DIPLOMSKO DELO

LANGUAGE ACQUISITION IN CHILDREN

Usvajanje jezika pri otrocih

Mentor: red. prof. dr. Dunja Jutronić
Kandidatka: Urška Kurmanšek

Maribor, 2010
ACKNOWLEDGEMENT

I would like to express my deepest thanks and gratitude to my mentor prof. dr. Dunja Jutronić, for her wise counsel and guidance when I began working on my thesis. I also have to express many thanks to my devoted partner Rajko and my lovely little daughter Niki for their support and understanding while I was writing my diploma paper.
IZJAVA


___________________________

Maribor, junij 2010
ABSTRACT

Aimed at language acquisition in children, its basic requirements and stages, this diploma paper focuses on how language acquisition is looked upon from several language acquisition theories. It sets out to examine Chomskian theories of language innateness and provides us with the answer that language learning is not something a child does, but is something that happens to a child placed in an appropriate environment. Further on, it provides an explanation of Chomskian and Skinner's theories of language acquisition with the purpose of enlightening their standings regarding acquisition of language. In order to defend Chomsky's opinion that successful language acquisition needs the interaction between innate features and child's language environment, a juxtaposition of two dominant theories of language acquisition follows: nativism of Noam Chomsky and behaviourism of B. F. Skinner. The sampled materials defend Chomsky's thesis that humans are born biologically equipped to learn a language, and explain his theory of Language Acquisition Device (LAD) - an inborn mechanism or process that facilitates the learning of language. On the other hand, Skinner easily explains that the child simply »imitates« adults; when the child is positively reinforced it performs a good imitation, and when negatively reinforced - a poor imitation. But there are some very convincing arguments which tell us that children do not just imitate adults’ speech. Chomsky argues that there is more to language learning than imitation and reinforcement. Children acquire language easily although the input they receive is scarce, and despite the complexity and abstract character of language. This is fascinating if we consider the fact that they acquire language to a great extent at the age of three, when their cognitive development does not enable them to deal with other demanding tasks. In my opinion, the innateness of language competence is the answer to the question how this miraculous achievement is possible.

KEY WORDS:

language, innate, innateness, language acquisition, language acquisition device, language faculty, Universal Grammar
POVZETEK

Namen diplomske naloge je predstaviti usvajanje jezika pri otrocih, osnovne pogoje in stopnje le-tega in razložiti Chomskyijev pogled na jezikovno prirojenost in njegovo prepričanje, da učenje jezika ni nekaj, kar bi se otrok naučil, ampak da se mu enostavno zgodi na poti v razvoju v za to primernem socialnem okolju. Temu sledi razlaga Chomskyijkeve in Skinnerjeve teorije o usvajanju jezika z namenom, da se poudarijo njuna različna pogleda na ta proces. Diplomska naloga je tako osredotočena na glavni teoriji o usvajanju jezika.

Da bi lahko zagovarjala Chomskyijev pogled, ki trdi, da je za uspešno usvajanje jezika potrebna interakcija med prirojenimi danostmi za usvajanje jezika in otrokovim jezikovnim okoljem, zoperstavljam dve teoriji. To sta dve prevladujoči teoriji: Chomskyijev nativizem in Skinnerjev behaviorizem.


KLJUČNE BESEDE:

jezik, vrojen, vrojenost, pridobivanje jezika, mehanizem za usvajanje jezika, jezikovna zmožnost, univerzalna slovnica
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>THE PURPOSE OF MY DIPLOMA PAPER</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>METHODOLOGY</td>
<td>5</td>
</tr>
<tr>
<td>3.1.</td>
<td>Research methods</td>
<td>5</td>
</tr>
<tr>
<td>3.2.</td>
<td>Used sources</td>
<td>5</td>
</tr>
<tr>
<td>3.2.1.</td>
<td>Primary written sources</td>
<td>5</td>
</tr>
<tr>
<td>3.2.2.</td>
<td>Secondary written sources</td>
<td>6</td>
</tr>
<tr>
<td>3.2.3.</td>
<td>Tertiary written sources</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>LANGUAGE ACQUISITION THEORIES</td>
<td>7</td>
</tr>
<tr>
<td>4.1.</td>
<td>Behaviourist theories</td>
<td>7</td>
</tr>
<tr>
<td>4.2.</td>
<td>Cognitive theories</td>
<td>9</td>
</tr>
<tr>
<td>4.3.</td>
<td>Sociological theories</td>
<td>11</td>
</tr>
<tr>
<td>4.4.</td>
<td>Innatist theories</td>
<td>12</td>
</tr>
<tr>
<td>5.</td>
<td>ONTOGENY OF LANGUAGE IN THE INDIVIDUAL HUMAN</td>
<td>14</td>
</tr>
<tr>
<td>5.1</td>
<td>Prenatal language learning</td>
<td>14</td>
</tr>
<tr>
<td>5.2</td>
<td>Postnatal language learning</td>
<td>15</td>
</tr>
<tr>
<td>5.3</td>
<td>Critical period</td>
<td>15</td>
</tr>
<tr>
<td>6.</td>
<td>LANGUAGE ACQUISITION</td>
<td>17</td>
</tr>
<tr>
<td>6.1.</td>
<td>Language acquisition</td>
<td>17</td>
</tr>
<tr>
<td>6.1.1.</td>
<td>Basic requirements</td>
<td>17</td>
</tr>
<tr>
<td>6.1.2.</td>
<td>The acquisition schedule</td>
<td>18</td>
</tr>
<tr>
<td>6.2.</td>
<td>Stages of acquisition process</td>
<td>19</td>
</tr>
<tr>
<td>6.2.1.</td>
<td>Pre-language stages</td>
<td>19</td>
</tr>
<tr>
<td>6.2.2.</td>
<td>The one-word or holophrastic stage</td>
<td>20</td>
</tr>
<tr>
<td>6.2.3.</td>
<td>The two-word stage</td>
<td>21</td>
</tr>
<tr>
<td>6.2.4.</td>
<td>Telegraphic speech</td>
<td>21</td>
</tr>
<tr>
<td>7.</td>
<td>CHOMSKIAN THEORIES OF LANGUAGE INNATENESS</td>
<td>23</td>
</tr>
<tr>
<td>7.1.</td>
<td>Chomskian “innateness hypothesis”</td>
<td>23</td>
</tr>
<tr>
<td>7.2.</td>
<td>Chomsky's Universal Grammar and Generative Grammar</td>
<td>24</td>
</tr>
<tr>
<td>7.3.</td>
<td>Genetically determined ‘language faculty’ or ‘language organ’</td>
<td>26</td>
</tr>
<tr>
<td>8.</td>
<td>CHOMSKIAN THEORIES OF LANGUAGE ACQUISITION</td>
<td>29</td>
</tr>
<tr>
<td>8.1.</td>
<td>Theories of language acquisition</td>
<td>29</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

Language is the main tool by which we know about people's thoughts, and the two must be intimately related. Every time we speak we reveal something about language, thus the facts of language structure are easy to come by; these statements hint at a system of extraordinary complexity. Nonetheless, learning a first language is something every child does successfully, in a matter of a few years and without the need for formal lessons. With language so close to the core of the meaning of being human, it is not surprising that children's acquisition of language has received so much attention. In this diploma paper I want to analyze where baby talk comes from. The answer is obvious: Baby talk comes from standard adult language. But which role do parents play? How dominant is baby's social environment? Which input influences them in which way and why? I am interested in when and how the acquisition of language begins. Does it start in the womb?

The choice of the title for my diploma paper is undoubtedly connected with my role of becoming a mother to my daughter Niki. Above all I have been having the opportunity to witness the physical and cognitive development of my child and four other children of the same age. It is tremendously interesting to see the steps of their language progress. Not a day passes by that I don't wonder how their little brains think, how they process what they are told, how much of spoken is actually understood, how they relate words to things, objects, actions, etc. My thoughts are occupied with the question of how children actually acquire language by which they eventually start to communicate with the outside world. When does the acquisition start? What is the role of family and social environment in the acquisition of language? Would we be able to master language so proficiently if we were not raised in a social environment?

The main goal of my diploma paper is to explain what the process of language acquisition actually is, its basic requirements and stages. Further on, to introduce how language acquisition is looked upon from several language acquisition theories, their basic postulations and how they differ from one another. I am primarily interested in the question of how and when language acquisition starts. In addition, I shall explain Chomskian theories of language innateness because it will help me explain why I think that “Language learning is not really
something that the child does; it is something that happens to a child placed in an appropriate environment, much as the child’s body grows and matures in a predetermined way when provided with appropriate nutrition and environmental stimulation” (Chomsky, 1973). I shall be defending the theory that language is innate and therefore our brains must be hardwired to learn a language. This means that there is a language structure which is imprinted in the human brain and the grammars of all languages are based on it. Furthermore, I will explain Chomskian and Skinner's theories of language acquisition in order to represent their view on language acquisition. I shall juxtapose two dominant theories of language acquisition from two very prominent researchers; Noam Chomsky’s nativism and B. F. Skinner’s behaviourism. According to sampled materials I would like to defend Chomsky’s thesis that humans are born biologically equipped to learn a language, and explain his theory of Language Acquisition Device (LAD) - an inborn mechanism or process that facilitates the learning of language. Then I would like to refute Skinner's thesis of language learning. He easily explains that the child simply «imitates» adults, and when positively reinforced it provides a good imitation, and when negatively reinforced- a poor imitation. But I will show that children do not imitate adults’ speech. Chomsky argued that there is more to language learning than imitation and reinforcement. But is LAD enough or we need the interaction between innate features and the child’s linguistic environment?

On the other hand, I want to emphasize that Chomsky and Skinner both agree on the fact that language speaking environment plays a crucial role in language acquisition and language learning. Toward the end of my thesis I will try to share Chomsky’s opinion that successful language acquisition requires interaction between innate features and child’s language environment. Children clearly need some kind of linguistic input to acquire a language. The last chapter about environmental factors will show that interaction which begins early in infancy between mother and child is crucial to language acquisition and language learning.
2. THE PURPOSE OF MY DIPLOMA PAPER

The aim of my diploma paper and my study of available written sources and internet sources is firstly to tell what the process of language acquisition actually is, its basic requirements and stages. Further on, to introduce how language acquisition is looked upon from several language acquisition theories, what their basic postulations are and how they differ from one another. I shall primarily be interested in the question of how and when language acquisition begins.

I shall also explain Chomskian theories of language innateness because it will help me explain that a newborn comes into the world prewired for language acquisition process. I shall be defending the innateness of language for which our brains must be hardwired to learn a language. This means that there is a language structure which is imprinted in the human brain and the grammars of all languages are based on it.

The explanation of Chomsky and Skinner's theories of language acquisition will follow in order to show their view of language acquisition. Further on, I will juxtapose two dominant theories of language acquisition of these two very prominent researchers; nativism by Noam Chomsky and behaviourism by B. F. Skinner. According to sampled materials I would like to defend Chomsky’s thesis that humans are born biologically equipped to learn a language, and explain his theory of Language Acquisition Device (LAD) - an inborn mechanism or process that facilitates the learning of language. Then I would like to refute Skinner's thesis of language learning. He easily explains that the child simply »imitates« adults, and when positively reinforced the child provides a good imitation, and when negatively reinforced- a poor imitation. But I will show that children do not imitate adults’ speech. Chomsky argued that there is more to language learning than imitation and reinforcement.

On the other hand, I want to emphasize that Chomsky and Skinner both agree on the fact that language speaking environment plays a crucial role in language acquisition and language learning. Towards the end of my thesis I will try to share Chomsky’s opinion that successful language acquisition requires interaction between innate features and child’s language environment. Children clearly need some kind of linguistic input to acquire a language. That
is why I devote my last chapter about environmental factors to showing that interaction between mother and child which begins early in infancy is crucial to language acquisition and language learning.
3. METHODOLOGY

3.1. Research methods

In the theoretical part of my diploma paper I applied methods as classified by Čagran B., and Pšunder M. (2003). In the beginning, my study of below listed written sources was based on descriptive and comparative research methods.

The first one used is the descriptive method, which often focuses on a particular variable or factor. The descriptive method involves collecting data to test hypotheses or answer questions concerning the current status of the subject of the study (there is no causal explanation). I used descriptive method to gain a better understanding of a topic.

The second one is the comparative method, for research on the level of comparing certain facts and relations with the aim to detect similarities and differences without any intervention by the researcher.

In the central part of my diploma paper, the data and results of my own studied written sources are presented by a descriptive and causal-comparative research method, without my intervention, which is common feature of these non-experimental research methods. In the latter method, research is made on the level of general conclusions.

3.2. Used sources

Sources used for my diploma paper are all in written form, with the exception of one lecture which I watched and listened on the internet.

3.2.1. Primary written sources

For my study, analysis and interpretation I used books from different authors, quoted in Bibliography, and as well many internet obtained abstracts that served as original sources of information.
3.2.2. Secondary written sources

Secondary written sources include some books and also some on-line sources that discuss ideas from primary sources. They served the purpose of comparison and analysis.

3.2.3. Tertiary written sources

Tertiary written sources provided additional information and/or access to some figures and interpretation of scientific expressions.
4. LANGUAGE ACQUISITION THEORIES

The acquisition of language has always intrigued people, so it is not surprising that their interest has resulted in a number of theories. There are several approaches to studying language acquisition and because my intent is to describe language acquisition in children, this chapter gives a rough outline of some very general theories on the acquisition of language.

A number of different hypotheses on how language is acquired by humans have been put forward at one time or another. Alan Cruttenden (1979) classifies them into four groups:

- Behaviourist theories
- Cognitive theories
- Sociological theories
- Innatist theories

4.1. Behaviourist theories

Behaviourism is a general theory of learning, which was also applied to language learning. It regards the development of language as a result of a set of habits, trying to refute nativists who claim that the knowledge of language is a result of nature, not nurture.

Behaviourist ideas originate from Ivan Pavlov, whose work *Conditioned Reflexes* (1972) could be said to represent the cornerstone of behaviourism. His theory of classical conditioning is based on an experiment which showed that dogs, who under normal circumstances salivate when they see food, can be made to salivate at the sound of a tuning fork. (ibid)

In the 1950s much of general psychology, linguistics and philosophy were dominated by a school of thought whose main proponents were J. Watson and B. F. Skinner. Behaviourists tried to explain behaviour by means of a few laws of stimulus-response learning. The basic concepts of their theory are stimulus, response and reinforcement.
Stimuli are events that occur in the environment and result in certain changes in behaviour – response. Reinforcement is the crucial element here, for the desired response increases if it is rewarded or reinforced. Certain behaviour first occurs accidentally, but due to the effect it has, it is likely to occur again. Skinner developed a new concept of operant conditioning in his work *The Behaviour of Organisms*. (ibid)

Skinner explains two categories of responses, the first one being *respondents*, which are reflex responses caused by certain stimuli, and the second one being *operants*, where there is no obvious stimulus that causes them. Skinner focused more on operant behaviour. He had rats in a cage, which was equipped with a bar. Whenever a rat pressed the bar by chance, a food pellet was released into the cage. Soon, rats learnt to press the bar deliberately. The pellet of food was called a reinforcer as it strengthened the desired response – pressing the bar. If things got a little more complicated and the release of food depended on the flashing of a light, then rats learned to press the bar only when the light flashed. The gradual changing of conditions under which the response was adequately rewarded made possible to shape the response of animals. Skinner found that if a stimulus was repeatedly associated with an already reinforcing stimulus, it could become reinforcing itself. He called this stimulus a secondary reinforcer. Skinner's belief is that even things like money and approval are examples of secondary reinforcers which can be associated with food, and that is the reason why they have become reinforcing. Skinner began with studying animal behaviour and later came to the conclusion that linguistic behaviour of people was not much different (Chomsky, 1967).

In his book *Verbal Behaviour* he tried to give an elaborate explanation of verbal learning in terms of his theory and then invented a detailed system of scientific terminology and definition, which »gives a misleading facade of scientific rigour« (Cruttenden, 1979). According to him, all human knowledge, belief, thought and actions can be explained as habits built up by a process of conditioning, which may be far more complex than the process by which rats in a psychological laboratory learn to obtain food by pressing a bar in a cage, but as far as its quality is concerned, it is the same. In his opinion, external factors are essential and can even explain something as complex as language, whereas the speaker's contribution is practically non-existent (Chomsky, 1967).
Let us try to demonstrate how operant conditioning is supposed to work, according to Skinner, when it comes to the acquisition of language. An infant produces an utterance *dada* by chance. Its father is present and shows his approval by smiling or even giving the child a sweetie as a reward. Due to reinforcement the child gradually learns to say *dada* if father is present. The process of what Skinner calls stimulus generalization is at work and it is possible that the child will begin saying *dada* whenever a man is present. However, from the response it gets, it learns stimulus discrimination and after some time it will learn to apply *dada* only to his father (Cruttenden, 1979).

Behaviorist ideas were very influential in the mid-twentieth century and we can find quite a few references to them in books and articles on psychology. Also, a number of linguists and philosophers made it clear at the time that they wanted their research to be compatible with behaviourist postulations. But Chomsky (1967) did not accept Skinner's ideas with enthusiasm. On the contrary, he offered only »a criticism of Skinner's speculations regarding language«, but a »general critique of behaviourist /.../ speculation as to the nature of the higher mental process«. He wanted to show that despite its wide acceptance, the framework of behaviourist reasoning was not empirically supported, but was »mythology« to a large extent. Chomsky attacked Skinner saying that he equated language with the behaviour of rats and used the same terminology to describe both. According to Chomsky, language is not a repertoire of responses and therefore we cannot explain it by means of stimulus-response learning. Children need not be taught to speak because they learn complex grammars very quickly. The conclusion he draws is that the brain is »somehow specially designed to do this, with data-handling or hypothesis-formulating ability to unknown character and complexity«. Chomsky developed these ideas in his subsequent works but I shall elaborate on that later in my thesis.

4.2. Cognitive theories

The name that is most closely connected with cognitive models is Piaget. He was a Swiss biologist and psychologist whose detailed empirical studies have been extremely valuable for
our understanding of the psychology of children. If innatist theorists see language as a system independent from the rest of the mind, cognitive theorists argue that the development of language depends upon general cognitive growth. Piaget claims that advances in language growth result from the earlier acquired cognitive process (Cook and Newson, 1998:31).

We could say that cognitive theories of language acquisition are based on the idea that language depends on cognition but cognition does not depend on language. Piaget's theory is built on the concept of cognitive structure. The developmental stages of cognitive growth relate to language development. According to him, there are four primary cognitive structures or stages of child development: sensorimotor stage (0-2 years), when intelligence takes the form of motor actions, preoperation period (3-7 years), which is the period of intuitive intelligence, concrete operational stage (8-11 years), during which logical intelligence needs concrete referents, and finally, formal operational stage (12-15 years), which is the stage of abstract thinking. The period of the first eighteen months is the period of the growth of sensorimotor intelligence. In this period, a child begins to construct a model of reality and his own interaction with it. He can represent his actions and reality to himself (before or after they take place) and the semiotic function appears, taking different forms:

- Behavioural imitation
- Symbolic play
- Drawing
- Language

According to Piaget, language is just one of the means by which children can think about reality. It enables a child to think about it more easily (Cruttenden, 1979).

And how did Piaget study development of cognition if we take into account the fact that the majority of cognition and cognitive growth studies are useless because they test cognition through language? His method consists of two versions: he used a controlled clinical method with younger children in which the child's ability to deal with certain concepts was systematically explored (similarly to Freud exploring his patient's subconsciousness), and with older children he measured their performance on conservation task. These are large experimental tasks that involve substances or objects which keep (or conserve) their
characteristics even when appearing in a different form, shape or position. Children who are able to judge whether water poured from a wide, short glass into a narrow and long glass can also understand the relevant concept and do not confuse it with some other concept like height. Language plays a part in such experiments, but only a minor part since Piagetian test does not measure language development. (ibid)

As mentioned above, cognitive theories of language development, particularly Piaget's theory, view language as dependent of cognitive development, which explains the developmental sequence: the child uses space adverbials (e.g. over there, on the ceiling) before time adverbials (e.g. yesterday) before manner adverbias (e.g. carefully). Language, however, is not considered to be essential for cognitive development of a child. It is relevant, but not indispensable to a child's conceptual development. H.G. Furth used Piagetian conservation task and his work *Thinking without language: The psychological implications of deafness* showed that deaf children developed cognitively just as hearing children did, but they needed a little more time. There are other studies indicating that their performance on many non-verbal intelligence tests can compare with that of hearing children. On the other hand, there are children whose intelligence is so low that they are unable to acquire language. Thus some intelligence is needed for a language to be able to develop. (ibid)

Chomsky argues that language acquisition does not depend on other faculties. We know that Piaget sees language as a result of a more general semiotic function, which occurs at the sensori-motor stage of cognitive development, but Chomsky emphasizes the complexity of grammar claiming that cognitive development is unable to account for something as abstract as structure-dependency and other principles. In his view these principles can only be acquired in a way that is confined to language (Cook and Newson, 1998:101).

4.3. Sociological theories

Both sociological and cognitive theories of language acquisition reject innatists' view which sees language as an autonomous system. Their view is that language depends on the child's development. Sociological models are not primarily interested in the child's cognitive development, but its social development, the child's needs to communicate and interact with
other members of society. The child develops language as a toll to satisfy its communicative needs (Cruttenden, 1979).

M. A. K. Halliday, a proponent of this theory, whose early studies are to some extent concerned with first language acquisition, in his work *Learning How to Mean* expresses his belief that language development serve needs that do not relate to, or depend on language but are characteristic of human existence. These needs or functions relate to the situation in which the child finds itself. Halliday divides them into six categories:

- Instrumental ('I want…')
- Regulatory ('Do this…')
- Interactional ('Hello…')
- Personal ('I'm cold…')
- Heuristic ('Why…')
- Imaginative ('Let's pretend…')

Adults express these functions using different grammatical structures such as question and command (this is what Halliday calls interpersonal level of grammar). Later the child realizes that language is a thing in itself. Language can simply be used in order to pass information to somebody. When this happens, a new function appears, the informational function. Adults usually express this function by means of variations in inner grammatical form, for instance, what the speaker decides to make the subject or the object of the verb (this is what Halliday calls the ideational level of grammar). The child must now develop grammar to be able to combine informational function with the other ones. Language develops this way because it first has to fulfill certain needs and later it has to pass information. (ibid)

The social situation plays an important role here but not in the same sense as in behaviourist theories because sociological theories view the child playing an active role in interacting with that situation.

4.4. Innatist theories

Nativist theories of language acquisition, which argue that there is a innate or prewired linguistic structure in the infant’s brain, have been particularly influential since the 1960s.
This was when famous American linguist Noam Chomsky demonstrated that behaviorism (which holds that the newborn brain is a tabula rasa, or a blank slate on which experience simply imprints its structure) could not alone account for language acquisition. Chomsky argued that for complex grammar to be acquired, input simply does not provide sufficient examples to allow the child’s brain to build grammatical structures from scratch and to know, for instance, which words are nouns or verbs and which parts of sentences can and cannot be moved. If the child bases his hypotheses about linguistic structure simply on what it has heard, it would draw a large number of erroneous conclusions about grammatical structure of his native tongue. Hence behaviorism cannot account for language acquisition (Karmiloff-Karmiloff-Smith, 2002:4-5).

There are several versions of nativist approach, but the central tenet is that infants are born with a so-called Universal Grammar (or UG) and specialized language-learning mechanisms for acquiring their native tongue. From this point of view, a common set of principles underlie every one of the world’s languages, despite very different surface characteristics of each language. Nativist theorists tend to argue that children are born prewired with these linguistic principles and set of parameters, which are simply triggered by a specific linguistic input. The nativist view claims that linguistic experience is needed only to allow the child to discover the local realization of universally specified principles and parameters. The brain mechanisms by which the child learns language are considered not only to be innate, but also entirely domain specific— that is, dedicated only to language learning (Karmiloff-Karmiloff-Smith, 2002:5).
5. ONTOGENY OF LANGUAGE IN THE INDIVIDUAL HUMAN

5.1 Prenatal language learning

In the past, language acquisition literature placed the onset of language at about twelve months of age, when children produce their first recognizable words. We have now come to realize that acquisition gets under way long before this, even prior to birth. From as early as twenty week gestation, the hearing system of the fetus is sufficiently developed to enable it to begin processing some sounds that filter through the amniotic liquid. The fetus’ world is filled with a cacophony of gurgles and grumbles from the mother’s body, along with the constant rhythm of her heartbeats. These noises provide early auditory stimulation. But most stimulating of all are the filtered sounds of language (Karmiloff- Karmiloff- Smith, 2002:1).

From the sixth month of gestation onward, the fetus spends most of its waking time processing these very special linguistic sounds, growing familiar with the unique qualities of its mother’s voice and the language (or languages) that she speaks. It also becomes sensitive to prosody- the intonation of sentences and patterns within words- that structures her speech. In the last three months in the womb, the fetus is busy eavesdropping on its mother’s conversation- an important preparation for life in the outside world. Already equipped with some experience of what language sounds like, the newborn comes into the world prepared to pay special attention to human speech, and specifically to his mother’s voice. These earliest intrauterine experiences prime the newborn for the linguistic input and can therefore be viewed as playing an important role in the overall process of language development (Karmiloff- Karmiloff- Smith, 2002:1-2).

With the new understanding of fetal and neonatal speech processing, the importance of early mother-infant nonlinguistic dialogue has been recognized. The amount and nature of early adult-infant interaction may of course vary from culture to culture, and such differences help researches decide which aspects of the social environment are crucial to language acquisition (Karmiloff- Karmiloff- Smith, 2002:3).

There is no disputing the fact that language is innate. This way of language learning begins even in the womb, as the environment impinges upon brain development. Almost from the
moment of conception, the mother's envelops the child, and its first neurons learn rhythm of humanity. This is not quite yet the rhythm of language, to be sure, but soon the child's own heart begins to beat, and the first rhythmic foundations are laid for language and all serial behaviour (Loritz, 1999:172).

5.2. Postnatal language learning

According to Loritz, the child's first year is not totally prelinguistic. Considerable receptive language learning clearly occurs, but the infant's capacity for motoric response is limited, and the most careful and ingenious experiments can assay the extent of this receptive learning. In one such experiment, Jusczyk and Hohne (1997) read 15 eight-month-old infants three stories containing novel words ten times over a two-week period. At the end of the period, the infants showed a small but statistically significant tendency to turn their heads in attention to words which they had heard in the stories (Loritz, 1999:182).

5.3. Critical period

The general belief is that during childhood (until puberty), there is a period when the human brain is most ready to ‘receive’ and learn a particular language. This period is referred to as the critical period. If a child does not acquire language during this period, for any of a number of reasons, then he or she will have great difficulty learning language later on. In recent years, because of the rather unfortunate circumstances, we have had some insight into what happens when the lateralization process takes place without accompanying input.

In 1970, a child named Genie was admitted to children’s hospital in Los Angeles. She was thirteen years old and had spent most of her life tied to a chair in a small closed room. Her father was intolerant of any kind of noise and had beaten the child whenever she had made a sound. There had been no radio or television, and Genie’s only human contact was with her mother who was forbidden to spend more than a few minutes with the child to feed her. Genie had spent her whole life in a state of physical, sensory, social and emotional deprivation.
As might be expected, Genie was unable to use language when she was first brought into hospital care. However, within a short period of time, she began to respond to the speech of others, tried to imitate sounds and communicate. Her syntax remained very simple. However, the fact that she went on to develop an ability to speak and understand a fairly large number of English words provides some evidence against the notion that language cannot be acquired at all after the mentioned critical period. One particularly strong view is that the lateralization process is complete by the time of puberty and that language acquisition after that time would present insurmountable difficulties. In this view, a part of the left hemisphere of the brain is open to accept a ‘language program’ during childhood and, if no program is provided, as in Genie’s case, then the facility is closed down.

In Genie’s case, tests demonstrated that she had no left-hemisphere language facility. So, how was she able to begin learning language, even in a limited way? Those same tests appeared to indicate the quite remarkable fact that Genie was using the right hemisphere of her brain for language functions. In dichotic listening tests, she had a very strong left-ear advantage for verbal as well as non-verbal signals. Such findings give some indication that there is not necessarily an exclusive brain location for language abilities. It may also help explain the fact that many people who suffer minor brain damage (with temporary loss of language) can recover, in varying degrees, their language-using abilities. When Genie was developing language, it was noted that she went through many of the same early ‘stages’ found in normal child language acquisition (Yule, 1996:171-172).

According to Lenneberg (1969), neurological material strongly suggests that something happens in the brain during the early teens which changes the propensity for language acquisition. We do not know the factors involved, but it is interesting that the critical period coincides with the time at which the human brain attains its final state of maturity in terms of structure, function, and biochemistry. Apparently, maturation of the brain marks the end of regulation and locks certain functions into place.
6. LANGUAGE ACQUISITION

6.1. Language acquisition

Language acquisition is a journey that begins in the fluid world of the womb and continues throughout childhood, adolescence, and even beyond. During this long period of acquisition, the learner faces a vast array of challenges. From the young infant's clumsy attempts to get the articulatory system in his mouth, throat, and larynx to produce the specific sounds of his native tongue, through to the much later complexities of producing and understanding long narratives, the child's language capacities undergo numerous changes (Karmiloff and Karmiloff-Smith, 2002:1).

According to Yule (1996:175), first language acquisition is remarkable for the speed with which takes place. By the time a child enters elementary school, he or she is an extremely sophisticated language-user, operating a communicative system which no other creature, or computer, comes close to matching. The speed of acquisition and the fact that it generally occurs, without overt instruction, for all children, regardless of great differences in a range of social and cultural factors, have led to the belief that there is some ‘innate’ predisposition in the human infant to acquire language. We can think of this as the ‘language-faculty’ of humans, with which each newborn child is endowed. By itself, however, this faculty is not enough.

6.1.1. Basic requirements

A child in the first two or three years of age requires interaction with other language-users in order to bring the 'language-faculty' into operation with a particular language, such as English. Yule mentions two very important factors which have to be present for successful language acquisition; lateralization (meaning that a child who does not hear, or is not allowed to use language, will learn no language) and cultural transmission (meaning that language a child learns is not genetically inherited, but is acquired in a particular language-using environment (Yule, 1996:175).

Although we can inherit brown eyes and dark hair from our parents, we do not inherit their language. We acquire language in a culture with other speakers and not from parental genes.
An infant born to Korean parents (who have never left Korea and speak only Korean), which is adopted and brought up from birth by English speakers in the United States, may have physical characteristics inherited from its natural parents, but it will inevitably speak English. (ibid)

This process whereby language is passed on from one generation to the next is called cultural transmission. While it has been argued that humans are born with an innate predisposition to acquire language, it is clear that they are not born with the ability to produce utterances in a specific language, such as English (Yule, 1996:24).

The child must also be physically capable of sending and receiving sound signals in a language. All infants make 'cooing' and 'babbling' noises during the first few months, but congenitally deaf infants stop after six months. So, in order to speak a language, a child must be able to hear the language being used. But only hearing language sounds, however, is not enough. One reported case has demonstrated that, with deaf parents who gave their normal-hearing son ample exposure to TV and radio programs, the child did not acquire an ability to speak or understand English. The crucial requirement appears to be the opportunity to interact with others via language (Yule, 1996:176).

6.1.2. The acquisition schedule

All normal children, regardless of culture, develop language at roughly the same time, along much the same schedule. Since we could say the same thing for sitting up, standing, walking, using hands and many other physical activities, it has been suggested that the language acquisition schedule has the same basis as the biologically determined development of motor skills (Yule, 1996:176).

This biological schedule, it is claimed, is tied very much to the maturation of the infant's brain and the lateralization process. If there is some general biological program underlying language acquisition, it certainly depends on an interplay of many social factors in the child's environment. We could think of a child as having the biological capacity to cope with distinguishing certain aspects of linguistic input at different stages during the early years of life. What this acquisition 'capacity' then requires is a sufficient constant input from which the basis of the regularities in the particular language can be worked out. In this view, the child is
seen as actively acquiring the language by working out the regularities in what is heard and then applying those regularities to what he or she says. (ibid)

Despite the fact that the child is still acquiring aspects of his or her native language through the later years of childhood, it is normally assumed that, by the age of five, the child has completed the greater part of the basic language acquisition process (Yule, 1996:186).

6.2. Stages of acquisition process

6.2.1. Pre-language stages

The pre-linguistic sounds of very early stages of child language acquisition are simply called 'cooing' and 'babbling'. The period from about three to ten months is usually characterized by three stages of sounds production in the infant's developing repertoire. The first recognizable sounds are described as 'cooing' with velar consonants such as [k] and [g] usually present, as well as high vowels such as [i] and [u]. These can normally be heard by the time the child is three months old, although many of the child's vocal sounds are very different from those which occur in the speech of mom or dad (Yule, 1996:178).

By six months, the child is usually able to sit up and can produce a number of different vowels and consonants such as fricatives and nasals. The sound production at this stage is described as babbling and may contain syllable-type sounds such as *mu* and *da*. In the later babbling stage, around nine months, there are recognizable intonation patterns to the consonants and vowel combination being produced. As the children are being able to pull themselves into standing position through the tenth and eleventh months, they are capable of using their vocalizations to express emotions and emphasis. This late babbling stage is characterized by a lot of 'sound-play' and attempted imitations. Some psychologists have suggested that this 'pre-language' vocalization gives children some experience in the social role of speech because parents tend to react to the babbling, however incoherent, as if it is, in fact, their child's contribution to social interaction (Yule, 1996:179).

One note of caution should be sounded at this point. Child language researchers certainly report very carefully on the age of any child whose language they study. However, they are
also very careful to point out that there is substantial variation among children in terms of the age at which particular features of linguistic development occur. So, we should always treat statements concerning development stages such as »by six months« or »by the age of two« as approximate and subject to variation in individual children. We are, after all, investigating a highly individualized experience while attempting to come up with some general facts about approximate stages of development. (ibid)

6.2.2. The one-word or holophrastic stage

Between twelve and eighteen months, children begin to produce a variety of recognizable single unit utterances. This period, traditionally called the 'one-word stage', is characterized by speech in which single terms are uttered for everyday objects such as 'milk', 'cookie', 'cat' and 'cup'. Terms such as 'single-unit' or 'single-form' may be more accurate, or we could use the term holophrastic (a single form functioning as a phrase or sentence), if we believe that the child is actually using these forms as phrases or sentences (Yule, 1996:179).

While many of these single forms are used for naming objects, they may also be produced in circumstances that suggest the child is already extending their use. An empty bed may elicit the name of a sister who normally sleeps in the bed, even in the absence of the person named. During this stage, then, the child may be capable of referring to Karen and bed, but is not yet ready to put the forms together to produce a more complex phrase. Well it is a lot to expect from someone who can only walk with a stagger and has to come down stairs backwards. (ibid)

Children's first words are similar all over the planet. About half the words are for objects: food (juice, cookie), body parts (eye, nose), clothing (diaper, sock), vehicles (car, boat), toys (doll, block), household items (bottle, light), animals (dog, kitty), and people (dada, baby). There are words for actions, motions, and routines, like (up, off, open, peek-a-boo, eat, and go) and modifiers, like (hot, allgone, more, dirty, and cold). Finally, there are routines used in social interaction, like (yes, no, want, bye-bye, and hi) – a few of which, like 'look at that' and 'what is that', are words in the sense of memorized chunks, though they are not single words for the adult. Children differ in how much they name objects or engage in social interaction using memorized routines, though all children do both (Pinker, no date A).
6.2.3. The two-word stage

Depending on what one counts as an occurrence of two separate words, this stage can be around eighteen to twenty months, as the child's vocabulary moves beyond fifty distinct words. By the time child is two years old, a variety of combinations, similar to baby chair, mommy eat, cat bad, will have appeared. The adult interpretation of such combinations is, of course, very much tied to the context of their utterance. The phrase baby chair may be taken as an expression of possession (= this is baby's chair), or as a request (= put baby in chair), or as a statement (= baby is in the chair), depending on different contexts (Yule, 1996:179).

According to Clark and Pinker, language changes in two ways around 18 months. Vocabulary growth increases; the child begins to learn words at a rate of one every two waking hours, and will keep learning at that rate or faster through adolescence. (ibid)

Children's two-word combinations are highly similar across cultures. Everywhere, children announce when objects appear, disappear, and move about, point out their properties and owners, comment on people doing things and seeing things, reject and request objects and activities, and ask about who, what, and where. These sequences already reflect the language being acquired: in 95% of them, the words are properly ordered (Braine, 1976; Brown, 1973; Pinker, 1984; Ingram, 1989) (Pinker, no date B).

Whatever the child actually intends to communicate via such expressions, the significant functional consequences are that the adult behaves as if communication is taking place. That is, the child not only produces speech, but receives feedback which usually confirms that the utterance 'worked'. Moreover, by the age of two, whether the child is producing 200 or 400 distinct words, he or she will be capable of understanding five times as many, and will typically be treated as an entertaining conversational partner by the principal caretaker (Yule, 1996:180).

6.2.4. Telegraphic speech

Between two and three years of age, the child will begin producing a large number of utterances which could be classified as multiple-word utterances. The salient feature of these
utterances ceases to be the number of words, but the variation in word-forms which begins to appear. Of particular interest is the occurring sequence of inflectional morphemes. Before we consider this development, however, we should note that there is a stage which is described as telegraphic speech. This is characterized by strings of lexical morphemes in phrases such as *Andrew want ball, cat drink milk, and this shoe all wet*. The child has clearly developed some sentence-building capacity by this stage and can order the forms correctly. While this type of telegram-format speech is being produced, a number of grammatical inflections begin to appear in some of the words, and simple prepositions (*in, on*) also turn up (Yule, 1996:180).

By the age of two and a half, the child's vocabulary expands rapidly and the child is actually initiating more talk. Of course, increased physical activity such as running and jumping also takes place during this period. By three, the vocabulary has grown to hundreds of words and pronunciation has become closer to form of the adult language, so that even visitors have to admit that the little creature really can talk. (ibid)
7. CHOMSKIAN THEORIES OF LANGUAGE INNATENESS

7.1. Chomskian “innateness hypothesis”

Chomsky and most of the other cognitive scientists with nativist approach to the explanation of language acquisition assume that the reason for the uniqueness and rapidity in child language acquisition lay in the Chomskian “innateness hypothesis”. In this hypothesis, language acquisition is determined by a biologically endowed – innate language faculty, also called “language acquisition device” or “language learning programme”. Chomskians often call these innate structures collectively the “grammar organ”, providing the following explanation:

- Just as we are all born with a liver to filter our blood, we are all born with a special part of our brain designed for learning human language (1988:149).

The paradox of the language acquisition process and language growth is that children at an early age of about three reliably correct grammatical competence. It leaves one question open for a further research:

- How is this possible?

Chomskians propose an explanation for this paradox:

Children’s inborn knowledge of the principles of grammatical structure of all languages explains the success and speed with which they acquire a language. They learn correct grammar by choosing from restricted set of candidate grammars, called Universal Grammar. From the correct grammar and finite vocabulary that children choose from, Generative Grammar generates an infinite set of possible sentences.

Further ideas and explanation of Chomsky’s Universal Grammar, Generative Grammar and other theories of language innateness with reference to human language acquisition and use, are presented in the text below.
Chomsky and other so-called “generative linguists” assume that the theory of Universal Grammar and Generative Grammar could help explain both language acquisition and the use of language. Therefore, I will represent the main features of both grammars, as presented and exemplified by Chomsky (1986, 1988, 2000).

With reference to his own linguistic past, Chomsky himself (2000:5) points out that Generative Grammar which became known with his book “Aspects of the Theory of Syntax” (1965), was an important factor in the development of “cognitive revolution”. Chomsky states Generative Grammar as “a system of combinatorial rules or principles that generate or derive an infinite set of possible sentences from a finite vocabulary” (2000:7). It represented a shift of focus in the approach to problems of language acquisition and use.

Chomsky suggests (1988: 3-4) three questions that arise in connection with the function of Universal Grammar and Generative Grammar in language acquisition and use, providing short and clear answers to them, as follows:

What constitutes knowledge of language?
- In Chomsky’s view, the answer to this question is provided by particular Generative Grammar, which is concerned with the state of the speaker’s mind/brain in a particular language.

How is knowledge of language acquired?
- The answer to this question is provided by specification of Universal Grammar with an account of the ways in which its principles interact with the experience to yield particular language. “Universal Grammar”, as Chomsky claims, “is a theory of the initial state of the language faculty prior to any linguistic experience”. (ibid)

How is knowledge of language put to use?
- As Chomsky points out, the answer would be a theory of how the attained knowledge of language “enters into the expression of thought and the understanding of presented specimens of language and derivately, into communication and other uses of language”. (ibid)
Chomsky sets the most important goal of linguistic theory to understand the child’s predisposition to learn a language, which he calls Universal Grammar. Thus, as Chomsky (1988) claims, children must have a “discovery procedure” for learning, therefore, it must be innate. In this manner, he presents his notion of the importance of Universal Grammar at the initial stage of language acquisition (1988:132) by claiming that

- this theory of the internal organization of the child’s mind/brain and that its specifically linguistic principles should be observed in every natural language.

- Universal Grammar does not claim that all human languages have the same grammar, or that all humans are “programmed” with a structure that underlies all surface expressions of human language. Rather, Universal Grammar proposes a structure of restricted set of rules (candidate grammars) that children choose from. Speakers of a specific language do not utter such expressions that are not part of their language and note that they are unacceptable to language learners. That would explain how children acquire their language or how they construct sentences satisfying the grammatical rules of their language.

- “It describes how this particular language assigns specific mental representations to each linguistic expression, determining its form and meaning” (ibid: 133). The fixed invariant principles of Universal Grammar constitute the human language faculty and the parameters of variation associated with them.

According to Chomsky (1988:35), Generative Grammar explains the remarkable language acquisition process in child’s mind, by specifying universal principles that are special to early grammar formation, rather than attempting to characterize the acquisition of language in terms of some general principle of cognitive growth. Traditional grammars, as Chomsky (2000:6) points out, had simply skimmed the surface and the elementary language properties had passed unrecognized. Thus, his Generative Grammar attempts to explain the basic language properties that are presupposed throughout, unrecognized and unexpressed.
In his book *Knowledge of Language: Its Nature, Origin and Use* (1986), Chomsky provides a detailed view of his notion of the Generative Grammar of a particular language. As he states (ibid: 3), Generative Grammar is concerned with those linguistic aspects of form and meaning of expression of a particular language that are determined with language faculty, a particular component of the human mind. In his view, the term “generative”, means nothing more than “explicit”. For our better understanding of Chomsky’s idea of Generative Grammar of a particular language learner, we can refer to his detailed illustrative explanation, outlined in his book *New Horizon of the Study of Language* (2000: 5-7). Chomsky begins his explanation suggesting to call the theory of the child’s language, i.e. Peter’s language, the “grammar” of his language.

“Peter’s language determines an infinite array of expressions, each with its sound and meaning. In technical terms, Peter’s language “generates” the expressions of his language. The theory of his language is therefore called a “generative grammar”.

*Each expression is a complex of properties, which provide “instructions” for Peter’s performance system: his articulatory apparatus, his modes of organizing his thoughts, and so on.*

*With his language and the associated performance systems in place, Peter has a vast amount of knowledge about corresponding capacity to interpret what he hears, express his thoughts, and use his language in a variety of other ways” (ibid).*

### 7.3. Genetically determined ‘language faculty’ or ‘language organ’

*We are designed to walk...*

*That we are taught to walk is impossible.*

*And pretty much the same is true of language.*

*Nobody is taught language. In fact you can’t Prevent the child from learning it.*

Chomsky, (1994)
In every available Chomsky’s book on language acquisition and use, the author presents a detailed explanation of the genetically endowed language faculty, providing additional facts about his notion of it.

- According to Chomsky (2000:4), language faculty, regarded as a distinctive component of human higher mental faculties or the property of the mind/brain, appears to be determined by innate biological endowment.

- As Chomsky suggests (1986:4, 2000:7), in order to determine a language faculty, we should first determine the attained language knowledge and the properties that must be attributed to the initial state of mind/brain for its attainment. If these properties are language – specific, then there is a distinct language faculty.

- As a very recent evolutionary development and a central element of human mind, the language faculty operates “in a deterministic fashion, unconsciously and beyond the limits of awareness and in a manner that is common to the species” (1988:157), yielding a rich and complex system of a particular language.

- As a “species property” (ibid.:2), language faculty is biologically isolated in crucial respects.

- The innate language faculty, as Chomsky (ibid.:149) points out, is a physical mechanism with certain definite properties that the theory of Universal Grammar seeks to formulate and describe. These properties permit the human mind to acquire a language of a specific type and also exclude others languages as “unlearnable” by the language faculty.

- Further on, Chomsky (ibid.) states that language faculty can reasonably be regarded as a “language organ”, in the sense in which scientists speak of the visual system, immune system, or circulatory system, as organs of the body. Therefore, language faculty as an organ cannot be removed from the body, leaving the rest intact, because it is a subsystem of a more complex structure. Chomsky expresses his hopes for the whole complexity to be understood after an investigation of the parts that have distinctive characteristics, and of their interactions.
The nature of language faculty is the subject matter of a general theory of linguistic structure that aims to discover the framework of principles and elements, common to attainable human languages. This theory is called Universal Grammar, which, as Chomsky states, may be regarded as “a characterization of the genetically determined language faculty” (1986:4). By explaining this idea of the importance of language faculty in language acquisition, Chomsky (ibid.) refers to it as

- a “language acquisition device”, an innate component of the human mind that yields a particular language through interaction with presented experience,

- and also as a device that converts experience into a system of knowledge of one or another attained language.
8. CHOMSKIAN THEORIES OF LANGUAGE ACQUISITION

8.1. Theories of language acquisition

“The child’s language “grows in the mind” as the visual system develops. The capacity for binocular vision, or as the child undergoes puberty at a certain stage of maturation. Language acquisition is something that happens to a child placed in a certain environment, not something that child does.”

(Chomsky, 1998:29).

In this part, Chomskian theories of language acquisition will be brought to light. I want to present them from the perspective of language growth. With his hypothesis of human innateness and genetic endowment of the language faculty, that plays an important role in children’s language acquisition, Chomsky (1986, 1988, 1998, 2000) provided the following question:

*How can a three-year old child produce and understand sentences that are not part of his/her previous linguistic experience?*

Chomsky (1998a) claims that children develop grammatical competence spontaneously, without formal training. They only need interaction with people and exposure to normal language use. In other words: when a child hears grammatically correct sentences, then he/she can construct an internal representation of the rules that generate grammatical sentences. He called this phenomenon the “poverty of stimulus” (1998a:6), also regarded as “the absence of negative evidence”, claiming that linguistic evidence available to the child, does not uniquely determine the underlying grammatical rules. I want to present a more detailed explanation of the term “poverty of stimulus”, as provided by Crain (1999): it is an argument in favour of linguistic nativism, claiming that humans are born with a specific adaptation for language that both funds and limits their competence to acquire languages in the course of their cognitive development and linguistic maturation. It is also the most widely cited reason for the Universal Grammar, which offers a solution to “power of the stimulus argument” by making certain restriction universal to the characteristics of human languages.
In addition, the purpose is to present Chomsky’s “parameter setting”, approach in his attempt to explain the universality and rapidity of the acquisition of language. His explanation is based on the following assumption:

- Many differences among languages represent different settings of a few “parameters” that allow languages to vary, or different choices of rule types from a fairly small set of possibilities” (Pinker, 2004).

Chomsky applied his “parameter setting” approach to the logical problem of language acquisition, claiming that children acquiring this knowledge (language complexity), do not have that much data. Although the limited amount of available data can be estimated quite closely, as he claims, “still, somehow children are reaching these states of knowledge which have apparently great complexity and differentiation – and that cannot be“ (2002:93). As there are no constrains in acquiring states, each child is capable of acquiring any such state. Therefore, as Chomsky points out, “so must be that the basic structure of language is essentially uniform and is coming from inside, not from outside” (ibid). This contradiction led to a research programme with the “Principles and Parameters” strategy to discover general principles that all language rules adhere to, and then to abstract those principles from that rules and attribute them to the child’s genetic. Chomsky’s approach was based on the discovery of the modern generative grammar and natural languages seem to be built on the same basic plan.

In the 1990s, Chomsky developed his “Minimalist Program”, which attempts to specify general principles and parameters of children’s knowledge of language, “sharply restricting the devices available for description” (1998a:51). As Chomsky claims, his programme faces an extremely heavy empirical burden (ibid.). Further on, he expresses hope for the programme which should yield deeper insight into the computational processes that “seem radically different from what we assumed only a few years ago” (ibid.).

Steve Pinker, Chomsky’s nativist follower, has made a significant contribution in the study of children’s language acquisition in the past two decades. In his book *The language Instinct* (1994), in the chapter *Chatterboxes*, Pinker presents findings of his own observations by claiming that children do not learn to talk simply by imitating adults. He gives account to children’s rapid acquisition of their native language to the fact that children are “wired” to
register grammar rules or to pay attention to certain kinds of phrases. In his view (1994:19), the complexity of language, from the scientific point of view, is a part of human “biological birthright”. It is not something that parents teach their children or something that must be elaborated in schools. He supports his observations with the following:

- In some cultures parents do not even address remarks to children, and when parents do monitor their children’s remarks, they correct them for meaning but rarely for grammatical errors.

- Children can learn a language without the special indulgent speech from their mothers, but, astonishingly, they utter vocabulary, which has never been used by their parents. Furthermore, at the same time children use grammatical forms, never heard from their parents and avoid grammatical errors.

As it is evident from Pinker’s ideas above, he does not attribute as much importance to the role of environment in children’s language acquisition as Chomsky, who claims that there has to be “sufficiently rich environmental stimulation for the genetically determined process to develop in the manner in which it is programmed to develop” (1988:172). Chomsky uses the term “triggering” to explain that the experience does not determine how the mind works, but it triggers it and makes it work in its own predetermined way. Thus, although principles of grammar may be acquired with little help from the child’s environment (parents or other caretakers), adults help children build a rich vocabulary, learn rules of discourse, and distinguish between culturally acceptable and unacceptable forms of expressions.

8.2. Language growth

As Chomsky (2000:6) points out, the study of children’s language acquisition enables an insight into interpretation of expressions from the child’s earliest stages which reveals that a child knows a lot more than experience has provided. At the child’s peak period of language growth, he/she is acquiring about one word an hour, “with extremely limited exposure under highly ambiguous conditions” (ibid.). The acquired vocabulary is explained in delicate ways, as he points out, far beyond the reach of any dictionary.
In Chomsky’s view (ibid.), language acquisition generally resembles the growth of organs. If it is something that happens to the child, not that a child does, with influence from its environment, the language acquisition process and its features are predetermined by the “initial state” of language faculty, a common human innate possession. The conditions of language acquisition must enable a largely inner-direct process, as in other aspects of growth, which denotes that all languages must be close identical, largely fixed by the initial state.

I want to refer to a detailed and clear explanation of Chomsky’s idea of children’s language acquisition process in his *Managua Lectures*, in the chapter “A framework for discussion” (1988:35) where Chomsky discusses the process of language acquisition with reference to the human mind/brain system. For better illustration of his theory, Chomsky (ibid.) presents this process schematically, as follows:

Chomsky (ibid.) expresses his assumption that the principles of language are fixed and innate, and their variation is restricted. Each language is (virtually) determined by a choice of lexical parameters: with one array of choices, we should be able to deduce Spanish, with another, English.

Further on, Chomsky proceeds from the fact that there is a language faculty presented with data. This language faculty determines a particular language, e.g. English, and consequently in turn determines a wide range of potential phenomena, going far beyond the presented data (ibid.). Further on, Chomsky hypothesizes the language acquisition process in the following way:

- If we supposed, as Chomsky suggests, that a child with the human language faculty as a part of his innate endowment, is placed in a Spanish speaking community, then his language faculty selects relevant data from the events taking place in that particular environment (the experience of hearing other people speak).
By making use of this data in a manner that is determined by its internal structure, the child constructs a language, Spanish, or more properly, “the variety of Spanish to which it is exposed”. (ibid.:36).

When the language acquisition process is completed, language constitutes the mature state attained by the language faculty.

As a result of the described process of acquiring a language, the person speaks and understands Spanish language. This language is now incorporated in the mind.

In addition, Chomsky (ibid.) provides a further explanation of the language a person has to acquire. In his view, human language is a system which comes from the many systems of knowledge or the person's cognitive systems, a rich and complex system with specific properties, determined by the nature of the mind/brain. As he claims, “This language in turn determines a vast range of potential phenomena; it assigns a structure to linguistic expressions that go far beyond any experience” (ibid). With regard to the function of the cognitive system that a child has acquired, Chomsky exemplifies his explanation:

If a child’s language is Spanish, his cognitive system determines that the word “strid” is not a possible word.

Similarly, the language determines the use of phrases, connections of meaning between the words, the sentence structure, and so on, “for an unlimited range of possible phenomena that far transcend the experience of the person, who has acquired a language…” (ibid.), or experience of his speech community.

In the final section of this chapter I would like to refer to the richness of innate endowment in case of language acquisition with a limited sensory input, as presented by Chomsky (2000:120). He makes the point that the highly specialized language faculty is not tied to specific sensory modalities, contrary to former assumptions. Thus, sign language of the deaf is structurally like spoken language, acquired in a similar way, and blind children acquire language as the sighted do. Chomsky hypothesizes that “large-scale sensory deficit seems to have limited effect on language acquisition” (ibid). Furthermore, as Chomsky implies, people
can achieve close to normal linguistic competence with no sensory input. For Chomsky, surprisingly, “the analytic mechanisms of the language faculty seem to be triggered in much the same ways whether the input is auditory, visual, even tactual, and seem to be localized in the same brain areas,…(ibid.:122).

8.3. Language acquisition device

According to McKenzie-Brown (2006), Chomsky proposed that each of us has a Language Acquisition Device (LAD) – what he sometimes called a “little black box” – that starts functioning when we are still infants. By the time we are five or six, that device will have enabled us to vacuum a native language based on universal grammar from our immediate environment. To put it another way, all languages are fundamentally the same, irrespective of the cultures we live in. They are the function of a large number of words (arbitrary symbols whose meaning is set by convention) and a limited number of grammatical rules that are somehow structured into our brains and minds.

Chomsky claims that the structure of language is biologically determined – that it is genetically transmitted from generation to generation. When children are exposed to speech of their families and other people around them, their ability to “derive the structural regularities of their native language – its grammatical rules” comes to the surface (Lyons, 1991:11). They wouldn't be able to do it if they weren't from birth equipped with the Language Acquisition Device (LAD), which consists of a set of linguistic rules, common to all human languages.

Chomsky compares the Language Acquisition Device with a black box into which something goes and out of which something else comes. After examining what goes in and what comes out, it is possible to draw some conclusions about the process hidden in the black box. Children receive primary linguistic data from the people around them, their parents and caretakers. These are, in a way, processes in their black box – Language Acquisition Device and this is how their linguistic competence in a particular language is acquired – a generative grammar. Let us take a look at the LAD model of native language acquisition:
It is possible to make certain conclusions on the basis of comparison between the language input that goes in and the knowledge of language that comes out, and this is what Chomsky says about it in his book Language and Mind: «Having some knowledge of the characteristics of the acquired grammars and the limitations on the available data, we can formulate quite reasonable and fairly strong empirical hypotheses regarding the internal structure of the language acquisition device that constructs the postulated grammars from the given data» (In Cook and Newson, 1998:79). The LAD must of course handle the acquisition of English and Chinese as well as that of Slovene or Hungarian. The question arises: How come there are things which come out of the black box if they didn't go in the first place? Chomsky's answer is that they can only come from the structure of the mind itself. The things that the input lacked are added by Universal Grammar. The black box does not merely process the input, it adds things of its own. (ibid)

Chomsky believes that children show a remarkable ability for constructing a theory of grammar; they can distinguish sentences from non-sentences, they notice ambiguities, they make sense out of sentences that start in one way and end in another and out of broken fragments of speech. The result is a highly abstract grammar of amazing complexity (Allen and van Buren, 1971:147). He is convinced that human minds are incapable of creating such complex knowledge on the basis of such impoverished experience of language available, so the source is clearly in the human mind. This is known in linguistics as the poverty-of-the-stimulus argument, as the data available in the stimulus is too scarce to account for the knowledge that emerges from them (Cook and Newson, 1998:82).

According to Chomsky, there are universal principles which determine the different realizations of grammatical regularity in each language. He says that children possess this mechanism from birth – it is innate. What is said to be biologically determined is an universal
device which is being canalized through the acquisition of grammar in social life. He named this universal device “LAD” (Language Acquisition Device). It allows the child to build up general rules and grammar competence on its own by making experiences in its social environment (Kayani, 2001).

The purpose of LAD is to extract certain rules from the perceived language. It starts with a certain linguistic information, for instance the knowledge that sentences consist of a verbal and a nominal phrase. Additionally, LAD needs plenty of analyzing procedures, which are being applied to the sentences. These procedures allow the discovery of transformations, which connect the basic linguistic information with the perceived structure of surface. The LAD has to be flexible enough to make it possible for the child to learn any language. (ibid)

According to the LAD-concept by Chomsky, every child talks by a certain rule in each of its developmental stages- but by the rules of its own “infant grammar” and not by the rules of adult grammar. After all, linguistic development takes place relatively independent from the development of sense. Of course, the child also receives feedback from its environment. The linguistic experience is analyzed and re-combined. That changes the state of the organism so that it can handle new kinds of linguistic input. It can be compared to a kind of discovery-procedure which develops into a specific procedure by approaching the universal grammar step by step. (ibid)

Chomsky states that language is interaction between innate features and the child’s linguistic environment which finally leads to the acquisition of grammar. (ibid)

The Language Acquisition Device (LAD) is a hypothetical brain mechanism that Noam Chomsky postulated to explain human acquisition of the syntactic structure of language. This mechanism endows children with the capacity to derive the syntactic structure and rules of their native language rapidly and accurately from the impoverished input provided by adult language users. The device is comprised of a finite set of dimensions along which languages vary, which are set at different languages that many aspects of language are universal (common to all languages and cultures) and constrained by innate core knowledge about language called Universal Grammar. This theoretical account of syntax acquisition contrast sharply with the view of B. F. Skinner which emphasizes the role of experience and general knowledge and abilities in language acquisition (Namy, no date C).
9. SKINNER AND HIS THEORY OF LANGUAGE ACQUISITION

9.1. Behaviourism

Behaviourism is a general theory of learning, which was also applied to the field of language. It regards the development of language as a result of a set of habits, trying to refute nativists, who claim that knowledge of language is the result of nature, not nurture.

In the 1950s much of general psychology, linguistics and philosophy were dominated by a school of thought whose main proponents were J. Watson and B. F. Skinner. Behaviourists tried to explain behaviour by means of a few laws of stimulus-response learning. The basic concepts of their theory are stimulus, response and reinforcement.

Stimuli are the events that occur in the environment and result in certain changes in behaviour – response. Reinforcement is the crucial element here because the desired response is increased if it is rewarded or reinforced. Certain behaviour first occurs accidentally, but due to the effect it has, it is likely to occur again. Skinner developed a new concept of operant conditioning in his work *The Behaviour of Organisms*. (ibid)

He mentions two categories of responses, the first one being **respondents**, which are reflex responses caused by certain stimuli, and the second one being **operants**, where there is no obvious stimulus that causes them. Skinner focused more on operant behaviour. He had rats in a cage, which was equipped with a bar. Whenever a rat pressed the bar by chance, a food pellet was released into the cage. Soon, rats learnt to press the bar deliberately. The pellet of food was called a reinforcer as it strengthened the desired response – pressing the bar. If things got little more complicated and the release of food depended on the flashing of a light, then rats learnt to press the bar only when the light flashed. The gradual changing of the conditions under which the response was adequately rewarded made it possible to shape the response of animals. Skinner found that if a stimulus was repeatedly associated with an already reinforcing stimulus, it could become reinforcing itself. He called such a stimulus a secondary reinforcer. Skinner's belief is that even things like money and approval are examples of secondary reinforcers that can be associated with food, which is the reason why they have become reinforcing. Skinner began by studying animal behaviour and later came to the conclusion that linguistic behaviour of people was not much different (Chomsky, 1967).
In his book *Verbal Behaviour* he tried to give an elaborate explanation of verbal learning in terms of his theory and invented a detailed system of scientific terminology and definition, which »gives a misleading facade of scientific rigour« (Cruttenden, 1979). According to him all human knowledge, belief, thought and actions can be explained as habits built up by a process of conditioning, which may be far more complex than the process by which rats in a psychological laboratory learn to obtain food by pressing a bar in a cage, but as far as its quality is concerned, it is the same. In his opinion, external factors are essential and can even explain something as complex as language, whereas the speaker's contribution is practically non-existent (Chomsky, 1967).

Let's try to demonstrate how operant conditioning is supposed to work according to Skinner when it comes to the acquisition of language. An infant produces an utterance *dada* by chance. Its father is present and shows his approval by smiling or even giving the child a sweetie as a reward. Due to reinforcement the child gradually learns to say *dada* if father is present. The process of what Skinner calls stimulus generalization is at work and it is possible that the child begin saying *dada* whenever a man is present. However, from the response it gets, it learns stimulus discrimination and after some time it will learn to apply *dada* only to his father (Cruttenden, 1979).

Behaviorist ideas were very influential in the mid-twentieth century and we can find quite a few references to them in books and articles on psychology. Also, a number of linguists and philosophers made it clear at the time that they wanted their research to be compatible with behaviourist postulations. For the part of Chomsky (1967), he did not accept Skinner's ideas with enthusiasm. On the contrary, he offered only »a criticism of Skinner's speculations regarding language«, but a »general critique of behaviourist /…/ speculation as to the nature of the higher mental process«. He wanted to show that despite its wide acceptance, the framework of behaviourist reasoning was not empirically supported but was to a large extent »mythology«. Chomsky attacked Skinner saying that he equated language with the behaviour of rats and used the same terminology to describe both. According to Chomsky, language is not a repertoire of responses and therefore we cannot explain it by means of stimulus-response learning. Children need not be taught to speak and they learn complex grammars very quickly. And the conclusion he draws is that the brain is »somehow specially designed to
do this, with data-handling or hypothesis-formulating ability to unknown character and complexity». Chomsky developed these ideas in his subsequent works but more will be told later.

Basically, Skinner modified the tenets of behaviorism to fit his own discoveries, which involved what he called "operant conditioning." "Conditioning" is the scientific term for learning. "Operant" refers to Skinner's idea that any organism "operates" on his environment - that is, performs actions that change the environment around it for better or for worse. Operant psychology is based on the idea that an action taken by a person or an animal often has consequences that occur naturally in the environment. This principal is called "operant conditioning". Reinforcement is something that makes it more likely that a given behavior will be repeated. The consequences of a given action either reinforce the behavior or do not.

For example, if a child makes faces at the teacher in school, the other children's laughter may serve to reinforce his behavior. If the teacher punishes him by making him write, "I will not make faces" one hundred times on the chalkboard, the child may avoid such antics in the future. Thus, the child initiates the behavior, and factors in the environment either reward or punish his behavior.

Skinner did not worry much about which consequence was the stronger one. He believed that if a behavior was reinforced, it was apt to be repeated. Skinner believed that positive reinforcement was more effective than punishment. He also believed that the reinforcement must come swiftly (Skinner, no date D).

9.2. Skinnerian view of language acquisition

Behaviorists view the process of language acquisition as a building process that results from interaction with the environment. In outlining his assertion that humans acquire spoken language as a result of behavioral conditioning, B.F. Skinner writes:

»The process of learning has always been a complex phenomenon among critics. It is an acknowledged fact that the lap of mother is the first educational centre for the child and the
foundation of every human activity is laid when a child uses the lap of the mother, the only
shelter of man«. In this way this has always been a debate question how the lap of mother, the
surroundings and the entire atmosphere in which a child lives, proves helpful in learning
language one. In this respect, two theories have been put forward, the innate theory by
Chomsky and the behaviouristic theory presented by Skinner. According to Skinner child
acquires his first speech through a process which is called the operant process. Operant
process means that language is an activity that a child acquires voluntarily without any
external force. In this way child acquires his language one in his own free will without any
kind of pressure. According to Skinner the whole process is based upon four elements:

1. stimulus
2. response
3. reinforcement
4. repetition

Skinner has elaborated all these things after making experiments on animals. He illustrates the
whole process with a rat which is put in a box containing a bar and it is rewarded food only if
it presses accidentally. As a result of that initial process it will be rewarded with food, but
eventually it will get the perception that it cannot get food until it presses the bar. Later the
process was made a bit difficult and now the rat gets the food if it presses the bar a certain
number of times. Initially it will feel confusion but eventually it will learn the trick. After this
experiment, Skinner expresses the very notion that every stimulus which is followed by a
response plays a vital role in learning the first language. Initially this response is given only in
case of sort of punishment or reward but eventually the child becomes volunteer in this.
Skinner also maintains that learning language one depends on imitation and the child imitates
his nears and dears around him. First of all, anything could play a role that would stimulate
the child to speak. For example, when a child hears the word toffee, he tries to store this word
in his mind and when he tastes a toffee and enjoys it, he tries to associate this word with the
actual theme (Toffee). When the child gives response in such a way by uttering the word
toffee, it proves no less than fairy song for his parents. So they reinforce him to utter this
word again and again and the child makes repetition. This is the whole process that has been
referred and presented by the behaviourists. Child enjoys a flexible mind, he is easily attracted
by the atmosphere in which he lives. That is why Skinner seems to be firm in his notion that
language learning is not different from learning anything else. Anything which is stuffed in
the mind of the child becomes the part and parcel of his life. That is why Skinner denies that language is a preprogrammed activity. It is just the gift of society and operant conditioning of his world around. If we take up the example of fictional character Tarjen, Skinner seems to be true in his notion because Tarjen was brought among animals and according to story tellers he spoke the language of animals. So he could not help being affected by the company in which he lived. Skinner received a share of criticism. It was Chomsky who made a bitter attack on the theory presented by Skinner. He considered it to be an inappropriate theory and that is why he brought forward his own theory named Nativistic theory or Mentalistic Theory or Innate Theory (Language Acquisition Theories, no date E).
10. HOW DOES CHOMSKY AND SKINNER'S EXPLANATION OF LANGUAGE ACQUISITION DIFFER?

The two men share greatly different views and ideas on the acquisition of language in humans.

Skinner, a behavioural psychologist and Chomsky a linguist, their branches of science are already different.

10.1. Skinner’s theory

Skinner, who was a Behaviourist, argued that language acquisition is any kind of cognitive behaviour – it is learnt by reinforcement and shaping. He also calls this operant conditioning - where child goes through trial-and-error, in other words, where the child tries and fails to use correct language until it succeeds; with reinforcement and shaping provided by the parents’ gestures (smiles, attention and approval), which are pleasant to the child. Parents, who ignore unfamiliar sounds and show increased attention to the reinforced phonemes, extinguish the acquisition of phonemes and morphemes.

The morphemes then become refined into words by shaping. Parents’ accuracy will lead to the total extinguishment of “baby” pronunciation and finally, by selective reinforcement and behaviour shaping, words will be shaped into telegraphic two-word sentences, later into sentences until full language has been acquired. Skinner differentiated between two types of verbal responses that a child makes. One of them is verbal behaviour that becomes reinforced when the child receives something it wants. For example, when the child sees a chocolate, it can show his own demand by calling it “choc”. As the child used appropriate verbal behaviour, he then receives chocolate and reinforcement. The other is tact, which is verbal behaviour caused by imitating others. Then the parent approves, which is just another form of reinforcement (Wikipedia, 2010).

10.2 Chomsky’s theory

Chomsky, who was a linguist, argues that the ability of language acquisition is innate; therefore taking a biological approach stand. Children will automatically acquire language if they are being exposed to it. There is no need for operant conditioning. This ability is
supported by, what Chomsky calls a LAD (innate language acquisition device) and inbuilt mechanism that automatically allows a child to decode any spoken language it hears around it. Chomsky suggests that all languages share a similar deep structure despite the differences in their surface structure. For instance, “I did the homework” and “The homework was done by me” have the same deep structure but differ in the surface structure. The LAD supplies humans with transformational grammar, which simply means the process of translating underlying meaning into speech. Children use these rules but will sometimes make errors, such as goed and comed (went and came). These are errors in performance not in competence, Chomsky claims.

One hotly debated issue is whether the biological contribution includes capacities specific to language acquisition, often referred to as universal grammar. For fifty years, linguist Noam Chomsky has argued for the hypothesis that children have innate, language-specific abilities that facilitate and constrain language learning. In particular, he has proposed that humans are biologically prewired to learn language at a certain time and in a certain way, arguing that children are born with a Language Acquisition Device (LAD) (Wikipedia, 2010).

10.3. Comparing and contrasting

Skinner and Chomsky’s theories contradict each other. Skinner suggests that the behaviour of language is learnt like any other cognitive behaviour – and Chomsky holds a stand of language being innate – we are born with the ability to acquire language.

In the last half of 20th century, debate on the origins of language was ignited by a highly publicized exchange between a strong nativist and a strong learning theorist. In 1957, the behavioral psychologist B F. Skinner proposed a learning view in his book Verbal Behavior, arguing that language, like all animal behavior, was an “operant” that developed in children as a function of external reinforcement and shaping. By Skinner's account, infants learn language as a rat learns to press a bar - through the monitoring and management of reward contingencies.

Noam Chomsky, in a review of Verbal Behavior, took a very different theoretical position. He argued that traditional reinforcement learning had little to do with humans' abilities to acquire
language. He posited a “language faculty” that included innately specified constraints on the possible forms human language could take. Chomsky argued that infants' innate constraints for language included specification of a universal grammar and universal phonetics. Language was one of the primary examples of what Fodor called a module—domain-specific, informationally encapsulated, and innate.

The two approaches took strikingly different positions on all of the critical components of a theory of language acquisition: (i) the initial state of knowledge, (ii) the mechanisms responsible for developmental change, and (iii) the role played by ambient language input. In Skinner's view, no innate information was necessary, developmental change was brought about through reward contingencies, and language input did not cause language to emerge. In Chomsky's view, infants' innate knowledge of language was a core tenet, development constituted “growth” or maturation of the language module, and language input triggered (or set the parameters for) a particular pattern from among those innately provided (Kuhl, 1997).

According to Millis there are some limitations to both, Skinner’s behaviourism and Chomsky’s nativism. (Millis, 2003).

**Behaviourism and Skinner**

- Language is based on a set of structures or rules, which could not be worked out simply by imitating individual utterances. There is an infinite number of sentences in any language; all possible sentences would be impossible to learn through imitation and reinforcement.

- The vast majority of children go through the same stages of language acquisition. There appears to be a definite sequence of steps. We refer to developmental milestones. Apart from certain extreme cases (see the case of Genie), the sequence seems to be largely unaffected by the treatment the child receives or the type of society in which child grows up.

- Children are often unable to repeat what an adult says, especially if the adult’s utterances contain the structure the child has not yet started to use. The classic demonstration comes from the American psycholinguist David McNeill. The structure in question here involves negating verbs:
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, say »Nobody likes me.«
Child: Nobody don’t like me.
Mother: No, listen carefully. Say »Nobody likes me.«
Child: Oh, nobody don’t likes me.

To maintain that language is “learned” it appears one needs a better theory of learning than imitation (Loritz, 1999: 11-12).

Nativism and Chomsky

- Chomsky’s work on language was theoretical. He was interested in grammar and much of his work consists of complex explanation of grammatical rules. He did not study real children. The theory relies on children being exposed to language but takes no account of the interaction between children and their carers. Nor does it recognize the reasons why a child might want to speak (Millis, 2003).
11. ENVIRONMENTAL FACTORS

11.1. Motherese or child-directed speech

The rhythm of the input that the infant hears is not only determined by the native tongue. It is also affected by the special way in which people talk to young children. Once the infant is born, in many cultures he is usually addressed with what is called motherese (also referred to as parentese).

Motherese is infant-directed speech. It possesses special characteristics in prosody and content that differentiate it from adult-directed speech. Stress patterns within words and sentences are exaggerated, as are intonation contours around phrases. Many repetitions and vocatives (way to attracting the infant’s attention) are used, and questions with rising intonation often replace statements that would normally be used in adult-directed interactions.

Clearly, it is neither the grammar nor the meaning of motherese that initially holds the attention of infants. The words and meanings are really irrelevant at this stage. Rather, it is the melodic features of the acoustic signal itself, with its exaggerated prosodic contours. According to Karmiloff and Karmiloff-Smith (2002:47), it is prosody in particular that helps very young infants organize and remember speech-related information.

But motherese also shows that the dynamic of social interaction plays a role in encountering the infant’s attention to language. In some cultures, mothers often set up “dialogues” with their babies, even when they are still in a womb. They will frequently speak to the fetus, feel it move in response, and then respond to those movements with further speech. Once the infant is born, such parents already treat their babies as valid interlocutors, as if they understand what they are saying. They know, of course, that the newborn does not comprehend the words themselves.

Usually parents speak to their children as if they understand them and respond to the content of their questions. They treat babies as intentional beings, capable of social interaction. These “conversations” that are initially one sided linguistically may actually constitute an important preparation for taking part in later dialogue when the toddler will be capable of using language to replace the primitive kicks and gurgles.
But not all cultures respond to prelinguistic infants in this way. As Bambi Schieffelin has shown in exciting cross-cultural work, in some cultures parents barely speak to their infants until the infants themselves are producing speech. In such cultures the early development of motor skills such as sitting and walking is valued far more than language learning. Motherese is simply not part of such infant’s experiences in their social world. Nonetheless, all such children end up with a full command of their mother tongue. So the authors are pointing out that we need to be particularly careful when generalizing from Western cultures (Karmiloff and Karmiloff-Smith, 2002:48).

Researchers such as Shore (1997) believe that baby talk is an important part of the emotional bonding process, and contributes to mental development. It plays a role in teaching a child the basic function and structure of language. Studies have shown that even replying to babble with meaningless babble aids language acquisition, because even though the babble itself conveys no logical meaning, the interaction teaches infants that speech is bidirectional communication. Some experts advise that parents should not talk to infants and young children solely in baby talk, but include some normal adult speech as well. Dr. David Miall of the University of Alberta has found surprising connections between the structure of baby talk and that of poetry. He is quoted as saying "Baby talk is full of poetic features, such as metrics and phonetics; I was surprised by how systematic it is, and how it works to shape and direct attention."

The new data suggests that modifications made by adults unconsciously when they speak to infants play a role in helping infants map native-language input (Kuhl, 1997).

11.2. Input
To understand how children learn language, we have to know what aspects of language (from their parents or peers) they have access to.

11.2.1. Positive evidence

Children clearly need some kind of linguistic input to acquire a language. There have been occasional cases in history where abandoned children have somehow survived in forests, such
as Victor, the Wild Boy of Aveyron (subject of a film by Francois Truffaut). Occasionally other modern children have grown up wild because depraved parents have raised them silently in dark rooms and attics; the chapter by Newport and Gleitman discuss some of those cases. The outcome is always the same: the children, when found, are mute. Whatever innate grammatical abilities they have, they are too schematic to generate concrete speech, words, and grammatical constructions on their own.

Children do not, however, need to hear a full-fledged language; as long as they are in a community with other children, and have some source for individual words, they will invent one on their own, often in a single generation. Children who grew up in plantations and slave colonies were often exposed to a crude pidgin that served as the lingua franca in these Babels of laborers. But they grew up to speak genuinely new languages, expressive "creoles" with their own complex grammars (Bickerton, 1984; see also the Chapter by Newport and Gleitman). Sign languages of the deaf arose in similar ways. Indeed, they arise spontaneously and quickly wherever there is a community of deaf children (Senghas, 1994; Kegl, 1994).

Children most definitely do need to hear an existing language to learn that language, of course. Children with Japanese genes do not find Japanese any easier than English, or vice-versa; they learn whichever language they are exposed to. The term "positive evidence" refers to the information available to the child about which strings of words are grammatical sentences of the target language.

By "grammatical," incidentally, linguists and psycholinguists mean only those sentences that sound natural in colloquial speech, not necessarily those that would be deemed "proper English" in formal written prose. Thus split infinitives, dangling participles, slang, and so on, are "grammatical" in this sense (and indeed, are as logical, systematic, expressive, and precise as "correct" written English, often more so; see Pinker, 1994a). Similarly, elliptical utterances, such as when the question 'Where are you going?' is answered with 'To the store'), count as grammatical. Ellipsis is not just random snipping of sentences, but is governed by rules that are part of the grammar of one's language or dialect. For example, the grammar of casual British English allows you to answer the question 'Will he go?' by saying 'He might do', whereas the grammar of American English does not allow it.

Given this scientific definition of "grammatical," do we find that parents' speech counts as "positive evidence"? That is, when a parent uses a sentence, can the child assume that it is part
of the language to be learned, or do parents use so many ungrammatical sentences, random fragments, slips of the tongue, hesitations, and false starts that the child would have to take much of it with a grain of salt? Fortunately for the child, the vast majority of speech they hear during the language-learning years is fluent, complete, and grammatically well-formed: 99.93%, according to one estimate (Newport, Gleitman, & Gleitman, 1977). Indeed, this is true of conversation among adults in general (Labov, 1969).

Thus language acquisition is ordinarily driven by a grammatical sample of the target language. Note that this is true even for forms of English that people unthinkingly call "ungrammatical," "fractured," or "bad English," such as rural American English (e.g., them books; he don't; we ain't; they drug him away) and urban black English (e.g., She walking; He be working). These are not corrupted versions of standard English; to a linguist they look just like different dialects, as rule-governed as the southern-England dialect of English that, for historical reasons, became standard several centuries ago. Scientifically speaking, the grammar of working-class speech -- indeed, every human language system that has been studied -- is intricately complex, though different languages are complex in different ways (Pinker, no date G).

11.2.2. Negative evidence

Negative evidence refers to information about which strings of words are not grammatical sentences in the language, such as corrections or other forms of feedback from a parent that tells the child that one of his or her utterances is ungrammatical. It is very important for us to know whether children get and need negative evidence, because in the absence of negative evidence, any child who hypothesizes a rule that generates a superset of the language will have no way of knowing that he or she is wrong (Gold, 1967; Pinker, 1979, 1989).

Roger Brown and Camille Hanlon (1970) attempted to test B. F. Skinner's behaviorist claim that language learning depends on parents' reinforcement of children's grammatical behaviors. Using transcripts of naturalistic parent-child dialogue, they divided children sentences into ones that were grammatically well-formed and ones that contained grammatical errors. They then divided adults' responses to those sentences into ones that expressed some kind of approval (e.g., "yes, that's good") and those that expressed some kind of disapproval. They
looked for a correlation, but failed to find one: parents did not differentially express approval or disapproval to their children contingent on whether the child's prior utterance was well-formed or not (approval depends, instead, on whether the child's utterance was true). Brown and Hanlon also looked at children's well-formed and badly-formed questions, and whether parents seemed to answer them appropriately, as if they understood them, or with non sequiturs. They found that parents do not understand their children's well-formed questions better than the badly-formed ones.

Other studies (e.g. Hirsh-Pasek, Treiman, and Schneiderman, 1984; Demetras, Post, and Snow, 1986; Penner, 1987; Bohannon & Stanowicz, 1988) have replicated that result, but with a twist. Some have found small statistical contingencies between the grammaticality of some children's sentences and the kind of follow-up given by their parents; for example, whether the parent repeats the sentence verbatim, asks a follow-up question, or changes the topic. But Marcus (1993) has found that these patterns fall far short of negative evidence (reliable information about the grammatical status of any word string). Different parents react in opposite ways to their children's ungrammatical sentences, and many forms of ungrammaticality are not reacted to at all -- leaving a given child unable to know what to make of any parental reaction. Even when a parent does react differentially, a child would have to repeat a particular error, verbatim, hundreds of times to eliminate the error, because the parent's reaction is only statistical: the feedback signals given to ungrammatical signals are also given nearly as often to grammatical sentences.

Stromswold (1994) has an even more dramatic demonstration that parental feedback cannot be crucial. She studied a child who, for unknown neurological reasons, was congenitally unable to talk. He was a good listener, though, and when tested he was able to understand complicated sentences perfectly, and to judge accurately whether a sentence was grammatical or ungrammatical. The boy's abilities show that children certainly do not need negative evidence to learn grammatical rules properly, even in the unlikely event that their parents provided it.

These results, though of profound importance, should not be too surprising. Every speaker of English judges sentences such as 'I dribbled the floor with paint' and 'Ten pounds was weighed by the boy' and 'Who do you believe the claim that John saw?' and 'John asked Mary to look at himself' to be ungrammatical. But it is unlikely that every such speaker has at some point uttered these sentences and benefited from negative feedback. The child must have
some mental mechanisms that rule out vast numbers of "reasonable" strings of words without any outside intervention (Pinker, no date G).
12. CONCLUSION

Learning a first language is something every child does successfully, in a matter of a few years and without the need for formal lessons. With language so close to the core of the meaning of being human, it is not surprising that children's acquisition of language has received so much attention.

The available information of when language acquisition begins provided me with the answer that in the past, literature about language acquisition situated the onset of language at about twelve months, when children produce their first recognizable words.

We have now come to realize that acquisition gets under way long before this, even prior birth. From as early as twenty week gestation, the hearing system of the fetus is sufficiently developed to enable it to begin processing some sounds that filter through the amniotic liquid. These earliest intrauterine experiences prime the newborn for linguistic input and can therefore be viewed as playing an important role in the overall process of language development.

The speed of acquisition and the fact that it generally occurs, without overt instruction, for all children, regardless of great differences in a range of social and cultural factors, have to lead to the belief that there are some ‘innate’ predispositions in the human infant to acquire language. We can think of this as the ‘language-faculty’ of humans with which each newborn child is endowed. By itself, however, this faculty is not enough.

Having juxtaposed two main language acquisition theories, Chomsky's nativism and Skinner's behaviourism, it does seem that an innate mechanism alone cannot take all the credit for language development. Thus social interaction, maturation and environmental aspects also play an important role. The innate Language Acquisition Device has to have social input otherwise all humans would have language difficulties hence in the case of Genie.

Surely the truth must lie somewhere between these two theories. Language would not exist without lots of learning as well as lots of heredity. We must not forget that a huge amount needs to be absorbed from the environment before a growing child can fully control a language.
Instead of setting up nature (our biological endowment) and nurture (the world we experience) as if they are in conflict, we would do better to ask which part each plays. The truth is that, like everything else that we are and do, our language results from the way our genetic potential makes use of our experience. We could not learn language if we did not start with the right equipment. Nor could we learn a language without massive amounts of exposure to that language.

Noam Chomsky claimed that behaviorism (which holds that the newborn brain is tabula rasa, or blank slate on which experience simply imprints its structure) could not alone account for language acquisition. Chomsky argued that for complex grammar to be acquired, input simply does not provide sufficient examples to allow the child's brain to build grammatical structure from scratch and to know, for instance, which word are nouns or verbs and which parts of sentences can and cannot be moved. If the child based hypotheses about linguistic structure simply on what he heard, he would draw a large number of erroneous conclusions about grammatical structure of his native tongue. Hence behaviourism cannot account for language acquisition. The central tenet of nativism is that infants are born with a so-called Universal Grammar and specialized language-learning mechanism for acquiring their native tongue.

The main goal of my diploma paper was to discover whether humans are born biologically equipped to learn language or do they learn it by simply imitating adults and being positively reinforced to perform a good imitation and negatively reinforced to perform poor imitation.

Having read all of the material I decided to defend the stand that language is innate and therefore our brains must be hardwired to learn a language. This means that there is a language structure which is imprinted in the human brain and the grammars of all languages are based on it. I agree with Chomsky that humans are born biologically equipped to learn a language, and do not agree with Skinner's thesis of language learning. He easily explains that the child simply »imitates« adults and as a result learns language. Chomsky argues that there is more to language learning than imitation and reinforcement.

On the other hand, I want to emphasize that both, Chomsky and Skinner agree on the fact that language speaking environment plays a crucial role in language acquisition and language
learning. I have to share Chomsky’s opinion that successful language acquisition needs the interaction between innate features and child’s language environment.
13. BIBLIOGRAPHY


Available: www.statemaster.com/encyclopaedia/Motherese. (23\textsuperscript{nd} Feb. 2010).

*Language Acquisition Theories.* (no date E).