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AUTHOR Mahoney, Gerald; Petersen, Gail
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ABSTRACT

This study reports the interrater agreement of the Maternal Language Classification Scale (MLCS), a functional language classification system, developed partly to avoid problems identified with previous scales. The MLCS is a comprehensive system for classifying the functional content of maternal language addressed to children whose mean length of utterance (MLU) does not exceed 3.0. Development of this scale was based on a thorough review of classification schemes used in the mother-child language literature, and on an examination of several videotape recordings of mother-child interaction to identify functional language parameters for which no categories were available. Interrater agreement for the scale was determined on a sample of 12 mother-infant dyads. Children were between 9 and 24 months of age. Audio recordings and a running narration of the stream of behavior were made while the mother and child engaged in spontaneous play in their home. Each maternal utterance was coded according to the MLCS by two independent raters. The overall agreement between raters on over 4,000 utterances was 93%. (Author/SS)

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Maternal Language Classification Scale

Gerald Mahoney

Graduate School of Education

University of California, Los Angeles

Gail Petersen

Department of Psychology

Adelphi University

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Abstract

While there has been considerable interest in the functional content of maternal language addressed to children, the classification systems which have been used in such studies frequently have inadequate psychometric characteristics. The Maternal Language Classification Scale was developed to provide a comprehensive scale based on a communication model of language acquisition for classifying maternal language addressed to children in the initial phases of language acquisition. The interrater agreement for this scale was investigated for maternal language addressed to children between 9 and 24 months of age. The overall agreement between raters on over 4,000 utterances was 93%. Possible uses of this scale were discussed.

The Maternal Language Classification Scale

A considerable amount of research has been conducted recently regarding the nature of the communication between mothers and their children during the initial phases of language development. For the most part these studies have been conducted to determine whether the quality of communication between mothers and their children can partly account for the rate at which children acquire language. Many of these studies have focused on the formal linguistic properties of maternal language including syntax (Snow, 1972), speech patterns (Phillips, 1973) and semantics (Greenfield & Smith, 1976).

An increasing number of studies, however, are being reported which focus on nonstructural communication properties of maternal language including discourse patterns (Snow, 1977) and functional use of language (Cross, 1978; Moerk, 1976; 1978). These studies of the nonstructured parameters of maternal language are generally based upon speech acts models of language acquisition which view communicative intentions as a fundamental component of the initial acquisition of language (Bates, Benigin, & Bretherton, 1976; Bruner, 1975, Dore, 1975; Halliday, 1975).

There have been considerable discrepancies in the literature regarding the description of the functional characteristics of maternal language (Mahoney & Seely, 1976). For example, the rates at which mothers have been reported to imitate children's language range from 1.1 percent (Seitz & Stewart, 1975) to approximately 9.4 percent

(Friedlander, Jacobs, Davis, & Wetstone, 1972). Although this discrepancy, and others, may be attributed partly to factors such as the developmental level of the children (e.g., Seitz & Stewart, 1975; Moerk, 1975) and the context of the communicative exchange, some of this variation may be accounted for by inadequacies in the design of the categories which have been used to classify these functional parameters. For example, while Bloom, Hood, and Lightbown (1974) defined imitation operationally as occurring within five utterances of the model utterance, others have failed to define imitation in terms of this dimension (e.g., Greenfield & Smith, 1976). Consequently it is difficult to compare the reported findings on maternal imitation.

In addition to the problem of defining functional categories, several other deficiencies in the design of scales for classifying maternal language have obscured the findings in this area. First, many functional language categories have not been mutually exclusive. For example, Moerk's (1976) scale for mother and child language includes the category "Makes a rhyming statement" which could also encompass his other categories, such as "Describes own act" or "Commands." That is, a mother could describe her own actions or give a command to a child in a manner which could also be classified as a "Rhyming statement."

Second, few functional classification scales are exhaustive catalogs of maternal language. Frequently, individual functional categories have been studied as isolated phenomena (e.g., Brown & Hanlon, 1970; Seitz & Stewart, 1975). This strategy has led to the implication that those functional dimensions which have not been studied are of little consequence. In addition, this approach impedes researchers from delineating the relationship between certain functional

categories and other functional dimensions of the linguistic context. Consequently, in studies in which specific functional categories have been selected as language training paradigms (e.g., Cazden, Note 2; Ammon & Ammon, 1971), the possibility that the effectiveness of these categories may depend upon other linguistic functions has been ignored.

Third, most language scales have been used without specifying the operational biases and assumption of the scales. Since language acts are often multifunctional, the identification of any utterance according to a particular, or primary, function requires a systematic bias in the classification scheme. For example, in the exchange:

- | | |
|---------|-----------------------------------|
| Child: | 1) "Boat" |
| Mother: | 2) "Boat" |
| | 3) "Yes" |
| | 4) "That's a little yellow boat." |
| | 5) "Boats float in the water." |

Utterances 4 and 5 might be classified as responses to the child's utterances only if it is assumed a priori that mothers are generally responsive to children's language. In some scales such as VINEX (Baldwin & Baldwin, 1973) these utterances would be classified in terms of the kind of information exchanged without characterizing their response quality.

Fourth, some functional classification scales have been designed post hoc to fit the sample of utterances (e.g., Schacter, Kirshner, Klips, Friedrichs, & Sanders, 1974). While we acknowledge the necessity of designing scales in this manner, there are at least two problems with relying on this as the principle means of classifying maternal language. First, this procedure fails to include categories for potential language

behavior which does not occur in a particular sample. Second, this method artificially elevates the reliability of the scale, since the scale has been designed to fit a specific sample of utterances.

In this study we will report the interrater agreement of the Maternal Language Classification Scale (MLCS), a functional language classification system which has been developed partly to avoid those problems which have been identified with previous scales. The MLCS is a comprehensive system for classifying the functional content of maternal language addressed to children whose MLU does not exceed 3.0.

The development of categories for this scale included three phases. First, some categories which had been defined well in other classification schemes were included directly into this scale. Second, categories which had been used in other classification schemes, but which had not been well defined previously were revised prior to including them in this scale. Third, new categories were developed for those functional dimensions of maternal language for which no categories were reported in the literature. The development of this scale was, therefore, dependent on a thorough review of classification schemes used in the mother-child language literature, and on an examination of several videotape recordings of mother-child interaction to identify functional language parameters for which no categories were available.

The primary unit of analysis of the MLCS is the communication act which was defined as any attempt by a speaker to transmit information to another person. The scale includes several distinct categories which may be used to classify a communication transaction into discreet qualitative functional communication acts including both the verbal and nonverbal communication modalities. Each of the total of 72 categories in the scale has been carefully defined, including

examples, so that the criteria for including an utterance in a category are well specified.¹

The MLCS is organized hierarchically so that individual categories can be included in more general dimensions. This organization enables raters to make general, preliminary decisions regarding the function of each utterance before assigning it to a specific category, and enhances the probability that categories are mutually exclusive. The most general dimension divides communication acts according to whether they are a response to the form or content of the child's communication (Response) or are unrelated to the form and content of the child's communication (Verbal Stimulation). These superordinate categories which emphasize the didactic quality of maternal language are further divided into subgroups which reflect historical divisions of the functional content of maternal language.

Several features regarding the individual categories should be noted. The MLCS is based upon a speech acts (Dore, 1975) or communication model (Bruner, 1975; Ryan, 1974) of language acquisition. It is assumed that certain structural dimensions of communicative exchanges may influence or facilitate children's acquisition of higher forms of communication. Although language models may seldom intentionally attend or respond to the form and content of children's emerging communication, much of their communication is a de facto response to some dimension of children's communication. Second, while most of the categories have been defined in terms of the function, or perceived use of the utterance by the speaker, some categories have been defined in terms of formal

¹The Revised MLCS is presented in full in Appendix 1.

characteristics of the utterances. These include those language dimensions which are identified in the literature according to formal characteristics, such as imitation or expansion. Usually these formal language categories are associated with more than one primary language function. Third, many maternal utterances have more than one function. It is assumed, however, that even multifunctional utterances may be identified reliably according to one primary function. For instance, if a child points to a cat and says "dog", and the mother responds, "it's a cat," the maternal utterance could plausibly be classified as a label. However, when one considers the possible function of the utterance in the context of speaking to a child still acquiring language, the utterance would serve the primary function of correction. This leads to the final point: The assignment of utterances to individual categories requires some interpretation of the intention of the speaker. Therefore, the context of each utterance must be considered to use the MLCS reliably.

Method.

Participants

Twelve mother-infant dyads were solicited from the general community to participate in this study. Two mother-infant dyads (one female child, one male child) were selected at each of the following child ages: 9, 12, 15, 18, 21, and 24 months. All infants were Caucasian, experienced normal births, and were free of health problems. Each mother had a minimum of a high school education and lived in a suburban setting, resulting in a sample of middle to upper-middle class home settings.

Procedure

A female observer visited the home of each mother-infant dyad and

requested that the mother engage in spontaneous play with her child. The observer stood either partially outside the room or as far from the dyad as possible while still maintaining visual contact. Twenty-minute audio recordings of the interactions were made by placing one microphone of a Sony stereo cassette recorder (Model #TC 120) close to the dyad in order to record the ongoing vocal/verbal behavior. A second microphone was held by the observer who simultaneously gave a running narration of the stream of behavior (e.g., gestures, physical distance, facial expressions). The narration was free from interpretive statements of behavior so that no subjective bias would be evident on the transcripts prior to coding.

Both narration and the recording of the interaction, including the verbal and nonverbal vocalizations of mothers and children, were transcribed. An utterance was defined as a vocalization, word, phrase, or sentence that was preceded and followed by a distinctive pause. Phonetic translations were made for all utterances that approximated actual speech. The transcripts were checked for accuracy by a second transcriber who was unaware of the child's age on each tape.

Each maternal utterance was coded according to the Maternal Language Classification Scale (MLCS) by two independent raters. The narration of social interaction was available to provide the raters information regarding the context of each utterance. The procedure for assigning an utterance to a category was based upon three decisions in the following order: (a) whether the utterance was a stimulus or response; (b) the stimulus or response subcategory that was most appropriate for the utterance; and (c) the code that the utterance should be assigned. Utterances which did not fit any of the categories within a subgroup were assigned a general subgroup code number (e.g., Information

Request--code #129-General)

Results

Of a total of 4088 utterances, 98 percent were codable and 2 percent were uncodable. Among the uncodable utterances, 61 were inaudible and 9 were incomplete (i.e., the mother either was interrupted or stopped speaking in the middle of a sentence). The percent of interrater agreement for maternal utterances at each child age level ranged from 87 percent to 96 percent, with an overall mean of 93 percent (See Table 1). The reliabilities for coding maternal utterances according to either stimulation or response were 93 percent and 91 percent, respectively. Interrater agreement for the scale subgroups, when collapsed across all age levels, indicated that almost all were very reliable with the exception of Respond to Request, which was 72 percent (Table 2). The percent of interrater agreement for each individual category is presented in Table 3. Sixty-seven percent of the categories had an observer agreement of 90 percent and above; 87 percent had an agreement of 80 percent and above; and 92 percent of the categories were 70 percent and above.

Discussion

The results from the analysis of the interrater agreement of the MLCS have several implications. First, and most important with regard to this particular scale, they indicate that the criteria for including utterances in almost every category have been specified clearly enough to achieve acceptable levels of reliability. Our assumption that raters could code each maternal utterance according to the perceived primary intention of the speaker is generally supported by these data. Second, these results indicate that it is feasible to develop a functional language scale a priori which can account for almost every maternal

utterance, at least in specific situations. Whether this is an exhaustive catalog of maternal utterances remains to be determined by using the scale with utterances which have been collected in a variety of contexts. Third, although this scale was designed to be used with language addressed to children whose MLU does not exceed 3.0, the overall reliability of the scale did not change developmentally. This suggests that the scale might also be useful for maternal language addressed to children whose language is more complex.

While no fixed criteria are available for determining minimally acceptable levels of reliability, we feel that the standards for a scale of this sort should be high since the coding procedures involve subjective judgment. We have arbitrarily modified those portions of the scale where interrater agreement was near, or less than, .80. Wherever we thought revision was necessary we attempted to determine the source of error by comparing each of the rater's disagreements. In cases where rater disagreement was within a subgroup, we revised the categories and included more examples to reduce the ambiguity. In cases where disagreement was across subgroups, we have clarified the distinction between conflicting subgroups. None of these modifications has altered the scale substantially.

There are at least two major uses for a functional language scale such as the MLCS. The first, and more general, use is to describe functional patterns of maternal language interaction. It is not only important to determine the relative rates of specific language functions during the various phases of child language growth, but it is also important to determine how various functional uses of language are inter-related. For example, it is possible that maternal language patterns

such as imitation-information request-praise are more salient to children at certain levels of language development than would be the occurrence of any one of those language functions as isolated phenomena. The range and comprehensiveness of the MLCS make it well suited for investigating problems such as this.

The second use for a functional language classification scale is to determine if differential patterns of maternal language interaction are related to differential rates of language acquisition. An adequate investigation of this problem requires the use of measurement instruments that have specific and detailed categories which may be used reliably. The data which have been reported in this study indicate that the MLCS adequately meets such criteria.

References

- Ammon, P. R., & Ammon, M. S. Effects of training black preschool children in vocabulary vs. sentence construction. Journal of Educational Psychology, 1971, 321-426.
- Baldwin, A. L., & Baldwin, C. P. The study of mother-child interaction. American Scientist, 1973, 61, 714-721.
- Bates, E., Benigin, L., & Bretherton, I. From gesture to the first word: On cognitive and social prerequisites. In M. Lewis & L. Rosenblum (Eds.), Origins of behaviors: Communication and language, 1976.
- Bloom, L., Hood, L., & Lightbown, P. Imitation in language development: If, when and why. Cognitive Psychology, 1974, 6, 380-420.
- Brown, R., & Hanlon, C. Derivational complexity and order of acquisition in child speech. In J. R. Hayes (Ed.), Cognition and the development of language. New York: John Wiley, 1970.
- Bruner, J. S. The ontogenesis of speech acts. Journal of Child Language. 1975, 2, 1-19.
- Cross, T. G. Mothers' speech and its association with rate of linguistic development in young children. In N. Waterson & C. Snow (Eds.), The development of communication: Social and pragmatic factors in language acquisition. London: John Wiley, 1978.
- Dore, J. Holophrases, speech acts, and language universals. Journal of Child Language, 1975, 2, 21-40
- Friedlander, B. Z., Jacobs, A. C., Davis, B. B., & Wetstone, H. S. Time-sampling analysis of infants' natural language environments in the home. Child Development, 1973, 43, 730-740.

- Greenfield, P. M., & Smith, J. H. The structure of communication in early language development. New York: Academic Press, 1976.
- Halliday, M. A. K. Learning how to mean: Explorations in the development of language. London: Edward Arnold Publishers, 1975.
- Mahoney, G. J., & Seely, P. B. The role of the social agent in language acquisition: Implications for language intervention. In N. R. Ellis (Ed.), International review of research in mental retardation, (Vol. 8). New York: Academic Press, 1976.
- Moerk, E. Changes in verbal child-mother interactions with increasing language skills of the child. Journal of Psycholinguistic Research, 1974, 3, 101-116.
- Moerk, E. L. Processes of language teaching and training in the interactions. Child Development, 1976, 17, 1064-1078.
- Moerk, E. L. Determiners and consequences of verbal behaviors of young children and their mothers. Developmental Psychology, 1978, 14, 537-545.
- Phillips, J. R. Formal characteristics of speech which mother address to their children. Child Development, 1973, 44, 182-185.
- Ryan, J. Early language development. In M. P. M. Richards (Ed.), The integration of the child into the social world. London and New York: Cambridge University Press, 1974.
- Schacter, F. F., Kitshner, K., Klips, B., Friedrichs, M., & Sanders, K. Everyday preschool interpersonal speech usage: Methodological, developmental, and sociolinguistic studies. Monographs of the Society for Research in Child Development, 1974, 39 (156).
- Seitz, S., & Stewart, C. Imitation and expansions: Some developmental aspects of mother-child communications. Developmental Psychology, 1975, 11, 763-768.

Snow, C. E. Mothers' speech to children learning language. Child Development, 1972, 43, 549-565.

Snow, C. The development of conversation between mothers and babies. Journal of Child Language, 1977, 4, 1-22.

Reference Notes

Note 1: Newport, E., Gleitman, L., & Gleitman, H. Mother's language and child syntactic acquisition. Paper presented at Stanford Child Language Research Forum, Palo Alto, California, April 1975.

Note 2: Cazden, C. Environmental assistance to the child's acquisition of grammar. Unpublished doctoral dissertation, Graduate School of Education, Harvard University, 1965.

TABLE 1
OBSERVER AGREEMENT FOR MATERNAL UTTERANCES
AT EACH CHILD AGE LEVEL

Sex	Age of child in months					
	9	12	15	18	21	24
Female	.94	.95	.95	.95	.96	.94
Male	.93	.93	.94	.94	.90	.87
Mean:	Female .95 Male .92 Overall .93					

TABLE 2

OBSERVER AGREEMENT FOR EACH SUBGROUPING
COLLAPSED ACROSS ALL CHILD AGE LEVELS

Stimulation	Percentage	Response	Percentage
I Behavior Request	.94	I Correction	.97
II Information Request	.95	II Expansion	.87
III Give Information	.92	III Imitation	.97
IV Social Speech	.89	IV Interpretation	.92
V Nonverbal Communication	.94	V Respond to Request	.72
		VI Accept	.92
		VII Negate	.85
		VIII Respond to Nonverbal Behavior	.97
		IX Nonverbal Response	1.00
Overall Mean	.93	Overall Mean	.91

TABLE 3
OBSERVER AGREEMENT FOR EACH CATEGORY COLLAPSED
ACROSS ALL CHILD AGE LEVELS

Stimulation			Response		
Category	Frequency	Percentage Agreement	Category	Frequency	Percentage Agreement
111 Commands	571	.93	211 Correct Articulation	54	.96
112 Prohibitions	95	.99	212 Correct Grammar	0	---
113 Prompts	250	.92	213 Correct Semantic	25	1.0
114 Seek Attention	100	.96	214 Correct Nonverbal	20	.95
119 General	0	---	219 General	0	---
121 Seek Elaborate Information	141	.95	221 Expand Noun Phrase	7	1.0
122 Seek Simple Information	363	.96	222 Expand Verb Phrase	6	.85
123 Request Label	91	.91	223 Expand Both Noun Phrase & Verb Phrase	27	.85
124 Elicit Imitation	81	1.0	229 General	0	---
125 Give Information Response Demanding	6	.50	231 Imitation	70	.94
126 Seek Nonverbal Response	87	.94	232 Imitation Interrogative	24	1.0
129 General	1	1.0	233 Imitation Interrogative Response	0	---
131 Elaborate Information	493	.95	234 Partial Imitation	1	.97
132 Simple Information	25	.80	239 General	0	---
133 Label	149	.93	241 Interpretation	25	.88
134 Deixis	39	.90	242 Request Child to Rephrase Utterance	52	.94
135 Model	57	.95	249 General	0	---
136 Direct Attention	62	.92	251 Respond to Behavior Request	9	.78
139 General	2	.50	252 Answer Question Elaborate Response	43	.65
141 Call	2	.50	253 Answer Question Simple Response	21	.86
142 Attitude	54	.76	259 General	0	---
143 Motivate	279	.90	261 Accept Correct	62	.97
144 Verbal Play	118	.98	262 Accept Phonetically Inappropriate	34	.94
145 Feeling	19	.74	265 Accept Semantically Inappropriate	20	.85
146 Praise	72	.92	269 General	2	0
147 Punish	0	---	271 Negate Articulation Inaccurate	0	---
149 Social Speech	116	.82	272 Negate Semantically Inaccurate	14	.93
151 Deixis	13	1.0	273 Negate Inappropriate Response	4	1.0
152 Exaggerate Facial & Vocalization	48	.98	279 General	2	0
153 Smile (Approval)	28	1.0	281 Interpret Gesture	3	1.0
154 Nod (Disapproval)	0	---	282 Respond to Nonverbal Behavior	98	.97
155 Feeling	11	.97	283 Label	17	.94
159 Nonverbal Communication	8	.50	289 General	0	---
			291 Deixis	0	---
			292 Reorganize Environment	0	---
			293 Exaggerate Facial	0	---
			294 Smiles (Approval)	1	1.0
			295 Nod (Disapproval)	0	---
			299 General	0	---

*zero frequency

Appendix 1
Maternal Language Classification Scale

A. Verbal Stimulation

- I Behavior Request**
 - 111 Command
 - 112 Mild Command
 - 113 Prohibition
 - 114 Prompt
 - 115 Seek Attention
- II Information Request**
 - 121 Seek Simple Information
 - 122 Seek Elaborate Information
 - 123 Request Label
 - 124 Give Information, Response Demanding
 - 125 Elicit Information
 - 126 Seek Nonverbal Response
- III Give Information**
 - 131 Simple Information
 - 132 Elaborate Information
 - 133 Label
 - 134 Deixis
 - 135 Model
 - 136 Direct Attention
- IV Social Speech**
 - 141 Verbal Play
 - 142 Feeling
 - 143 Motivate
 - 144 Praise
 - 145 Punish
 - 149 Social Speech
- V Nonverbal Communication**
 - 151 Deixis
 - 152 Vocalization
 - 153 Exaggerate Facial + Vocalization
 - 154 Smile/Laugh
 - 155 Nod
 - 156 Feeling
 - 159 Nonverbal Communication
 - 199 Unclassified Communication

B. Response to Child's Language

- I Correction**
 - 211 Correct Articulation
 - 212 Correct Grammar
 - 213 Correct Semantic
- II Expansion**
 - 221 Expand Noun Phrase
 - 222 Expand Verb Phrase
 - 223 Expand Noun Phrase and Verb Phrase
- III Imitation**
 - 231 Imitation
 - 232 Imitation Interrogative
 - 233 Imitation Interrogative Rephrase
 - 234 Partial Imitation
- IV Interpretation**
 - 241 Interpretation
 - 242 Request Child to Rephrase Utterance
- V Response to Request**
 - 251 Respond to Behavior Request
 - 252 Answer Question Simple Response
 - 253 Answer Question Elaborate Response
 - 254 Give Label Upon Request
- VI Accept**
 - 261 Accept Correct
 - 262 Accept Inappropriate Articulation
 - 263 Accept Semantically Inappropriate
- VII Negate**
 - 271 Negate Articulation Inaccurate
 - 272 Negate Semantically Inaccurate
 - 273 Negate Grammatically Inaccurate
- VIII Respond to Nonverbal Communication**
 - 281 Label
 - 282 Interpret Gesture
 - 283 Interpret Nonverbal Vocalization
 - 284 Correct Nonverbal
 - 285 Accept Nonverbal
 - 286 Negate Nonverbal
 - 287 Imitate Nonverbal
 - 289 Respond to Nonverbal Communication
- IX Nonverbal Response**
 - 291 Deixis
 - 292 Exaggerate Facial
 - 293 Smile/Laugh
 - 294 Nod
 - 295 Feeling
 - 299 Nonverbal Response

Rules for Coding Maternal Utterances

Three decisions must be made regarding each utterance in the following order:

1. Is the utterance a stimulus or response item?
2. What stimulus or response subcategory does the utterance best fit?
3. What code should the utterance be assigned?

Definition: Utterance is any verbal and/or nonverbal attempt to communicate.

General Guidelines:

1. If there is any apparent relationship between the specific forms and content of the mothers' utterance and the specific form and content of a previous child utterance and this relationship is judged to be intentional rather than accidental, then the item should be coded as a response item. More than one maternal utterance may be used to respond to a single child utterance and the maternal utterance need not immediately follow the target child utterance. When there is no apparent intentional relationship between the form and content of the maternal utterance and the form and content of the child utterance, the maternal utterance should be coded as a stimulus item.
2. A. If the utterance is coded as verbal stimulation then it must be assigned to one of the five subcategories:
 - (1). If the utterance is primarily non verbal (including vocal and nonvocal communication), then it should be assigned to the 150 (Nonverbal Communication) categories.

- If the utterance is primarily verbal, then it should be assigned to categories 110, 120, 130, or 140.
- (2). If a verbal utterance primarily communicates cognitive information or information regarding personal social rules or relationships, the utterance is coded 120 if it seeks such information, or 130 if it conveys such information to the child. 120 and 130 categories are characteristically, but not always, impersonal.
 - (3). Utterances which pertain to emotions, feelings, or social relationships rather than to objects, events, attributes or personal-social rules are coded as 140 (social speech). Social speech is often characterized by positive or negative affect rather than neutral affect.
 - (4). Utterances which attempt to influence a child to perform or not perform certain physical acts and which focus on the activity of the child (what the child does) rather than what the child feels or thinks should be coded as 110 (Behavior Request).
- B. If the utterance is coded as response to child's utterance then it must be assigned to one of nine subcategories.
- (1). Nonverbal responses to the child's attempt to communicate are coded as 290.
 - (2). Verbal responses to the child's utterance may be coded in categories 210-280 depending upon the form and function of the response. Each of these subcategories have been defined in the glossary of codes.

3. Having decided in what subcategory an utterance ought to be placed, the utterance should then be assigned a code. When no code is appropriate, a general category which is indicated by a 9 in the third digit (e.g., 119, 129, 139, etc.) may be assigned. Every effort should be made to assign a code other than the general category.

Definitions of MLCS Categories

Verbal Stimulation--Language addressed toward a child in which there is no apparent intentional relationship between the form and content of the maternal utterance and the form and content of a preceding child utterance.

110 Behavior Requests--Utterances which influence a child to perform or not to perform certain physical acts by the use of imperative, interrogative, or declarative statements. Behavior requests focus on the activity of the child rather than what the child thinks or feels.

111 Command--A direct request for the child to perform a certain act. Commands are generally in the imperative mood. The tone of a command should be with strong emphasis rather than with mild or suggestive emphasis. Utterances which direct the child's attention should not be coded in this category (see 115 and 136).

- e.g., 1. Do something.
- 2. Put the ring on the peg.
- 3. Give me your shoes.

112 Mild Command--A direct request for the child to perform a certain act. The tone of a mild command should be with mild or suggestive emphasis rather than with strong emphasis. Thus the differentiation between a command (111) and a mild command should be made by examining the tone of the mother's utterance. If the tone cannot be distinguished, then the utterance should be coded as a command (111). A mild command is generally in the imperative mood.

112
(Cont.)

- e.g., 1. Come on. (to get the child on task)
2. Let's go.
3. Put your shoe on. (mild tone)

113 Prohibition--A direct request for the child not to perform a certain act. Prohibitions are in the imperative mood and are demanding rather than suggestive. A prohibition is prohibitive rather than punitive (see 144).

- e.g., 1. Don't do that.
2. You'd better not hit me.
3. No, no, no.

114 Prompt--An indirect request for the child to perform or not to perform a certain act. A prompt can only be an interrogative or declarative statement. The tone is one of suggestion rather than demand.

- e.g. 1. You could put the ball in the corner, couldn't you?
2. Can you do what I'm doing?
3. Good boys don't do that. (prohibitive, not punitive)
4. Why don't you do that?

115 Seek Attention--A request for the child to give his attention to the speaker. Seek attention is often employed as a preparation for the mother to interact verbally with the child. When the mother's utterance is intended to direct the child's attention to a specific aspect of the environment other than to the mother herself, then the utterance should be coded as a direct attention (136).

- e.g., 1. Johnny, look at me.
2. Come on. (when used as an attention-seeking utterance)
3. Listen to me.

120 Information Request--A request for the child to process cognitive linguistic, or personal-social information. Information requests are most often interrogative, although some categories included declarative and imperative forms.

121 Seek Simple Information--Information request in which the required response is a simple affirmation or negation. Utterances which require an imitative response rather than a simple "yes" or "no" should be coded as an elicit information (125).

- e.g., 1. Did the truck fall down?
2. Is the book blue?
3. Does a doggie go "bow wow"?

122 Seek Elaborate Information--Request information from the child in which the child must respond with an utterance other than "yes" or "no." Elaborate questions are of the form "who, when, why, where, how." "What" questions are included when they do not require that the child merely provide a label of a specific object, attribute, person, or event (see 123).

- e.g., 1. What do you want?
2. How many toes do you have?
3. What does a dog sound like?

123 Request Label--Request the name of a specific person, object, attribute, or event which is within the child's perceptual range. The mother may or may not point to the object.

123
(Cont.)

- e.g.,
1. Who is that? (while pointing to a picture)
 2. What is that?
 3. What color is that?

124 Give Information, Response Demanding--Provide partial or complete information for the purpose of prompting the child to elaborate that information.

- e.g.,
1. A doggie goes _____. (e.g., "bow wow")
 2. That is a _____. (e.g., while pointing to a horse)
 3. That ball is _____. (e.g., "red")

125 Elicit Imitation--An explicit request for the child to repeat a sound, word, or phrase. Utterances which consist of the sound, word, or phrase without the explicit request should not be coded in this category (see 133 and 135).

- e.g.,
1. Can you say "doggie"?
 2. Johnny, say "kitty"?

126 Seek Nonverbal Response--A request for the child to either denote or depict some information by use of gestures.

- e.g.,
1. Where is your nose?
 2. How des a dog look mad?
 3. Show monny where the pig is. (while looking at a picture)

130 Give Information--Utterance is intended to provide cognitive or personal-social information to the child without any explicit or implicit demand that the child respond verbally to the utterance.

131 Simple Information--Utterance provides cognitive or personal-social information by simple affirmation or negation. Simple

affirmations or negations which have a directing value rather than a praising or punishing value are also included in this category (see examples 2 and 3). Examination of intonation and context of the utterance is essential in this instance.

- e.g.,
1. Yes.
 2. That's right. (when directive, not when praise is the intent)
 3. Good. (when directive, not when praise is the intent)

132 Elaborate Information--Utterance provides the child with information concerning the cognitive or personal-social dimensions of persons, objects, attributes, or events. Elaborate information is intended to be a general category which includes most all utterances whose primary function is to provide cognitive or personal-social information.

- e.g.,
1. Snoopy sleeps on top of his house.
 2. You are going to break it if you hit it too hard.
 3. The ring is round.
 4. I don't like this book.

133 Label--Utterance provides the child with the name of a specific person, object, attribute, or event in the child's perceptual field and is not accompanied by a pointing gesture. When stress or emphasis is placed upon the name, then the utterance should be coded as a model (135).

- e.g.,
1. That's a ball.
 2. This is a horsie.
 3. Doggie. (without linguistic emphasis)

134 Deixis--Utterance provides the name of a specific person, object, attribute, or event in the child's perceptual field which is accompanied by a pointing gesture. Note that the pointing gesture gives less information than the utterance.

- e.g.,
1. That's a ball. (+ pointing gesture)
 2. There's a ball. (+ pointing gesture; in labeling context)
 3. Doggie. (+ pointing gesture; without linguistic emphasis)

135 Model--Mother says a word or utterance for the specific purpose of emphasizing the linguistic characteristics by slow pronunciation or intensified articulation without demanding that the child imitate it. The child may or may not imitate the utterance. If the utterance is used mainly as a label, then it should be coded as a label (133).

- e.g.,
1. Doggie. (with linguistic emphasis)
 2. A horsie. (with linguistic emphasis)

136 Direct Attention--Utterance is used to guide the child's attention to a specific aspect of the perceptual field so that the child will attend to cognitive or personal-social information. The emphasis of direct attention is on the information rather than the behavior of the child. Note that the utterance is not specifically intended to provide a label for the child. The mother may or may not use a pointing gesture. If, however, a pointing gesture is used, then it provides less information than the utterance.

136
(Cont.)

- e.g., 1. Look at what Donald Duck is doing. (while looking at a book)
2. Here. (as the mother gives the child something)
3. There it is.
4. There's the ball. (in the context of directing the child's attention rather than in the context of labeling)

140 Social Speech--Utterances which pertain to emotions, feelings, or social relationships, rather than to objects, events, specific attributes, or personal-social rules.

141 Verbal Play--Stereotyped, repeated, or onomatopoeic sounds, words, or phrases. Songs and sounds for activities are included in this category. Emphasis is on the social value rather than the informational value of the utterances (e.g., if mother says "The dog goes 'bow wow,'" then code as 132).

- e.g., 1. Zoom.
2. Whoosh. (sound of a truck passing)
3. Meow.
4. Peek-a-boo!

142 Feeling--Utterances which express empathy, mood, or interpersonal attitudes of the mother or child. Feelings generally give or request information dealing with affect (i.e., emotions) rather than with the child's thoughts or perceptions.

- e.g., 1. I love you.
2. Do you love me?
3. I feel good today.
4. Are you bored?

143 Motivate--Utterance which elicits or maintains interest, or positive affect. Motivate may create a positive atmosphere by introducing joy and happiness. Putting the child in a positive mood by teasing or tickling, informing the child that what he is doing is interesting or exciting, or expressing interest or moral support for what the child is doing should be coded as motivate. Note that it is important to examine the intonation and context of the utterance when considering this category.

- e.g.,
1. You can do it.
 2. This is fun!
 3. What a beautiful doll!! (excitedly)
 4. Come on. (in the context of motivating the child to do something)

144 Praise--Utterance is intended to inform the child that what she is doing or has done is commendable. Praise always has the tone of positive affect. The emphasis of praise is on the child rather than the act.

- e.g.,
1. Good girl!!
 2. Look what Sally did!! (in the context of praise rather than directing attention; see 136)
 3. Good! (praise value rather than directive value; see 132)

145 Punish--Utterance is intended to tell the child that what he is doing or has done is reprehensible. Punishment usually has the tone of negative affect. The emphasis of punishment is on the child rather than the act. Note that utterances in this category are not imperatives (see 113).

145
(Cont.)

- e.g., 1. Bad boy. (a social consequence of an undesirable act)
2. I am going to spank you for that.

149 Social Speech--Social utterances which cannot be classified in any of the previous social speech categories.

150 Nonverbal Communication--Mother communicates to the child primarily by means of the nonverbal mode.

151 Deixis--Mother guides the child's attention in a certain direction by pointing or posturing toward that direction. Deixis may also be accompanied by verbalizations so long as the verbalizations do not convey more information than the gesture. Note then that any accompanying verbalization is secondary to the gesture. Furthermore, the verbalization should be general rather than specific.

- e.g., 1. Mother points to a certain object and says "There" or "That one."
2. Mother points in a general direction and says, "Over there."

152 Vocalization--Mother responds to an act which she or the child has done with a surprise vocalization. Vocalizations are generally exclamatory responses to behaviors or events rather than to communication. The mother does not accompany her vocalization with a surprise face (see 153).

- e.g., 1. Oh! (when the child falls)
2. Yikes! (e.g., when the mother tips over a tower of blocks)

153 Exaggerate Facial + Vocalization--Mother responds to an act which she or the child has done with a surprise face which is often accompanied by a sharp inspiration or an exclamation.

e.g., 1. (sharp inspiration + surprise face)

(e.g., when the child falls)

2. Oh! (+ surprise face)

154 Smile/Laugh--When the child is looking at the mother, the mother smiles or laughs at the child but does not verbalize. The smile or laugh may be the result of the mother or child's actions or feelings.

155 Nod--Child looks at mother after he has performed a certain act and the mother nods to affirm or negate the child's act. Nodding may be accompanied by nonverbal vocalizations such as "Mmmhmm" for yes and "unuh" for no.

156 Feeling--Gesture and/or nonverbal vocalization which expresses empathy, mood, or interpersonal attitudes of the mother or the child.

e.g., 1. (hug).

2. Aaahh. (when the child hurts herself)

159 Nonverbal Communication--Any communicative gesture and/or nonverbal vocalization which does not fit into any other nonverbal communication category.

199 Unclassified Communication--Any verbal, nonverbal, or nonvocal communication strategies which cannot be classified into any of the aforementioned categories.

Response to Child's Language--Utterance is a direct response to the specific form or content of a preceding child utterance. The child utterance need not immediately precede the maternal utterance.

210 Correction--Utterance is intended to correct a preceding incorrect utterance of the child. Negations which may precede corrections should be coded separately (see 270 categories). If the child's utterance is incomprehensible to the rater and the mother responds by providing the child with the appropriate word, then the response should be coded as a correct nonverbal (284).

211 Correct Articulation--Utterance provides the correct pronunciation of a word which the child has mispronounced.

- e.g., 1. Child (C): "Muk."
Mother (M): "Milk."
2. C: "Daggie."
M: "It's doggie."

212 Correct Grammar--Utterance is directly concerned with correcting a specific grammatical error in the child's previous utterance.

- e.g., 1. C: "The boy goed home."
M: "You mean, 'the boy went home.'"
2. C: "Me want to go."
M: "I want to go."

213 Correct Semantic--Child's choice of words is inappropriate and mother provides an appropriate word.

- e.g., 1. C: "Car." (meaning truck)
M: "It's a truck, not a car."
2. C: "The book is red."
M: "The book is green, Bobby."

220 Expansion--Mother responds to the child's utterance by expanding the utterance. The word order is preserved in the expansion. The child's utterance and/or the mother's expansion may or may not be grammatically complete.

221 Expand Noun Phrase--Mother expands the noun phrase in the subject position.

- e.g., 1. C: "Boy going home."
 M: "The little boy going home."
 2. C: "Book."
 M: "The red book."

222 Expand Verb Phrase--Mother expands only the verb phrase.

- e.g., 1. C: "Boy go."
 M: "Boy going home to his mommy."
 2. C: "Boy paint."
 M: "Boy is painting."

223 Expand Noun Phrase and Verb Phrase--Mother expands both the noun phrase and the verb phrase.

- e.g., 1. C: "Boy go."
 M: "The little boy is going home."
 2. C: "Pig eat."
 M: "The fat pig is eating."

230 Imitation--Utterance is a replication of the child's utterance. If the mother imitates a child's nonverbal utterance, then the response should be coded as an imitate nonverbal (287).

231 Imitation--Exact repetition of the child's utterance which maintains the child's intonation.

232 Imitation Interrogative--Exact or partial imitation of a declarative statement of the child in which the mood is changed from a declarative to an interrogative.

e.g., 1. C: "The dog is in the car."

M: "The dog is in the car?"

2. C: "Mommy is going to the store."

M: "Mommy is going?"

233 Imitation Interrogative Rephrase--Utterance is essentially an exact or partial repetition of the child's utterance except that the sentence is rephrased (usually the subject) and the mood is changed from a declarative to an interrogative.

e.g., 1. C: "I don't like to go to the farm."

M: "You don't like to go to the farm?"

2. C: "Doggie is in the house."

M: "The little doggie is in there?"

234 Partial Imitation--Utterance is a partial replication of what the child had previously said.

e.g., 1. C: "Doggie run fast."

M: "Doggie run."

240 Interpretation--Utterance is an attempt to make sense of what the child had previously said. If the utterance is totally incomprehensible to the rater, then the response should be coded as interpret nonverbal (283).

241 Interpretation--When child's utterance is ambiguous or unclear, the mother attempts to reflect both the intention and form which the child attempted to communicate. In interpretation, the intention of the child's utterance seems to be unclear.

241
(Cont.)

- e.g., 1. C: "Muk."
M: "Oh, you want some milk."
2. C: "Me truck."
M: "You want your truck?"

242 Request Child to Rephrase Utterance--Mother is unable to interpret the child's utterance and asks the child to rephrase the utterance.

- e.g., 1. C: "Muk."
M: "What did you say?"
2. C: "I want choo choo."
M: "What do you want?"

250 Respond to Request--Utterance is a response to any question or request which the child might make.

251 Respond to Behavior Request--Any utterance which accompanies the mother's attempt to respond to the child's behavior request.

- e.g., 1. C: "Tie my shoe."
M: "Okay, Johnny."
2. C: "Play school with me."
M: "I'll play school with you."

252 Answer Question Simple Response--Answer a question with either an affirmation or negation.

- e.g., 1. C: "Do it this way?"
M: "Yes."
2. C: "Is the book red?"
M: "No."

253 Answer Question Elaborate Response--Utterance is a response to the child's question and is more elaborate than a yes/no response.

253
(Cont.)

- e.g., 1. C: "Where Daddy go?"
M: "He went to work."
2. C: "Where does this go?"
M: "It goes in the truck."

254 Give Label Upon Request--Mother responds to the child's request for a specific label by providing the appropriate label.

- e.g., 1. C: "What that?"
M: "That's a horsie."
2. C: "What color?"
M: "It's red."

260 Accept--Utterances which are intended to communicate to the child that the child's previous utterance is acceptable. If the mother accepts a nonverbal and non-idiosyncratic child utterance, then the response should be coded as an accept nonverbal (285).

262 Accept Correct--Accept child's utterance when it is both semantically and phonetically appropriate. The child's utterance may or may not be grammatically correct.

- e.g., 1. C: "That's a dog."
M: "That's right."
2. C: "Daddy go."
M: "Yes."

262 Accept Inappropriate Articulation--Mother accepts the child's utterance even though it is mispronounced.

- e.g., 1. C: "That's a twuck."
M: "Yes."
2. C: "Daggie."
M: "Right."

263 Accept Semantically Inappropriate--Mother accepts the child's utterance even though it's meaning is not correct in a given context. Idiosyncratic words which are common to both the child and the mother are included in this category (see example 2).

e.g., 1. C: "That's a truck." (meaning car)

M: "Yes."

2. C: "That tweet-tweet." (meaning bird)

M: "That's right."

270 Negate--Rejection to the child's utterance. If the mother negates a nonverbal utterance which is incomprehensible to the rater, then the response should be coded as a negate nonverbal (286). A negation is often followed by a correction (see 210 categories).

271 Negate Articulation Inaccurate--Utterance indicates to child that his previous utterance is wrong when it is only mispronounced.

e.g., 1. C: "Muk." (milk)

M: "No."

2. C: "That's a twuck." (truck)

M: "Wrong."

272 Negate Semantically Inaccurate--Utterance indicates to the child that his previous utterance is wrong when it is an inappropriate word selection.

e.g., 1. C: "Truck." (meaning car)

M: "No."

2. C: "It's red."

M: "You're wrong."

273 Negate Grammatically Inaccurate--Mother indicates to the child that his previous utterance is grammatically incorrect.

273
(Cont.)

- e.g., 1. C: "Johnny goed home."
M: "No."
2. C: "Me want more."
M: "That's wrong."

280 Respond to Nonverbal Communication--Utterance is a response to the child's nonverbal vocalization and/or nonverbal communicative behavior (viz., gesture). Responses to any utterance which is both incomprehensible to the rater and is not an idiosyncratic utterance common to both the child and the mother are included in this category.

281 Label--Utterance labels what the child denotes by pointing or other gestures.

- e.g., 1. C: (points to picture of a dog)
M: "That's a doggie."
2. C: (points to chair)
M: "Chair."

282 Interpret Gesture--Utterance describes what the child's nonverbal gesture depicts.

- e.g., 1. C: (child rubs his hand)
M: "Oh, you hurt yourself."
2. C: (child flaps his arms)
M: "You're a birdie."

283 Interpret Nonverbal Vocalization--Mother attempts to interpret the child's nonverbal vocalization.

- e.g., 1. C: "Aka."
M: "You want milk?"
2. C: "Nana."
M: "You want to play?"

284 Correct Nonverbal--Mother corrects the child's nonverbal vocalization by providing the correct utterance.

- e.g., 1. C: "Aka."
M: "It's a doggie."
2. C: "Nana."
M: "Cookie."

285 Accept Nonverbal--Mother accepts the child's nonverbal vocalization even though it is incomprehensible.

- e.g., 1. C: "Aka."
M: "That's right."
2. C: "Baba."
M: "Yes."

286 Negate Nonverbal--Mother negates the child's nonverbal vocalization. This response is often followed by a correct nonverbal (284).

- e.g., 1. C: "Aka."
M: "No."
2. C: "Baba."
M: "Wrong."

287 Imitate Nonverbal--Mother imitates the child's nonverbal vocalization.

289 Respond to Nonverbal Communication--Mother's response to child's nonverbal communication which does not fit into any of the preceding 280 subcategories.

290 Nonverbal Response--Respond to child's communication with a nonverbal vocalization or gesture.

291 Deixis--Nonverbal response in which the mother points or gestures in a direction to specify a specific aspect of the perceptual field.

e.g., 1. C: "Where doggie?"

M: (points to picture of a dog)

292 Exaggerate Facial--In response to child's communication the mother makes an exaggerated face indicating surprise or disbelief. A sharp inspiration or verbalization often accompanies this response.

293 Smile/Laugh--In response to child's communication the mother smiles or laughs.

294 Nod--In response to child's communication the mother nods with approval or disapproval.

295 Feeling--In response to the child's communication the mother gestures or vocalizes with feeling.

e.g., 1. C: "I love you."

M: (hugs child)

299 Nonverbal Response--Nonverbal communication which cannot be classified in any of the previous nonverbal response categories.

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