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# **ALAPSZAKOS SZAKDOLGOZAT**

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anglisztika alapszak

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# ALAPSZAKOS SZAKDOLGOZAT

*Az Univerzális Grammatika védelmében: Anyanyelv- és idegennyelv-  
elsajátítást vizsgáló tanulmányok eredményeinek összefoglalása*

*In defence of Universal Grammar: A synthesis of results from first and  
second language acquisition studies*

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## **Abstract**

The present paper aims to demonstrate how Chomsky's (1957) theory of Universal Grammar addresses the main problematic issues of both first and second language acquisition, which seem to be difficult to explain within the theoretical frameworks preceding the generative approach. These points are "linguistic creativity", "universality in linguistic development" and "the age factor". The presupposition of my thesis is that Chomsky's theory, also known as 'the innateness hypothesis', could serve with logical, clear and realistic solutions to these problems. On the one hand, my thesis introduces those theoretical models of Universal Grammar which could play an important role in explaining the processes of first and second language acquisition. On the other hand, it describes the results of some empirical studies which can serve as evidence of the theoretical model of Universal Grammar (e.g., Ellis, 1994; Pinker, 1994; Singleton, 1989). The conclusion of the thesis is that the innatist approach seems to be a considerable theoretical framework for first language acquisition research and also serves as a perfect springboard of second language acquisition research (e.g., current cognitive theories). The significance of the theory became visible by the revolutionary perspective it represents in language acquisition research.

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# **In defence of Universal Grammar: A synthesis of results from first and second language acquisition studies**

*“Any language is a supreme achievement of a uniquely human collective genius, as divine and endless a mystery as a living organism.”*

Michael Krauss, linguist (1992, as cited in Pinker, 1994, p. 260)

## **1. Introduction**

Due to the sudden development of cognitive psychology and generative linguistics in the last century, the connection between human mental/cognitive processes and language has become a central topic of psycholinguistics. The problem of language acquisition/learning proved to be a particularly exciting field of research, which scientists examined from many different viewpoints and created various theories about.

The most popular approaches in the first half of the 20<sup>th</sup> century were behaviourism and interactionism. Behaviourists thought that language acquisition happens simply through imitation, practice, and habit formation, while interactionists emphasised the role of interplay, face-to-face communication, and social interaction (Lightbown & Spada, 1999). Although both theories provided partial solution to the problem, neither could give proper explanation to some key aspects of language acquisition (e.g., linguistic creativity, developmental sequences, and the age factor).

In the second half of the century, the American generative linguist, Noam Chomsky challenged these theories when he published his own approach, Universal Grammar (UG),



which examined the problems of language acquisition from a completely novel viewpoint. Chomsky's model moved the focus from imitation and interaction to biologically determined mental capacities. The theory presupposes the existence of an innate language faculty (UG), which enables learners to recognise the rules of the linguistic system and to create their own grammar in their minds. It emphasises mental abilities (internal factors) instead of environmental (external) factors (Ellis, 1994). In other words, UG revolutionised the theoretical basis of language acquisition research and provided perfect starting point for later theories (e.g., cognitive accounts).

Current cognitive theories of language acquisition make an effort to understand the connection between explicit (conscious) and implicit (unconscious) knowledge of the learner (e.g., Krashen's Monitor Theory), deal with the importance of language transfer and learning strategies (e.g., Interlanguage theory), and try to find a synthesis of the different factors influencing second language acquisition (SLA) to solve the problem of variation in success (e.g., Multidimensional Model; Ellis, 1994). UG played a considerable role in the change in language acquisition research, as Chomsky's theory highlighted problems which directed scientists' attention from interaction and simple imitation to internal (mental/cognitive) mechanisms of the human mind.

The aim of the present paper is to show the significance of the mentalist perspective UG represents among language acquisition theories. The thesis highlights some problematic points of first and second language acquisition and introduces the possible solutions to these offered by Universal Grammar. The first half of the thesis describes some of the most controversial issues of language acquisition; that is, linguistic creativity, the universality of linguistic development, and the age factor. Subsequently, the second half attempts to explain these points within the theoretical framework of the Chomskyan approach.

## 2. The problems of language acquisition

Theories preceding UG wanted to explain language acquisition by social interaction (interactionism; e.g., Ellis, 1994) and habit formation (behaviourism; e.g., Pinker, 1994). In this part, some interesting and observable problems of language acquisition are described, which these theories could not solve properly.

### 2.1. Linguistic creativity

The phenomenon of linguistic creativity (also known as “the problem of learnability”) is made up of three main points. First, learners often know more about the linguistic system than they are supposed to on the basis of the input they receive from their environment; that is, a mismatch can be observed between their linguistic experience and actual linguistic production (White, 2007). Second, after a while children know what is grammatical and ungrammatical in their mother tongues; however, they are usually not told explicitly what is correct and what is not (Lightbown & Spada, 1999). Third, children acquire their mother tongue at a surprisingly early age, when other complex and abstract operations (e.g., mathematical problems, algebra) would be impossible for them (Ellis, 1994).

The Chomskyan name of linguistic creativity is “the logical problem of language acquisition” (Aitchison, 2008, p. 107). This phrase covers the unbelievable ability of children to abstract the rules of the grammar system from the often ambiguous and poor linguistic input they receive and to create and utter completely new pieces of language, such as *I am heyv* and *I don't want to go to your Ami* (Pinker, 1994, p. 267). These sentences derive from the misunderstanding of the expressions *Behave!* and *Miami* as *Be heyv!* and *my Ami*. Children simply applied the linguistic paradigms they already knew, which shows that they are creative and do not directly imitate their environment as it was suggested by behaviourists

(Pinker, 1994). Such sentences do not occur in adult speech, which means that children, instead of simply imitating the language of their environment, create their own, completely new and independent expressions that they have never heard before (Gósy, 2005).

Another evidence of children's linguistic knowledge is the misuse of irregular forms. English children often say *mouses* instead of *mice* and *finded* instead of *found* (Pinker, 1994; Wolfe, 2005). These mistakes are not random but come from their experience about the linguistic system. Children look for general patterns and systematic occurrences in the linguistic input they receive (Fromkin & Rodman, 1993). They know the rule that '-s' means plural and '-ed' means past tense, but they do not know about irregular forms, which are unpredictable from the linguistic system and must be memorised as independent lexical entries in the mental dictionary. This phenomenon (i.e. overextension of an analogy) is also called "overgeneralization" (Pinker, 1994; Wolfe, 2005). If behaviourists were right and children studied only through imitation, they could not utter such ill-formed words, as these forms (similarly to the expressions like *Be heyv*) do not occur in adult speech.

The third evidence of children's knowledge about the grammatical system comes from the results of certain tests made with them. One of these is the so-called 'wug-test' (Aitchison, 2008, p. 128) in which a bird-like creature (i.e. the 'wug') is shown the children. Later, they are asked to name a pair of those imaginary animals. Every child produces the plural correctly and says; 'wugs'. The fact that they can name the plural of a nonexistent word they have never met before means that they do not memorise the plurals of nouns but create them by using already known grammatical rules (Pinker, 1994). The results of these kinds of tests show that children are able to apply the already recognised grammatical paradigms on new, unknown words and expressions. In other words, they seem to transform lexical entries by using linguistic rules and do not study them as fixed expressions as it is suggested by the behaviourist theory.

The problem with this kind of creativity is complex. First, the input children receive is not rich enough and does not contain all linguistic forms and possible formulas which would be essential for the child to abstract the rules of grammar from their linguistic experience. The Chomskyan term for this problem is “the poverty of the input” (White, 2007, p. 37). Additionally, the input is not only poor, but sometimes contains grammatical mistakes, slips of the tongue, and unfinished sentences, which could confuse the child. The Chomskyan name of this problem is the “degeneracy of the data” (Cook & Newson, 1996, p. 115). Second, children usually do not get negative feedback from their parents. Nobody tells them if they mistake and they do not receive explicit grammatical information, systematic reinforcement or correction from their parents (Cook & Newson, 1996). Wolfe (2005) argues that neither parents nor children are interested in grammatical correctness and they only deal with meaning. Aitchison (2008) mentions examples of occasions when parents try to correct their children who do not understand the point and seem to be disinterested (p. 74). Third, “the lack of cognitive sophistication”; that is, how children are able to acquire such a complex and abstract symbol system as language at an age when they are not expected to learn anything complicated as that (Ellis, 1994, p. 437).

According to linguists working within the framework of UG theory, the problem of linguistic creativity is also present in SLA. According to Cook and Newson (1996), the “poverty of the stimulus” problem is also true in the case of a second language (L2), which is logical considering the fact that L2 learners are usually taught in classroom settings and have little contact with native speakers, which means that they are not supposed to meet every type of sentences. Although Chomsky did not mention the possible implications of UG theory for SLA, some linguists believe that there is also a “logical problem of second language acquisition” (Ellis, 1994; Lightbown & Spada, 1999), that is, L2 learners know more about ambiguity, ungrammaticality, and linguistic rules of the target language than they should on

the basis of the input they are exposed to. White (2007), after referring to her experimental results, concludes that “the problem of learnability” seems to be present in the process of first language acquisition (FLA) and SLA as well. It could mean that FLA and SLA processes are quite similar. First, learners discover the rules of the linguistic system, (often over-) generalize them, before they finally learn the exceptions and use the language correctly (Brewster, Ellis & Girard, 2002).

To sum up, “the logical problem of language acquisition” is an observable phenomenon. Children’s overgeneralizations, ill-formed irregular words, and the results of certain tests (cf. the ‘wug-test’) show that acquisition does not happen simply through imitation and habit formation, but some creative mental process operates in language learners’ minds.

## **2.2. The universality of linguistic development**

Observable uniformity seems to characterise the process of human language acquisition. It happens through the same stages in case of every human being and individuals can only differ in the pace of acquisition (Pinker, 1994). The explanation of these observations can be that some biologically determined characteristics of humans might guide the process of language acquisition.

Actually, the pure ability to acquire and use such an abstract communicational system as any human language seems to be a species-specific biological inheritance of humankind (Cook & Newson, 1996; Ellis, 1994). Naturally, animals have their own means of communication (e.g., the dance of bees, the alarm calls of certain monkeys); however, these cannot be considered as rich, open, creative, and productive linguistic systems as human language (Aitchison, 2008; Wolfe, 2005). There were many trials to teach our closest relatives, anthropoid apes American Sign Language (ASL) but these ended with little success

(Aitchison, 2008; Cook & Newson, 1996; Wolfe 2005). Although monkeys understood several words (i.e. had semantic knowledge), they were not able to construct grammatical system in their minds and to use it creatively. They could only sign fixed formulas without internal structure in order to receive attention or some food (Pinker, 1994). Linguistic environment, input, and social interaction, which behaviourists and interactionists considered to be determining in language acquisition, was provided for these primates; however, they could not achieve huge success. This means that some species-specific biological feature must enable humans to acquire the grammar system. The fact that children do not need any special education to acquire their mother tongues, while these (very little) successes could only be achieved by monkeys who were heavily trained for years, makes the difference between human and animal linguistic abilities more straightforward (Wolfe, 2005).

In contrast to monkeys, by the age of four every healthy (i.e. neurologically healthy) child becomes a “grammatical genius” (Pinker, 1994, p. 276), who is able to use his or her mother tongue and owns a “virtual knowledge” about its grammatical system (Cook & Newson, 1996; Fromkin & Rodman, 1993; Wolfe, 2005). The expression “virtual knowledge” covers the *competence* (what language users know about the linguistic system) in contrast to the *performance* (what they actually write or say; Spada & Lightbown, 2002). This means that children can tell if an utterance is impossible or ungrammatical in their mother tongue even if they cannot explain why and would never produce that piece of language on their own. In the case of competence, experimental and observational research is hard; however, indirect tests like the “grammaticality judgement” test can measure this kind of ability (Cook & Newson, 1996; Ellis, 1994). All children reach the same level of internalised grammatical competence; however, they rarely receive completely the same input and also have different social grace (Cook & Newson, 1996). Language acquisition seems to be separate from other cognitive abilities (e.g., general intelligence), as even children with limited cognitive abilities acquire

their mother tongues; in addition, people suffering from aphasia do not become less intelligent because of the injury (Aitchison, 2008; Ellis, 1994; Gósy, 2005; Pinker, 1994). The fact that although children grow up in different cultures, social and linguistic environments they acquire their mother tongues with equal ease everywhere on Earth no matter if it is Chinese, English, or Hungarian suggests that a universal ability must be in the background of language acquisition (Aitchison, 2008; Cook & Newson, 1996).

Not only acquisition is universal in case of every human being, but so is the way it happens. Universal developmental sequences can be observed in FLA and SLA processes too. The first sounds of a baby are uttered at the same time and some of these sounds are universal everywhere on Earth regardless of language or culture (Aitchison, 2008). These universal first sounds are produced even by deaf babies, who (in the case of receiving input) start signing exactly the same time when their healthy peers start articulating sounds (Fromkin & Rodman, 1993; Pinker, 1994). Ellis (1994) mentions a concrete example of acquisition orders in FLA; that is, a fixed sequence of morphemes through the linguistic development. For example, children do not learn internal negation without knowing external negation and produce 3<sup>rd</sup> person singular ‘-s’ only after using the ‘-ing’ form (p. 94). MacWhinney (as cited in Gósy, 2005) also describes certain developmental stages, which can be applied in both FLA and SLA. These are mechanic repetition, analogy (often wrong analogy; that is, overgeneralization), and rule formation (p. 245). Ellis (1994) names the following developmental patterns equally observed in SLA and FLA: silent period (only understanding), formulaic speech (expression learnt as a whole), structural and semantic simplification (short sentences without function words, pp. 82-106). VanPatten and Williams (2007) shows an SLA example which involves the acquisition order of English negation. These are external negation, negation attached to modals, and later on to auxiliaries (p. 10).

Universality cannot only be discovered in the process of acquisition but in the characteristics of different languages too. These so-called linguistic universals underlie all human languages; for example, every language has word classes, which is an “absolute universal”, but there are also “universal tendencies” among human languages (Ellis, 1994, p. 417). For example, Nicaraguan children with hearing impairment, who were not taught a standard version of sign language, created their own (proto-) language which had a real, internal grammatical system reflecting the “underlying structure of all languages” (Wolfe, 2005); for example, they divided parts of utterances into the same units as any other human language (e.g., [Fall down][the hill].). In other words, they instinctively created a system they were never taught before.

To sum up, language acquisition seems to be a species-specific, internally governed, universal developmental process. The observations show that every neurologically healthy human being is able to acquire a language regardless of social environment, input, and even other cognitive skills (e.g., general intelligence). Probably some innate ability of human beings is responsible for these phenomena. In SLA, the only factor which breaks the uniformity is the level of proficiency achieved by learners. In some way, SLA is different from FLA in this respect and other factors seem to influence its success besides humans’ innate ability.

### **2.3. The age factor**

The role of age in the success of language acquisition is maybe the most controversial issue among linguists and explaining it proves to be a “major challenge” (Abello-Contesse, 2009, p. 170) of the field. There are several different opinions among psycholinguists concerning the topic, and the centre of their debate is a hypothetical optimal period for language acquisition. The basic idea is that human mind is only able to acquire a language up to a certain age.



In connection with FLA, scientists can only rely on indirect evidence (i.e. so-called natural experiments). Many researchers refer to some well-known cases when children spending their early years (probably) without any linguistic input are taught of language with negligible success. One of them is a 12-year-old boy, Victor, who was found in the forests of France and the other one is Genie, a 13-year-old girl, who was locked into a dark room, where nobody talked to her and she was punished by her father if she vocalized. Both children had a long therapy and could develop their social skills up to a level; however, their linguistic abilities remained poor (i.e. they could not build their mental grammar) and they could only pronounce some unarticulated words (similarly to aphasiacs; Fromkin & Rodman, 1993; Gósy, 2005; Lightbown & Spada, 1999; Pinker, 1994; Wolfe, 2005). These cases suggest that for lack of linguistic experience, language acquisition becomes limited and even impossible after a certain age (Wolfe, 2005).

On the other hand, a third child, the six-year-old Isabelle, who was born of a deaf and mute mother, was able to acquire language (even syntax) perfectly after she was found (Aitchison, 2008), which means that there must be a difference between the acquisition abilities of a six-year-old and an adolescent. To summarise the results; it seems that FLA is only guaranteed before the age of six, after that, it runs into difficulties, and after puberty it becomes almost impossible (Gósy, 2005; Pinker, 1994). (Naturally, it is also possible that Isabelle was not entirely deprived of linguistic input and (similarly to the Nicaraguan deaf children) developed some kind of language with her mother. Unfortunately, only partial information is available about these children's life.)

Controlled experiments, however, served with scientifically well-founded results about SLA. Emmorey (2002) claims that deaf children born into healthy families use sign language better and more consistently than their parents, who learned it as adults (i.e. as an L2). Johnson and Newport (1995) describe their experiment made with Korean and Chinese

immigrants in the United States and conclude that earlier arrivals have a great linguistic advantage. They also made experiments with deaf signers and found that language acquisition ability significantly declines over age. Newport's study (1990, 1991, as cited in Emmorey, 2002, pp. 211-212) also about deaf signers shows that there is a significant difference between the proficiency of native, early, and late signers. Pinker (1994) mentions similar results of tests made with immigrants acquiring the new language after puberty. They achieved almost native-like grammar, but they had a strong accent.

Another piece of evidence for the importance of the age factor can be that people achieve equal level of success at their mother tongues but different level of proficiency at an L2. Mother tongue is easily acquired by any neurologically healthy human being without any external intervention by the age of four; while learning a foreign language must usually be a conscious process, which needs explicit explanation of grammar rules and lots of practice (Fromkin & Rodman, 1993). On the basis of these experiments and observations, we can conclude that some relation must be between age and the success of language acquisition, and that early exposure to a language can determine the level of proficiency which can be achieved by the learner (Pinker, 1994).

Singleton (1989) introduces four divergent points concerning the success of learners caused by age-difference. These are the 'younger are better', the 'older are better', the 'younger are better at acquiring an accent', and the 'younger are better in the long run' versions (pp. 81-116). Ellis (1994) also mentions several age factor-related experiments which (maybe due to the different research methods) ended with completely controversial results. As all possibilities have arguments for and against, it cannot be decided properly which is true. Singleton (1989) finally concludes that all age groups have their characteristic strengths and weaknesses, which seems to be the best explanation for lack of unambiguous research evidence. Little children seem to be best at pronunciation, later they acquire syntax the best,

and after the age of ten, they only broaden their vocabulary. This is the so-called “tuning-in hypothesis” (Aitchison, 2008, p. 94).

Although scientists disagree about the existence and importance of the age factor, some generally accepted tendencies can be claimed. After describing several experiments about the age factor, Ellis (1994) formulates some general conclusions on the basis of research results. Adult learners prove to be better at grammar; however, children (especially in native environment) overtake them. Only children are able to acquire native-like accent without explicit information, while adults seem to need direct instruction to do so. Adults are generally less likely to achieve native grammatical competence. Although pronunciation is much more affected by age than grammar, children usually reach higher level of competence in both. (pp. 491-492).

The problem with the existence of an age factor in language acquisition is its explanation. An ideal theory should find the reasons why people acquire languages so naturally, easily, and with equal success as a child, while usually have problems with any language after puberty. Language acquisition theories have to explain the difference between childhood and adulthood, L1 and L2. Behaviourist and interactionist theories could not provide explanation to these problems. If language acquisition was guided by external factors like interaction or imitation, which are also available in the case of an L2 in adulthood, SLA should be just as successful as FLA.

To sum up, the role and the importance of the age factor in FLA is not testable and only natural experiments are known about the issue. On the basis of controversial research results in SLA, only general tendencies can be formulated which show that age can cause huge differences in the success of language acquisition; however, these tendencies are not

absolute as many exceptions are known of each theory. Probably, age factor should be considered in relation to other factors in SLA research (Ellis, 1994).

### **3. Solutions offered by Universal Grammar theory**

So far, the most problematic issues of language acquisition research have been described. In the second part of the thesis, the possible solutions offered by Universal Grammar theory will be introduced.

#### **3.1. 'It's all in our mind.'**

Instead of explaining language acquisition by habit formation and social interaction, Chomsky's Universal Grammar theory placed the key of the issue into the human mind. In contrast to empiricist theories (e.g., behaviourism and interactionism) which declare environment to play a central role, Chomsky's rationalist approach (UG) states that the ability of language acquisition must be innate, biologically determined, and only *activated* by linguistic experience (Gósy, 2005).

Chomsky (1976, as cited in Ellis, 1994) claimed that "the logical problem of language acquisition" can only be solved if we presume the existence of a specialised module of human brain which contains linguistic universals or (as Chomsky described it) a "system of principles, conditions and rules that are elements or properties of all human languages" (p. 430). In other words, UG contains "building blocks" (i.e. lexical entries) and their combination rules (i.e. grammar); that is, "substantial" and "formal" language universals (Aitchison, 2008, p. 101). He called this distinct part of our brain the 'Language Acquisition Device' (LAD) (or LAS; 'Language Acquisition System'), later on (as the name of the theory itself) simply 'Universal Grammar' (Aitchison, 2008 pp. 100-101). This mental mechanism

contains methodology needed to analyse linguistic data and the universal ingredients of human language, which any specific language can built on (Gósy, 2005).

The LAD (or UG) contains principles (i.e. “the abstract properties of grammar”) and parameters (i.e. “the principles of concrete languages”, Ellis, 1994, p. 430), which learners have to set on the basis of their primary linguistic experience (Aitchison, 2008). UG determines only the core features of grammar (i.e. principles of subsystems) but not the periphery elements (e.g., pragmatics) and the values of parameters which should be learnt on the basis of the linguistic input (Cook & Newson, 1996). According to Chomsky’s concept, UG is a large collection of switches which determine the major characteristics (i.e. parameters) of the mother tongue (Aitchison, 2008).

The mental organ helps the learners to look for regularities in the linguistic input, set the parameters on the basis of this input and to create the grammar of their mother tongues in their minds. The result of this process is an unconscious, intuitive, and implicit knowledge about the linguistic system; that is, grammatical competence (Ellis, 1994). Later, language use (comprehension and production) will be based on this abstract linguistic system formed by UG (White, 2007). Sometimes, UG is also called “hypothesis-making device”, which enables children to create ‘hypotheses’ about the linguistic rules of their mother tongue and test them until they find the appropriate one (Aitchison, 2008, p. 99).

The existence of a mental language faculty would explain the problems of “linguistic creativity”, “the poverty of the stimulus”, “the degeneracy of the data”, “the lack of negative feedback”, and “the lack of cognitive sophistication”. If language acquisition is guided by a separate module of the brain present in every human being, these problems do not need to be explained by external causes. Aitchison (2008) summarizes the results of language-connected brain research carried out in the last few decades, which show that the left hemisphere of the

brain seems to be responsible for language production and perception (Broca's and Wernicke's area); however, the location of the LAD is not found yet. Although the connection between brain structure and language use is not entirely clear, on the basis of the structure of the human vocal apparatus and brain capacity, human species seem to be "physically adapted to language" (Aitchison, 2008, p. 68).

To sum up, on the basis of the aspects of "the logical problem of language acquisition", a separate module of our brain, a mental organ may be responsible for human language acquisition. This LAD/UG enables us to create a "discrete combinatorial system" (Pinker, 1994, p. 84) of linguistic elements and rules, which allow us to make "infinite use of a finite media" (Wilhelm von Humboldt, 1972, as cited in Pinker, 1994, p. 84); that is, use a recursive language.

### **3.2. Innate language faculty**

In the previous part, Chomsky's UG theory was introduced; however, a very important feature of it was not mentioned; that is, UG is supposed to be genetically programmed. That is why UG theory is often called an "innatist approach" or "innatism" (Aitchison, 2008, p. 21). It means that children are biologically pre-programmed to acquire a language and if they receive the appropriate amount of (linguistic) input from their environment, they inevitably discover the systematic rules of their mother tongue and start producing their own meaningful utterances (Brewster, Ellis & Girard, 2002; Wolfe, 2005).

The problems introduced in 'The universality in linguistic development' part (2.2.) can be solved by this innate language faculty. UG seems to be a biologically determined mental organ naturally present in every human being, which answers the question why animals are not able to acquire the abstract and arbitrary symbol system of human language. The fact that FLA is independent from general intelligence and social grace, and that children receiving

different linguistic input achieve the same level of proficiency also strengthen the suspect that language acquisition must be guided by an innate capacity. According to Wolfe (2005); for example, children have an idea about objects and numbers in their minds and they also have some kind of an innate ability to recognise patterns in the linguistic input and extract the grammatical rules from it.

The universality of milestones and stages of language acquisition processes show that a biological clock is in operation, which (if the linguistic environment is given) starts and controls the “pre-ordained”, innate language programme (Aitchison, 2008, p. 79). The biologist, Lenneberg (1967, as cited in Aitchison, 2008) lists six characteristics of biologically controlled behaviour, which are the following:

- 1 The behaviour emerges before it is necessary.
- 2 Its appearance is not the result of a conscious decision.
- 3 Its emergence is not triggered by external events (i.e. change in the environment).
- 4 Direct teaching, explicit information, and guided practice have relatively little effect.
- 5 There is a regular sequence of ‘milestones’ as the behaviour develops.
- 6 There may be a ‘critical period’ for the acquisition of the behaviour (p. 71).

In the case of FLA all of these features are true. Little babies do not need to talk, they start acquisition unconsciously, (usually) nothing changes in their environment which could offer reasons for the start of the acquisition process, they do not pay attention to explicit information or corrections, they acquire their mother tongue in a given developmental sequence and are only able to do this up to an age (cf. natural experiments).

The difference between FLA and SLA becomes visible at this point. The characteristics formulated by Lenneberg are not true in the case of SLA. L2 learners usually have conscious motivation, their environment changes (e.g., they start a course), they need explicit instruction; however, they also show developmental patterns and are more successful before a certain age (Ellis, 1994). In connection with SLA, the main question is whether (and how) the parameters of UG can be reset after the acquisition of the mother tongue. The exact effects of L1 on a possible L2 setting (i.e. language transfer) are not known. The access to UG can be limited or altered by the L1; however, linguists have controversial opinions about the issue (Ellis, 1994). The question of accessibility will be covered in detail in ‘The Critical Period Hypothesis’ part (3.3.).

To sum up, the universality in human linguistic development suggests that the process of language acquisition is guided by an innate mental mechanism (UG), which is present in every human being by birth.

### **3.3. The Critical Period Hypothesis**

According to Lenneberg, similarly to little ducks, who must glimpse their mother some hours after their birth to recognize her, children must receive linguistic stimulus during the so-called ‘critical period’ (before the beginning of puberty) to activate UG in their brain. He called this theory the ‘Critical Period Hypothesis’ (CPH) (Lightbown & Spada, 1999, p. 19). According to this hypothesis, UG is only in process up to an age and after that, it is closed and not available for the learner any more. The onset and the end of this critical period is a controversial question among linguists. Certain researchers find better to talk about “sensitive period” because of this controversy (Aitchison, 2008, p. 93; Ellis, 1994, p. 492).

Regarding the beginning of the critical period, psycholinguists more or less agree. Singleton (1989) and Gósy (2005) claim that the critical period does not have a beginning.



Little babies hear their mothers' voice even in the womb and can recognize their mother tongues on the basis of its prosody (i.e. rhythm, stress, and intonation pattern) when they are only few days old (Gósy, 2005; Pinker, 1994). A one month old baby is able to differentiate the voiced-voiceless pairs of his or her mother tongue and afterwards, linguistic development becomes even faster and faster (Aitchison, 2008; Pinker, 1994).

The end of the critical period is a much more controversial question. According to the “strong version” of the hypothesis, language acquisition does not happen at all after this period, while the “weak version” suggests that an early start of acquisition is an advantage, but the process can also go on after the end of the period; however, it becomes less effective (Singleton, 1989, p. 38). Another theory was created by Johnson & Newport (1995), who differentiated the “exercise” and the “maturational state” hypotheses. Maturational state hypothesis claims that there is a significant decline in language acquisition ability over age and after a while, acquisition becomes impossible; while exercise hypothesis means that if one language was exercised within the critical period it will stay in the learners' minds through their life. The latter would mean that children and adults acquire an L2 equally well, while the former suggests that children are better at SLA than adults (pp. 79-80).

Evidence is known of both versions; however, certain general tendencies can be claimed. Actually, there seem to be two biologically determined boundaries concerning language acquisition. The first one is around the age of 6-7 and the second one around the beginning of puberty, at the age of 10-12. Before the first boundary, FLA and SLA are completely successful (e.g., bilingual children) and L2 can be acquired without accent (cf. early immigrants). Between the two boundaries, FLA becomes endangered and SLA usually happens with accent. After the beginning of puberty, FLA seems to be impossible (cf. the case of Victor and Genie) and L2 can only be acquired with an accent (cf. late immigrants) (Gósy, 2005). Linguists explained the existence of these boundaries and the critical period with the

state of the brain in childhood. Children show an unbelievable ability to recover from brain injuries due to the plasticity of their brain. It seems that when this plasticity is lost (somewhere around puberty) the natural skill of language acquisition is also lost (Johnson & Newport, 1995; Pinker, 1994; Singleton, 1989).

On the one hand, CPH can be a believable hypothesis concerning FLA as it can provide a good explanation of children-adult differences and can solve the problem of the ‘wolf-children’ (i.e. Victor and Genie). In connection with SLA, on the other hand, CPH can be questionable as it seems to exclude UG from the process of SLA. The role of UG in SLA is not clear, because we do not know the effects of parameters set on the basis of L1 input on SLA (Ellis, 1994).

Although neither Lenneberg nor Chomsky mentioned the possible implications of CPH on SLA, linguists are arguing about the question (Johnson & Newport, 1995). Some say that there is no difference between FLA and SLA because UG is equally in operation in both cases and creates two separate instantiations. Others say that UG is not accessible at all after the critical period, which means that L1 and L2 competence are completely separated and other tools are used (e.g., learner strategies) by learners to acquire an L2. A third group states that after the critical period, UG is not working in the same way because it is altered and limited by the mother tongue; that is, the learner has access to principles, but parameters cannot be reset any more (Cook & Newson, 1996; Ellis, 1994).

The choice between these versions may depend on the connection between L1 and L2 acquisition processes, which seem to be quite similar. The learner is required to understand the rules of the language he hears and build them into the structure he already knows because of UG (Brewster, Ellis & Girard, 2002). The learning conditions, however, are rather different in the case of an L1 and an L2. L2 learners have less interaction with native speakers, avail

less sources, have very different motivation, receive more corrective feedback, and show a wider range of variation in success (Ellis, 1994; Pinker, 1994). As the problem of linguistic creativity is also present in SLA and L2 learners usually study consciously, the third version (i.e. limited access) seems to be the most acceptable.

From the language teaching point of view, the three groups are in contrast. The first one says that as UG is in process and SLA can be as unconscious as FLA, no explicit information is needed for L2 learners. (According to White (2007) UG seems to be responsible for the unconscious linguistic (grammatical) competence of native speakers as well as L2 learners.) Whereas the other group claims that explicit information need to be given about what is ungrammatical in the foreign language (Lightbown & Spada, 1999). Maybe, the answer is somewhere on the continuum between these two points. According to Cook and Newson (1996), UG seems to play “a central and vital part in L2 learning, but there are many other parts” (p. 198) of the process.

Abello-Contesse (2009) emphasizes the controversy of opinions regarding CPH. There seem to be multiple critical periods for different components of language (e.g., phonology and grammar). Critical period is usually accepted in the case of FLA but is not in the case of SLA. Some scientists argue for a ‘sensitive’ instead of a ‘critical period’ and rather mention “a gradual and continual decline from childhood to adulthood” (p. 170).

To sum up, the existence and the boundaries of a critical period of language acquisition is a controversial question among linguists. Only some general tendencies can be claimed to be acceptable. The question of access to UG in SLA needs more methods and research to be answered clearly (Ellis, 1994).

#### **4. Conclusion**

One of the main goals of any science is to become familiar with human thinking; that is, what is going on in our minds. So far, language seems to be “the most accessible part of the mind” (Pinker, 1994, p. 404). Therefore, psycholinguistics and especially language acquisition research has growing importance in answering the questions of human mind and thinking. As most aspects of language acquisition are not testable and linguists can only work with models and theories which are waiting for proof, this task is not easy.

Cook and Newson (1996) mention three levels of adequacy in the case of theories; observational, descriptive, and explanatory (p. 80). UG theory proves to have descriptive adequacy, as it can explain the rules of grammar (syntax) within the framework of generative grammar. It can tell about the role of linguistic input (observational adequacy); in addition, the Chomskyan approach also reaches explanatory adequacy, as it offers a theoretical framework to explain language acquisition (Ellis, 1994). Although Cook and Newson (1996) warn that empirical research is difficult in the case of UG theory, Chomsky’s approach cannot be neglected among language acquisition theories. According to Ellis (1994), the biggest strength of the theory is that it offers a strictly defined theoretical framework for the acquisition of formal linguistic properties (Ellis, 1994).

On the basis of natural experiments, observations, and scientific research, the theoretical framework of UG seems to offer solutions to the main problematic points of language acquisition introduced in the first part of the thesis. The existence of an innate, mental grammar explains the problem of linguistic creativity, gives an account for developmental universality in language acquisition, and (by the Critical Period Hypothesis) serves as an acceptable solution for the age factor problem.

Many factors can influence (especially L2) acquisition and linguists need new models, theories, and experiments to deal with the issue. Chomsky's UG theory has been able to explain the most problems of FLA (such as linguistic creativity, developmental sequences, and the age factor) and also served as a secure basis of future cognitive SLA research. Although some aspects of the theory are difficult to prove, the significance of the theoretical framework of UG in language acquisition research is indisputable. It introduced a completely novel perspective and showed that not only "language is a supreme achievement of a uniquely human collective genius" but so is language acquisition (Krauss, 1992, as cited in Pinker, 1994).

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