THE RELATIONSHIP OF LANGUAGE FUNCTION OF ADULTS WITH AUTISM TO THE SPEECH OF THEIR MOTHERS

Wong Chi Hong and Li-Tsan Cecilia Wai Ping

Introduction

Over the last 20 years, many studies attempted to investigate the relationship of parental speech to the language-learning process of autistic and language impaired children (Snow, 1972; Howlin et al., 1973; Frank et al., 1976; Cantwell et al., 1977; Howlin and Rutter, 1989; Conti-Ramsden and Dykins, 1991). Based on the Social Exchange Theory (Kozloff, 1973), it is believed that there is a close relationship between language development of persons with autism and their mother. However, whether the relationship still holds true for adults with autism was unknown. Cantwell et al. (1978) and Rumsey et al. (1985) found that persons with autism still had a lot of problems in their verbal communication even when they were growing up. However, there are very few studies on the relationship between parental speech and language development of adults with autism (Baltaxe and Simmons, 1987). In addition, most of the literature found in the 1990s in the area of communication training for persons with autism were related to augmentative and alternative communication (Reichle et al., 1991; Moore et al., 1993; Vazquez, 1995; Simon et al., 1996). If we just focus on studying the use of augmentative and alternative communication which is a compensatory approach for the persons with autism, we will sacrifice the right and opportunities of those who have a potential to learn functional speech to develop their language. Simultaneously, many studies of related topics demonstrated certain methodological flaws such as inadequate sample size, problem in time sampling of the verbal samples, inadequate reliability and representativeness, inadequate control of confounding variables, etc. As a whole, understanding the relationship between the verbal communication of adults with autism and their mothers will provide valuable information for developing a treatment approach to

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facilitate more functional verbal communication of adults with autism in the aspect of family.

**Methodology**

**Hypotheses**

The hypotheses of the research are as follows:

1) There will be a significant correlation between language directed utterances of mothers’ speech (as measured by number of utterances in language directed utterances group of the Category System for Analysis of Mothers’ Speech) to social utterances (as measured by number of utterances in socialised utterances group of the Language Function Categories) made by their sons/daughters with autism.

2) There will be a significant correlation between language directed utterances of mothers’ speech (as measured by number of utterances in language directed utterances group of the Category System for Analysis of Mothers’ Speech) to autistic utterances (as measured by number of utterances in autistic utterances group of the Language Function Categories) made by their sons/daughters with autism.

3) There will be a significant correlation between complexity of mothers’ speech (as measured by mean length of utterances) to complexity of speech (as measured by mean length of utterances) of their sons/daughters with autism.

4) There will be a significant correlation between frequency of speech (as measured by total number of utterances) of mothers to the frequency of speech (as measured by total number of utterances) made by their sons/daughters with autism.

**Operation Definition**

Snow (1972) defined that “Utterances were scored by listening to the tapes and making transcriptions as indicated by the phonetic cues and pauses in the speech. Run-on sentences were scored as two or more utterances. Phrases and sentence fragments were accepted as utterances if they were characterized by a complete intonation pattern”. Language Directed Utterances are operationally defined as the items under the category in the Category System for Analysis of Mothers’ Speech (Appendix 1). Socialised Utterances are operationally defined as the items under the category in the Language Function Categories (Appendix 2).

**Subject Selection**

Twenty five adults with autism and their mothers were invited to participate in the study. All the adults with autism came from different Day Service Centres, including Day Activity Centres and Sheltered Workshops for people with mental handicap.

**Selection Criteria**

The subjects of adults with autism had to fulfil the following criteria:

1) being diagnosed as autism by a medical officer
2) aged 16 or above
3) IQ score within the range of moderate mental retardation
4) no evidence of oral motor dysfunction and hearing problem
5) attending a day service centre (either day activity centre or sheltered workshop)
6) living with mother
7) not attending intensive speech or language training programme
8) able to speak comprehensible words

In addition, the mother tongue of the adults with autism and their mothers must be Cantonese. The mothers should not receive a parent training programme on a related topic beforehand. The above selection criteria were set to try to control the variables that might affect the language function of the autistic adults and the speech of the mothers as found in previous studies.

**Instrumentation**

The following measuring tools were applied for the required measurement:

1) Validated Chinese Version of Category System for Analysis of Mothers’ Speech and
2) Validated Chinese Version of Language Function Categories

Category System for Analysis of Mothers’ Speech (CSMAS) (Howlin et al., 1973) was developed by inductive analysis of the mothers’ speech during recording session and reviewing previous related category systems (e.g. Friedlander et al., 1972). The category system encompasses almost all types of speech shown by mothers of young autistic and normal children (Appendix 1). The Language Function Categories (LFC) (Cantwell et al., 1977) was developed on the previous framework of Cunningham (1968). The instrument is for measuring the language function of autistic clients (Appendix 2). The two instruments (CSAMS and LFC) were translated into a Chinese version and have been validated with the result of a high content validity (average rating of items = .43 and .45 which is between agree and strongly agree on items in the 5-point Likert scales rated by 5 panel experts), inter-rater reliability (ICC = .93 and .93 among three raters) and test-retest reliability (r = .71 and .91).

The original version of the above two category systems had been used in several related studies (Wolchik and Harris, 1982; Wolchik, 1983; Konstantareas et al., 1988; Howlin and Rutter, 1989).

**Mean Length of Utterances and Total Number of Utterances**

Mean Length of Utterances (MLU) and Total Number of Utterances (TNU) were commonly reported in language sampling studies and had been the major factors for measuring language development (McCarthy, 1930, Frank et al., 1976; Conti-Ramsden and Dykins, 1991; Krug et al., 1993). MLU had been used widely to reflect the complexity of language development of an individual while TNU was used to show the frequency of speech. Inter-rater reliability coefficients of mother’s MLU and child’s MLU were reported as .93 and .99 respectively (Cunningham et al., 1981)

**The Childhood Autism Rating Scale**

As the degree of severity of the autistic level of an individual is also correlated to his language development, The Childhood Autism Rating Scale (CARS) (Schopler et al., 1988) was used for every autistic subject. CARS is a 15-items behavioural rating scale developed to identify children
with autism, and to measure the degree of severity of the autistic level of an individual. Reliability and validity of CARS are well documented.

Data Collection

Two audio-recording sessions, conducted within 10 days, were implemented for each of the 25 pairs of subjects (mother and her son/daughter with autism) in their home during their natural interaction. The mothers were simply told to do as they normally did when looking after their sons/daughters. The only constraint imposed was that they should be free of other obligations such as cooking a meal (Cantwell et al., 1977). The one hour period for recording was chosen according to the time in which the mother usually has the most verbal interaction with her son/daughter with autism at home without the presence of others.

All recorded verbal interactions between the mothers and the adults with autism were transcribed into transcripts which were then analysed and coded according to the two category systems. The number of utterances of each item and each group in the two instruments were counted. Also, MLU and TNU of each subject’s verbal sample were computed.

In order to reduce the observer-effect, Howlin et al. (1973) suggested the following: i) The data collection procedure will be conducted in a free structure and in a natural home environment (which was supported by Buckhalt et al. 1978; Wetherby and Prutting, 1984; Geller, 1991). ii) Subjects will be allowed to know the observer. iii) Subjects will not necessarily know what exactly the observer will look for so they do not know what to conceal. iv) The first 15 minutes recording will be discarded.

Results

Correlation of Language Directed Utterances of Mothers and Socialised Utterances of Adults with Autism

The result of the Partial Correlation Coefficient Test (TABLE I) showed that there was a significant correlation between the Socialised Utterances (C2) of the adults with autism, which included the number of utterances of the five items under the socialised utterances group (Appendix 2) and Language Directed Utterances (MI) of the mothers, which included the number of utterances of the ten items under the language directed utterances group (Appendix 1). The partial correlation coefficient was .77 (p = .00) when other confounding variables (including CARS score, IQ level and mother’s educational level) were controlled. However, the correlation between Non-language Directed Utterances (MII), which included the number of utterances of the five items under the non-language directed utterances group (Appendix 1), and Socialised Utterances (C2) was not significant (p = .21). In the further examination of the correlation between each item in the Language Directed Utterances of mothers and the Socialised Utterances of adults with autism by the same test (Table II), the results showed the items: Questions, Echo (exact), Mitigated echo, Reduction, Expansion, Prompt, Correction and Reinforcement of the Language Directed Utterances of mothers significantly correlated with Socialised Utterances of adults with autism.
### TABLE I

**Relationship between the Utterances of Adults with Autism and of their Mothers**

<table>
<thead>
<tr>
<th></th>
<th>MI Correlation Coefficient</th>
<th>MI Sig.</th>
<th>MII Correlation Coefficient</th>
<th>MII Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>.09</td>
<td>.67</td>
<td>-.12</td>
<td>.60</td>
</tr>
<tr>
<td>C2</td>
<td>.77**</td>
<td>.000</td>
<td>-.28</td>
<td>.21</td>
</tr>
</tbody>
</table>

**Notes**

C1 = Echolalic and autistic utterances; C2 = Socialised utterances
MI = Language directed utterances; MII = Non-language directed utterances
** p < .01 (2-tailed)

### TABLE II

**Relationship between the Items of Language Directed Utterances and Socialised Utterances**

<table>
<thead>
<tr>
<th>Socialised utterances</th>
<th>Correlation Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>.63**</td>
<td>.00</td>
</tr>
<tr>
<td>Answers</td>
<td>.15</td>
<td>.55</td>
</tr>
<tr>
<td>Echo (exact)</td>
<td>.48*</td>
<td>.04</td>
</tr>
<tr>
<td>Mitigated echo</td>
<td>.57**</td>
<td>.01</td>
</tr>
<tr>
<td>Reduction</td>
<td>.61**</td>
<td>.01</td>
</tr>
<tr>
<td>Expansion</td>
<td>.49*</td>
<td>.03</td>
</tr>
<tr>
<td>Directed mimicry</td>
<td>.03</td>
<td>.74</td>
</tr>
<tr>
<td>Prompt</td>
<td>.54*</td>
<td>.02</td>
</tr>
<tr>
<td>Correction</td>
<td>.70**</td>
<td>.00</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>.66*</td>
<td>.00</td>
</tr>
</tbody>
</table>

*p<.05 (2-tailed)  **p<.01 (2-tailed)

Then, Wilk’s Lambda test for discriminant analysis was applied to determine the best predictor(s) from the correlated items to predict the Socialised Utterances of the adults with autism. The use of discriminant analysis allows all the variance to remain within calculations until a final solution has been achieved. Further, the use of Wilk’s Lambda test was recommended by Portney and Watkins (1993). The result (TABLES III and IV) showed there were two items in the Language Directed Utterances which had a most significant effect in the correlation with the Socialised Utterances. Therefore, the best predictors of the Socialised Utterances of the adults with autism were “Reinforcement” and “Questions”.

The canonical correlation for a discriminant function is the square root of the ratio of the between-groups sum of squares to the total sum of squares. Squared, it is the proportion of the total variability explained by differences between groups. According to the Standardised Canonical Discriminant Function Coefficients shown in TABLE III, the proportion of the total variability explained by the independent variables “Reinforcement” and “Question” were 78% and 22% respectively. Furthermore, the figures of Wilk’s Lambda shown in
TABLE III
Standardised Canonical Discriminant Function Coefficients

<table>
<thead>
<tr>
<th>Function</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement</td>
<td>-5.37</td>
<td>.78</td>
</tr>
<tr>
<td>Question</td>
<td>5.42</td>
<td>.22</td>
</tr>
</tbody>
</table>

TABLE IV
Wilks’ Lambda Test

<table>
<thead>
<tr>
<th>Test of Function(s)</th>
<th>Wilks’ Lambda</th>
<th>Chi-square</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 through 2</td>
<td>.00**</td>
<td>176.81</td>
<td>.00</td>
</tr>
<tr>
<td>2</td>
<td>.00**</td>
<td>64.53</td>
<td>.00</td>
</tr>
</tbody>
</table>

**p<.01

TABLE IV were all significant (p<.01) which indicated the significant difference of group means.

**Correlation of Total Number Utterances and Mean Length of Utterances of Adults with Autism and of their Mothers**

Likewise, there was a significant correlation between the MLU of adults with autism and that of the mothers with r = .48 and p = .04 (TABLE V) when the confounding variables (including CARS score, IQ level and mother’s educational level) were controlled. But, no such significant correlation was found between the TNU of adults with autism and that of their mothers. That is, the complexity of utterances of adults with autism and that of their mothers were significantly correlated while the correlation between the frequency of utterances of them was not significantly observed.

**Discussion**

**Correlation between Utterances of Adults with Autism and their Mothers**

The result supports the findings of Howlin and Rutter (1989) that there is a close relationship between the Language
Directed Utterances of the mothers and the Socialised Utterances of the adults with autism which is the main hypothesis of this study. It suggests that if the mothers increase their Language Directed Utterances, it is possibly followed by the increase of Socialised Utterances of the adults with autism. But a significantly decreasing of Echolalic and Autistic Utterances of the adults with autism might not occur simultaneously. The significant correlation \((r = .77, p = .00)\) suggests that Language Directed Utterances of the mothers is one of the major factors affecting the Socialised Utterances of persons with autism even when they became adults.

**Correlation of Mean Length of Utterances and Total Number Utterances between Adults with Autism and their Mothers**

The result implies that the complexity of utterances of the mothers is highly correlated to the complexity of utterances of the adults with autism. But the frequency of their utterances is not correlated significantly. In the verbal sample of some of the subject pairs, the mothers tended to speak more and more in an attempt to facilitate more speech from their sons without paying attention to whether their sons were ready to respond. On the other hand, some of the mothers just kept quiet most of the time with TNU less than 20 within half an hour. It was similar to the behaviour of the mothers in the control group of Howlin and Rutter’s (1989) study namely that the mothers just give up the attempts to elicit a language response from their children with autism. For when the mother speaks more it doesn’t mean the person with autism will speak more as well. Further, some mothers tended to modify their speech to a lower level in order to facilitate more verbal response from the autistic subjects. This phenomenon was reflected by the significant correlation of MLU of both parties. Harris et al. (1983) reported that children with language problems responded better when the parents modify their speech to meet the needs of the children. The more attempts the child makes, the more opportunities for the parents to respond with reinforcement, prompts, modelling and other language directed speech. However, inappropriate verbal stimulation would sometimes facilitate maladaptive verbal response. For instance, asking the same question repeatedly and quickly or persistent use of disapproval speech would demotivate the verbal response of the adults with autism. As Kozloff (1973) stated in the Social Exchange Theory, “Sensitivity to the patterns of interaction that arise between parent and child . . . can allow one to pick up some very subtle but important transactions that serve to sustain maladaptive patterns of behaviour”.

**Clinical Implications**

This study reflects that the mothers’ speech could improve the language function of adults with autism. It suggests that an increase of utterances of the items Questions, Echo (exact), Mitigated echo, Reduction, Expansion, Prompt, Correction and Reinforcement in mothers’ speech might possibly be followed by an increase in the Socialised Utterances of adults with autism. In addition, the result from the discriminant analysis shows that two items (Reinforcement and Questions in sequence from the strongest correlation to less strong correlation) were the best predictors of Socialised Utterances of adults with
autism. That is, if we try to change the mothers’ speech to facilitate a more functional verbal behaviour of adults with autism, it should be considered to focus on the changes of these two aspects of utterances.

Furthermore, the findings of the study revealed two important concepts regarding the verbal communication between the adults with autism and their mothers. Firstly, the mutual reinforcement of their verbal interaction. The significant result of the correlation between different variables consistently showed the importance of the effect of mutual reinforcement in the verbal behaviour of the two parties in their conversation. When the mother found the correct way to facilitate the verbal response from their sons/daughters, the adults with autism would tend to respond more and also appropriately which would simultaneously reinforce the mother to use more language directed speech in her verbal behaviour. That is, the mother who asks more questions or provides more reinforcement will tend to receive more socialised verbal response from her son/daughter. As a result, the socialised verbal response from her son/daughter will tend to further reinforce the mother to ask more questions or to provide more reinforcement in return. It is just like a continuous cycle. However, if the mother didn’t generate effective verbal behaviour to facilitate meaningful speech from her son/daughter, the mute or inappropriate verbal response will probably reduce the mother’s motivation further to try speaking to her son/daughter as stated by several mothers during the interview “It is useless to talk to him. He is unable to communicate anyway”. Also, the mother might respond with non-language directed utterances, such as disapproval, which showed no significant correlation to socialised speech of the adults with autism (TABLE I). As stated in the social exchange theory, a person will repeat those responses which are rewarded; whenever the responses of a person in an exchange are reinforced by the responses of the other, the exchange itself will tend to be repeated. Therefore, continuous effective verbal interaction between mothers and their sons/daughters with autism is of paramount importance. Secondly, the importance of maintenance. Speech performance of the adults with autism and the verbal interaction between them and their parents should be maintained. This way the language function of the adults with autism could be improved gradually and deterioration of their speech performance could be prevented. However, in fact many parents, and even the community, will shift the focal area to a more functional survival skill such as work, self maintenance, behavioural control etc. of their autistic sons/daughters when they become adults, and comparatively less attention will be paid to their language development. Furthermore, it is the case that usually the motivation, enthusiasm and expectation of the parents for their sons/daughters with autism will be diminished gradually as they are growing up. Many parents are frustrated and burnt out after the extremely long period of struggling, especially when there is no adequate support. However, if the parents do not attend to the language development of their adult children with autism continuously, the children will lose the opportunities to continuously practice, to learn and to improve their language function. As a result, the adults with autism may deteriorate and become more unable to communicate with others by verbal means. It might possibly affect the development of their social relationships, too.
Recommendations

For further action to explore the topic, it is highly recommended to carry out further studies aimed at clarifying the nature of this correlation and to determine ways to cause a change on the language function of the adults with autism. Studies with experimental design to improve the mothers’ speech according to the findings of this study, to see whether the language function of adults with autism would be improved is highly recommended.

Summary

In this study, twenty five adults with autism and their mothers were audiotaped in their natural home environment during their interaction. Two validated Chinese versions of measuring tools: Category System for Analysis of Mothers’ Speech (Howlin et al., 1973) and Language Function Categories (Cantwell et al., 1977) were chosen to assess the verbal samples collected from those subjects. In addition, measurements such as standardised instruments CARS, MLU and TNU were administered to the autistic subjects to control confounding variables.

The results of the main study showed support for the hypothesis that there is a significant correlation between the Language Directed Utterances of the mothers and the Socialised Utterances of the adults with autism. Furthermore, some predictors from the items in Language Directed Utterances, for prediction of the Socialised Utterances of adults with autism were identified. The complexity of speech between adults with autism and their mothers was found to be significantly correlated. The findings suggest the possibilities of improving the language function of persons with autism, even when they become adults, by modifying the speech pattern of their mothers.

Moreover, the study also revealed some important concepts such as mutual reinforcement and importance of maintenance. Clinical implications and recommendations such as possible ways to improve mothers’ speech and future direction for further research were reported.

Acknowledgements

This study would never have been finished without the support and guidance from my academic supervisor Dr. Cecilia Li, Associate Professor, Department of Rehabilitation Science. Her supervision highly enriched my thinking and facilitated me to solve many problems with new perspective of viewpoints. Furthermore, the professional advice regarding statistical issues from Professor Lo Sing-kai also made the part of the data analysis running more smoothly. Participation of the recruited subjects, including the adults with autism and their mothers, was an essential part of the project. Their enthusiasm and assistance helped me a lot during the process of data collection.

Appendix 1

Definition of the Category System for Analysis of Mothers’ Speech
(Howlin et al., 1973)

I. Language directed utterances:
A speech in response to child’s speech or for the purpose of eliciting or changing child’s speech.

(1) Questions: Syntactically marked by ‘why’ or other question word, by subject verb inversion or by intonation. Only scored if mother is
obviously trying to elicit some sort of answer from child. Many apparent questions are actually directions or commands to the child and should be scored as such. For example, “What is your name?” “Where do you live?” “Do you go to school?” would be scored as Questions, whereas “Would you like to go and get your book?” “Will you stop doing that?” “Shall we play Lego?” would be scored as Directions or Commands, as appropriate.

(2) Answers: must have a question preceding.

(3) Echo (exact): exact repetition or echoing of the child’s speech.

(4) Mitigated echo: repetition of the child’s speech - but with appropriate change in pronoun, noun, or verbal number. Example: Child - “I don’t want to”; Mother - “You don’t want to”.

(5) Reduction: repetition of only part of child’s speech. Example: Child - “Why don’t you go and mend the window?”; Mother - “Mend the window”.

(6) Expansion: repetition of all or part of child’s speech with more added. Examples: Child - “Yes”; Mother - “Yes, she does”. Child - “Bus”; Mother - “Yes, a bus”.

If in (3), (4), (5) or (6) mother’s repetition indicates (generally by intonation) that the child’s speech is incorrect, it is scored as Correction instead.

(7) Directed mimicry: Instructing the child to say something. Some direct marker, such as the word “Say”, should be present. Example: ‘Say, bye-bye”.

(8) Prompt: Urging the child to say something but with no direct marker present. Generally, some clue as to the correct answer must be given and for an utterance to be scored as a Prompt rather than Question, the response required from the child should be obvious from the tone or content of the question.

(9) Correction: a response by the mother which by intonation or content clearly implies that what the child has said, or the way in which he has said it, is incorrect. Repetition of what the child has said may or may not occur. Correction may be of: Syntax, Semantics, Fact or Articulation. Examples: Child - “You want a biscuit” (when asking for a biscuit); mother - “I don’t want a biscuit” or “Who wants a biscuit”. Child - “It’s an eye”; Mother - “No, it’s mascara”. Child - “The pram has 4 wheels”; Mother - “It has only 3 wheels”. Child - “Tree”; Mother - “No, three”.

(10) Reinforcement: word or comment by mother which indicates that she is listening to child or approves what he says, e.g. “Uh huh.” “That’s good.” “Right”, etc.

II. Non-language directed utterances:

Speech or response to child’s activities and general comments.

(11) Direction: including demands or suggestions. Examples: “Let’s play Lego”. “Are you going to come and kiss me better?”

(12) Statement: mother is obviously expecting no response, either verbal or otherwise, to her comments. Examples: “Isn’t it a lovely day?” “Isn’t she a good girl?”

(13) Approval: including remarks of affection, obviously no answer expected. Examples: “That’s a very good boy.” “You’re a nice boy, aren’t you?”

(14) Disapproval: including remarks implied criticism, either by tone or content. Examples: “Don’t do that”. “You are a very naughty boy.”

(15) Indirect modelling: story telling, reading, reciting nursery rhymes, counting, singing, etc. by mother.

III. Other:

Speech not classified in above categories.

(16) Interjection: words or sets of sounds used as a sudden remark usually expressing feeling, including exclamation. Example: “Oh!”

(17) Incomprehensible: either part or whole of utterance inaudible.

Appendix 2

Definition and Examples of Language Function Categories
(Cantwell et al., 1977)

A. Echolalic and autistic utterances

(1) Immediate repetition of self: utterances in which the child repeats himself, either exactly or with slight variation are considered "immediate
repetitions of self’. The repetitions need not follow the original utterance absolutely immediately: occasionally other interpolated remarks may occur. Example: Child - “And a dog”; Mother - “And a horse”; Child - “And a dog”. And a dog. And a dog.

(2) Immediate repetitions of other: In cases in which the child repeats the mother’s utterance, either exact or with slight modifications, the utterance is considered to be an ‘immediate repetition of other”. Example: Mother - “Distracting me”; Child - “With you distracting me”. Immediate repetitions of other were sub-classified according to their structure: (a) exact repetitions: in which the mother’s utterances are repeated exactly. (b) reduced repetitions: in which only part of what the mother says is repeated. (c) expanded repetitions: in which the child repeats something the mother says but adds on some words of his own. (d) mitigated repetitions: in which the child makes the appropriate changes in number and person when he repeats the mother’s utterance.

(3) Delayed stereotyped echoes: refers to stereotyped utterances which the child apparently heard before and is repeating verbatim. These can be phrases from the radio or television or utterances that other people have spoken to the child. Example: (to himself) “Hello, everybody and welcome to the Tony Blackburn Show”.

(4) Action accompaniments and thinking aloud: refers to utterances in which the child is apparently ‘talking to himself’. Example: Child - (while blowing bubbles) “Up, up. The bubble is going up.”

(5) Metaphorical or Telegraphic utterances: refer to utterances whose usage is idiosyncratic and whose meaning cannot be determined. Examples: “A love from me”, “Boot 50”, “A grandma pie”.

B. Socialised utterances

(6) Questions: refer to attempts on the part of the child to elicit the information from the mother. These may be marked either by intonation or by syntactic structure. Examples: “Now it is whose turn?” “That’s mummy?” (for ‘is that mummy?’).

(7) Answers: refers to the child’s responses to maternal questions, prompts, or directions. Includes both appropriate and inappropriate responses to questions, “completions” to incomplete sentences, and both refusals and agreements to follow directions. Examples: Mother - “read this page?”; Child - “I not read that”. Mother - “Who can you see?”; Child - “The plank”.

(8) Spontaneous remarks: refers to utterances in which the child makes some voluntary comment to the mother. Can follow a conversation course or can introduce a new conversational topic. The so-called “self-commands” in which the child expresses his desires are also considered spontaneous remarks. Example: “I want to play”.

(9) Directions, demands: utterances in which the child is directing or telling the mother to do something are scored as directions. Examples: (in playing a card game) “Your turn”, “Gimme that”.

(10) Automatic language: refers to so-called “Intra-Verbal” utterances such as “Hello”, “Please”, “Thank you”, “Excuse me”; to emotional words such as “Damn” etc., and to learned wholes such as strings of numbers, the alphabet, or nursery rhyme phrases. These are the categories of language that are now thought to be processed in the right hemisphere of the brain. Examples: “Humpty Dumpty sat on a wall”, “One, two, three, four, five, six, seven, eight, nine, ten”.

C. Other:

(11) Non-Verbal: refers to grunts, groans, screams etc. Also, humming a tune with no words present. (Singing with words present was scored as “Automatic”.)

(12) Incomprehensible: refers to utterances that are completely or partially incomprehensible such that scoring into any other category was not possible. If it was possible from intonation or other clues to determine that the utterance was, for example, a question, it was then scored as a question even if the actual words could not be made out.

References


