *Communication strategies: A psychological analysis of second-language use*. Oxford, UK: Basil Blackwell.
- Brown, P., & Levinson, S. C. (1987). *Politeness—some universals in language usage*. Cambridge, UK: Cambridge University Press.
- Carter, R. (1988). Vocabulary, cloze and discourse: an applied linguistic view. In R. Carter and M. McCarthy (Eds.), *Vocabulary and language teaching*. London: Longman.
- Clark, H. H., & Wilkes-Gibbs, D. (1986). Referring as a collaborative process. *Cognition*, 22, 1-39.
- Coupland, N., Coupland, J., Giles, H., & Henwood, K. (1988). Accommodating the elderly: invoking and extending a theory. *Language in Society*, 17, 1-41.
- Day, R., Chenoweth, N., Chun, A., & Luppescu, S. (1984). Corrective feedback in native-nonnative discourse. *Language Learning*, 34, 19-45.
- Faerch, C., & Kasper, G. (Eds.). (1983). *Strategies in Interlanguage Communication*. London: Longman.
- Faerch, C., & Kasper, G. (1984). Two ways of defining communicative strategies. *Language learning*, 34, 1, 45-65.
- Faerch, C., & Kasper, G. (1986). Strategic competence in foreign language teaching. In G. Kasper (Ed.), *Learning, teaching and communication in the foreign language classroom*. Aarhus, UK: Aarhus University Press.
- Ferguson, A. (1989). Perspectives on conversational repair in aphasic and normal interaction. In V. Anderson and M. Bailey (Eds.), *Theory and Function—Bridging the Gap: Proceedings of the Fourteen Annual Brain Impairment Conference*. Melbourne: Australian Society for the Study of Brain Impairment.
- Flowers, C. R., & Peizer, E. R. (1984). Strategies for obtaining information from aphasic persons. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings* (Vol. 14, pp. 106-113). Minneapolis, MN: BRK.
- Giacobbe, J., & Cammarota, M. (1986). Learners' hypotheses for the acquisition of lexis. *Studies in Second Language Acquisition*, 8, 327-342.
- Goffman, E. (1971). *Relations in Public*. Harmondsworth, UK: Penguin.
- Golper, L. A. C., & Rau, M. T. (1983). Systematic analysis of cuing strategies in aphasia: Taking your 'cue' from the patient. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings* (Vol. 13, pp. 52-61). Minneapolis, MN: BRK.
- Goodglass, H., & Baker, E. (1976). Semantic field, naming, and auditory comprehension in aphasia. *Brain and Language*, 3, 359-374.
- Grimshaw, A. (1980). Mishearings, misunderstandings and other nonsuccesses in talk: a plea for redress of a speaker-oriented bias. *Sociological Inquiry*, 20, 31-74.
- Halliday, M. A. K. (1985). *An Introduction to Functional Grammar*. London: Edward Arnold.

- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Halliday, M. A. K., & Hasan, R. (1985). *Language, Context and Text: Aspects of Language in a Social-Semiotic Perspective*. Victoria, UK: Deakin University Press.
- Hammersley, M., & Atkinson, D. (1983). *Ethnography: Principles in Practice*. London: Tavistock.
- Hopper, R. (1983). Interpretation as coherence production. In R. T. Craig and K. Tracey (Eds.), *Conversational Coherence—Form, Structure, and Strategy*. Beverley Hills, CA: Sage.
- Linebaugh, C. W., Margulies, C. P., & Mackisack, E. L. (1985). Contingent queries and revisions used by aphasic individuals and their most frequent communication partners. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings*, (Vol. 15, pp. 229–236). Minneapolis, MN: BRK.
- Lubinski, R., Duchan, J., & Weitzner-Lin, B. (1980). Analysis of breakdowns and repairs in aphasic adult communication. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings* (Vol. 10, pp. 111–116). Minneapolis, MN: BRK.
- Martin, A. D. (1981). An examination of Wepman's thought centred therapy. In R. Chapey (Ed.), *Language intervention strategies in adult aphasia*. (1st ed.). Baltimore, MD: Williams & Wilkins.
- Milton, S. B., Tunstall, C. M., & Wertz, R. T. (1983). Dysnomia: A rose by any other name may require elaborate description. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings* (Vol. 13, pp. 137–147). Minneapolis, MN: BRK.
- Roberts, C., Simonot, M., Bremer, K., & Vasseur, M. T. (1988). *Procedures to Achieve Understanding in a Second Language*. Strasbourg, France: European Science Foundation.
- Schegloff, E. A., Jefferson, G., & Sacks, H. (1977). The preference for self-correction in the organisation of repair in conversation. *Language*, 53, 361–382.
- Tannen, D. (1989). *Talking voices: Repetition, dialogue, and imagery in conversational discourse*. Cambridge, UK: Cambridge University Press.
- Yorkston, K. M., Beukelman, D., & Flowers, C. (1980). Efficiency of information exchange between aphasic speakers and communication partners. In R. H. Brookshire (Ed.), *Clinical Aphasiology Conference Proceedings* (Vol. 10, pp. 96–105). Minneapolis, MN: BRK.

APPENDIX A

DEFINITION OF SUPPLYING WORDS*

Supplying words is a form of the condition that indicates hypothesis forming, which involves verbally supplying the word(s) or speaking for/on behalf of the other participant, and asking rhetorical questions. In supplying words, the partner provides the word or words that the speaker "would have said." The most apparent example of this is when the partner completes the speaker's sentence, but it also includes a partner's providing the entire utterance for the speaker. Supplying words is essentially a two-way interaction, and so may be differentiated from "speaking for" behavior, which requires a third person.

*Extended definitions based on the work of Roberts, C., Simonot, M., Bremer, K., and Vasseur, M. T. (1988). *Procedures to Achieve Understanding in a Second Language*. Strasbourg, France, European Science Foundation.

APPENDIX B

DEFINITION OF TROUBLE SPOT*

A trouble spot extends over at least five turns, has no more than one untroubled turn, no more than two turns with only Reprise/Minimal Disfluency, has at least one metalinguistic Comment/Minimal Query, and at least two Hypothesis Forming behaviors.

*Extended definitions based on the work of Roberts, C., Simonot, M., Bremer, K., and Vasseur, M. T. (1988). *Procedures to Achieve Understanding in a Second Language*. Strasbourg, France, European Science Foundation.

APPENDIX C EXAMPLE

TROUBLE SPOT 19

D/LESS FAM

(Discussing ballooning trip—Tape counter 169 to 173)

- D 1 The weather was right. And when it takes off, there were about twelve blokes holding it down. And then the, and then they say go, they just, tilt, straight up
(SOUND EFFECT)
like you're riding on a, um
(SNAP FINGERS)
what do they call that thing that used to be at Luna Park?
(LOCATION) (Explicit Request)
- DLF 2 * Like the Big Dipper?
- D 3 Big Dipper! That just like what it was.
- DLF BC Yes, yes.
- D And when it gets to the right, height
(OTHER COLLOCATION) (No Explicit Request)
- DLF 4 * height
- D 5 They ah level out and um, and it's quite um, quite q-
(PHONEME) (No explicit Request)
- DLF 6 * Quiet?
- D It's quiet, yeah.
DLF Yeah.