Aphasic Speakers' Use of Definite and Indefinite Articles to Mark Given and New Information in Discourse

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The discourse of persons with mild aphasia is sometimes perceived as vague, difficult to follow, and lacking in cohesion and coherence. Difficulty in word selection and errors in syntax, grammar, and morphology may be present, but these structural linguistic deficits appear to account only partially for the perception of mildly aphasic speakers as less cohesive and less coherent than normal speakers.

One set of conversational rules which relates particularly to the coherence and cohesion of conversational interactions is the appropriate marking of "given" and "new" distinctions. The "given-new contract" is one of several pragmatic principles which guide the speaker's organization of topics and selection of words in discourse (Clark and Clark, 1977). It is an agreement between speaker and listener which says that the speaker will properly identify any information or referent that he/she believes the listener already knows about, and will also mark all new information or unfamiliar referents. In order to comply with this agreement, the speaker must be aware of the background knowledge which the listener has at the beginning of the communicative exchange and must be sensitive to the changes which occur in this knowledge as the conversation continues.

Given-new distinctions may be indicated in several ways: by the use of sentential stress patterns, by word order, or by linguistic markers. Linguistic markers of given and new information include articles, determiners, pronouns, and diectic words. Ambiguous or absent marking of given and new information can result in breakdowns in the communication process. Rochester and Martin (1977) reported that thought-disordered schizophrenic speakers used linguistic markers in ways which required the listener to create his/her own referent or arbitrarily to decide which of two possible referents the speaker intended. Gleason et al. (1980) noted errors in the use of pronoun referents in aphasic discourse. Kimbarow and Brookshire (1984) reported that the aphasic speakers in their sample were sensitive to the risks of pronoun ambiguity in their narratives. Errors in marking the referents of nouns and errors of anaphora were noted by Ulatowska et al. (1983) in the discourse of moderately aphasic individuals.

We were particularly interested in the use of definite and indefinite markers to identify given and new information. If a speaker assumes that a listener can locate the referent for an item by searching a shared context, e.g. the speaker believes the information is "given," he/she will consider the definite marker appropriate. Definite markers include the definite article "the" and possessive pronouns including "his, her, their, my, your, our." Indefinite markers signal new or nonspecific referents in the discourse. They tell the listener not to search the context for a referent. If a speaker believes that a referent is new to a listener, he or she will consider the indefinite marker appropriate. Indefinite markers include the indefinite articles "a, an, and some." Ambiguous, failed, or inaccurate marking of given and new information can cause the listener to search the previous context for a nonexistent referent or to fail to search for a referent which is needed.

If the discourse of mildly aphasic individuals contains errors in marking given and new reference, such errors could account for the perceived lack of

cohesion and coherence in the discourse of these individuals. The present study examined mildly aphasic individuals' use of the noun phrase signalling system in assisting the listener to retrieve appropriate referents for given and new information. Specifically, we hypothesized that the discourse of our mildly aphasic speakers would contain errors in the use of definite and indefinite markers to identify given and new information.

METHOD

Subjects for this study were 10 aphasic speakers, 10 normal speakers, and 7 listeners. The aphasic speakers were adults with mild aphasia as a result of a single left hemisphere infarction. Diagnosis of aphasia was based on scores on standardized language tests which were interpreted by a certified speech and language pathologist. The mean overall score on the Porch Index of Communicative Abilities (Porch, 1967) was 13.71, which corresponds to the 90th percentile. All speakers were at least one year post onset of aphasia; the average time post onset was 36 months. There were 6 women and 4 men; ages ranged from 24 to 66 years. A control group of non-brain-damaged adults was matched for age, sex, and educational background. Listeners were normal adults who volunteered to participate in the study.

The aphasic and normal speakers were asked to describe to one of the listeners five sets of sequential picture cards. The listener was provided a matching set of cards in random order, and was instructed to arrange them in the order described by the speaker. The listener was not allowed to ask questions or otherwise interact with the speaker. The speaker was not able to see the listener's cards. The speaker's discourse was audiotaped and transcribed.

All noun phrases were identified. Only final productions were analyzed. Scoring indicated whether a linguistic marker was present, what type of marker it was (definite or indefinite), whether or not there was an antecedent for the noun phrase, and the appropriateness of the marker selected. A marker was considered correct if it appropriately led the listener to an antecedent or correctly instructed the listener that the referent was new. The marker was considered incorrect if it misdirected the listener to search the verbal context for an antecedent when none existed or signalled a new referent when actually referring to an old one, in either case establishing ambiguities in the verbal context for the listener.

Both intra- and interobserver reliability with the scoring system were established. Interobserver agreement on scoring categories was 99%; intra-observer agreement after a six-month interval was 96%.

RESULTS

Table 1 compares normal and aphasic speakers with regard to the total number of noun phrases produced, total number and percent of noun phrases with a linguistic marker present, and total number and percent of noun phrases without a linguistic marker. Normal speakers produced more noun phrases than mildly aphasic speakers, but the difference was not statistically significant. Normal speakers produced more noun phrases with a linguistic marker present, but again, the difference was not significant, and the percent of total noun phrases with a linguistic marker present was quite similar for the two groups. There was no significant difference between the groups for either the raw scores or percent of total noun phrases with linguistic marker absent. Mildly

number of noun phrases produced or the number with a linguistic marker present.

Table 1. Comparison of noun phrase totals.

	Normal Speakers	Aphasic Speakers
Total noun phrases		
Mean	113.8	90.6
S.D.	57.2	38.3
Total noun phrases with linguistic marker present		
Mean	96.5	75.0
S.D.	45.5	29.5
Percent of total	84.0	83.0
Total noun phrases with linguistic marker absent		
Mean	17.2	14.7
S.D.	13.2	10.7
Percent of total	15.0	16.0

Table 2 compares normal and aphasic speakers with respect to the type of linguistic marker used. The number of noun phrases with a definite marker present was not significantly different for the two groups; however, the percent of total noun phrases with a definite marker was significantly higher for the mildly aphasic speakers. The aphasic speakers marked a greater proportion of their noun phrases with a definite marker, signalling "given" information. The mean number of noun phrases marked with an indefinite marker was significantly lower for the aphasic speakers, as was the percent of total noun phrases marked with an indefinite marker. The aphasic speakers used significantly fewer indefinite markers to identify information as "new."

Table 2. Type of linguistic marker used.

	Normal Speakers	Aphasic Speakers
Noun phrases with definite marker		
Mean	50.1	51.6
S.D.	20.9	15.7
Percent of total	51.0	67.0*
Noun phrases with indefinite marker		
Mean	42.6	21.5
S.D.	24.5	21.3*
Percent of total	44.0	28.0*
Noun phrases with other marker		
Mean	3.7	2.8
S.D.	2.5	2.5
Percent of total	3.0	3.0

*$p \leq .05$

Table 3 compares the accuracy of use of definite and indefinite markers in marking new and given information. The percent of noun phrases correctly marked with either a definite or an indefinite marker was significantly lower for aphasic speakers.

Table 3. Accuracy of marker use.

	Normal Speakers	Aphasic Speakers
Noun phrases with definite marker		
Mean	50.1	51.6
Percent of total	51.0	67.0*
Percent correct	86.0	73.0*
Noun phrases with indefinite marker		
Mean	42.6	21.5*
Percent of total	44.0	28.0*
Percent correct	89.0	76.0*

*$p \leq .05$

Table 4 compares the types of errors in noun phrase marking by both groups of speakers. The error categories included: DEFINITE ARTICLE ABSENT: Failure to use a linguistic marker in a context where the definite article was obligatory to mark given information. INDEFINITE ARTICLE ABSENT: Failure to use a linguistic marker in a context where the indefinite article was obligatory to mark new information. DEFINITE ARTICLE SUBSTITUTED FOR INDEFINITE ARTICLE: Substitution occurred in a context where the indefinite article was obligatory to mark new information. INDEFINITE ARTICLE SUBSTITUTED FOR DEFINITE ARTICLE: Substitution occurred in a context where the definite article was obligatory to mark given information. Aphasic speakers made significantly more errors overall, and the distribution of errors over the categories varied considerably between the two groups. Slightly more than 40% of the errors made by normal speakers involved omission of a marker where one was required, and equal numbers of definite and indefinite articles were omitted. Omission of markers accounted for slightly less than 20% of the errors made by aphasic speakers, and there was little difference between the numbers of definite and indefinite markers omitted. Normal speakers substituted one type of marker for another with nearly equal frequency. Aphasic speakers, however, showed a significantly higher frequency of definite for indefinite marker substitutions.

Table 4. Error types.

	Normal Speakers	Aphasic Speakers
Total Errors	66	177*
Definite Article Absent	14 (21%)	20 (11%)
Indefinite Article Absent	13 (20%)	15 (08%)
Definite Article Substituted for Indefinite	21 (32%)	117 (66%)
Indefinite Article Substituted for Definite	18 (27%)	25 (14%)

*$p \leq .05$

In summary, mildly aphasic speakers were as productive as the normal speakers with regard to the total number of noun phrases produced and the total number with and without linguistic markers. Normal speakers had a significantly higher percentage of noun phrases correctly marked with an indefinite marker. Aphasic speakers frequently used the definite marker in place of the indefinite marker, incorrectly signalling to the listener that the referent was "given" and could be located in a shared context, thus creating ambiguities in the verbal exchange.

DISCUSSION

Mildly aphasic speakers used definite markers where indefinite markers were obligatory. They used indefinite markers less often than normal speakers did. They made more errors with indefinite markers they did use. They also used both definite and indefinite markers correctly a substantial portion of the time.

The rather extensive substitution of definite for indefinite markers does not appear to be explainable on the basis of ease of production. From an articulatory standpoint, it seems fairly obvious that "a, an, and some" are no more demanding than "the, his, hers, and theirs" - in fact, the indefinite markers should be easier to produce.

Definite and indefinite markers may place a differential demand on the word retrieval process. Certain variables which have been reported in the literature suggest that definite articles may be easier to retrieve. They are more concrete and more salient. Hence "the" at the beginning of a sentence may be more easily retrieved than "a." Definite markers occur with greater frequency in the discourse of normal speakers, largely because a referent is normally marked as "new" only once, but may be marked as given in several succeeding utterances. Even in the restricted context of this experimental task, where numerous new referents were introduced and little elaboration was permitted, normal speakers used more definite than indefinite markers. Increased frequency of use may facilitate the retrieval of definite markers for the aphasic speaker.

Attention and short term memory may play a role in the selection of definite and indefinite markers. In order to select the proper marker for a referent, the speaker must attend to the preceding conversation and must remember what has been said. Faulty recall of a conversation could lead to improper marking of referents.

Failure to mark given and new information appropriately could reflect a pragmatic disorder. That is, it could suggest that aphasic speakers are less sensitive to, or less able to respond to, the speaker's need to have given and new information marked. Consistent with Kimbarow and Brookshire's data (1984), all of these aphasic speakers marked both kinds of information correctly on many occasions, demonstrating pragmatic competence at least part of the time.

These aphasic subjects were, on the average, 3 years post onset of aphasia and had had many sessions of speech and language therapy. Since therapy tasks involved in training syntactic structures frequently depend upon shared information between clinician and client, it seems likely that many therapy procedures would train the use of definite markers more than indefinite markers.

We propose a more global explanation for the increased use of definite and decreased use of indefinite markers, an explanation which negates none of the above but draws upon concepts of information handling and information processing as well. Schatz (1978) suggested that variations in linguistic performance could be explained by resource allocation theory--a theory which

employs concepts of information processing. Briefly, Schatz proposes that the complexity of perceptual, social and cognitive variables which form the basis for communication require some form of organization, of information handling. She cites syntactic and pragmatic rules as examples of information handling techniques in communicative behavior. Further, the use of such information handling techniques requires resources, and since human resources are finite, some schema must be devised for allocating these resources to various information handling techniques. According to Schatz, each information handling technique has a workload value which reflects its priority or importance in organizing communicative behavior and its level of mastery, on a continuum from virtually automatic to new and requiring extensive conscious effort. Finally, resources must be allocated not only to a general communicative task, but also to the various subtasks which comprise it.

Relating this to the communicative behavior of the aphasic adult, we are reminded that aphasic speakers' linguistic information processing techniques are likely to be less automatic, and to require more conscious effort than would be expected for normal speakers, and that their communicative and cognitive resources may be compromised. Thus the aphasic speaker may be operating at a higher workload level and with reduced resources. In this situation, the aphasic speaker may choose to allocate more of his or her resources to the success of the larger communicative task at the expense of one or more of the subtasks contained within it. For example, identification and marking of new information in discourse requires the speaker to scan the general cultural context, the immediate physical context, the previous verbal context, and his or her short term memory of recent shared interaction before he or she can determine conclusively that a referent is "new." If the task in this experiment (the description of the picture sequences) can be largely accomplished without diverting precious resources to the analysis of the referent in all of its possible contexts, the speaker may fall back on the easier alternative, the increased use of definite and decreased use of indefinite markers, thus designating a higher proportion of referents as "given." This hypothesis is consistent with Linebaugh's (1982) observation that aphasic speakers tend to shift a higher proportion of the communicative burden to the listener. In this example, the mildly aphasic speakers marked a high proportion of information as "given," relying upon the listener to search all of the contexts and use other strategies to disambiguate the referents and complete the communicative interaction.

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