

UNIVERSAL GRAMMAR AND ITS EFFECT ON L1 AND L2 ACQUISITION

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Abstract

The aim of this paper is to convey why Chomsky's theory of language, namely, Universal Grammar (UG), is stimulating and adventurous and why it has significant consequences for all the people working with language. The goals of the theory are to describe language as a property of the human mind and to explain its source (Cook, 1988a). To achieve these goals, specific proposals are put forward which may not be correct, but at least the theory provides a unified framework within which they may be tested. This study is carried out in order to give basic information about the overall frame work and details of the theory to evaluate its usefulness in the field of first language and second language acquisition.

Key words: Universal Grammar, Universal Grammar and L1 acquisition, Universal Grammar and L2 acquisition

“One reason for studying language –and for me personally the most compelling reason- is that it is tempting to regard language, in the traditional phrase, a mirror of mind.”
(Chomsky, 1976 cited in Smith, 1999: 81)

1. INTRODUCTION

The Chomskyan generative grammar approach argues that the L1 learner comes to the acquisition task with innate, specifically linguistic, knowledge, or Universal Grammar (McLaughlin, 1987). The idea is that human beings are biologically endowed with the innate ability to acquire language (Gynan, 1994). As Chomsky put it:

“Universal Grammar is taken to be the set of properties, conditions, or whatever, that constitute the ‘initial’ state of the language learner, hence the basis on which knowledge of language develops.”

(Chomsky, 1980 cited in McLaughlin, 1987:91)

UG is a theory of knowledge, not of behavior, its concern is with the internal structure of the human mind. For Chomsky, it is probable that human beings are predisposed to learn a language by their biological make-up and that this predisposition is passed on by genes (Salkie, 1990). These ideas postulate the

existence in the human brain of a “Language Acquisition Device”, equipped from birth with the set of linguistic rules that form the UG, grammatical rules which are common to all human languages (Johansson, 1991).

Chomsky’s ideas about language acquisition, mainly, UG are still highly controversial among linguists, with some echoes of the nature vs. nurture debates that have acquired in the other branches of human sciences (Lidz & Gagliardi, 2015). In this paper, there would be an attempt to study the concept of UG itself in some details in order to consider its application in FLA and SLA research.

2. WHY A UNIVERSAL GRAMMAR?

The aims of linguistic are often summarized by Chomsky in the form of three questions (Smith, 1999:2-3).

1. What constitutes knowledge of language? The linguist’s prime duty is to describe what people know about language; whatever it is that they have in their minds when they know English or French or any language, or more precisely, a grammar.

2. How is such knowledge acquired? A second aim is to discover how people acquire this knowledge, studying acquisition of language knowledge means first establishing what the knowledge that is actually consists of.

3. How is such knowledge put to use? A third aim is to see how people use this acquired language knowledge. Again, investigating how knowledge is used depends on first establishing what knowledge is.

2.1. What constitutes knowledge of language?

UG is defined by Chomsky “the system of principles, conditions, and rules that are elements or properties of all human languages...the essence of human language” (Chomsky, 1978 cited in Johansson, 1991:2). A few examples of rules that supposedly belong to this UG can be given as follows:

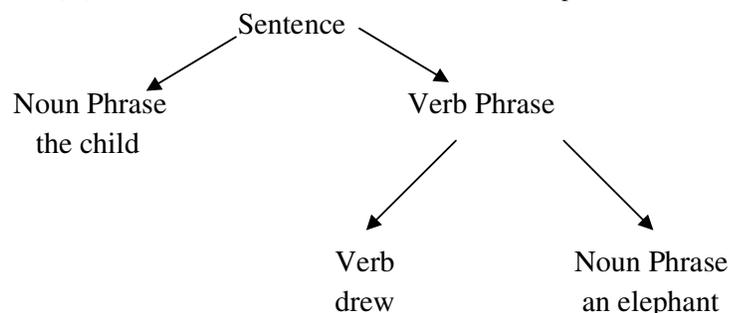
2.1.1. Structure Dependency

Structure dependency asserts that knowledge of language relies on the structural relationships in the sentence rather than on sequence of words (Smith, 1999). This is probably the least controversial of all the proposed rules of UG, being strongly supported both by all available data, and by most people’s linguistic intuition (Johansson, 1991).

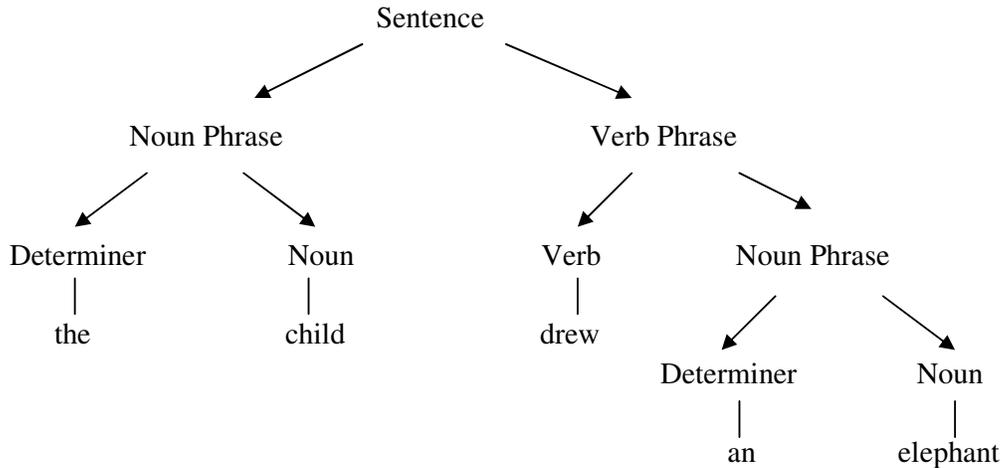
A major assumption in linguistics since the 1930s has been that sentence consists of phrases; structural groupings of words: sentences have phrase structure. Thus, the sentence (S) (Cook, 1988a):

The child drew an elephant.

breaks up into a Noun Phrase (NP) *the child*, and a Verb Phrase (VP) *drew an elephant*; the VP in turn breaks up into a Verb (V) *drew* and a further Noun Phrase *an elephant*



These phrases also break up into smaller constituents; the NP *the child* consists of a Determiner (Det or D) *the* and a Noun (N) *child*, while the NP *an elephant* consists of a Determiner *an* and a Noun *elephant*.



The phrase structure analysis of the sentence breaks it up into smaller and smaller constituents. A sentence is not just a string of words in a linear sequence but is structured into phrases, all of which connect together to make up the whole.

In another sample sentence:

The manager who will fire Barnes will succeed.

gives us a choice of two auxiliaries *will* while forming questions. But only one of these can move to get a question. Every English speaker knows that the correct question is:

Will the manager who will fire Barnes succeed?

not

*** Will the manager who fire Barnes will succeed?**

The only auxiliary that can be moved is the *will* in the main clause *the manager will succeed*, not the one in the relative clause *who will fire*, that is to say, the auxiliary *will* occurring in a particular place in the structure of the sentence.

This brings up the major aspect of the principle of structure dependency: movement in the sentence is not just a matter of recognizing phrases and then of moving them around, but of moving the right element in the right phrase: movement depends on the structure of the sentence. The *will* which moves is the one directly within the main clause, not the one which the relative clause; it plays a particular role in the structure of the sentence. The movement involved in the formation of English question is the central example of structure dependency used in Chomsky's writings. Chomsky, for example, contrasts:

Is the man who is here tall?

with

***Is the man who here is tall?**

as evidence for the claim that "the rules of language do not consider simple linear order but are structure dependent..." (Chomsky, 1988 cited in Cook, 1988a:8).

English itself can be considered as a structure dependent language: the principle of structure-dependency applies to all the types of structure found in English. But the same seems to apply to other languages. For example, in Greek in the passive *o giatros* has moved from later in the sentence.

o giatros didachtike Aglika opo ton Peter.

(the doctor was taught English by Peter)

The doctor was taught English by Peter.

or in Spanish questions, where *esta* (is) has moved from the main clause VP, not the relative clause VP.

Esta el hombre, que esta contento, en la casa?

(Is the man, who is happy, at home?)

Is the man who is happy at home?

or in Arabic, where the pronoun *nafsahu* must refer to the same person as Zaid within the same clause.

qala Ahmed anna Zaydun qatala nafsahu

(said Ahmet that Zaid killed himself)

Ahmet said that Zaid killed himself.

When describing passives, questions and reflexives in English, Greek, Spanish or Arabic, the generalization can be made that the rules in each of these languages are structure-dependent. Structure-dependency can therefore be put forward as a universal principle of language: whenever elements of the sentence are moved to form passives, questions and whatever, such movement takes account of the structural relationships of the sentence rather than the linear order of words.

2.1.2. The Head Parameter

Each phrase contains a “head” (main word) and all phrases in a given language have the head in the same position (Johansson, 1991:3). For example, the VP *drew an elephant* has a head Verb *drew*; the NP *the child* has a head Noun *child*; a PP such as *by the manager* has a head Preposition *by* (Cook, 1988a).

The head has a relationship with the other elements of the phrase, called complements. The head of the phrase can be placed on the left of the complement or on their right. So in the NP:

education for life

the head Noun *education* appears on the left of the complement for life. In the VP:

showed her the way

the head Verb *showed* appears on the left of the complements her and the way. But, Japanese is very different. In the sentence:

E wa kabe ni kakatte imasu

(picture wall on is hanging)

The picture is hanging on the wall.

The head Verb *kakatte imasu* occurs on the right of the Verb complement *kabe ni*, and the postposition *ni* (on) comes on the right of the PP complement *kabe*. Hence, there are two possibilities for the structure of phrases in human languages: head-left or head-right.

According to Chomsky, the relative position of heads and complements needs to be specified only once for all the phrases in a given language. Instead of a long list of individual rules specifying the position of the head in each phrase type, only a single generalization will be sufficient: ‘heads are last in the phrase’ or ‘heads are first in the phrase’. Human beings know that phrases can be either head-first or head-last; an English speaker has learnt that English is head-first; a speaker of Japanese has also learnt that Japanese is head-last. The variation in order of elements between languages amounts to a single choice between head-first and head-last which is termed as head parameter. UG captures the variations between languages in terms of limited choice between two or so possibilities, known as parameter. The impacts of the parameter yield languages as different as English or Japanese.

2.1.3. The Projection Principle

Properties of lexical entries project onto the structure of the phrases of which they are the head. This rule ensures that a verb gets the appropriate number and type of objects (Johansson, 1991). For instance, some verbs are followed by object noun phrases (Cook, 1988a):

Helen prefers Scotch whisky

but not:

***Helen prefers.**

Other verbs are not followed by NPs, for example:

Peter fainted

not:

***Peter fainted the cat.**

The lexical entry is said to project onto the syntax, the lexical specifications of the word ensure that the syntax has a particular form. This is known as the Projection Principle. Much of the information that could be expressed as syntactic rules is handled as projections from lexical entries. Rules such as:

VP → V (NP)

provide redundant information owing to the fact that NP is no longer optional, but predictable from the behaviour of particular lexical items: like can have an NP, go cannot. In other words, there is no need to say that sentences may be transitive or intransitive if the information available for every verb specifies whether it can have a following NP or not. The lexicon is not a distinguishable issue, a list of words and meanings; it plays dynamic and necessary parts in the syntax.

The Projection Principle is a further universal of human language; all languages integrate their syntactic rules with their lexical entries in this way. Since there is no logical necessity for language to be this way and no obvious means by which a child could acquire it, it also seems a built-in feature of the mind.

2.1.4. The Government / Binding Theory

a) Government Theory

This refers to a particular syntactic relationship of high abstraction between a ‘governor’ and an element that it governs (Cook, 1988a). A preposition such as “to” governs a Noun Phrase. For example, in the Preposition Phrase:

to her

the preposition *to* governs the NP *her*. A verb governs the NP object, in the sentence:

He likes Coltrane.

the verb *like* governs the NP *Coltrane*. The list of governors consists of lexical categories noun, verb, adjective and preposition –everything that can be the head of a phrase.

If the relationship of government obtains between two elements in the sentence, they affect each other in various ways. So the fact that the preposition “to” governs the NP meant that it had the form:

to her

not:

*** to she**

In other words, government ensures that the word gets an appropriate Case. The verb also governs an NP that follows it, in the sentence:

Sarah consoled her.

the verb *console* governs the NP *her*. Government both ensures that the NP gets the right Case, *her* rather than *she*, and the actual presence of an NP, derived by the Projection Principle from the entry for the verb, follows from government, the verb governs the elements that it projects onto the sentence.

b) Binding Theory

It constrains the relationships between different kinds of noun phrases (White, 1989). The theory covers three principles, *Principle A*, which is concerned with anaphors like reflexive, and reciprocal pronouns, *Principle B*, which handles pronouns, and *Principle C*, which covers lexical NPs. Principle A

states that an anaphor must be bound in its governing category (the smallest NP or S containing the anaphor and a governor of the anaphor). That means, it must be c-commanded by a local antecedent which is co-indexed with it.

Principle B states that a pronoun must be free in its governing category. That's to say, it co-indexed antecedent must not c-command it within the same clause or NP. Principle C states that lexical NPs must be free. They must not be c-commanded by a co-indexed antecedent at all, no matter how far away.

Examine the sentences below. The reasons why the co-indexed NPs in each sentence can or cannot be co-referential will be analyzed. In each sentence, the governing category has been bracketed.

- a) [John i saw himself i]
- b) * [He i saw John i]
- c) * [John i saw him i]
- d) * John i said [that Fred hurt himself i]
- e) John said [that Fred i hurt himself i]
- f) John i said [that Fred hurt him i]
- g) * He i said [that Fred hurt John i]

In *a*, John c-commands the reflexive within its governing category and so the sentence is permitted by principle A. In *b*, the pronoun c-commands the name, which must be free, so this sentence violates Principle C. In *c*, John c-commands the pronoun, which must be free in its governing category, violating Principle B. If this pronoun does not refer to John, it is free and the sentence is acceptable. In *d*, John cannot be the antecedent of the reflexive because this would bind it outside its governing category, which violates Condition A. In *e*, on the other hand, is grammatical because Fred binds the pronoun within its governing category. In *f*, him is free in its governing category, such as John. In *g*, he c-commands John, in violation of Condition C. In all the sentences, except *b* and *g*, both John and Fred are free, as required by Condition C.

2.1.5. Core and Periphery

UG theory differentiates core and peripheral grammar. Core grammar refers to the parts of that have grown in the child through the interaction of the UG with the relevant language environment (McLaughlin, 1987). However, it is assumed that every language also has elements which are not constrained by UG. These elements belong to the peripheral grammar. Peripheral elements are the ones stemmed from the history of language that have been borrowed from other languages, or that have arisen accidentally. Cook (1988a) gave several examples related to the peripheral grammar. For example, *the more the merrier* reflect a common comparative construction in Old English. And the fact that *police* does not rhyme with *nice* indicates it was a late borrowing from French after other words with *i* had changed their pronunciation. Hence, it is unrealistic to expect a UG theory to account for myriads of such unconnected features of language knowledge. It deals with a core of central language information and a periphery of less essential information.

As McLaughlin (1987) states although the child's mind is thought to prefer to adopt rules based on UG, the child also has to learn aspects of language that are peripheral when he learns a particular language. The peripheral aspects fall outside the child's pre-programmed instructions and hence are more difficult to acquire. Similarly, according to Cook (1988a, 1988b), a core language is a system determined by fixing values for the parameters of UG, and the periphery is whatever is added on the system actually represented in the mind of a speaker-hearer. Thus, the theory of UG is far from a complete account of the speaker's entire knowledge of language, it deals with the core aspects that are related to UG, not with the periphery which is unrelated to UG.

2.1.6. Principles and Parameters

It is important to realize that although the principles of UG are universal, this does not mean that every principle necessarily operates in every language (White, 1989; White, 2012). Examples can be given from phonetics, where there is assumed to be a universal set of phonetic features. Individual languages have a phonetic inventory which makes use of a subset of the full set of features; as a result, different languages make use of different sounds.

According to Chomsky, certain principles of UG differ in the way they work from language to language. The differences are accounted for by incorporating a limited number of options into UG. Parameterized principles which exhibit such options are termed as parameter settings. Parameters help the child have knowledge of what the possibilities will be, that means, they limit the range of hypotheses that have to be considered.

One of the most interesting aspects related to the concept of parameters is that they involve the clustering of properties. Once a parameter is set in a particular way, all related properties are affected. An oft-cited example of such a parameter is the pro-drop parameter. This parameter encompasses a number of properties, namely a) the omission of subject pronouns, b) the inversion of subjects and verbs in declarative sentences, and c) that-trace effects (Gass & Selinker, 2001). A language will either have all of these properties or none of them. Languages like Italian and Spanish are [+pro-drop] and have all of the properties, whereas English and French are [-pro-drop], having none of them. Examples from English and Italian below illustrate the differences:

<u>Italian</u>	<u>English</u>
<i>Omit subject pronouns</i>	<i>obligatory use of subject pronouns</i>
Va al cinema sta sera goes to the movies this evening	She is going to the movies this evening * is going to the movies this evening
<i>subject-verb inversion</i>	
È arrivata Laura Is arrived Laura	Laura has arrived * has arrived Laura
<i>That-trace</i>	
Chi hai detto che evenuta? Who you said that is come?	Whom did you say come? * Whom did you say that come?

According to Chomsky, “a language is not, then, a system of rules, but a set of specifications for parameters in an invariant system of principles of UG” (Chomsky, 1995 cited in Mitchell & Myles, 1998:53). He proposes a network metaphor for the ‘whole faculty’.

“The initial state of the language faculty consists of subsystems, or modules as they are called, each of which is based on certain very general principles. Each of these principles admits of a certain very limited possibility of variation. We may think of the system as a complex network, associated with a switch box that contains a finite number of switches. The network is invariant, but each switch can be set in one of the permissible ways, the system functions, yielding the entire infinite array of interpretation for linguistic expressions. A slight change in switch settings can yield complex and varied phenomenal consequences as its effects filter through the network...To acquire a language, the child’s mind must determine how the similarities are set.” (Chomsky, 1987 cited in Mitchell & Myles, 1998:53)

2.1.7. Minimalism

The Minimalist Program is a current conceptualization of UG, which continues with the goals of the Principles and Parameters approach. Within the Minimalist framework, the lexicon plays a very important role. Parameterization is no longer in the syntax, but in the lexicon (Gass & Selinker, 2001). In fact, in this view, parameters are part of the lexicon and language learning is largely lexical learning. Chomsky drew the current picture of acquisition with the Minimalist program by his own words: "Acquisition of a language reduces to selection of substantives from a given score and fixing of values of parameters that apply to functional elements and to properties of the lexicon as a whole" (Chomsky, 1995 cited in Cook, 1998:3).

The concept of functional categories is very important in this view. Functional categories can be considered as grammatical words that in sense form the glue of a sentence. Determiners (a, the, my, this), complementizers (if, whether, that) and grammatical markers (past tense endings, case markings, plural endings) are the examples of functional categories.

Functional categories can be differentiated from lexical categories in a number of ways. In general, functional categories are said to be limited since they represent a fixed set of words in a language, but on the other hand, lexical categories can be generated if a need arises. Another distinction is that whether or not a class of words is associated with lexical properties. To illustrate, prepositions are a part of the lexical category, as opposed the functional category. This is so since prepositions are associated with such roles as agent (who does what to whom), patient (who is the recipient of the action) and location.

The use of reflexives exemplifies how parametric variation is attached to the lexicon. In the following sentence:

The mother told the girl to wash herself.

Speakers of English grasp that the word herself must refer to the girl. But the same is not true in another sentence below, where "her" can refer to the mother or someone else.

The mother told the girl to wash her.

Hence, the word herself in English will consist of information stating to which antecedent in a sentence it must refer. Other languages choose different options. For instance, in Japanese, one reflexive form, *zibun*, can create ambiguity, as in the following sentence:

John-wa Bill-ga kagami-no naka-de zibun-a mita to itta
John [Top] Bill [Nom] mirror [Gen] inside [Loc] self [Acc] saw that said
'John said that Bill saw self in the mirror'

(Either John or Bill can have seen himself.)

In the next sentence *zibun-zisin* removes the ambiguity.

John-wa Bill-ga kagami-no naka-de zibun-zisin mita to itta.
'John said that Bill saw himself in the mirror'.

(John can't have seen himself.)

As a result, languages cover information in the lexicon that signals grammatical relationships.

3. HOW IS KNOWLEDGE OF LANGUAGE ACQUIRED?

A more familiar way of asking this question might be: How do people learn their native language? For Chomsky, it is needed probable that human beings are predisposed to learn a language biologically (Salkie, 1990). He also proposes that one part of our biological make-up is specifically designed for language: he calls it the language faculty. UG represents the initial state of the language faculty. The point is that universal means what it says. If there is a significant genetic element in language acquisition, it must be common to all human beings: there is no evidence that any particular people are predisposed to learn one

language rather than others. For linguists, who are interested in this genetic issue, finding features which are shared by all the languages will be the first step.

According to Chomsky (2000), the language faculty has at least two different components: a cognitive system that stores information in some manner, and performance systems that make use of this information to articulation, perception, talking about the world, asking questions, telling jokes and so on. The language faculty has an input receptive system and an output production system, but more than that; no one speaks only Japanese and understands only Swahili. These performance systems access a common body of information, which links them and provides them with instructions of some kind.

4. HOW IS KNOWLEDGE OF LANGUAGE PUT TO USE?

Chomsky's third question asks how knowledge of language is put to use. He makes a distinction between knowledge of language, other psychological mechanisms involved in the use of language, and physical skills which are needed to produce and understand language (Salkie, 1990). For him, the UG approach to language is concerned with knowledge of language, with the abstract mental representation of language which all human beings possess, with competence (Mitchell & Myles, 1998). In competence, the sentences have an intrinsic meaning determined by linguistic rule and a person with command of a language has in some way internalized the system of rules that determine both the phonetic shape of the sentence and its intrinsic semantic content (Chomsky, 1972). It is not about performance, the actual observed use of language. In his third question, Chomsky tries to show that communication is just one special use of language among others. But he has been highly criticized by many linguists in the point that the whole point of language is to enable people to communicate with each other (Salkie, 1990). It is important to clarify what Chomsky tries to mean here. He is not saying that the study of language communication is impossible or uninteresting; but for him, the study of communication is one part of his research programme.

5. SECOND LANGUAGE ACQUISITION AND UNIVERSAL GRAMMAR

Universal Grammar theory does not concern itself with SLA. The application of the theory to SLA has emerged through recent work of a number of SL researchers. Four considerations motivate interest on the part of researchers in the Chomskyan position (White 1985 cited in McLaughlin 1987:91):

- 1) The need for a sufficiently sophisticated linguistic theory to describe the complex structural characteristics of inter languages. There is a certain vagueness in Interlanguage Theory that derives from an inadequately developed linguistic theory. The same criticism, by the way, has been applied to Krashen's theory. UG, its proponents argue, provides a sophisticated and detailed linguistic theory to account for SL phenomena.
- 2) The growing realization that SL learners face a 'projection problem', that is, that they, like L1 learners, have to work out a complex grammar on the basis of deficient data. Those working in the Chomskyan tradition argue that the learner's grammatical knowledge cannot be explained by the input data alone.
- 3) The development of parameter theory within generative grammar, which allows for a more precise investigation of language variation, including variation between native and target languages. Thus, the language properties inherent in the human mind are thought to consist of a set of general principles that apply to all grammars and that leave certain parameters open. UG is seen to set the limits within which human languages can vary.

4) Researchers interested in SLA have argued that there is no reason to assume that the language faculty described by UG necessarily atrophies with age, instead they maintain that, like L1 learners, adult L2 learners are sensitive to certain structural properties of the language they are acquiring and they use these sensitivities in constructing the grammar of language they are learning.

During the 1980s SLA research became increasingly interested in seeing the extent to which the principles and parameters model could deal with SLA. The adaptation of the Language Acquisition Device model to L2 learning is the departure point in this domain. In principle the LAD diagram could simply be extended to take in other languages as in Figure 1 (Cook & Newson, 1998:125). A second set of primary linguistic data go into the black box, a second grammar comes out containing a second version of the principles, a second batch of settings for the parameters, and a second lexicon (See Figure 1).

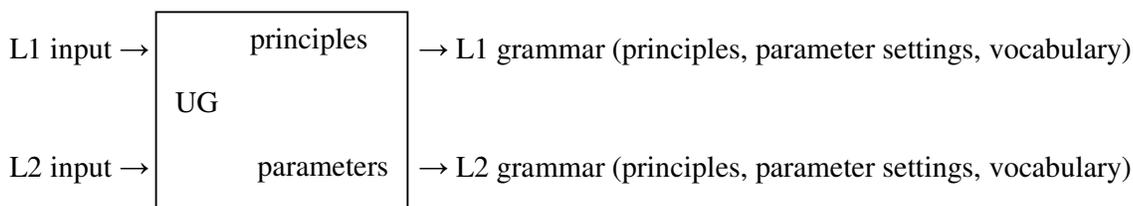


Figure 1. LAD extended to SLA

SLA appears not to function in this way. What is different about L2 learning? One possibility is the existence of L1 in the mind L1 children start with the zero state S_0 and go on the steady state S_s , they progress from an initial stage of knowing everything about a particular language. L2 learners already know an L1; they possess one instantiation of UG. But, the initial state of the child's mind, S_0 , has no language-specific knowledge, the initial state of the learner, S_i , already contains one grammar, complete with principles and actual parameter settings. In a more complicated situation, the L2 may be being learnt while the learning of the L1 is still incomplete; in this case S_i contains a non-final form of the L1. With various starting points to first and second language acquisition, it is hardly surprising that the end result is different. The mind starting to learn an L2 in state S_i , already contains an L1 grammar, an S_s , that is to say, $S_i = (S_0 + S_s)$; the L2 has to live alongside this other grammar. The LAD diagram misinterprets the initial state of L2 learning by treating it as the initial state of L2 learning by treating it as the initial state of L1 learning.

In L1 acquisition the final S_s is adult competence which definitely means: a native speaker's competence is whatever a native speaker knows, neither more or less. But the final state in L1 learning is hard to define. What is a normal L2 speaker? One possibility is to take the final state of L2 learners as identical to the L1 S_s : the task of L2 learners will be complete when they know the L2 as well as they know the L1. Chomsky himself argues for the common-sense view that only the complete knowledge of language counts, rather than intermediate states (Chomsky, 1986 cited in Cook & Newson, 1998:126).

“We do not for example say that the person has a perfect knowledge of some language similar to English but still different from it. What we say that the child or foreigner has a partial knowledge of English or is on his or her way towards acquiring knowledge of English, and if they reach this goal, they will then know English.”

But most people are substantially less efficient in their L2 than in their L1, many succeed in learning little of the L2, sometimes despite their best efforts. If the native adult Ss is the final state of L2 learning, it is very difficult to reach. While L1 competence is whatever it is, L2 competence is usually defined as what it is not, in short as if it were L1 competence. The steady state that L2 learners achieve differs from an L1 Ss and varies from one learner to another. This terminal state L2 learning can be referred to as St, to distinguish it from Ss in the L1 learning. The differences between L1 and L2 learning are then:

L1 learning	So.....Ss
L2 learning	Si.....St

Neither the initial nor the final states of 2 learning are the same as those of first language acquisition.

5.1. The Poverty-of-the-Stimulus Argument and Second Language Acquisition

If L2 learners possess knowledge of language they could not have acquired from the evidence they have encountered, its source must be within their own minds (Cook, 1988a). The poverty of the stimulus argument works slightly different with second languages. Step A in first language acquisition accounts for demonstrating the existence of a property of syntax in the mind of a native speaker. But L2 learners come in all varieties and levels of knowledge of the L2 (Cook & Nelson, 1998). Is it possible to demonstrate Step A for L2 learners, for structure-dependency? The findings of the MUG test yield that advanced L2 learners of English rejected sentences such as:

*** Is Sam is the cat that brown?**

Japanese teachers of English scored 97%, Chinese students 86.6%, and Finnish students 100%. Step A is satisfied in that advanced L2 learners are aware of structure-dependency.

Step B searches for the sources of language evidence available to the L2 learner. The occurrence and uniformity requirements function slightly differently in L2 learning theory; because St is itself variable, explaining how a learner acquired something means that the postulated situational effect actually occurs for all learners.

5.1.1. Imitation

As in L1 acquisition, sheer imitation merely gives positive evidence of what is heard; repeating sentences does not itself allow the learner to know what can not be said. In fact a similar argument caused the demise of language teaching methods that rely on an imitation, such as ALM. Repeating aloud the sentence; *Oscar fancies himself*, ten times does not confer knowledge of Binding Principle A.

5.1.2. Grammatical Explanation

Grammatical explanation does not figure in prominently in the experience of L1 children. L2 learning is; however, different, at least for those learners who encounter the language in the classroom. But teachers can only explain what they are consciously aware of. "It must be recognized that one does not learn the grammatical structure of a second language through 'explanation and instruction' beyond the most rudimentary level for the simple reason that no one has enough explicit knowledge about this structure to provide explanation and instruction." (Chomsky,1969 cited in Cook & Newson,1998:128). Even if grammatical explanation might work for some aspects of L2 learning, it cannot give any evidence how people know what they are not thought, for example, structure-dependency. The explanations of 'reflexives' in pedagogical grammar books for example do not go very far towards explaining the Binding Principles the L2 learner knows.

5.1.3. Correction and Approval

Children are rarely given any correction or approval of syntactic forms in their native language. But such feedback is provided in many L2 learning situations both in the classrooms and natural settings. For correction to be successful, the L2 learner must produce sentences that deviate in the appropriate way. In order to learn Binding, the learners must generate sentences such as:

The Joneses asked the Smiths to help themselves.

in the meaning that the Joneses wanted to help.

*** The Joneses i asked the Smiths to help themselves i**

And the correctors must point out:

No, in that case you mean 'The Joneses asked the Smiths to help them.'

Though the language of L2 learners exhibits a variety of peculiarities, such mistakes are not numbered among them. Thus, it is not clear that L2 learners actually produce the necessary mistakes in terms of principles and parameters that would enable their teachers to correct them. As a result, correction is no more liable to lead to L2 knowledge in non-classroom contexts than in L1 acquisition. As L2 learners manage to learn UG principles without such correction, it cannot be the most vital element. Although correction potentially meets the occurrence requirement for some areas of language for some learners, it is an ineffective way of learning the central areas of UG.

5.1.4. Social Interaction

In terms of social interaction it is necessary to separate the exchanges that are natural exchanges from the other exchanges that are non-neutral; though L2 learners may engage in the same routines of social interaction as L1 children; moreover, they may have controlled artificial exchanges, for example the ones found in such teaching techniques as the structure drill. Natural social exchanges lead to pragmatic competence in the L2 but unfortunately they do not help the acquisition of UG principles in the L2 any more than they do in the L1. As a result, there occurs the classic three-fold exchange in the classroom: teacher's question, student's answer and teacher's evaluation. These exchanges could aim at teaching principles as Binding, but this approach would necessitate the provision of negative evidence or grammatical explanation if it were to succeed. Vital as social interaction may be to the communication needs of second language students, it is unlikely vehicle for the acquisition of core UG grammar.

5.2. Access to UG Hypothesis

Even if the UG hypothesis is correct for L1 learning, there are still a number of logical possibilities concerning its role in L2 learning. Five possible positions regarding the availability of UG that center around two main variables, transfer and access are listed below (Gass & Selinker, 2002:176-177).

1. *Full transfer/partial (or no) access*: This approach specifies that the initial state of learning is the L1 final state. It means adults come to the learning situation with fully-formed grammars. One has access to UG through the L1, so that if a UG principle is not found in the L1, it will not be available for SLA.
2. *No transfer/full access*: This position maintains that the starting point for acquisition is UG. There is a disconnection between L1 and the developing L2 grammar. A prediction based on this position is that L1 and L2 acquisition would proceed in a similar fashion, and would finish at the same point, and that all L2 acquisition would proceed along the same path.
3. *Full transfer/full access*: This position assumes that the starting point for L2 acquisition is the final state of L1 and the availability of UG. In this one, the learner is assumed to use the L1 grammar as a basis, but to have full access to UG when the L1 is deemed insufficient for the learning task at hand. Grammars of learners of different L1s will differ, L1 and L2 learning will differ and there is no prediction that learners will eventually reach complete knowledge of the L2.

4. *Partial transfer/full access*: This one argues that both L1 and UG are available concurrently. However, different properties are available through UG and the L1. Learners may or may not reach the final state of an L2 grammar depending on what is available through the L1 and UG.
5. *Partial transfer/partial access*: This position predicts that ultimate attainment of an L2 is not possible because there is permanent impairment in the acquisition system. In other words, only parts of the L1 grammar are available.

Within four of these five positions, the exception being the first, UG is active available in some form to adult second language learners.

6. CONCLUSION

UG was proposed by Chomsky to explain how children acquire language, which is a complex task, at such an early age and with such speed and efficiency. To learn a language, any language as the term suggests, this theory is used to explain language acquisition in general, it is not language specific. This theory does not attempt to claim that all human languages have the same grammar, or that all humans are programmed with a structure that underlines all surface expressions of human language. Rather, universal grammar proposes that there exists an underlying set of rules that helps children to acquire their particular languages (Maker & Groves, 1998; Farahani, Mehrdad & Ahghar, 2014).

As Chomsky (1998) defines, UG is the system of principles which characterizes the class of possible grammars by specifying how particular grammars are organized; namely, what are the components and their relations, how the different rules of these components are constructed, how they interact. Specifically, it is a set of empirical hypotheses bearing on the biologically determined language faculty. The task of the child learning a language is to choose from among the grammars provided by the principles of UG that grammar which is compatible with the limited and imperfect data presented to him. Thus, according to Chomsky, language acquisition is not a step-by-step process of generalization, association, and abstraction, going from linguistic data to the grammar. So the debate has begun. The role of UG in L1 and L2 acquisition has been investigated by many researchers, leading to various findings (Lidz & Gagliardi, 2015).

As White (2003) pointed out it is not the aim of UG-based theories of SLA to account for all aspects of L2 development. These theories concentrate largely on the nature of unconscious interlanguage knowledge giving a rise to competing proposals: those interlanguage grammars are natural language grammars constrained by UG, versus those interlanguage grammars suffer from impairments.

As with L1 acquisition, it is vital to underline that UG research into L2 learning is concerned with core grammar rather than other issues (Cook, 1988a, 1988b). UG theory has to explain how two languages reflecting principles and parameters are simultaneously known by the same mind, the implications for the logical argument of language acquisition of L2 resetting parameters also need to be considered. But, unfortunately the research methodology in this field is full of difficulties. In addition to the problems involved in investigating L1 acquisition, such as competence/performance and acquisition/development, the difficulty of L2 learning research is compounded by the variations in Si and St and the apparent effects of differing learner personality and experience. As with L1 acquisition, the UG approach may in fact deal with the most profound aspects of L2 learning since UG plays a central part in L2 learning. But one thing should be also taken into consideration, there are many other parts.

As a last word, UG is not making vague or unsubstantial suggestions about properties of the mind but precise statements based on specific evidence. The general concepts of the theory are connected with specific details; the significance of UG is its attempt to integrate grammar, mind, and acquisition at every moment (Cook, 1988a).

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