

A comparison between three methods of language sampling: Freeplay, narrative speech and conversation

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Objectives: The spontaneous language sample analysis is an important part of the language assessment protocol. Language samples give us useful information about how children use language in the natural situations of daily life. The purpose of this study was to compare Conversation, Freeplay, and narrative speech in aspects of Mean Length of Utterance (MLU), Type-token ratio (TTR), and the number of utterances.

Method and Materials: By cluster sampling method, a total of 30 Semnanian five-year-old boys with normal speech and language development were selected from the active kindergartens in Semnan city. Conversation, Freeplay, and narrative speech were three applied language sample elicitation methods to obtain 15 minutes of children's spontaneous language samples. Means for MLU, TTR, and the number of utterances are analyzed by dependent ANOVA.

Results: The result showed no significant difference in number of elicited utterances among these three language sampling methods. Narrative speech elicited longer MLU than freeplay and conversation, and compared to freeplay and narrative speech, conversation elicited higher TTR.

Conclusion: Results suggest that in the clinical assessment of the Persian-language children, it is better to use narrative speech to elicit longer MLU and to use conversation to elicit higher TTR.

Keywords: Conversation, Freeplay, narrative speech, Language sampling.

Submitted: 10 Apr 2011

Accepted: 12 Sep 2011

Introduction

The spontaneous language sample collection and analysis has an important role in evaluation of children's language skills (1-4). Because of the limitations of standardized language tests and the lack and unavailability of these tests in Persian language, the necessity for application of the spontaneous language sample analysis in the assessment of language skills of Persian children is obvious. Since language sampling embraces both the content and context of language use, it can present more detailed information for planning intervention. Also, representativeness and effect of conversational context that are of special importance when trying to

collect language samples, cannot be ensured by applying standardized language tests as the only method of language assessment. That is because representativeness can only be achieved by engaging the child and the conversational partner in a real conversation on topics of interest to the child (5). Standardized language tests are highly structured and cannot ensure obtaining a representative sample of child's language. There are several common methods of language sample elicitation. Among these methods, Conversation, freeplay, and storytelling are the prominent ones (6). These methods elicit language samples containing different linguistic items.

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Conversation is a dialogue or discourse between the child and his partner and maybe about some aspects of the child's every day experiences that are irrelevant to the immediate situation (7). Questions, topic imitation, request to repair and source of difficulty are common methods to elicit conversational language sampling (8). As a language sampling method, one of the limitation of the conversation is that the quantity and types of the child's utterances obtained via conversation can easily be influenced by the features of the interaction in which the conversation takes place (9). Being highly structured, Lack of spontaneity of the language samples elicited by conversation is another limitation of this language sampling method (10). But, in the other side, conversation is a beneficial method, because language samples which elicited by conversation are very structured; All participants responded to the same questions in the same order, and all participant likely supposed the necessity of answering all of the questions that posed to them (11).

To obtain child's narrative speech sample, a variety of strategies may be used by the examiner. Some of these strategies include using stories with universal appeal, stories that present a puzzle, stories that are unique to the child's experience (12), retelling stories driven from books (13), films, and pictures (5). Results of several studies show that compared to freeplay, retelling the stories elicit more complex language samples and less complex language samples than the conversation does (10).

To reduce the influence of speaking partner and conversational setting on the child's language output (14), clinicians use freeplay for collection of language samples that are more spontaneous in nature. But, eliciting language samples via freeplay causes several problems. First, while a child is in a freeplay context, collecting a spontaneous language sample that is representative of his expressive capabilities is a time consuming process. This is because the time required providing the child the opportunities to reveal all his structural and conversational behaviors are extensive. Second, another major limitation of freeplay is that different play materials and toys influence the use of language by children (15). In freeplay method, language samples elicited during clinician-child or child-peer interaction, when the child plays with age-appropriate toys. In freeplay context, the clinician invites the child to join a play and then initiates the play by himself. The clinician would play alone with

the child in a way that his play seems to be natural and appropriate. If the child was quiet for extended times, the clinician can evocate him to talk by asking several questions such as "what are you doing?" or "what will happen next?" (11).

Language samples elicited by these three methods are evaluated by several criteria. For example, following seven criteria are among the most common criteria applied in several studies to analyze the language samples: number of utterances, diversity of syntactic structures, mean length of utterances (MLU), the number of syntactic error, type-token ratio (TTR) and proportion of complex syntactic utterances (1,11). Several studies evaluate spontaneous language samples which elicited by different methods. Results of one study showed that language samples elicited by conversation are more qualitative than those elicited by freeplay (1). Results of a comparison between conversation, freeplay and narrative as methods of language sample elicitation showed that freeplay elicited more number of utterances than narrative speech, but less proportion of complex syntactic utterances than narrative and conversation. Also, compared to freeplay and conversation, narrative speech samples elicited less mean length of utterances (MLU). Finally, one study indicated that compared with conversation and freeplay, narrative speech is better for eliciting more language structures (11). In Persian language, results of one study indicated that there was no significant difference between language samples collected by picture description and conversation in the number of verbs in the sentence and in MLU (16). Another study compared speech quality indices of spontaneous language samples elicited in children of Semnan, Tonekabon and Birjand cities in Iran. MLU and number of verbs were higher in Semnanian children's language samples than in Tonekabonain and Birjandian ones, but the number of dependent clauses was higher in language samples of Tonekabonain and Birjandian children than in Semnanian ones. These results showed that cultural and linguistic differences can result in the differences in the language samples (17). Finally, there is controversy in the Persian literature regarding the gender effect of on MLU. One study showed no significant difference in MLU in two genders (18) while another study indicated significantly larger MLU in girls than boys (19).

The purpose of present study was to compare conversation, freeplay, and narrative speech on some aspects of language elicited in five-year old Persian

language children. Due to the effect of age, gender, culture and language on features of language samples elicited by the studied methods, we limited the participants to five year old Persian language children of Semnan city. Concerning the obvious importance of obtaining spontaneous language samples in the assessment of children with language disorders and due to the lack and unavailability of standardized language tests in Persian language, Present study aimed to set the stage for the future development of better assessment protocols in Persian language. According to the electronic search of the authors of the present study, in no study in Iran, comparing of conversation, freeplay and narrative speech was done on the aspects of language elicited. Comparing of the language samples obtained by these three methods of language sampling in Persian, can guide our clinicians to select the best method of eliciting a special linguistic feature. The following questions were considered in the present study:

1. Among conversation, freeplay, and narrative speech which one can elicit more number of utterances?
2. Among conversation, freeplay, and narrative speech which one can elicit longer MLU?
3. Among one can elicit more MLU which one can elicit more TTR?

Method

Participants

Statistical population of the present study included all the five-year-old Persian language boys resident in Semnan City in 2007. By cluster sampling method, a total of 30 Semnanian five-year-old boys with normal speech and language development were selected from Semnan kindergartens. To this aim, we first listed all the active kindergartens of the city and then randomly selected 6 of them. Finally, among the five-year-old boys enrolling each of these six kindergartens, five boys were randomly selected. The boys between the ages of four years and six month and five years and six month were selected as five-years-old boys. Before the children enrollment in the kindergartens, they had their mothers as their primary caregivers. Written consent for the children's participation in the study was acquired from their mothers. Identification of children with normal hearing, speech, and language development were accomplished by interviewing the mothers and the kindergarten staff.

Language samples of the 30 children were elicited using three methods of language sample elicitation including conversation, freeplay, and storytelling. The language samples, lasting 15 minutes, were obtained by collecting five minutes of spontaneous language samples elicited using each three mentioned methods of language sampling.

Methods of language elicitation

Methods of eliciting language samples which used in the present study are described below.

Conversation:

1. The researcher asked the child several questions about his family, his friends, school activities, and favorite television programs.
2. The researcher gave verbal imperatives to the child such as "please tell me about toys or puppets you like to play with.
3. The researcher encouraged the child to explain how to play a game.
4. The researcher requested the child to describe one picture from a set of pictures and then researcher guessed which picture has been described (10, 11,20).

Freeplay:

In this study, language samples elicited during researcher-child interactions when the child played with age-appropriate toys or puppets (2, 7, 21). To decrease the influence of nonlinguistic context on children's language output, same toys or puppets were used for all the participants.

Narrative speech:

1. The researcher requested the child to tell a story about a particular topic.
2. The researcher requested the child to tell a folk story (for example, Bozboz-e-Ghandi story in Iran.
3. The researcher gave a prompt to the child such as picture series and then requested him to tell a story about it.
4. The researcher told a story and then requested the child to retelling it (10, 11,20).

To keep the situations similar for all participants, we used the same tasks and materials in administering each method. In conversation, we asked the same questions for interacting with the participants. In freeplay, we used the same toys, and in narrative speech, we used the same picture series and requested all participants to tell us about the same folk story.

Criteria and data analysis

Language samples elicited by each method were audiotape recorded and were transcribed by the first author. Language samples elicited by conversation, freeplay, and narrative speech were compared in aspects of three language evaluation criteria): Number of utterances, b) Mean length of utterances, and c) Type-Token ratio.

- a) Number of utterances: number of utterance is the sum of single words, single phrases and dependent clauses.
- b) Mean length of utterances (MLU): This criterion was acquired from dividing the number of morphemes used in each language sample by the total number of utterances elicited.

- c) Type-Token ratio (TTR): Type-Token ratio was calculated by dividing the number of different words (types) by the total number of words (tokens) (22).

To evaluate the reliability of language samples analysis, third author of the present study randomly analyzed 20 language samples again. Internal validity for number of utterance was 100%, for MLU was 100% and for TTR was 98%.

Results

The mean and standard deviation of the number of utterances, MLU, and TTR of language samples elicited by conversation, freeplay, and narrative speech are presented in table 1.

Table 1. Mean and Standard Deviation of Number of utterances, MLU, and TTR of language samples elicited by conversation, freeplay, and narrative speech

Methods	N	Number of utterances		MLU		TTR	
		Mean	SD	Mean	SD	Mean	SD
Conversation	30	67.07	23.26	3.32	0.68	0.63	0.13
Freeplay	30	54.5	24.48	3.28	0.99	0.53	0.12
Narrative Speech	30	57.4	20.05	4.02	1.26	0.49	0.12

The results of repeated-measures one-way analysis of variance (ANOVA) to compare mean of

conversation, freeplay, and narrative speech in number of utterances, presented in table 2.

Table 2. Results of ANOVA for comparing number of utterances of language samples elicited by conversation, freeplay, and narrative speech

	SS	df	MS	F	P value
Treatment (tre)	2599.22	2	1299.6	3.01	0.056
Between Subjects (BS)	18844.2	29	649.8		
Within Subjects (WS)	27724.82	60	426.08		
Residual (R)	25125.6	58	433.2		
Total (T)	74293.85	89			

There was no significant difference among three methods of language sample elicitation in the number of elicited utterance $F(2, 58)=3.01$, ($P=0.56$).

Compared by elicited MLU, a significant difference among three methods of language sample elicitation was observed ($F(2, 58)=5.41$, $P=0.07$) (table 3).

Table 3. Results of ANOVA for comparing MLU of language samples elicited by conversation, freeplay, and narrative speech

	SS	df	MS	F	P value
Treatment (tre)	10.4	2	5.2		
Between Subjects (BS)	38.28	29	1.32		
Within Subjects (WS)	66.08	60	1.1	5.41	0.007
Residual (R)	55.68	58	0.96		
Total (T)	170.45	89			

The Tukey HSD test was used to pairwise comparison between the methods. There was a significant difference between MLU elicited by narrative speech and conversation ($HSD(3, 60) =$

3.68 , $P>0.5$), and narrative speech and freeplay ($HSD(3, 60) = 3.89$, $P<0.5$). MLU elicited by narrative speech method was significantly longer than MLU elicited by conversation and freeplay.

There was no significant difference between MLU elicited by conversation and freeplay (HSD (3, 60) =0.44, P>0.5).

The data of Table 4 show that there was a significant difference among TTR elicited by three language sampling methods (F (2,58)= 6.73, P=0.01). Pairwise comparisons showed a significant difference between TTR elicited by conversation

and freeplay (HSD (3, 60) = 3.44, P<0.5) and conversation and narrative speech (HSD (3,60)=4.28, P<0.1).TTR elicited by conversation method was significantly more than TTR elicited by freeplay and narrative speech. The results of Tukey HSD test showed that no significant difference between TTR elicited by freeplay and narrative speech (HSD (3, 60) =1.37, P>0.5).

Table 4.Results of ANOVA for comparing TTR of language samples elicited by conversation, freeplay, and narrative speech

	SS	df	MS	F	P value
Treatment (tre)	0.31	2	0.15		
Between Subjects (BS)	0.81	29	0.028		
Within Subjects (WS)	1.59	60	0.026	6.73	0.001
Residual (R)	1.28	58	0.022		
Total (T)	3.99	89			

Conclusion

The results of the present study indicated that there was no significant difference among number of utterances elicited by conversation, freeplay, and narrative speech. This finding is not consistent with those of a similar study indicative of higher number of utterances elicited by freeplay than by conversation (11). However, similar to the present study, the results of the mentioned study (11) showed that there was no significant difference between number of utterances elicited by conversation and narrative speech. Inconsistency between the results of present study and previous studies may be caused by individual differences between participants. Some children are extravert and talkative, and therefore have high number of utterances, but other children may be introvert and laconic and therefore have low number of utterances. Concerning the evident influence of child's conversational partner on his communication aspects (23), difference between the investigators of this and the previous studies could be another reason for the reported inconsistency. Results of a study showed that a difference up to four words in utterance length in homogenous populations can be observed by changing the researcher eliciting the child's language sample (24). Also, change in the topic of conversation results in difference in the number and the length of utterances elicited during language sampling. So, difference in the topic of conversations and stories could be another reason for the inconsistent results. To reduce the influence of change in topic of conversation and stories, in the present study the applied conversational topics and questions for language sampling kept constant among all the participants.

For language sampling, from 50 to 100 utterances are considered as sufficient to have a representative sample (1, 25). In this study more than 60 utterances provided by the three elicitation methods. Hence, all three methods provided sufficient utterances for clinical use. Results showed that compared to conversation and freeplay, narrative speech yielded longer utterances. This finding is consistent with those of other recent studies (11, 26). Therefore, to have a language sample with longer utterances, it is suggested to use narrative speech which according to the result of this study, elicits more complex language. In the other hand, compared to narrative speech and freeplay, language samples provided by conversation resulted in more TTR. This finding is in agreement with a similar study (27). Hence, to have a language sample with more TTR it is better to use conversation for language sampling.

The results of the present study suggest an implication for clinical practice. Apart from the observed differences in freeplay, conversation, and narrative speech methods, it is suggested to apply all these three methods when trying to collect their language sample to elicit more language abilities of children. This study sets the stage for future investigations on spontaneous language analysis of Persian children. It is suggested to include children with language impairments in the future studies, because the participants of the present study were selected among typically developing children who expected to have higher language proficiencies when compared to language impaired children. To increase the extent to which the results of the present study can be generalized, inclusion of children from different ages and inclusion of girls in the similar future studies are suggested.

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