

The Effect of Learning Environment on Language Acquisition: A Survey of Chinese and Pakistani Siblings

Muhammad Adeel Akram¹ | Hongyan Wang² | Iqra Mustafa³

¹Master Graduate in Foreign Languages and Literatures, Shenzhen University, Shenzhen, Guangdong, China.

²Professor in College of International Studies, Shenzhen University, Shenzhen, Guangdong, China.

³Master Student in College of Management, Shenzhen University, Shenzhen, Guangdong, China.

Received 26-08-2024

Revised 27-08-2024

Accepted 25-09-2024

Published 27-09-2024



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Abstract

First Language Acquisition is a complex phenomenon and it has been debated for decades by theorists and researchers. The biological foundations of language such as Chomsky's LAD and the obvious influence of external stimuli have resulted in many different schools of thought for language acquisition. This paper explores different theories of language acquisition and presents their features as well as their criticisms. It also outlines the differences between acquisition and learning and presents the stages of language acquisition. This study's primary aim is to explore what role nurture plays in the early stages of the development of language. The researcher would explore this question by conducting a survey based on the time of onset of speech in the siblings' first language. This survey is being conducted because siblings get the same kind of environment but the younger siblings have a comparatively more favorable language environment as they get the stimulus from the parents as well as their elder siblings. The researcher has done a comparative survey on the onset of speech between the siblings and analyzed the results to conclude this paper. The researcher has systematically collected data from language learning schools in China and Pakistan. Data is gathered from 100 parents of children who have more than one child and are learning a second language in an institution. Out of the 100 participants, 52 were Chinese and 48 were Pakistanis. The quantitative method of research is adopted for analyzing the data collected in the survey. A questionnaire is used as a data collection tool which consists of open-ended and close-ended questions. Later in the analysis section, data is comprehensively examined and investigated. Earlier onset of speech in the first child and second child was analyzed in which the ratio is 31% and 69% respectively and out of 100 participants only 8% of the siblings had the same time of onset of speech. Research shows that earlier onset of speech results comprised of 56% of girls as compared to 44% of boys. Research on language learners through their parents' feedback concludes that both nature and nurture play an important role in the development of language acquisition. This is because we need our genes and brain to build a language acquisition device (LAD), and then, after we have the ability to learn a language and interact with people around us, we gradually acquire words and grammar, and our language system is then complete.

Keywords: Behaviorist theory, Nativist theory, Nature; Nurture, Universal Grammar, language acquisition device, Learning environment

Introduction:

Language is a phenomenon that distinguishes humans from the rest of the creations on this planet as it is specific to human beings. Human language seems to be unique, significant entity (Chomsky, 2010). Language fulfills the purpose of communication and interaction. Since the emergence of humans on this planet, they started creating, using, and hence evolving language. Enough pieces of evidence are not present about how old the language is, but it can be as old as the humans on this planet. Language learning is a phenomenon that is not new in human life rather humans have been provided language learning environments so that they can learn their parent language. It has been widely debated that out of nature and nurture which one is more important for human development? Nature can be defined as all the genetic factors that influence us, from our appearance to our personality traits. Whereas nurture refers to all the environmental factors that influence us, including our childhood experiences, family backgrounds, how we are raised, our social relationships, and the culture around us. Although most researchers acknowledge that both nature and nurture play an important role in language acquisition, some researchers emphasize the influence of learning on language acquisition, while others have their leaning toward the influence of biology. As the children are not born speaking, they must learn a language to communicate. The question then arises whether they are born with the mechanism that is required to get them started. What kind of findings could help answer these questions? Another issue is whether children are born with built-in linguistic categories and structures required for learning. This has also been a topic of long debate. Some scholars have proposed that children are born with an innate knowledge of syntactic categories like “noun” or “verb”, along with certain structural arrays for combining them. And they slowly work out what counts as a noun or verb in the speech they hear. Others have emphasized that children can differentiate nouns and verbs by looking at all the linguistic contexts they occur in and they can

discover nouns and verbs from the kinds of things they come across like, nouns are for people, places, and things and verbs are for actions. Even if children are born with an innate mechanism dedicated to language, this mechanism can only be attributed to syntactic structure. The rest has to be learned. Language is a complex task for children. If we compare learning a language to learning other tasks like how to wear shoes and socks or brush one’s teeth, it is clear that language demands a lot more. Language consists of complex systems whether we consider just the vocabulary or the sound system, or also syntactic and word structure. The structural elements of a language are just a part of what has to be learned; the other part consists of the functions assigned to each element. Learners must acquire both the structure and function of all the elements to use a particular language. Languages aren’t all based on the same pattern, and this makes a difference in their acquisition. They differ in the range and combination of sounds they use and in their basic word orders for subject, verb, and object. For example, a language may have SVO or SOV order. But languages are often consistent in their basic word order and the orders used across a variety of syntactic constructions. Such grammatical universals are important for speaking and listening. The consistencies of a language help speakers keep track of what they are listening to and how they will respond. So, whether it is an SVO or SOV language, the children have to learn general structural consistencies in the language they’re acquiring. These characteristics are important because, once the speakers have acquired them, they can make certain assumptions about the type of information that can come next in an utterance.

Various theorists have worked on the theory of acquisition in language and prominent names are Bloomfield and Skinner on behaviorism, and Chomsky on nativism. Skinner (1957) argued that the process of language acquisition could be explained by the mechanisms of operant conditioning (OC). OC is a technique that can be

used to target and increase a behavior by pairing the performance of the target behavior with a positive or rewarding outcome (Domjan, 2010). Chomsky (1959) then rebutted Skinner's argument on several grounds, including that it was not possible that parents could do the slow and careful shaping of children's vocalizations and that there are grammatical regularities that cannot be discerned from the surface features of language alone. Children's time to obtain their first language varies a lot. They can be slow, moderate or fast in the onset of their speech. This is influenced by several factors, such as natural factors, cognitive development factors, social background factors, and hereditary factors (gender, intelligence, personality/style acquisition) (Slobin, 1985:63).

Inter-linguistic (genetic) and extra-linguistic factors (social/cultural/environmental) affect the language learning process of children in the initial stages of language learning. Present study explores the phenomenon of language learning with respect to learning environment and nature. Language learning is a constant process which takes time to evolve and every language is an integrated, multidimensional system with fixed rules. Numerous methods and techniques have been adopted by language instructors to teach language to kids. The end goal of language learning is to be able to comprehend novel utterances in a target language and to create new, linguistically correct utterances. In language learning, both nature and nurture have been argued to play a role. Innate theory claims that language acquisition is an innate mechanism, by taking this statement as a starting point, we aimed to conduct a study comparing the time of onset of speech between the siblings. Because the siblings have different language learning environment (Figure 1&2), the purpose is to find out whether the siblings have the same or different time of onset of speech. If it is same then this might argue in favor of innateness playing a

role in language acquisition. If it is different, then the importance of environmental factors should be acknowledged as well. We would also try to find out whether the elder siblings have influence on the language acquisition of their younger siblings. It is added that this is a first exploration of this issue, and that any answers in this debate are tentative and meant to lead to further research.

Research Significance:

Numerous researches have been carried out on language acquisition and development. The present study will explore the effect of nature and nurture in language learners and will try to weigh their influence and see if one dominates the other. We predict that nurture will dominate nature. Innate mechanism does have its importance in providing a hardware for language acquisition but environmental factors are the main ingredients of our language development. These factors eventually decide what language and how many languages we may speak. Special attention will also be paid to the role of parenting in the language learning journey of their children. As the technology is advancing, the parent-child conversation time is decreasing so the research will also suggest the importance of stimulus for children's language acquisition and might be used as a reference for providing a good language acquisition environment to the children suffering from delayed speech.

Research Questions:

The siblings normally get almost the same kind of environment at home but the younger siblings get a more favorable language environment as compared to their elder ones because the increase in the number of family members means more chances of conversations which result in a better language environment for the children. Elder sibling gets only two types of stimuli which can be called as direct and indirect stimuli. Direct stimulus refers to the chances of language acquisition a child gets directly from his parents and indirect stimulus means the language a child acquires indirectly from the parent to parent conversations. The two types of language stimuli are shown in Figure 1.

Direct Stimulus

Indirect Stimulus

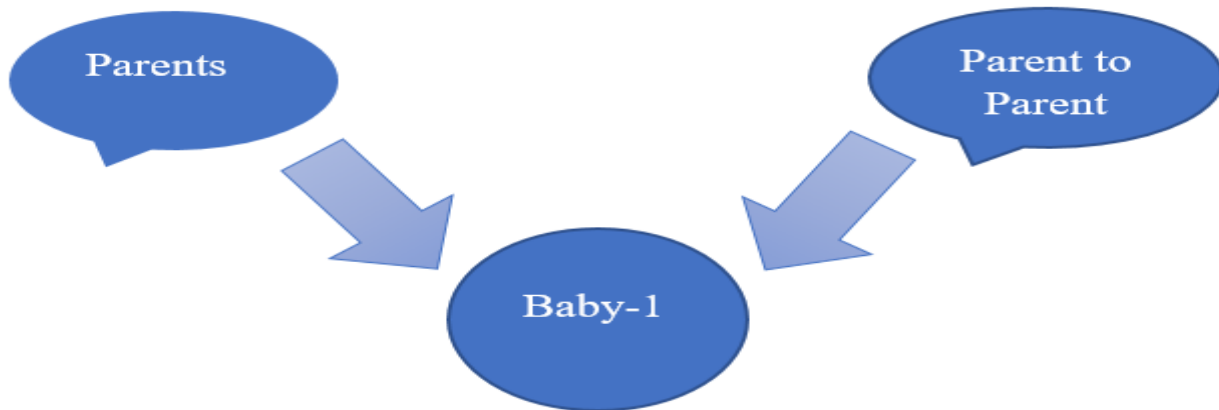


Figure 1: Two types of language stimuli for the elder sibling

On the contrary to the two stimuli for an elder sibling, a younger sibling gets four types of stimuli. Two of them can be classified as direct stimuli and the other two as indirect stimuli: one direct stimulus from their parents and one from their elder

sibling, one indirect stimulus from the parent to parent conversations and one from the parents-to-elder sibling's conversations. The four types of stimuli for the younger sibling are shown in the figure below.

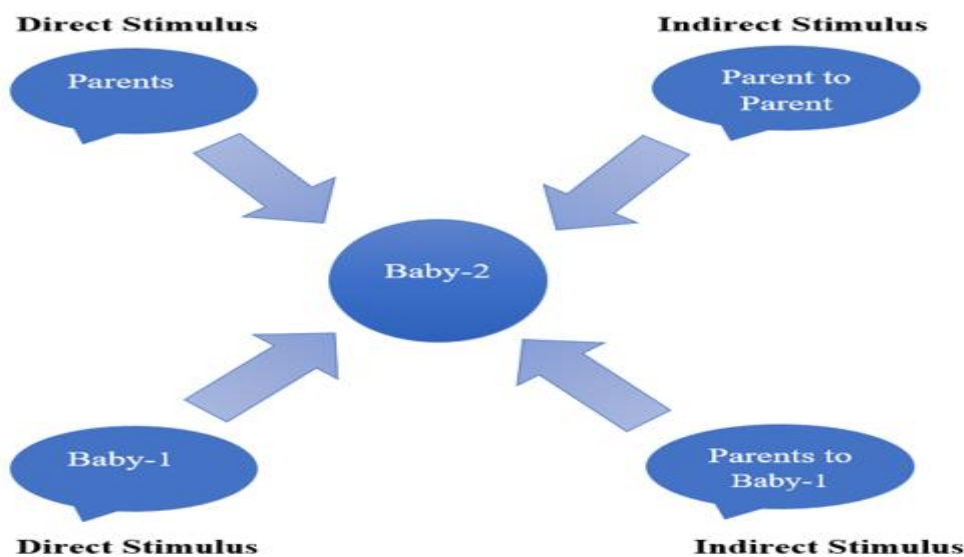


Figure 2: Four Types of Language Stimuli for Younger Siblings

Figures 1&2 clearly show that the younger sibling gets the double amount of language stimuli as compared to the elder sibling which means that the younger sibling gets a much better language acquisition environment than his elder one and that allows us to probe further into the decades-long debate of impact of nature and nurture on language acquisition. This research is primarily based on behaviorist theory of language acquisition which claims that children acquire language from their

environment through a stimulus-response (SR) method. This research is not about the children's full competence in language, rather the researcher will try to discover the impact of stimulus on the time of onset of speech (two to three word sentences) in siblings. Keeping in mind the difference in the first language acquisition environment of the siblings, a survey of their time of onset of speech will be done and we will try to find out the answers to the following questions:

- i. Do siblings tend to have the same time of onset of speech?
- ii. Do the elder siblings influence the time of onset of speech in their younger siblings?
- iii. How does the difference in number of language stimuli affect siblings' onset of speech?

Literature Review:

First language acquisition occurs when a child has been without a language and now acquires one. If it is one language, it is called as monolingual FLA. The less frequent case of a child learning two languages simultaneously is known as bilingual FLA. Monolingual first language acquisition is the most widely investigated form of language learning. But to understand first language acquisition, a crucial point to be noted is that first languages are acquired, not learned. This

distinction between learning and acquisition is important in understanding language acquisition. Acquisition is involuntary and implicit, whereas learning involves explicit instruction which is voluntary on the learners' part. Acquisition is effortless, while learning requires effort. When children acquire their first languages, they do not require formal instruction, and they acquire the basics of all essential parts of a language like pronunciation, grammar, and intonation, all by the age of five or six, well before they enter institutions of formal education. Finally, the outcome is the same and all individuals talk unless physical or mental impairments affect their linguistic capacity. Other aspects of speech such as the ability to throw jokes, understand and use sarcasm, or hold a meaningful conversation, are all developed and learned over time.

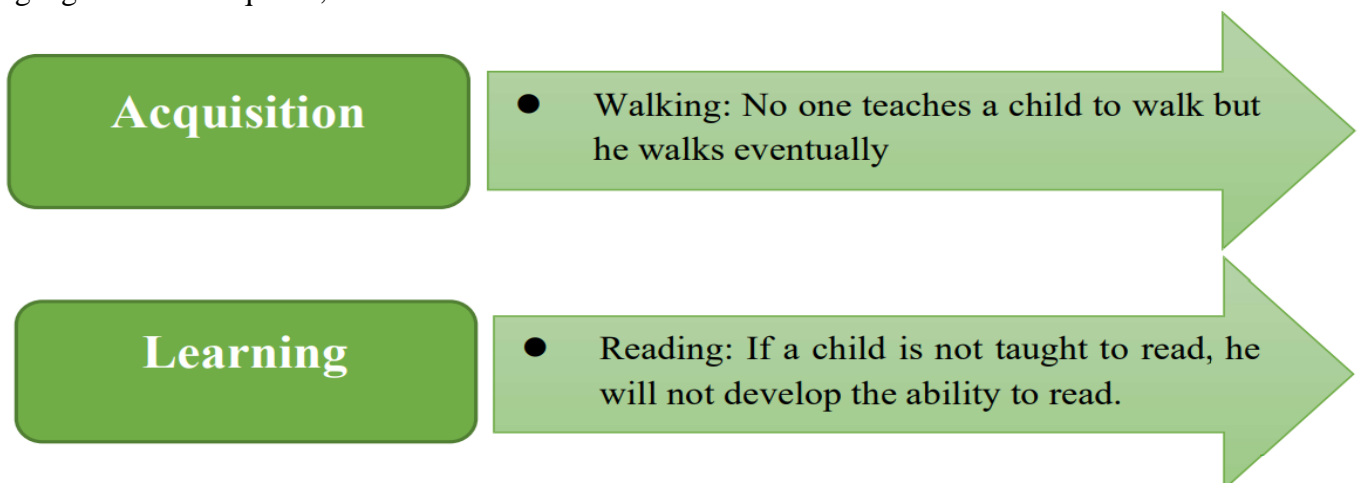


Figure 3: Difference between acquisition and learning (Fromkin, 1983)

Fromkin (1983) differentiates acquisition and learning by stating that walking is a process of acquisition whereas reading requires a learning process. All children, except some with physical deformities, can walk without any special coaching or tutoring. On the contrary, reading is a learning process because a child will only be able to read if he is taught to read. As we know many people around the world can't read because they were not taught to do so.

Stages in First Language Acquisition:

The built-in capacity of language in humans does not mean that they possess the ability to speak perfect grammatical utterances in their first

language by birth. The first language is acquired in several stages progressing with age and each subsequent stage is closer to the level of competence. There are six primary stages of first language acquisition, as denoted below (Hutauruk, 2015):

1. Pre-talking stage / Cooing (0-6 months): At the cooing stage, babies produce vowel-like sounds to respond to human sounds, and turn their heads and search the speakers with their eyes when they hear the sounds of speaking (Bolinger, 2002). They may produce some chuckling sounds and some vowel-like sounds, especially the back vowels [u] and [o] in the typical ways of "cooing". They find

difficulty in producing the [i] sound as it is a bit challenging at this stage, but they may produce the sound when screaming or crying. Consonant sounds like [b], [p], or [m], are not produced yet at this stage.

2. Babbling stage (6-8 months): According to Steinberg (2003), babbling involves the sounds, infants produce as consonant-vowel combinations. This stage includes some common sounds we associate with parental figures such as [ma-ma-ma], [da-da-da], [ba-ba-ba], or [na-na-na].

3. Holophrastic stage (9-18 months): Fromkin defined holophrastic as a combination of holo meaning “complete” or “undivided” plus phrase or sentence (Fromkin, 1983). Thus, the holophrastic stage is where a child produces simple one-word utterances to represent meanings.

4. The two-word stage (18-24 months): At this stage, children start to combine words. According to Fromkin, children start to form actual two-word sentences, with the relations between the two words showing definite syntactic and semantic relations and the intonation contour of the two words extending over the whole utterance rather than being separated by a pause between the two words (Fromkin, 1983). For example, an utterance like “Sam go” or “I come” may be produced. The consonant sounds [j], [p], [b], [d], [t], [m], and [n], can be pronounced by children at this stage.

5. Telegraphic stage (24-30 months): The telegraphic stage is named so because the child produces concise utterances with primarily content words, as you would find in telegraphic messages (Fromkin, 1983). When a child begins to produce utterances that are longer than two words, they imitate full sentences as more words are combined. They have hierarchical and constituent structures similar to the syntactic structures found in the sentences produced by adult grammar.

6. Later multi-word stage (30+months): In the later multi-word stage, utterances have communicative intent and are not limited to just a few content words (Bolinger, 2002). Functional words indicating an understanding of grammatical structures begin to emerge at this stage. The

increase in vocabulary is the fastest at this stage with many new additions every day. There’s no babbling at all (there may be exceptions) and utterances have communicative intent. The children seem to understand everything said and directed to them.

As mentioned in the steps above, every stage of language learning marks a different level of learning. The child explores the language as he proceeds in his language learning journey. Quite a few theories have emerged over the years to investigate the process of language acquisition. These diverse schools of thought provide the theoretical paradigms to study the realm of language acquisition.

Theories Underlying First Language Acquisition:

The long-standing controversy between nature and nurture has been explored through various theories of language acquisition, that is, whether language is innate and God-given or learned from the environment. Gleason (1998) states, perhaps this is the major question that divides psycholinguistics. To what extent is language hardwired into the human brain (nature), and to what extent is it learned through interaction with the environment (nurture)? Do parents teach children language, or does language simply unfold gradually according to a genetic program? There have been many attempts to answer these questions and they have resulted in the existence of several school of thoughts with different theories on how human beings acquire language, four of which are explained below.

Behaviorism:

Behaviorism is a psycho-linguistic theory of language acquisition that emerged in the 1950s and is based on the psychology of habit formation. Skinner in Brown (2000) states that language learning is a kind of behavior similar to other behaviors. B.F. Skinner is at the forefront of the behaviorist theory and suggests that babies imitate the language of their parents (Skinner, 1957). This developed into the imitation theory that children learn language by imitating their parents or others

around them. Moreover, the stimuli-response theory was also highly influential in this era. The term stimulus (S) refers to the reinforcement or the environment and response (R) refers to the activity resulting from behavior changing. The stimulus here is in the form of language input. When a child gets a language input from the environment, he imitates it and continues to practice this input (sounds and patterns) until he forms “habits” of correct language use. Thus, behaviorism explains language acquisition as behavior change through habit formation which relies on the presence of stimuli and is strengthened through practice and selective reinforcement. Although Skinner’s view has its merits, it is met with some objections. One critical discrepancy in Skinner’s explanation is that children make mistakes in their early stages of language acquisition and they keep on correcting themselves with time which reveals that they are not just imitating but actively working out and applying the rules governing their language. In addition, children rarely receive grammatical corrections at such young ages, as parents are more concerned about truthfulness and politeness than correcting children’s grammatical mistakes at earlier stages of the language. Moreover, the Critical Period Hypothesis popularized by Eric Lenneberg (1967) suggests the existence of a period within which children can acquire language perfectly. This window closes at adolescence, and after this point, children cannot achieve native-level knowledge of a language. The behaviorist theory does not explain how children speak beyond the input that they receive from the environment, and how this input is not sufficient after a certain point of time.

Nativism:

The innatists, also known as nativists, believe that language is not a behavior learned through imitation and conditioning as claimed in behaviorism. Chomsky & Miler (1957) in Chaer (2003) state that children’s minds are not blank slates to be filled merely by imitating language they hear in the environment. The innateness view emerged as a direct criticism of the behaviorist theory of language acquisition. The apostle of this

school of thought is Chomsky who directly negated the behaviorist view in his review of Skinner’s Verbal Behavior in 1959. According to Chomsky, the ability of children to create novel utterances despite the impoverished language input they receive concludes the existence of an inborn faculty for language acquisition. This innate natural faculty hardwired in human beings is known as the Language Acquisition Device or LAD (Chomsky, A Review of B.F Skinner's Verbal Behavior, 1959). He stresses that all human languages possess common principles, like nouns and verbs. It is the language acquisition device that helps the children to access and process these principles. Another assumption of this approach is that language development follows biological and chronological program. Just as normal children go through distinct and predictable phases of psycho-motor development at different times during their early years, various grammatical features are acquired according to natural order or program which is contradictory to behaviorism suggesting that language outputs are proportional to language inputs. Goh & Silver (2004: 19) also emphasize that language is rule-based and generative in nature, processed and produced through complicated cognitive processes and mechanisms. Innateness theory is well supported by Lenneberg (1967) who is popular with his Critical Period Hypothesis in which he argues that the critical point for language acquisition occurs around puberty. Beyond this point, people who try to learn a language will not acquire it to the level of native speakers. Although Chomsky’s theory is venerable and possesses many things that cannot be explained otherwise by other theories in existence, it is sometimes criticized for the fact that the theory does not provide any insight into real children and their experiences with the language environment around them to see to what extent it influences children’s first language acquisition.

Cognitivism:

Jean Piaget, a Swiss psychologist, is regarded as the pioneer of the cognitive theory of language development. Just like nativism, the cognitive view directly opposed behaviorism as well. Cognitivism

justifies the role of mental activities and rational thoughts of the human mind in language acquisition. According to Piaget, language is a mental and emotional process where the child's cognitive development is linked to language development (Piaget, 1926). He suggests that before a child can verbalize a concept, he must first understand what it is. Thus, cognitive development is a prerequisite for language acquisition and cognitive theorists believe that language is a subordinate part of cognitive development, dependent on the attainment of various concepts (Gleason, 1998:383). According to their view, children learn about the world first and then map their language onto that prior experience. In addition, they believe that language is just one aspect of human cognition. According to Piaget and his followers in Gleason (1998:384), infants must learn about the world around them, which they do through active experimentation and construction. For example, an infant crawls around the floor, observes the objects from all angles, and then gradually develops a sensory-motor (literally, "through the senses and more activity") understanding of the space in which she lives. The cognitive theory is not free from criticism as well. One area of debate is that as children continue to develop and grow, the link between language and intellect gets blurred and hard to trace.

Interactionism

In recent years, different theories have started to stress on the importance of language input received by children and interactionist school of thought is one of them. The primary focus of this model which is also known as functional approach is how language and cognitive development take place within key contexts of interaction. These theorists believe that language exists as a result of the human

society and the need for communication, without which it would have ceased to exist in the first place. Jerome Bruner, an Interactionist, suggests that the language behavior of adults while talking to children, mostly known as child-directed speech (CDS), is specially adapted to support the process of children's language acquisition. Adults change their manner of speech when interacting with children to communicate at their pace of language development. This act of support for the children's language learning process is described as scaffolding. The term Language Acquisition Support System or LASS was coined by Bruner. This term was coined in response to Chomsky's LAD. According to Bruner, if there is a device for language acquisition, then there is a support system as well (Bruner, 1983). This support system is the social environment in which the child interacts with adults and develops language with the help of input from the adults. This idea is in line with Vygotskyan's view of cognition and language in which it is stated that cultural and social interactions and language learning are interrelated. However, the relationship between cognition and language learning interactions gradually changes as the child grows older. Through language used by themselves and the people around them, children come across new experiences that further develop their ability to think. For example, children who have some control over their language will start asking questions to make sense of things they see or hear. They also enjoy listening to stories and talking about characters in the stories. Therefore, by learning to use language, children in turn develop new ways of thinking about their experiences. This changing relationship of cognitive development, interaction and language is shown in the figure below.

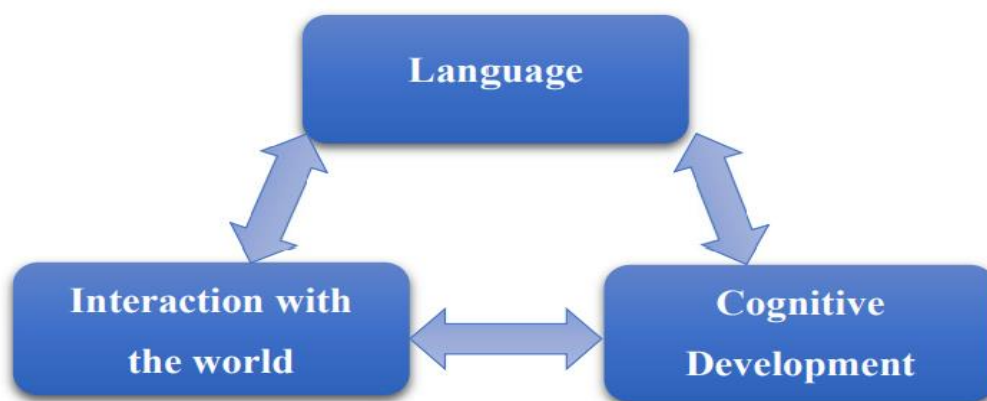


Figure 4: Changing relationship of cognitive development, interaction and language

Language Acquisition Device:

Noam Chomsky, an American linguist, argues that children are born with the innate ability to learn a language. But how is that possible? He suggests that it is due to a built-in mechanism in the child's brain which is called Language Acquisition Device (LAD). For years, behaviorist theorists were winning the language acquisition debate, largely due to the lack of scientific evidence behind the nativist theory. However, all that changed with the arrival of Chomsky who helped revolutionize the field of linguistics in the 1950s and 60s by treating language as a uniquely human and biologically based cognitive ability. He rejected the behaviorist theory (which states that children learn a language by imitating adults) and, instead, suggested that children are 'hard-wired' to learn a language by birth. He came to this conclusion after noticing that children were able to form syntactically correct sentences (e.g. subject + verb + object) despite receiving impoverished language input (baby talk), and not being taught how to do so. Chomsky proposed the LAD theory to explain how children are able to use the basic structures of language, even though they seldom receive instructions on how to speak their native language. He originally argued that the LAD contained specific knowledge that is key to understanding the rules of language; however, he adapted his theory later and now suggests that the LAD works more like a decoding mechanism which is a uniquely human trait and cannot be found in animals and it helps explain why it is only humans that can communicate through language. Although some species of apes can communicate via signs and images, they cannot grasp the complexities of grammar and syntax. It's also important to remember that the LAD is a hypothetical tool, and there is no evidence of a physical language device in our brains yet. But studies have also shown certain disabilities of language learning in some children who have damaged some parts of their brains. Such children grow up with partially impaired language ability because the brain can develop new language pathways that are accountable, but they cannot complete the actual part of the brain which is

involved in language (Reilly, 1998). Reilly's argument goes in favor of LAD and the biologists should probe further into the existence of LAD in our brains.

Universal Grammar:

LAD does not possess specific information about any specific language, such as Chinese or English because it is not language-specific, and instead, works more like a mechanism to help us work out the rules of any language. Chomsky believes that every human language has the same basic grammar structures - he calls this Universal Grammar (UG) and LAD helps decode and implement the general principles of universal grammar. Chomsky does not believe that a child from England is born with the innate ability to learn English, or that a child from China has a LAD containing Chinese vocabulary. Instead, he suggests that all human languages share many of the same common grammar principles. For example, most languages differentiate between verbs and nouns, have fundamental rules about the past, present and future tenses, have a counting system and have a way of asking questions. According to Universal Grammar theory, the basic grammatical structures of language are already encoded in the human brain at birth. Once the child hears any language, the LAD is triggered, and it will help the child acquire that specific language. When children learn a language, they make mistakes. These mistakes can give us information as to how children learn. For example, children have an unconscious ability to recognize the past tense and automatically begin to associate words ending with a /d/ /t/ or /id/ sound with the past. Chomsky suggests this is why children make 'virtuous errors' such as, 'I goed' rather than 'I went' when first learning a language. Nobody teaches them to say 'I goed'; they figure that out for themselves. To Chomsky, these virtuous errors suggest that children are born with the subconscious ability to work out the grammatical rules of language. So, let's break down how the language acquisition device, universal grammar and the environment interact to help a child produce a language: The child hears adult speech which triggers the LAD, the child automatically

applies universal grammar to speech, he learns new vocabulary and applies the appropriate

grammatical rules and he is able to use the new language.

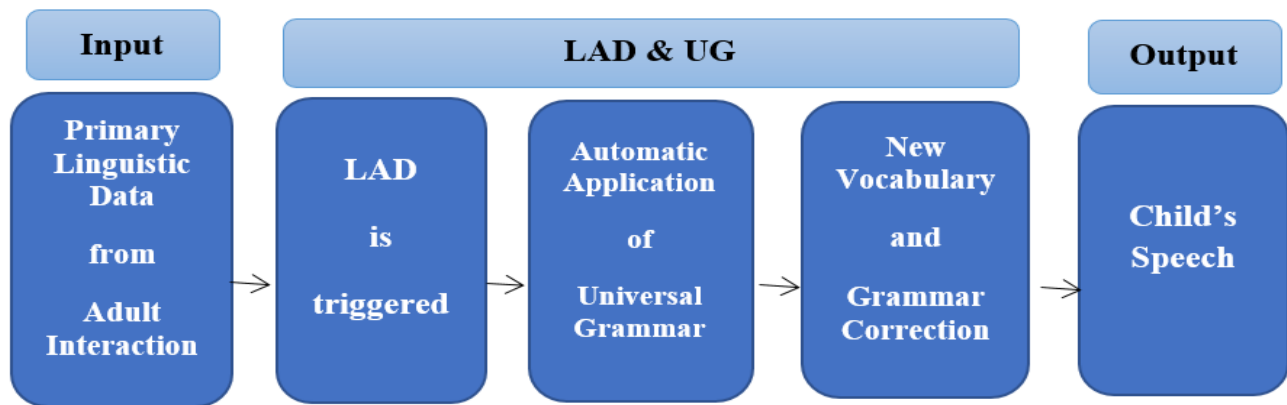


Figure 5: The Role of LAD, UG and adult interaction in child's speech

Language is expected to be more cultured and more prevailing form of communication and nobody can fit in a community without adhering to the spoken language of the respective community. Consequently, human offspring seems to attain linguistic systems without a conscious effort. Acquiring a language implies the fact that we just need to accomplish ourselves in just one language but this is not the case. Languages have many surfaces, whenever we talk about acquiring a language, we are talking to be experts in a diversity of skills and acquiring many different forms of knowledge. Thus, before acquiring another language, the learner needs to follow a systematic process to be master in that language. A questionnaire based longitudinal study of Japanese learners was conducted which focused on students' attitude towards learning English language and study provides pedagogical implications to teach English (Kobayashi, 2010). Initially, they need to differentiate sounds into words, linguistically speaking, it means converting phonology into morphemes. However, this is just the initiation of the language learning process. Once a child learns any word, he tries to fit that word in every possible utterance. He learns how to fit words into sentences to create syntax. Finally, children have to learn to use the cluster of words, they have in their thoughts coherently to make the sentences meaningful. The human brain processes language and the creative utterances which the mind produces. The second thing which dominates the language learning

process is its environment which means linguistic knowledge which children have to learn also depends on the child's exposure to the language provided by the environment.

The Poverty of Stimulus:

The poverty of stimulus (1980) is a hypothesis in language learning which states that natural language grammar is not acquirable to the full given the relatively limited data available to children and adults learning a language, and therefore this knowledge is supplemented with some sort of innate linguistic capacity. Humans are born with a specific representational adaptation for language that both supports and constrains their competence to acquire linguistic representations in the course of their linguistic maturation. But the language a child is exposed to in the environment is full of confusing information (for example false starts, incomplete sentences or sips of tongue) and does not provide all the information which the child needs but still he ends up knowing far more about language than is exemplified in the language we hear around us. It is well known that children make mistakes during the course of their language journey but they are neither corrected nor do they pay much attention to these corrections. If this is the case how do they recover from their mistakes? According to Cook (1991) there are four steps to the poverty of stimulus argument which are shown in the figure below.

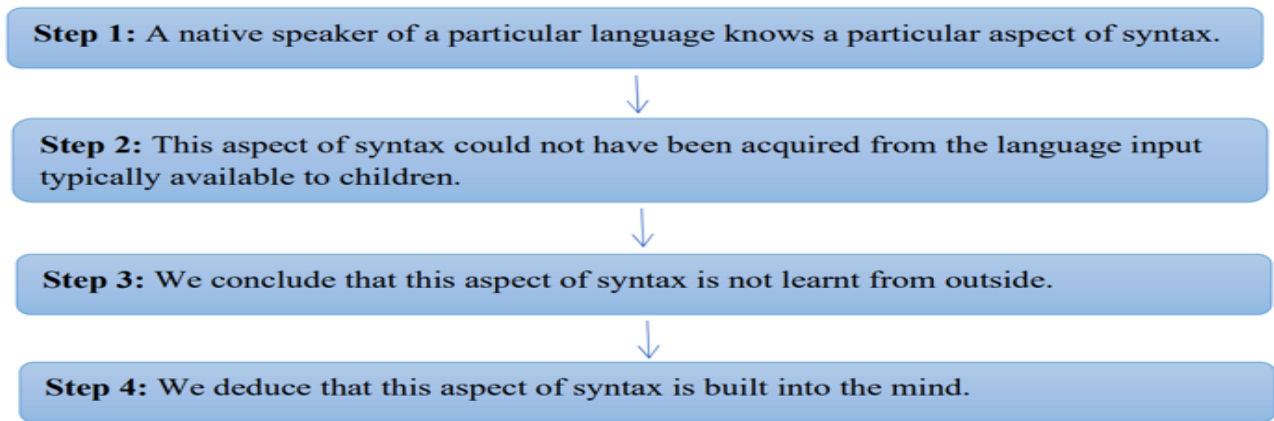


Figure 6: Four Steps of the Poverty of Stimulus (Cook 1991)

Similarly, the principles of Universal Grammar underline the specific grammar of all languages that need to be acquired. This can only be acquired instinctively without coaching or tutoring. The left hemisphere of the brain is considered to be involved in the acquisition of human language and this part of the brain is specially equipped for language. This theory arose as a challenge to children as well as for their syntax development. Although syntactic knowledge does not provide adequate information about the language, it shares their brains to construct similar structure utterances and this provides a healthy environment to acquire the necessary knowledge.

Methodology:

This research adopts the quantitative research method to emphasize the objective and statistical analysis of the data collected through the survey. The researcher developed questions to inquire the parents about their children's time of onset of speech. A total of 100 participants were interviewed and 52 of them were Chinese and 48 were Pakistanis. Initially, parents were asked to write the time when their children started speaking words or two-to-three-word simple sentences like, "I want water", "I play" and "I sleep" etc. Statistical analysis is then conducted for the numerical results to compare the results of the siblings. The design and measures of the study are on individual parents who send their children to learn a second language in schools. Research data collected through questionnaires and interviews was further analyzed and examined to get the best results. Data was collected through random sampling which is called so because parents were randomly chosen based on their willingness to provide data for research. This research is neither experimental nor a co-relational one. The focus is

on the parents' observations regarding their children's first language acquisition journey over time. So, the questionnaire includes open-ended and close-ended questions that are covering quantitative information.

Various research tools are used to answer the research questions. Data for the present research is collected through questionnaires. The questions were created and molded according to the need and requirements of the research. Questions focused on the linguistic knowledge, observations, input, input duration, and the nurturing environment which the parents have provided to their children. They were asked to write down the time when their children started uttering words and simple sentences. The researcher requested them to fill in a questionnaire having the parents' name, time of onset of speech for the first child and time of onset of speech for the second child.

The second data collection tool used in this research is asking random questions from parents. Four open-ended questions were asked from parents which included their opinions related to their child's language learning process. Random questions about elder siblings' interaction with their younger siblings, parents' encouragement to let the child express his thoughts and feelings and parents' personal opinion about the dominant factor between nature and nurture and gender's role in language acquisition, were asked. Researcher further asked the parents about the period of giving the input and the audio-visuals they were using to help their children learn fast. Research tries to cover all possible means of conveying linguistic knowledge for language acquisition.

Results and Discussion:

This part explains and analyzes the results of the survey. The results are remarkably interesting and

worthwhile. The following diagram describes the figurative representation of the same and different time of onset of speech between the siblings from 100 families.

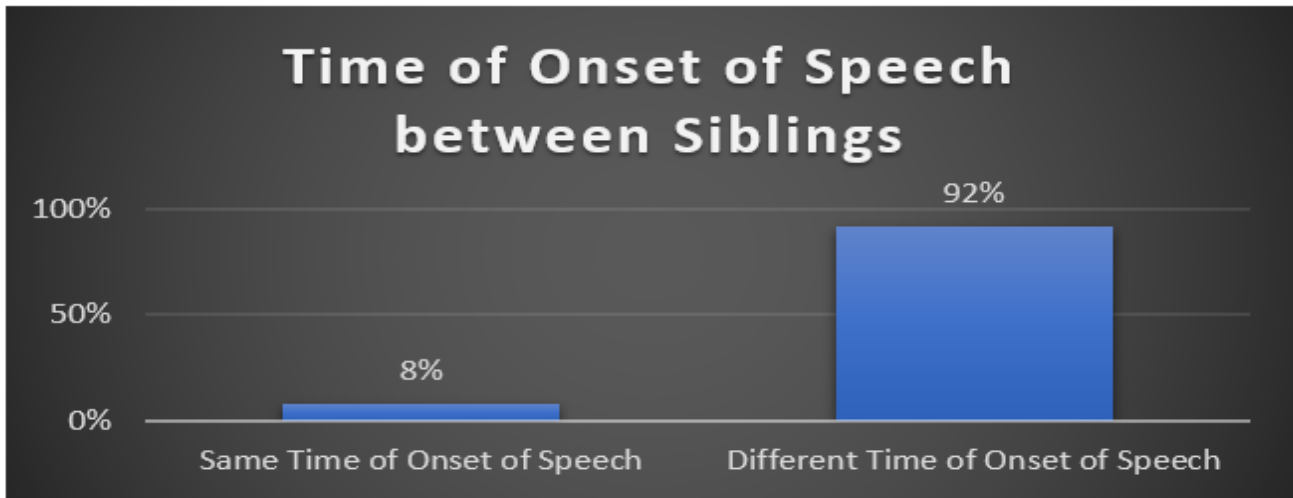


Figure 7: Same time of onset & different time of onset in siblings

The time of onset of speech is presented in the figure above which shows that only 8% of siblings had the same time of onset of speech and a huge number of 92% of siblings had different time of onset of speech. Now, the first question which arises from the results of the research is that, if we have an innate mechanism and no role of environment in language acquisition then why do 92% (first child+ second child) of the siblings have different time of onset of speech and only 8% of the siblings have the same time of onset of speech? This result points towards the significance of

language environment provided to siblings. Because the siblings get different language environments compared to each other, this affects their earlier stages of language acquisition differently. Hence, most of the siblings have different time of onset of speech.

Having different times of onset of speech also varied from one month to several months as illustrated in the figure below. The time difference of months is presented in the horizontal line whereas percentages are expressed in vertical lines

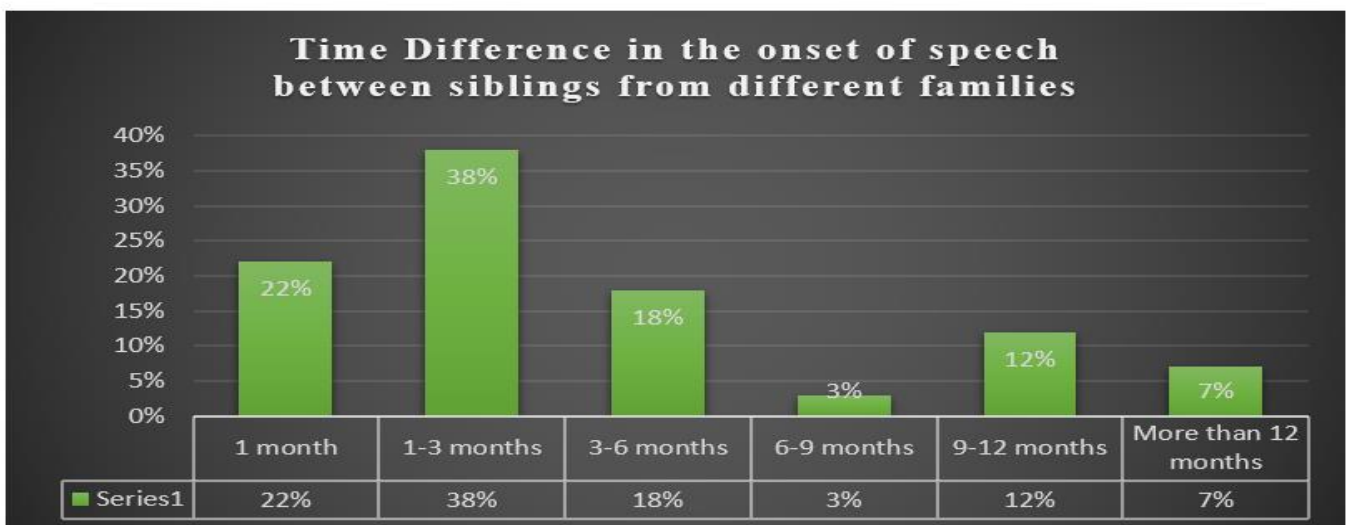


Figure 8: Difference in the onset of speech between siblings from different families.

As illustrated in figure 9, 22% of siblings have a difference of 1 month, and 38% of siblings have a difference of 1 to 3 months. 18% have a difference of 3 to 6 months and 3% have a 6 to 9 months' difference. Furthermore, 12% have a huge difference of 9 to 12 months between them and 7% have a difference of even more than 12 months.

This huge contrast of one month to more than 12 months among siblings from different families depict that because all families are supposed to have different language environment at home due to their educational and work backgrounds, hence, the siblings of different families have diversified difference of time of onset of speech.

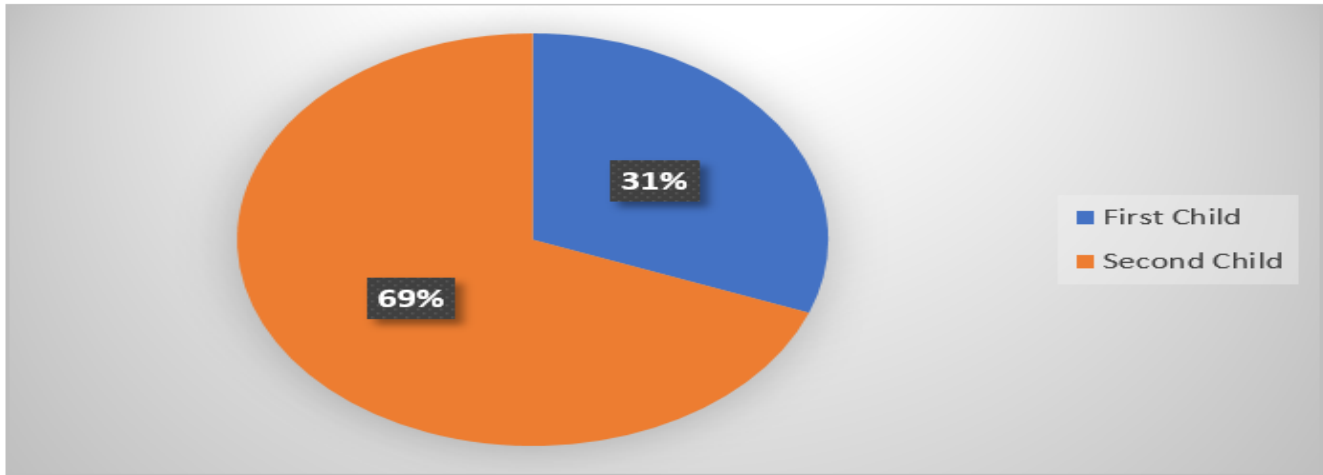


Figure 9: Earlier onset of speech in the first child vs. second child

The results in the pie above show the earlier time of onset of speech between the first and second child. 69 % of second children had an earlier time of onset of speech as compared to the first children who had a comparatively low number of 31%. Here, the second question that arises from the results is why the second children have about the double number of percentages of the earlier onset of speech as the first child. This superiority of second children in earlier onset of speech again points to the more favorable language environment they get as depicted in Figure 1& 2 in the first

chapter that the second children get four language stimuli from the environment as compared to only two stimuli for the first children. Hence a more favorable language environment results in the earlier onset of speech in more second children.

If we consider the gender, figure 11 below describes that 56% of the girls had earlier onset of speech in comparison to the 44% of boys which shows that girls' capability to acquire a language is comparatively better than boys.

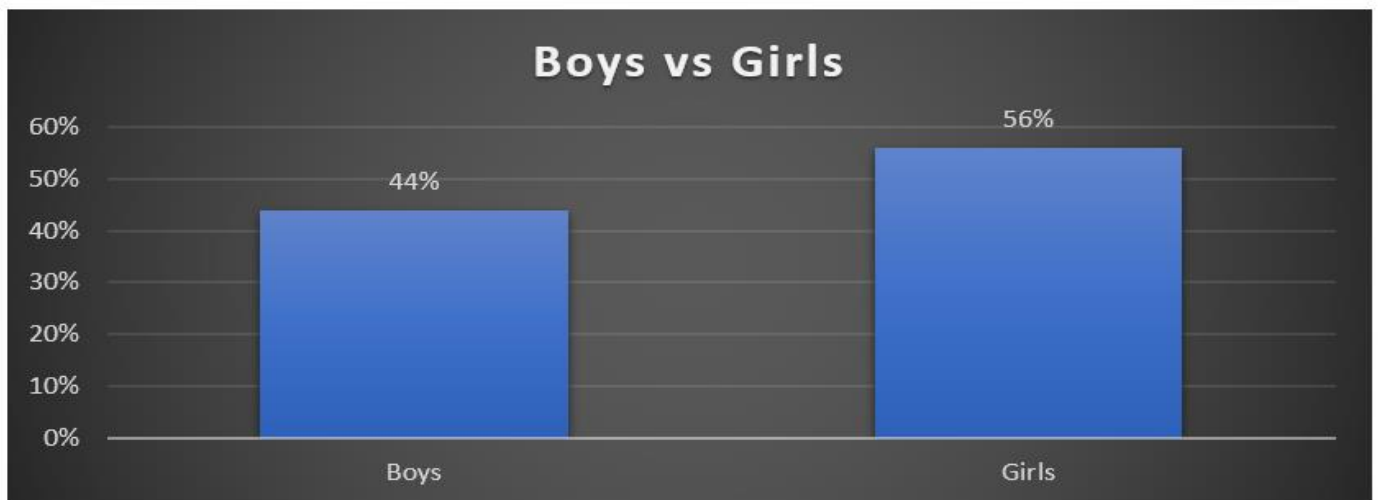


Figure 10: The earlier onset of speech between boys and girls.

This particular superiority of girls to have comparatively faster language acquisition than boys might be because of some innate aspect of language due to some physiological or biological differences in the brains of male and female children but this requires further medical research and investigation.

Conclusion:

The research concludes that both nature and nurture play their respective roles in language acquisition but nurture dominates nature, especially in the earlier stages of language acquisition. The researcher critically provides answers to the research questions by drawing comparative theory research and including the tenets of both the nature and nurture theories of language acquisition. Both theories are crucial to answer the research questions. To understand the language functions in the human brain, we can take the examples of the computer and a typewriter. Both of them are used to type but the computer has some additional mechanisms in it. You can store a lot of songs in a computer's memory and then listen to them but you cannot do the same with a typewriter. We can assume the human brain is like a computer and the rest of the animals' a typewriter. Humans have an innate mechanism in the form of a Language Acquisition Device (LAD) that helps them store the language in the form of input which they perceive from the environment and they can use it later but the animals do not possess this additional feature so they cannot produce a language. We cannot claim that language is completely innate because if it were true, the whole planet would be speaking the same language since birth but this is not the case which illustrates that environmental factors have a role in the language acquisition journey. And if a child gets apart from his family at the time of his birth and is taken to some other country, would that child have the same physical traits as his parents? Probably he would. Will the child speak the language of his parents or he would rather speak the language of the place where he is brought up? Certainly, the child will speak the language of the community in which he grows up. The community provides you with essential input

for the language. All these questions also demonstrate the fact that nurture plays its role in acquiring, developing, and exploring novel traits of language.

According to the results, only 8% of siblings had the same time and 92% had different times of onset of speech so the answer to the first question is that siblings in the family do not have the same time of onset of speech rather they have diverse onset of speech which is the result of different language environments to both the siblings. Moreover, siblings from different families had a diversified difference from one month to more than twelve months in the onset of their speech which again points towards the significance of the nurture aspect of language acquisition.

The results showing 69% second children having an earlier onset of speech than their elder siblings (31%) answers our second research question that the elder siblings definitely influence the acquisition of language in their younger siblings in a positive way because the presence of the elder sibling provides the younger ones with at least two more language stimuli (Figure 2) and as a result, the younger sibling gets a total of four stimuli as compared to his elder one who gets just two stimuli which again suggests that environmental input is a major factor in language acquisition in children.

The aspect of gender is worthwhile to discuss as raised in the earlier section and during interviews, some respondents also claimed that their female child is the more active recipient of linguistic input than the male counterpart and they considered gender as a crucial factor governing language. While gathering the descriptive characteristics of the research, parents mentioned a clear distinction between their male and female kids. According to them, girls tend to have more language skills and they respond to language better than their male siblings and in our research as well, more girls (56%) are earlier in their onset of speech than boys (44%).

Question 3 of the research inquires about the impact of different numbers of language stimuli on siblings in language acquisition and the

investigation shows that environmental stimuli are crucial in language acquisition. Language is acquired better in a more favorable language environment. 69% earlier onset of speech in second children is an indication of the dominance of environmental factors (nurture) in language acquisition.

Despite having an innate linguistic mechanism, all humans need to perceive external stimuli to acquire and develop a language, and language acquisition depends upon the quality of the stimulus they are receiving. If we talk about the dominance of one factor over the other in earlier stages of language acquisition then according to this study, nurture should be considered the more dominant factor in language learning as compared to nature.

Future Study:

The data collected in the study is limited to just one hundred participants, it is suggested that a broader study is done on the same topic covering prominent institutes of language learning with a bigger number of participants and with a different range of questions. Researchers can take interviews with parents, teachers, and learners as well to get an even better idea of the role of nature and nurture in language acquisition. The age difference between the siblings is one more area of research that can be analyzed to know how the age difference influences the onset of speech in younger siblings.

Disclosure Statement:

The authors did not declare any possible conflicts of interest.

Acknowledgments:

I want to express my sincere gratitude to Hongyan Wang for her invaluable guidance and support throughout this research. Her expertise and insightful feedback were essential in shaping the direction of this paper.

Disclaimer:

The views and opinions expressed in this paper are those of the authors alone and do not necessarily reflect the views of any institution.

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