Universal Grammar
as a Model of Second Language Learning

Dr. Ahmed Qadoury Al-Khudhairy

Assistant Lecturer
University of Wassit
College of Education
Department of English

Abstract

This paper provides an overview of the role of Universal Grammar as a model in second language learning. Universal Grammar is part of an innate biologically endowed language faculty (also called LAD) built into the human mind consisting of principles and parameters. Principles are unvarying and apply to all natural language; in contrast, parameters possess a limited number of open values which characterize differences between languages. Grammar is knowledge in the mind, not rules in a book; students should know the knowledge of language in an unconscious sense so that they can put it to good use. The core of human language

is the lexicon (lexical categories and functional categories). Classroom teaching application is limited.

1. Introduction

So far, linguists have examined grammar in terms of morpheme, content and function words, and structures. All of these capture some aspects of Second Language (known as L2) learning. Chomsky in the 1980s developed, as mentioned in Fortos (2001:269), a radically different way of looking at grammar[1] which has become popular in recent years; a grammar tries to see what human languages have in common because of the nature of the human mind (see also Crystal, 2003:483-84). This is **Universal Grammar**[2], or UG. Cook (1991:34) affirms that

Universal Grammar (UG) sees the knowledge of a grammar in the mind as made up of two components: 'principles' that all languages have in common and 'parameters' on which they vary. All human minds are believed to honour the common principles that are forced on them by the nature of the human minds that all their speakers share. They differ over the settings for their parameters for particular languages.

One of the principles of UG is **structure dependency**. It means that a knowledge of language relies on knowing structural relationships in a sentence rather than looking at it as a sequence of words. Furthermore, one of the parameters in UG which may vary, within certain limits, from one language to another, is the **head parameter**. It concerns the position of heads within each phrase: in English, the head is first in a phrase, e.g.: **in my car** (prepositional phrase), whereas in Japanese, the head is last, e.g.: **Nihon ni** (Japan in)(see Richards et al., 1992:392-93 and Cook,1996:26-30). The principles and parameters involved are couched in terms of the framework familiar in Chomskyan work of the 1980s,usually known as **Government/ Binding Theory**, or **GB,**or particularly **Principles and Parameters Theory,** or **PP**. The grammar for a particular language consists of a list of parameter settings rather than of the principles themselves; English has a grammar with the **head parameter** set one way and with the **pro-drop parameter** set in another way; Japanese or Arabic has a grammar with parameters set differently; both incorporate the same language principles. Each is one of the finite numbers of grammars possible in human languages by setting the parameters of UG in particular ways; human languages are limited to the "finitely many (in fact relatively few) possible core grammars"(Chomsky, 1982:17).

2. Basic Concepts

Much of the work on UG in second language learning has been conducted within the GB framework. Since then, there have been changes in linguistic theory; some properties that were determined by principles in GB are handled differently under the **Minimalist Program(me)**. Parameters have gradually become more constrained, being largely associated with variation in the lexicon. In the Minimalist framework, the computational system is 'given' by UG[3] and is invariant. What varies is properties of the items that enter into the computation (Mitchell & Myles, 2004:258-60 and Radford,1997:21). Some basic concepts of this learning model[4] are mentioned below:

- ➢ It is a knowledge model that emphasizes the importance of the individual mind in L2 learning.
- ➢ It is a property theory, that is, it attempts to characterize the underlying linguistic knowledge in L2 learners' minds.
- ➢ It links L2 to current ideas about language and language learning.
- ➢ It sees learning as setting parameters from the actual sentences the learners encounter.
- ➢ Learning in this model has one side to it, knowledge, and it makes a distinction between two types of knowledge-the natural or universal knowledge, which is acquired through the faculty of language and the knowledge of language, which can be learnt by other faculties of the mind.

3. How does learning take place?

Concerning this model, Cook (1991:117) states that

Learning in the UG model is a straightforward matter
of getting the right input. In this theory language input
is the evidence out of which the learner constructs
knowledge of language. Such evidence can be either
positive or negative.

He gives examples and an explanation of what he means by "positive evidence" and "negative evidence". His argument is as follows: 'The train leaves London at five' is the actual sentence that the learners hear. This is an example of the "positive evidence", which is sufficient to show the learners how to deduce facts about English grammar. In other words, the information provided by this example allows the learners to deduce that in English "subjects come before verbs; and verbs come before objects and prepositions come before nouns." The other type of evidence is the negative one. Cook argues that:

Negative evidence has two types. Because learners never hear certain kinds of sentences, say sentences without subjects in English such as 'leaves', they deuce that English sentences must have subjects...The other type of negative evidence is correction: 'No you mustn't say you was here' you must say 'you were here'…Negative evidence can be used to work out what does not occur in the second language but might be expected to occur if it were like the first **(ibid.).**

For instance, Arabic learners listening to English realize on the basis of the sentence input that English doesn't have subjectless sentences, called nominal sentences in Arabic, but their languages do. Finally, Imssalem (2001:213) claims that the input could be made more learnable by highlighting various sentences of the language. Mitchell & Myles (2004:53) argue that this model of learning emphasizes language knowledge, i.e. the subconscious mental representation of language that underlies all language use. The following diagram is an attempt to determine the components of a UG model of L2 learning [5] (within LAD)[6]:
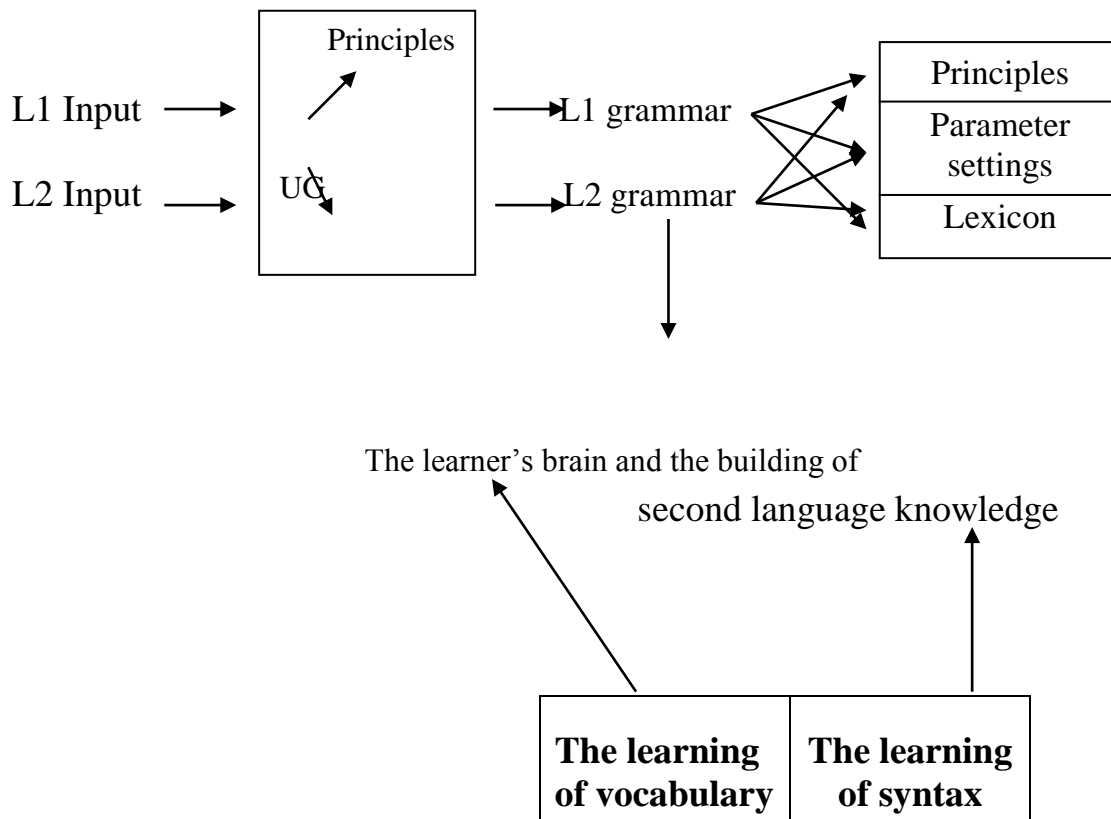
Diagram: The Components of a UG Model of L2 Learning.
(Cook & Newson,1996:81; modifications are mine)

It is worth-noting that there are two theoretical points of view concerning the acquisition of knowledge of language (or input). First, second language grammars are **constrained** by Universal Grammar. The second language is a natural language, and it is constrained by Universal Grammar in the same way as native grammars. Three approaches can be identified here (Mitchell & Myles (ibid.:55-61):

➢ Some researchers believe that "second language learners start off with the parameter settings of their first language, and rest them on the basis of input".

➢ Others believe that second language learners have available to them from the onset the full range of Universal Grammar parameters, like first language childlearners, and do not resort to first language parameter settings in the first instance.

➢ Others still believe that second languages gradually draw on Universal Grammar, and that functional categories are not available to learners at the beginning of the learning process.

Second, Universal Grammar **does not constrain** second-language grammars, or Universal Grammar is **impaired**. Two approaches can be seen here (ibid.):

➢ Some researches believe that second language grammas are fundamentally different from first language grammars because they are not constrained any longer by Universal Grammar, and learners have to resort to general learning mechanisms.

➤ Other researchers believe that only the parameters and principles activated in the learners' first language will be available, and parameter resetting is impossible.

What is different about L2 learning? One possibility is the existence of the first language in the mind. Cook (1996:125-30) examines this possibility affirming that L1 children start from zero, or as called, initial state S_o, and go on to the steady state S_s .On the other hand, L2 learners already know a first language, they possess one instantiation of UG. The initial state of the L2 learners is S_i, which already contains one grammar, complete with principles and actual parameter settings. The L2 may be being learnt while the learning of L1 is still incomplete, in this case S_i contains a non-final form of the L1 ($S_i=S_o + S_s$).Therefore, the end result is different in L1 and L2. The task of L2 learners is complete when they know the L2 as well as they know the L1. Chomsky himself, as quoted in Cook (ibid.:125), argues for the "common-sense" view that only the complete knowledge of language counts, rather than intermediate state. The steady (or terminal) state that L2 learners achieve differs from an L1 S_s and varies from one learner to another. Thus, neither the initial nor the final states of L2 learning are the same as those of L1 acquisition. The poverty-of-the-stimulus argument of L2 learners come in all varieties and levels of knowledge: some are just beginners and never likely to progress any further; others are interpreters with the future of natives hanging on their translation. There is no typical L2 learner, only diverse individuals.

4. The Learning of Syntax and Vocabulary

The L2 learning of syntax has turned out to be wider and deeper than anyone supposed. Teaching has to pay attention to the internal processes and knowledge the students are subconsciously building up in their minds. Learners start from their L1 setting-not from scratch. For example, Arab learners might assume initially that subjects are not needed; adding particles can do negative and interrogative, and verbs must have a particular conjunction as a marker of subject-verb concord. They have access to the systems of principles and parameters via their L1, i.e., Arabic.

Principles and Parameters Theory puts grammar on a different plane from anything in language teaching. Hence teachers will not find any quick help with carrying out conventional grammar teaching from such forms of grammar. But they will nevertheless understand better what the students are learning and the processes through which they are going. The most tackling principle and parameter in the UG books and researches are **structure-dependency** and **head parameter**, respectively. Some principles and parameters are more usable than others because we use some grammatical structures and vocabulary items more than others. UG in all its versions, starting from PP till MP, is a theory of syntax, more than vocabulary. This leads linguists like Chomsky, Cook, and White[7] to consider their opinions gradually. The principles proposed in MP are still powerful and abstract in their effect on language knowledge, but, as mentioned in

Mitchell & Myles (2004:66),probably the biggest challenge concerns parameters. Instead of being linked to specific principles and contained in the structural part of the grammar, parameters would now be stored within the lexicon in this view, i.e., MP, languages are different from one another only because their lexicons are different, and all that language acquisition involves is the learning of the lexicon

Vocabulary learning is central to language acquisition, whether first, second, or foreign. Although vocabulary has not always been recognized as a priority in language teaching, interest in its role in L2 learning, as stated by DeCarrico (2001:285-87) has grown rapidly in recent years. According to Cook, "grammar provides the overall patterns, vocabulary the material to put in the patterns" (199137). The learning of vocabulary does not mean learning individual words one at a time and knowing only their dictionary meaning or pronunciation. Learning how they behave in a sentence is also involved. Cook (ibid.: 119) adds that

It is not just a matter of the beginner in English learning the syntax, function and meaning of ' He plays football', it is learning that in English the verb 'play' needs to be followed by a noun phrase.

As mentioned above, the Minimalist Programme introduces some ideas concerning the central importance of vocabulary in language acquisition and learning. L2

learning is thus acquisition of L2 lexical entries with their associated parameter settings. This is clear in the following parameters (Cook & Newson, 1996:318-25,347):

1- The **lexical parameterisatin hypothesis** that claims that parameters are part of the lexicon.
2- The **functional parameterisation hypothesis** that they are attached to functional phrases, which have their own entries in the lexicon: the lexicon is thus an extended system with entries of two types.
3- **Inflection-driven**. Grammatical inflections are added in the lexicon and 'checked' in the syntax.

Thus, there are parameters in the lexicon. Acquiring an L2 lexical entry is setting parameters as well as acquiring meanings. In particular it is acquiring parameters for functional phrases. When someone learns that English has an inflection'-s' it means they also set the parameters for agreement in English. Linguists try to answer questions like: do L2 learners build up lexical entries for their grammatical knowledge as L1 learners do? It also seems to some, Cook one of them, to reflect an 'itemisation'of grammatical acquisition: learners are acquiring items with properties, not rules or generalizations. Cook, in his own site[8] ,mentions the acquisition of **dog** with its entries in English and in English-French lexicon (bilingual lexicon):

Universal Grammar

incorporates of principles :structure-dependency
Projection principle
Principle of Economy….
Acquisition of lexicon:
(a) lexical categories, "dog",N,Count,…[+E]
with argument etc"chien',N,Count,…[+F]
'like',V,Agent,Object,…[+E]
linguistic input'aimer".V,Agent,Object,…[+F]
…
(b) functional categories,CP,"that",+wh movment,…[+E]
with parameter CP,"que",+wh movement,…[+F]-settings
etc AGR$_O$P, parameter off,…[+E]
AGR$_O$P,parameteron,…[+E]
DP,'the',…[+E]
DP,'le",compulsoryD,…[+F]
…

Entries in the lexicon

dog
a.. canine quadruped,[+canine,+animal],basic level,…
b. N,Count,…
c. pl+/z/,…
d./dog/…

Entries in the bilingual lexicon

dog N,Count,…[+E]
chien N,Count,…[+F]
that CP,+wh movement,…[+E]

que CP,+wh movement,…[+F]

That is to say, first the mind acquires a first language complete with the principles and parameter settings; then some process produces another distinct grammar with its own processes and principles; and so on for as many languages as the person knows. Bilingualism is on and on forever with each grammar in a separate box, but within one lexicon.

5. Teaching Implications

According to Cook (1991:185), this model has three main implications as far as classroom teaching is concerned:

- ➢ There is no need to teach principles because they are universal and
   exists in all human languages.
- ➢ We should design optimum input for triggering parameters.
- ➢ The teaching of vocabulary items with specifications of how they can occur in grammatical structures is important.

Although this model provides some insight into language teaching, its application to classroom teaching is very

limited. The act of trust, that of providing single sentence input, or highlighting groups of unrelated sentences which are similar only in structure, helping the learner to construct a grammar that fits the word order 'facts' of English, is unobtainable. To Katamba(1993:8-10)this model assumes that the L1 and L2 learners make very clever guesses or hypotheses about the rules of the grammar(syntactic, morphological ,and phonological properties)being acquired on the basis of rules already acquired after experience of a particular language. This idea is illustrated when Cook (op.cit.) examines **The Cambridge English Course** (Swan &Walter, 1986), and argues that everything necessary to set the parameter for the absence of subjectless sentences and the presence of dummy subjects such as **it** and **there** in English is introduced in the first weeks of the course. He finds in the above course the following:

- Unit 5: 'There's an armchair in the living room'
- Unit 7: ' There's some water in the big field'
- Unit 9: 'It rains from January to March'
  'It' ll cloud over tomorrow'
  'There will be snow'
- Unit 10: 'It's a man'

Imssalem (2001:215) doubts that this type of input provides enough information for the learners to predict the structure of the language. The only information that it might provide, she affirms, is that these structures exist in language. Also this type of input cannot provide the

unconscious knowledge that the learners need in order to put language into use. Furthermore, pedagogically speaking, this type of input is characteristic of a descriptive grammar, where the sentence is the basic unit. To her, many learners' errors are attributer to this type of input. Cook has affirmed this idea earlier as follows:

> **The UG principles are not learnt; the parameters setting probably need little attention. Any view of the whole L2 learning system has to take on board more than UG. Classroom L2 teaching must also include many aspects of language that it does not cover** (1991:84).

It is also suggested that the study of linguistic universals, or UG as mentioned in Ellis (1985:15,191), can help to overcome one of the major problems of contrastive analysis, namely that not all the linguistic differences between L1 and L2 result in learning difficulties. UG can be used to help predict which differences lead to difficulty and which ones do not. This means that UG has helped to revamp transfer theory; the effects of L1 transfer may be restricted to 'non-core' features, or parameters. That is, if learners discover that a L2 rule is not in agreement with a universal rule, they will seek to interpret that rule in terms of the equivalent rule in their L1 (see also Mitchell

&Myles, 2004:54-57). This statement has also been affirmed by Brown(2000:214):

The hope is that by discovering innate linguistic principles that govern what is possible in human languages, we may be better able to understand and describe contrasts between native and target languages and the difficulties encountered by adult second language learners. Research on UG has begun to identify such universal properties and principles, and therefore represents an avenue of some promise.

Conclusions

1- This model reminds us that learners have minds of their own creative beings.
2- The essential feature of Chomsky's Principles and Parameters Theory is that the underlying structures of language, the grammar, are innate and the same for all humans; different languages are the result of

ascribing binary values to a small set of parameters.

3- In teaching, we should pay attention to the mental processes and the knowledge that the learners bring to the learning task.

4- This approach to grammar affects the nature of interlaqnguage – the knowledge of the second language in the learner's mind. Their source (of knowledge) might be partly the learners ' L1, partly their learning strategies, partly other sources.

5- Vocabulary should be taught not as tokens with isolated meanings, but as items that play a part in the sentence by dictating what structures and words they may go with in the sentence.

6- The application of UG in classroom teaching is limited because it is concerned with the abstract mental representation of language and the computational mechanism associated with it, which all human beings possess, called competence.

Notes

1- Pinker (1994:238-39) states that Chomsky's Universal Grammar is like an archetypal body plan or common plan of syntactic, morpho-logical, and phonological rules and principles, with a small set of of varying parameters. An example is the **Pro-drop parameter** (Cook & Newson, 1996:348):

Pro-drop parameter

whether a language allows null subject or not
-depends on whether INFL is proper governor (GB)
-depends on morphological uniformity (B)
-depends on whether affixes are generated in the syntsax or in the lexicon (MP)
See Katamba(1993:56,158-59).

2- UG is sometimes substituted by "mental grammar" (see Fortos, 2001: 269) and Ellis (1985:c14). Katamba(1993:9,)states that UG is a system containing "a finite set of switches, each one of which has a restricted number of positions".

3- Pinker, commenting on Chomsky's recent theories, states that most of the key features of Syntactic Structures approach have now been abandoned; deep structure has shrunk and virtually disappeared the idea of transformation has been abandoned; while language is still regarded, in a broad sense, as a generative process. Chomsky has moved from a system which placed exclusive emphasis on syntax to one which begins to recognize the importance also of lexicon, moving from the transformational-generative approach to Government / Binding to Principles and Parameters (1994:85-114).

4- In the 1980s, researchers' more UG-specific questions: Is UG available or accessible to L2 learners? In other words do interlanguage shows evidence of being constrained by principles of UG? A number of principles were investigated, such as **Subjaceny**,the **Empty Category Principle (ECP)** and **Binding**

Principle A. The assumption was that if you can show that a particular UG principle operates/does not operate then this generalizes to other principles, hence to UG availability/non-availability in general. (White, 1989:40-43). White's own opinion is that UG is an answer to a bigger question: what are natural language grammars like?

5- See Cook & Newson (1996:80-81).

6- See Cook (1991:125) and Imssalem(2001:213) .Modifications are ours.

7- They have enriched UG more than others (see Radford,1997:1-26).

8- http://privatewww.essex.ac.uk/-vcook/OBS9.htm

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