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# CLASSIFYING COMMUNICATIVE ACTS IN CHILDREN'S INTERACTIONS

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Describing speakers' repertoires of communicative intents and rules for expressing those intents is crucial to any complete description of the language capacity. Many different systems for classifying speakers' communicative intents have been developed and used in research analyzing both the acquisition of speech acts and the nature of the communicative deficits shown by various language-impaired populations. We argue, though, that these systems have typically been limited in scope, in applicability across the full developmental range, or in their theoretical foundations. The criteria for an adequate system for analyzing communicative intents are discussed, and a system proposed which meets those criteria.

## INTRODUCTION

Identifying a speaker's communicative intent is the most basic task of the language user, and at the same time perhaps the most difficult. Communicative intents can be difficult to identify because intents do not map in a one-to-one way onto the forms of utterances and because the demands of politeness often require some measure of deniability or ambiguity about one's intents (Brown and Levinson, 1978). Moreover, most utterances express intent on a number of different levels simultaneously. Four such easily identifiable levels are the propositional or semantic level, the performance or speech act level, the interactive level, and the conversational level, but there are undoubtedly more (Ninio and Snow, in press).

Despite the difficulty of identifying communicative intents in parent-child interaction, the need to develop a theoretically well-founded way of doing so

is pressing both for clinical practice and for theory. The passage of PL 99-457 supplements PL 94-142 in that it extends the provision of services downward to include children aged birth to three years. Thus, tools for identifying communicative delay or deviance prior to the emergence of language are crucial. Because young children display their optimal level of functioning with familiar partners, ideal assessment requires techniques for analyzing child-caregiver interaction. Furthermore, since intervention in the least restrictive environment is mandated, tools for designing family-centered interventions and evaluating their effects are necessary. Thus, understanding the nature of social interaction between children and their parents as well as among peers during the preschool years becomes crucial in designing and evaluating intervention environments.

For those interested in the process of language development, a description of a language user's linguistic system must include information about the communicative intents s/he can express. As children learn to talk they also develop control over the expression of a variety of communicative intents. It is not clear to what extent the development of control over communicative intents is inextricably connected with, or developmentally somewhat distinct from, the acquisition of other language systems, e.g., grammar and lexicon. A major question motivating researchers is the degree to which various language handicaps involve (and perhaps can be characterized by) delay or deviance in the range and nature of communicative intents expressed.

Considerable attention has been devoted to the analysis of communicative intents in the work on parent-child interaction and language disability; this work attests to the need for a well-grounded and reliable system for coding communication. Unfortunately the work also demonstrates the difficulty of developing such a system. It will be our goal in this paper to a) argue the need for a theoretically well-founded and widely applicable system of analyzing communicative intents in child language and in language disabilities research; b) review the strengths and weaknesses of the systems previously used for coding communicative intents; c) present the theoretical basis for an alternative, improved system and; d) sketch the outlines of that alternative for work with normally developing and for language disordered preschool aged children.


## A SPEECH ACT CODING SYSTEM IS NEEDED

It is generally recognized that an adequate description of children's language skills includes an analysis of their pragmatic skills (see, for example, Bates et al., 1979, or recent child language texts such as Berko Gleason, 1985 and Muma, 1986). The earliest stage of development can be described as mainly pragmatic, since considerable skill at conversational turntaking and at communication with gestures and early words develops before any syntax or

morphology (Bates, 1976; Bateson, 1975; Bruner, 1975; Dore, 1974, 1975; Ninio and Snow, 1988; Snow, 1977b, 1983). As children develop their lexical and grammatical systems, development in pragmatic skills–both in types of communicative intents expressed and in ways of expressing them–continues (Bates et al., 1979, James, 1978, Gallagher, 1977). It is widely accepted that the pragmatic system is dominant in early development, and that the pragmatic component of language skill is central to any complete description of the language system throughout development. A more radical position concerning the role of pragmatics in development argues that pragmatics can explain the acquisition of grammar (see Bates and MacWhinney, 1982; Bruner, 1978; Ninio and Snow, 1988; Tough, 1977, for various, quite different versions of this claim). Testing the various hypotheses about the functional basis for the acquisition of grammar clearly requires classification of children's utterances into categories based on their communicative intent in order to determine: 1) if different structures are used in different categories and 2) if the means for the expression of different categories develop in parallel or somewhat independently. Furthermore, it has been suggested that different social class groups differ in the distribution of their responses to various speech acts (Tough, 1977). It is necessary to understand the "social semiotic" of the various groups in which children might be members if we are accurately to assess the children's participation. To do this, we must start from an analysis of the categories of communicative intent expressed within the speech of such groups.

## Pragmatic Skills and Language Handicap

The pragmatic skills of language handicapped children deserve special research attention. A survey of the literature on language handicapped populations suggests that the nature of the pragmatic deficit, and the degree of pragmatic deficit as related to deficits in syntax, morphology, or lexicon, may be diagnostic of membership in various groups. At the same time, of course, the unusual relationships between pragmatic and other language skills that have been identified in some populations serve as a testing ground for theories about the role of pragmatics in language acquisition.

When considering the pragmatic skills of various language handicapped groups in comparison to normal children, we can look for deficits or differences in pragmatic skills of a number of different types:

1. There may be a reduction in the range of speech acts performed. In children with Specific Language Impairments (SLI), such reduction has been found to be consonant with what is expected based on level of lexicon (Rowan et al., 1983) and grammar (Fey et al., 1978). Thus, these studies suggest that deficits in speech acts of children with SLI parallel their deficits

in formal language; they look very much like MLU-matched younger children in terms of their speech act production. Conversely, such a reduction in speech act performance may be out-of-phase with formal language skills, as demonstrated in high functioning persons with autism. Tager-Flusberg (1981) has found that high functioning children with autism exhibit limitations in the range of speech acts expressed relative to their syntactic level. Similarly, Snyder (1978) found deficits in speech act range in children with SLI when compared to MLU-matched controls; the inconsistency between these results and those of Fey et al. (1978) may be due to the speech act coding system used, severity of the impairment, or other subject factors.

2. Although normal range and frequency of communicative intents may be observed, there might be some deficit or developmental delay in the performance of those speech acts. Whereas a normal 18 month old may request objects by naming them, a language delayed child may make equivalent sorts of object requests but only gesturally. Such variation in communicative means has been documented in the emerging language skills of children with SLI, Down syndrome and autism. Children in all these groups are more likely to use nonlinguistic means (e.g. gestures) to express intentions for which normal children use linguistic means (Snyder, 1978; Greenwald and Leonard, 1979; Rowan et al., 1983; Wetherby and Prutting, 1984; Wetherby, Yonclas, and Bryan, 1989).

3. There may be deviance in the sequence with which speech acts emerge. Wetherby and her colleagues (Wetherby and Prutting, 1984; Wetherby, 1986) found a deviant order of development of pragmatic functions in children with autism, compared to children developing normally. That is, rather than acquiring object-related and social speech acts simultaneously, as normal children do, children with autism acquire these functions sequentially. Further, Tager-Flusberg and Keenan (1987) have suggested that high functioning persons with autism may never acquire certain pragmatic functions. On the other hand, the range of speech acts used by children with autism was wider than one would expect from MLU-matched hearing-impaired children (Curtiss, Prutting and Lowell, 1979) and children with Down syndrome (Halfond and Tamari, 1980). This means that children with autism were functioning pragmatically closer to their cognitive levels than to their syntactic levels.

4. There may be deviance in form of speech act. Persons with autism have been found to express quite normal communicative functions through the use of culturally non-conventional forms. Although echolalic utterances were once thought pathological, it is now accepted that persons with autism use both immediate and delayed echolalia to express certain communicative acts (Wolff and Chess, 1965; Schuler, 1980; Prizant and Duchan 1981, Prizant and Rydell 1984). Further, persons with autism have been found to use idiosyncratic routines such as asking questions to initiate and maintain social contact rather than for their more common purpose of obtaining information

(Hurtig, Ensrud, and Tomblin, 1982). Although they express the same speech acts as MLU-matched controls, children with SLI and learning disabilities often fail to express them as completely, as conventionally or as effectively (Donahue, Pearl, and Bryan, 1980; Gale, Liebergott and Griffin, 1981; Gallagher and Darnton, 1978). Prinz (1977, 1982) and Snyder (1978) found they were more likely to use gestures rather than words. Bryan, Donahue, and Pearl (1981) also found that language-learning disabled children were poor at strategies for initiating conversation and for repairing conversational breakdowns (see also Bryan et al., 1981; Pearl, Donahue, and Bryan, 1981; Donahue, Pearl and Bryan, 1983; Donahue and Bryan, 1985).

   5. There may be deviance in range of speech acts used, as compared to level of formal language skills. The speech of some exceptional populations, e.g., schizophrenics, may be characterizable as deviant in that certain communicative functions are absent (e.g., informative responses to questions). Limitation in the range of speech acts expressed is typical of emotionally disturbed (Schecterman, Wollner, and Geller, 1978) and psychotic children (Cunningham, 1968). Conversely, the speech of retarded adults who had been taught verbal social routines through reinforcement procedures can be deviant in the overproduction of speech acts like greetings, which in normal speech occur only under certain, well-specified conditions. Mildly retarded adults show a range of speech acts and a level of competence with conversational turn-taking that is more sophisticated than their lexical or grammatical skills would predict (Abbeduto and Rosenberg, 1980; Abbeduto, 1984). However, retarded children and those with Down syndrome show functional deficits when compared to MLU-matched normally developing children (Oller, Tharp and Coleman, 1978; Greenwald and Leonard, 1979; Miller, Chapman and Bedrosian, 1978). These findings suggest that children with cognitive delays may continue to learn about appropriate performance of speech acts and effective conversational strategies after they have stopped acquiring grammar.

   Although the work reviewed here suggests how powerful pragmatic analyses can be in understanding the language development of normally developing as well as language handicapped children, there is rather little comparability of analysis across the various studies and, in general, the nature of the pragmatic analysis carried out in most of the studies is open to criticism. In the next section, we shall review the problems in the systems most widely used to assess communicative intent in normally developing and language handicapped populations.

## STRENGTHS AND WEAKNESSES OF PREVIOUSLY USED SYSTEMS FOR ASSESSING PRAGMATIC DEVELOPMENT

Building on the theoretical work that had been done by Austin (1962), Searle (1969, 1976), and Vendler (1972), by the mid 1970's it was commonly

recognized that semantic and syntactic analyses of child speech needed to be supplemented by pragmatic analyses. Since then there has been considerable research effort, but the inherent complexity of a pragmatic analysis has prevented the emergence of any generally agreed upon methods or metrics of development (equivalent, for example, to MLU for syntactic development). Among the problems that arise concerning coding schemes are the following:

1. Many of the systems are internally incoherent, confusing functional with semantic levels of analysis (e.g., Greenfield and Smith, 1976; see Ninio and Snow, 1988 for discussion), or functional with formal bases for categorization (Dore, 1976). This problem, true not only for work with normally developing children, extends also to research with handicapped populations. In part, this problem results from the adaptation of coding schemes developed for normal children to children with communication disorders. For example, Geller and Wollner (1976) used Dore's (1977) classification system; Curcio (1978) adapted Bates' scheme; Leonard et al., (1982) used McShane's (1980); Horsborough et al. (1982) adapted McNeill and McNeill (1975); and Bernard-Opitz (1982) used a modification of Dore's 1977 system.

2. As insightfully discussed by Chapman in her review (1981), fully analyzing communicative intent requires integrating a number of levels of analysis (she identifies the utterance, conversational, discourse, and social levels). While some coding schemes are quite good at one level or another (e.g., Bloom, Rocissano, and Hood, 1976, at discourse; Dore, 1978a, 1978b, at the utterance level), many mix levels of analysis and all fail to cover all the levels within one coding scheme.

The need to code for multiple levels of pragmatic functioning is also ignored in most systems used with communicatively impaired populations. Snyder's coding system, for example, appears to differentiate communicative attempts at a rather high level, that of the socially constituted activity, rather than the utterance. Her system does not distinguish between directing attention with a request form ("Look") versus a statement ("horse"). Hazen and Black (1989) confound the speech act level with the level of conversational move, distinguishing, for example, simple responses ("minimal acceptance") and elaborated responses ("turnabout acceptance"), even though these perform the same speech act and differ only in conversational effect. What is crucial here is that any utterance should be codable at more than one level—not a characteristic of any system except Labov and Fanshel's (1977) and Ninio and Wheeler's (1984a).

3. As Chapman (1981a) also argues, it is not sufficient simply to identify the performance of different speech acts. One must be able to use the coding as a basis for assessing the conventionality with which the acts are expressed, and their social appropriateness, if one is to give a complete picture

of a child's level of communicative development. Thus, the speech act categories identified must be constricted sufficiently and homogeneous enough that one might be able to review the utterances within any category for appropriateness and conventionality.

4. Some of the most widely used systems (e.g., Bates 1976; Bates et al., 1979; Dore, 1974; Halliday, 1975; McShane, 1980) were designed for very young children, and are difficult to extend to older children's more complex systems. It is particularly difficult to apply these systems to language handicapped populations whose pragmatic sophistication may far outrun their grammatical or lexical level. Bales (1950), Labov and Fanshel (1977), and D'Andrade and Wish (1985) have presented systems meant primarily for adult interaction. Among the more comprehensive systems that have been developed for coding speech acts, which are also appropriate for children in the first stage of language acquisition and beyond, are those by Tough (1977), McShane (1980), and Dore (1978b) (see Appendix 1 for a summary of these). These systems are quite different from each other: Tough's system operates to make distinctions at a cognitive level; Dore's is much closer to illocutionary force at the utterance level; and McShane's concentrates on the kind of activity children are engaged in. The systems are also subject to many of the same problems of mixed bases for classification and insufficient distinctions identified in the other systems discussed here.

5. Many of the previously used systems are oversimplified. Presumably to ease coding and to increase reliability, such systems typically collapse the categories of communicative intent coded into a relatively small number—10 (Folger and Chapman, 1978) to 38 (Dore, 1978b). While the practical advantage of a small number of coding categories is clear, such systems fail as reasonable reflections of the complexity of the communicative system used even by rather young children. Many of the systems group the speech acts identified into larger categories, and one might expect that these larger categories at least would show some comparability across different systems, but such is not the case (see Appendix 1).

The pragmatic assessment schemes used with handicapped populations also suffer from an overly restricted number of categories. Coggins and Carpenter (1981) synthesized coding schemes most appropriate for emerging communicative skills in children. They developed an assessment tool for clinical use which takes into account both verbal and nonverbal intentions. This system differentiates only eight speech act categories (including three different requests and two different comments) for the intentional behaviors of children from birth to two years.

The restriction in range of speech act categories may relate to the somewhat restricted range of activities in which children's language has typically been observed, rather than to the pragmatic abilities of the children. Evidence of the effect of situation on the range of speech acts displayed comes

from Coggins, Olswang, and Guthrie (1987), who compared children's language in elicited versus low structure tasks. They found that after 18 months most children were able to demonstrate proficiency with both comments and requests in the elicited but not in the low structure task, a finding replicated by Wetherby and Rodriguez (1992). This suggests the possibility that researchers who rely on elicitation tasks may well bias their findings toward requests (e.g., Wetherby, 1984, 1988, 1989).

Often no theoretical basis is given for decisions about how many speech acts to distinguish. Decisions made on a purely empirical basis can be greatly affected by the nature of the interactive situation in which the data were collected; on the other hand, armchair-derived coding systems may be empirically inadequate. Prizant and Duchan (1981) note that "one apparent weakness of the recent pragmatic literature is that such functional categories were most often predetermined and not derived from the data" (p. 242). In the system proposed below, theoretically driven distinctions were confirmed by asking mothers to explicate their own intentions while viewing videotapes of their interactions.

Clearly, it is possible to differentiate any speech act category (including the ones we present later in this paper) more finely; the crucial criterion for a rational system, though, is that all the categories should be at roughly the same level of distinctiveness. Many of the previously used systems make very fine distinctions within some categories of speech act (e.g., distinguishing request for action, request for object, and request for social routine), but leave other categories at very high levels of generality (e.g., respond, inform). We would argue that a rational system should either maintain the same level of generality across the various speech act categories or be organized in a hierarchical fashion that structures the elaboration of some categories for particular research purposes.

6. The most detailed and theoretically sound systems have typically concerned themselves with some subset of formal structures (e.g., Keenan, 1977, looked only at repetitions), of communicative categories (e.g., Garvey, 1975, looked only at requests for action; Garvey, 1977, only at clarification requests; Ervin-Tripp, 1977, Gordon and Ervin-Tripp, 1984 only at children's requests; and Menn and Haselkorn, 1977, only at requests) or of situations (Moerk, 1975, looked only at teaching interactions; Ninio and Bruner, 1978, only at book reading routines). These coding schemes for subsets of communicative intents were designed to address particular research or clinical questions; building on such schemes to describe the pragmatic systems of language handicapped children is clearly too restrictive. For example, Brinton (Brinton, Fujiki, and Sonnenberg, 1988; Brinton et al., 1986) has studied language-impaired children's conversational abilities by applying the Garvey (1977) and Gallagher (1981) classifications of clarification requests—an important but very limited aspect of conversational skill.

Another related source of problems in schemes for both normally develop-ing and language handicapped populations is restriction on the range of language forms to which the scheme applies. For example, Prizant and his colleagues (Prizant and Duchan, 1981; Prizant and Rydell, 1984) derived functional categories for immediate and delayed echolalia from language samples of three children. Although this work has helped researchers reas-sess the function of echolalic utterances produced by children with autism, it is too narrow to serve as a general purpose pragmatic coding scheme.

7. A further difficulty with available systems is that they do not take a strong theoretical stand on the perspective from which communicative in-tents must be assessed. As Searle pointed out long ago, the speaker's intended act is not necessarily identical to the hearer's inferred intent. Furthermore, many effects are achieved interpersonally in conversations between intimates or between a more competent and a less competent conversational partner. In categorizing communication, one must initially establish whether it is the *achieved* communicative effect or the *intended* communicative effect that is to be the focus of analysis. In the system to be presented below, we have chosen the latter. Many of the systems currently in use fail to make the distinction at all, and often base judgements haphazardly on either one or the other.

8. Problems arise when a system is designed based on language age expectations (as specified by MLU). Some children with communicative disorders may be able to express intentions which are more advanced than their MLU would suggest. These children's pragmatic skills are underesti-mated by language age-graded systems, because the coding schemes cannot reflect the children's more advanced intentions. For example, Roth and Spekman (1984) presented a framework for assessing pragmatic functioning in language handicapped populations that synthesized many of the widely used coding schemes. They derived three different taxonomies, each of which represented communicative intentions for children functioning at one of three different stages (prelinguistic, one-word, or multi-word level). Whereas this approach may optimize description at each of the stages, it makes it very difficult to observe or understand development in pragmatic skills across the stages. In addition, relative communicative strengths of children with poor formal language skills may be underestimated with such assessment tools (see Rollins et al., this volume).

9. Many of the schemes widely applied in clinical practice were designed to circumvent the need for full transcription and to provide a preliminary assessment (e.g., for screening purposes). Some rely on rating scales rather than on coding. For example, Prutting and Kirchner's (1987) protocol for use with children at least five years of age identifies a number of different pragmatic domains in which the child's behavior is to be judged as appro-priate or not appropriate. Snyder (1978) used a five point scale in which

more credit was given for the use of linguistic than for nonlinguistic means in expressing the imperative and declarative intentions. This approach, which was also used by Greenwald and Leonard (1979) and by Rowan et al. (1983) confounds children's ability to use words for specific intentions with their ability to demonstrate the intention.

One approach which goes beyond rating the appropriateness of children's communicative behaviors is the Social Interactive Coding System (SICS) (Rice, Sell, and Hadley, 1990). Designed for on-line coding of preschool classroom interactions, this scheme codes communicative acts as initiatory or responsive, and is valuable as a quick, preliminary assessment of social-interactive skills and as a way of identifying children or settings to which more detailed analyses might usefully be applied.

Because the pragmatic domain is important in understanding the nature of language acquisition, in identifying the specific language strengths and weaknesses of language handicapped individuals, and because of difficulties in existing systems, we present here an alternative system for coding pragmatic intent intended to redress many of these weaknesses.

## PROPOSAL FOR A SPEECH ACT CODING SYSTEM

The system that is proposed here, which we call the Inventory of Communicative Acts–Abridged (INCA-A), is an abridged version of the system developed by Ninio and Wheeler (1984a). Judged by the same criteria that we have applied to other coding systems currently in use, the INCA-A has several advantages.

1. First, the INCA has a strong theoretical justification (see Ninio, 1986, Ninio and Wheeler, 1984b). In addition to Speech Act Theory, the system is derived from sociological studies of face-to-face interaction such as Goffman's (1961, 1974) and Streeck's (1980), from an interpretation of the nature of human social interaction based on Rommetveit (1974), and from analyses of conversations such as that by Sacks, Schegloff, and Jefferson (1974).

2. The INCA-A system identifies and codes communicative intent at two different levels—the level of the utterance and the level of the verbal interchange in which it is embedded. An interchange is defined as one or more rounds of talk all of which serve a unitary interactive function. Thus INCA-A, consists of two subsystems, each of which codes for a different component of communicative intent. The two levels of the system remedy the limitation inherent in a system coding only for speech acts, which cannot systematically acknowledge any higher-level organization of talk than the single utterance (c.f. Dore and McDermott, 1982; Streeck, 1980). Additional levels of analysis (propositional and conversational, for example) are not coded here, although Ninio and Wheeler (1984b) include one system for coding conversational moves (see also Rollins et al., this volume).

3. Ninio and Wheeler designed the INCA for use with younger as well as older children and with mothers interacting with children. Their concern with more complex communicative capacities of adults permits the system to reflect development adequately across successive developmental levels. This feature makes it particularly appropriate for use with language handicapped children, where the developmental level of the child's pragmatic system may be far in advance of syntactic sophistication.

4. The ecological validity of the system was assured by using mothers as informants about, and interpreters of, the social reality created in dyadic interaction, in the process of the construction of the system (see Ninio and Wheeler, 1984b). The system was originally calibrated by interviewing mothers viewing videotapes of their interactions with their children, about the communicative intents they were expressing with their utterances and the communicative intents they understood their children to be expressing. Thus, the system was not imposed on purely theoretical grounds, but was grounded in empirical evidence about maternal communicative intents as well as their perceptions of their children's intents.

5. The system is built on a two-dimensional model of communicative meaning, which makes possible the adjustment of level of detail to be employed in any particular investigation to the specific research purposes. The full Ninio and Wheeler (1984a) taxonomy is very detailed: it distinguishes among 65 different verbal interchange types and almost as many speech act types. The abridged INCA to be presented below distinguishes among 22 major interchange types, relinquishing the further differentiation on the dimension of the contextual arguments of utterances that exists in the full system. On the level of utterance, the abridged system is identical in level of detail to the full system, distinguishing among 66 different types of speech acts. In theory, every speech act may appear in the environment of every interchange, the combination defining a unique type of communicative act. In fact, certain speech acts tend to cluster within certain interchanges, thereby reducing the actual number of different codable communicative acts. Furthermore, for certain types of analyses, it is possible to group the speech acts into major pragmatic force categories.

6. The type of analysis employed is communicative rather than functional. On the level of the utterance, the intended, rather than the achieved, illocutionary act is coded. On the level of the interchange, what is coded for is speaker's overt (though not necessarily explicit) framing of the immediate social situation.

## Verbal Interchanges and Their Operations on Social Reality

Utterances are seen as one of the means by which the participants co-construct a shared social reality. As discussed extensively by Goffman (1974)

and by Rommetveit (1974), people are constantly defining for themselves what is happening in their social world. In an interactive situation, they also aim to achieve interpersonal agreement about the participants' mutual social situation. Talk is a powerful determinant of how the situation is framed, both because what is said has a direct impact on what is happening, and because talk is a major means by which interpersonal agreement is sought and achieved. In talking, speakers operate on states and events of the immediate social situation in various ways. Utterances are organized into larger structural units, called verbal interchanges, which are unified within structures in which interlocutors operate on the social situation in a common way. These operations define the major classes of speech interchange distinguished within the system:

1.  Negotiations consist of directives to the hearer to bring about some future state of affairs, of commitments by which the speaker undertakes to bring about some state of affairs, and of declarations that some state obtains.
2.  Markings signal or acknowledge the occurrence of an event. Markings are contingent on the occurrence of the event but do not indicate it since the event is not represented verbally by the utterance.
3.  Discussions consist of the exchange of information on various topics. The operation involved here is to establish and sustain a state of conversation.
4.  Performances of verbal moves in rule-bound activities. Performances of verbal moves in games and other rule-bound activities count as meaningful units within the framework of those games. The meaning of such utterances is describable only in reference to the relevant non-linguistic game and its rules.
5.  Metacommunications. In addition to operating on the states and/or events of the immediate social situation, speakers also engage in interchange types that represent operations on previous communications or texts. Metacommunications consist of demands for clarification or confirmation of the meaning of hearer's past communications, or else of various statements about them.
6.  Uninterpretables. A final interchange type must be assigned to uninterpretable vocalizations or verbalizations of which the communicative intent is unclear. Vocalizations include uninterpretable vocalizing or verbalizing.

## Differentiation Among Interchanges According to Their Contextual Arguments

The present coding system distinguishes among talk interchanges primarily by the kind of operation they produce on social interaction or previous talk, but in some cases also according to the states and events they operate on. A variety of different kinds of negotiations can be distinguished from one another (e.g., negotiating copresence, mutual attention, possession of objects,

immediate or future activity). In the abbreviated INCA (INCA-A) presented
here all types of markings are combined into one category of interchange,
though they are distinguished in Ninio and Wheeler's use of INCA (1984a).
Conversations or discussions are distinguished according to the immediate-
ness of their topic: topic is the focus of joint attention, topic is closely related
to joint attentional focus, topic is a recent event, topic is the non-present or
the non-observable, or topic is the inner feelings or state of either speaker or
hearer. Performances of verbal moves in games are distinguished in INCA
according to the type of game played, but are combined into a single
category in INCA-A. Metacommunication is distinguished according to the
kind of communicative move which is clarified—verbal or nonverbal. Table
1 presents a list of the major categories of verbal interchange used in the
simplified coding system, their codes and definitions.

## Speech Act Codes, Categories and Definitions, by Major Pragmatic Force

The categorization of speech acts at the level of utterance involves identify-
ing the intent of the utterance from the speaker's point of view. The variety
of speech acts identified within the system presented here is not radically
different from that proposed or used by many other researchers, though it is
perhaps somewhat more complete than most. The speech acts are presented
within twelve categories, arranged according to type of operation on the
context. A full list of speech acts is presented in Table 2. The major
categories of speech acts distinguished are:

1. Directives and responses.
2. Speech elicitations and responses.
3. Commitments and responses.
4. Declarations and responses.
5. Markings and responses.
6. Statements and responses.
7. Questions and responses.
8. Performances.
9. Evaluations.
10. Demands for clarification.
11. Text editing.
12. Vocalizations.

## Further Tailoring of the System

Although the basic abridged system allows adequate description of pragmatic
skills across a broad developmental range, individual researchers with spe-

**Table 1.** Categories of Interchange Distinguished in the Proposed System

| Code | Category | Function |
|------|----------|----------|
| NCS | Negotiate co-presence and separation. | To manage the transition. |
| NMA | Negotiate mutual attention and proximity. | To establish mutual attentiveness and proximity or withdrawal. |
| SAT | Showing attentiveness. | To demonstrate that speaker is paying attention to hearer. |
| DHA | Directing hearer's attention. | To achieve joint focus of attention by directing hearer's attention to objects, persons and events in the environment. |
| DJF | Discussing a joint focus of attention. | To hold a conversation about something in the environment that both participants are attending to, e.g., objects; persons; ongoing actions of hearer and speaker; ongoing events. |
| DRP | Discussing the related-to-present. | To discuss non-observable attributes of objects or persons present in the environment or to discuss past or future events related to those referents. |
| DRE | Discussing a recent event. | To hold a conversation about immediately past actions and events. |
| DNP | Discussing the non-present. | To hold a conversation about topics which are not observable in the environment, e.g., past and future events and actions, distant objects and persons, abstract matters. (Excluding conversations about hearer's and speaker's inner states.) |
| DFW | Discussing the fantasy world. | To hold a conversation within fantasy play. |
| DHS | Discussing hearer's thoughts and feelings. | To hold a conversation about hearer's non-observable thoughts and feelings. |
| DSS | Discussing speaker's thoughts and feelings. | To hold a conversation about speaker's non-observable thoughts and feelings. |
| PSS | Negotiating possession of objects. | To determine or discuss who is the possessor of an object. |
| NIA | Negotiating the immediate activity. | To negotiate the initiation, continuation, ending and stopping of activities and acts; to direct hearer's and speaker's acts; to allocate roles, moves, and turns in joint activities; to evaluate speaker's and hearer's acts as correct or incorrect; or as desirable or undesirable. |
| NFA | Negotiating an activity in the future. | To negotiate actions and activities in the far future. |
| PRO | Performing verbal moves in an activity. | To perform moves in a game or other activity by uttering the appropriate verbal forms. |

**Table 1.** *Continued*

| Code | Category | Function |
|------|----------|----------|
| MRK | Marking. | To express socially expected sentiments on specific occasions such as thanking, apologizing, etc. or to mark some event. |
| CMO | Comforting. | To comfort hearer, to express sympathy for misfortune. |
| DCC | Discussing clarification of verbal communication. | To discuss clarification of hearer's ambiguous verbal communication, or a confirmation of speaker's understanding of it. |
| DCA | Discussing clarification of action. | To discuss clarification of hearer's nonverbal communicative acts. |
| TXT | Read written text. | To read or recite written text aloud. |
| NIN | Non-interactive speech. | Speaker engages in private speech or produces utterances which are clearly not addressed to present hearer. |
| OOO | Unintelligible utterances. | Unknown function. |
| YYY | Uninterpretable utterances. | Unknown function. |

cific hypotheses may wish to analyze communicative means as well as intent, or to examine a particular level of coding in further detail. In our own work with very young children, we have developed specific ways of coding communicative means (e.g., by tagging communicative attempts produced either nonverbally, or by means of a combination of verbal and nonverbal means). Researchers studying children with autism might also choose to tag echolalic communicative attempts to permit separate analysis of acts produced using spontaneous vs. echolalic means.

In our work with older normally developing preschoolers, we have tagged nonliteral uses of language (talk that is sarcastic, ironic, teasing, or joking in intent), and have coded talk within fantasy in somewhat greater detail than the abridged INCA-A provides for. Detailed coding of fantasy-related talk allows us to examine the emergence and development of children's ability to engage in a variety of verbal interchanges within, as well as outside, fantasy play.

## Applications of the Coding System

The full Ninio and Wheeler (1984a) system has been used for coding cross-sectional data from 24 Hebrew-speaking mother-infant dyads as well as longitudinal videotaped data from another 24 dyads. These coded data have been the basis for the examination of a number of issues in children's

**Table 2.** Categories of Illocutionary Force Distinguished in the Proposed System

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**Directives and responses**

RP     Request/propose/suggest action for hearer, or for hearer and speaker.

RQ     Yes/no question about hearer's wishes and intentions which functions as a suggestion.

DR     Dare or challenge hearer to perform action.

WD     Warn of danger.

CL     Call attention to hearer by name or by substitute exclamations.

SS     Signal to start performing an act, e.g., to run or roll a ball. Pace performance of acts by hearer.

AD     Agree to carry out act requested or proposed by other.

AL     Agree to do for the last time.

RD     Refuse to carry out act requested or proposed by other.

CS     Counter-suggestion; an indirect refusal.

GI     Give in; accept other's insistence or refusal.

AC     Answer calls; show attentiveness to communications.

GR     Give reason; justify a request for action, refusal or prohibition.

**Speech elicitations and responses**

EI     Elicit imitation of word or sentence by modelling or by explicit command.

EC     Elicit completion of word or sentence.

EX     Elicit completion of rote-learned text.

RT     Repeat/imitate other's utterance.

SC     Complete statement or other utterance in compliance with request eliciting completion.

CX     Complete text if so demanded.

EA     Elicit onomatopoeic or animal sounds.

**Commitments and responses**

SI     State intent to carry out act by speaker; description of one's own ongoing activity.

FP     Ask for permission to carry out act.

PD     Promise.

TD     Threaten to do.

PA     Permit hearer to perform act.

PF     Prohibit/forbid/protest hearer's performance of an act.

**Declaration and responses**

DC     Create a new state of affairs by declaration.

DP     Declare make-believe reality.

YD     Agree to a declaration.

ND     Disagree with a declaration.

**Markings and responses**

MK     Mark occurrence of event (i.e. thank, greet, apologize, congratulate, mark ending of an action, etc.).

TO     Mark transfer of object to hearer.

CM     Commiserate, express sympathy for hearer's distress.

EM     Exclaim in distress, pain.

**Table 2.** *Continued*

| | |
|---|---|
| EN | Express positive emotion. |
| ES | Express surprise. |
| XA | Exhibit attentiveness to hearer. |

**Statements and responses**

| | |
|---|---|
| ST | State or make a declarative statement. |
| AP | Agree with proposition expressed by previous speaker. |
| DW | Disagree with proposition expressed by previous speaker. |
| WS | Express a wish. |
| CN | Count. |

**Questions and responses**

| | |
|---|---|
| QN | Ask a product-question (wh–question). |
| YQ | Ask a yes/no question. |
| TQ | Ask a limited-alternative yes/no question. |
| EQ | Eliciting question (e.g., hmm?). |
| AQ | Aggravated question, expression of disapproval by restating a question. |
| SA | Answer a wh–question by a statement. |
| AA | Answer in the affirmative to yes/no question. |
| AN | Answer in the negative to yes/no question. |
| QA | Answer a question with a wh–question. |
| YA | Answer a question with a yes/no question. |
| TA | Answer a limited-alternative question. |
| NA | Intentionally non-satisfying answer to question. |
| RA | Refuse to answer. |

**Performances**

| | |
|---|---|
| PR | Perform verbal move in game. |
| TX | Read or recite written text aloud. |

**Evaluations**

| | |
|---|---|
| PM | Praise for motor acts, i.e. for nonverbal behavior. |
| ET | Exclaim in surprise or enthusiasm, express enthusiasm for hearer's performance. |
| CR | Criticize or point out error in nonverbal act. |
| AB | Approve of appropriate behavior. Express positive evaluation of hearer's or speaker's acts. |
| DS | Disapprove, scold, protest disruptive behavior. Express negative evaluation of hearer's or speaker's behavior as inappropriate. |
| ED | Exclaim in disapproval. |

**Demands for clarification**

| | |
|---|---|
| RR | Request to repeat utterance. |

**Test editing**

| | |
|---|---|
| CT | Correct, provide correct verbal form in place of erroneous one. |

**Vocalizations**

| | |
|---|---|
| YY | Utter a word-like utterance without clear function. |
| OO | Unintelligible vocalization. |

early pragmatic development. Ninio (1990a) has, for example, examined the
claim that children's early words can be thought of as conditioned responses
triggered or elicited by stimulus events. She found that less than a third of
utterances by a group of 10-12 month olds were of this context-embedded
variety, and an even smaller percentage of utterances by 18 month old
children could be characterized as constituting reactions to some event.
Instead, the majority of utterances for both age groups functioned to discuss
or regulate elements of the context.

Ninio (1990b) has also investigated form-function mapping in the single
word utterances of children and mothers. Nearly all of children's mapping
strategies (99.2%) were realizations also used by mothers for expressing the
same communicative intents. Moreover, the realization most frequently cho-
sen by children for each communicative intent was the one most frequently
used by mothers. By demonstrating that both children and adults use single
words to express meanings more complex than the decontextualized dictio-
nary meaning of the word, Ninio calls into dispute the notion that children's
one-word (so-called "holophrastic") utterances are functionally different
from adult speech.

In a third study, Ninio (1990c) further examines the mapping strategies
evidenced in children's one-word utterances. Specifically, she investigates
the possibility that the "vocabulary spurt" noted in many normally-develop-
ing children around the middle of the second year may be related to changes
in form-function mapping strategies.

In its abridged form, the coding system is being used to assess the range
and expression of communicative acts in the speech of 52 English-speaking
normally developing children and their mothers when the children were 14,
20, and 32 months old. Half the children are girls and half are boys, and half
are from upper middle class families while the other half are from lower
middle class families. Analysis of a subset of these data (Pan and Snow,
1990) across the period from 14 to 20 months has demonstrated an increase
in the number and interpretability of children's communicative acts, a
decrease in the extent to which children are dependent on nonverbal and
dual-channel means to express those intents, and an increase in children's
range both at the speech act and the interchange level. Individual differences
were also observed in the number of different interchange-speech act combi-
nations used by children. That is, some children used a relatively small
repertoire of speech acts in a variety of interchange contexts, while others
demonstrated a wide range of speech acts used in relatively limited com-
municative contexts. These types of analysis were made possible by the
provision within the INCA-A system for coding both the interchange and
speech act level, as well as the tagging of nonverbal and dual-channel
messages. Currently, other analyses are underway with these data which
focus on the relationship between measures of pragmatic performance and

measures of syntactic, morphological, and lexical skills (Snow, Pan, Herman, and Imbens-Bailey, 1993).

In addition to work with normally-developing children, the abridged coding scheme is also being applied to various groups of language handicapped children and their mothers. Rollins (1990; Rollins et al., this volume) demonstrates how focusing on different levels of analysis can yield different pictures of the pragmatic skills of specifically language impaired children, relative to their language-matched siblings. Conti-Ramsden et al. (1990) focuses on the communication patterns of mothers interacting with their specifically language impaired versus normally-developing children. Tingley (1990) has used the INCA-A coding system to examine the effects of maternal depression on mother-child communication. She found that children of depressed mothers tended to take the initiative in communicative exchanges by engaging in a wider variety of interchange types and by asking more questions than did the children of well mothers, while in well mother-child dyads, such initiatives were more often assumed by the mother.

The application of the abridged coding scheme in these various studies reveals acceptable levels of reliability (ranging from 78% to 86% agreement on both interchange and speech act) and usability (a well-trained coder can code a 20-minute transcript in 5-6 hours). The introduction of the interchange and speech act coding into an electronically stored transcript then opens up the possibility of a wide variety of iterative analyses (see, for example, Rollins et. al, this volume) using automated transcript analysis procedures such as the CLAN system (see MacWhinney and Snow, 1985, 1990).

## SUMMARY

While pragmatic analyses both of normally developing and of language handicapped children's speech have generated a rich array of hints about the importance of pragmatics to normal language learning and to understanding the nature of deviant development, the earlier research has been characterized by relatively limited or theoretically unjustified analyses of pragmatic skills. Sufficient information is now available to undertake the task of producing a solidly based analysis of pragmatic skill, as a tool for furthering our understanding of language acquisition in both normally developing and language handicapped populations. We have sketched here the outline of such a system, which has been demonstrated to be workable and reliable. It is being employed in a number of studies designed to illuminate the exact nature of pragmatic development in normally developing children, and the nature and extent of pragmatic deficits in children with language handicaps.

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## APPENDIX 1

Major Categories of Communicative Function Identified in Various Systems

**Dore 1978** (38 total distinctions; first four identified as most important)
Requestives: solicit information or actions.
Assertives: report facts, state rules, convey attitudes, etc.
Responsives: supply solicited information or acknowledge remarks.
Regulatives: control personal contact and conversational flow.
Expressives: nonpropositionally convey attitudes or repeat others.
Performatives: accomplish and establish acts/facts by being said.

**Tough 1977** (37 total distinctions)
Directives:     a) self directing
                b) other directing
Interpretive: a) reporting on present and past experiences
                b) reasoning
Projective:    a) predicting
                b) empathetic
                c) imaginating (sic)
Relational:   a) self maintaining
                b) interactional

**McShane 1980** (16 distinctions)
Regulation: attention directives, requests, vocatives
Statement: naming, description, information
Exchange: giving, receiving
Personal: doing, determination, refusal, protest
Conversation: imitation, answer, follow-on, question