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ABSTRACT

Three Downs Syndrome children (1 to 4 years old) and their mothers and four graduate student clinicians participated in a study of adult-child interaction and child comprehension. Mothers were asked to assess their child's comprehension in informal preliminary interviews, children were tested for early-developing linguistic comprehension, and both the mothers and their children and the students and the children were videotaped in a series of 10-minute play sessions. After each play session the students were asked to judge the children's comprehension. Videotapes were analyzed regarding verbal requests, gestures and child-adult interaction. Results were compared with an earlier study, and similarities were found in the number of requests made by the adult samples and in the strategies for facilitating compliance. However, compliance rate was markedly different. Both students and mothers were generally accurate in their estimates of the children's comprehension competencies. Findings suggested the importance of pause time in predicting whether children would eventually comply with the requests. (CL)

Comprehension in Young, Language-Impaired Children: How Mothers (And Others) Help

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Introduction

In a paper presented to the Asha convention in 1980, Chapman, Klee & Miller investigated the mismatch between mothers' estimates of their young children's comprehension abilities and the comprehension competencies typically attributed to young children by psycholinguists. Their study carefully scrutinized the pattern of interaction observed for 48 mother-child dyads spanning the ages from 10 to 21 months, in an attempt to determine why it was that mothers of children less than two years of age tend to report that their children understand a great deal early on, while studies including those of Miller, Chapman, Branston & Reichle, (1980); and Huttenlocher, (1974) have yielded empirical evidence suggesting quite the contrary.

Chapman and her colleagues specifically looked at two different types of requests which they noted were frequently occurring in mother-child interactions: requests to attend to objects and requests for the performance of an action. What they discovered from analysis of videotaped mother-child play segments was that mothers' perceptions of their children's comprehension could be viewed as related to the children's compliance with these two types of maternal requests.

More specifically, their analyses revealed that to some degree successful compliance by the children had probably been facilitated by widespread use of gesture on the mothers' part; another aspect of the children's compliance

with the requests was the fact that the mothers were accepting what the authors termed "pseudosuccesses" for compliance. That is, the mothers would request an action or ask the child to attend to an object when the child was already in the act of "complying". These "pseudosuccesses" served to inflate the total number of complied-with requests, and similarly inflate the mothers' impression that the children were comprehending what was requested of them. According to the authors, these findings were important because they demonstrated that mothers' overestimation of their children's comprehension abilities had some systematic foundation.

We wanted to know whether these categories and this particular methodology used to study maternal views of the comprehension abilities of young, normally-developing children would be useful in investigating comprehension within mother-child interactions where the children were language-impaired. For example, were language-impaired children and their mothers involved in similar comprehension "cycles", the term used by Chapman and her colleagues to describe portions of conversations between mother and child where the mothers appeared to be "trying to get the child to attend to an object or carry out an action (p.4)". If the mothers of language-impaired children were providing similar cues and timing devices for their children, were their children responding to them, and utilizing them, in the same

manner and to the same extent as the normally-developing children had done?

Beyond viewing these interactions with mothers and children, we also wanted to investigate how clinicians as the interactants would change what we observed, if at all. It has been our experience that clinicians-in-training often overestimate the comprehension abilities of their young, language-impaired clients. In our experience, then, students appear likely to make assumptions about language comprehension that mothers have been shown to do.

This preliminary investigation asked two major questions:

1. Do the mothers of young, language-impaired children demonstrate the same sorts of strategies mothers of normally-developing children have been shown to use when requesting attendance to objects or the performance of actions from their children?

2. How do graduate student clinicians compare with the mothers of the language-impaired children in terms of the strategies used when making requests, and the subsequent impressions the students have of these children's comprehension abilities?

Procedure

Subjects

Each of the three children who served as subjects had been diagnosed shortly after birth as having Downs Syndrome. At the time of testing the children were 1:8 (Child A), 3:10 (Child B), and 4:4 (Child C) (years:months). All three of the children were male. As the identifying information provided in Appendix 1 suggests, each child was functioning considerably below age expectation in both receptive and expressive language.

In addition to the mothers of the three subjects, four graduate students were selected to participate in the study from a group of students who had voluntered for the project. Three of the students were in their second year of graduate training and the remaining student had begun her graduate program several weeks prior to the start of the study.

Data Collection

Several data collection activities were completed. First, the mothers were interviewed informally and asked to provide their assessment of how much of what was said to their children was typically understood, and to describe the behaviors their child presented which led them to that assumption. Second, each child participated in a language comprehension test similar to that described by Miller and his colleagues (1980), to determine the child's linguistic comprehension abilities. During this test which assesses eight levels of early-developing linguistic comprehension, the examiner was careful to provide no cues to assist task compliance (e.g. gesture). The highest task level passed is also listed on the handout. Third, the mothers and their children, and the clinicians and each of the three children were videotaped in a ten-minute play session. A large box of toys was present in the room and the adults were told to "just play" with the children. None of the adults were apprised of the focus of the experiment until its completion. After each play session the students were asked

to complete a survey form which asked them to make several judgments about the child's comprehension abilities.

Following the play sessions, the taperecordings were transcribed and analyzed. As had been done in the Chapman, Klee & Miller study, two different types of verbal requests were coded: requests to perform actions (RA), and requests to attend to objects (RAO). Explanations of these two categories are provided in Appendix 2. In addition to determining where these requests occurred and demarcating the request "cycles", additional judgments were made in order to provide information which could be directly compared to the findings reported by Chapman and her colleagues. Specifically, the use of gesture was noted, as were the use of the child's name in the request, the use of object names, and whether or not the request was timed so that the child had begun to respond prior to the adult's request.

Results

I. Number of requests

In terms of the numbers of requests which made up the adult samples, our findings were strikingly similar to those of the Chapman et al. study. Where seven percent of the utterances produced by the mothers in the Chapman, Klee & Miller study were requests for attention to objects, and 15% of their utterances were requests for action, the three mothers of the language-impaired children in our study produced requests for attention to objects 8% of the time,

and requests for action comprised 13% of their utterances. The graduate students' request percentages were similar to the mothers': 7% of their utterances were requests for attention to objects, and 14% were requests for action.

II. Number of cycles and compliance

On the average, the adults in our study produced 24 request cycles per 10-minute passage, although the range of request cycles was formidable, with one student producing 12 such cycles and another producing 43. As would be expected from the percent of utterances by request type given, the request for action cycles outnumbered the requests for attention to object cycles two to one (67% to 33%). When we calculated the percentage of cycles where the adults, either mothers or students, had received compliant responses to their requests, we found that the children complied with requests for attention to objects for 50% of the cycles, and slightly more, 52% of the time for requests to act. The data demonstrated that the mothers were more successful in getting compliance for requests to attend to objects (58%, RAO; 42%, RA) but the opposite was true for the students who demonstrated more success getting compliance for requests for action (47%, RAO; 55%, RA). These percentages are quite different from those obtained by Chapman and her colleagues for their subjects' mothers, who received compliant responses for an average 85% of the requests to attend to objects, and 25% for requests for action. The two older, and more linguistically sophisticated children in our study

were responsible for the higher percentages of compliance to requests for action.

III. Pseudosuccesses

As far as pseudosuccesses were concerned, we did find evidence that both mothers and students were occasionally making requests either for attention to objects or actions, while the children were already in the act of responding. However, there were only eight instances where the presence of a pseudosuccess altered the outcome of a cycle. Therefore, in our data we could not look to pseudosuccesses as appreciably inflating impressions that the young children were comprehending the requests made by the adults.

IV. Strategies facilitating compliance

As Chapman and her colleagues had done, we attempted to determine what in the adults' behaviors had promoted success on the part of the children. The mothers and students in our study rarely used the name of the specific object requested within the form of the request, and rarely did they use the child's name to get his attention. These findings were the same as those reported by Chapman, Klee & Miller. Similarly, we found, as Chapman, Klee & Miller had, that gestures were a frequent accompaniment to both request types: for 74% of the requests to attend to objects, and 62% of the requests for action, although our percentages were considerably lower than those observed with normally-developing children (98%, RAO; 90%, RA).

V. Students' and mothers' impressions of the children's comprehension abilities.

The results of the survey forms completed by the students following their interaction segments with each child, and the informal interviews held with the mothers where they were asked to assess their child's comprehension yielded evidence that both students and mothers were generally accurate in their estimates of comprehension competencies. That is, the mothers and students were generally able to describe how many words per utterance they assumed the child could understand, as well as the types of utterances they understood and based this comment on some particular set of the child's response behaviors. This was not what we had hypothesized we would find. We were further surprised by this finding as it became apparent that the conversational behaviors used by two of the mothers and three of the students ran counter to their estimates of the children's comprehension. That is, only one student and one mother consistently accomodated their request forms, and cycle structures to optimize the opportunity for compliance, and thus, the possibility to infer comprehension.

Subjectively, at any rate, pause time appeared to play an important role in predicting whether the children would eventually comply with the requests. In many instances we suspect that there would have been compliance either at the end of the cycle or long before, had the child had an opportunity to respond. Therefore, we determined that for

these children, at least, the numbers of request forms which appeared per cycle had a lot more to do with the adult's interaction style than it had to do with the child's ability to comprehend what was expected of him. We noted that the mothers were more apt to stack several requests per cycle than were the students. Perhaps we tend to typically think about the importance of pause time when we consider expressive language parameters but these analyses gave us ample opportunity to see just how crucial appropriate latencies can be for facilitating compliance and inferring comprehension. One could easily hypothesize that the lack of appropriate latencies may be even more devastating for the language-impaired child than for the child developing language normally.

REFERENCES

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Appendix I

DESCRIPTION OF SUBJECTS

Subject	Age	SICD (R)	Expressive Lang.	Comp. Task
A	1:8	12 mos.	3 single words (CVs, e.g. mommy, ball, baby)	Level 3
B	3:10	28 mos.	"primarily single words/signs; will produce 2-word utterances if asked"	Level 6
C	4:4	28 mos.	"approx. 35 single words/signs; 2-word utterances if prompted	Level 5

Level 3: Comprehends absent person or object

Level 5: Comprehends possessor-possession

Level 6: Comprehends action-object

Appendix II

CATEGORIES OF VIDEOTAPE CODING:

I. Request for Action: An adult either directly or indirectly requests/asks that the child perform a particular action. For all requests for action determine what the specific action involved is. In other words, what would the child have to do to comply with the adult's request?

ex.: Indirect request, "Who's on the phone?", as child is playing with the telephone receiver could be construed as the adult's request for the child to pick up the phone and hold it to her ear.
ex.: Direct request, "Give me the bell."

II. Request to attend to an object: Adult may or may not use the word "look", "see", or a demonstrative term in the request, but it is understood that the adult has a particular object of attention focus in mind for the child. As with requests for action, you should be able to determine what focus of attention on the part of the child would fulfill the adult's request.

ex.: "Who's this guy?", "Where are those other toys?", "Look here".

For each Request for action (RA) or Request for attention to an object (RAO) you determine, also determine whether:

1. any gestures were used on the part of the adult while the request was made. If so, describe the gesture.

2. the adult used the child's name as part of the request.

3. whether the adult's request was timed so that the child's action was occurring prior to the adult's request, after the adult's request or simultaneously with the request.

4. Finally, determine whether or not the child successfully complied with the request as made by the adult.

III. Determination of Cycles:

According to Chapman, Klee & Miller (1980) these are "stretches of conversation in which the mother was trying to get the child to attend to an object or carry out an action (p.4)." This may appear as one request or several requests of the same type where the compliance segment is the same. For example, Mother: Can you give me the ball, G.? (her hands outstretched) Can you give me the ball? Give Mommy the ball.