

PRAGMATIC SKILLS OF PRESCHOOL CHILDREN FOR TELEPHONE CONVERSATIONS

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ABSTRACT

This study investigated the development of communicative competence for the telephone conversational skills of 24 preschool children, ranging in age from 3:0 to 5:0 years. Each subject participated in two telephone conversations: (1) the examiner called the child, and (2) the child called the examiner. Developmental trends were observed and results indicated that, although younger preschool children did not adhere to all of the underlying structural rules of telephone conversations studied, by five years of age they had learned most telephone conversational skills. Performance for conversation length, contingent obligatory responses, number of turns and topicality did not change with increasing age.

INTRODUCTION

The ability to use language efficiently, here referred to as communicative competence, requires the appropriate use of syntactic, semantic, phonological and pragmatic rules. The research reported here investigates the development of communicative competence in a particular situation, telephone conversations. Conventional telephone interaction requires the acquisition and use of routines, such as conversational openings, initiations, and closings which, in turn, involve the use of structural rules (See Table 1 for an outline of the rules discussed below and studied in this research.).

The summons-answer sequence (SA sequence) (Schegloff, 1968), a conversational opening, refers to the telephone ring for the summons and picking up the receiver and saying "hello" for the answer. Closely related to the SA sequence, is a distribution rule for first utterances which requires the answerer to speak first (Schegloff, 1968).

Adjacency pairs, which occur at various points throughout general conversation, apply to telephone conversations. They allow two people to organize and co-ordinate their conversation so it proceeds in an orderly fashion. For example, the "hello-hello" sequence is the greeting-greeting adjacency pair, which serves to initiate formal contact (Schegloff and Sacks, 1973). Although rule-governed, this greeting portion varies considerably

depending on the social circumstances (Ervin-Tripp, 1969). Umiker-Sebeok (1976) reports that children exclusively used the more formal greeting "hello" in telephone conversations whereas "hi" is the preferred form in general conversations.

Whether a caller identifies himself (self-identification) immediately after the greeting is optional, although frequently helpful. However, it is he who must initiate the conversation by introducing the first topic (Schegloff, 1968).

The conversation content then proceeds until the closing is initiated. Adjacency pair rules co-ordinate the conversation so that it ends by mutual agreement. The first of two steps, the agreement to close, or the "pre-closing" (Schegloff and Sacks, 1973), frequently takes one of the following forms: "We-ell ...", "O.K. ..." or "So-ooo ..." and is characterized by a falling intonation contour. The use of a pre-closing statement by the caller (A) may not always lead immediately to the second step, the conversational closing, since B may choose to introduce a new topic. If, however, B accepts the invitation to close and participates in the pre-closing, A is then expected to continue with the closing.

According to the rules, to preserve courteous conversation both parties must say "goodbye" before hanging up the receiver. These routine closings, characteristic of adult telephone conversations, are seldom found in the general conversations of preschool children, who frequently use abrupt terminations with a marked lack of pre-closings (Umiker-Sebeok, 1976). The relative paucity of verbal farewells compared with verbal greetings is interpreted to mean that the closing sections of preschoolers' conversations are less developed than their openings.

Children must also use more general conversational skills for effective telephone communication. The ability to converse co-operatively over an extended number of speaker-listener turns is one example. Recent research corroborates young children's ability to engage in verbal dialogue, to extend it over a number of turns, to attend to one another's utterances, and to provide relevant responses (Garvey and Hogan, 1973; Keenan, 1974; Keenan and Klein, 1975; Mueller, 1972). There is, however, some controversy about whether these conversational aspects develop throughout the preschool years (Garvey and Hogan, 1973; Mueller, 1972; Umiker-Sebeok, 1976). The finding that male preschoolers have a higher average number of turns per exchange than females (Mueller, 1972; Umiker-Sebeok, 1976) contrasts with boys' slightly later development in many aspects of language (Winitz, 1969).

Coherency in dialogue increases with age and requires speakers to make their comments relevant to the conversation. One might measure this using contingent responses, which share the topic and add new information (Keenan and Klein, 1975; Bloom, Rocissano and Hood, 1976). Another aspect of telephone conversation is that of content. Although preschoolers' general conversations are monotopical, this has not been investigated in telephone conversations.

The relevant sociolinguistic research concerning the rule-governed aspects of telephone conversations deals with the adult population and investigation of such learned routines in the preschool population is lacking. A pilot study (Malcolm, 1979) indicated that preschool children demonstrate knowledge regarding the use of the telephone; that is, they are aware of what the telephone is used for and are able to use it for communicative purposes, although they do not consistently follow the rules of telephone pragmatics. The present research was designed to investigate further preschool children's adherence to the underlying conventional rules of telephone conversation interaction and their use of conversational techniques.

METHOD

Subjects

Twenty-four children enrolled in preschool, ranging in age from 3:0 to 5:0 years, participated in the study. All passed both an audiometric screening test bilaterally and a screening test for age-appropriate language skills using the *Preschool Language Scale* (Zimmerman, Stein and Evatt, 1969). All were native speakers of English and of middle class background.

The children were divided equally into four age groups at six month intervals (3:0-3:6, 3:7-4:0, 4:1-4:6, 4:7-5:0) with three females and three males comprising each group. Questionnaire information obtained from parents prior to subject selection revealed that all children had access to a telephone and that the children in each group had similar amounts of telephone experience.

Procedure

In a preschool "house" setting each subject interacted briefly in play activities with the examiner (KM). Two non-operating telephones, separated by a screen to ensure the absence of visual cues and to simulate telephone conversation conditions, were available in the area. Each subject participated in two telephone conversations: (1) the examiner (E) called the child and (2) the child called E. The former call required the child to assume the role of called, while the latter required him/her to assume the role of caller. All conversations were tape recorded and later transcribed verbatim by E.

Table 1 illustrates each structural rule and its relevant aspects examined from the conversations. For the SA sequence, whether the child recognized and appropriately acknowledged a telephone ring was recorded, as well as whether the child initiated an SA sequence. For the greeting aspect of conversation, whether the child appropriately acknowledged a greeting by saying "hello", appropriately initiated a greeting by saying "hello" and behaved appropriately during a greeting according to role expectations were recorded, as was the type of greeting used. With respect to self-identification, whether the child acknowledged an identification and initiated self-identification were noted as well as the type of acknowledgement employed. Conversation initiation was examined with respect to the child's acknowledgement of an initiation, the child's initiation of a conversation and the appropriateness of the initiation according to role expectations. The pre-closing and closing sections of the conversations were both examined according to the child's recognition of, acknowledgement of, and initiation of pre-closings and closings, as well as the child's behaviour as related to caller-called role expectations. The types of pre-closing and closing utterances were also recorded. In both roles of caller and called, the child was given five seconds to initiate the behaviour in question or to respond to E.

The transcriptions also provided data about the more general conversational techniques. How relevant the contributions were to the conversation was examined by recording the percentage of contingent and non-contingent utterances as defined by Bloom *et al.* (1976). Each conversation was controlled for minimum length and for topicality so that all children had an equal opportunity to demonstrate the presence of the behaviours being examined. When the child was called, the examiner directed the conversation and initiated the topic. After 60 seconds, a topic change was introduced by E and the child's ability to follow this topic shift was observed. When the child was the caller, he/she was allowed to direct the conversation as long as possible. If the conversation lasted 60 seconds and no topic change was introduced by the child, the conversation remained monotopical. If, however, the child attempted to terminate the conversation in less than 60 seconds, E introduced a topic change

TABLE 1

Structural Rules Examined and Five Child Behaviours Recorded

Structural Rules	Child Behaviours				
	Recognition	Appropriate Acknowledgement	Initiation	Ordering	Possible Types
SA Sequence	Does the child recognize a telephone ring?	Does the child respond to a summons by picking up the receiver and saying "hello"?	Does the child initiate an SA sequence?		Does the child dial and ring, just dial or just ring?
Greeting		Does the child say "hello"?	Does the child say "hello"?	Does the child say "hello" first when called and second when caller?	Does the child say "hello" or "hi"?
Self-Identification		Does the child acknowledge E's identification?	Does the child identify self when calling?		Does the child say "hi", "hi Kim" or "oh"?
Conversation Initiation		Does the child respond to E's initiation?	Does the child initiate conversation when calling?	Is the initiation appropriately ordered?	
Pre-closing	Does the child recognize a pre-closing?	Does the child appropriately acknowledge a pre-closing?	Does the child initiate a pre-closing?	Does the child initiate a pre-closing when calling and not when called?	Does the child say "O.K.", "well", or "gotta go now"?
Closing	Does the child recognize a closing?	Does the child appropriately acknowledge a closing?	Does the child initiate a closing?	Does the child initiate a closing when calling and not when called?	Does the child say "bye", "goodbye" or hang up only?

to ensure that the conversation lasted the required time. This controlled duration and created a consistent time framework from which to measure the number of turns per conversation.

RESULTS

Because, for the structural rules examined, there were no significant differences between male and female subjects, data for the two groups have been combined. Results of the SA sequence are shown in Table 2. Recognition of the summons, indicated by picking up the receiver and saying "hello", occurred for 70.83% of the total group, with percent correct recognition increasing across the age groups. Errors included not picking up the receiver and not saying "hello". When callers, a pattern similar to that for recognition was evident, although the overall percent correct (62.50) was significantly lower ($p < .05$). Here, the children dialed the phone, indicated a ring and waited for E to answer. Initiation showed a general developmental trend, with one reversal for the 3:7-4:0 age group. The two types of errors were dialing but not signalling a "ring" and "ringing" with no dialing.

When called, 75.00% of the children appropriately initiated the conversational greeting within the allotted five second time period and a developmental trend appeared (Table 2). When they assumed the role of caller, the overall correct performance decreased to 62.50%. Errors in both conditions involved the temporal aspect of the greetings almost exclusively; children either did not initiate the greeting or did so when they should have waited for E. For the caller and called conversations combined, the greeting "hello" was used by the children 75.00% of the time.

Fifty percent of the children appropriately acknowledged E's self-identification when serving the role of called and developmental trends were noted. Errors involved a failure of acknowledgement. By contrast, when callers, only one child identified himself.

For conversation initiations, when called, 91.60% of the children responded appropriately with an acknowledgement. Two children erred by initiating the conversation out of turn. This percent was less (66.67%), however, when the children, as callers, were required to initiate the conversation. Developmental trends were seen, with one reversal for the 4:1-4:6 age group. Performance erred if the child did not initiate a conversation within the allotted five seconds. Examination of the difference between the roles of called and caller approached significance ($p = .06$) with the better performance obtained in the called role.

Results of the pre-closing sections again illustrated the superiority of performance when the children were required to acknowledge the pre-closing in the role of called (79.10%) rather than to initiate it in the role of caller (37.50%) ($p < .01$). Developmental trends were evident within both roles. Children erred here by omitting the pre-closing or by responding inappropriately.

When called, preschoolers acknowledged the closing appropriately 58.33% of the time by saying "goodbye" before hanging up the receiver. Errors included closing by hanging up without saying "goodbye", inappropriately initiating a closing after completing the pre-closing, and a simultaneous "bye" with the caller. As caller, 66.67% performed appropriately by initiating "goodbye" following completion of the pre-closing and waiting for E to complete the closing before hanging up the receiver. The two error types were hanging up too soon or failing to initiate a closing. Developmental trends were noted for both roles, despite a reversal for the 3:7-4:0 age group.

Separate multiple regression analyses examining the contribution of age (4 groups) and sex (male-female) variables were performed for the roles of called and caller. Results of these

TABLE 2

**Percent Appropriate Responses for Six
Structured Rules for Each Age Group**

Age Group	Percent Appropriate Responses ¹					
	SA Sequence	Greetings	Self- Identification	Conversation Initiation	Pre- Closing	Closing
	Called					
3:0-3:6	50.00	50.00	16.67	83.33	50.00	33.33
3:7-4:0	50.00	66.67	33.33	100.00	83.33	16.67
4:1-4:6	83.33	83.33	50.00	83.33	83.33	83.33
4:7-5:0	100.00	100.00	100.00	100.00	100.00	100.00
	Caller					
3:0-3:6	50.00	66.67	0.00	50.00	16.67	50.00
3:7-4:0	33.33	33.33	0.00	66.67	16.67	33.33
4:1-4:6	66.67	50.00	0.00	50.00	33.33	83.33
4:7-5:0	100.00	100.00	16.67	100.00	83.33	100.00

¹Each percent is based on 6 respondents, 3 female and 3 male.

TABLE 3

**Ranges and Means for Duration, Number of Turns,
and Obligatory Contingent Utterances for Each Age Group**

Age Group	Duration		Number of Turns		Obligatory Contingent Utterances	
	Range (min:sec)	Mean (min:sec)	Range	Mean	Range %	Mean %
	Called					
3:0-3:6	1:02-2:00	1:34	10-13	11	84.21-100.00	93.83
3:7-4:0	1:08-1:30	1:19	9-15	11	88.89-100.00	95.65
4:1-4:6	1:30-2:23	1:48	9-14	11	84.24-100.00	97.06
4:7-5:0	1:00-1:43	1:29	11-17	13	94.74-100.00	99.12
	Caller					
3:0-3:6	0:30-1:34	0:57	3-9	5	60.00-100.00	87.38
3:7-4:0	0:09-1:38	0:33	3-11	7	0.00-100.00	76.26
4:1-4:6	0:41-1:44	1:16	6-13	9	—	100.00
4:7-5:0	0:35-1:46	1:03	6-11	8	—	100.00

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respective analyses indicated that these variables had a significant effect on performance ($F = 6.019, p = .003$; $F = 3.981, p = .016$ in the called and caller roles, respectively). For age, the rank order of most to least contribution was the 4:7-5:0 group, the 4:1-4:6 group and the 3:0-3:6 group, with the 3:7-4:0 age group not contributing to the results.

Duration, a general conversational aspect, showed no significant increases with age (Table 3), as expected, since E controlled this variable. Variability among subjects was large, however, with a range of 0:09 to 1:46 minutes and conversations were significantly longer ($p < .001$) when the children were called and were not required to lead the conversation.

Data for the range and mean number of turns in the first 60 seconds of the conversation for each age group were similar (Table 3). The mean of 11 turns for the called role was significantly greater than the mean of 7 for the caller role ($p < .001$).

When called, all groups responded appropriately and consistently with obligatory contingent utterances. When callers, similar results were observed except for three children in the two youngest age groups.

When called, all children had the opportunity to follow a topic change introduced by E and 66.67 to 100.00% of the children in the four age groups were able to do so (Table 4). The variability noted, was related to age and sex, since all children who did not follow a topic change were males. When caller, all children in all four groups who were given an opportunity to follow a topic change introduced by E were able to do so. Recall, however, that a topic shift was introduced by E only if the conversation was going to terminate prior to the required 60 second duration.

Few children in any age group independently initiated a topic change (0.00 to 33.33%), with no differences noted between the called and caller conditions. Only four children, all males, changed topic independently and one of those reverted to a previous topic.

For all conditions, results comparing male and female subjects revealed minimal differences between the sexes. This observation was confirmed statistically, as sex was the least contributory variable in the multiple regression analysis for each role. In a few instances, however, the differences were large enough to warrant further statistical analyses using t-tests for independent means. The only significant differences were found for ability to follow a topic change ($F > M, p < .05$) and initiating a topic change ($M > F, p < .05$).

DISCUSSION

Preschool children did not follow all the underlying structural rules of telephone conversations. That developmental trends emerged indicated the important contribution of age to these pragmatic skills. The children in the 4:7-5:0 age group always performed as well or better than the younger groups with their performance being virtually 100% for all rules examined. This age group was found to contribute most to the observed developmental trends, followed by the 4:1-4:6 age group, then the 3:0-3:6 age group, using a multiple regression analysis. The 3:7-4:0 age group did not contribute significantly, as their performance was equal to or poorer than the younger group in several conditions. It may be that children at this age do not perform better than younger children, or that this sample is not representative of the larger population. Further research with a larger sample size could aid in examining this more completely.

The relative difficulty of the individual rules studied also related to preschoolers' performance. Some rules were easier than others. When performance on the rules was

TABLE 4
Number and Percent Children to Follow and Initiate
Topic Change for Each Age Group

Age Group	Topic Change			
	Follow		Initiate	
	No.	Percent	No.	Percent
		Called		
3:0-3:6	4	66.67	1	16.67
3:7-4:0	6	100.00	0	0.00
4:1-4:6	4	66.67	1	16.67
4:7-5:0	6	100.00	0	0.00
		Caller		
3:0-3:6	1	100.00	2	33.33
3:7-4:0	2	100.00	0	0.00
4:1-4:6	4	100.00	0	0.00
4:7-5:0	2	100.00	0	0.00

TABLE 5
Male and Female Responses Across All Age Groups for Structural Rules and
General Conversational Aspects According to Role of Called or Caller

Behaviours Examined	Called		Caller	
	Male	Female	Male	Female
Structural Rules				
SA Sequence	66.67%	75.00%	58.33%	66.67%
Greeting	75.00%	75.00%	58.33%	66.67%
Identification	50.00%	50.00%	8.33%	0.00%
Conversation Initiation	83.33%	100.00%	75.00%	58.33%
Pre-closing	83.33%	75.00%	33.33%	41.67%
Closing	41.67%	75.00%	66.67%	66.67%
General Conversational Aspects				
Follow Topic Change	66.67%	100.00%	100.00%	100.00%
Initiate Topic Change	16.67%	0.00%	16.67%	0.00%
Duration (min:sec)				
Mean	1:29	1:36	0:55	0:57
Number of Turns				
Mean	11.75	11.75	6.75	8.50

*Difference is significant at the .05 level between male and female.

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considered irrespective of age, the order emerging from least to most difficult was conversation initiation, greeting, SA sequence, closing, pre-closing and self-identification. Only one child failed to produce an appropriate conversational greeting as compared with nine who closed the conversation inappropriately. This and the rank ordering of the rules support Umiker-Sebeok's (1976) finding that the closing sections of preschoolers' conversations are less developed than their openings. An alternate explanation to the difficulty hypothesis for the more advanced behaviour in openings is preschoolers' type of experience in telephone use; young children are often not expected to carry out entire conversations, but instead, just answer the telephone and then hand the receiver to a parent.

Whether each rule was equally difficult for all age groups was examined using Kendall's coefficient of concordance, with the oldest age group omitted because their scores were almost all 100%. The obtained coefficient of .597 indicated some association among the sets of rank orderings, although the degree was not large enough to reach significance ($p > .05$). This suggested that respective difficulty of the rules was not the entire explanation for preschoolers' performance although a contributing factor to it.

The preschool children also demonstrated the most difficulty with what may be considered to be the more "refined"¹ aspects of telephone conversations, such as self-identification. When called, only 50.00% of the children acknowledged E and, when calling, only one child identified himself. These preschool children may not be aware of the courteous traditions that accompany telephone use; or they may have assumed that the listener knew who they were and thus felt no need to identify themselves, or they may have been operating, as many adults do, on the assumption that self-identification is not an obligatory aspect of conversations.

The "refined" aspects hypothesis is also supported when the children's errors are examined for their timing versus appropriateness characteristics. In greeting and conversation initiation, all errors involved timing. For example, many children produced an appropriate telephone greeting but at the wrong time; they initiated when caller and waited to acknowledge when called. Pre-closing and closing rule data corroborate this notion, as many errors involved inappropriately timed initiations or responses to E.

The effect of the role which the child assumes in a telephone conversation is also important. Consistent with many aspects of the child language literature, performance for the recognition or acknowledgement of E's behaviour when the child was called exceeded that for the initiation of these same behaviours when the child was caller. This held true for five of the six rules examined: the SA sequence, greeting, self-identification, conversation initiation, and pre-closing.

The general lack of sex influencing performance in telephone conversations corroborates Umiker-Sebeok's findings (1976) for preschoolers' general conversation. Both within and across age groups, little difference was noted between males and females, with the exception of a statistically significant female advantage ($p < .05$) for following a topic change when called and a significant male advantage ($p < .05$) for initiating a topic change in the called-caller conditions combined. The latter is of particular interest since only males had difficulty following a topic change when one was introduced by E.

Results of the general conversational skills indicated that all the preschool children were able to communicate using the telephone, thus demonstrating their ability to dissociate language from the "here and now," as discussed by Shatz (1975). Recall, however, that the sample was restricted to children who had telephone experience.

¹The term "refined" is operationally defined as those aspects which are optional in telephone conversations (that is, self-identification) or those aspects involving the timing of the behaviour.

As expected, developmental trends were not shown with respect to some general conversational skills. All children were able to provide a high percent (94.08) of obligatory contingent utterances as was found by Bloom *et al.* (1976). If 90% correct responses is taken as a criterion for acquisition (a common practice in the language acquisition literature), this aspect of conversational competence may be considered to have already been acquired by three years of age. This is also consistent with Mueller (1972) who found no dramatic improvement in children 3:6 to 5:6 years of age in maintenance of verbal exchanges.

Developmental trends with respect to conversational length and number of turns per interaction were neither expected, nor observed in this study. Although Umiker-Sebeok (1976) found that the number of turns per interaction increased with age, the difference between her results and the present findings are likely a consequence of differences in research methodology. It was not possible to control the length of each child's response and the number of turns in each conversation as some children were more talkative than others and some rapidly terminated the conversation, allowing no further interaction with E. The variability observed for number of turns may have been due to the varied lengths of individual subjects' responses and to the differences in the number of questions asked by E. Within the 60 second time period, some children had longer responses and fewer turns. In fact, a greater number of turns per 60 seconds could indicate poorer conversational skills due to a reduced mean length of utterance, rather than more advanced skills.

Although role does not appear to affect either obligatory contingent utterances or topicality, it does influence both length and number of turns per conversation across all age groups. A possible explanation for the reduced number of turns when the children were callers is that, because they were primarily responsible for directing the conversation, a greater number of pauses occurred and fewer turns resulted.

All children were able to maintain a co-operative dialogue over ten turns when the entire conversational length was considered and when the children were serving the more passive role of called. This objective was not achieved by a few children in each age group as callers, again suggesting that the preschool children were better reactors than initiators. This co-operative conversation observed for all children does, however, provide evidence to refute the notion that child language serves primarily an egocentric function, as discussed by Piaget (1976) and Muma (1975). All children demonstrated the ability to engage in co-operative dialogue and adjust and address their speech to a listener.

With respect to topicality, all children, excepting one, who were given the opportunity to follow a topic change were able to do so, although very few children initiated a topic change independently. Such findings suggest that the monotopicality of children's conversations, as discussed by Umiker-Sebeok (1976), is not necessarily a result of the preschool child's inability to cope with a topic change in conversation, but rather, of his failure to initiate them. Speculation that initiation of a topic change was because of boredom or uninformedness about E's topic was not supported since the changes often shifted to a topic discussed previously.

In summary, this research suggests that, although younger preschool children did not adhere to all of the underlying structural rules of telephone conversations, they had learned most telephone conversational skills by five years of age. With 90% correct response indicating mastery, these children have acquired the telephone conversational skills studied by 4:7-5:0 years of age. Developmental trends through the ages of 3:0 to 5:0 were noted, with the oldest group always demonstrating the best performance. Furthermore, a developmental order was apparent, with aspects of the opening section of the telephone call more highly developed than aspects of the closing. Receptive aspects of telephone

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conversational routines (recognition of SA sequences, self-identifications, openings, pre-closings, closings and topic changes) preceded expressive aspects (initiation of same) and children used appropriate rules before learning their appropriate timing in the conversational sequence. Male-female performance differences were not of great significance. As expected, developmental trends for the more general conversational aspects of conversation length, contingent obligatory responses, number of turns and topicality were not noted and role influenced performance in only two of these aspects.

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