Development of Conversational Repair in 2 to 6 year Kannada Speaking Typically Developing Children

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ABSTRACT

A successful communication depends on each partner's ability to recognize communicative breakdowns and to persist until communication is successful. The purpose of this study was to explore the development of conversational repair strategies in 2-6 year old typically developing Kannada speaking children. Conversational repair strategies represent an early developing mechanism that is vital to discourse regulation.56 children with their mothers participated in this study. One hour audio-video sample (recorded in 3-4 sittings)of semi instructed mother-child interaction using toys flash cards, story and picture books, puzzles, building blocks, etc, was collected. Frequency of use of conversational repair strategies (initiated and responded) during mother-child interaction was analysed. The results of this study showed children's ability to initiate and respond for conversational repair strategies increased with age suggesting developmental changes in emergence of repair strategies during the act communication interaction with their communicative partner (i.e. mother).

Keywords: Conversational repair (initiated and responded), Kannada speakers, typically developing children, mother.

1. INTRODUCTION

Communication develops as a result of early social interaction between an infant and his or her caregiver (Alexander, Wetherby

& Prizant 1997). Conversational repair is an early emerging pragmatic behaviour. Leinonen, Letts & Smith (2000) defined pragmatic development as children's progressing ability to use context in language comprehension and expression. The term "repair" came with the work by Schegloff et al. (1977). Wetherby & Prizant (1993) defined communicative repair as the ability to persist in communication and to modify or revise a signal when faced with a failure to communicate. Schegloff, Jefferson & Sacks (1977) broadly classified conversational repair mechanisms into self-initiated repairs and other-initiated repairs based on who initiated the repair sequence and who provided the clarification. In self-initiated repairs, the speaker identifies the source of breakdown and accordingly repairs it by modifying the content of the message. In other-initiated repairs, the listener requests for clarification and the speaker then repairs the breakdown. Repair is not necessarily an "error" or "mistake" and the repair does not necessarily involve a replacement of the problematic speech (Schegloff et al. 1977). Developing the ability to repair communication is an important part of the language acquisition process whereby children become intentional and competent communicators.

Alexander, Wetherby & Prizant (1997) Intentional communication parallels the emergence and development of conversational repair in typically developing children. They reported that to repair conversational breakdowns at the preverbal stage children adopt non-verbal behaviors, at verbal stage children use conventional symbolic behaviors. Corsaro (1977) identified clarification requests as serving different pragmatic functions in adult-child interactions. It was reported that clarification requests made by the adults were used to indicate communicative failures that occurred due to inaudibility or a lack of comprehension of the child's utterance. However, he also observed that they functioned as conversational fillers, or as markers to indicate incredulity or acknowledgment of the child's utterance.

Konefal & Fokes (1984) and Levy (1999) reported that children by 2 years of age are able to identify and repair breakdowns in conversations. Gallagher (1977) identified the

pattern of repairs in 1.6 to 3 year old typically developing children in linguistic stages of development responding to quires of an unfamiliar adult. He found that children modified linguistic forms to repair their misunderstood messages 77% of the time and failed to respond only 2% of the time. Their access to a variety of repair strategies increased over time as their language skills developed.

Brinton, Fujiki, Loeb & Winkler (1986a) studied the repair behaviors of children (aged 2.7 to 9.10 years) to stacked requests of clarification. It was found that older children persist and attempt to respond to all three requests in a stacked sequence whereas younger children only respond to the first request for clarification. Older subjects (7 to 9 years) used additional information to repair the breakdowns. The use of cues (defining lexical items, providing background information, or discussing the source of communicative breakdown in the conversation) was characteristic of only 9-year old subjects. Alexander (1994) conducted a cross sectional study of the ontogeny of repair strategies using the normative samples from the communication and symbolic behaviour scales. 30 samples from each of the language development stage: prelinguistic (mean age 12.1 month), early one word (mean age 14.8 month), late one word (mean age 17.4 month), and multiword (mean age 21.1 month), were considered. Result showed that percentage of repair attempts ranged from 88% in prelinguistic stage to 93% in the multiword stage.

Nishi (2004) developed norms for pragmatic skill acquisition in younger population aged 2.6 to 3.6 years. She reported that repair strategies were found to be above the base level at 2.6 years of age. Nitta (2006) established norms for the development of pragmatic skills for children in the age range from 1.1 to 3 years. Results revealed that with increase in age mean responses for repair behaviour increased, indicating developmental changes in emergence of pragmatic skills in typically developing children. Dheepa & Shyamala (2008) developed a protocol to identify sequential development of pragmatic milestones in typically developing children in the age range from birth to eight years.

Results showed that children responded for repair strategies by 2 years of age.

Conversational repair is a pragmatic behavior that develops parallel to linguistic development. Effective caregiver-child dyads provide the child an opportunity for communication development. Several research studies have reported that there are developmental changes in emergence of conversational repair strategies in typically developing children and also it's been reported that conversational partners influence the type of repair responses used by typically developing children. As professionals, it is important to be aware of the normal aspects of development before we deal with the issues in clinical population. Hence, the present cross sectional study was undertaken with the following objectives

2. OBJECTIVES

1. To study the development of conversational repair strategies in 2-6 year old typically developing Kannada speaking children in the context of mother-child interactions.
2. To find gender differences if any.

3. METHOD

3.1. *Participants*

56 typically developing Kannada speaking children in the age range of 2-6 years (mean age of 4.6 years) in interaction with their mothers participated in this study. Participants were divided into four subgroups, each subgroup consisted of 14 children (7 male each and 7 female each). The subgroups included, 2-3 years (mean age: 2.7 years); 3.1-4 years (mean age: 3.5 years); 4.1-5 years (mean age: 4.9 years); 5.1-6 (mean age: 5.10 years). Participants were screened for normal Speech and Language skills, Cognitive skills, Motor development and Hearing ability.

3.2. *Materials*
Toys and activities suitable for children in the selected age range were included based on guidelines from 'Toy kit for children with developmental disabilities' (Venkatesan 2003). A variety of toys (e.g., balls, dolls, puzzles, building blocks etc.) and educational materials (e.g., flash cards, drawing books, pens, story books) etc.

3.3. *Procedure*
A semi instructed mother-child interactions served as the media through which the conversational repair was assessed. Mothers and children were instructed to play and interact with each other as they would normally do at home using as many of the toys and materials provided to them. An hour's audio-video recording of mother-child interaction was collected in 3-4 sittings for 20-15 minute duration within aweekusing a Sony (DCR-DVD703E) digital video camera recorder. The video camera was handled by the investigator. Recording was carried out at their homes. Neither children nor mothers were informed about which recording would be analysed, the video samples were as natural as they could be.Based on the temperament of the child, adequate rest periods were given between the recordings. At the end of each session, children were provided with tangible reinforcement. During the time of recording except the investigator and mother-child pair, no other person was entertained

3.4. *Judges*
Three speech-language pathologists (postgraduates) served as judges for this study. Recorded audio-video samples were shown to the judges along with the operational definitions/explanatory note and score sheets for analyzing frequency of response. The samples were judged independently by these three judges.

3.5. *Coding procedure given to judges*
The recoded video samples of mothers-child interaction were subjected to frequency calculation. Frequency referred to the number of instances of repair strategies initiation from mother

and responses given by each child and self-initiation of repair by each child.

1. **Self-initiated repairs by child**: Identifying the source of breakdown and accordingly repairing it by modifying the content of the message. Example: non-specific request for repetition ("huh" "what" "say again" "pardon" "I didn't understand"); specific requests for repetition; request for confirmation; direct request; relevance request (Garvey 1977 and Brinton & Fujiki 1989)
2. **Mother's initiation of repair**: The responses obtained from each child to mother's initiation of repair strategies was grouped into two categories namely, response and no response.
   a. **Response for repair**: Contextually appropriate response (gestures and / or utterances) from the child that occurred to mother's initiation of conversational repair. Example: Repetition, revision, addition, expansion, cue, simplification, keyword, explanation (Gallagher 1977; Brinton et al. 1986a; Most 2002).
   b. **No response for repair**: child ignoring mother's question without answering. Responses out of topic were also grouped in "no response" category.

3.6. *Inter-judge reliability*

For each pragmatic skill, inter-judge reliability was calculated among the three judges. Reliability co-efficient alpha was calculated and it was found to be 0.7 to 0.8 indicating high reliability between the judges.

4. RESULTS AND DISCUSSION

The findings in the developmental literature illustrate that conversational repair is an early emerging pragmatic behavior that develops parallel to intentional communication. The purpose of this study was to explore the conversational repair strategies (initiated and responded) by typically developing children to communication breakdowns that occurred during interaction with

their mother. Conversational repair used during mothers-child interaction was subjected to frequency calculation. Frequency referred to the number of instances of self-initiated repairs by children and responses given by child for repair initiated by mother. For this purpose, the following research questions were of interest to the study:

Research questions 1: Are there any gender differences in frequencies of using repair strategies (initiated and responded) to repair communication breakdowns?

In order to check for the presence of gender effect on conversational repair, Mann-Whitney U test was carried out. These analyses revealed that no significant differences at .05 level of significance were present between male and female participants of the study. Hence, in the final analysis, data was combined.

Research questions 2: Frequencies of conversational repair strategies (initiated and responded) use to repair communication breakdowns by 2-6 year old typically developing Kannada speaking children in the context of mother-child interactions?

Table 1. *Mean & SD values for repair strategies (initiated and responded) by typically developing children*

Conversational repair	2.1-3 years		3.1-4 years		4.1-5 years		5.1-6 years	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Request for repair	12.00	4.02	12.75	3.84	19.83	5.59	23.75	7.63
Response for conversational repair	70.60	10.00	70.31	11.95	79.92	5.52	80.91	4.62

Table 1. Shows mean and SD values for conversational repair (initiated and responded). The results of this study showed that repair strategies (initiated and responded) emerged at the age of 2 years. The results are in consistent with earlier research

Gallagher (1977); Konefal & Fokes (1984); Levy (1999); and Dheepa & Shyamala (2008) demonstrating that children by 2 years of age are able to identify and repair breakdowns in conversations. Performance of participants in the age of 2.1-3 years and 3.1-4 years were similar for both initiation and response for conversational repair for communication breakdown. Their access to a variety of repair strategies increased over time as their language skills developed (i.e. from 2 to 6 years) indicating developmental changes in emergence of pragmatic skills in typically developing children. This result is in support with Brinton, Fujiki, Loeb & Winkler (1986a); Alexander (1994); and Nitta (2006).

Duncan's Post Hoc test was carried out to check pair wise differences between the age groups:

Table 2. *Duncan's test at 0.05 level of significance for conversational repair strategies (initiated and responded) by typically developing children*

Age (in years)	Conversational repair	
	Request for repair	Response for conversational repair
2.1-3 & 3.1-4	NS	NS
2.1-3 & 4.1-5	S	S
2.1-3 & 5.1-6	S	S
3.1-4 & 4.1-5	S	S
3.1-4 & 5.1-6	S	S
4.1-5 & 5.1-6	S	NS

S: significant; NS: not significant

Table 2. Shows results of Duncan's test at 0.05 level of significance (pair wise comparison). The results indicated that, there were no statistically significant differences at .05 level of significance for pairs 2.1-3 years & 3.1-4 years for request and response for conversational repair during communication breakdown and for the age group of 4.1-5 & 5.1-6 on response for conversational repair. Other age groups did show statistically significant differences at .05 level of significance for both initiation and response for conversational repair.

Research questions 3: What are the types of conversational repairs (initiated and responded) used by 2-6 years old typically developing children?

Children in the age 2 to 4 years were more likely to use non-specific request for repetition: "huh" "what" for self initiation of repair. Repetition and keyword were used as response for mother's initiation of repair. Children in the age 4 to 6 years used non-specific request for repetition ("what" "say again" "I didn't understand"); specific requests for repetition; request for confirmation; direct request; relevance request for self initiation of conversational repair. Repetition, revision, addition, expansion, cue, simplification, keyword, and explanation as response for mother's initiation of conversational repair.

The findings do illustrate that although conversational repair is an early emerging pragmatic skill, developmental differences exist in the manner in which breakdowns are resolved. In addition, older children may have had more communicative opportunities that enabled them to effectively identify need for conversational repair (initiated and responded).

5. CONCLUSION

Use of conversational repair strategies is an integral part of the language acquisition process. This study describes the repair strategies (initiated and responded) used by typically developing Kannada speaking children for the communication breakdowns occurring in their interaction with their mother during play activities. The results of this study revealed no significant differences between male and female participant's ability to initiate and respond for conversational repair. The findings also illustrate developmental differences from 2-6 years in the kinds of repair used, with older children using a wider range of repair to resolve the breakdowns. These findings do illustrate the developing pragmatic competence of children in engaging and managing ongoing discourse with adults. The present study adds new information to the existing literature on development of repair strategies in typically developing children. Such a study

would serve as basis for assessing and planning intervention for various clinical populations with pragmatic difficulties.

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