Universal Grammar: Arguments for its Existence

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ABSTRACT

The first part of this paper discusses the rationale for universal grammar (UG) theory to explain first language acquisition. It also illustrates the issues of language acquisition Chomsky argued which could not be supported by behaviourist theories and shows how Chomsky proposed a solution to this problem through his theoretical model of universal grammar. The next part outlines this theory's key tenets, arguing that these principles must be an innate endowment of the human mind. Moreover, the study illustrates specific examples of grammatical phenomena that universal grammar seeks to explain. Lastly, it shows that certain distinct grammatical features are linked and that these connections can be explained within the Universal Grammar theoretical framework. The only reasonable explanation for the first language learning needs only limited linguistic exposure to activate them and set criteria for the language being learned for children whose minds have already been wired with essential language concepts.

INTRODUCTION

An eminent American linguist Noam Chomsky's theory of universal grammar explains that all human beings are born with a set of basic language structures in their mind irrespective of the different language communities they belong to. He believes that children would not grasp the language spoken to them without much effort quickly if not for the basic set of subconscious rules in mind. This predisposition in the mind which children are born with enables human beings to learn the language fluently. Thus, for Chomsky, language is innate and biological make-up. His view of all human beings possess some basic language structure in their minds is supported by two concepts: principles and parameters. While principles describe generalities, parameters explain differences among human languages.

THE RATIONALE FOR UG THEORY

Chomsky's cognitive theories on language acquisition first appeared in 1959 in his book 'Syntactic Structures', a critical review of behavioural psychologist B.F Skinner's 'Verbal Behaviour'. While explaining that every human possesses a Language Acquisition Device (LAD) in mind,

Chomsky criticises the behaviourists' idea that language acquisition takes place by learning, and it is learnt mainly by imitation. According to Chomsky, children do not imitate the adults, because there are numerous variations found in adults' speech and the children. To illustrate this argument of Chomsky, we can look at the following examples. Children often use verbs like, 'goed', 'comed', 'speaked' and 'putted'. The adults do not produce these verbs. These few examples per se show that children have an internal language structure in their mind, which in these examples is the past tense of verbs, formed by adding –ed to the verbs. In other words, children's language is rule-governed, and their rules do not necessarily represent that of the adults.

Moreover, over-generalisation of such rules is common to all children of that age of that speech community. This feature also emphasises that children are genetically endowed with a basic set of language rules. If we look at the behaviourist theory, the idea of over-generalisation cannot be supported, as adults do not make such mistakes in their first language.

If language is behaviour and learned by imitation, how can human beings produce and understand all novel, brand-new utterances that we have not produced or heard before? This feature of human language also shows that language

is not learnt by imitation but supports the innate concept of Chomsky. He argues that it is possible to produce and understand an infinite number of utterances with the finite set of rules and vocabulary available in the language. Chomsky considers a great deal of creativity that occurs in language acquisition. He highlights the human ability to generate an infinite number of grammatically approved utterances. Besides, when we consider first language learning, irrespective of family, and other socio-cultural backgrounds, almost all children master their first language after some time. This argument supports the theory of universal grammar by giving evidence that all humans have something innate in them, which enables them to do it.

Reinforcement is an essential phenomenon in behaviourist theory. This theory emphasises that when children show favourable behaviour, it is positively reinforced by several ways such as praising, smiling and appreciation which strengthens the particular behaviour. Similarly, when children express unfavourable behaviour, adults negatively reinforce it by ignoring, correction, punishment, warning, advice, and so on to weaken the behaviour and the undesirable behaviour is not used again. In real-life situations, we notice that this is not true. Human beings use negatively reinforced words and utterances whenever they wish. Therefore, how human learn and use unfavourable behaviour remain unsupported.

Moreover, all utterances by every speaker-hearer would not have had positive reinforcement, for every human being produces and understands several new utterances every day. Besides, human utterances mostly are situational-based, and thus, they are unpredictable. This fact also disproves the behaviourist idea of language acquisition. Chomsky's theory of universal grammar thus evolved to rectify the weaknesses found in Skinner's explanation of language as a learnt behaviour. The Mentalistic language acquisition theory, put forward firstly by Chomsky says that 'everybody learns a language, not because they are subjected to a similar conditioning process, but because they possess an inborn capacity that permits them to acquire a language normal Maturational Process' (Wilkins 1972).

Besides, behaviourists' claim of language acquisition as a learnt behaviour is not supported in children with impaired IQ. Irrespective of intelligence, children learn their first language, unlike mathematics and science, which demand high cognitive skills. According to Mitchell & Myles (2004), sophisticated use of language with complex syntax and adult-like vocabulary is found in individuals whose overall mental development is otherwise very slow and remains below that of a seven-year-old. Evidence of the opposite is also found: children who are cognitively 'normal', but whose language is impaired, sometimes severely. This aspect confirms that language learning is a separate section of the brain from other cognitive processes. Chomsky names this part as Language Acquisition Device (LAD) and this was later developed to his theory of Universal Grammar.

As Nowak et al. (2001) point out, universal grammar is not learnt but is required for language learning. This theory supposes nature is more important than nurture, that is to say, environmental factors are secondary to inborn ability to learn the language, and experiences and environment only help activate the already remaining Language Acquisition Device.

It is clear from the above arguments that language learning and development are a biological process resulting from underlying innate predisposition in mind, not by the teaching-learning experience in the environment.

AN OUTLINE OF THE STRUCTURE OF THE THEORY AND THE TYPES OF GRAMMATICAL PHENOMENA THAT UG THEORY SEEKS TO EXPLAIN

Chomsky discusses several facets of his theory, and here the fundamental concepts of the theory will be explained. As it has been mentioned previously, Chomsky's theory explains several principles and parameters concerning languages. This theory holds that the speakers know a set of principles that all languages share, and parameters that make languages vary, within clearly-defined limits, from one another. In the principles and parameters approach, Chomsky claims that universal principles are shared by every human language, and all human beings know these shared rules.

Structure dependency plays a vital role in Chomsky's universal grammar (Black, 1999). Linguists believe that sentences consist of phrases. Phrases are structural groupings of words, and therefore, sentences have phrase structure. Any sentence can be basically divided into two parts or phrases: Noun Phrase (NP) and Verb Phrase (VP). In addition, these two main phrases further break up into several sub-categories. For example:

Even though the order in which phrases occur in sentences may change in some languages, all languages have phrase structure, and that is common to all human languages. All languages share similar characteristics of using nouns, verbs and other structural phenomena though not essentially in a similar order.

For instance, a positive sentence in English takes the following phrase structure. The little girl / is reading / an interesting novel. (English) [NP + VP + NP] Anthe sirumi / oru suvaarasiyamaane naavelai / vaasiththuk kondirukkiraall. (Tamil) [NP + NP + VP].

Chomsky's (1965) 'All languages are cut to the same pattern' in Thomas (2004) indicates that language is organised in such a way that it depends on its structural arrangement. No language is organised based on a linear relationship, but a structural relationship. For example: 'He will like it' is a statement, and by switching the phrases it can be changed into a question. 'Will he like it'? One might think this change is done by only moving the second word. However, it is not true. To illustrate this point, we can look at the following example: 'The boy will like it' is a sentence, and the question is formed by moving the auxiliary verb to the front. Thus 'Will the boy like it?' is formed. Instead, if we try to move the second word to the initial position, it will be 'Boy the will like it?' and it makes no sense. Thus, it becomes clear that language is organised by structural arrangements and not by linear arrangements. In the first example (He will like

it), the second word is moved, but in second (The boy will like it), it is the third word. Then how do speakers of English know which word to move in a question? The answer is that the English speakers know that 'he' and 'the boy' are corresponding constituents belonging to the same structure, which is NP, and it allows them to form the right transformations. This rule is part of the speakers' internal language structure which is in their mind. That is why native speakers can differentiate acceptable and unacceptable utterances even if many speakers cannot explain why those utterances are right or wrong. This reality gives evidence to the innate feature of language and proves that the rules exist is in humans' subconscious mind.

Likewise, active-passive also proves structure dependency. For instance:
- She posted a letter. (Active)
- A letter was posted by her. (Passive)

Active-passive transformation takes place by moving some elements in the sentence. The object in the first sentence 'a letter' is moved to the passive sentence's initial position, and consequently, a few other changes occur in the structure.

Structure dependency could also be explained with several other elements like 'wh' questions and subject-verb agreement. All this support the idea of universal grammar put forward by Chomsky. The ability to use intricate structures such as the ones shown above proves that human beings have tacit knowledge irrespective of education, experience and other environmental factors.

As we have seen above, all languages depend on their structural relationship and not linear relationship. No language allows its speakers to move every second, third or fourth word to form a question. This nature of language enables us to conclude that structure-dependency is an essential feature of all human languages

Recursion is another crucial feature of language which enables human beings to generate numerous new sentences. In recursion, a sentence is extended by embedding one or more phrases or sentences in another. Without making changes to the basic structure, a sentence can be extended. For example:
- He loved her.
- He told me that he loved her.
- His parents know that he told me that he loved her.
- I am sure that his parents know that he told me that he loved her.

The sentence can be extended depending on the creativity of the speaker. A phrase can also have several phrases in it. For instance:
- She is sitting on a stone bench.
- She is sitting on a stone bench under the tree.
- She is sitting on a stone bench under the tree in the garden.

Accordingly, recursion allows speakers to generate an infinite number of sentences. This feature is a universal principle.

Phrase structure is an important phenomenon in UG theory, and its rules show possible and impossible syntactic patterns in a phrase. Phrase structure principle is common to all world languages.

Chomsky argues that syntactic rules are innate and it is not learnt. The complexities of syntactic patterns and the human knowledge of those structures, irrespective of environmental factors, are a shred of evidence that there should be a mental representation of sentence structures in the mind that is innate. X-bar theory is a development of the traditional phrase structure rules. X-bar theory tries to identify syntactic features which are shared by all languages.

X-bar theory shows that all phrases such as Noun Phrase, Verb Phrase, Adjective Phrase and Prepositional Phrase share some basic structural properties. Let us look at the following examples:

The above diagrams vividly show that the hierarchical structure of phrases and this structure is shared by all phrases in a given language. For example, NP, N^1 and N indicate the different hierarchical structure of a noun phrase. The X-bar theory claims that there are certain structural similarities among phrases of all languages. The letter X is used to refer to the head of the phrase (X in NP is a noun; X in VP is a verb) to keep the description rules general.

According to X-bar theory, each phrase has a head that carries the central meaning of the phrase. Thus, N is the head in a Noun Phrase, V is the head in a Verb Phrase, and A is the head in an Adjective Phrase. These phrases are named by the lexical category of the head of the phrase.

Head parameter is also a significant phenomenon in the universal grammar theory. According to this theory, all human beings know that phrases are either head-first or head-last. An English speaker knows that English is a head-first language. For instance:
- The principal of my school (Noun Phrase)
- bought a book (Verb Phrase)
- by the window (Adjectival Phrase)

Similarly, a Tamil speaker knows that Tamil is a head-last language. Example:
- Enathu paadasaalai athipar
  (The principal of my school)
- Oru puththagam vaanginaan.
  (bought a book)
- Jannal arukil (by the window)

Accordingly, specifying the position of the head in a particular language once is enough for all the phrases in that language.

X-bar theory links syntax with lexicon through the projection principle. Lexicon is the mental dictionary in the human mind that gives information on syntactic, pronunciation, semantic and categorical (N, V, Adj. et cetera) details. According to the X-bar theory, the lexical properties of heads are projected onto the other parts of the phrase at all levels of syntactic representation. Besides, if a verb needs an object as a lexical property, it must have an object at deep-structure and surface-structure. As we have seen above in the tree diagrams, other components are specifier and complement. In addition to these, the extended projection principle claims that the subject position must be present at all levels of structural representation. Thus, the

projection principle integrates syntactic rules and lexicon, and this principle is a common feature in all languages. Thus, a language speaker is aware of what the words in his language mean and how words are combined to make meaningful sentences. There are restrictions on the use of words in sentences. For example, the verb 'play' is transitive, and it takes a direct object which is a noun phrase; the verb 'buy' is di-transitive and it can take two objects (a direct and an indirect), but the verb 'cry' is intransitive, and it cannot take an object.

Theta (θ) criterion also plays a crucial part in Chomsky's universal grammar. 'Theta theory deals with the assignment of semantic roles (θ roles), such as Agent, Patient, Goal to elements in the sentence" (Cook and Newson, 1996).

Theta theory assigns θ – roles to the noun phrases in a sentence. 'Predicate' is the verb in sentences, and noun phrases linked by the predicate are called 'arguments'. Different arguments have different theta roles in this theory. Doer of the predicate (action or state) is called 'agent', and the agent's argument is called 'patient'. The receiver of the patient is called 'Goal'.

As explained in Cook and Newson (1996), theta roles are assigned to structural elements of sentences interacting with the X-bar syntax and the projection principle. Verbs like buy, send, donate, present, and assign three roles to the NPs (agent, patient and goal). For Example:
- Yumna sent a book to Deedat.

In the above sentence, the predicate is 'sent'. 'Yumna' is the doer of the predicate, so Yumna is the agent. 'A book' is the patient as it is the argument acted upon by the agent, and 'Deedat' is the goal as he is the receiver of the patient. From the example, one might also guess that subject is the agent, the direct object is the patient, and the indirect object is the goal. Although it is right for the above example, it is not always so. For example, the same idea can be written in the following way:
- Deedat received a book from Yumna.

However, in this sentence - unlike the previous example - the subject is not the agent, and the indirect object is not the goal. Therefore, it is clear that roles are assigned to the noun phrases depending on the semantic roles and not their positions in sentences.

In addition to the above-mentioned semantic roles, 'experiencer' and 'theme' are also shown in Cook and Newson (2007).

They give the following two examples to illustrate these interpretations:
a) The dog chewed the slipper
b) The dog saw the slipper.

In a) the dog is the agent, and the slipper is the patient. Since the doer of the action is the dog and the action acted upon (chewed) is the slipper. However, in b), although it is of the same syntactic structure as in a), the dog is not the agent because nothing happens to the slipper due to the dog seeing it. Therefore, the dog is the 'experiencer', and the slipper is the 'theme'.

Further to the features discussed above, movement and transformation also play significant roles in Chomsky's universal grammar. They occur in questions including 'wh' questions, negatives, and passive voice.

Movement takes place as a result of D-structure and S-structure which exist in the human mind. D-structure is the abstract syntactic arrangement in the mind while S-structure is the phonological realisation. Transformation takes place in D-structure, and it is realised in S-structure. Structure of any sentence can be explained in two levels, D-structure, which is the original form or the level before movement is made and S-structure which is the pronounced form or the level after movement is done. Radford (1988) argues that the two levels of structure (S-structure and D-structure) are inter-related by a set of movement rules known technically as Transformations.

V movement can be seen in modal verbs. They contain the information on tense and agreement like in:
- Priyan <u>does</u> work well.
- She <u>has</u> a car.

However, we do not always use modal verbs in everyday speech. In those situations, the verb is inflected to show tense and agreement between subject and verb. Example:
- The boy played football.
- She ate an apple.

Formation of the question when there is a long verb phrase in the sentence: Example:
- The boy <u>will have finished</u> the task by tomorrow.

This sentence has two auxiliaries: will and have. The correct formation of the question will be:
- Will the boy have finished the task by tomorrow? But not –
- Have the boy will finished the task by tomorrow?

Having the second auxiliary (have) in order to form the question is ungrammatical.

Moreover, according to the locality principle, when a sentence is embedded with two clauses, only the first one can be moved. For example:
- It seems the boy is likely to finish the task by tomorrow. But not –
- The boy seems it is likely to finish the task by tomorrow. However, the following is also acceptable:
- The boy seems likely to finish the task by tomorrow.

Passive transformation is possible for sentences with transitive verbs.
- The chid painted a cartoon.
- A cartoon was painted by the child.

Along with a few other changes, passives are formed by the object's movement to the subject position. This cannot be done simply by changing, say the fourth or the fifth word.

As per universal grammar theory, government and binding is another essential feature of human language. This feature talks about the governor and what it governs. An example is shown below:
- They miss me.

The verb 'miss' governs the noun phrase 'me'. Similarly, a preposition also can govern a noun phrase. For example:
- We talked to her.

The preposition 'to' governs the noun phrase 'her'. Other possible governors are nouns and adjectives. In the above

examples, the objects' me' and 'her' do not occur in their nominative case, but the accusative. The verb in a sentence is inflected to show the time and tense. Example:

- They <u>play</u> cricket. (present tense - bare form or no inflection)
- They <u>played</u> cricket. (past tense – inflection 'ed' to the verb to show past tense)

Agreement is another aspect of the binding theory. If the subject is plural, the verb has no inflection, and if the subject is singular, the verb has inflection. Thus, the agreement concerns the number of whether the subject is singular or plural. For instance:

- They <u>play</u> cricket, and he <u>plays</u> cricket.

Carnie (2007) in his book 'Syntax' clearly explains about three binding principles. According to him, binding principle A is that an anaphor must be bound. Anaphor is a noun phrase which gets its meaning from another noun phrase in the same sentence. In the example,

- <u>The boy</u> did the task <u>himself</u>.

'himself' refers to the boy, and thus the reflexive pronoun in this sentence is governed by the noun phrase the boy. The anaphor 'himself' and its antecedent 'the boy' occur in the same clause. On the other hand, Binding principle B says that a pronoun must be free in its binding domain, meaning that any antecedents cannot bind pronouns in the same clause. Example:

- Raj wished him for success.

In this sentence, 'Raj' and 'him' do not refer to the same person. Or,

- Roy killed him.

'Roy' and 'him' are not the same persons.

Binding principle C is that an R-expression must be free. Referring expressions are also free, and they are not bound at all in sentences. R-expressions get their meaning from the real world. So, knowledge of the person talked about in these sentences goes beyond the information given in the sentence level to the real context.

As we have seen in the above part of the essay, the outline of universal grammar's theory shows that universal grammar is innate. All human beings possess a tacit knowledge of the language, and this knowledge of the language is in their mind not by learning, but by nature. First language acquisition in children at an early age without much knowledge of the language supports Chomsky's innate language idea. This innateness is also proved by the research on Broca's and Wernicke's areas in the brain.

HOW DOES THE THEORY LINK UNRELATED ASPECTS OF GRAMMAR?

Finally, in this section, we will show how universal grammar theory links seemingly unrelated grammar aspects.

The universal theory is based on the argument that all speakers share some basic language rules, which are innate and common to all languages globally. Chomsky clearly explains these common properties of all languages in his universal grammar theory, and the common features are known as 'principles'. Universal grammar theory also explains how languages vary from one another, and the features that make languages vary are known as 'parameters.'
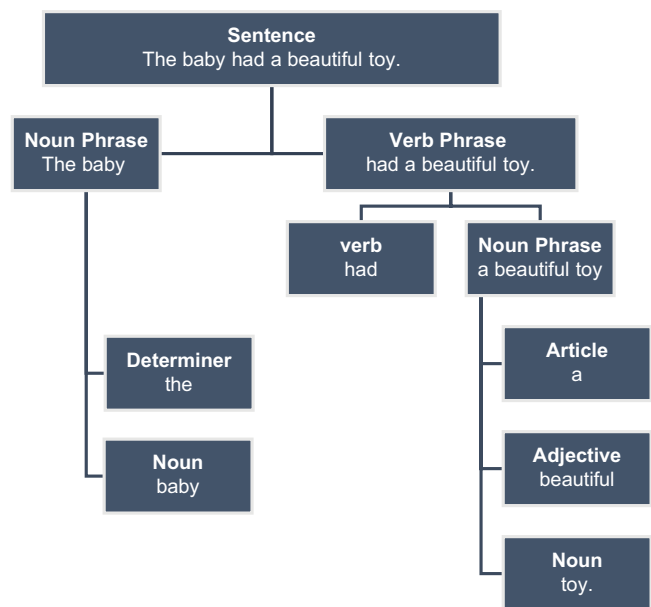

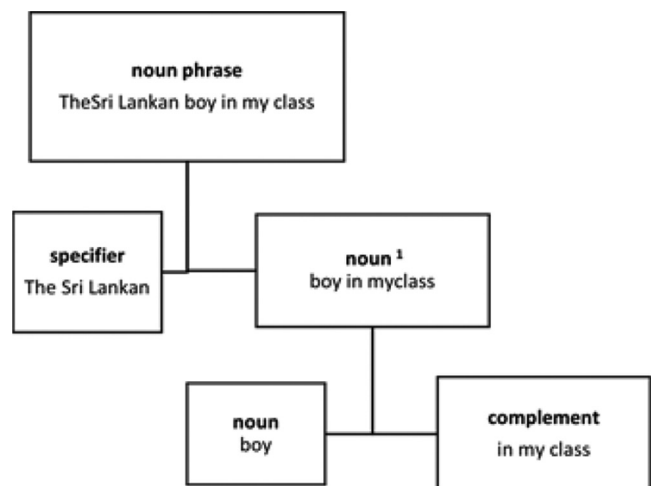**Figure 1.** A Sentence and its Phrase Structure

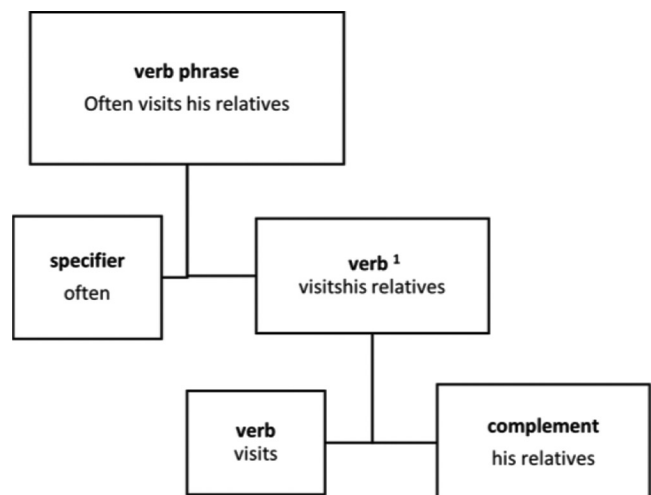**Figure 2.** A Noun Phrase Structure

Figure 3. A Verb Phrase Structure

Head parameter is a feature of universal grammar argued by Chomsky. On the surface level, this feature shows how
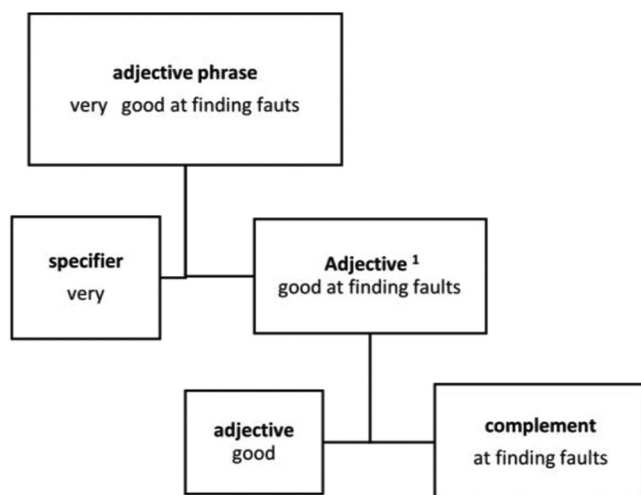
Figure 4. An Adjectival Phrase Structure

languages are different from one another. As we have seen in the early part of this essay, heads could have either two positions in a phrase, head – first or head – last. Whether it is head – first or head –last, a particular language has that position consistently for all its phrases. For example: English, Arabic and Italian are head-first languages while Tamil, Chinese and Japanese are head-last languages. While this feature of universal grammar performs a separatist function among languages, it also undoubtedly unifies the numerous languages spoken in the world into two major categories.

Pro-drop parameter is another phenomenon in universal grammar. This is also known as null-subject parameter. Some languages, such as Italian, allow sentences to have null subjects while other languages such as English do not allow them. In this case, an equivalent sentence in different languages become grammatically correct or incorrect depending on whether a language is a pro-drop language or a non-pro-drop language. Like head-parameter, knowledge of the pro-drop parameter phenomenon limits the speaker's choice to a manageable number and helps the speaker set the switch to suit his or her language.

Whether it is to set the switch to pro-drop or non-pro-drop, the universal grammar theory says that the switch is in a neutral position at birth. Later, depending on the types of sentences the child hears, they switch to pro-drop or non-pro-drop. The following example in English shows that the word 'it' has no semantic meaning, but carried over to the subject position to fulfil the need to have a grammatically correct sentence:

- It's raining.
- It's getting dark.

Similarly, the dummy subject 'there' also occurs in English sentences for the syntactic purpose, although the word does not give its usual meaning:

- Once upon a time, there lived a monster.

Moreover, some languages like Spanish and Italian sometimes allow verb-subject conversion, which English

does not. English has the strict order of subject-verb for its declarative sentences, and verb-subject word order is kept for questions. Therefore, the pro-drop phenomenon generalises human languages, although it is a universal grammar parameter.

Although universal grammar focuses on first language acquisition, knowledge of the principles and parameters theory much helps in second language acquisition by naturally looking at similarities and differences. It is evident in a close analysis that universal grammar theory links unrelated grammar.

CONCLUSION

This paper has explained that the universal grammar theory put forward by Noam Chomsky provides a clear and logical account for first language acquisition by illustrating the flaws presented in behaviourist theory. Chomsky shows that children must be born with a special language package (LAD) in order to acquire such abstract principles at a young age. It has been made clear in the above argument that first language acquisition cannot simply be a learning and imitation product. The only convincing argument for acquiring the first language for children whose minds have already been programmed with basic language principles only requires minimal linguistic exposure to trigger them and set parameters for the language being acquired. The theory structure has also been discussed with examples of the types of grammatical phenomena that the theory seeks to explain, and how the Universal Grammar theory links seemingly unrelated grammar has also been shown.

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