

## Grammatical Competence Development of Nursery School Children Acquiring Persian

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**Abstract.** This study is an attempt to answer three questions: First, whether there is a difference between the grammatical competence development of a group of children aged 2;6 vs. a group of children aged 3;6. Second, whether there is a relationship between the children's age and their MLU on the one hand and their speech and the caretakers' speech on the other. Third, whether or not the normal limit proposed by Brown (1973) is also observed in the acquisition of Persian. To this end, six children were studied during a six-week period. The results indicate that in terms of age difference, there is neither an unequivocal yes nor a definitive no answer to the question, i.e. in some cases there is a difference whereas in other cases there is no difference at all. Regarding the relationship, no significant relationship was found between the speech of the children and the speech of the caretakers' in terms of Mean Length of Utterance (MLU). Finally, it is indicated that the limit proposed by Brown (1973) is also observed in Farsi.

**Keywords:** L1 (First Language), CDS (Child Directed Speech), MLU (Mean Length of Utterance)

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## 1. Introduction

In spite of the fact that great strides have been taken en route to explaining L1 acquisition, due to the paucity of the research evidence on the one hand, and the inherently complex nature of the phenomenon on the other, it is still difficult to explain such a feat as adequately as possible. That is why it is not yet possible to identify an all-and-only, comprehensive theory of L1 acquisition. However, three major theoretical approaches have been put forward by the scholars as partial explanation of the phenomenon. Whereas the empiricist and/or the behavioral tradition has been trying to explain L1 acquisition in terms of picking up of the input offered to the child by the parents or the caregivers; the rationalistic and/or the nativist approach (Chomsky, 1975) deems the innate endowment of the child responsible for such a great undertaking. On the other hand, the functionalist, and/or the interactionist approach (Lightbown & Spada, 2003) tends to challenge both the empiricist/ behavioral and the rationalist/ nativist approaches on the grounds that L1 acquisition can take place not because of the environmental input nor on the basis of the mind-internal, innate, pre-programmed device(s), but rather through some sort of information processing and as a result of interaction between the input provided and the innate capacity, i.e. an interface between a totally input driven view on the one hand and a totally mind driven view on the other. According to the interactionist view, more prominent roles should be given to the social interactions and the linguistic environment than what the innatist tradition seems to imply. An important subcategory of such a view is the role of Child Directed Speech or the Caretaker's Speech that is said to help L1 acquisition.

As Pececi (2006) points out Child Directed Speech and the early social interactions between mothers and babies has been a response to Chomsky's view that the 'poverty of stimulus' makes it impossible for children to acquire a system as abstract and complex as human language without some prior in-born knowledge about the way it works. Besides, as Snow (1997) mentions almost everybody's speech towards children of various ages might be regarded as child directed speech or caretaker speech implying that the term 'motherese' is misleading in that not only mothers but others may also speak in a special way to the children. According to Snow (1997), until recently, L1 acquisition was studied without taking child directed speech into account because it was thought that the nature of the child directed speech made no difference to the course of language acquisition. It was thought that "there was a large innate component in linguistic ability which buffered language acquisition against sparseness, complexity and confusion in the primary linguistic data." (Snow, 1997, p. 214)

Another line of research which has been commonly used in L1 acquisition research is a measure called Mean Length of Utterance (MLU). Despite the

fact that MLU has been instrumental in describing children's overall language development, researchers have reacted differently to using it in L1 acquisition research. For example, Wells (1997) believes that the validity of this measure has been the subject of numerous amount of critical discussion, but because of its apparently general nature and the ease with which it can be calculated, it still continues to be widely used. In the opinion of Lust (2007), although MLU is a useful tool for estimating the developmental level of children's L1 acquisition, it does not inform us much about their grammatical knowledge. According to Lust (2007), we still do not know the reasons as to why the length of children's sentences vary, how they overcome the problem, or how their sentences can be representative of grammatical knowledge.

On the other hand, Johnson (2001) argues that since Brown's (1973) study, Mean Length of Utterance (MLU) has been the most commonly used index of language development for spontaneous language sample data. According to Brown (1973c, p.53 cited in Lust 2007, p.79) a child's MLU is an "excellent simple index of grammatical development because almost every new kind of knowledge increase [utterance] length." Nevertheless, Brown (1973, cited in Johnson, 2001) had earlier said that MLU would be less informative once children had reached stage five of L1 acquisition because differences in utterance length would then reflect properties of particular interactions rather than new language knowledge.

According to Ingram (1999, p.50) Brown's (1973) five stages are as follows: The first is semantic roles and syntactic relations in which the acquisition of basic semantic relations used in language such as Agent vs. Patient are acquired. The second stage is modulation of meaning in which the child begins to acquire inflections and grammatical morphemes. The third stage is modalities of the simple sentence in which the active acquisition of the English auxiliary as it appear in yes/no question, wh. questions, imperatives and negatives is acquired. The fourth stage is embedding of one sentence within another in which complex sentences appear with object noun phrase complements, embedded wh. questions and relative clauses. The fifth stage is coordination of simple sentences and propositional relation in which the active development of sentences, noun phrase and verb phrase coordination with the use of conjunctions, are observed.

Furthermore, some authors argue that MLU is a valid developmental measure into the school years (Jones, Weismer & Schumacher, 2000, Miller, Frieberg, Rolland & Reves 1992 cited in Johnson 2001). Some others such as Bernstein and Tiegerman-Farber (1997, cited in Johnson 2001) suggest that MLU is useful only up to a ceiling of approximately four to five morphemes, corresponding to an upper age limit between 45 to 54 months for typically developing children. Yet others such as Bloom and Lahey (1978 cited in Johnson 2001) question the applicability of MLU greater than 3.0, corresponding to an upper age limit

of approximately 36 months. Finally, Peccei (2006, p.57) maintains that “in assessing a child’s language, age must still be considered in relation to the MLU and in relation to other aspects of the child’s language use to determine whether the child is developing within normal limits or showing delays or deviations in their language development”. The normal limits referred to above is the limit proposed by Brown (1973, cited in Peccei,2006, p.57) in terms of which a child of 1;6-2;3 age has an MLU of 1.75, a child of 1;9-2;6 age has an MLU of 2.25, a child of 1;11-3;1 age has an MLU of 2.75, a child of 2;2 -3;8 has an MLU of 3.50 and a child of 2;3 to 4;0 has an MLU of 4.00.

## 2. Research Questions

This paper is an attempt to address the following questions:

- 1) Is there any difference between the grammatical competence development of children belonging to two age groups of 2;6 vs.3;6 in terms of their spontaneous speech production?
- 2) Is there a relationship between the children’s age and their MLU on the one hand and their MLU and the MLU of the caretaker’s on the other?
- 3) Is the normal limit proposed by Brown (1973, cited in Peccei 2006, p.56) also observed in the acquisition of Persian?

## 3. Significance of the Study

The significance of the first and second questions lies in the fact that age would really matter and that Child Directed Speech is important in L1 acquisition whereas the significance of the third question would be relevant to the universality of Brown’s (1973) MLU limit.

## 4. Methodology

### 4.1 Participants

From among seventeen children who were occasionally attending a nursery school during the summer holidays, six children (three boys and three girls) were selected as the main participants of the study. The reason for such a sampling was simply because the rest turned out to be attending so irregularly that it was practically impossible to decide whom to select and whom to reject for the final analysis. The six children selected were actually those who participated more consistently than the others in the six-week data collection period. The children were of two age groups: A group of 2;6 consisting of three boys, i.e., Parsa, Farzan and Arian and a group of 3;6 consisting of three girls, i.e., Helia, Parmis and Parmida. The children in both groups did come from the

same linguistic as well as the same socioeconomic background. In other words, their parents did speak Farsi at home and they belonged to the upper-middle class.

#### **4.2 Data collection procedure and analysis**

The data of the present paper were collected following the procedures given for the grammatical competence development test. According to Lust (2007), for testing grammatical competence development, one might draw upon three methods. The first is tapping production through either the spontaneous speech or elicited production. The second method is making meta-linguistic and/or grammatical judgments such as self-initiated corrections and/or questions and answers. The third method is to test comprehension through natural commands when tested naturalistically, or through act-out, question and answer, picture-choice, truth value judgment and infant head turn/ preferential looking technique when tested experimentally. In this study the following three steps have been taken: First, around five hours of spontaneous speech samples of the speech of the children with their caretaker's at the nursery school were collected by means of audio recordings. The recordings were jotted down in Farsi and later on fed into the Clan software to derive both the children's as well as the caretaker's MLU. Secondly, the children's meta-linguistic and/or grammatical judgments to distinguish and to decide upon two syntactically and two semantically violated sentences were obtained. Thirdly, their comprehension was tested using a general command test.

Indeed, two types of tests were given: First, the children in each age group, i.e., 2;6 vs.3;6, were tested to find out if their overall grammatical competence development differed as a result of their MLU; as a result of their meta-linguistic judgment and as a result of their comprehension. Secondly, the two groups were contrasted against each other to find out if the children's age and their MLU on the one hand and their MLU and their caretakers' MLU covary and/or have any correlation.

### **5. Results and Discussion**

Before touching upon the results of the spontaneous speech sample (as one of the three methods of testing grammatical competence), it might be a good idea to report the results of the other two tests, the first of which was based on the assumption that if the children can indeed comprehend the commands in their native language, i.e., Farsi, they must then be able to follow the oral directions given. The commands were of the type: "open the door", "close the door" Or "give me the pen on the table" which were followed by the children's correct reactions.

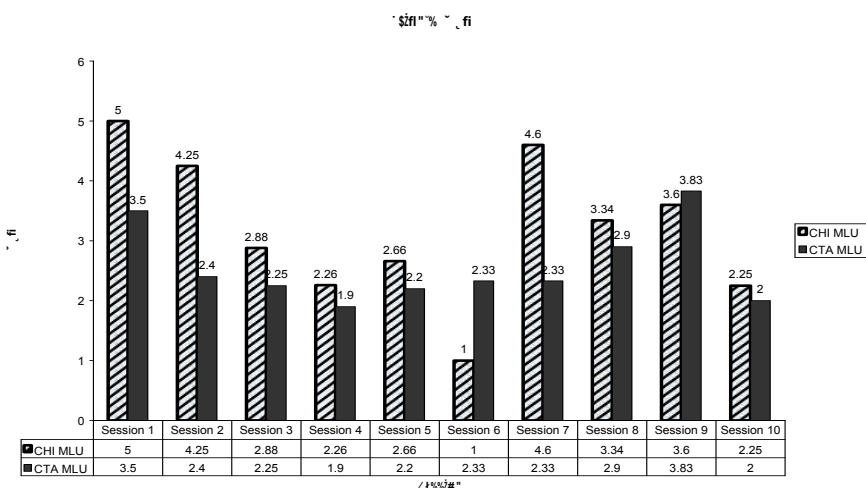
As for the results, no difference was, in fact, obtained between the performances of the two groups. In other words, the children in both age groups

performed quite similarly. This indicates that the two age groups didn't differ in the extent to which they followed the commands. That is why they could and did actually do whatever they were asked to do.

The second test was a test of grammaticality judgment on the basis of which the children had to decide upon the grammaticality as well as the meaningfulness of two syntactically and two semantically violated sentences respectively. In the test, the children had to decide upon semantically violated sentences such as the following: "Mashine babaye Mahsa xarab ast. vs. Babaye mashine Mahsa xarab ast" [Mahsa's father's car is broken vs. Mahsa's car's father is broken] and syntactically violated sentences such as "Man daram harf mizanam vs. Man harf zad [I am talking vs. I am talked]".

As for the results, there was really a difference between the judgments. In other words, children belonging to the older age group outperformed the younger group. That was possibly because the older group, i.e., group of 3.6 years, could probably see the meaning difference more easily and distinguish between the syntactically as well as the semantically correct vs. incorrect sentences without any hesitation whereas the younger group needed much more explanations to be able to differentiate the difference. However, the younger group could not differentiate the difference between the two sentence types even though they were provided with more explanations.

As for the results of the spontaneous speech sample, the following results are obtained. Figures 1-6 are the graphic representations of each and every child's MLU along with his/her not stable but changing (as a result of summer holiday) caregiver's MLU.





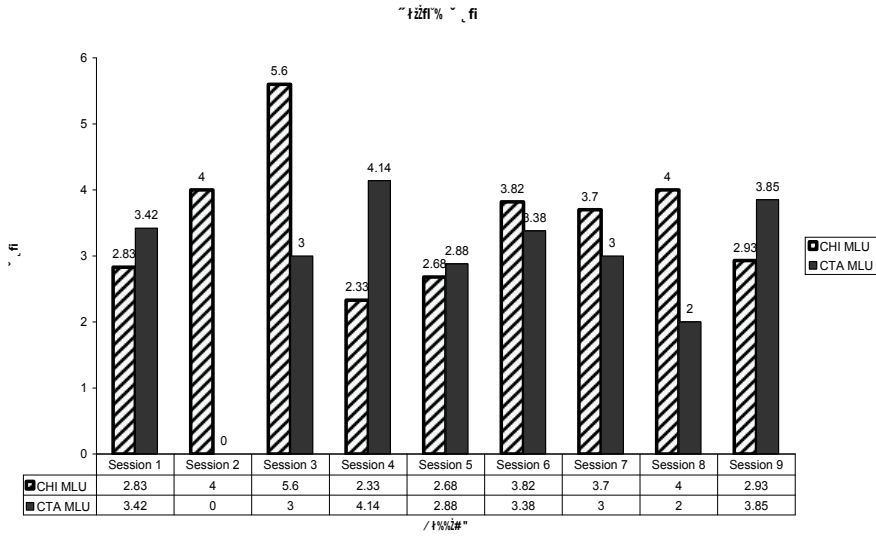


Figure 4. Helia's and her caretaker's MLU

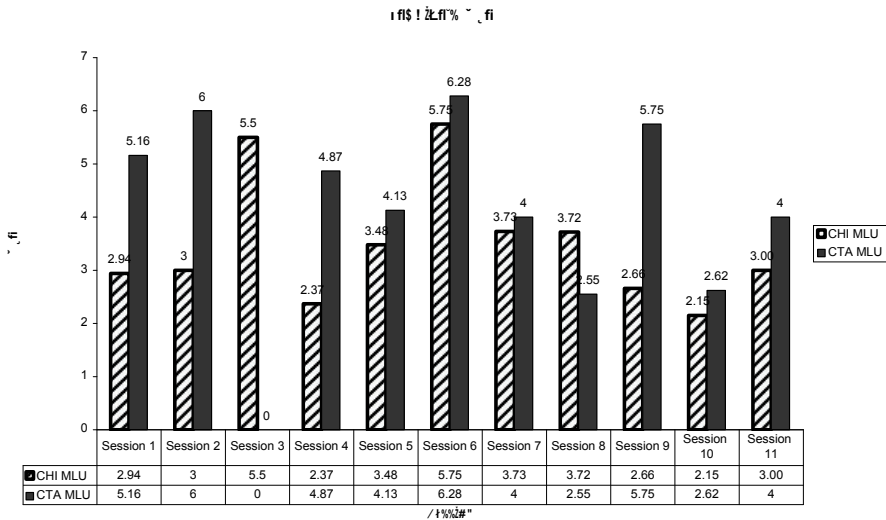
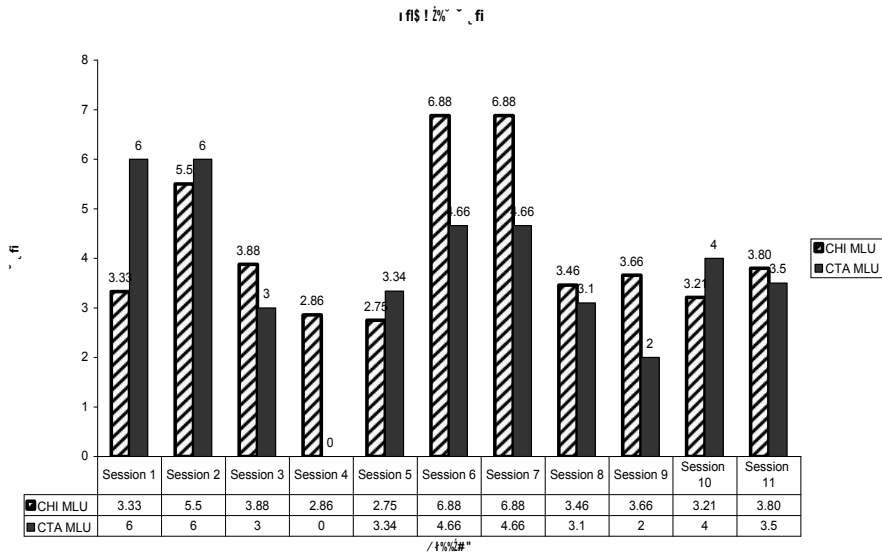


Figure 5. Parmida's and her caretaker's MLU





**Figure 6.** Parnis' and her caretaker's MLU

In addition to the above Figures, the correlations between the children's MLU and their caretakers' MLU were calculated using the SPSS. Regarding the first question as to whether there is a difference between the two age groups concerning the grammatical competence development, the answer is neither an unequivocal yes nor a definitive no. That is because of the fact that each one of the tests given has provided us with a rather different and almost conflicting pieces of evidence. As far as the comprehension test is concerned, no difference was obtained in the degree of their comprehension. In other words, it is as though 2;6 was equal to 3;6 meaning that the two age groups did comprehend the commands in a similar way as if they belonged to the same age. An explanation for this similarity might be that they both have already completed the L1 comprehension as fully as possible accounting for why speech comprehension is said to precede speech production.

Considering the grammaticality judgment test, the older group did outperform the younger one. In other words, 3;6 > 2;6 meaning that the two age groups differed and the age group of 3;6 was better than the age group of 2;6. The explanation might be the processing efforts needed meaning that it might have been much easier for the older group to process the semantic processing to make the distinction between the two types of sentences.

As for the results of the spontaneous speech sample, the results are indeed fuzzy and rather slippery. First of all no significant correlation was obtained concerning the age of the two groups of children and their MLUs. Likewise, no significant correlation was obtained concerning the caretaker's MLU on the one hand and the children's MLU on the other though in some cases the correlation might have been as high as 0.70. Why is it so then? One explanation for the correlation of age and MLU might be that age and gender have been conflated in this study making it a bit difficult to separate. In other words, in the analysis aiming to see the relationship between age-MLU or gender-MLU, it was essentially impossible to separate the two variables because no matter which one you would choose, the other one was willy-nilly there so that whenever you wanted to study age, gender was there and the other way round. Another explanation for such indeterminacy is that according to the SPSS manual, the minimum number for such a comparison is that the sample should be at least 15 people whereas in here we compare only 3 persons. This means that the more the members of the groups, the more the probability of significant correlations to be obtained.

With regard to the correlation between CDS and children's MLU, the explanation might be that MLU by nature seems to be a context-sensitive, task-dependent measure. This means that depending on the nature of the speech of the caretaker's and/or the nature of the particular task, a child's MLU might fluctuate from being either quite high to being quite low. In some cases the caretaker's word or sentence might be of interest to one child inducing him/her to produce a lengthy sentence resulting in high MLU whereas the same word or sentence might be quite boring to the second child causing him/her to lose any interest leading to a sharp decrease in the rate of the MLU.

## 6. Conclusion

Taking into account the above mentioned results, it seems that MLU is more appropriate to longitudinal rather than cross-sectional studies. Moreover, it might make sense if we refer to Brown's (1973) words that beyond stage five (when MLU reaches 4) and afterwards MLU is not indicative of grammatical competence development but is rather reflective of the nature of interaction. As for the normal MLU limit proposed by Brown (1973), it might be interesting to note that the average MLU of both age groups seems to follow the limits, i.e. the MLU limit for the age range of 1;9-2;6 is said by Brown to be around 2.25 and here it is 2.31. On the other hand, the MLU limit for the age range of 2;2-3;8 is said to be around 3.50 and here it is 3.71. Therefore, Brown's normal limit seems to be operating in languages other than English (including Persian) though more studies have to be carried out in the future to generalize cross-linguistically.



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