



The Role of Input in First Language Acquisition

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Abstract

The current study investigates the accessibility of a systematic pattern to Iranian infants learning their first language, and also it is a try to show the effect of the quantity of input on first language acquisition. To these aims, two case studies were carried out on six Iranian infants learning Persian as their first language. The participants of the first study were three infants acquiring their first language in Iran being followed for 12 months (24-36 months) to see if they all passed the same pattern in language development. The participants of the second study were three infants (who were exposed to less input) acquiring their first language in Iran being followed for 12 months (24-36 months) to see if the language development was affected considering the amount of input they were exposed to. In-depth interviews, observations, audio and video recordings, notes and reports were used to collect the data for this study. The data collected for each infant was analyzed separately, and the stages of development were reported for each infant accordingly. The findings support the claim that the process of language acquisition depends on an innate language ability which holds that at least some linguistic knowledge exists in humans at birth, and also the input that learners receive plays a very important role in the language acquisition since the input activates this innate structure.

Keywords: language acquisition, first language, infants, input

1. Introduction

It is clear that infants learn language with remarkable speed, but how they do it remains a mystery. The unbelievable way in which young children acquire their first language has long fascinated linguists and developmental psychologists. Language is a skill that infants master by the age of three with incredible ease and speed, despite the complexity of the task (Lust, 2006). The question is: What types of mechanisms underlie the acquisition of first language system?

Saffran et al. (1996) believed that because of the richness and complexity of the language system, it seems impossible that children could ever learn their first language structure. It is difficult to believe, because of the complex nature of human languages, and limited cognitive abilities of the infants, that they are able to acquire most aspects of language without being explicitly taught. Children, within a few months of birth, understand the grammatical rules of their native language without being explicitly taught, as one learns grammar in school. This puzzle attracts a great number of studies to the domain of first language acquisition.

The amazing ability of language learning by infants and the constraints on the input make first language acquisition a long-standing debate. A major question in understanding language acquisition is how these capacities are picked up by infants from what appears to be very little input (Doughty & Long 2003). A range of theories of language acquisition have been proposed in order to explain this apparent problem. These theories include innatism and psychological nativism in which a child is born prepared in some manner with these capacities, as opposed to other theories in which language is simply learned as one learns to ride a bike (Pinker, 1994). The conflict between traits human is born with and those that are the product of one's environment is often referred to as the "Nature vs. Nurture" debate. As is the

case with many other human abilities and characteristics, it appears that there are some qualities of language acquisition that the human brain is automatically wired for (a “nature” component) and some that are shaped by the particular language environment in which a person is raised (a “nurture” component) (Pinker, 1984).

2. Research Questions

The purpose of this study is to explore the stages of linguistic development (24-36 months) passed by Iranian infants acquiring their first language (Persian), compared with different amounts of input being received. Specifically, the study has focused on two primary objectives:

1. What syntactic stages (24-36 months) are passed by Iranian infants to acquire their first language (Persian)?
2. How can the quantity of input affect the stages of linguistic development (24-36 months) passed by Iranian infants to acquire their first language (Persian)?

3. Methodology

3.1 Participants

This study addressed the infants acquiring their first language in Iran. Three infants (Arad=boy, Asal and Bahar=girl) were followed for 12 months; all these infants grew up in the similar condition (they had no sibling, their parents worked out in the morning and were at home in the afternoon, they were with their grandmothers in the morning). The infants were chosen as typical examples of other infants to be the representative sample of Iranian infants. In addition, three infants (Ziba=girl, Nima and Hamid=boy) whose mothers were dumb were followed for 12 months; all these infants grew up in the similar condition (they had no sibling, their mothers were dumb, they were with their mothers in the morning, and their fathers were at home at night). These six infants were studied for a period of 12 months to investigate the accessibility of a systematic pattern to Iranian infants learning their first language, and also to show the effect of the quantity of input on first language acquisition.

3.2. Procedure

The data collected for each infant was analyzed separately and the stages of development were reported for each infant accordingly. The infants who received normal input were compared to see if the steps followed by all these infants were the same or not, then the infants who had received less input were compared to see if the steps followed by all these infants were the same or not. And also, the normal and less input received infants were compared to see the differences in syntactic development according to the amount of input being received. To check the infants' reaction to the stimuli, changes in infant sucking rate, the infant head turn, looking and listening time, direction of head turn, and the preferential looking paradigm were used. In this study, these methods were used whenever it was possible.

3.3 Data Collection and Data Analysis

Case study data analysis generally involves an iterative, spiraling, or cyclical process that proceeds from more general to more specific observations. In this study, data analysis began informally during interviews or observations and continued during transcription, when recurring themes, patterns, and categories become evident. Once written records were available, analysis involved the coding of data and the identification of salient points or structures.

This case study was a developmental descriptive one. Data gathering for all the cases started from the first day of their birth (both the mothers and the researcher were involved in the process of data collection) using in-depth interviews, observations, audio and video recordings, notes and reports. There was data reduction (selecting, focusing, simplifying, abstracting, transforming); as with most case studies the researcher was faced with a load of data. So after the data was collected, it was reduced and then organized. The data was displayed in an organized and compressed way to make conclusion. Interpretations and inferences were made through discussing, analyzing, and comparing the data (noting irregularities, patterns, explanations, possible configurations, propositions). It can be summarized that data followed the process of transcription, coding, analysis and presentation of results to make the final conclusions.

4. Results and Discussion

4. 1 Language development in first language acquisition by Iranian infants (24-36 months old)

4.1.1. (24-26 months old)

When the three infants were 24 months old, they began to form content word combinations in their own productions, used word order of simple NNV sentences to determine agent / patient (maman bastani khord, Asal biscuit mikhad, pishi ghaza mikhad). When the three children were 24 months and two weeks old, they made some negative verbs (nadarim, nemikham, nemishe, nasuzi, nandazi), and made imperatives (boro, bogu, beshin). At their 24th month, they seemed to have a word for almost everything. At this stage, for the children comprehension of basic grammatical operations became evident, and simple sentences as well as coordinate and adjoined or embedded sentences started to be used and understood (mother: miduni chera babai azat narahat shode? bara einake ke shekastam). When they were 25 months old, they were sensitive to auxiliary / inflection dependencies (maman dare mire, baba mikhad bekhabe, tutua daran miran). They used verb inflections in their own productions (man bazi kardam, toham bazi kardi?). There was object permanence in the sentences produced by the three infants when they were 25 months old (babai man o dust nadare, boro khune maman bozorgi, maman pishi ro beshur, ame Bahar ro dust nadare). When the three infants were passing the last days of their 25th month, they used present progressive (nini dare bazi mikone, dai dare mikhune). For the three infants, early language-specific constraints on word order and structure were evident, although the utterance length was constrained (Bahar bastani dust dare, baba man o mibare park). For the three children, at their 25th month,

rhythm and fluency were often poor, and volume and pitch of voice were not yet well-controlled. Aarad could make longer sentences using the right structure than the two other girls when he was passing the last days of his 25th month (boro khune maamaan bozorgi beshin gerye kon). The following figure shows the importance of the quantity of input in syntactic development.

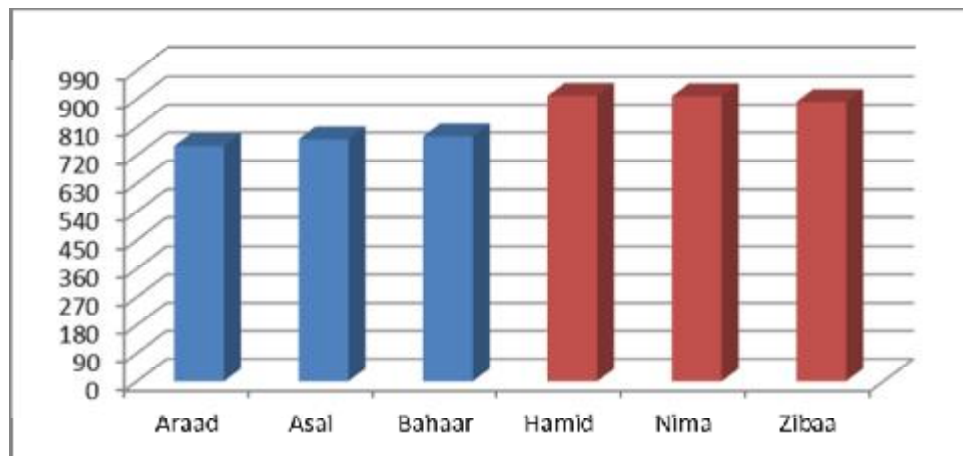


Figure 4.1. Input frequency and language development in first language acquisition by Iranian infants (24-26 months old)

4.1.2. (26-28 months old)

As the three infants entered their 26th month, there was a gradual release on length constraint as words began to be combined into sentences, and they were making early word combinations (ab midam be pishi). When the three infants were 26 months old, utterances were usually one, two, or three words long and family members could usually understand them. As they entered their 27th month, development of semantic scope operations in syntax was gradual (they knew how to use a transitive verb (kifo bede be man), and an intransitive verb (maman bekhab). During their 27th month, they could understand and produce 50-1000 words. When the three infants were 27 months old, past tense was used (baba raft, ketab ofrad), and they could make the imperative verbs negative (bokhor: nemikhoram, salam kon: salam nemikonam). The following figure illustrates the importance of the quantity of input.

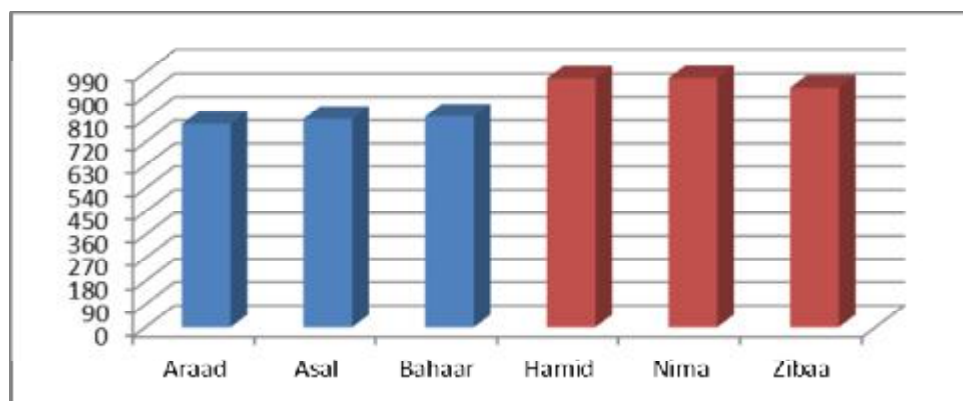


Figure 4.2. Input frequency and language development in first language acquisition by Iranian infants (26-28 months old)

4.1.3. (28-30 months old)

When the three infants entered their 28th month, complex syntax, with various forms of embedding and transformations, appeared as early sentences grew in length (fek mikoni chera un aghae narahate). When they were 28 months and three weeks old, they could use pronouns correctly (man, to, una, ma, un), and the plural form (pishiha, bacheha). They could also make longer questions using relative questions (maman chera meshki pushidi? Maman chi mikhori?). When the three infants were 29 months old, they used some forms of adverbs (farda, dishab, dobare, alan). Development continued for operations involving integration of language-specific lexicon and syntactic computation (e.g. gholbede / begu) when the three infants were 28 months old. The three children could understand two stage commands (kafshato dar biar bad bezareshun tu jakafshi), and understood contrasting concepts or meanings (e.g. hot/cold, stop/go, in/on) when they were 29 months old. The role of the amount of input can be seen in the following figure.

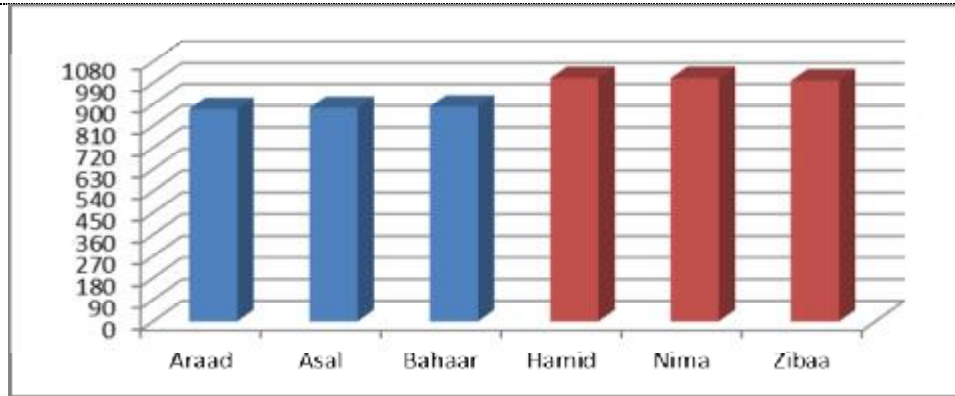


Figure 4.3. Input frequency and language development in first language acquisition by Iranian infants (28-30 months old)

4.1.4. (30-32 months old)

At this stage, when the three infants were 30 months old, syntax continued to grow. “My” and “mine” were beginning to emerge (mamane man, male man) when the three children were 30 months and 20 days old. When the three infants entered their 21st month, their vocabulary was expanding rapidly; they seemed to learn a new word every day. The three children began to use complete 2-4 word sentences to communicate with family members from the first days of their 31st month. At this stage of language development, as they were getting close to their 32nd month, the three children understood and used adjectives “khanume chagh, pishie zesht”. They could also use please, and I’m sorry (maman lotfan baram bastani bekhar, bebakhshid maman nadidamet). They could use past continuous (maman dashti ba baba harf mizadi man akh shodam), and they could make the simple past form of the verb themselves (mother: chi mikhai bokhori? – hamun ghazai diruz khordam). The importance of the frequency of input is shown in the following figure.

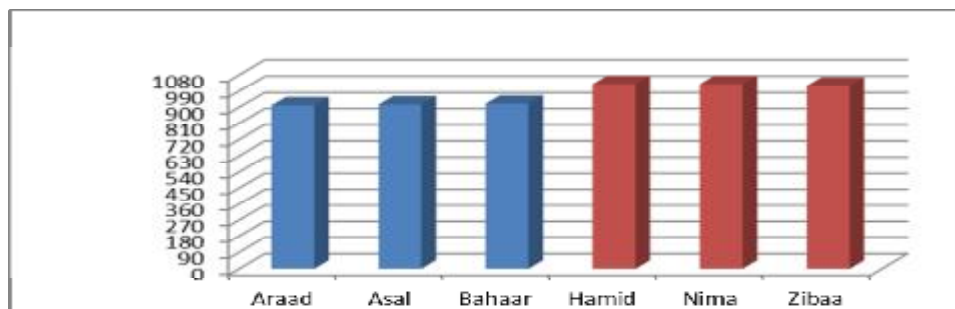


Figure 4.4. Input frequency and language development in first language acquisition by Iranian infants (30-32 months old)

4.1.5. (32-34 months old)

At this stage, as the three children were 32 months old, comprehension of basic operations of complex syntax and knowledge of ambiguity emerged. They were using some plurals and past tenses correctly. Aarad could use “wish” and “if” structures when he was 32 months and 18 days old (kashki to babam budi, age to mamanam nabudi ye mamane khub miavordam), but Bahar used these structures when she was 32 months and 25 days old, and Asal did it when she was 33 months old. The three children could use adverbs of manner (dandune maman beshadat dard mikone) when they were 33 months old. Lexical, semantic and pragmatic knowledge continued to develop in language-specific interaction with the syntax of the language. They could use the future form (mother: begu chekar kardi? – khob migam). The way that language development is affected by the amount of input is shown in the following figure.

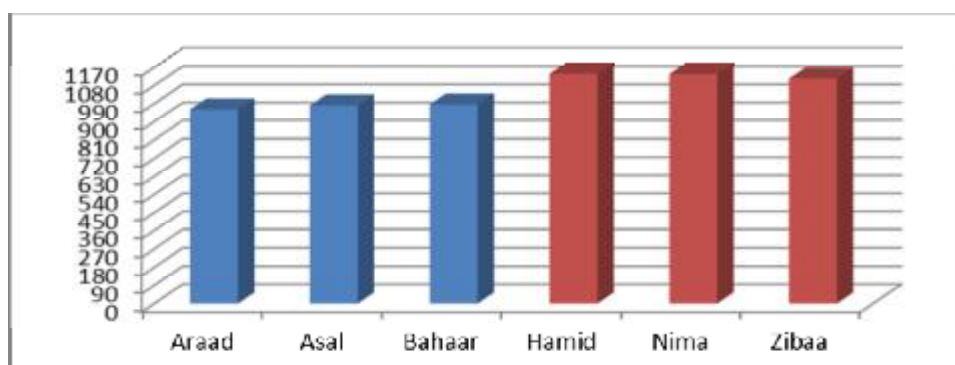


Figure 4.5. Input frequency and language development in first language acquisition by Iranian infants (32-34 months old)

4.1.6. (34-36 months old)

When the three children were 34 months old, certain language-specific properties of grammar, syntax/semantics interactions, and lexicon/syntax interactions continued to develop. At their 35th month, sentences that the three children could produce were becoming longer as the children could combine four or more words (maman dolphin mige emruz narim birun, mother: inaro nakan kharab mishan -: khob kharab beshan). Higher order semantics (e.g. logical connectives and quantifiers) continued to develop. Integration of pragmatic, semantic and syntactic factors continued to develop. The effect of the amount of input on language development is shown in the following figure.

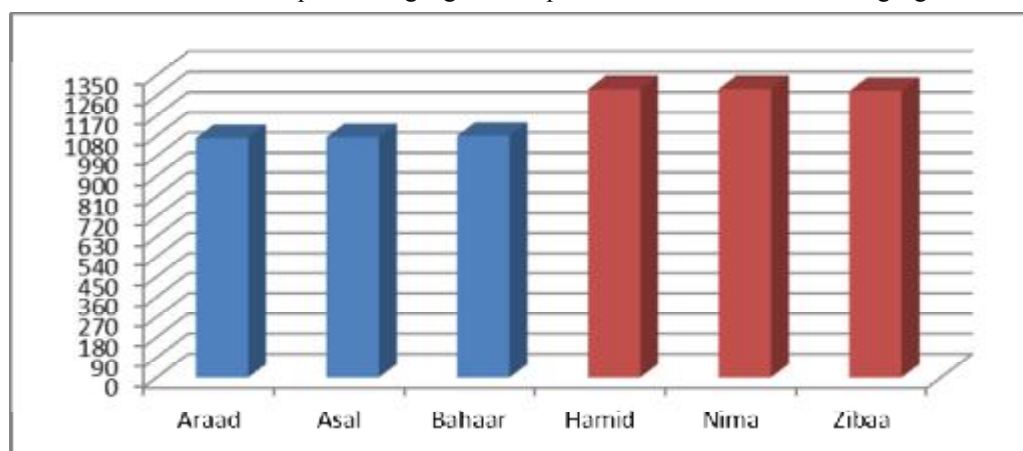


Figure 4.6. Input frequency and language development in first language acquisition by Iranian infants (34-36 months old)

5. Conclusion

According to the findings of the first case study, the children followed a systematic pattern. They all followed the same path of development. Children did not learn language accidentally. If a Language Faculty is present in the initial state, then we would have an explanation for how and why the epistemological primitives of language knowledge occur so early, and for why principles and parameters of syntax appear to guide early language development. Children appear predisposed to analyze the speech stream in order to discover critical syntactic units. So infants appear biologically predisposed to analyze these acoustic properties in just the right way for syntax acquisition. Just the existence of an innate ability can be an answer to such an unbelievable ability.

But the findings of the second case study, comparing the infants who received normal input and the infants who received less input, showed some important points which highlighted the important role of input in first language acquisition. Comparing these infants with the infants who received less input, they both followed the same process, but for the children who received less input the process happened with some delay and more slowly.

Among the children who received less input, Ziba was more sensitive to the language and started the language sooner than the two other infants because all the time television and radio were on in her environment morning to late at night, and also in the mornings her cousin came to their house twice a week and spoke with her. Among the children who received normal input, Arad was more sensitive to the language and started the language sooner than two other participants of this study, and passed the steps of this system faster and easier. It can be because he was exposed to two languages before and after birth (Persian & English), and also his grandmother talked to him more than two other infants being involved in this study. Arad's mother started to speak in English again after one year, and it was so interesting that Arad could understand English but could not answer or produce English. It can also be another support to the existence of an innate ability in language acquisition and a support to prove that input is necessary to trigger that innate ability. Asal was also more sensitive and started the language sooner than the other girl (Bahar) because her mother and father read different story books for her in the morning and at night.

The findings show that innate knowledge of grammar itself is not sufficient. Language acquisition is not only an innate process, and it does not come from language faculty alone, but is due to a complex interaction of input and the internal system, together with many other factors. It is important to consider that the frequency of input is highly significant, and there has to be a sufficient quantity of input review. A small amount of input may cause language comprehension, but language production will be delayed until the learner receives enough amount of input. Therefore, the input is not merely a trigger which operates the internal mechanisms controlling the language acquisition process, but a necessary condition for successful language acquisition.

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