PARALLELISM BETWEEN LANGUAGE STRUCTURE AND LANGUAGE ACQUISITION

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ABSTRACT

The grammar of a language is a set of rules describing the structure of the utterances that are used by the speakers of that language, and the utterances they may produce in future and be understood by their fellow speakers. Chomsky adds that the essence of human language is a universal grammar, a basic system of rules that is common to all human languages and genetically determined. The acquisition of language necessitates the acquisition of the grammar of the language; both processes are extremely complex.

Analysing language in terms of a hierarchy of structures has proved adequate for the purposes of linguists, psychologists and psycholinguists. In earlier linguistic analyses, there is the Immediate Constituent analysis that has Constituents, Smaller Constituents and finally Ultimate Constituents. Later on, there is the “Kernel” of the language and “transformational rules”. Child language, reflecting different stages of language acquisition has the characteristic of growing in complexity as the child grows in age and maturation. The language - Learning - process shows a similar scale of growing complexity: from trial and error, on the role memory, to imitation, on to association then finally analogy. Analysis as a strategy in language learning has its place in the advanced stages.

Language and Grammar:

Different linguists representing different schools of thought agree that every language has some system: either one single system or a number of systems, depending on one’s view-point. The system is arbitrary, based on no logical or natural rules, excluding artificial languages like Esperanto. To illustrate from
different authorities. The following quotations are given. To Joos, language is "a symbolic communication system, or in one word ... a 'code'".1 to Francis, "a language is an arbitrary system of articulated sounds made use of by a group of humans as a means of carrying on the affairs of their society".2 Phonology, Morphology, Syntax and Lexicon form the bulk of the system of any language. Though there are differences concerning the domain of grammar, whether it includes phonology, morphology and syntax; or to include morphology and syntax only, does not really make much difference in what follows in this article. However, for the sake of simplicity, grammar will mean morphology and syntax only. The crucial point is that the grammar of a language is a set of rules describing the structure of the utterances that are used by the speakers of that language, and the utterances they may produce in future and be understood by their fellow speakers. Miller regards "language as an extremely complicated human skill". "It is grammar that is so ... important to understand clearly".3 Together with Isard, Miller stated that "Presumably, anyone who speaks a natural language knows (tacitly, at least) that successive words in that language are normally chosen subject to certain constraints; to violate those constraints is to invite misunderstanding and failure of communication. The constraints are usually classified according to their origin in the grammatical, semantic or pragmatic rules of the language".4

However, Chomsky believes that the essence of human language is a universal grammar, a basic system of rules that is common to all human languages and genetically determined. Whether we accept his notion of the universal nature of grammar or not, grammar is the essence with its system of rules. The acquisition of language, then, necessitates the acquisition of the grammar of the language. Acquisition of grammar leads to knowledge of the grammar and consequently of the language. But knowledge of the grammar is not a simple nor an easy matter. It involves some complicated processes requiring varied skills to be possessed by the speaker or learner. The difficulty is due to the complexity of the language system, or the grammar on the one hand, and the complexity of the learning acquisition processes on the other.

The Hierarchical Structure of Language:

In analyzing a language, the smallest contrasting elements are the phonemes of the language. Phonemes combine to form morphemes that, in turn, form utterances. That sort of analysis is the approach followed by most linguists in their description of languages. This leads to adequate statements that would otherwise be complicated and lengthy. The same multi-levelled description can be applied to utterances of various lengths. What is interesting is that this approach to language analysis has been adopted by psycholinguists and psycholinguists as well as linguists. One approach to the analysis is the Immediate Constituent Analysis. It attempts to identify the

component parts of a structure on its highest level of organization; then the parts into which a structure is divided in the first step of analysis. The process can be repeated until the *ultimate constituents* can be reached.

"Immediate constituent analysis" as a procedure of analyzing languages has, as is mentioned above, been adopted by several linguists and psycholinguists. Gleason says that "The meaningful structure of a sentence can be best stated in terms of a hierarchy of I.C.'s". Francis says the same thing in a more detailed way. "1) English syntax is a many-layered organization of relatively few types of basic units; 2) every structure may be divided into its immediate constituents, almost always two, each of which may in turn be divided and subdivided until the ultimate constituents are reached". Miller gives his view on the complexity of the structure of language saying that, "Sentences are not just arbitrary chains of vocal responses, but they have a complex inner structure of their own". Then Braine takes the point of view of two linguists and says that, "according to Harris (1957) and Chomsky (1957), the grammar of a language can be hierarchized into an elementary part, called the "kernel" of the language, and a second part which consists of a set of transformational rules for deriving complex sentences from simple ones". Lashley also discusses "a series of hierarchies of organization in a language". Carroll expresses the same idea saying, "A striking feature of the linguistic analysis of message is the appearance of a hierarchy of units, from the smallest units (distinctive features of phonemes) to the larger units in complete utterances (sentence-types)".

How Children Learn the Grammar of a Language:

"Learning to talk has been called the most difficult skill which we ever acquire as human beings". Several studies and experiments have been conducted to investigate the nature of the learning processes involved and the different stages of the child's acquisition of language. The results have been so varied that "it looked as if every child went its way in mastering the language of its environment". Nevertheless, it is evident that the acquisition of language is not a matter of imitating a number of utterances, committing them to memory, and storing them in the brain for future use. Children frequently come up with utterances that they have never heard before; and so do grown-ups most of the time. Behind that, there is a systematic building up of rules and generalizations that the child acquired somehow. One suggestion as to how the child acquires the syntax is Martin Braine's study on
the acquisition of syntax by children. His experiment was conducted on a number of children who were able to read. The language used was simple, composed of a limited number of nonsense syllables of very low, or even no association with language units. In the first experiment, he used two sets or classes of words, and children were taught some simple rules for the combination of the classes of words, without being given formal rules. The language was taught through a series of drills in the pattern aimed at. The results indicated that children were able to place words in their right position in new contexts. That behaviour indicated that they were able to learn the simple grammar of that language. The explanation of that behaviour, according to Braine, was ‘context generalization’ resulting from the repeated experience of certain words in a certain position regardless of the context. As a result of several other similar experiments with a more complicated language with more involved rules, Braine gives the following three proposals:

(a) What is learned are the locations of expressions in utterances.
(b) Units (i.e. expressions whose position is learned) can form a hierarchy in which longer units contain shorter units as parts, the location that is learned being the location of a unit within the next larger containing unit, up to the sentence.
(c) The learning is a case of perceptual learning—a process of becoming familiar with the sounds of expressions in the positions in which they recur.  

He then goes on to generalize his tentative findings to include natural languages, giving examples from English. He builds his analogy on the established theory that the grammar of a language can be hierarchized into two main levels: ‘kernel sentences’ and ‘derived ones’. That can be formed by a number of transformations. He suggests that it is “sound strategy to aim first at finding an explanation for the learning of the structure of the simple declarative English sentence”. Though this idea is contradicted by Bever, Fodor and Weksel in their “Critique” saying “But it is not true that the base form is the simple declarative sentence. The kernel grammar does not produce simple declarative sentences; it does not produce any sentences”. This seems to be a theoretical controversy. Whether the kernel grammar produces sentences, trees of rules for constructing sentences, or semantic notions that need to be realized through the application of transformational rules into actual pronounceable sentences is not of prime importance here. What really matters in this paper is that the idea can be used as an indication of how children acquire knowledge of syntax. Kernel sentences may be considered as the ‘plan’ for the construction of longer and more complicated sentences. That language is hierarchical in structure, that children start first by producing one word-sentences, then longer ones, that complex sentences can be formed out of simpler short ones are all elements that can be utilized to point the general direction in this area.

Children start producing single-word utterances as a first step. It is not a coincidence that the word is the semantic peak of the corresponding complete adult

14. note No. 8, p. 246.
15. note No. 8, p. 250.
utterance that has the same meaning, or conveys the same message, it is the word bearing main stress and highest pitch, because children, as much as adults, understand a major part of the message from the intonation-pattern of the utterance. A single word utterance in child language may be a compressed sentence, or a single lexical item. The next stage is that of producing two-word utterances of one of the following two types: either subject-verb or verb-object. The latter type would probably be a command that does not require a subject. The underlying pattern is NP + VP which is the basic pattern of kernel sentences. That function words rarely, or even never, appear at that stage is understandable due to the fact that function words have very little or no referential meanings, or semantic weight, and that they do not appear on the first level of kernel constructions of NP + VP. They can be part of the elaboration of the NP or VP. They cannot be used as a single-word-utterances merely as function words because they very rarely form the peaks of complete utterances. This is further proved by Miller’s comment on Glazer’s experiments with function words and nonsense syllables. He says that, “Function words become easier to learn when they are placed in contexts that seem more suitable to them... The point, of course is that in the triplet context (Nonsense syllable + Function word + Nonsense syllable) the function words are more readily bound to the nonsense syllables because they seem to form natural syntactic constituents in that context.”

According to Mackey, “the learning of one language in childhood is an inevitable process”. He summarizes the procedures involved in learning the first language in the following five points: “(i) trial and error, (ii) rote memory, (iii) imitation, (iv) association, and (v) analogy”.

(i) **Trial and error:** This procedure works in the case of children learning the mother tongue because the child is corrected all the time by the individuals in the environment. In spite of the child’s fumbling with the structures of the language, according to Rivers, “trial and error learning is a noticeable feature of the way we learn our native language”. The important thing is not complete avoidance of mistakes, because they will happen whatever measures are taken, but rather the reinforcement that the child receives whenever he produces an acceptable utterance. That is especially true when we remember the emotional side involved in the parent-child relationship that leads to reinforcing the child’s verbal behaviour. The reinforcement of such utterances in rewarding situations increases the probability of its recurrence. Learning by ‘trial and error’ leads the child to develop the ability to communicate, rather than merely to repeat certain utterances. In the case of learning the native language, reinforcement comes not only from parents, as mentioned earlier, but also from a whole community: peers, relatives, the school as a whole and others. However, it should be borne in mind that in the case of learning a foreign language in a native language environment the context of the learning by process is different. Trial and error may not work as successfully as in the case of learning the

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17. note No. 3, p. 205
18. note No. 11, Chapter 4
19. note No. 9, p. 77.
native language. The learner is deprived of the reinforcement of the multitude of instructors that surrounded the child learning the mother tongue. The only source may be the teacher, unless the teaching-learning process is so carefully designed that it becomes as close to real-life situations as possible. What makes matters more difficult is that, in the case of learning a foreign language, unless the learner is under the age of adolescence, his personality structure will be so different that it may be unbearable for him to go through the disappointment of the error-phase of trial-and-error. Error failure frustration may be a hindrance, rather than an aid to his learning the foreign language.

(ii) *Rote Memory*: Learning by rote-memory occurs quite easily in the case of the child’s learning of the language as the child is exposed to thousands of repetitions of certain basic utterances that are essential and therefore repeated in everyday life. Most of what the child memorizes is utterances, not individual vocabulary items. But when it comes to learning the grammar of a language, whether it is a first or a foreign language, rote-memory seems at the first glance to contribute nothing towards that goal. Children do learn little songs that are sometimes made up of meaningless words and syllables. They learn and enjoy them for the tune that they use in playing together certain games. From that kind of learnt material, not much is acquired beyond the practising the sounds of the language. But from what is memorized out of the everyday-communication messages that meet felt needs and satisfy them for the child, learning of the grammar takes place. When the material is meaningful it is not committed passively into memory as stored material to be retrieved on recall. Processes of organizing and digesting that material seem to take place. “Since Jame’s time we have accumulated evidence which elaborates on the conclusion that the memorizer does not always store passively the information presented to him, but has the capacity to weave it into a systematic organization”.20 The result of those processes of organizing and “weaving” lead to the gradual acquisition of grammar.

(iii) *Imitation*: All members of the child’s immediate environment are very efficient and tireless models for him. The child starts by imitating his parents and members of the family, but his circle of models is soon extended to include his peers, siblings and play-mates. The influence of other children is illustrated by the observed fact that children do not acquire the foreign accent their parents might have when the whole family lives in a community speaking a language other than the mother-tongue of the parents. In some cases, children learn the language of the community without any active or passive help from the parents. The learning is completely dependent upon imitating other children. It is needless to say that no explanations take place, no analysis, no formal rules of grammar are supplied. The child is not exposed to any sort of formal teaching of any sort of grammar.

(iv) *Association*: Though learning by association plays a major role in language learning, it may not be as clear in acquiring the grammatical system of the language as it is evident in vocabulary acquisition. But, there may be some evidence in Braine’s experiments that children learned the grammar of his simple language by associating

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vocabulary items to certain positions in the sentence. In a natural language, association between pairs of words from classes (Nouns, Verbs, Adjectives and Adverbs) is less likely to occur than between function words and form classes, or between affixes and form classes. Although it can be questioned whether language of the grammar of nonsense language created by Braine resembles in any way the learning of grammar of real human language, the answer is that the findings of such experiments are only indications, upon which testable hypotheses can be built and investigated.

"The associations involved in language learning can be classified into two categories: extra-language associations and intra-language associations. In the first category fall all the links that have to be made specifically between environmental stimuli and linguistic units – The intra-lingual category refers mostly to the integration of smaller language units into longer ones." 21

(v) Analogy: A child learns part of the language structure by memorizing and manipulating patterns which bring out partial resemblances, or similarities of structure, beneath surface variations of vocabulary. Analogy is a form of generalization leading to transfer of what has been experienced in a particular situation, with specific utterances, to other situations. In his daily experience and interaction with the environment, the child perceives that language is a tool for expressing his needs, thoughts, and desires and for communicating with others. This helps him to develop his language abilities through repeated reinforcement in rewarding situations. By analogy, a child interiorizes a system for generating appropriate verbal behaviour rather than a list of rote responses.

Analogy and Analysis in Language Learning:

So far, analysis has not been used in the learning process of the language by the child. All children have to learn the mother tongue, whether that learning is continued at school, or not. If the learning is not continued at school, as an adult an individual would not have the same mastery of his language as the individual who received formal schooling. By the time a child starts formal learning, he has already acquired a large vocabulary, some complex sentence structures, the ability to count and the ability to give brief and critical responses. 22 Once the child has acquired that ability in the language, his whole inner life is changed. He becomes more and more independent of the immediate environment, and he no longer relies on others in many of his needs. "And as he thus develops, he relies less and less on imitation and more and more on analysis. The more he uses the language, the more he becomes a prisoner of its structure". 23

That the child starts the process of interiorizing the language system for generating appropriate verbal behaviour rather than a list of rote responses is illustrated by Berko's experiments on child learning of English morphology. 24 The experiments

21 Amstel: op. cit., p. 112.
22 Mackey, footnote No. 13.
23 ibid
conducted on children about 6 years old, proved that the children tested had the
ability to apply morphological rules to new, unheard of words. The children were
able to attach the correct allomorph of the plural English morpheme to words that
functioned as nouns, to attach the correct allomorph of the past marker of English
verbs to words that were considered as verbs, and they were also able to do some
other processes. The children showed that they had already done their own
generalizations and extensions and learned the right rules. The picture that emerged
from the experiments was "one of consistency, regularity and simplicity",25 and that
is what rules are hoped to have. The age of six may be the age at which children move
from the stage of automatic imitation and repetition of utterances, the mechanical
process of habit formation, to a higher stage of thought, generalization and
understanding of the language together with the mechanical stage of habit
formation. At school, the child experiences new sides of the language for a number of
years; he starts reading and writing before he is exposed to any formal teaching of the
grammar of the language. The process of learning the first language extends over a
considerable number of years before an individual masters the language, and by that
time he is acquainted with a major part of the grammar of the language.

A corresponding situation is faced in foreign language learning. A child learner
starts at almost the same position as a child learning his first language. A good deal of
learning is done through direct practice without any explanation or generalization.
The objective of direct practice is to form correct habits in the elements of the foreign
language. Direct practice leads to transfer where identical elements are involved:
responses are connected to a cue from the teacher, and the learner is rewarded for
following that cue; thus he is reinforced in his behaviour by the teacher's approval
and through his own self-satisfaction. But this type of direct practice may be too
restrictive for advanced stages of foreign language learning, because it can lead only
to identical element transfer. It is needless to say that transfer among identical
elements may be quite adequate for classroom purposes but it will not lead to the
development of language ability in real life situations. A change in the process is
needed to meet the development in the learner's ability. Besides direct practice, some
explanation and generalization is to be offered to the learner. Learners need to know
the objective behind the drills, they are to be encouraged to form some
generalizations after enough practice in the mechanics of the language and automatic
production of fundamental structures of language. The two stages of language
acquisition may correspond in a very broad manner to the 'kernel' and 'derived
sentences' mentioned above or to River's two levels of language. In Rivers it is stated
that, "it seems difficult to maintain a belief in one level of language behaviour of a
mechanical character".26 The other level is that of 'thought', where explanations and
generalizations are needed, that is where grammar is needed.

Another point of view on the acquisition of language in general and the acquisition
of grammar in particular, is the view of transformational generative grammarians.

25. Ibid., p. 375.
26. note No. 9, chapter VI, p. 46.
They state that their grammar is the most complete description of linguistic rules. Consequently, their conception of the acquisition of those rules must be taken seriously into consideration. "The answer that emerges from the writings of Chomsky (e.g. 1962) and others in that the child is functioning as an implicit inductive scientist".\(^{27}\) The child listens to thousands of utterances in the language of his environment, he treats the utterances as data to be collected and classified into various grammatical categories. From the categories the child constructs rules to account for the regularities he discovers. Needless to say that the rules he reaches go first through several stages of observation, then hypothesizing, testing the hypotheses, then verification and generalization. He then uses these rules in producing new utterances that he keeps on testing on his environment. The process goes on, the system developed by the child is not static, but subject to repeated revising and refining as new linguistic data are made available in the course of his over-all mental and physical development. The mainstay of this theory is that human beings are endowed with a programme for analyzing linguistic input to discover a system of underlying regularities. A corollary of this is that the programme is innate and that it has elements of the end-product of the analysis: i.e. the grammar itself. If this corollary is dismissed it will be difficult to account for the fact that children do manage to build up a well-structured system of rules that they can use to generate acceptable-grammatical sentences in a relatively short time, compared with the immense complexity of the task: the acquisition of the system of grammar. Another factor contributing to the complexity of the task is that the data available to children is not composed wholly of well-structured and grammatical sentences, nor acceptable and complete ones. A good part of the data is incomplete sentences, grammatically incorrect ones, or unacceptable by native speakers in general, though produced by some of them. A considerable portion of the data is produced by other children who are still in training, experimenting with the language. This sort of cluttered input intensifies the difficulty of language acquisition and can be explained only by accepting the 'specific innate propensities of the human child' hypothesis.

It can be safely presumed that the ideas suggested for first language acquisition by children are similar to some degree to ideas applicable in second language learning by adults. However, it has been observed that pre-teenage foreign language learners reach a degree of perfection closer to near-native ability than anything that adults can reach. This may be due to the theory that the ability to formulate linguistic rules through the language analyzer that human beings possess, diminishes when children reach the age of puberty. The observation about degree of perfection in second language proficiency applies to speed in learning language or languages. This by no means implies that the strategies followed by the adult learner of a foreign language are the same strategies followed by a child learning his native language. It simply means that there are similarities in the mechanism used by the two.

\(^{27}\) Ainsled: op. cit., p. 115.
CONCLUSION:
This article has attempted to bring into focus the complex nature of both language and the process of language acquisition by children as well as adults, whether it is a first language or a foreign tongue. Language has the grammatical system as its core and the most baffling parts of the language-acquisition process is learning the grammar. Grammar is hierarchical in nature with a multi-levelled structure and to acquire that complex system, children seem to follow all sorts of methods and use all sorts of strategies but all are complementary and form a whole trial and error, rote memory, imitation, association and analogy. They start by producing one-word utterances and gradually build up the hierarchy longer and more complex constructions by analogy and/or some other method. The child starts by depending on his memory and moves on to depend on reasoning and higher mental capacity. Behind all this, there seems to be a biological foundation of language: an innate ability for language acquisition that depends on an analyzer that is programmed for the specific purpose of classifying linguistic data into grammatical categories out of which rules for regularities are discovered. The process of learning is as complex as the object to be learnt. The process has a hierarchy of steps, methods, strategies and abilities as does the grammar. It looks very complex and confusing, but nothing less than that can account for the gift that distinguishes man among all other members of the animal kingdom.
BIBLIOGRAPHY


التواقي بين البناء اللغوي واكتساب اللغة

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ملخص

إن وکذلك العبارات التي قد يستخدموها مستقبلا، مما يظهر التحول الأحرون من أبناء اللغة، ويصف تسويهANS بقوله إن عصر اللب في لغة البشر هو القواعد العالية وهي ذلك النظام الأساسي الذي يضم القواعد المشتركة بين كل لغات البشر في حدود ماثلية عناصر الوراثة، وتحم عملية اكتساب اللغة على أنها علم قواعد تلك اللغة وكلا العمليتين شديدة التعقيد.

إن تحيل اللغة على أساس ترتيب طبقات تركيباتها تبين أنه يخي يتعرض كل من عالم اللغة، وعالم النفس، وعالم اللغة النفس، ففيما سبق من تحليلات لغوية، تكون هذه اللغة هذا المنهى الذي يبدأ بتسير إلى الاتجاهات المكونات مباشرة، ثم مكونات أصغر حتى الوصول إلى مرحلة المكونات النهائية. ثم تتطور الأمر لتجد "الجملة اللب" و"قواعد التحويل". وتتغير لغة الأطفال بрабатыва تركيباتها تعقيدا كثيما في الطفل وتقدم به العمر والصحة. وكذلك تعيد عملية تعلم اللغة صورة مشابهة من ترايب التعقيد من مرحلة المحاولة وإحباط إلى الحفظ والاستحضار إلى النقل، إلى التوافق، وأخيرا إلى مرحلة القياس - كما أن طريقة التحليل باعتبارها طرقا من طرق تعلم اللغة لها مكانها في المراحل المقدمة.