DOCUMENT RESUME

ED 339 479 PS 020 073

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TITLE Is Early Speech Situational? The Relation of Early Utterances to the Context.
SPONS AGENCY United States-Israel Binational Science Foundation, Jerusalem (Israel).
PUB DATE Apr 91
CONTRACT BSF-84-00267-1; BSF-2467-81
NOTE 32p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Seattle, WA, April 18-20, 1991).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Child Language; *Classification; *Context Effect; Foreign Countries; Hebrew; *Infants; *Language Acquisition; Language Research; Longitudinal Studies; Mothers; *Parent Child Relationship; Social Environment; Speech Communication
IDENTIFIERS Israel

ABSTRACT

A study on children's speech is prefaced by an extensive theoretical discussion. An attempt to construct a taxonomy that captured psychologically real, discrete types of communicative acts in mother-child interactions was based on the insight that verbal utterances are social acts that are meaningful in particular social situations. The taxonomy was formulated from an analysis of mother-infant interactions and a study of sociological theories. The key distinction made in the taxonomy is between the presence and separation of the communicants. Utterances are classified into several types, including: negotiations, markings, evaluations, conversations, performances, acknowledgements, metacommunication, and text editing. In all, the taxonomy distinguishes 65 types of talk. From this taxonomy, other researchers have developed abridged verbal utterance coding systems. The study investigated the possibility that utterances are produced as responses to situations or as expressions of communicative intent. The speech interactions of two samples of Israeli Hebrew-speaking, mother-infant dyads were analyzed. Results indicated that even though infants made more context-embedded utterances at 10 months of age than at 18 months, those utterances accounted for only 30 percent of all utterances. The great majority of children's utterances were independent of the ongoing context. A reference list of 39 items is included. (BC)

SYMPOSIUM: EARLY COMMUNICATIVE DEVELOPMENT:

THE CENTRALITY OF PRAGMATIC ANALYSIS

Is Early Speech Situational?

The Relation of Early Utterances to the Context

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Paper presented at a symposium on Early Communicative Development: The Centrality of Pragmatic Analysis, chaired by B. A. Pan & C. E. Snow. The Biennial Meeting of the Society for Research in Child Development, Seattle, Washington, April, 1991.

The construction of the coding system and the research reported here was supported by Grant no. 2467/81 from the United States-Israel Binational Science Foundation (BSF), Jerusalem, Israel, to Anat Ninio and Carol Eckerman, by Grant no. 84-00267/1 from the United States-Israel Binational Science Foundation (BSF), Jerusalem, Israel, to Anat Ninio and Catherine Snow, and by a grant from the Israeli Academy of Sciences.
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INTRODUCTION to the Ninio and Wheeler taxonomy of verbal communicative acts

The three presentations in this symposium are reports from research projects utilizing a taxonomy of verbal communicative acts developed by my collaborator Polly Wheeler and myself in 1981-82. I was asked to introduce the taxonomy and to explain the principles on which it was built. The investigations be presented applied two different coding systems derived from the taxonomy; Ninio's used the full system (Ninio & Wheeler, 1984a), whereas Pan, Rollings and Snow, and Tingley used an abridged version (Ninio, Wheeler, Snow, Pan, & Rollings, 1991) that had been derived from the full system by combining certain of its categories in a principled way. I shall present both the full taxonomy and this abridged version. As it will become clear in the following, the taxonomy allows the derivation of many different pragmatic coding systems, according to the particular research questions addressed in a given project, of which the abridged inventory used by these groups is one example.

The initial impetus for developing the taxonomy came from a wish to study the development of speech production in young children, and more specifically, the development of the production rules they employ to verbalize communicative intents. Coding systems for the categorization of communicative intent existing at the time were neither detailed enough nor systematic enough for this purpose, and most had serious shortcomings (cf. Chalkley, 1982; Chapman, 1981; Dore, 1979). Moreover, the prominent theory of utterance meaning, namely, Searle's Speech Act Theory (1969, 1975) had been repeatedly criticized e.g., for its focussing on individual utterances as the unit of analysis, and in general, for working with a simplistic and unacceptable model of the organization of talk and of social acts in general (cf. Dore & McDermott, 1982; Edmondson, 1981; Streeck, 1980).

The goal was to develop a category system that would capture psychologically real discrete types of communicative acts in mother-child interaction. The question is, does such a system of categories actually exist in children or for that matter in adults? Rules imply some form of internal representation of fixed options or meanings that the speaker has recourse to when producing or interpreting utterances. The presupposition that such fixed representations exist, either for word meanings, for utterance meanings or for any other type of social meanings in the broadest sense, has been repeatedly challenged ever since Wittgenstein (1953), both by sociologists of the ethnomethodological persuasion (Cicourel, 1970; Garfinkel, 1967) and by linguists and psycholinguists (Shanon, 1988). Social or verbal meanings are said by many to be created ad-hoc in each unique set of circumstances, to be essentially indexical. In some parts of sociology, all attempts at formalization have been more or less abandoned, in favour of explication of the methods or procedures by which a gloss on intended meaning is produced, and on the basis of which meaning is experienced at the same time as an ordered phenomenon. In this intellectual climate, setting a goal of formalizing pragmatics appears an anachronism. Nevertheless, there is some basis for believing that utterance meanings do form discrete categories rather than an infinite and indivisible continuum, a field or space of options flowing into each other.

The principles underlying the construction of the taxonomy

The basic insight on which the taxonomy is built is that speech is a

type of social behavior, and as such, utterances are social acts which are meaningful as moves in the currently operative social situation (cf. Goffman, 1976; Wittgenstein, 1953).

According to theories of social behavior, the meaningfulness of any kind of action is derived from its being systematically related to some agreed-of definition of what is going on between the participants in a social scene (Bateson, 1955; Goffman, 1974; Gumperz, 1971; Hymes, 1972). In Scheflen's (1974) words, "meaning applies... to a relation between behavior and context" (p.179). The same is true of language; utterance meaning is a type of social meaning (Halliday, 1975). Thus talk, being a kind of social action, also derives its meaningfulness from its having a systematic relationship with the interactive context. To understand what is it that is said is first of all to understand what is happening in face-to-face interaction <u>in</u> uttering the utterance.

Talk both defines and is defined by the currently operative social reality. When what is said cannot be assimilated to the current definition of social reality, it is meaningless. For example, when somebody says "the water is boiling " in the middle of a marriage ceremony, the result is nonsense (Baier, 1967). Thus, a theory of utterance-meaning should explain how talk contributes to the definition of the situation and how is it interpreted in light of the definition of the situation. To make principled distinctions among types of utterances one should look for differences in the ways speech functions as a contextualized interpersonal behavior.

From the point of view of identifying the dimensions along which communicative acts differ, the question then becomes, how an utterance relates to, or is defined in terms of, the currently defined social reality. This question can be decomposed into two: First, <u>what</u> is the state or event or entity of social reality that the current speech act relates to; and second, <u>how</u> the speech act relates to, defines, or constitutes that state or event of social reality. As it will become clearer in the following, it appeared that there are a finite number of different states and events in terms of which people construe face-to-face interaction, and there are a finite number of distinct ways in which speech operates on the immediate social reality. These two dimensions are taken jointly as defining the <u>social</u> meaning of utterances, and the taxonomy formalizes the resulting categories of social meaning. The reason why there exist distinct types or categories of utterance meaning is, then, that the conceptual systems underlying utterance meaning -- social-cognitive concepts such as interactive states or actions, and linguistic-communicative concepts such as kinds of meaning operations on contextual arguments -- are themselves finite systems of discrete categories rather than infinite and indivisible continua.

<u>A model of face-to-face interaction</u>

To answer the question how talk relates to immediate social reality, first of all a model or theory of face-to-face interaction was needed. Such a model was to identify the system of social-cognitive concepts of different type of states and events that are used by participants in interaction in their definition of the current situation. The formulation of the model relied on two different sources. The first were mothers' descriptions of videotaped interaction sessions in which they participated,

which were content analyzed (Ninio & Wheeler, 1984b). The second were the theoretical writings of sociologists such as Goffman (1953, 1961, 1963, 1964, 1976) on the nature of face-to-face interaction.

From both sources this model emerged. Participants define or "frame" the current social reality on several levels simultaneously. These may be viewed as hierarchically embedded definitions going from the most general to the most specific. Figure 1 presents a schematic model of the different states and events of face-to-face interaction.

Insert Figure 1 about here

The key element in this taxonomy of interactive states is the degree of communality or intersubjectivity achieved. The model thus starts at the most general distinction to be made among interactive states, that of the distinction between co-presence and separation. Co-presence offers the possibility of mutual visual monitoring and a potential for focussed interaction. Focussed interaction occurs when the participants attend to the same perceptual or mental focus. They might interact around a joint focus of perceptual attention, they might carry on a conversation on a jointly contemplated topic, or else they might achieve intersubjectivity by carrying out a joint activity. Each of these types of focussed interaction (or encounter) is seen as further articulated into smaller structural units and their boundaries. In addition, breakdowns of frame might occur when one of the participants discontinues the expected flow of events. Lastly, interactants might be at a state of transition between any two given interactive states.

The following is a list of the states or events of social situations, from the general to the specific:

* co-presence/ separation/ transitions between them
* focussed interaction/ unfocussed co-presence
* types of focussed interaction: joint attention/ conversation/ joint action
* beginning/ middle/ discontinuity/ end of focussed interaction
* self-contained units of focussed interaction and their boundaries
* acts/ their boundaries/ between-act breathing spaces
* other elements of immediate social situation: roles, turns, moves

The relation of talk to current social reality

Given this system of participant-defined interactive states and events, the next question is, how does speech function to establish, sustain or modify the current definition of social reality?

There are several qualitatively different modes of employing speech, each representing a different type of relationship of speech to the interactive situation. Utterances may:

* explicitly negotiate the occurrence and characteristics of future states and events. Negotiations consist of directives to hearer to bring about some future state of affairs, and of commitments by which speaker undertakes to bring about some state of affairs. In addition, the giving and requesting of information necessary for effective negotiation is also seen as a type of action negotiation.

* mark, signal, acknowledge the occurrence of some happening, thereby turning it into a ratified, publicly acknowledged event of social reality.

For example, a greeting ratifies a meeting; or an expression like "That's it!" publicly marks the completion of an action.

* establish and sustain a state of conversation; conversations are discussions consisting of the exchange of information on some topic.
* perform or enact verbal moves of rule-bound activities such as games.
* evaluate past, ongoing and future actions of the participants.
* acknowledge the reception of previous communicative messages.
* metacommunicate about unsuccessful communication.
* text-edit previous talk, e.g., correct, repeat, complete, etc.

Figure 2 presents the model of interactive states and events, with types of speech superimposed on it.

Insert Figure 2 about here

The speech events marked on the model are talk interchanges (Goffman, 1953). Single utterances very seldom function by themselves but rather there are stretches of talk made up of two or more turns at speaking by the participants that form a higher structural unit, functioning together. We call an interchange such stretches of talk that are unified by their serving a common interactive function, i.e., by relating similarly to one specific element of social reality. This shared operation of several interconnected utterances on the same contextual argument is one of the specific mode of employing speech, as listed above. So when participants for instance negotiate the transition from separation to co-presence, one may call out to the other, request that the other join her, and the other may answer by agreeing to come or by refusing to come. The exchange as a whole relates to the future event of the participants entering co-presence by the meaning-operation of negotiation, which is one possible mode of employing speech meaningfully in interaction.

Apart from the interchange types marked on the model, there are interchanges dealing with metacommunication, such as clarifying some failed message. As these may appear in the context of any kind of utterance or talk interchange, they cannot be displayed on the model.

Another way to clarify the cross-classification underlying the Interchange categories of the taxonomy is to say that the taxonomy distinguishes among talk interchanges not only by the kind of operation they exert on social interaction but also according to the states and events they operate on.

Negotiations are distinguished according to the state or event that is being decided on. Choices about the future of the interaction are made on various levels, from the most general decision whether the interactans will remain in each other's presence, to minute details of an ongoing activity, e.g., who is to perform the next move.

Markings are differentiated according to the event which is acknowledged, eg, Meeting, Returning to co-presence, Parting; Going to sleep; Hearer being about to eat or eating ; Hearer having sneezed or burped; Fall of object; Completion of action; Object transfer etc.

Evaluations are distinguished according to whose action is being evaluated: Hearer's or Speaker's .

Conversations are distinguished according to the immediateness of their topic: Topic is the focus of joint attention, a recent event; the

non-present or the non-observable etc.

Performances of verbal moves in games are differentiated according to the specific game which is played. For example: Swinging game; Peek-a boo; Jumping game; Telephone talk.

Acknowledgements of the receipt of past communications are considered expressions of attentiveness and are not distinguished further according to the kind of communication which is acknowledged.

Metacommunication is distinguished according to the kind of communicative move which is clarified, namely, verbal communication or nonverbal communication.

Text-editing can occur in any kind of talk, irrespective of its interactive arguments, and is coded as part of that talk. Distinctions among different kinds of text-editing (e.g., correction or repetition) are coded on the level of the utterance.

The Interchange level of the taxonomy

The 1984 version of the taxonomy distinguishes between 65 distinct types of talk interchanges. These are presented in Table 1.

Insert Table 1 about here

In the coding system built on the taxonomy, the first level of coding, then, is to identify the type of interchange an utterance belongs to, according to the mode of speech use and according to the kind of contextual argument it relates to.

The utterance level of the taxonomy

On the second level of coding the communicative function of the single utterance is classified, within the relevant interchange. For instance, in a verbal exchange that comprises of the negotiation of the next activity, a certain utterance might suggest a specific new activity to be engaged in, while another utterance might serve to agree to carry out that suggestion or else might reject it. Although the common business of both turns at speech is the negotiation of the immediate future activity, each utterance has its unique communicative meaning or unique contribution to the business of the interchange. This component of utterance meaning is captured in the taxonomy and coding system by speech act category names using, mostly, the ordinary illocutionary act vocabulary. On an abstract level, the same analysis of decomposing meaning into operations on arguments applies to speech act (SA) codes too, each combination of type of operation and type of argument defining a specific distinct code (see also Ninio, 1986). Table 2 presents the most prominent operations of individual utterances, and the kind of arguments they take.

Insert Table 2 about here

The meaning of some speech acts decompose to two or more pairs of operations on arguments, for instance wh-questions are both directives with respect to their answer and product-incomplete representations of some state of affairs. The SA code system acknowledges each unique combination of pairs of operations and arguments actually found in the observational

data base. In the 1984 taxonomy and coding system, there are 64 categories of speech acts for individual utterances which are moves in interchanges. Table 3 presents them in families according to the major pragmatic force or type of operation.

Insert Table 3 about here

Level of detail of the full taxonomy

The final unit of verbal communicative acts in the taxonomy are SA-Interchange combinations, like "Suggest the initiation of a new activity" (e.g., "Let's do a puzzle now") or "Suggest the person to perform the next move" (e.g., "You do it"). The full coding system generates a large number of different types of communicative acts, differing either in the type of operation(s) on their contextual argument(s), or the identity of these arguments, or in both.

This level of detail is the appropriate one for the original research purpose for which the taxonomy was constructed, namely, the identification of verbal realization rules defined on psychologically real categories or types of communicative intent in young children. Such level of detail may be neither necessary nor optimal for all possible applications, nor is it the only level at which a pragmatic coding system may be derived from the taxonomy.

Derivations of other coding systems from the taxonomy and the abridged coding system used by Snow and collaborators

As the taxonomy creates categories by the cross-classification of communicative intent along four different dimensions, other category systems may be derived from it in a principled way by collapsing distinctions along one or more of these dimensions. Either interchanges or speech act categories or both may be grouped to form wider coding categories, by eliminating some or all distinctions according to types of speech use or according to the type of contextual argument that speech relates to. Moreover, either the interchange level of coding or the speech act level of coding may be eliminated altogether. For example, interchanges can be grouped only according to major type of speech use, e.g., all action negotiations, all discussions, all markings, etc. In this case, the identity of the contextual arguments of talk will not be coded for. Or, interchanges may be grouped according to the interactive states they operate on; e.g., all talk to do with managing the transition between separation and co-presence, whether negotiations or marking; or all talk to do with directing and sustaining joint attention. This may be the correct level for studying social cognition underlying speech use. If however the focus of the investigation is some phenomenon on the level of individual utterances, such as the relative frequency of initiations and responses, the interchange code can be eliminated and only the utterance-level SA codes used. Such decisions require a theoretical justification and an awareness of what sort of information about utterance meaning may be lost in the process of creating wider categories.

The version used by Catherine Snow and her collaborators (Ninio et al., 1991) groups interchanges into wider categories according to type of speech use, eliminating most of the distinctions according to type of contextual

argument. For instance, all negotiations of immediate action are grouped into a single category, not distinguishing between negotiations of whole activities, of subunits of activities, and of single acts; or between negotiating the beginning of activities or their ending; repetition or stopping, and so on. Or another example: in this abridged system all marking interchanges are grouped into a single category, not distinguishing between them according to the event marked. Table 4 presents the Interchange categories of the abridged coding system.

Insert Table 4 about here

This abridged version of the coding system does not represent the most radical collapsing across contextual categories that can be made on the level of interchanges. Some distinctions remain, for instance there are two specific action negotiation categories Negotiate copresence and separation and Negotiate mutual attention. For purposes of documenting the overall frequency of major types of speech use (e.g., action negotiation, discussions, markings) even these contextual distinctions could be eliminated, and the system would still be adequate. On the other hand, the abridged version may not be the correct one to use to study the range of communicative acts mastered by a child because the Negotiate Immediate Action category is a superordinate one subsuming many very different acts with differential developmental timetables and its use certainly causes an underestimation of the size and variability of communicative repertoires. As in a typical observational session about 35 - 80% of all utterances fall into this Interchange category, its impact is considerable.

Apart from collapsing across the various dimensions of the taxonomy and thus creating wider and less detailed coding categories than the ones in the original Ninio and Wheeler (1984a) coding system, the taxonomy makes possible also the principled creation of more specific and more detailed coding categories than in the original 1984 version. In an investigation of input-output relations in single-word speech carried out by me about a year or two ago (Ninio, in press), several of the original Interchange and Speech Act categories were broken into sets of more specific coding categories. For instance, the Interchange category of Perform move in game of mimicking animal and inanimate noise (PRA in the 1984 version) was replaced by 40 categories (P01-P40) each coding for a specific elicitation stimulus, e.g., cat, train, bird, and so on. Similarly, the original QN speech act code (wh-question or product question) was replaced by 8 specific codes according to the type of question, namely, a question about animate entities, inanimate entities, place, time, quantity, manner, cause and so on. Several other Interchange and SA categories were similarly elaborated. This level of detail was deemed more correct or more appropriate for that investigation than that of the original categories, for various reasons outside the scope of this paper. In all cases, however, the further elaboration was justified by some inherent heterogeneity of the original categories with respect to the principles according to which discriminations had been made, rather than by the application of some novel set of criteria.

The abridged version used by Catherine Snow and associates also exploited an existing heterogeneity of category definitions in order to make further subdivisions in one of the original Interchange codes, Discussions of non-present topics. Because the original coding system was

built to capture very young children's speech, where such discussions are very rare, this Interchange category was not maximally elaborated and, in the original coding instructions, made reference to several different types of conversations. Because of Snow's special interest in decontextualized language use, and her intent to study older children, it made sense to break the category into several more specific ones, splitting the existing multiple category definition into its components. This resulted in three categories instead of the original one: 1. Discussing the related-to-present; 2. Discussing the non-present; and 3. Negotiating an activity in the far future. In consequence, the abridged version is much better suited to the study of the development of decontextualized language use than the original Ninio and Wheeler version.

In addition to the possibility of the creation of different coding systems derived from the taxonomy according to the specific research question addressed, it is of course possible to code some data base with the help of a detailed instrument, but later group the results into more general categories for purposes of presentation or analysis, according to the level of detail necessary or appropriate for the particular study. In terms of theoretical considerations, grouping categories for the sake of analysis and presentation is equivalent to creating a priori more general coding categories, and in both cases the creation of superordinate categories should follow the principles on which the taxonomy is built.

In summary, even if the basic principles on which the Ninio and Wheeler (1984a) taxonomy of verbal communicative acts is built are accepted as representing psychologically real dimensions along which utterance meaning is categorized and represented in our cognition, no single pragmatic coding system derived from the taxonomy is suitable for all research purposes. In all cases, the correct procedure is to derive a unique set of coding categories from the basic taxonomy (and from the original version of the coding system) to fit the research question addressed at that particular moment.

In the empirical study I am going to present in the following, the observations had been coded with the help of the detailed system referred to above, but ultimately the findings are presented in terms of three wide categories according to their degree of context-relatedness, namely, context-construing talk, context-related talk and context-displaced talk. As the nature of talk's relationship with the ongoing interactive context is one of the defining dimensions of the taxonomy, such superordinate categories are derived relatively straightforwardly.

Is early speech situational? Introduction.

Children's early word meanings are considered by some to consist of holistic representations of situations, events or scripts (cf. Barrett, 1986; Bloom, 1973; Harris, Barrett, Jones, & Brookes, 1988, Harrison, 1972; Lock, 1980, McCune-Nicolich, 1981, Nelson, 1985). According to this approach, early words are produced like conditioned responses, i.e., they are triggered or elicited by the appropriate stimulus event. Early utterances are seen as holistic responses to complete, unanalyzed physical and behavioral situations, rather than communicative acts expressing some mental content such as communicative intents. These utterances are said to be produced in highly specific physical and behavioral situations, and the utterances are seen as embedded in the context.

The crucial evidence required for the substantiation of this claim consists of situation-specific and/or underextended word use, persisting in a child for some time, with a careful check (optimally, experimental) on the child's opportunities for exhibiting a nonrestricted range of uses. If the child does not persist for some convincing period in uttering the relevant word in only a narrowly defined specific situation, the claim that the word is at all situationally bound is void; after all, every context in which words are uttered is a specific narrowly definable context. Similarly, it is very hard to substantiate situation-specific, underextended word use on the basis of naturalistic observations of speech production only, because the child may not have an opportunity to demonstrate the normal range of extension even if she controls it (see also (Huttenlocker & Smiley, 1987). For example, a child may only use the word "giraffe" when looking at a picture in a picture book, but it is still possible that given that a living giraffe is shown to the child in the zoo, the child would immediately label it by the same word, thus demonstrating that even though on a behavioral level she had only used "giraffe" in a narrowly definable situation, she had not conceived of this word as only applicable to that particular picture in that particular book.

The empirical data on which the claims for underextension are based seldom meets these criteria. For instance, Barrett (1986) reports on a situation-specific use of "chuff-chuff" in his child Adam, although only 4 days passed before the child used the same expression in a different context, and it is unclear from his data whether an opportunity to do so offered itself before that. In Harris et al. (1988) in which a majority of the first words by a group of children were found to be context-bound, a priori only those child words were included in the data set that showed a consistency of usage with respect to objects and actions, to a criterion of three instances of use in a "relatively consistent behavioral context". When comprehension as well as production is tested, and the physical and interactive context of early word use is systematically documented, no evidence is found for situationally bound nominals in children's early productions (Huttenlocker & Smiley, 1987). It appears that the empirical evidence for underextension is not robust enough to carry the theoretical claims about the "situational" character of early speech.

Even if early nominals are not situationally bound, it is still possible that most of children's early utterances are of this character. Nominals may be relatively late arrivals in children's speech, or else constitute only a small proportion of the earliest vocabulary. The prototypical early utterance may represent some more primitive type of speech use than nominals do. In order to check the validity of this claim, a communicative analysis was undertaken of the degree of contextual embeddedness of utterances produced by a group of 10-12 month old children. In order to provide some developmental perspective, these data were compared to utterances produced by a group of 18-months-old children.

Method

Sample

Two samples of Hebrew-speaking mother-infant dyads were observed and videotaped. The first was a cross-sectional sample of 24 dyads who were observed only once. All mothers had post high-school education, most full college education. Eight of the infants were approximately 0;10, 8 were

1;6, and 8 were 2;2 at the time of the observation. Half of each subsample were males, half females. The second, longitudinal, sample consisted of 24 dyads of mothers and their infants who were observed once in every two months for a year, 6 times in all. Three observations could not take place because of illness or the family's travel. These were different subjects than in the cross-sectional sample. The 24 infants constituted three sub-samples, 8 infants each. Each sub-sample consisted of 4 males and 4 females, two each of a middle-class and a lower-middle class background. The first sub-sample of 8 infants was 1;0 at the first filming, and 1;2, 1;4, 1;6, 1;8 and 1;10 at subsequent observations. The second sub-sample was 1;6 at the first filming, and 2;4 at the last. The third sub-sample was 1;10 at the first filming and 2;8 at the last. All children were of normal health, of intact homes, and the longitudinal sample were all first-borns. The subjects were randomly selected from birth records and recruited through letters and home visits. Each mother was paid a fee for her participation.

In the present study, the speech of 16 0;10-1;0 olds and of 24 1;6 olds was examined. The younger sample consisted of the 8 0;10 olds of the cross-sectional sample, and of the 8 1;0 olds of the longitudinal sample (mean age 0;11.7, SD = 0.38 days). The older sample consisted of 8 1;6 olds of the cross-sectional sample and 16 of the longitudinal sample (mean age 1;6.4, SD = 19.5 days). Eight of the latter were the same children as the 1;0 olds of the younger sample.

Procedure

Children were videotaped in 30 minutes' unstructured home play with their mothers. All utterances were analyzed for the communicative intent expressed, using a detailed category system developed in the study (Ninio & Wheeler, 1984a). Intercoder reliability was 84.3%.

Results and discussion

The unit of analysis in the following is the distinct "language use", consisting of a combination of communicative intent and a way to verbally realize it. The assumption underlying the use of this measure is that children learn mapping rules to verbalize communicative intents; if a child learns to express the same intent by two different mapping rules, she is credited with the mastery of two different "language uses". For the 10-12 months' group this is practically identical to counting intent-word combinations because these children rarely expressed a given type of communicative intent by more than one verbal form; their mapping rules generated usually a single vocabulary item per rule. The situation is different with respect to the 18 month olds who possessed various categorical mapping rules that generated several different vocabulary items, e.g., "verbalize the object element in statements discussing a joint focus of attention"; counting mapping rules rather than words gives equal weight to these and to mapping rules that generate a single word. The statistic does not give credit for vocabulary size or for frequency of tokens, only for the number of implicit rules generating verbalizations for communicative intents.

Discounting imitations, 10-12 month olds produced 1-8 distinct utterance types, differing either in the intent expressed or in the form

the intent was mapped onto the utterance. Most of the 10-12 month olds expressed a given type of communicative intent by a single expression, mostly general wide-applicable unmarked forms such as "this" as a generalized object request. Some examples are given in Table 5.

Insert Table 5 about here

For the 10-12 month olds, as a group, there were 59 types of uses contributed by 16 children. These are presented grouped into wide categories for the ease of presentation.

Insert Table 6 about here

These language uses were broken down according to their degree of embeddedness in the interactive context. Table 7 presents the distribution of language uses in the 10-12 month olds sample and, for comparison's sake, in the 18 month olds sample. The results are presented pooled over the different children in the samples.

Insert Table 7 about here

In the younger group, one (1.7%) of all uses was clearly context-independent in that it discussed a non-present topic.

Forty (67.8% of all uses) were context-related, but not contextually embedded. These were either joint-action regulators, joint attention regulators or sustainers, or discussions of a joint focus of attention. Such utterances discuss or regulate current contextual elements, rather than simply constituting reactions to the ongoing context. When the topic of talk is the current social reality, and talk is used to explicitly negotiate, mark, evaluate, define, or create by declaration, events and states of the current situation, we may speak of metainteractive talk. Such talk belongs to a class of metabehaviours (Scheflen, 1975) that stand in a second-order logical relationship to ongoing interaction. That is, utterances of this kind do not belong to the interactive situations or states which are their arguments; on the contrary, there is a clear distinction between what is happening when people utter such utterances and the happening that is regulated or marked, etc., by such talking.

Neither are discussions of a joint focus of attention acts embedded in the ongoing context. Such language uses and even in the case of very young speakers, are built on the principle that intersubjectivity can be achieved by jointly attending to some stimuli, and that this joint attentional state may be sustained by emitting some vocalization related to the object etc. at which attention is focussed. Establishing and sustaining a joint attentional state is an intersubjective achievement, not a given of the objective setting. Even though the vocalization is correlated with some aspect of the environment, their emission is a far cry from a "reflex" type of conditional response to a set of external stimulus conditions, as the "situational" view would have it.

In this young sample, 18 (30.5%) of all uses were possibly context-embedded. These were either expressive exclamations, performances of verbal moves in games, or event markers. Context-embedded utterances

are equivalent to nonverbal interactive acts in that their meaning is fully dependent on their constituting social moves in social-interactive contexts. The type of operation on contextual arguments that these language uses exemplify is such that the relevant utterances are meaningless except as moves in the ongoing interactive situation.

Verbal moves in games can easily qualify as context-construing language uses. They are fully equivalent to nonverbal moves in the relevant games, their involving speech giving them no extra meaning.

Markers of events may qualify as context-construing speech uses. In the 10-12 month group, there was only one type of marker, that of object transfer. It is possible to say that these young children consider the verbalization accompanying object transfer as an obligatory response (or rather accompaniment) to this action. In this sense, the verbalization is a direct response to the action, and has no other meaning.

Expressive exclamations, e.g., of surprise or distress, are responses to an internal event, of feeling some type of conventionally marked emotion. As these exclamations are markers of the relevant emotional state rather than descriptions of it, once again the relationship between the verbalization and its argument is one of contingency only. Altogether, these three types of speech uses are the ones that qualify as contextually embedded, conditional-response type acts.

By comparison, for 18 month olds, context-embedded uses were much less frequent (17.2%) and context-related ones more frequent (79.3%) than in the case of the younger group. Context-independent uses were still very rare at 18 months (3.5% of all uses). Because of the partially repeated, partially independent nature of the two samples, it is impossible to test the significance of these differences, and these data are offered only as indicators of possible developmental trends.

In summary, of all communicative uses, only the context-embedded ones could possibly be considered conditioned responses triggered by the situation, similar to sensory motor schemata. Such uses are indeed more frequent at 10-12 months than at 18 months, but even so account for only 30% of all uses. The great majority of the children's types of word use was relatively independent of the ongoing context. For these utterances, the context was not a stimulus triggering a response but a meaningful social situation in which conversational moves could make sense.

A pragmatic analysis of children's language use at different ages is a prerequisite for understanding what children mean by language and what language means to children. Such an analysis reveals that although the earliest language is somewhat less complex and more contextually bound than later speech, children's earliest word productions are not necessarily different in character from later ones, or for that matter, from adult uses. Given the intrinsically intersubjective character of language, this should come as no surprise.

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Table 1. Types of verbal interchanges according to interactive function

MANAGEMENT OF THE TRANSITION BETWEEN SEPARATION AND CO-PRESENCE.

CFA: Call from afar.

GMO: Greet on meeting.

MCP: Mark co-presence.

MANAGEMENT OF THE TRANSITION BETWEEN CO-PRESENCE AND SEPARATION.

GPO: Greet on parting.

GNO: Wish good night.

LTT: Temporary leave-taking.

-LTT: Prevent H's leaving.

INITIATING FOCUSSED INTERACTION: ESTABLISHING MUTUAL ATTENTIVENESS AND PROXIMITY.

CAL: Call.

SAT: Show attentiveness.

RE-ESTABLISHING FOCUSSED INTERACTION AFTER A BREAK.

ICS: Initiate: "Come and start".

RCN: Renew: Propose continuation of activity after a break.

WITHDRAWING FROM INTERACTION.

WFI: Withdraw from interaction.

MANAGEMENT OF JOINT ATTENTION.

DHA: Direct addressee's attention.

DJF: Discuss joint focus of attention.

DRE: Discuss a recent event.

Table 1. Cont.

HOLDING CONVERSATIONS ON TOPICS OTHER THAN UNDER JOINT FOCUS OF ATTENTION.

DNP: Discuss the non-present.

DHS: Discuss addressee's non-observable state.

DSS: Discuss S's non-observable state.

PSS: Negotiate possession of objects.

THE MANAGEMENT AND VERBAL PERFORMANCE OF JOINT ACTION.

THE NEGOTIATION OF JOINT ACTION.

NEGOTIATING THE INITIATION OF A NEW ACTIVITY.

IOQ: Initiate: Open-ended question about addressee's wishes.

IPA: Initiate: Propose specific activity.

IPR: Initiate: Propose a preparatory move of a new activity.

IPM: Initiate: Propose performing move.

ICS: Initiate: "Come and start".

ALLOCATING ROLES, TURNS AND MOVES IN ACTIVITIES.

AAH: Offer next move, turn, role to addressee or to third person.

AAS: Demand role, turn or move for S.

SETTING UP RULES OF TURN-TAKING.

RTT: Set rules of turn-taking.

RENEWING/REPEATING AN ONGOING ACTIVITY.

RRP: Renew: Propose repetition of last unit of activity.

RNF: Renew: Propose a new focus of activity.

MOR: Propose addition of a recursive act.

DIRECTING ADDRESSEE TO DO - REGULATING ADDRESSEE'S NEXT ACT.

RHA: Regulate addressee's acts.

Table 1. Cont.

DIRECTING ADDRESSEE NOT TO DO - STOPPING/PREVENTING ADDRESSEE'S ACT.

-RHA: Stop/prevent addressee's act.

MHP: Make addressee pause in action.

DIRECTING SPEAKER'S ACTIONS.

RSA: Regulate S's next act.

OHH: Offer to help addressee.

EVALUATING ADDRESSEE'S & SPEAKER'S ACTIONS.

EHP: Evaluate addressee's performance.

ESP: Evaluate S's performance.

STOPPING, ENDING AND PREVENTING ACTIVITIES.

-IPA: Prevent new activity (Negative initiate new activity).

AEA: Attempt to end activity or sub-unit of activity.

MCA: Mark completion of action.

PERFORMANCE OF VERBAL MOVES IN GAMES AND OTHER ACTIVITIES.

P--: Perform verbal move. (each different game a different interchange type). Main types:

PR1-PRT: Perform move in social games such as ring-around-the-rosy.

PRO: Perform move in elicited imitation format.

PRA (P01-P40): Perform move in game of mimicking animal and inanimate noise.

Table 1. Cont.

MARKING EVENTS: SOCIALLY EXPECTED VERBAL INTERCHANGES.

MTK: Thank.

MPG: Politely wish a good appetite.

MPS: Politely bless on sneezing.

MNC: Mark new clothes.

MCN: Congratulate.

MAZ: Apologize.

MEE: Mark exertion of effort.

MEB: Mark swallowing of food.

MEF: Mark falling of object.

MEH: Mark addressee's falling.

CMO: Comfort.

MRK: Mark events not specified above.

METACOMMUNICATION: DEMAND CLARIFICATION OR CONFIRMATION OF ADDRESSEE'S MEANING.

DCC: Demand clarification of verbal communication and word-like vocalizations.

DCA: Demand clarification of action (or non-action).

Table 2. Meaning operations of individual utterances and their arguments

Operations	Arguments
Represent	State of affairs, real, hypothetical or fictive; past, present or future. (Truth conditions) (subspecies: full, uncommitted, product-incomplete)
Commitment-complete	Previous uncommitted representation (e.g., yes/no question).
Product-complete	Previous product-incomplete representation (e.g., wh-question).
Direct	Future action by addressee satisfying directive. (Compliance conditions)
Comply	Past directive complied with.
Commit	Future action by speaker fulfilling obligation. (Fulfillment conditions)
Mark, acknowledge	Present or immediate past events; including speech events.
Evaluate	State of affairs, actions.
Declare	State of affairs to be created by declaration.
Perform, constitute	Move in rule-bound activity.
Imitate	Previous utterance or part of it.
Correct	Previous utterance or part of it.
Complete	Previous utterance; incomplete word or sentence.
Recite	Rote-learned text.

Table 3. Speech act codes, categories and definitions, by major pragmatic force.

Directives and responses

RP Request/propose/suggest action for hearer. Proposed action might also involve speaker.
RQ Yes/no question about hearer's wishes and intentions which functions as a suggestion.
DR Dare = 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 do = agree to carry out act requested or proposed by other.
AL Agree to do for the last time.
RD Refuse to do = refuse to carry out act requested or proposed by other. Including refusals by giving excuses and reasons for noncompliance.
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, etc.

Speech elicitations and responses

EI Elicit imitation of word or sentence by explicit command.
MU Model utterance, without explicit request for imitation.
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.

Commitments and responses

SI State intent to carry out act by speaker.
FP Ask for permission to carry out act by speaker.
PD Promise.
TD Threaten to do.
PA Permit hearer to perform act.
PF Prohibit/forbid hearer to perform act.

Declarations and responses

DC Declare = create a new state of affairs by declaration.
DP Declare (phantasy) = create make-believe reality by declaration.
YD Agree to a declaration.
ND Disagree with a declaration.

Table 3. Cont.

Markings and responses

MK Mark occurrence of event (ie thank, greet, apologize, congratulate, etc.)
TO Mark transfer of object to hearer.
CM Commiserate, express sympathy for hearer's distress.
EM Exclaim in distress, pain.
EN Endearment = express positive emotion.
ES Exclaim in surprise = express surprise.
XA Exhibit attentiveness to hearer.
PT Polite response to thanking.

Statements and responses

ST State = 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 Wh-question = ask a product-question.
YQ Yes/no question = ask a yes/no question.
TQ Restricted-alternative.
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.
NA Non-satisfying answer to question.
RA Refuse to answer.

Performances

PR Perform verbal move in game.

Evaluations

PM Praise for motor acts, i.e. nonverbal behavior.
ET Exclaim in enthusiasm = express enthusiasm for hearer's performance.
CR Criticize = point out error in nonverbal act.
AB Approve of appropriate behaviour. 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 behaviour as inappropriate.
ED Exclaim in disapproval.

Demands for clarification

RR Re-run request = request to repeat utterance.

Table 3. Cont.

Text editing

CT Correct = provide correct verbal form in place of erroneous one.

Vocalizations

VC Word babble = utter a word-like utterance without clear function.
XX Idiosyncratic words.

Table 4. Abridged interchange category system

NCS	NEGOTIATE CO-PRESENCE AND SEPARATION
GRT	GREETING ON MEETING OR PARTING
NMA	NEGOTIATE MUTUAL ATTENTION AND PROXIMITY
SAT	SHOWING ATTENTIVENESS
DHA	DIRECTING HEARER'S ATTENTION TO OBJECTS AND PERSONS
DJF	DISCUSSING A JOINT FOCUS OF ATTENTION
DRP	DISCUSSING THE RELATED-TO-PRESENT
DRE	DISCUSSING A RECENT EVENT
DNP	DISCUSSING THE NON-PRESENT
DFW	DISCUSSING THE FANTASY WORD
DHS	DISCUSSING HEARER'S NON-OBSERVABLE THOUGHTS AND FEELINGS
DSS	DISCUSSING SPEAKER'S NON-OBSERVABLE THOUGHTS AND FEELINGS
PSS	NEGOTIATING POSSESSION OF OBJECTS
NIA	NEGOTIATING THE IMMEDIATE ACTIVITY
NFA	NEGOTIATING AN ACTIVITY IN THE FUTURE
PRO	PERFORMING VERBAL MOVES IN AN ACTIVITY
MRK	MARKING
CMO	COMFORTING
DCC	DEMANDING CLARIFICATION OF VERBAL COMMUNICATION
DCA	DEMANDING CLARIFICATION OF ACTION
TXT	READ WRITTEN TEXT
NIN	NON-INTERACTIVE SPEECH
XXX	UNINTELLIGIBLE UTTERANCES
YYY	UNINTERPRETABLE UTTERANCES

Table 5. Examples of communicative intents verbally expressed by 10-12 month olds

Propose new activity	et-ze this
Propose object to act on	et-ze this
Refuse proposal to do	lo no
Call addressee's attention	ima mommy
Direct attention to focus	hine here
Statement on joint focus of attention	ze this
Statement on joint focus of attention	doda aunty
Statement on joint focus of attention	buba doll
Answer where-question	hine here
Answer affirmatively	ken yes
Answer affirmatively	REPEAT
Answer in the negative	lo no
Exclaim in surprise or enthusiasm	ai
Exclaim in surprise or enthusiasm	eh
Perform moves in tickling game	dag
Perform moves in other games	hau
Mimic cat noise	miau
Mimic goose noise	gah

Table 6. Communicative intents verbally expressed by 10-12 month olds by number of children and number of different language uses in the group

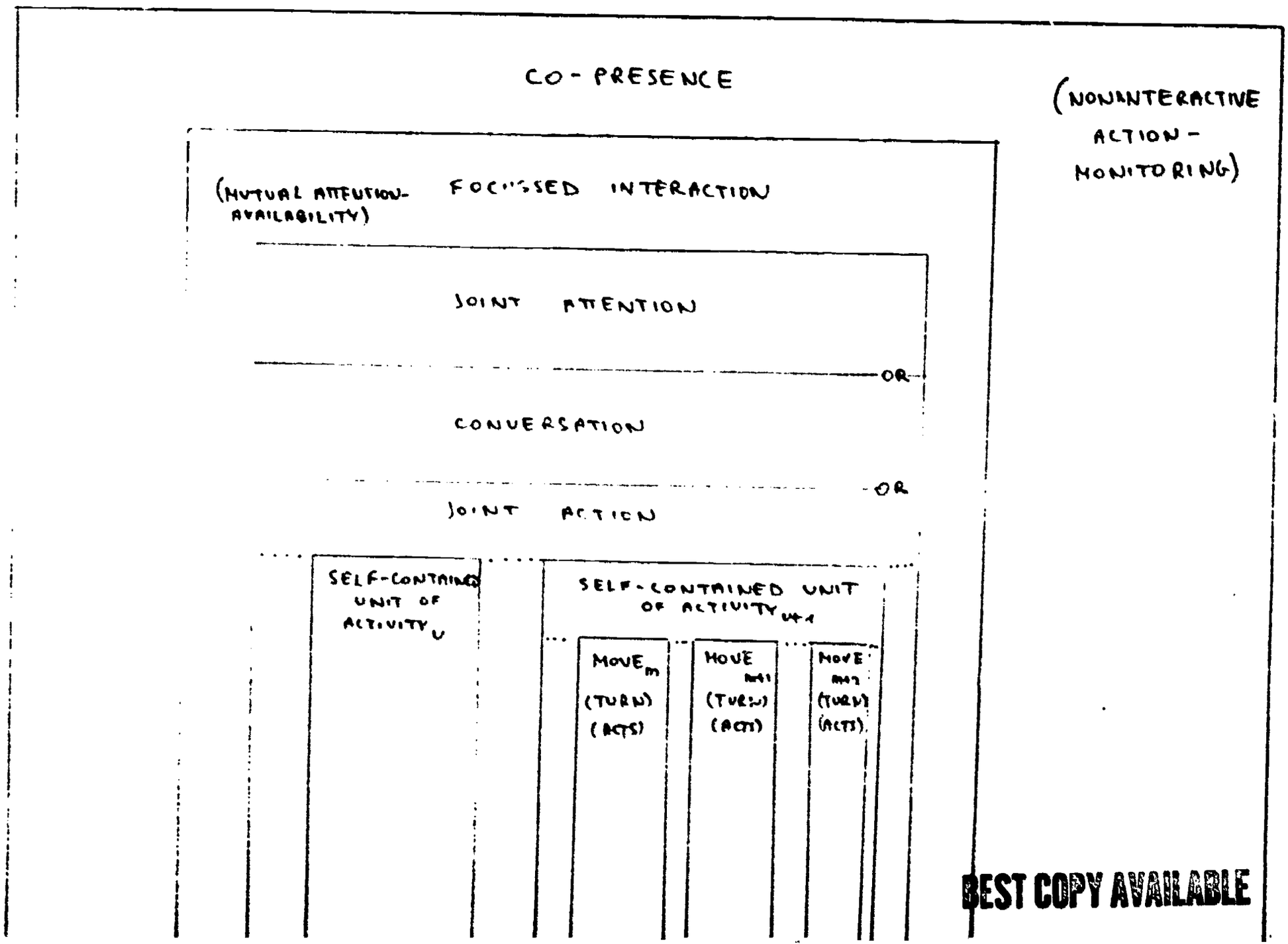
	No. of children (n=16)	No. of uses in group
Performance of verbal moves		
In social games	5	6
In game of mimicking animal noises	3	5
Negotiate mutual attentiveness		
Call addressee's attention	6	7
Request further communication	1	1
Action negotiations		
Request/propose actions	4	7
Mark transfer of object	2	2
Forbid	1	1
Agree to proposal	1	1
Refuse proposal to do	2	2
Discuss a joint focus of attention		
Direct attention to focus	4	4
Statement on j.f. of attention	9	10
Exclaim in surprise or enthusiasm	4	5
Answers to questions		
Answer affirmatively	4	4
Answer in the negative	1	1
Answer what-question	1	1
Answer where-question	2	2
Discuss the non-present		
Statement on the non-present	1	1

Table 7. Number of different language uses of 10-12 month olds and of 18 month olds, by relation to the context

	10-12 month olds (n = 16)		18 month olds (n = 24)	
	No.	%	No.	%
Context-construing talk	**18**	**30.5**	**107**	**17.2**
Performances of verbal moves in games (peek-a-boo, dance, mimic animals, pretend telephone)	11	18.6	45	7.2
Expressive exclamations (Distress, disapproval, surprise)	5	8.5	21	3.4
Event markers (Object transfer, meeting, effort, action completion, fall of object)	2	3.4	41	6.6
Context-related talk	**40**	**67.8**	**494**	**79.3**
Metainteractive talk (Negotiate mutual attentiveness, proximity, actions, activities, roles, moves)	19	32.2	225	36.1
Discussions of joint focus of attention (Direct and sustain attention on joint focus or recent event)	14	23.7	115	18.5
Answers to questions	7	11.9	154	24.7
Context-displaced talk	**1**	**1.7**	**22**	**3.5**
Discuss the non-present	1	1.7	16	2.6
Discuss inner states and feelings	0	--	3	4.8
Discuss possession	0	--	3	4.8
Total	59		623	

A MODEL OF FACE-TO-FACE INTERACTION

ANAT NINIO



A MODEL OF FACE-TO-FACE INTERACTION WITH FUNCTIONS OF VERBAL INTERCHANGES EMBEDDED WITHIN

ANAT NINIO

M : mark
N : negotiate
E : evaluate
= : Sustain state: discuss / perform