

A CLINICAL APPRAISAL OF THE PRAGMATIC ASPECTS OF LANGUAGE

CAROL A. PRUTTING

University of California, Santa Barbara

DIANE M. KIRCHNER

Private practice, San Francisco, CA

A descriptive taxonomy, the pragmatic protocol, was developed for this study. The protocol consists of 30 pragmatic parameters of language. The purpose of the study was to test the utility of the tool to evaluate a range of pragmatic aspects of language in a sample of conversational speech from subjects in six groups. Among the disordered subjects, four distinct profiles emerged that separated the diagnostic groups. Individual differences in the way pragmatic deficits were distributed within a diagnostic category were also identified. The authors stress that the assessment of pragmatics should encompass a range of parameters that includes aspects of linguistic structure as well as those aspects of communication that have to do with principles governing language use. We offer our data as an early look at the way in which pragmatic deficits stratify across disordered populations.

In a recent book dealing exclusively with the pragmatics of language, Levinson (1983) devoted 53 pages to defining the topic. In his seminal work the author writes, "Here we come to the heart of the definitional problem: The term pragmatics covers both context-dependent aspects of language structure and principles of language usage and understanding that have nothing or little to do with linguistic structure" (p. 9). Pragmatics are concerned with the relationship between linguistic knowledge and the principles governing language use. Pragmatics must, therefore, account for two divergent aspects of communicative competence: those aligned with structure and those that operate apart from the structural properties of utterances. The term pragmatics has clear meaning and as Levinson says,

In one sense there is no problem of definition at all: Just as, traditionally, syntax is taken to be the study of the combinatorial properties of words and their parts, and semantics to be the study of meaning, so pragmatics is the study of language usage. Such a definition is just as good (and bad) as the parallel definitions of the sister terms, but it will hardly suffice to indicate what the practitioners of pragmatics actually do; to find that out, as in any discipline, one must go and take a look. (p. 6)

Levinson believes that "the most promising definitions are those which equate pragmatics with 'meaning minus semantics' or with a theory of language understanding that takes context into account, in order to complement the contribution that semantics makes to meaning" (p. 32).

To understand how the field of speech and language pathology has dealt with the pragmatic aspects of language, both the theoretical paradigms for viewing pragmatics and the way the pragmatic aspects of communication have been organized for clinical purposes will be reviewed.

Paradigm for Conceptualizing Pragmatic Aspects of Language

There is a consensus within our discipline on one issue with regard to the pragmatic aspects of language. That is, these aspects should be assessed in language-disordered populations. What has yet to be agreed upon is a paradigm from which to view pragmatics. Some have envisioned a pragmatics-as-separate model where language use is described as a separate component from syntax and semantics (Bloom & Lahey, 1978; Chomsky, 1957, 1965). Although Bloom and Lahey acknowledged the interaction among syntax, semantics, and pragmatics, Chomsky emphasized a syntactic component that is more autonomous from aspects of meaning and use. A second position has been proposed by Bates (1976, 1979). She proposes a pragmatics-as-perspective model in relationship to other components of the system. From this framework, the pragmatic aspects of language actually serve as a source of functional constraints on various outcomes at other levels of the system. Finally, while denying neither of the above, a third position emerges that is the pragmatics-as-cause-effect point of view. In the case of this study the concern is for the communicative effects of various linguistic and cognitive deficits on interaction. The central notion was discussed by Charles Peirce more than a century ago (Peirce, 1878). He believed that our conception of something was our understanding of its effects. This is our viewpoint, and it is central to the position of this paper.

In the meantime, there have been a few attempts to organize the pragmatic aspects of language for clinical application (Curtiss, Kempler, & Yamada, 1981; McTear, 1985; Penn, 1983; Prinz & Weiner, in press; Prutting & Kirchner, 1983; Roth & Spekman, 1984). Curtiss et al. (1981) suggested a conversational analysis that includes 16 categories representing discourse functions. Prutting

designed a protocol in 1982 that was published in 1983 (Prutting & Kirchner, 1983). The protocol proposed the use of a speech act theory as a means of organizing pragmatic parameters and offered the following breakdown: utterance acts, propositional acts, illocutionary and perlocutionary acts.

Penn (1983) developed a profile of communicative appropriateness that takes the following pragmatic parameters into account: nonverbal communication, sociolinguistic sensitivity, fluency, cohesion, control of semantic content, and responsiveness to the interlocutor. She examined 40 parameters grouped under these five broad categories for clinical purposes. Roth and Spekman (1984) advocated the following breakdown for analyzing pragmatic abilities: communicative intentions, presuppositions, and the social organization of discourse. McTear (1985) separated the pragmatic aspects of language into an interactional component and a transactional component. The interactional component accounts for turn-taking acts and exchange structure, whereas the transactional component is used to denote the propositional content of discourse such as relevance, cohesion, and coherence. All of the above approaches evaluate the parameters within a conversational setting and/or clinician-constructed tasks. Prinz and Weiner (in press) have developed a pragmatic screening test that employs standardized tasks to elicit specific pragmatic abilities. The following parameters are assessed using this tool: speech acts, presuppositions, conversational interaction, and nonverbal signals.

The problem with all of these approaches has to do with the boundaries that are drawn between intentionality and the necessary presuppositions, propositional knowledge, and social rules of discourse needed to carry out the intentions. In fact, we originally classified the pragmatic parameters according to a speech act model (Austin, 1962; Searle, 1969). In other words, each parameter was classified as belonging to the utterance act, propositional act, or illocutionary/perlocutionary act. However, we have since abandoned the discrete classification of parameters under one of these three speech act categories and have recognized the lack of boundaries that distinctly separate propositional knowledge from, say, illocutionary function.

When describing the components of the speech act framework, Searle (1969) writes,

I am not saying of course, that these are separate things that speakers do, as it happens, simultaneously as one might smoke, read, and scratch one's head, but rather that in performing illocutionary acts, one characteristically performs propositional acts and utterance acts. (p. 24)

He sees the components within the speech act theory as follows: "Utterance acts stand to propositional and illocutionary acts in the same way in which making an 'X' on a ballot paper stands for voting" (p. 24). We concur with Searle in the final conclusion of his book, *Speech Acts: An Essay in the Philosophy of Language*:

For speaking a language—as has been the main theme of this book—consists of performing speech acts according to the rules, and there is no separating those speech acts from

the commitments which form the essential parts of them. (p. 198)

Both semantic theory, as mentioned earlier in Levinson's (1983) work, and speech act theory (Austin, 1962; Searle, 1969) can be used as paradigms from which to help us understand pragmatics because intentionality and meaning are at the heart of language use. For an evaluative comparison of the proposed conceptual frameworks for pragmatics, see Parret (1983).

In the absence of an agreed-upon paradigm, there is a need to determine what the pragmatic aspects of language are and how these aspects should be organized for clinical and research purposes. We appear to be in a period of fact-gathering that consists primarily of empirical work undertaken to articulate a paradigm. Obviously, it will be possible to work with more direction in this area of language when theorists and researchers reach a consensus on a paradigm that helps us to conceptualize the communicative system. The debate is by no means over.

Despite the current status of this area of interest, the need for a pragmatic perspective for clinical purposes has been widely asserted for some time now. In one of the first articles written by Rees (1978) in the area of pragmatics, she stated,

The possibilities, then for effective application of the pragmatic approach to studying and remediating clinical populations seem almost limitless. Without a doubt the future will bring a wealth of studies and reports on this subject that will advance clinical knowledge and skills for training the use of language in context. (p. 263)

Some years later, most of us still believe in the potential of a pragmatic approach to the study of language-disordered populations. However, to date there is no documentation of how language-disordered populations fare when assessed on a range of pragmatic abilities. As a result, we have little understanding of the way in which pragmatic deficits stratify across disordered populations. The purpose of this paper is to test the utility of a descriptive taxonomy, the pragmatic protocol, to evaluate a range of pragmatic parameters in a sample of conversational speech from six diagnostic groups.

METHOD

Subjects

The subjects for this study were 157 children and adults comprising six different diagnostic groups. These groups were as follows: 42 children with language disorders, 42 children with articulation disorders, 42 children developing language normally, 11 adults following a left hemisphere cerebrovascular accident (CVA), 10 adults following a right hemisphere CVA, and 10 adults with normal language. Subject selection criteria will be presented for each group separately.

The subject criteria for children with language and articulation disorders were based on those established by

the California State Department of Education Title 5, Section 3030. In addition, the children with language and articulation disorders demonstrated performance IQs of 85 or better on standardized psychometric evaluations such as the Wechsler Intelligence Scale for Children—Revised (Wechsler, 1972), the Stanford-Binet (Terman & Merrill, 1973), and the Leiter International Performance Scale (Arthur, 1952). These children were free of mental retardation, emotional disturbance, and clinically identifiable neurologic impairments. The diagnosis of speech or language disorder could not be attributed to cultural differences or hearing loss. Subjects were English speakers from monolingual homes, and each child passed a hearing screening no longer than 6 months prior to the time of the study.

To be considered language disordered, children in the present study performed at least 1.5 standard deviations below the mean or at the 7th percentile on standard measures of language comprehension and production. At least two standardized tests were used to determine a language disorder in one or more of the following areas: morphology, syntax, and semantics. Tests were selected from those most appropriate for the child's age or developmental level. The standardized tests of language comprehension administered to the children with language disorders included but were not limited to the following: the receptive portion of the Northwestern Syntax Screening Test (Lee, 1969), the Receptive subtests of the Clinical Evaluation of Language Function (Semel & Wiig, 1980), the Auditory Reception and Auditory Association subtests of the Illinois Test of Psycholinguistic Abilities (Kirk, McCarthy, & Kirk, 1968), and the Peabody Picture Vocabulary Test—R (Dunn & Dunn, 1981). Expressive language measures included but were not limited to the following: the expressive portion of the Northwestern Syntax Screening Test; Expressive subtests from the Clinical Evaluation of Language Function; the Grammatical Closure subtest of the Illinois Test of Psycholinguistic Abilities; and a spontaneous language sample analyzed for length, complexity, and diversity of syntactic structures.

Of the 42 children with language disorders (mean age = 8:2 years, range = 7:1–10:0 years), 36 were enrolled in classrooms for the communicatively handicapped within their respective school districts. The remaining 6 children were attending regular classroom programs and were receiving itinerant language services.

The children with articulation disorders were classified as such if they displayed reduced intelligibility or an inability to use the speech mechanism in a way that significantly interfered with communication and attracted attention. In this case, diagnosis of articulation disorder was made when production of multiple speech sounds on a standardized scale of articulation adequacy was below that expected for the child's chronological age or developmental level. The standardized tests administered included but were not limited to the following: The Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1972), The Fisher-Logemann Test of Articulation (Fisher & Logemann, 1971), and analysis of a connected speech sample using the Natural Process Analysis (Shriberg & Kwiatkowski, 1980). All of

the 42 children with phonologic disorders were enrolled in speech intervention programs at the time of the study. The mean age for this group was 8:5 years and the range was 7:3–9:9 years of age.

According to school records and parental report, children in the normally developing group (mean age = 8:1 years, range = 7:0 to 9:2 years) had no history of speech or language deficits, were judged to be of normal intellectual potential, had normal hearing, and were placed in regular classroom settings at the time of the study. Children in the normal group were English speakers from monolingual homes as well. Sex was evenly distributed across all three groups of children with 21 females and 21 males in each.

The remaining 31 subjects comprised three diagnostic categories: 11 adults following left hemisphere CVA, 10 adults following right hemisphere CVA, and 10 normal adults. The subject selection criteria for the 21 brain-injured adults were as follows: diagnosis by a neurologist of left or right hemisphere CVA (obtained from medical records), neurologic stability (a minimum of 3 months postonset), and the absence of concomitant diagnoses such as dementia or psychiatric disturbance. All adult subjects were native English speakers (determined by interviews with family members), and all subjects had normal hearing (as indicated in the patient medical record). The subjects with left and right hemisphere damage were receiving treatment at the time of the study.

Of the 11 left hemisphere-damaged adults (mean age = 61 years, range = 51–70 years), 6 had been diagnosed as having fluent aphasia, and 5 had been diagnosed as having nonfluent aphasia. For the fluent subjects (Subjects 1–6) the mean score on the Western Aphasia Battery (Kertesz, 1982), aphasia quotient, was 74.9 with a range of 49.4–96.2. On the Communicative Abilities in Daily Living (Holland, 1980) the mean score was 81.2 with a range of 52.9–97.7. There were 3 men and 3 women among the fluent subjects.

For the nonfluent subjects (Subjects 7–11) in the left hemisphere-damaged group the mean score on the Western Aphasia Battery, aphasia quotient, was 66.0 with a range of 40.3–90.3. On the Communicative Abilities in Daily Living, this group's average score was 113.6 with a range of 72.0–133.0. There were 4 men and 1 woman among the left hemisphere-damaged nonfluent subjects.

In the group of 10 right hemisphere-damaged adults (mean age = 64, range = 48–74) the mean score on the Western Aphasia Battery was 98.5 with a range of 92.6–100. The mean score for the group on the Communicative Abilities in Daily Living was 123.5 with a range of 72–136. Subjects were evenly distributed on the basis of sex with 5 men and 5 women in this diagnostic category.

The last group consisted of 10 adults with normal language (mean age = 62, range = 57–69) distributed evenly on the basis of sex (5 women, 5 men). According to each subject's history, there was no evidence of neurologic disorder; psychiatric disorder; speech, language, and hearing problems; or bilingual differences. The adults in all three groups had completed a minimum of 13 years of school, and all were considered literate.

The Pragmatic Protocol

The pragmatic protocol, developed by Prutting (1982), was designed to provide an overall communicative index for school-age children, adolescents, and adults. The protocol consists of 30 pragmatic aspects of language. These parameters were extrapolated from the developmental child language literature as well as the adult literature. It was particularly important for us to design a tool that would represent a range of diverse aspects discussed in the literature. We have adhered to Levinson's (1983) treatise that the range of pragmatic aspects exists on a continuum and includes both context-dependent aspects of language structure (e.g., cohesion) as well as aspects that rely on principles of language usage that are relatively independent of language structure (e.g., physical proximity, eye gaze). We have purposely mixed levels of analysis within the protocol (form and function) in order to explicate the pragmatic effects of deficits across various levels of performance.

As mentioned the protocol was designed to represent a range of parameters under observation. In addition to inclusiveness or broadness of scope the following properties were taken into consideration in constructing the protocol: homogeneity—all parameters represent a logical relationship to communicative competence and to each other, mutually exclusiveness—all items refer to one unique dimension of communicative competence and can be classified into only one category, and usefulness—each parameter serves a function in relation to the purpose of the study. Fox (1969), as reported by Brandt (1972), suggested the desirability of these four properties in the development of taxonomies. Each aspect was included under one of the following categories: verbal, paralinguistic, nonverbal.

The protocol used in this study along with the definitions of each parameter and examples are presented in the Appendix. It is important that judgments of appropriate or inappropriate be made relative to the subject, partner, and other aspects of the context that are known. For instance, a 5-year-old child is able to be cohesive but perhaps in fewer ways or using a more restricted number of syntactic forms than an adult. When using this protocol, judgments must be made taking both chronology and context into account. The tool is designed to be used only with children 5 years of age or older. The developmental literature suggests that by age 5 children show some form (possibly not fully developed) of all 30 parameters evaluated by the pragmatic protocol.

The pragmatic protocol should be completed after observing individuals engaged in spontaneous, unstructured conversation with a communicative partner. It is recommended that clinicians observe 15 min of conversation on-line or from a videotaped sample. After the clinician has observed the interaction, the protocol may be completed. At this time each pragmatic aspect of language on the protocol is judged as appropriate, inappropriate, or not observed. The following guidelines are used:

Appropriate: Parameters are marked appropriate if they are judged to facilitate the communicative interaction or are neutral.

Inappropriate: Parameters are marked inappropriate if they are judged to detract from the communicative exchange and penalize the individual.

No opportunity to observe: If the evaluator does not have sufficient information to judge the behavior as appropriate or inappropriate, the clinician marks this column. Aspects marked in this column are reassessed during additional samples of conversational interaction until the evaluator is able to judge them as either appropriate or inappropriate.

Rationale for Categorical Judgments

Pragmatic theory has long been concerned with the assignment of appropriateness conditions for every set of contexts, in much the same manner that semantic theory has concentrated on truth conditions to well formed formulae. This viewpoint has been supported by philosophers (Austin, 1962; Grice, 1975; Searle, 1969) as well as linguists (Allwood, Andersson, & Dahl, 1977; Lyons, 1977; Van Dijk, 1976). Both of our first two categories imply that one has some notion of normal practice and can, therefore, make accurate judgments about conforming to, and the violation of, these practices given a very careful consideration of the context in which the communicative interaction takes place. The third category, no opportunity to observe, was added because a few of the pragmatic aspects (e.g., stylistic variations) occur infrequently. It should be noted, however, that the majority of the pragmatic aspects on the protocol are continuous throughout discourse and can easily be judged within a 15-min segment of conversation.

There are several points to keep in mind while judging the pragmatic aspects as appropriate or inappropriate. One must understand the sociolinguistic background of the subject, as is the case with any analysis of language, in order to assign the current judgment. We are not attempting to treat people as culturally homogeneous. The literature from which these parameters were extracted documents their development in English, and the definitions provided are designed to be used with English-speaking children from monolingual homes. Second, we recommend that the relationship between the communicative partners be positive or neutral. The assumption in this type of relationship is that both partners expect to engage in cooperative discourse (Grice, 1975). It is important to note that one may operate in an outlandish or exaggerated manner, be disinterested, be ironic, and so forth and thereby exploit communicative conventions but, nevertheless, be judged appropriate given the goals of the relationship and situation at hand. As Levinson (1983) mentions, one can be grossly inappropriate and yet be supremely appropriate. Lastly, speakers and listeners may conform to the prevailing mores of a particular attitude or subculture in a number of ways. It is important to realize that built into the definitions of appropriate and inappropriate is tremendous variability in terms of the manner in which one adheres to or violates these conventions. What we are asking is, does a particular parameter fall too far from the normal curve to be appropriate to the context and in some way interfere with the relationship?

We opted for a two-point yes/no judgment rather than using a scaled procedure. The rationale was that in observing the entire 15-min segment, if there was one instance in which the subject was judged inappropriate and it appeared to penalize the interaction, we would mark the aspect inappropriate even though all other attempts were judged appropriate. We are making a judgment over the episode for each parameter. It is along these lines that we have moved to judging the effects of certain parameters on communicative interactions. For instance, in one of our training tapes a client came into the room and proceeded to lie down on the couch. In this context, this act was very inappropriate and caused great alarm to the partner even though they had a familiar relationship. Therefore, even though it occurred only once, the effect was so dramatic that physical proximity and body posture were marked inappropriate. On the other hand, the protocol works in the opposite way. One would not make a judgment of inappropriate for one parameter if the aspect is utilized incorrectly but does not seem to penalize the interaction. An aphasic patient, for example, was clinically dysfluent because of word-finding problems. However, his compensatory strategies were so good that he used interjections to hold his place in the conversation and keep the listener's interest. Consequently, he was not judged inappropriate on aspects of turn taking. In this case, there was clinical evidence (on standardized measures) of a deficit that did not make a noticeable difference in the client's ability to make smooth transitions at turn boundaries in the conversation. If also, for example, a subject misses an opportunity to revise a statement even though one was called for, this one instance would not necessarily be judged inappropriate if it did not penalize the interaction. Although we do not take frequency into consideration, we judge the parameter within the conversational episode observed. In other words, our judgment here is along a societal rating for clinical purposes. A parameter is marked inappropriate not because it is different but because the difference makes a difference in the interaction. We will demonstrate that these judgments can be made reliably.

Pretraining

The first author pretrained the clinician-investigators who collected the data for this study in the use of the protocol. Pretraining procedures included familiarization, discussion, and clarification of the definitions of each of the pragmatic categories to be evaluated. In addition, each investigator was trained to make judgments of appropriate, inappropriate, or no opportunity to observe. Pretraining was accomplished using videotapes of children with speech and language disorders as well as adults with right and left hemisphere brain injury and developmentally delayed adults. It was necessary to utilize a variety of disordered populations across age levels because different questions arose depending on the particular linguistic and cognitive deficits exhibited by the clients. Approximately 8–10 hr of training was required for this research project. For pretrain-

ing, point-by-point reliability was calculated for both appropriate and inappropriate judgments using the following formula:

$$\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100.$$

Reliability was always above 90% for judgments of appropriate and inappropriate thus meeting adequate pretraining criterion.

Observational Procedure

To collect the data for this study, each of the 157 subjects was observed while engaged in 15 min of spontaneous conversation with a familiar partner. The children with articulation and language disorders were observed on-line with either the speech-language pathologist or their teacher; the normal children were observed with their classroom teacher. For all three groups of children, observations were carried out in the school setting. All of the adults were engaged in interactions with family members, friends, or the speech-language pathologist. Observation sessions with the adult subjects were videotaped. At the end of the observation period, the protocol was completed for each subject.

Reliability

Interobserver reliability data were obtained for 25% of the total subjects (40/157) with at least 6 subjects drawn from each of the six diagnostic groups. During the reliability sessions the investigator and a clinician-investigator observed the conversational interaction. The protocol was completed independently by each investigator at the end of each observational period. Point-by-point reliability was calculated for each of the 30 parameters separately for the appropriate and inappropriate categories. The following formula was used:

$$\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100.$$

Reliability for the groups of children with articulation and language disorders was calculated and ranged between 93%–100% with a mean of 94.4% for judgments of appropriate and 92.3% for judgments of inappropriate. For the left and right hemisphere-damaged adults reliability agreements ranged from 90.9% to 100%. Average reliability for judgments of appropriate was 95.6%; 93.1% agreement was seen for judgments of inappropriate. Reliability for both normal groups (children and adults) was 100% for both judgments of appropriate and inappropriate categories.

RESULTS

Two levels of descriptive analyses were performed on the data addressing both qualitative and quantitative

TABLE 1. Mean (*M*), standard deviation (*SD*), range of appropriate pragmatic aspects of language, and rank order of most frequent inappropriate pragmatic aspects per group expressed in percentages.

Group	<i>M</i>	<i>SD</i>	Range	Rank order of inappropriate aspects
Normal children (<i>N</i> = 42)	99	3	83-100	
Normal adults (<i>N</i> = 10)	99	1	97-100	
Children with articulation disorders (<i>N</i> = 42)	96	8	60-100	Intelligibility (21%) Vocal quality (10%) Vocal intensity (10%) Fluency (7%) Facial expression (7%) Pause time (7%)
Children with language disorders (<i>N</i> = 42)	88	10	60-100	Specificity-Accuracy (71%) Cohesion (55%) Repair/Revision (40%) Quantity-Conciseness (38%) Intelligibility (21%)
Adults with left hemisphere damage (<i>N</i> = 11)	82	9	63-93	Specificity-Accuracy (100%) Quantity-Conciseness (82%) Pause time (64%) Variety of speech acts (45%) Fluency (45%)
Adults with right hemisphere damage (<i>N</i> = 10)	84	13	60-100	Eye gaze (60%) Prosody (50%) Contingency (50%) Adjacency (50%) Quantity-Conciseness (50%)

aspects of the profiles for each subject group. These analyses included: (a) across-group comparisons of the mean percentage of appropriate pragmatic parameters and (b) within-group measures that addressed the profiles of deficits in each diagnostic category. Specifically, this was the rank order of the five pragmatic parameters most frequently marked inappropriate as well as individual subject data that reflected profiles of performance across all 30 communicative parameters. (For children with articulation disorders, 6 parameters are listed because of ties in ranking.)

The mean percentage of appropriate pragmatic parameters and the standard deviations were computed separately for each group. These results are presented by group in Table 1.

Normal Groups

As expected, the normal subjects that served as controls for both child and adult groups showed few inappropriate pragmatic behaviors (less than 1% on the average). There was little variability within either of the two normal groups as indicated by the small standard deviations in

both cases. The individual subject data for these two groups are presented in Figures 1 and 2. The normal subjects were included in the study to determine whether or not the protocol is an index sensitive to differences between normal and disordered communicators on a broad set of communicative parameters. However, the groups were not included for the purpose of making direct comparisons to normal functioning. Therefore, analysis from this point on will be confined to the four remaining diagnostic categories.

Disordered Groups

With respect to the disordered populations, the results for the subjects with articulation and language disorders are presented first. These group data are also summarized in Table 1, whereas individual subject profiles are presented in Figures 3 and 4. The mean percentage of appropriate pragmatic parameters was 96% and 88%, respectively. There was greater variability in these subject populations compared to that for the normals as indicated by the higher standard deviations. Children with articulation disorders were found to be deficient on a cluster of dimensions that primarily relate to issues of speech production affecting the clarity of the message expressed: intelligibility, fluency, voice quality, vocal intensity, pause time, and one nonverbal parameter—facial expression. (See rank-order data in Table 1.) This was not an unexpected finding considering the diagnosis of articulation disorder. However, the extent to which such errors are judged to affect communicative competence is variable within the population. Even though all children in the study were being treated for articulation disorders, a much smaller proportion of those (9/42) exhibited disorders severe enough to interfere with a perceived level of communicative competence.

The mean percentage of appropriate pragmatic behaviors for the children with language disorders was somewhat lower than for the children with articulation disorders. Rank-order data (Table 1) show the cluster of pragmatic parameters that was identified for this group of subjects. The parameters that appeared to interfere with communicative competence were by and large the product of linguistic deficits related to the semantic and syntactic aspects of expressive language. These children exhibited a cluster of pragmatic deficits related to the specificity and accuracy of the message, the cohesiveness of expression, the ability to revise and clarify messages, intelligibility, and the quantity and conciseness of messages.

The group and rank-order data for the two adult disordered groups are also presented in Table 1; individual subject profiles are presented in Figures 5 and 6. The adult subjects with a left hemisphere CVA show a mean of 82% pragmatic parameters judged appropriate. Like the children with language disorders, this group of subjects produced a profile of deficits that were related to linguistic constraints including specificity and accuracy of expression, pause time in turn taking, quantity and

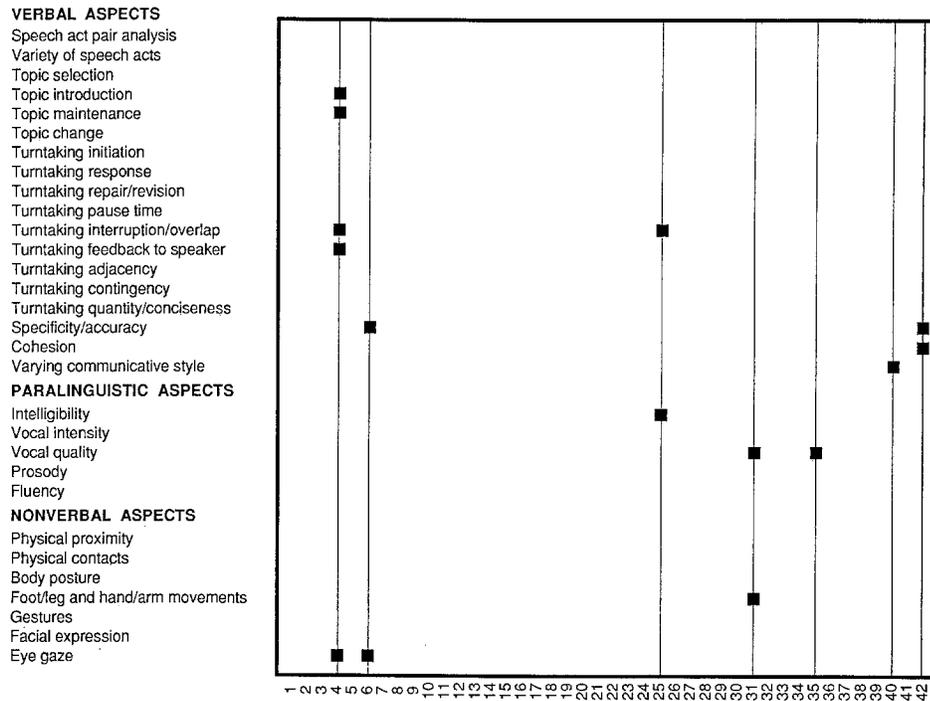


FIGURE 1. Pragmatic parameters marked inappropriate for the 42 children in the normal group.

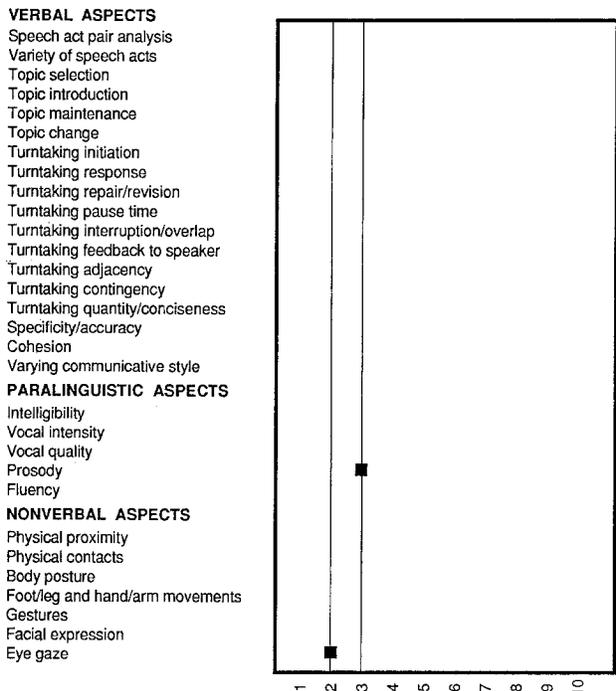


FIGURE 2. Pragmatic parameters marked inappropriate for the 10 adults in the normal group.

conciseness of the message, fluency, and the variety of speech acts produced.

In quite dramatic contrast, the subjects with lesions in the right hemisphere presented a different profile altogether. The mean percentage of appropriate pragmatic parameters was 84%, which is similar to that of the group

with left hemisphere lesions. The difference lies in the cluster of parameters identified as most frequently judged inappropriate (see Table 1). They included eye gaze, prosody, adjacency, contingency, and quantity and conciseness. Although quantity and conciseness and contingency are affected by linguistic ability, the problems of prosody and eye gaze make a major contribution to the perceived problem of affect, which has been well documented for patients in this diagnostic category (e.g., Meyers, 1986; Ross & Masulam, 1979).

The results of this study show differences in the way in which pragmatic deficits stratify across four diagnostic groups of subjects with speech and language disorders. The significance of these results and the benefits of applying a procedure that evaluates a range of pragmatic parameters in disordered populations are presented in the next section.

DISCUSSION

The purpose of this study was to evaluate the utility of a descriptive taxonomy that can be used to identify the range of pragmatic deficits in individuals from four clinical populations. In the present investigation children with articulation disorders, children with language disorders, adults with left hemisphere lesions, and adults with right hemisphere lesions served as subjects. The results of the study were presented in terms of the pattern tendencies that characterized the responses of the subjects in each diagnostic category. The results will be discussed in terms of the value of the tool for clinical application.

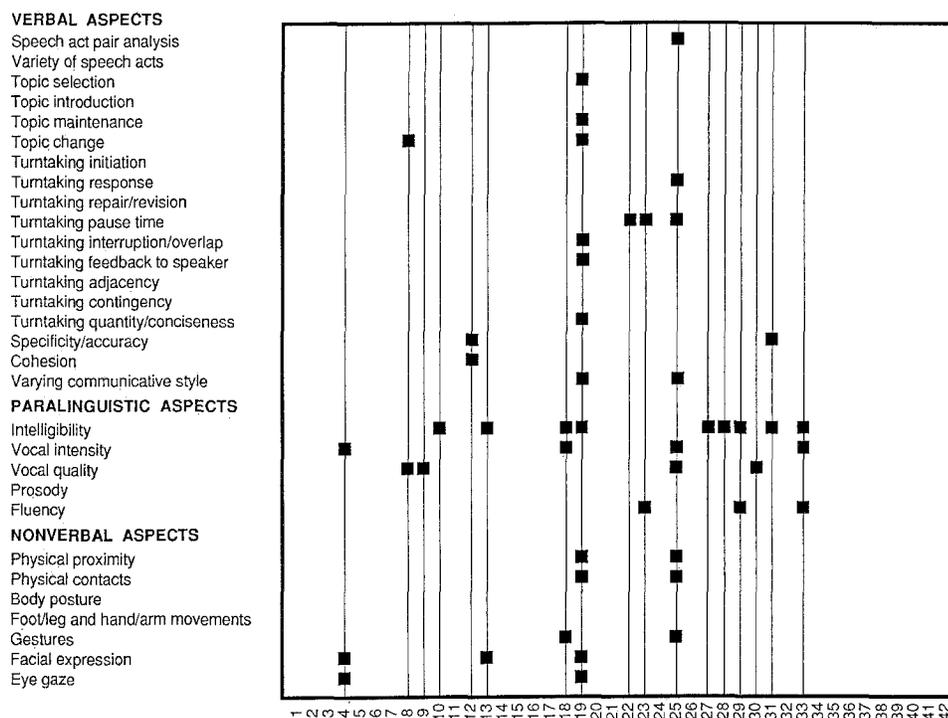


FIGURE 3. Pragmatic parameters marked inappropriate for the 42 children in the articulation-disordered group.

The findings of this investigation can be summarized in the following way. First, the data indicate that the pragmatic protocol is a useful tool for deriving a profile of communicative deficits across clinical populations. Four distinct profiles emerged that separated the four diagnostic groups on the basis of their performance on a range of pragmatic parameters. In the absence of detailed clinical profiles, we are making no claims about consistent group differences. However, we are claiming the potential usefulness of the tool for distinguishing among patterns of pragmatic deficits.

Second, the data indicated that the number of pragmatic parameters judged inappropriate, in absolute terms, were low across subject groups. The mean percentage of inappropriate pragmatic parameters for the children with articulation disorders was 4% of the total, for the children with language disorders was 12%, for adults with left hemisphere lesions was 18%, and for adults with right hemisphere lesions was 14%. However, there was a fairly large range of variability, as indicated by the standard deviations, within each of the four clinical groups.

In all likelihood, this variability reflects two aspects of the study. To begin with, the children with language and articulation disorders were observed conversing with either their teacher or speech pathologist. Even though the criterion of listener familiarity was met, it is possible that the conversational partner in the dyad observed could influence the structure and content of the interaction. For example, a more facilitative partner could encourage initiation and participation; whereas another partner could assume a dominant position in the conversation and allow fewer opportunities for initiation on the

part of the disordered communicator. Therefore, in using the tool it is important to consider the role each participant plays in structuring the interaction. The results obtained should be evaluated relative to the contributions made by both speaker and listener. In fact, the tool cannot be used in any other way.

This variability could also reflect the lack of homogeneity of subjects due to the general diagnostic classification used to select participants for this study. For example, if subjects with language disorders had been separated into subgroups according to comprehension-production relationships (e.g., high comprehension-low production, low comprehension and production), the variability may have been reduced. Moreover, different profiles of pragmatic deficit may have emerged. Several investigators have hypothesized (e.g., Fey & Leonard, 1983; Prutting & Kirchner, 1983) that the particular combination of linguistic and cognitive deficits identified clinically will yield subgroups of pragmatic deficits. By inspecting the individual subject data presented in the figures, this hypothesis is validated to some extent. For example, the profiles for Subjects 14, 15, and 38 in the group of language-disordered children are quite different (see Figure 4). These profiles suggest that the term *pragmatic deficit* cannot be defined by the same set of parameters for all subjects with a similar diagnostic label.

For Subject 14 in the language-disordered group, the major source of perceived communicative difficulty was in the appropriate use of speech acts. This refers to the variety and number of speech acts successfully accomplished as well as the ability to take both the speaker and listener role (e.g., acknowledgment of comments made by

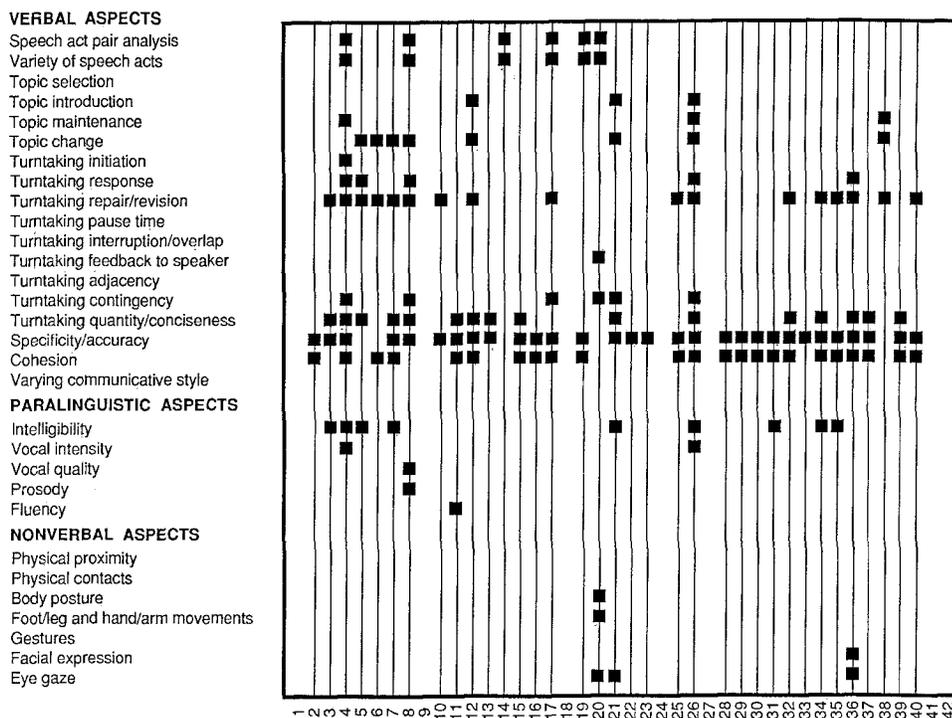


FIGURE 4. Pragmatic parameters marked inappropriate for the 42 children in the language-disordered group.

the partner or requesting information or actions). For Subject 15, the profile is quite different. The issues that were judged to interfere with communication deal with the ability to select and retrieve lexical items appropriate to the context; the ability to produce segments of unified, relevant, and connected text; and the ability to provide sufficient but not excessive or unnecessary information for the listener. And finally, for Subject 38, yet another profile emerged. For this subject, areas of deficit were focused on aspects of topic including the ability to maintain and change topic at appropriate points in the discourse and the ability to repair or ask for clarification when necessary.

Different profiles may also reflect differences among subgroups for the disordered adult subjects as well. For a patient with a fluent aphasia, speech is often plentiful but deficient in content and intelligibility due to high proportions of paraphasia (literal and verbal) and deficits in lexical access. In contrast, the nonfluent patient produces speech that is limited to a few words, is characterized by agrammatical structure, and often contains high proportions of apraxic errors with increased response latency. In both cases, successful communication is dependent on the availability of lexical items and structural types (primarily linguistic or speech production parameters). In both cases, the burden of communication may lie with the listener to extrapolate meaning from content. The result is a perceived lack of communicative competence but for very different reasons. The data from two of the aphasic subjects in this study, Subjects 1 and 9, illustrate the differences in profiles that may be obtained depending on the site of injury and type of aphasia (see Figure 5). Subject 1, a fluent aphasic,

showed deficits in repair and revision strategies, intelligibility, and vocal intensity as well as a cluster of parameters that centered on the ability to generate cohesive, relevant, and explicit messages. For Subject 9, a nonfluent aphasic, deficits in the ability to generate concise, clear messages were also identified along with variety of speech acts, pause time (too long in this case), and fluency. The point is, the way in which the profile of deficits is distributed within a diagnostic population will be variable. A general diagnostic label alone does not allow the clinician to predict the exact way in which deficits interact to produce a loss of communicative ability. In addition to the groups discussed in this paper, head-injured adults have been studied using the protocol. The results are discussed elsewhere (Mentis, 1985; Milton, Prutting, & Binder, 1984).

It is important to keep in mind several aspects of the protocol and its use. First, the protocol is considered a general communicative index. This is not a diagnostic procedure. The treatment strategies adopted for a particular client will be based on detailed assessment of the pragmatic parameters that have been judged inappropriate. The clinical value of this procedure is as a descriptive taxonomy. The tool provides the clinician with a profile of performance deficits across 30 nonverbal, paralinguistic, and verbal parameters that affect communicative competence. Once certain parameters have been identified as being deficient, they can be aggregated into clinical clusters, which are both functionally and behaviorally grouped. The identification of intact abilities is also important from a clinical standpoint. These aspects can provide important information that can be used in designing treatment strategies that build on existing abilities. In

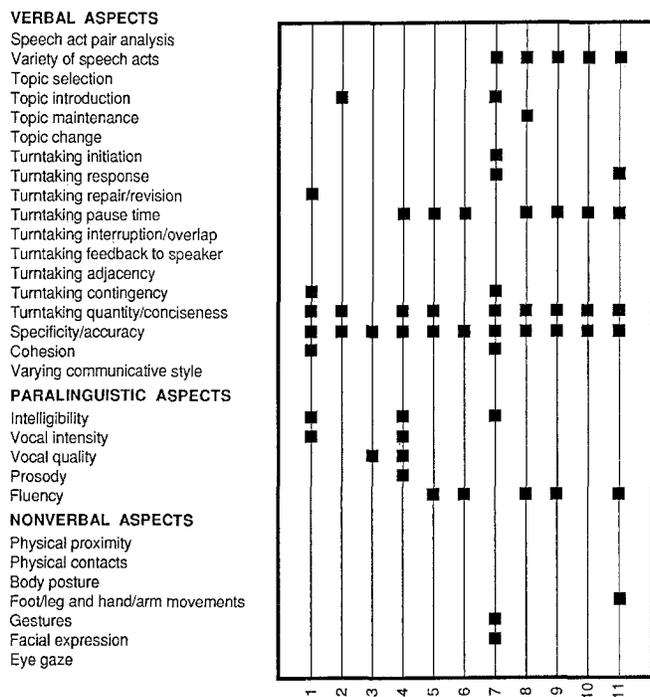


FIGURE 5. Pragmatic parameters marked inappropriate for the 11 adults in the left hemisphere brain-damaged group.

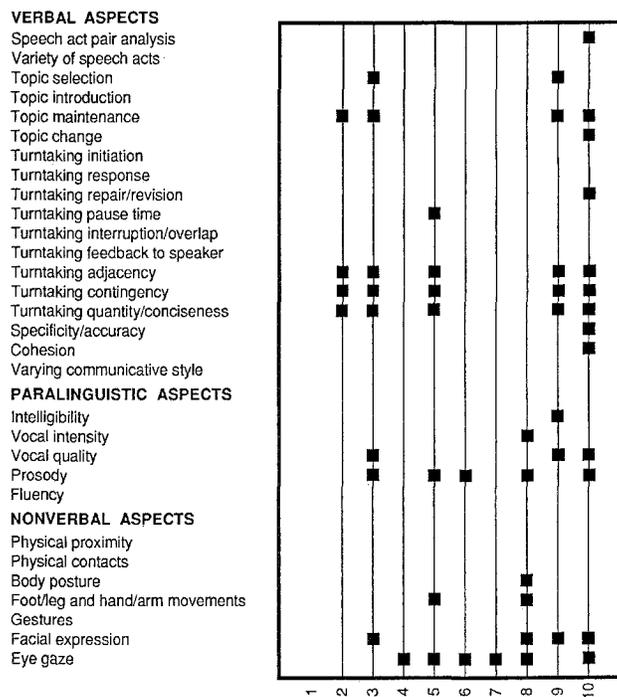


FIGURE 6. Pragmatic parameters marked inappropriate for the 10 adults in the right hemisphere brain-damaged group.

any case, it is the individual configuration of communicative performance that determines the extent to which additional diagnostic procedures may be useful.

Second, as previously indicated, the data suggested that the average number of inappropriate pragmatic parameters for subjects in all four diagnostic categories was relatively low (no less than 82% appropriate on the average for any group). However, analysis on the basis of frequency alone is misleading because a parameter was judged appropriate or not depending on whether it appeared to interfere with the subject's ability to communicate successfully. Moreover, no particular cutoff score has been provided to suggest those patients falling above a predetermined level have no pragmatic deficit and those falling below are impaired. The protocol is used in such a way that a behavior occurring only once in the observational period but judged penalizing would be marked inappropriate. The rationale is that if only one parameter is judged inappropriate and used in such a way that it interferes with communication, that parameter should be assessed further to determine whether this individual frequently displayed this type of behavior. The clinician would make further observations in other situations (e.g., classroom, home, or work environment) to determine whether this was simply an isolated incident or a pattern of interaction that occurs in many contexts. On the other end of the continuum, there may be clinical evidence (on standardized measures) of a deficit that does not make a noticeable difference in one's ability to communicate effectively. If the difference does not make a difference in the overall communicative interaction and in the perceived level of competence, it is not considered inappropriate. It is quite likely that some parameters used inap-

propriately are more penalizing, from a conversational standpoint, than others. Furthermore, certain combinations of deficits may be more penalizing than other combinations. In other words, frequency alone cannot be considered an index of severity when using this tool.

And finally, the pragmatic protocol is separated from other pragmatic analyses in one additional way. Hypotheses about the pragmatic deficits displayed by the individual are generated from larger segments of performance and then evaluated in relation to deficits in their component abilities. That is, in pragmatic assessment one must consider the effects of deficits in other aspects of development on the perceived level of communicative competence. Here the clinician is interested in the relationship between deficits in specific abilities, say naming or attention, and the subsequent integration of these abilities into conversational language. As an example, consider the problem of anomia or word-retrieval deficit in aphasia and childhood language disorder. One of the parameters most frequently judged inappropriate for both groups in this study was specificity and accuracy. The problem is one of making clear reference as opposed to the overuse of nonspecific terms (e.g., pronouns, indefinite anaphora, etc.) or circumlocutory remarks. Clearly, this is a conversational parameter that is dependent both on lexical diversity and lexical access and would be considered linguistic in nature. Yet, the conversational consequence of word-retrieval deficit is lack of specificity and accuracy in expression allowing, in some cases, output that is sufficient in amount but deficient in content and clarity. The patient's use of language at the level of discourse is an often neglected source of information for the clinical speech-language pathologist. The study of language in discourse is a powerful assessment tool that has been

overlooked, particularly in the development of standardized test instruments. To understand how or whether clinical deficits affect communicative competence, analysis of larger segments of performance is necessary.

The present investigation was designed to test the clinical utility of a descriptive taxonomy that evaluates a 15-min sample of communication using 30 dimensions of pragmatic functioning. This seems to be of considerable clinical benefit. That is, the protocol appears to be suitable as an index of the extent to which clinical deficits affect communicative competence. The results of this analysis guide the clinician to clusters of parameters that require further assessment. The results also allow the clinician to identify intact abilities that can be used in treatment.

The importance of continued study in the area of pragmatics is underscored by findings from a study by Mueller (1983). Using the protocol as a measure of pragmatic functioning, she studied the communication patterns of developmentally delayed adults. Mueller found that overall societal likability ratings correlated +.80 with pragmatic abilities, +.40 with semantic abilities, +.20 with phonologic abilities, and .00 with syntactic abilities. These results suggest that the pragmatic aspects of language are intimately linked to judgments of a perceived level of social competence. Our effectiveness as clinicians is judged, in part, by the impact our remediation efforts have on an individual's ability to function as a productive member of society. In cases where only limited advancement in the structural aspects of language can be predicted, remediation of the pragmatic aspects of communication may contribute most to a level of social acceptability.

Future research should address the performance of well defined clinical groups matched on diagnostic profiles to extract patterns or clusters of dimensions on which the subjects perform well or poorly. This kind of research would allow us to understand better the nature and impact of a pragmatic deficit in a population of disordered subjects based on pattern analysis from relatively homogeneous groups. We believe that with an in depth descriptive account of linguistic and cognitive performance it would be possible to predict the areas that will emerge as strengths and weaknesses at the pragmatic level. As discussed earlier, several researchers proposed that various subgroups would emerge across disordered populations (e.g., Fey & Leonard, 1983; Prutting & Kirchner, 1983). Even though our groups were not diagnostically homogeneous, distinct patterns emerged that separated one clinical population from another.

The descriptive taxonomy is an attempt to embellish that important section in our clinical assessment report entitled "Clinical Impressions." This refers to the perceived effects of various deficits on overall communicative competence. We have taken the notion of clinical impression and given it the prominent position it deserves. We have included it from the start within the formal assessment necessitating observation, documentation, and interpretation across a range of abilities using the form herein described as the pragmatic protocol.

ACKNOWLEDGMENT

The data for this study were collected as part of four separate master's theses directed by the first author at the University of California, Santa Barbara. Therefore, we gratefully acknowledge the contributions of Patricia Hassan (1982), Pat McHale-Buen (1982), Glenn Binder (1984), and Joyce Gauvain (1985).

REFERENCES

- ALLWOOD, J., ANDERSSON, L.-G., & DAHL, O. (1977). *Logic in linguistics*. Cambridge: Cambridge University Press.
- ARTHUR, G. (1952). *The Arthur Adaptation of the Leiter International Scale*. Chicago: Stoelting.
- AUSTIN, J. (1962). *How to do things with words*. Cambridge: Harvard University Press.
- BATES, E. (1976). *Language in context*. New York: Academic Press.
- BATES, E. (1979). *The emergence of symbols*. New York: Academic Press.
- BINDER, G. (1984). *Aphasia: A societal and clinical appraisal of pragmatic and linguistic behaviors*. Unpublished master's thesis, University of California, Santa Barbara.
- BLOOM, L., & LAHEY, M. (1978). *Language development and language disorders*. New York: John Wiley & Sons.
- BLOOM, L., ROCISSANO, L., & HOOD, L. (1976). Adult-child discourse: Developmental interaction between information processing and linguistic knowledge. *Cognitive Psychology*, 8, 521-522.
- BRANDT, R. (1972). *Studying behavior in natural settings*. New York: Holt, Rinehart & Winston.
- BRINTON, B., & FUJUKI, M. (1984). The development of topic manipulation skills in discourse. *Journal of Speech and Hearing Research*, 27, 350-358.
- BRINTON, B., FUJUKI, M., LOEB, D., & WINKLER, E. (1986). Development of conversational repair strategies in response to requests for clarification. *Journal of Speech and Hearing Research*, 29, 75-81.
- CHOMSKY, N. (1957). *Syntactic structures*. The Hague: Mouton.
- CHOMSKY, N. (1965). *Aspects of a theory of syntax*. Cambridge: MIT Press.
- CRAIG, H., & GALLAGHER, T. (1982). Gaze and proximity as turn regulators within three-party and two-party child conversations. *Journal of Speech and Hearing Research*, 25, 65-75.
- CURTISS, S., KEMPLER, D., & YAMADA, J. (1981). *UCLA working papers in cognitive linguistics*. Los Angeles: UCLA Department of Linguistics.
- DUNCAN, S., & FISKE, D. (1977). *Face to face interaction: Research, methods and theory*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- DUNN, L., & DUNN, L. (1981). *Peabody Picture Vocabulary Test—R*. Circle Pines, MN: American Guidance Service.
- ERVIN-TRIPP, S. (1977). Wait for me roller-skate. In E. Ochs (Ed.), *Developmental pragmatics* (pp. 165-188). New York: Academic Press.
- ERVIN-TRIPP, S. (1979). Children's verbal turntaking. In E. Ochs (Ed.), *Developmental pragmatics* (pp. 391-414). New York: Academic Press.
- FELDMAN, R. (Ed.). (1982). *The development of nonverbal behavior in children*. New York: Springer.
- FEY, M., & LEONARD, L. (1983). Pragmatic skills of children with specific language impairment. In T. Gallagher & C. Prutting (Eds.), *Pragmatic assessment and intervention issues in language* (pp. 65-82). San Diego: College-Hill Press.
- FISHER, H., & LOGEMANN, J. (1971). *The Fisher-Logemann Test of Articulation Competence*. Boston: Houghton-Mifflin.
- FOX, D. (1969). *The research process in education*. New York: Holt, Rinehart & Winston.
- GALLAGHER, T. (1977). Revision behaviors in the speech of normal children developing language. *Journal of Speech and Hearing Research*, 20, 303-318.
- GARVEY, C. (1975). *Contingent queries*. Unpublished master's thesis, Johns Hopkins University.

- GAUVAIN, J. (1985). *The role of pragmatic behaviors in communicative competence: A study of right hemisphere brain-damaged subjects*. Unpublished master's thesis, University of California, Santa Barbara.
- GOLDMAN, R., & FRISTOE, M. (1972). *Goldman-Fristoe Test of Articulation*. Circle Pines, MN: American Guidance Service.
- GRICE, H. (1975). Logic and conversation. In P. Cole & J. Morgan (Eds.), *Studies in syntax and semantics, speech acts* (pp. 41-58). New York: Academic Press.
- HALLIDAY, M., & HASSAN, R. (1976). *Cohesion in English*. London: Longman.
- HASSAN, P. (1982). *A clinical appraisal of pragmatic behaviors*. Unpublished master's thesis, University of California, Santa Barbara.
- HOFFER, B., & ST. CLAIR, N. (Eds.). (1981). *Developmental kinesics: The emerging paradigm*. Baltimore: University Park Press.
- HOLLAND, A. (1980). *Communicative abilities in daily living*. Baltimore: University Park Press.
- HOLLAND, A. (1983). Aphasia with and without adjectives: Remarks on the problems of classifying aphasic patients. In R. Brookshire (Ed.), *Clinical aphasiology: Conference proceedings* (pp. 289-291). Minneapolis: BRK.
- KEENAN, E. (1977). Making it last: Repetition in children's discourse. In S. Ervin-Tripp & C. Mitchell-Kernan (Eds.), *Child discourse* (pp. 125-138). New York: Academic Press.
- KEENAN, E., & KLEIN, E. (1975). Coherency in children's discourse. *Journal of Psycholinguistic Research*, 4, 365-380.
- KEENAN, E., & SCHIEFFELIN, B. (1976). Topic as a discourse notion. In C. Li (Ed.), *Subject and topic* (pp. 337-384). New York: Academic Press.
- KERTEZ, M. (1982). *Western Aphasia Battery*. New York: Grune & Stratton.
- KIRK, S., MCCARTHY, J., & KIRK, W. (1968). *Illinois Test of Psycholinguistic Abilities*. Los Angeles: Western Psychological Services.
- LAHEY, M., & LAUNER, P. (1986). *Unraveled yarns: Narratives in school-age children*. Paper presented at the California Speech-Language-Hearing Association, Monterey, CA.
- LEE, L. (1969). *The Northwestern Syntax Screening Test*. Evanston, IL: Northwestern University.
- LEVINSON, S. (1983). *Pragmatics*. Cambridge: Cambridge University Press.
- LYONS, J. (1977). *Semantics* (Vols. 1 & 2). Cambridge: Cambridge University Press.
- MCHALE-BUEN, P. (1982). *A societal appraisal of pragmatic behaviors in normal children with articulation disorders*. Unpublished master's thesis, University of California, Santa Barbara.
- MCTEAR, M. (1985). Pragmatic disorders: A case study of conversational disability. *British Journal of Disorders of Communication*, 20, 129-142.
- MENTIS, M. (1985). *Cohesion in the discourse of normal and head-injured adults*. Unpublished master's thesis, University of California, Santa Barbara.
- MEYERS, P. (1986). Right hemisphere impairment. In J. Costello & A. Holland (Eds.), *Speech and language disorders* (pp. 935-966). San Diego: College-Hill Press.
- MILTON, S., PRUTTING, C., & BINDER, G. (1984). Appraisal of communicative competence in head injured adults. In R. Brookshire (Ed.), *Clinical Aphasiology Conference proceedings* (pp. 114-123). Minneapolis: BRK Publishers.
- MITCHELL-KERNAN, C., & KERNAN, K. (1977). Pragmatics of directive choice among children. In S. Ervin-Tripp & C. Mitchell-Kernan (Eds.), *Child discourse* (pp. 189-208). New York: Academic Press.
- MUELLER, S. (1983). *An investigation in social competence using clinical and societal profiles*. Unpublished master's thesis. University of California, Santa Barbara.
- PARRET, H. (1983). *Semiotics and pragmatics*. Amsterdam: John Benjamins Publishing.
- PEIRCE, C. (1878). How to make ideas clear. *Popular Science*, 12, 286-302.
- PENN, C. (1983). *Syntactic and pragmatic aspects of aphasic language*. Unpublished doctoral dissertation, University of Witwatersrand, Johannesburg, South Africa.
- PRINZ, P., & WEINER, F. (in press). *Pragmatics Screening Test*. San Antonio, TX: Psychological Corporation.
- PRUTTING, C. (1982). *Observational protocol for pragmatic behaviors* [Clinic manual]. Developed for the University of California Speech and Hearing Clinic, Santa Barbara.
- PRUTTING, C., & KIRCHNER, D. (1983). Applied pragmatics. In T. Gallagher & C. Prutting (Eds.), *Pragmatic assessment and intervention issues in language* (pp. 29-64). San Diego: College-Hill Press.
- REES, N. (1978). Pragmatics of language. In R. Schiefelbusch (Ed.), *Bases of language intervention* (pp. 191-268). Baltimore: University Park Press.
- ROSS, E., & MASULAM, M. (1979). Dominant language functions of the right hemisphere? *Archives of Neurology*, 36, 144-148.
- ROTH, F., & SPEKMAN, N. (1984). Assessing the pragmatic abilities of children: Part I. Organizational framework and assessment parameters. *Journal of Speech and Hearing Disorders*, 49, 2-11.
- SACHS, J., & DEVIN, J. (1976). Young children's use of age appropriate speech styles in social interaction in role playing. *Journal of Child Language*, 3, 81-98.
- SACKS, H., SCHEGLOFF, E., & JEFFERSON, G. (1978). A simple systematic for the organization of turn taking for conversation. *Language*, 50, 696-735.
- SCHERER, K., & EKMAN, P. (Eds.). (1982). *Handbook of methods in nonverbal behavior research*. Cambridge: Cambridge University Press.
- SEARLE, J. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge: Cambridge University Press.
- SEMEL, E., & WHIG, E. (1980). *Clinical Evaluation of Language Functions*. Columbus: Charles E. Merrill.
- SHATZ, M., & GELMAN, R. (1973). The development of communication skills: Modification in the speech of young children as a function of the listener. *Monographs of the Society for Research in Child Development*, 38, 1-37.
- SHRIBERG, L., & KWIATKOWSKI, J. (1980). *Natural Process Analysis (NPA): A procedure for phonological analysis of continuous speech samples*. New York: John Wiley & Sons.
- TERMAN, L., & MERRILL, M. (1973). *Stanford-Binet Intelligence Test, Form L-M*. Boston: Houghton-Mifflin.
- VAN DIJK, T. (Ed.). (1976). *Pragmatics of language and literature*. Amsterdam: North Holland.
- VON RAFFLER-ENGEL, W. (Ed.). (1980). *Aspects of nonverbal communication*. Amsterdam: Swets & Zeitlinger.
- WECHSLER, D. (1972). *Wechsler Intelligence Scale for Children—Revised*. New York: Psychological Corporation.

Received June 1, 1986
Accepted July 28, 1986

Requests for reprints should be sent to Carol A. Prutting, Ph.D., Speech and Hearing Sciences, University of California, Santa Barbara, CA 93106.

APPENDIX
Pragmatic Protocol

NAME: _____ DATE: _____
 COMMUNICATIVE _____ COMMUNICATIVE PARTNER'S _____
 SETTING OBSERVED _____ RELATIONSHIP _____

<i>Communicative act</i>	<i>Appropriate</i>	<i>Inappropriate</i>	<i>No opportunity to observe</i>	<i>Examples and comments</i>
<i>Verbal aspects</i>				
A. Speech acts				
1. Speech act pair analysis				
2. Variety of speech acts				
B. Topic				
3. Selection				
4. Introduction				
5. Maintenance				
6. Change				
C. Turn taking				
7. Initiation				
8. Response				
9. Repair/revision				
10. Pause time				
11. Interruption/overlap				
12. Feedback to speakers				
13. Adjacency				
14. Contingency				
15. Quantity/conciseness				
D. Lexical selection/use across speech acts				
16. Specificity/accuracy				
17. Cohesion				
E. Stylistic variations				
18. The varying of communicative style				
<i>Paralinguistic aspects</i>				
F. Intelligibility and prosodics				
19. Intelligibility				
20. Vocal intensity				
21. Vocal quality				
22. Prosody				
23. Fluency				
<i>Nonverbal aspects</i>				
G. Kinesics and proxemics				
24. Physical proximity				
25. Physical contacts				
26. Body posture				
27. Foot/leg and hand/arm movements				
28. Gestures				
29. Facial expression				
30. Eye gaze				

Definitions for Communicative Parameters Assessed Using the Pragmatic Protocol

VERBAL ASPECTS

Speech act pair analysis

The ability to take both speaker and listener role appropriate to the context. Types: Directive/compliance—personal need, imperatives, permissions, directives, question directives, and hints. Query/response—request for confirmation, neutral requests for repetition, requests for specific constituent repetition. Request/response—direct requests, inferred requests, requests for clarification, acknowledgment of request for action. Comment/acknowledgment—description of ongoing activities; of immediate subsequent activity; of state or condition of objects or person; naming; acknowledgments that are positive, negative, expletive, or indicative.

Examples: Appropriate behaviors: Initiates directives, queries, and comments; responds to directives by complying; responds to queries; responds appropriately to requests; and acknowledges comments made by the speaker. Appropriate behavior can be verbal or nonverbal as in the case of taking appropriate action to a directive or request. Inappropriate behaviors: Does not initiate directives, queries, and comments; does not respond to directives, requests, or queries by the speaker; and does not use acknowledgments made by the speaker either nonverbally or verbally.

References: (Austin, 1962; Gallagher, 1977; Garvey, 1975; Mitchell-Kernan & Kernan, 1977; Searle, 1969).

Variety of speech acts

The variety of speech acts or what one can do with language such as comment, assert, request, promise, and so forth.

Examples: Appropriate behaviors: The partner shows both appropriate use of and diversity in the number of different speech acts he can accomplish. Inappropriate behaviors: The partner shows inappropriate use or a reduced range of different speech acts he or she can use (e.g., a particular child whose productive repertoire is restricted to requests for objects with no other observed speech act types).

References: (Austin, 1962; Mitchell-Kernan & Kernan, 1977; Searle, 1969).

Topic

a. Selection

The selection of a topic appropriate to the multidimensional aspects of context.

b. Introduction

Introduction of a new topic in the discourse.

c. Maintenance

Coherent maintenance of topic across the discourse.

d. Change

Change of topic in the discourse.

Examples: Appropriate behaviors: The speaker/listener is able to make relevant contributions to a topic, is able to make smooth changes in topic at appropriate times in the discourse, is able to select appropriate topics for discussion given the context and participants, and is able to end discussion of a topic at an appropriate place in the discourse. Inappropriate behaviors: The introduction of too many topics within a specified time limit, the inability to initiate new topics for discussion, the inability to select appropriate topics for discussion given the context and participants, and the inability to make relevant contributions to a topic. Inability to maintain topic may frequently co-occur with high frequency of new topic introductions.

References: (Bloom, Rocissano, & Hood, 1976; Brinton & Fujuki, 1984; Ervin-Tripp, 1979; Keenan, 1977; Keenan & Schieffelin, 1976).

Turn taking

Smooth interchanges between speaker/listener.

a. Initiation

Initiation of speech acts.

b. Response

Responding as a listener to speech acts.

c. Repair/revision

The ability to repair a conversation when a breakdown occurs, and the ability to ask for a repair when misunderstanding or ambiguity has occurred.

d. Pause time

Pause time that is too short or too long between words, in response to a question, or between sentences.

e. Interruption/overlap

Interruptions between speaker and listener; overlap refers to two people talking at once.

f. Feedback to listener

Verbal behavior to give the listener feedback such as *yeah* and *really*; nonverbal behavior such as head nods to show positive reactions and side to side to express negative effects or disbelief.

g. Adjacency

Utterances that occur immediately after the partner's utterance.

h. Contingency

Utterances that share the same topic with a preceding utterance and that add information to the prior communicative act.

i. Quantity/conciseness

The contribution should be as informative as required but not too informative.

Examples: In all of the above categories, appropriate and inappropriate behavior is judged in relationship to both speaker and listener in the dyad. Appropriate behaviors: Initiating conversation and responding to comments made by the speaker, asking for clarification when a portion of the message is misunderstood and revising one's own message to facilitate understanding, avoiding interrupting or talking before the other partner is finished, giving feedback to the speaker as a way of moving the conversation forward, appropriate length of pauses in the conversation to support timing relationships in the conversation, and making comments relevant and informative. Inappropriate behaviors: Little initiation in the conversation forcing one partner to take the burden of moving the conversation forward, no response of inappropriate responses to requests for clarification by the partner, no attempt to ask for repair, long pauses that interrupt timing relationships in the conversation, pause time that is too short and results in overlap or interruptions, little or no feedback to the speaker, and inability to produce comments that are relevant and informative.

References: (Bloom et al., 1976; Brinton, Fujuki, Loeb, & Winkler, 1986; Duncan & Fiske, 1977; Ervin-Tripp, 1977; Ervin-Tripp, 1979; Gallagher, 1977; Grice, 1975; Keenan, 1977; Keenan & Klein, 1975; Keenan & Schieffelin, 1976; Sacks, Schegloff, & Jefferson, 1978).

Lexical selection/use

Specificity/Accuracy

Lexical items of best fit considering the text.

Examples: Appropriate behaviors: The ability to be specific and make appropriate lexical choices to clearly convey information in the discourse. Inappropriate behaviors: Overuse of unspecified referents that results in ambiguity of the message. Also includes inappropriate choice of lexical items that do not facilitate understanding.

References: (Prutting & Kirchner, 1983).

Specifying relationships between and across speech acts

Cohesion

The recognizable unity or connectedness of text. Types: Reference—semantic relation whereby the information needed for interpretation of some item is found elsewhere in the text. Substitution—cohesive bond is established by the use of substitute item of the same grammatical class. Ellipsis—substitution by zero and refers to sentences or clauses whose structure is such as to presuppose the missing information. Conjunction—logical relation between clauses. Lexical cohesion—achieved through vocabulary selection.

Examples: Appropriate behaviors: Relatedness and unity in the discourse. One is able to follow the conversation, and the ideas are expressed in a logical and sequential way. Inappropriate behaviors: A conversation is disjointed, and utterances do not appear to be related in a logical and sequential fashion. One is unable to follow the line of thinking expressed by the speaker, frequently resulting in misinterpretation and ambiguity.

References: (Halliday & Hassan, 1976; Keenan & Klein, 1975; Lahey & Launer, 1986).

Stylistic variances

Adaptations used by the speaker under various dyadic conditions (e.g., polite forms, different syntax, changes in vocal quality).

Examples: Appropriate behaviors: The ability to adjust speech style to the listener. Inappropriate behaviors: Mismatch between style and status of listener or no difference when required.

References: (Sachs & Devin, 1976; Shatz & Gelman, 1973).

PARALINGUISTIC ASPECTS

Intelligibility

The extent to which the message is understood.

Vocal intensity

The loudness or softness of the message.

Vocal quality

The resonance and/or laryngeal characteristics of the vocal tract.

Prosody

The intonation and stress patterns of the message; variations of loudness, pitch, and duration.

Fluency

The smoothness, consistency, and rate of the message.

Examples: Appropriate behaviors: Speech that is clear; not too loud or too soft; appropriate in quality; and shows appropriate use of intonation, stress, and pitch to support the communicative/linguistic intention of the message. Inappropriate behaviors: Speech that is so unclear as to result in frequent misinterpretations of the message; speech that is too loud or too soft; a quality of speech that is inappropriate to age or sex of speaker and interferes with communication; and the lack of prosodic variation that supports affect and the linguistic aspects of the message.

References: (Duncan & Fiske, 1977; Scherer & Ekman, 1982).

NONVERBAL ASPECTS

Physical proximity

The distance that the speaker and listener sit or stand from one another.

Physical contacts

The number of times and placement of contacts between speaker and listener.

Body posture

Forward lean is when the speaker or listener moves away from a 90-degree angle toward the other person; recline is slouching down from waist and moving away from the partner; side to side is when a person moves to the right or left.

Foot/leg and hand/arm movements

Any movement of the foot/leg or hand/arm (touching self or moving an object or touching part of the body, clothing, or self).

Gestures

Any movements that support, complement, or replace verbal behavior.

Facial expression

A positive expression as in the corners of the mouth turned upward; a negative expression is a downward turn; a neutral expression is the face in resting position.

Eye gaze

One looks directly at the other's face; mutual gaze is when both members of the dyad look at the other.

Examples: Appropriate behaviors: Use of nonverbal aspects of communication that demonstrate level of affiliation between partners, aid in regulating discourse turns, and may supplement or support linguistic aspects of the message. Inappropriate behaviors: Use of nonverbal aspects that interfere with interpersonal/social aspects of communication; behaviors that detract from the content of the message rather than support and regulate discourse.

References: (Craig & Gallagher, 1982; Duncan & Fiske, 1977; Feldman, 1982; Hoffer & St. Clair, 1981; Scherer & Ekman, 1982; Von Raffler-Engel, 1980).