Conversation Analysis in Tamil Speaking Male Children

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Abstract

Introduction: The present study aims to profile the conversation behaviors of typically developing Tamil speaking male children in the age range of 3–5 and 7–9 years. **Methods:** The participants of the study were twenty typically developing Tamil speaking male children in the age of 3–5 years and 7–9 years. Ten mother–child dyads were videotaped in each group. The recordings were orthographically transcribed. Three to four elaborated topics were selected from the transcribed data of each child. Each topic was analyzed for the following behaviors: (1) topic initiation, (2) topic maintenance, (3) request for repair, (4) conversation repair, (5) nonverbal behavior, and (6) topic termination **Results:** Comparison of the younger children (3–5 years) dyad with the older children (7–9 years) dyad indicates a significant difference in orientation under topic initiation, conversation information under topic maintenance, responding to request under conversation repair, and nonverbal behavior. Discontinuous turns and abrupt topic termination were present only in the younger group dyad. **Conclusion:** This quantitative approach provides a method of measurement of the conversation behavior. This knowledge will be helpful for making assessment and planning for intervention for children with conversation difficulties.

Keywords: Conversation, conversation repair, dyad, topic

INTRODUCTION

According to Hymes,[1] acquiring language involves not only mastering the grammatical knowledge but also the ability as to "how to communicate effectively" or "pragmatic development." There are three aspects of pragmatic development. The first is communicative intentions, the second is the way the child understands and responds to the communication of others, and the third is how the child involves in interaction and conversation. Conversational has different components such as initiation, taking turns, changing topic, making repairs, and terminating conversation.[2] Conversation is organized into topics. A topic is a sequence of utterances that relate to each other and to a theme.[3]

Topic maintenance which is the central aspect of conversation can be analyzed to compose of several subphenomena such as turn taking, changing topic, and repairing of conversation. Garvey[4] showed that both repetition and variations of others utterances were used to maintain conversation through age 5 years. Young children used more of sound play to maintain conversation rather than true topic cohesion. Young children's conversation often declines into playing with words, repetitions of words or phrases, and other contents less talk to maintain a conversation.

Keenan and Klein[5] analyzed conversation in young children and showed that imitation was used as a primary tool to maintain coherence across turns. Nelson and Gruendel[6] said that young children often do not engage in real dialog because they are not able to develop topics of conversation. Luszcz and Bacharach[7] reported that children at a young age have deficits in understanding connections between conversation topics.

In a study by Schley and Snow,[8] children aged between 7 and 12 years were told that he or she has to interview an adult as if for a television show like Phil Donahue or Geraldos. The adult was instructed to answer questions but not to be helpful in maintaining the conversation going. The talk show setting was one where the children's skills at initiating and maintaining topics were severely tested. They found that children who got higher ratings as conversational partners in the talk show used questions related to previous utterances and avoided close-ended questions and silent pauses of long duration.

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These children elicited elaborate responses from their adult conversation partner.

In peer–peer conversation, Dorval and Eckerman[9] reported that children in second grade produced the highest percentage of unrelated conversational turns and children in ninth grade had a greater portion of factually-related turns. Thus, older children had topic coherency in sophisticated ways than younger children. Parab[10] showed a smooth transition to conversational competence in all the four conversational parameters (exchange structure, turn taking, repairs, and cohesion) from 4-year-old to 10-year-old children. Kluwin[11] showed that school-aged children had increasing control with age and were well aware of the topic being discussed.

Conversation repair is a conversation organization that restores and maintains understanding among conversation partners.[12] Conversation repair deals with some problem in message transmission encountered either by the speaker or by a recipient.[12] Breakdown of message transmission is repaired by the use of clarification requests. A study by Garvey[13] showed that most 10 year olds are able to determine communication breakdown and repair the damage. They can reformulate unsuccessful utterances.

Children with language impairment showed difficulty, in turn, taking skills as language becomes increasingly more complex.[14] They may overuse turn-fillers or acknowledgments ("Uh-huh") to keep the conversation going.[15,16] Children with autism generally have deficit in initiating and maintaining topics in conversation[17] and often respond to a conversation partner in a noncontingent manner.[18] The criteria for the diagnosis of autism list "ability to initiate or sustain a conversation with others" as one of the core deficits in children with autism.[19]

To identify the deficits in conversation in children with pragmatic disorders, it is important to understand the normal aspects of conversation in great detail. There exists significant gap of studies on conversation behavior in Indian population. The present study aims to compare the conversational patterns in younger (3–5 years) and older (7–9 years) typically developing Tamil speaking male children.

METHODS

Participants

The participants of the study were twenty native typically developing Tamil speaking male children in the age of 3–5 years and 7–9 years who were attending normal English medium school. Language ability of girls varies from boys in verbal fluency and usage of language.[20] Hence, only male children were chosen in the present study to maintain homogeneity in the group. Informed consent was obtained from the parents of all the participants. Participants were told that this study would help children with difficulty in conversation. The language spoken at home was Tamil. The minimum education level of their mothers was graduate, and

the participants belonged to the middle-income group.[21] The children educational performance was either average or good. Ten mother–child dyads were present in each group. These children were assessed for their speech and language skills using speech and language developmental chart[22] to confirm on their normal speech and language development. Hearing screening was performed informally to rule out hearing impairment.[23,24] Participants who responded to soft sounds/m/,/ah/,/oo/,/ee/,/sh/,/s/ and name call at 5 feet distance were considered to have passed hearing screening.

Procedure

The mother and child sat comfortably on a chair or sofa. Before recording, the dyads were given the following instruction in Tamil "you have to talk to each other, just the way you would talk at home freely." Mother was asked to provide more opportunities for the child to speak. Mothers were asked to provide prompts such as asking questions or requesting elaboration to facilitate the conversation. No specific themes were mentioned to the participants but were given the options of talking about school, family, play, park, toys, etc., of their choice. This helped in viewing the child's behavior with their conversation partner in a semi-structured and semi-naturalistic environment. The mother–child interactions were videotaped using a Canon Power Shot A3200 IS Digital Camera. Each of the recordings was completed in about 15–20 min.

Analysis

The video recordings were orthographically transcribed. These transcribed utterances consisted of several topics. Three to four elaborated topics were selected from transcribed data of each child resulting in a total of 32 topics in the younger group and 31 topics in the older group. The elaborated topic was decided based on the number of turns (12 turns and above). The unit of analysis was the dyad and the interaction rather than the individual behaviors of the child. In the present study, each topic was analyzed for the following behaviors by a speech-language pathologist using the topic analysis format proposed by Jr. Owens[25] [Appendix 1]. (1) Topic initiation, (2) turn-taking, (3) Topic maintenance, (4) topic termination, and (5) conversation repair. The speech-language pathologist had more than 5 years of experience. The coder was blind to participant information. Each aspect is explained in Appendix 2. The categories (topic initiation, nonverbal behavior, turns, and topic termination) were quantified on the basis of a number of counts in both the groups. Then, the percentage frequency of occurrence of a particular behavior was found by the following formula.

Percentage frequency of occurrence of a particular behavior

$$= \frac{(\text{Total frequency count of that behavior})}{(\text{Total number of topics})} \times 100$$

The categories (topic maintenance, request for repair, and conversation repair) were quantified on the basis of frequency of occurrence of a particular behavior for each topic. Then, the

percentage frequency of occurrence of a particular behavior was calculated by the following formula.

Percentage frequency of occurrence of a particular behavior

$$= \frac{\text{(Total frequency count of that behavior)}}{\text{(Total number of turns of a topic)}} \times 100$$

The percentage frequencies of occurrence of a particular behavior were averaged to get the mean for that behavior. Chi-square test was used to find the significance between groups for behaviors based on the number of counts and *t*-test was used for behaviors that were based on percentage frequency in a topic.

RESULTS

It was observed in Table 1 that there was a statistical significance in orientation under topic initiation between the groups ($P = 0.017$).

Table 1: Frequency of occurrence of different behaviors under topic initiation, nonverbal behavior and topic termination between the groups

	Young, *n* (%)	Old, *n* (%)	χ^2	df	*P*
1. Topic initiation					
a. Type of topic initiation					
New	27 (84.4)	21 (67.7)	2.658	2	0.265
Related	4 (12.5)	9 (29)			
Reintroduced	1 (3.2)	1 (3.2)			
Consecutive	0	0			
b. Manner of initiation					
Coherent	25 (78.1)	16 (51.6)	5.371	2	0.068
Noncoherent	0	0			
Shifting	3 (9.4)	4 (12.9)			
Shading	4 (12.5)	11 (35.5)			
c. Subject matter					
Appropriate	32 (100)	31 (100)	0	1	1
Inappropriate	0	0			
d. Orientation					
Self	2 (6.3)	9 (29)	5.671	1	0.017*
Shared	30 (93.8)	22 (71)			
e. Outcome					
Successful	32 (100)	31 (100)	0	1	1
Unsuccessful	0	0			
2. Nonverbal behavior					
Action	15 (57.7)	1 (5.3)	15.332	3	0.002*
Shaking head	8 (30.8)	12 (63.2)			
Laughs	2 (7.7)	6 (31.6)			
Facial expression	1 (3.8)	0			
3. Topic termination					
Abruptly	3 (9.4)	0	4.141	2	0.126
Shifting	20 (62.5)	25 (80.6)			
Shading	9 (28.1)	6 (19.4)			

*P<0.05, *n*: Number of counts

The older children group have initiated nine self-oriented topics as compared to only two self-oriented topics in the younger group. The younger group has initiated a significant number of shared topics (30) than the older group (22). There was a statistical significance in using nonverbal behavior as a response between the two groups ($P = 0.002$). Action as response was present in 15 topics in the younger group as against 1 topic in the older group and shaking head as response was present in 8 topics in younger group as against 12 topics in the older group.

More number of related topics (9) were initiated in the older children as against 4 in the younger children but there seems to be no statistical significance between the groups ($P = 0.265$). All the topics initiated by both the groups were appropriate and successful. Successful initiation of a topic was determined by the way, in which the conversation partner acknowledged the speakers topic by responding, repeating, agreeing or disagreeing, or adding information. There was no noncoherent manner of initiation in both the groups. There were three topics that were abruptly terminated in the younger group as against none in the older group.

It was observed from Table 2 that the mean percentage of new conversational information in a topic is 74.29 (standard deviation [SD] =9.533) in the older group was significantly higher than that in the younger group (mean = 64.38 and SD = 14.158) ($P = 0.002$). There also emerged a statistical significance ($P = 0.002$) between the mean percentage of no new information in the younger group (mean = 29.90 and SD = 11.90) as against the mean percentage in the older group (mean = 21.00 and SD = 8.864). There was also a statistical significance ($P = 0.027$) between the mean percentage of conversation repair in response to the request in 25 topics in older group (mean = 12.24 and SD = 5.044) as against twenty topics in the younger group (mean = 9.05 and SD = 5.744). There were two topics that had 4% discontinuous turn in a topic in the younger group as against none in the older group.

DISCUSSION

The current study extends our understanding of conversation skills in children. The mean number of turns in the younger group was 20 and the mean number of turns in the older group was 19. This showed that greater number of turns will occur in adult–child conversation correlating with the findings of Kaye and Charney[29] and Snow.[30] In an interaction with adults, children tend to look like good turn-takers.

Self-oriented topics were significantly higher in the older group indicating that self-interest of the dyad were reflected more in the conversation of the older group. Shared-oriented topics were significantly higher in the younger group indicating that adults adopt topics of child interest.

An 8-year-old male child

C: (*First rank edduta enga kutittu pova?*) If I get first rank where will you take me? (Self-oriented topic initiation).

Table 2: Mean percentage of the different behaviors under topic maintenance and conversation breakdown between the groups

	Young			Old			t	P
	n	**Mean**	**SD**	**n**	**Mean**	**SD**		
4. Topic maintenance								
a. Type of turn								
Continuous	32	93.66	2.743	31	94.1	1.85	7.45	0.459
Discontinuous	2	4	2.828	0				
b. Conversational information								
New	32	64.38	14.158	31	74.29	9.533	3.250	0.002*
No new	30	29.90	11.9	29	21.0	8.864	3.249	0.002*
Problematic	2	9	5.477	5	7.60	4.159	0.438	0.675
5. Conversation breakdown								
a. Request for repair								
Nonverbal	0			0			0.581	0.564
Verbal	23	11.39	7.656	27	12.52	6.047		
b. Conversation repair								
Spontaneous	17	10.53	7.332	17	7.65	3.408	1.47	0.151
To request	20	9.05	5.744	25	12.24	5.044	1.982	0.027*
6. Number of turns	32	20.41	8.695	31	19.03	6.364	0.714	0.478

Mean is in percentage, *$P<0.05$. SD: Standard deviation

Shared-oriented topic initiation in the younger group.

A 4-year, 6-month-old male child

M: (*mdyanam skoola saptiya?*) Did you eat in the school this afternoon? (Topic initiation - new [type of topic] and shared [orientation]).

A 3-year, 6-month-old male child

M: (*Auto po pudikumma, bus popudikumma*) Do you like to go in auto or bus? (Topic initiation - new [type of topic] and shared [orientation]).

A 3-year, 6-month-old male child

M: (*Nama bus vangalam, car vangalama*) We will buy bus or car?

C: (*Aeroplane vangalam, adu melai pogum*) We will buy aeroplane. That will go up.

M: (*Ni vaccurukiya aeroplane, helicopter bommai*) Do you have aeroplane and helicopter toys.

C: (*Bommai kizha pogum*) Toys will go on the floor (inappropriate).

M: (*Enna bommai vaccurukka*) what toys do you have?

C: (*Aeroplane izhutta poguttu*) If you pull only, aeroplane will go (inappropriate).

M: (*Battery pottadu vangalamma*) we will buy aeroplane working on batteries.

This also shows that with young children, discussion of topics can be object mediated discussions. There were occassional disruptions of order (inappropriate) in young children turn-taking.

A 4-year-old male child

M: (*sari ni pogumpodu, enna sonnan?*) O. K. What did he say while you were going?

C: (*Onnum solalaye*) He did not say anything.

M: (*Ey, pogumpodu nalakki schoolkku*) while going, he said tomorrow school…

C: (*Enna sonnan*?) What did he say? (initial overlap).

M: (*Schoolkku varanum*) You should come to school.

C: (*Schoolkku varanumma, schoolkku ponna ellarayum adikka porranga*) We should go to school. If we go to school, they will beat everyone.

The above example also showed children use imitation as a tool to maintain coherence across turns similar to the findings of the previous study, Keenan and Klein.[5] The interjection (initial overlap) occurred because the listener (the child) was unsure of the speaker's intention. In the present study, there was significant no new information in the conversation of the younger group (29.9%) as against 21% in the older group.

A 8-year-old male child

M: (*Enna dress potta?*) What dress did you wear ? (for dance competition)

C: (*Ulla oru t-Shirt, apparam jins pant, blu colour jins ellarrum pottanga, commona girls yellarrum frock different colourla*) I put a T-shirt inside, then everyone put blue colour jeans pant, girls wore a different color frock.

Thus, with cognitive development, the children can provide elaborate responses to adults' questions. This indicates that

older children have a greater ability to provide new information to maintain topics of conversation. In the present study, there was a significant new information in the conversation of the older group (74%) as against 64% in the younger group. Findings similar to this have been reported by Bloom *et al*.[31] and Bedrosian[28] in adult–child conversation.

A 4-year-old child

C: (*Schoolkku varanumma, schoolkku pona ellarayum adippanga*) If we go to school they will beat us.

M: (*Yaru?*) Who? (Request for repair)

C: (*Ellarayum adikkaporanga*) They will beat everyone.

M: (*Yaru?*) Who? (Request for repair)

C: (*Ellarayyum adikka poranga*) They will beat everyone.

Conversation repair strategies used by children were repetitions and revision of their initial utterances. Young children have limitations on understanding the intentions and requests of the partner.

An 8-year-old male child

M: (*Ni edukku ivvalavu vaala irukka?*), Why are you so naughty?

C: (*Adukkellaam oru kaaranum irukku*) There is a reason for all that.

M: (*Enna karanum irukku?*) What is the reason?

C: (*First, pettavangata puriya vakkannum*) First, mothers have to make us understand.

M: (*enna puriya vakkannum?*) What should I make you understand?

C: (*nalla avanga madiri irukka puriya vaykkanum*), Mothers should make us understand to be good (conversation repair).

An 8-year-old male child

M: (*First rank edu, edutavodanee queensland kutittuporen*) You take first rank, I will take you to queensland.

C: (*Adu inda jenmattulla nadakkadu*) It will not happen in my lifetime.

M: (*En, padiccataan nalladu, padikkamattenla sollakudatu*) Why, if you study only it is good. You should not say that I will not study.

C: (*Miss ozhunga sollitaramattengranga*) Miss is not teaching properly (conversation repair)**.**

In the topic of the 4 years old, the child was not able to answer the request for repair whereas the 8-year-old children were competent enough to answer to the request. In the present study, there was a significant conversation repair in response to request in the older group. Continued request results in providing additional information in older children but not in younger children correlating with the findings of

Brinton *et al*.[32] and Parab.[10] This shows that older children will reformulate to aid comprehension.

A 4-year-old male child

M: (*Povyya, enna pannuva?*). You will go. What will you do? (Swimming)

C: (*Swimming poolla tanni irukkudu, kuduccu kuduccu poven*) *with action*. There is water in the swimming pool. I will jump, jump and go (with action).

A 3-year, 6-month-old male child

M: (*R mela tanni adicicu illa?*) It poured water on R, No (elephant)

C: (*tanni eduttu adicucu*) *with action*. It took water and poured (with action)

M: (*R enna seytan*). What did R do?

C: (*R azhudaan*) R cried

In the present study, there was significant action as response under nonverbal behavior in the younger group similar to the findings of Bates[33] and Sachs.[34] Children use nonverbal strategies in conversation with adults.

A 5-year-old male child

M: (*Yar vizhundutta.*). Who fell down?

C: (*D, nan skid adikkumpodu, avan idiccuittan, avan vizhuntuittan*) D, When I skid, he dashed me and he fell down.

M: (*Sari*) O. K.

C: (*One minute*) (abrupt topic termination).

M: (*eppodum one minitunnu nadula oodidraan*) Always he says 1 min and runs away.

The child terminated the topic abruptly without shifting or shading to another topic.

Conclusion

In the present study, Comparison of the younger children (3–5 years) dyad with the older children (7–9 years) dyad indicate significant difference among the groups in orientation under topic initiation, conversation information under topic maintenance, responding to request under conversation repair, and nonverbal behavior as a response. Discontinuous turns and abrupt topic termination were present only in the younger group dyad. Analysis of conversation behaviors gives us the pattern, in which the conversation skill develops with age. The results of the current study provide evidence of quantitative approach of measurement of the conversation behavior. This knowledge will be helpful for making assessment and planning for intervention for children with conversation difficulties.

Conflicts of interest

There are no conflicts of interest.

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APPENDICES

Appendix 1: Format for rating topics and turns

Categories	Turns												Total	Percentage of total
	1	2	3	4	5	6	7	8	9	10	11	12		
1. Topic initiation														
a. Type of topic														
1. New														
2. Related														
3. Reintroduced														
4. Consecutive														
b. Manner of initiation														
1. Coherent change														
2. Noncoherent change														
3. Shifting														
4. Shading														
c. Subject matter														
1. Appropriate														
2. Inappropriate														
d. Orientation														
1. Self														
2. Shared														
3. Unrelated														
e. Outcome														
1. Successful														
2. Unsuccessful														
2. Topic maintenance														
a. Type of turn														
1. Continuous														
2. Discontinuous														
b. Conversational information														
1. New information														
2. No new information														
3. Problematic														
3. Conversation breakdown														
a. Request for repair														
1. Nonverbal														
2. Verbal														
b. Conversation repair														
1. Spontaneous														
2. In response to request														
4. Nonverbal behaviors														
1. Action as response														
2. Shaking head as response														
3. Laugh														
4. Facial expression														
5. Topic termination														
1. Abruptly														
2. Shifting														
3. Shading														

Appendix 2

I. Topic initiation

Topic initiation analysis included the type of topic, the manner of initiation, the subject matter, orientation and the outcome.

    a. Type of topic

       The type of topic included new, related, reintroduced, and consecutive.[26,27]

       1. New topics would be those appearing in the conversation for the first time and not linked to the immediate preceding topic. For example:
- Partner: I saw lion, tigers in the Zoo
- Child: Mummy got me a new toy car (new topic initiation).

       2. Related topics would be linked directly to the previous topic. For Example:
- Partner: I like monkeys too. Where there clowns in the circus? (Related topic initiation)
- Child: I don't like clowns. They are frightening.

       3. Reintroduced topics would have appeared in the conversation previously

       4. Consecutive topics consist of two or more topics initiated in a turn with no opportunity for the listener to maintain the preceding topic. For example:
- Child: Can you come to my birthday party? I went to Parrys corner yesterday. Do you live there? (Consecutive topic initiation).

    b. Manner of initiation

       The manner of topic initiation might include coherent changing, noncoherent changing, shifting and shading.[26,27]

       1. Coherent changing occurs when one topic is terminated and following topic content is not derived from the immediately preceding topic. For example:
- Child: And he caught the thief
- Partner: What a great story? Anything else to tell
- Child: I have a new toy car (coherent changing).

       2. Noncoherent changing occurs with the absence of topic termination signaling transition to a new topic. For Example:
- Child: Let's have bread and butter for breakfast
- Partner: I will fix it
- Child: I am going to take the bread…. What is that? A new ball. I want to play with that ball (Noncoherent changing).

       3. Shifting occurs when the topic being discussed serves as a source for a new topic. For example:
- Child: I don't like eggs
- Partner: Why don't you like eggs?
- Child: I want some juice. I like juice (shifting topic)
- Partner: What juice do you want?

       4. Shading differs from shifting in that shading is a change of focus on the same topic. For example:
- Partner: I will cook the toast
- Child: I will butter it. Where is the knife? (Shading topic)
- Partner: The knife is in the small cupboard.

    c. Subject matter

       The subject matter is the content of the topic initiation which is judged as appropriate or inappropriate topics for the communication context.

    d. Orientation

       Orientation might include topics about self, a shared experience or interest with the listener or a topic seemingly unrelated to the listener.

    e. Outcome

       Outcome may be rated as successful or unsuccessful. Success is dependent on the manner of initiation and the subject matter. Success occurs when the conversational partner acknowledges the speakers topic in some way as agreeing or disagreeing or adds information to maintain the topic. Nonsuccess includes no response, an interruption, an initiation of new topic, or a request for repair.

II. Topic maintenance

Topic maintenance includes the type of turn and the ability of the participant to further the conversation with the addition of new conversational information.

    a. Type of turn

1. Continuous turns include responses to requests or questions; acknowledgements such as okay and yeah; partial, whole, or expanded repetitions; appropriate emotional responses including laughter or crying; the addition of more information or a request for more information; agreement or disagreement; a request for repair.[28] For example:
   - Partner: what is that?
   - Child: A cap (continuous turn)
   - Partner: Put it on
   - Child: No, it is too small for him (Continuous turn).
2. Discontinuous turns include ones not linked to the current topic – includes topic initiations, off-topic responses, monologues, and use of silence. For example:
   - Partner: What happened in school?
   - Child: I like my baby brother (Discontinuous turn).

b. Conversational information

Turns might be analyzed for the extent to which they contribute to the development of the topic by adding relevant, novel information.[27]

1. New information includes answers and replies that contain new information. For example:
   - Partner: We are going to the Zoo tomorrow
   - Child: Tigers live in the zoo (New information).
2. No new information include acknowledgements; requests for repair; partial, whole, or expanded repetitions; response to questions that do not contain new information; emotional responses; agreement or disagreement add no new information to the conversational exchange. For example:
   - Partner: And the crow flew away
   - Child: flew away (no new information).
3. Problematic turns include word searching, incoherent utterances, ambiguous utterances, and incomplete turns. For example:
   - Partner: Who is your teacher?
   - Child: At school.

III. Topic termination
1. Shifting: Topics usually are terminated by shifting to another related topic
2. Shading: For more mature language users, this process is accomplished by shading, in which the speaker shifts to another aspect of the topic or to a closely related topic. For example:
   - Partner: Do you like vegetables?
   - Child: Yes.
   - Partner: Eating vegetables is healthy. Do you like ladies finger? (Shading to one aspect of the topic "vegetables").
3. Abrupt topic termination: Preschool children may end the topic abruptly when they decide it is over or become restless.

IV. Nonverbal behavior
Communicating with actions, shaking head, laughing, or facial expression was considered as nonverbal behavior.

V. Conversation breakdown
a. Request for repair
   - Nonverbal, for example, Puzzled expression or
   - Verbal e.g. What? I do not understand, I do not remember.
b. Conversation repair may be spontaneous or in response to a request for repair.