

Conversational Patterns of Aphasic, Closed-head-injured, and Normal Speakers

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This investigation examined the clinical utility of various analyses for characterizing the conversational patterns of two groups of mildly impaired brain-injured subjects, one aphasic group and one nonaphasic head-injured group. These groups were selected because, theoretically, they represent two distinct deficit patterns. According to Holland (1982), aphasia may be described as a disorder of language form, whereas head injuries result in disorders of language use. Consistent with this idea, Sohlberg and Mateer (1989) note that pragmatic deficits may be the most pervasive communication problem in adults with head injuries. Further, they observe that although aphasic individuals may communicate better than they talk, head-injured individuals appear to talk better than they communicate. It was reasonable to ask whether and how these two clinical groups differ from each other and from normal subjects in conversational discourse.

Numerous dimensions have been addressed in the analysis of conversational discourse, such as turn taking and repair mechanisms. Blank and Franklin (1980) have also described a procedure for evaluating the appropriateness of an utterance within a conversation. The concept of appropriateness traditionally has not been addressed objectively in the assessment of brain-injured patients. Using the distinction of speaker-initiator and speaker-responder, appropriateness within a conversational interchange can be examined. A speaker-initiator's utterances are evaluated according to what Blank and Franklin term their "summoning power." Utterances that clearly summon or demand a response are designated as Obliges; those that do not are designated as Comments. A differential response to these conversational initiatives describes whether the speaker is appropriately extending the conversation. The utterances of the speaker-responder are evaluated with regard to their appropriateness within a conversation.

How individuals manage conversational topics is also critical to the success of an interaction. In the context of this investigation, *topic* refers to what conversations are about and to how this changes as an interaction proceeds (Brinton & Fujiki, 1989). Initiation of a new topic is often marked only by the introduction of propositional content (Hurtig, 1977); in other words, a speaker simply begins talking about something else. Sometimes speakers initiate new topics by using special devices such as an opening marker ("by the way") or a question ("Did you see the game yesterday?"), signaling the listener that the topic is changing. After a topic is initiated, it may or may not be continued. A topic is said to be "maintained" when it is continued (Brinton & Fujiki, 1989). Although a topic may be maintained by a single speaker, of particular interest in the present investigation was how topics are maintained by *both* participants in a conversation. Topics may be discontinued when the speakers stop talking or when the speakers change topics. Sometimes a topic may be discontinued and a new topic initiated in a rather subtle way that is referred to as topic shading (Brinton & Fujiki, 1989). Such topic shifts may be smooth or disruptive.

This investigation examined the conversational performance of the two brain-injured groups, using measures of appropriateness, topic initiation, and total output, and compared their performances with those of a group of normal speakers. The analyses attempted to delineate distinct conversational patterns for each group and quantify some of the common subjective descriptions of head-injured individuals' pragmatic abilities such as excessive talkativeness and tangential verbalizations (Prigatano, 1986).

METHOD

Subjects

Aphasic Subjects. Five adult males (mean age 31.2 years, range = 18-42) who were status post unilateral left cerebrovascular accidents (CVAs) (mean months post onset = 25, range = 2-50) made up the aphasic group. All five demonstrated a mild aphasia as determined by their Aphasia Quotients from the Western Aphasia Battery (mean AQ = 93, range = 92-95.2).

Closed Head Injured (CHI) Subjects. Five adult males (mean age 27.8 years, range = 20-38) with closed head injuries (mean months post onset = 17.4, range = 8-36), who were nonaphasic and without significant dysarthria (as determined by an experienced speech-language pathologist), participated in this study. All five CHI subjects were considered to be

mildly impaired and were rated as Level VIII, Purposeful-Appropriate, on the Rancho Los Amigos Scale of Cognitive Functioning.

Normal Subjects. Five adult males (mean age 34.6 years, range = 27–41) with no history of neurologic disease or trauma, served as the control group.

Procedure

Each of the brain-injured and control subjects was individually brought into a quiet room, introduced to the same adult female research assistant (RA), and instructed to have a 15-minute conversation with her on topics of their choice. The investigator then left the room. Each conversation was audiotaped and each recording transcribed verbatim with each utterance being assigned to one of the speakers (RA or subject).

Analysis

Three broad categories of analyses were employed with each transcribed conversation: appropriateness, topic initiation, and total output.

Appropriateness. Each utterance was categorized either as a Speaker-Initiation or Speaker-Response.

Speaker-Initiations. Speaker-Initiations were classified as *Obliges* or *Comments*. *Obliges* were utterances containing explicit requirements for a response from the listener (“How long have you lived there?”). *Comments* were utterances not containing an explicit demand for a response (“The weather has been great all week”).

Speaker-Responses. Speaker-Responses were classified in terms of adequacy: *Adequate Plus*, *Adequate*, *Inadequate*, or *Ambiguous*. An *Adequate Plus* response was relevant and elaborated the theme, providing more information than was requested (e.g., in response to the question, “Where do you live?” speaker-responder replies, “I live in town and have lived there all my life”). An *Adequate* response was one that appropriately met the speaker-initiator’s verbalization (e.g., “I live in town”). An *Inadequate* response was one in which the information offered was invalid, irrelevant, or insufficient to meet the constraints established by the speaker-initiator’s utterance (e.g., in response to the same question, speaker-responder replies, “I’m 27 years old”). An *Ambiguous* response was one in which the information offered was unclear or ambiguous so that one could not determine

whether it was adequate or not (e.g., in response to the same question, speaker-responder replies, "Why should I tell you?").

Topic Initiation. Topics could be introduced by either a subject or the RA. Topics could be changed in three ways: (a) at the beginning of the conversation, or by ending discussion of one topic and initiating another, referred to as Novel Introduction; (b) by means of a Smooth Shift, in which discussion of one topic is subtly switched to another; or (c) by means of a Disruptive Shift, in which discussion of one topic is abruptly or illogically switched to another topic. The total number of Novel Introductions produced by a subject or the RA over the course of each conversation, as well as the total number of topic shifts, both smooth and disruptive, were tallied.

Total Output. *Output* was the total number of words produced by each speaker in a conversation. Fillers and starters were not counted in each total. Ungrammatical utterances were tallied and defined as utterances with syntactical errors (e.g., "In winter, oh God, brutal") or incomplete utterances (e.g., "Now I'm um, um a couple people").

Reliability

Each of the 15 transcribed conversations was analyzed independently by three of the four investigators. None of the measures yielded point-to-point interjudge reliability scores of less than 93%.

RESULTS

Inferential statistics looking at differences between groups were not applied to the data because of the small numbers of subjects. All results are, therefore, presented in a descriptive format.

Appropriateness

Turns. Within each 15-minute conversation, both the subject and the RA functioned as an initiator and a responder. Turns, therefore, accounted for all utterances produced during a conversation. Number and length of Turns were related. A higher number of Turns was indicative of shorter utterances and fewer Turns of longer utterances. The normal controls had the lowest mean number of Turns, 29 (range = 20-41), in their conversa-

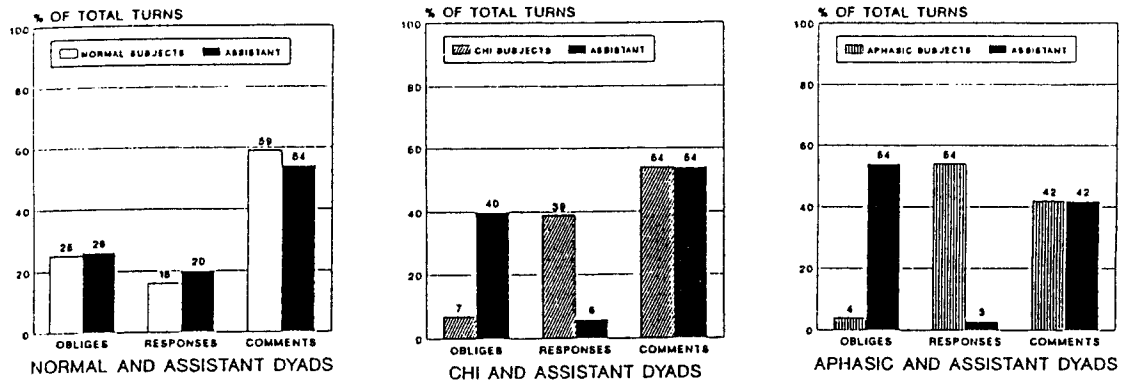


Figure 1. Number of Speaker-Initiations (Obliges & Comments) and Speaker-Responses depicted as percentages of total Turns per conversation for the normal controls and research assistant, the closed-head-injured (CHI) subjects and research assistant, and the aphasic subjects and research assistant dyads.

tions with the RA. CHI subjects had a mean number of 57 turns (range = 46–76), and the conversations of the aphasic subjects were characterized by the highest mean number of turns, 103 (range = 80–140). In discussing the number of Speaker-Initiations (Obliges & Comments) and Speaker-Responses (Adequate Plus, Adequate, etc.) produced by the subjects and the RA, each category will be presented as a percentage of the number of Turns per conversation (see Figure 1).

Speaker-Initiations

Obliges. Obliges were those initiations that contained the clear expectation that a response was to be forthcoming. The normal controls and the RA produced comparable mean percentages of Obliges in their conversations, 25% and 26% respectively. Seven percent of Turns for the CHI subjects were Obliges versus the 40% produced by the RA. The aphasic subjects produced Obliges in only 4% of all Turns while the RA produced 54% in their conversations.

Comments. Comments constituted the highest percentage of Turns in the conversational dyads of the normal controls and CHI subjects with the RA. The normal controls produced Comments in 59% of all Turns compared to 54% for the RA, whereas the CHI subjects and the RA each produced 54% (Figure 1). In the dyads with the aphasic subjects and the RA, mean percentages of Responses for aphasic subjects and Obliges for RA were greater than Comments. The aphasic subjects and the RA each produced Comments in 42% of all Turns in their conversations.

Speaker-Responses

None of the subject groups produced many Inadequate (<1% of total responses) or Ambiguous (<2% of total responses) responses. We suspect that these types of responses would be more prevalent in more severely involved subjects or those in more acute stages of recovery, particularly those with CHI.

The subject groups demonstrated different percentages of Adequate Plus versus Adequate speaker-responses. An Adequate Plus response was one that appropriately met the speaker-initiator's verbalization and further elaborated the theme. When the mean number of Adequate Plus responses for each subject group was divided by the mean number of the RA's Obliges for that group (i.e., Adequate Plus responses/RA's Obliges [opportunities to produce Adequate or Adequate Plus responses]) the resulting percentage indicated the frequency of Adequate Plus responses in the conversations with the RA for that group. The percentages were 48% for the normal controls, 30% for the CHI group, and 22% for the aphasic group.

Topic Initiation

In terms of the total number of topics introduced in the conversations, the smallest mean number was noted in the normal controls and RA dyads 7.8 topics (range = 5-10), followed by the CHI and RA dyads with 11.6 (range = 8-16). The greatest number of topics was noted in the aphasic and RA dyads with 16.6 (range = 11-23) (Table 1). The percentage of total topics introduced by the normal controls was 59%. The CHI subjects introduced 28% of all topics and the aphasic subjects introduced only 20% of all topics in their conversations with the RA.

Manner of Topic Initiations. Another measure of topic initiation was how new topics were introduced into conversations. In the conversational dyads with the normals and the RA, nearly equal mean numbers of Novel Introductions were noted, 1.4 and 1.2 respectively. The CHI subjects had a mean of only .2 Novel Introductions, while the RA had a mean of 1.6 in their conversations. In the aphasic subjects and RA conversations, only the RA had Novel Introductions, with a mean of 4.4. All subjects had comparable mean numbers of Smooth Shifts: 3.2 for the normal controls and 2.6 for the CHI and aphasic subjects. The RA had the smallest mean number of Smooth Shifts in the conversations with the normal controls (1.8), a larger mean number in the conversations with the CHI subjects (6.8), and the greatest mean number with the aphasic subjects (8.8). Disruptive Shifts accounted for very few of the topic changes in any of the

TABLE 1. MEAN NUMBER AND TYPE INITIATIONS FOR THE NORMAL CONTROL (NOR), CLOSED-HEAD-INJURED (CHI), AND APHASIC (APH) SUBJECTS IN THE CONVERSATIONAL DYADS WITH THE RESEARCH ASSISTANT (RA)

| <i>Initiation</i> | <i>Conversational Dyad</i> | | | | | | | | |
|----------------------------|----------------------------|-----|---------------|-----|-----|---------------|-----|------|---------------|
| | NOR | RA | DYAD TOTAL | CHI | RA | DYAD TOTAL | APH | RA | DYAD TOTAL |
| Novel Intro. | 1.4 | 1.2 | 2.6 | .2 | 1.6 | 1.8 | 0 | 4.4 | 4.4 |
| Smooth Shift | 3.2 | 1.8 | 5.0 | 2.6 | 6.8 | 9.4 | 2.6 | 8.8 | 11.4 |
| Disrupt. Shift | 0 | .2 | .2 | .4 | 0 | .4 | .8 | 0 | .8 |
| Total Inits. | 4.6 | 3.2 | 7.8 | 3.2 | 8.4 | 11.6 | 3.4 | 13.2 | 16.6 |
| Percent of Total Inits. | 59% | 41% | | 28% | 72% | | 20% | 80% | |

conversational dyads. None were observed for the normal controls, a mean number of .4 was noted for the CHI subjects, and .8 for the aphasic subjects: The only Disruptive Shifts produced by the RA occurred in the conversations with the normal controls, but these were infrequent (mean = .2).

Total Output

An analysis of the proportion of the total words produced by the subjects and the RA indicated some differences among the subject groups. In the dyads with the normal controls and the RA, the proportions were 63% versus 37% respectively; for the CHI subjects and the RA they were 51% versus 49% respectively, and for the aphasic subjects and the RA the proportions were 46% versus 54% respectively.

The normal and the CHI subjects produced on average 1.6 and 2.8 ungrammatical utterances per conversation respectively. In contrast, the aphasic subjects produced the greatest number of ungrammatical utterances for all dyads, mean of 18.2 (range = 6–28.)

DISCUSSION AND CONCLUSIONS

The greater number of Turns in the CHI and aphasic subjects' conversations was most likely attributable to their shorter length of utterance per Turn and the RA's high percentage of Oblige production within the required time limit. The CHI and aphasic subjects had more difficulty initiating and sustaining conversations than the normal controls as indi-

cated by the low number of topic initiations by both brain-injured groups of subjects. The RA attempted to compensate for this by using more Obliges, changing topics within conversation, and doing more talking (i.e., the RA produced a greater proportion of the total words in the conversations with the CHI and aphasic subjects than in those with the normal controls). The RA appeared to use Obliges for different reasons with each of the brain-injured groups. For example, the RA made more requests for clarification of the aphasic subjects. This may have been the result of their high proportion of ungrammatical utterances. With the CHI subjects, Obliges were used to elicit more content on a specific topic or to change topics when the conversation lagged.

The normal controls' greater frequency of Adequate Plus response production was consistent with their lower number of Turns per conversation as well as their greater proportion of total words per conversation. The normal controls, as well as the RA when conversing with them, were more likely to develop and extend dialogue on specific themes as opposed to the shorter, less elaborated discussions that took place with the CHI and aphasic subjects. The normal controls produced Adequate Plus responses in response to nearly 50% of the RA's obliges (Adequate Plus responses/RA's Obliges = 48%). By contrast, the CHI subjects produced approximately 30% Adequate Plus responses and the aphasic subjects produced only 20%.

These findings led to the following preliminary conclusions:

1. The analyses employed in the present study appeared to demonstrate differences in conversational patterns for the normal controls and the CHI and aphasic subject groups.
2. Descriptive terms such as "talkativeness, and tangential or inappropriate responses" used to describe the communicative abilities of CHI individuals were not supported in the present investigation. The five CHI subjects studied were high level, in the final stages of rehabilitation. By comparison they were rather subdued, with several requiring prompting to talk, tangentially or otherwise. We suspect that CHI subjects in more acute stages of rehabilitation or with more severe impairment might behave differently. Additionally, the rather structured and assistive mode of interaction adopted by the RA in the conversations with the CHI and aphasic subjects (e.g., the high number of obliges produced) may have inhibited the occurrence of, for example, tangential responses. In less structured interactions such behaviors may have occurred more frequently. In any event, the conversational analyses utilized in this study lend themselves to objectifying behaviors such as ambiguous responses or disruptive topic changes.

3. *Communicative burden* has been defined as the share of responsibility each participant in a conversation must carry to insure the successful exchange of information (Linebaugh, Kryzer, Oden, & Myers, 1982). Linebaugh and colleagues (1982) noted that if communication is to succeed, a portion of the communicative burden of aphasic speakers often needs to be assumed by the individual with whom the aphasic person is interacting. The findings of this study support this idea. The RA clearly assumed a greater proportion of the communicative load in the conversations with the aphasic subjects by producing a high number of Obligés, changing the topic of conversation, and talking more. Although not surprising in the presence of even the mild aphasia the aphasic subjects demonstrated, it is interesting that the RA also assumed a greater proportion of the communicative load in the conversations with the nonaphasic CHI subjects. Clearly, aphasia alone is not a necessary prerequisite for conversational difficulty.
4. Finally, although the results of this study seem to demonstrate some different conversational patterns for the CHI and aphasic subjects, the differences are not great enough, nor the groups of five subjects large enough, to draw conclusions regarding the underlying cause of their conversational deficits (i.e., disorders of language form vs. use). Further research needs to be conducted to explore this question.

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