Strategies for Obtaining Information from Aphasic Persons

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Conversational partners of aphasic persons report that one of their most difficult and frustrating tasks occurs when the aphasic individul attempts to convey a message and is unsuccessful, creating a communicative breakdown. The partner may need to make certain requests, ask questions, or make guesses in order to repair the breakdown. It would seem helpful for a clinician to know the entire list of potential strategies and behaviors a partner could use in such a situation. From that list, the clinician could select those appropriate for use with a particular aphasic individual, based largely upon an assessment of the aphasic person's communicative strengths and weaknesses.

In this study we asked what follow-up strategies partners use when aphasic persons attempt unsuccessfully to convey messages to them. We hoped to be able to speculate as to how the nature of an aphasic impairment might dictate which of the strategies would be most effective for individual patients. Our long range mission is to learn how to help partners adopt the most effective communicative behaviors as they interact with an aphasic person.

METHOD

Subjects. In order to identify the most representative sample of behaviors and strategies that partners use in obtaining information from aphasic persons, we selected aphasic subjects with a variety of verbal expression patterns, and we used different types of partners. Subject information for the 11 couples appears in Table 1. Overall percentiles on the Porch Index of Communicative Ability (PICA, Porch, 1981) ranged from 27 to 72. Verbal expression disorders were all severe enough that the partners could be expected to misunderstand the aphasic individuals' messages frequently, to the point that they would need to seek clarification of what messages were attempted. Verbal subtest PICA percentiles ranged from 21 to 37.

Interaction Task. The task of each couple was similar to one reported by Yorkston, Beukelman and Flowers (1980). The couple was seated at a table facing each other. Paper and pencil were available on the table. The partners placed a picture on a stand so that it was visible only to the aphasic person. The partner then asked a question about the picture, either "What do you see?" requiring a noun response, or "What are the people doing?" After they asked the question and got an unclear answer, they were required to do anything they thought would help them get an accurate answer. When they thought they knew the answer, they said, "Now I think I know." Finally, they wrote down the answer. The duration of the interchange about a picture was the time from the end of the original question to the onset of "Now I think I know." There was a three-minute limit for each picture, and each couple went through 20 pictures. The interchanges were videotaped. Before the task, couples received training and practice on three pictures that were not used in the study. Two overall measures of task proficiency were obtained: task accuracy and total task duration. For accuracy scoring, each item was scored two points for an accurate, complete answer to the question, and one point for a related or incomplete answer. The total possible accuracy score was 40.

Table 1. Subject background information.

Couple Number	Aphasic Person/ Partner	Overall PICA/ Verbal Pica Percentiles	Time Post Onset of Aphasia	Nature of Verbal Responses
1	80 yr old female/ distant relative	35/31	1 yr, 6 mos	Press of speech; jargon, even in response to yes-no questions.
2	31 yr old female/ mother-in-law	45/37	6 mos	Single words, automatic phrases; frequent use of gestures and mispelled written words.
3	68 yr old male/ wife	40/35	5 mos	Stereotypic phrases; lack of content; expletives; paraphasias; occasional attempt to draw.
4	65 yr old male/ daughter	45/41	11 mos	Single words; short phrases; low volume unintelligible mumbling; gestures often unintelligible.
5	65 yr old male/ wife	34/21	8 yrs	Speech reduced to recurring utterance (yai-yai) but with variable intonation; draws pictures.
6	58 yr old male/ graduate student	51/47	2 yrs,7 mos	Fragmented, incomplete sentences or one-word responses; effortful, apraxic speech.
7	68 yr old female/ graduate student	37/26	2 yrs	Fluent, empty speech; perseverations; paraphasias; frequent success at pantomime and drawing pictures.
8	62 yr old female/ undergrad student	72/37	3 yrs	Simple sentences with high content; effortful, apraxic speech; occasional writing.
9	38 yr old male/ mother	37/24	4 yrs,3 mos	Stereotypic utterances; lack of content; requests partner to repeat questions; uses gestures, drawing.
10	70 yr old male/ wife	Not Given	3 yrs,6 mos	Single words and short phrases, often unintelligible; answers with yes and no.
11	74 yr old female/ driver for transportation to clinic	27/33	1 yr, 6 mos	Jargon; occasional real phrase; gestures unintelligible.

Transcription and Coding of Videotaped Interchanges. All verbalizations of both the partners and aphasic persons were transcribed verbatim. Gestures, writing, drawing and other nonverbal responses were recorded on the transcripts, along with standard notations to explain the context of behaviors.

Our first task was to describe the interchanges and identify strategies used by each partner. To quantify the behaviors, we developed a coding system which evolved over several years. In the process of developing the system, we viewed tapes from the Yorkston, Beukelman and Flowers study (1980) as well as others recorded in a similar format. With each new couple, categories were added to the system so that ultimately there was a code for each "message" of the partners. In most cases the message unit of coding was a conversational turn. The codes are listed and described in Table 2. For both the aphasic persons and their partners, we coded manner of delivery (verbal, gestural, etc.). For the partners only, we also coded two aspects of their statements and questions. The two additional codes assigned to each partner's verbal message were the form of the message (yes-no question, wh question, statement, etc.) and its apparent purpose (to obtain new information, request a repetition, give feedback, etc.). A 26-page instruction manual was written for the coding system, including descriptions and examples of each code.

Reliability of the Coding System. To assess reliability of the coding system, two university speech pathology graduate students unfamiliar with the system were trained in its use. The training and coding extended over a two-month period. The students read the manual and practiced coding sample transcripts. They received feedback about accuracy during the training. To generate the reliability data, they coded a total of 248 partner messages from the transcripts of eight couples in this study. Their codes were compared to standard codes established by the investigators. Results were that both students agreed 100 percent with the standard in coding manner of message delivery and 99 percent in coding form of messages. Agreement with the standard in coding apparent purpose of messages was 94 and 87 percent for the two trainees.

RESULTS AND DISCUSSION

All partners' messages could be coded with the present system. The percentage of messages assigned each code for the 11 couples are listed in Table 3. Our main interest was in the form and apparent purpose of messages, analysis of which was expected to reveal partners' strategies for obtaining information from the aphasic persons. The most common strategy by far was for partners to make guesses, typically in the form of a yes-no question. These were guesses as to what the aphasic person just said or did, or about the picture. Guesses usually constituted a "game of 20 questions" in which the partners attempted to narrow down the answer by asking more and more specific questions. At least 20 percent of all partners' guesses were redundant with some previous guess. Apparently these partners were aware of the need to confirm information previously obtained. Some partners attempted to get clarification by repeating an utterance back to the aphasic person. This was a major strategy for couples 4, 6, 7 and 8. Requesting a nonverbal manner of expression occurred at least five percent of the time for couples 1, 4, 5, 6 and 9. Three partners (1, 7 and 9) demonstrated a strategy in their use of social/neutral comments. In these cases, these were statements such as "OK, umhm," functioning as encouragement for the aphasic person to continue without

Table 2. Categories in the coding system.

Category	Definition or Example
Manner	
Verbal	involves use of any spoken behavior
Gestural	involves use of gesture or pantomime
Written/graphic	involves use of pencil and paper to write or draw
Nonverbal	involves vocalization such as animal sounds or singing
Form	
Yes-no guess	Yes-no questions or other guesses about the content of the picture or about what the aphasic person just said or did
wh/other question	questions that include wh-words
multiple choice question	for example, "Is it an apple or an orange?"
indirect question	questions to elicit some response rather than a yes or no answer, such as "Can you tell me what it is?"
statements	such as aside comments and commands to the aphasic person
unfinished/interrupted utterance	incomplete utterances or those interrupted by the aphasic person
Apparent Purpose	
new	a question or statement that has not been presented before
redundant	a question or statement that has been presented
repetition	exact restatement of an aphasic person's response
partial repetition	involves alterations of an aphasic person's response, for example, expansion upon incomplete words or phrases
repetition + redundant	an exact or partial repetition of an aphasic person's response that involves a question or guess asked previously by the partner
repetition of yes-no	repetition of an aphasic person's yes-no response
request for verbal manner	request for any spoken behavior
request for gestural manner	request for any gestural behavior
request for graphic manner	request for drawing
request for written manner	request for any written behavior
request for repetition/ elaboration	request to elaborate upon or repeat a response
request for spelling	request to spell a word in whole or part
positive feedback	for example, "You're making my job easy."
negative feedback	for example, "I don't understand."
social/neutral	task related comments such as "That's a tough one, isn't it?" and utterances such as "OK," "alright," or "mmhmm"

Table 3. Summary of coding results. Percentage of communication partner messages coded for manner, form and apparent purpose, as well as task accuracy and average task duration results.

Code Category	Couple 1	2	3	4	5	6	7	8	9	10	11
Manner											
Verbal	72	94	94	98	93	84	62	80	95	92	90
Verbal + Gesture	27	5	6	2	7	16	38	20	4	8	10
Verbal + Written/Graphic	1	1	0	0	0	0	0	0	1	0	0
Form											
Yes-No Question/Guess	50	86	65	82	53	79	72	82	26	80	78
Wh Question	20	5	7	6	8	4	2	2	32	11	2
Multiple Choice Question	2	2	2	2	3	1	1	2	0	0	0
Indirect Question	3	2	5	5	7	6	2	2	4	0	3
Statement	19	3	11	2	25	7	21	1	38	8	13
Unfinished Utterance	6	2	10	3	4	3	2	11	0	1	4
Apparent Purpose											
New Question/Statement	28	65	39	41	36	25	35	23	16	40	40
Redundant Question/Statement	34	18	25	22	21	20	16	18	36	25	19
Redundant + Repetition	2	2	3	3	0	3	3	5	4	2	2
Repetition--Partial	6	4	6	13	0	18	15	31	2	2	15
Repetition--Exact	0	1	1	6	0	11	2	7	0	1	2
Repetition of Yes/No	2	1	1	2	5	6	2	1	0	20	2
Request Verbal Manner	0	0	2	3	2	0	0	0	0	0	0
Request Gestural Manner	8	1	2	1	8	5	2	0	7	0	1
Request Graphic Manner	0	1	0	1	2	2	1	2	3	0	2
Request Written Manner	0	0	0	0	1	0	0	0	0	0	0
Request Spelling	0	1	0	1	0	0	0	0	0	0	0
Request Elaboration	2	1	1	2	2	1	0	1	4	1	0
Positive Feedback	0	1	1	0	0	1	2	1	0	1	1
Negative Feedback	0	1	2	1	10	0	0	0	4	1	0
Social/Neutral Comments	12	1	7	1	9	5	20	0	24	6	12
Unfinished Utterance	-not coded for for Apparent Purpose-										
Number of Messages on Which above Percentages Were Based	481	407	357	213	203	146	124	84	140	437	347
Task Accuracy (percent	20	63	37	75	78	93	90	100	45	30	50
Mean Duration per Picture (seconds)	150	101	106	96	78	40	66	37	57	110	95

reacting specifically to the content of the aphasic person's responses. One code which could not be related to a strategy was the category "unfinished utterance." These were simply cases where a partner had difficulty formulating comments or questions and left them unfinished.

The following strategies were used by partners in the study.

1. Successive related guesses, narrowing down answer to original question.
2. Isolated guesses or questions.
   A. about aphasic person's verbal information
   B. about aphasic person's gestures or pantomime.
   C. about aphasic person's drawing.
   D. about aphasic person's writing.
   E. wild guesses, unrelated to aphasic person's information.
   F. stereotypic guesses; same guesses about each picture.
3. Repeat a question previously asked.
4. Exact repetition of what aphasic person said, to obtain confirmation of interpretation.
5. Repeat word or phrase in altered form, to obtain confirmation of interpretation.
   A. repeat part of fluent, low content, copious utterance.
   B. repeat a distorted or unintelligible word or phrase, but as a recognizable word.
   C. repeat what aphasic person said with some addition.
6. Request a verbal response.
7. Request a gesture
8. Request a written response.
9. Request aphasic person to draw.
10. Request aphasic person to spell.
11. Request a repetition or verbal elaboration of a previous utterance.
12. Give feedback indicating noncomprehension of aphasic person's response.
13. Acknowledge attention to what aphasic person is saying, as encouragement to continue (for example, "um hmm, okay").

Guessing was used by all partners, but they differed in their guessing strategies. The two guessing strategies that appeared nonproductive were 2E and F. Three partners (2, 3 and 10) did not attempt to narrow their guesses from general to more and more specific ones. Instead, they asked a similar list of questions for each picture, or they made a series of wild guesses.

The transcription and coding methods for obtaining measures in this study are too time consuming to be used clinically, but they could be used with some modifications. To obtain an overall measure of message transmission from an aphasic person to a partner, and the partner's skill at obtaining the information, the accuracy and duration measures in this study could be obtained without transcribing and coding the interaction. Ten stimuli would probably be sufficient to get a valid overall measure of proficiency on the task, and to get an adequate sampling of a partner's strategies. It may be possible to develop a reliable on-line tallying system for quantifying the type and frequency of partner strategies, now that we know more about what strategies to look for.

For an aphasic person who has marked difficulty conveying messages on the first attempt, to the point that he or she frequently is not understood, what information should we gather in our assessment that would help us know

which strategies to recommend that a partner use with that person? For assessing the aphasic person, the following questions are among those of interest.

1. What clues exist in the person's first attempt at conveying a message about the content of the message? Some of our partners missed important clues, while others followed up on erroneous or misleading information.

2. What is the aphasic person's accuracy of answering yes-no guesses and other questions? Some partners appeared to assume that the aphasic person's yes-no answers were correct, which at times resulted in reduced accuracy scores. Others appeared to realize that answers by the aphasic individual were often incorrect, as judged by their tendency to seek further clarification and to ask questions a second or third time.

3. Does the aphasic person use some means to indicate that a question was inappropriate to pursuit of the message? One aphasic person had a method of indicating "hot" and "cold" when the partner asked questions that were on track or off track. That person also was able to indicate when a yes-no question did not really have a "yes" or "no" answer. These behaviors appeared helpful to the partner, who was able to use the aphasic person's responses to decide on the direction of further questioning. Other aphasic persons gave immediate yes-no answers even when a question should not have been answered with that type of response.

4. Does the aphasic person give answers to yes-no questions beyond simply answering the questions with a "yes" or "no?" An example was for the picture of a pie about which an aphasic person was asked, "do you eat it for the main course?" The aphasic person's answer was "no." This lead the partner to ask a series of other questions to discover when the food is typically eaten. It would have been more efficient and more similar to normal interaction, had the aphasic person been able to give a more elaborate answer, for example, "for dessert."

5. When the aphasic person is unsuccessful at conveying a message orally, is he or she likely to be successful at using another expressive modality, for example, gesturing, pantomime, drawing or writing? The obvious implication is that the partner needs this information in order to know if it is reasonable to request nonoral expression.

6. Does the aphasic person spontaneously use his or her best expressive modalities? Several aphasic persons in this study did use their strong nonoral modalities spontaneously, and so the partners did not need to request it. Others used nonoral modalities only on request, even though they frequently conveyed important information in those modalities.

What questions should we address as we attempt to analyze the strategies and behaviors used by a partner to obtain information from an aphasic person? From the interactions we have studied, answers to the following questions would seem to have important implications for deciding if the partner's strategies are appropriate.

1. Does the partner make the best use of information provided by the aphasic person in seeking clarification about the information? Some partners appeared to fail to understand how the aphasic person's answers were related to the true answer. For example, one aphasic person wrote the first letter of some answers, but the partner ignored the writing and made guesses unrelated to the written response.

2. If a partner needs to ask successive yes-no questions, does the partner proceed systematically from the more general to more and more specific questions? Partners who ask these kinds of questions without a system will be inefficient in obtaining information.

3. Is the frequency of the partner's redundant questions appropriate? In interacting with aphasic persons who give unreliable yes-no answers, a high level of redundant questions is appropriate as a check on the accuracy of obtained information. In other cases, a high level of redundant questions could be needless and inefficient.

4. If the aphasic person does not spontaneously use his or her best expressive modalities, does the partner request it?

5. Is the strategy of encouraging the aphasic person to continue or of asking for a repeat or elaboration likely to result in the aphasic person's giving relevant and intelligible information?

If the results of our evaluations are to help us decide what follow-up strategies partners should use, our procedures may need to move in directions indicated by the above lists. Current standard aphasia assessments would not result in answers to these questions.

REFERENCES

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