

The Universality of Grammar in the Context of Principles and Parameters Theory

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Abstract

This paper examines the universality of grammar in the context of Chomsky's Principles and Parameters Theory, with a view to establishing its applicability in natural language processing. The study adopted a qualitative crosslinguistic research design. Samples of sentences drawn from English and three Nigerian languages (Yoruba, Edo and Izo) constituted the data for the study. The sources of the data were published language texts on the selected languages. The sentences were subjected to syntactic analysis. The study substantiates the claim that headedness and movement are common properties of natural languages, and it explicates patterns of variation in position of heads in phrases. The projection principle, extended projection principle, adjacency condition, empty category principles and binding principles A, B and C are core components of UG. Endocentricity principle and spec-head agreement are periphery components of UG. It is concluded in the study that UG is substantiated in real language use. Hence, it is not mere abstraction. Principles and Parameters Theory adequately takes care of UG components and claims.

Keywords: Universal Grammar, Universality of grammar, Principles and Parameters, Transformational Syntax, Natural language processing

Background to the study

The study of language since mid-20th century has continued to thrive on linguistic theories. Loosely defined, linguistic theories may be regarded as suppositions or systems of ideas intended to explain certain details about language. A linguistic theory is formulated to understand the nature and structure of language(s). The phenomenon could refer to hypothesis, proposition, thesis, premise and contention based on general principles independent of language itself, aimed at establishing a coherent set of independent principles to explain phenomena in language. Modern linguistics has witnessed widespread innovations in theorisation, some of which seek to answer diverse questions relating to what languages is, and what properties organism (human or artificial) must possess in order for it to learn and use language (Langendoen, 1998).

For instance, the later years of the 19th century saw the emergence of Structural Grammar, a model premised on the stance of the behaviorist psychologist, Bloomfield, and devised purely objective and entirely formal ways to discover and describe the structure of any language. However, the model was not without its weakness, just as its predecessor, Traditional Grammar. In Chomsky's *Syntactic*

Structures (1957), Transformational Generative Grammar emerged as a major reaction to the excesses of Structural Grammar and the inadequacies of Traditional Grammar. Chomsky's model, till date, is not void of criticism. For example, Halliday's Systemic Functional Grammar which developed from J.R. Firth's Scale and Category Grammar argues that the real bases of language description are the sociological aspects (behaviour, function and situation). However, the transformational generative model has remained the most widely discussed and engaged linguistic theory.

One of the hallmarks of Chomsky's Transformational Grammar is its introduction of, and its argument in favour of Universal Grammar. Chomsky (1986:3) defines Universal Grammar as “a deductive science concerned with the immutable and general principles of spoken and written language, principles that form part of common human nature and that direct human reason in its intellectual operation”. By this definition, it is implied that Chomsky conceives of Universal Grammar as a faculty inherent in and natural to human, which makes it possible for anybody to acquire and study a new language.

The thesis of this paper is the universality of grammar in the context of Chomsky's Principles and Parameters Theory. The paper presents crosslinguistic data to establish the universality of grammar.

Statement of the problem

In early studies which seriously investigated whether Universal Grammar, a genetically-determined language faculty, is involved in language acquisition, there have been observable differences among scholars' standpoints. Such differences include the influence exerted by the L1 at the onset of acquisition and in subsequent development. The differences led some researchers at various times to the conclusion that UG is not involved at all in the construction of L2 mental grammars (Bley-Vroman, Felix & Ioup, 1988; Hawkins, 2001; Farahani, Mehrdad & Ahghar, 2014; Zhang, 2024). Subsequent criticisms against transformational syntax have not only challenged the claims of UG but have also argued that UG has no direct bearing on Chomsky's constraint-based principles and parameters (Bley-Vroman, 1989). The current study considers this position misleading. As it sets out to substantiate the existence and applicability of the claims about Universal grammar in the context of Principles and Parameters Theory.

Aim and objectives of the study

The paper examines the core and periphery components of Universal Grammar within the context of Principles and Parameters Theory. It specifically seeks to:

- i. substantiate the applicability of the principles and parameters constraints in crosslinguistic data; and
- ii. provide crosslinguistic evidence for the core and periphery components of Universal Grammar.

Research questions

- i. What is the applicability of the principles and parameters constraints in

- crosslinguistic data?
- ii. To what extent can the core and periphery components of Universal Grammar be substantiated in natural languages?
 - iii. Which principles and parameters constraints can be said to be core and which could be said to be periphery?

Scope of the study

To adequately discuss the universality of grammar, this study covers the core and periphery components of Universal Grammar. These components will be examined in relation to three modules of principles and parameters theory. These are X-bar, Government and Binding theories, which occupy central place in PPT.

Significance of the study

It is not in doubt that young career language scholars and students of language and linguistics express much phobia for core syntax, especially the transformational models. Often, they lament the seeming complexities and technicality that characterise the model. With this study, such students and early career scholars would have better grasp of principles and parameters theory specifically and by extension, transformational syntax in general. Also, the study comes handy in bringing to bear the applicability of transformational model in language study.

Literature review

Goals of linguistic theory

The goals of linguistic theory are to answer such questions as 'What is language?' and 'What properties are essential for language learning. Different theories provide different answers to these questions, and there is at present no general consensus as to what theory gives the best answers. Moreover, most linguists, when pressed, would say that these questions have not yet been satisfactorily answered by any theory.

In order to try to answer these questions, one strategy, originally employed by Greenberg (1961), is to undertake a comprehensive study of the languages of the world, to determine what properties they have in common and what distinguishes them from things that everyone agrees are not languages. Another, advocated by Greenberg (1974) and Chomsky (1980), is to examine a few particular languages in depth to determine which of the intricate details that are found in one language are manifest in all the others. As each of these approaches is extended, they merge into one another, and can be expected, ultimately, to converge on the same answer. The goals of linguistic theory are broadly categorised as descriptive adequacy, explanatory adequacy and cognitive processing.

Models of Transformational Generative Grammar: Standard Theory to Minimalist Program

Since the inception of transformational generative grammar (Chomsky, 1957), different models have been developed, subject to criticisms and revision of each

preceding model of the theory. These models are Standard Theory (Chomsky, 1965), Extended Standard Theory (Chomsky, 1972), Revised Extended Standard Theory (Chomsky, 1973), Principles and Parameters Theory (Chomsky, 1993) and the contemporary Minimalist Program (Chomsky, 1995).

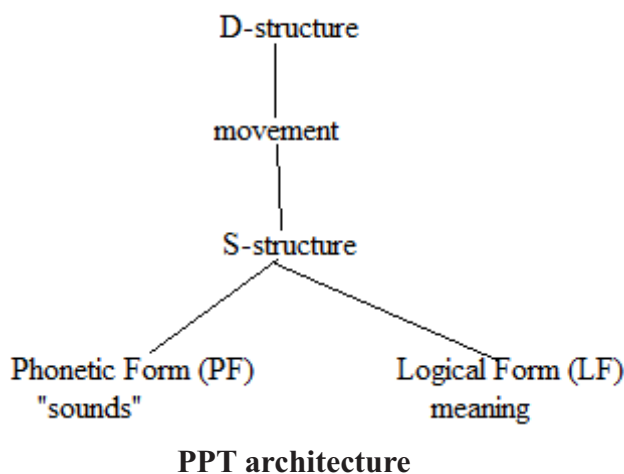
In earlier models of transformational grammar, the locus of interpretation is taken to be Deep Structure and the transformational operations that produced Surface Structures were assumed to be meaning-preserving (Lamidi, 2016). Hornstein (2000) opines that transformational operations, in the beginnings of transformational grammar, did not contribute to the grammatical licensing of the interpretive information encoded in the Deep Structure phrase marker. In the Extended Standard Theory (EST) of 1972, it was proposed that grammatical levels other than Deep Structure syntactically determine sentence meaning. What this means is that different grammatical levels determine different features of sentential interpretation. Later, with the development of trace theory in the Revised Extended Standard Theory (REST), the S-structure (SS) was treated as the sole locus of semantic interpretation. The trace theory requires that a moved element leave behind a trace, and the trace preserves the structural relations that obtained prior to movement. Thus, the trace theory has information-preserving quality. Because of traces, therefore, it is possible to consolidate all the grammatical information.

Theories are always subject to revisions. REST was also revised. The revision gave birth to Principles and Parameters Theory (PPT), also popularly known as Government and Binding theory or GB. Our focus in this unit is not on GB. The GB model dominated the mainstream generative linguistics for more than a decade (1981-1995). In 1995, Chomsky developed a computational approach to grammar that uses a limited set of mechanisms and constraints to provide adequate explanation of language structures. This approach is known as the Minimalist Program (MP). Many reviews of the Minimalist framework have established that the Minimalist Program aims at developing further ideas involving *economy of derivation* and *economy of representation*.

Theoretical framework: Principles and Parameters Theory

Principles and Parameters Theory is a major theoretical model in transformational generative grammar (TGG). Udoka, Umoh and Etuk (2020) assert that the core of TGG has been to establish a grammar that can account for all human languages. PPT as a model of the broader TGG is used to analyse phrase structures in natural language processing. As a competence grammar, it is used to filter out grammatically incorrect sentence. The theory consists of set of sub-theories that interact, Government and Binding being two of them. Hence, the theory is commonly labeled Government and Binding theory (henceforth GB). GB gives emphasis on principles, rather than rules, that constrain syntactic processing. In GB, the assumption is made that sentences have three main levels of structure: D-Structure, S-Structure and Logical Form. The S-Structure is derived from D-Structure, and Logical Form from S-Structure by a single transformation, Move Alpha (Chomsky, 1993), which basically means move any category anywhere (Black, 1998; Ouhalla, 1999: 258; Lamidi, 2025). The figure

below, presents the PPT architecture:



The application of move-alpha is constrained by the interaction of various sub-theories which act as conditions on possible representation. Because of its arrangement (general theory with specific sub-theories), Government and Binding is regarded as a fitting framework for describing the syntax of all languages (Ouhalla, 1999). The various sub-theories within the framework include X-bar theory, Theta Theory, Case Theory, Binding Theory, Control Theory, Bounding Theory and Government Theory. The analysis in this study is done within the framework of X-bar, Government and Bounding sub-theories.

Methodology

The study adopted a qualitative crosslinguistic research design. Sentences were drawn from English and three Nigerian languages (Yoruba, Edo and Izon) to illustrate the application of core and periphery components of UG within the context of principles and parameters theory. The author carefully drew sentences and clauses from existing texts published in the English language. Also, samples of Edo and Izon sentences were drawn from existing texts (journals) published on linguistic studies relating to the languages. The author, being a native speaker of Yoruba, self-generated sentences in Yoruba language. As a guide in the course of the study, dictionaries of the languages used for illustrations were consulted to ensure accuracy of spelling, meaning (gloss) usage of words and phrases. The sentences were subjected to syntactic analysis to account for the focus of the paper, upon which findings were noted and conclusions were drawn. For analysis, phrase markers (i.e. tree diagrams) and labelled brackets were used.

Data analysis/discussion

Crosslinguistic Evidence for the Core and Periphery Components of Universal Grammar

Principles of Universal Grammar

The Lexicon and Projection Principle

All natural languages have array of lexical items (with their idiosyncratic features) that are strung together in the construction of all sentences. Syntactic theories are primarily interested in accounting for the combinatorial properties of natural languages. By the Projection Principle in the X-bar module of PPT, the properties of lexical items must be preserved while generating the phrase structure of a sentence. It is on such condition that sentences like (1a-4a) below can be generated. The same condition explains the reason for the ungrammaticality of sentences (1b-4b)

- 1a. The class members strangled Jane.
- 2a. Won bò aşırı iyá wọn.
- 3. Plr cover+pst secret mother 3pl+poss
- 1b. *The class members strangled.
- 2b. *Won bò.
- 3Plr cover+pst

The projection principle requires that all syntactic structures are projected from the lexicon. In other words, the properties of lexical entries project onto the syntax of the sentence. Ouhalla (1999) adds that all (syntactic) representations observe the subcategorisation properties of lexical items (which are the verbs in the context of the above sentences). Sentences 1b and 2b above without the object, in violation of the verbs' subcategorisation frame are ill-formed. This is because the verbs 'strangled' (in 1) and 'bò' (in 2) are transitive, and thus they obligatorily require an internal argument to which their respective accusative case must be assigned.

Word order

Words in all natural languages co-occur with one another in a linear order within a structure. Such linear order is known as word order. Though variations exist in what obtains in individual language, it is established that words are not strung haphazardly in natural languages. Many languages of the world share common features in word order. This is why it is possible to classify modern English and Yoruba as SVO-languages, and Urhobo as SOV language. The implication of such classification is that in a basic clause of any language that belongs to such family, the subject is the first element and it is followed by the verb. Any linear order apart from this (such as the patterns contained in 3 and 4) below will only result in ungrammaticality and unacceptability.

- 3a. *Jonah fish swallowed.
- 4a. *Sola aso ra
- Sola cloth buy+pst

Also, the extended projection principle within the X-bar module requires that every clause must have a subject, that is, the subject position in a sentence must be syntactically represented. Given this condition, sentences 3b and 4b below are wrong also.

3b. *Swallowed Jonah fish.

4b. *Ra aso Sola

Buy+pst cloth Sola

Headedness

The X-bar theory emphasises the primacy of the head in every syntactic configuration. One of the most relevant constraints within the theory is the endocentricity principle. Endocentricity constraint requires that all phrases are the projection of a head. It is viewed in this paper that there are two dimensions to the application of this principle. First, it implies that all phrases project from a head (either lexical or functional). The implication of this is that when any phrasal construction lacks a head (such as is found in 5-7 below), ungrammaticality sets in.

5. *We found our teacher diary.

6. *Yinka jealous Gbade.

7. *Olorun wa mi

God be me

The possible interpretation of sentence 5 above is that the speaker (with other people) found a diary that belongs to their teacher. Thus, in noun phrase (NP) 'teacher diary', the lexical item *diary* is the head, and *teacher* can only be a specifier within a determiner phrase (DP) that modifies 'diary'. Within such DP, 'teacher' is a specifier that should be assigned genitive case by the determiner (possessive marker). The non-projection of this functional head brings about the ungrammaticality in 5; 'teacher' is *caseless* and thus violates case filter. If sentence 6 is assumed to be a sentence IP, it is obvious that the structure lacks verb, as the constituents are noun (Yinka), adjective (jealous) and noun (Gbade). The absence of the verb implies that there are no inflectional features which are the functional head of the sentence. In seven, the subcategorisation frame of the existential verb 'wa' requires the proposition 'pelu' (that is, 'with') which heads the PP complement of the verb. Such preposition would have assigned the oblique case and the beneficiary theta role to the argument 'mi'. The absence of such lexical head results in violation of case filter as well.

The other dimension to the application of the endocentricity principle is that it prohibits the projection of two heads at each any syntactic level. For instance, if it was possible to look away from the DP specifier in 5 above, the structure would be interpreted as having two nominal heads ('teacher' and 'diary') in the complement position in the sentence. This implication currently being discussed is often more recurrent in some English as second language expressions such as 8 below.

8. *This your friend is beautiful.

The subject of sentence 8 above has two determiner heads projected at the specifier position of the subject NP.

Movement

One of the characteristics of constituents in natural languages is movement. Syntactic objects can be displaced from their initial position to another when certain transformations take place. For instance, generating relative clauses, focus constructions and questions often necessarily involves movement of some syntactic element, especially noun phrase and wh-phrase. Thus, NP movement and wh-movement are commonly discussed in most natural languages, if not all. Also, their respective traces (NP trace and Wh trace) are topics one often come by in discussions relating to empty categories.

Ouhalla (1999:406) posits that the generalised computation also allows us to move an item apart from selecting and merging items. This is a universal principle because it gives room for speakers of different languages to move already existing items in a particular phrase marker to move to another phrase marker. Movement is core component of grammar within the Principles and Parameters Theory which accords central and overarching effect of the move α as the transformation required in generating surface structure from deep structure (see GB architecture). Yusuf (1998:4) agrees to the fact that “all languages distinguish between statements and questions”. He also says that forming of question is based on the universal rule of move α

9a. Bola is my friend.

10a. Bola ni ore mi.

Bola cop friend my

(Bola is my friend)

9b. Is Bola my friend?

10b. Se ore re ni Bola?

Qw friend 2sg+poss cop Bola?

In sentence 9b above, the be-verb is moved leftwards in to generate a polar question from the basic clause structure originally presented in 9a. Similarly, the realisation of 10b involves the movement of the NP Bola. The discussion on the q-word is deliberately left here since it is not within the scope of the particular discussion at hand.

Evidence of parametric variation in natural languages

Variation in word order

All languages have syntactic structures which they follow at sentence and phrasal levels; they, however, vary widely in their canonical word order. This variation has brought about descriptions of languages as being SVO, SOV, VSO (Maurits, Perfors and Navarro, 2014; Nurse, Rose and Hewson, 2016). English belongs to the SVO language class (Maurits, Perfors and Navarro, 2014; Bøegh, Daval-Markussen and Bakker, 2016; Nurse, Rose and Hewson, 2016).

For instance, sentences 10, 11 and 12 below respectively show that the word order parameter in English, Yoruba and Edo is SVO languages while it is SOV in Izon.

S V O

11. The children love their mother (English)

S V O

12. Tolu ti fo aso

Tolu perf wash clothe

S V O

13. Irabor wen Osayidè iyán

Irabor and Osayibuy+PRS yam

'Irabor and Osayi buy yam.'

S O V

14. Miawoubo mini yinmataremi

Child+plr mother love+prs

The children love their mother

Head parameters in natural languages

One of the most basic cases of parametric variation in languages is the position of the head element within a constituent. Head parameter is a binary valued parameter which concerns the location of elements with respect to the head of a phrase (Rahmani, Alizadeh and Hamidi, 2014; Bøegh, Daval-Markussen and Bakker, 2016).

Head parameter is concerned with the relative position of the head a construction vis-à-vis its complement or specifier. The X-bar module adequately takes care of description and classification of language in this regard. The module does not only emphasises the primacy of head. Its schema helps clearly explicate the location of heads in phrases. Languages differ in the location of syntactic head in their phrases. While some languages are head-initial in their NPS, some others are head-last. For the example, the data for English structure in 13 shows that English NPs are head-last while Yoruba and Edo structures presented in 14 and 15, respectively show that NPs in the two languages are head-initial.

15. [_{NP}_{Spec,Det} The _{Spec,Adj} incumbent _N governor] is [_{NP}_{Spec,Det} a _{Spec,Adj} retired _N teacher.

16. [_{NP}_N Ere _{Spec,Adj} nla] wa fun [_{NP}_N omo _{Spec,Det} naa]

Reward great be for child the

There is great reward for the child

17. Òdé héísán [_{NP}_N hèn _{Spec,NPoss} Èròmòséle .

Òdé reject+past key Eromosele+Gen

'Ode rejected Eromosele's key.'

Parametric variation in movement syntax

The properties of syntactic movement have been studied extensively in linguistic theory, both in terms of locality conditions and in terms of the types of constituents affected. Embick & Noyer (2001) and de Villiers (1995) are examples of such works. In this section, attention is given to two syntactic processes that are common to most languages of the world: relativisation and question formation. A relative clause is a subordinate clause that qualifies a noun. In English, relative clauses are introduced by relative pronouns.

Relative constructions are made up of two parts: the antecedent and the relative clause. These are joined with each other by a relative pronoun. For instance,

18. [_{IP}This is [_{NP}the boy [_{CP}who_i [_{IP}t_i studies biology]]].

In this sentence, the *wh*-phrase *who* is the antecedent of the trace 't_i'. The same is identical with the subject of the sentence. On the other hand, "who studies biology" is the relative clause which identifies the antecedent 'boy'. The following data from Yoruba and Edo show how these two languages differ from English.

Yoruba data

19. Omo ti mo feran ko feran mi

Child REL 1sgNOM love Neg love 1sgACC

The child whom I love does not love me

20a. [_{IP}[_{NP}Àlìmoí [_{CP}nẹ [_{IP}èNósákpaén]] ọghòghò]

Orange REL FILL Nosa pluck +pst ripe

'The orange which Nosa plucked is ripe'.

21a. [_{IP}[_{NP}Èvbàrè [_{CP}nẹò lé]]èşéşè

Food REL 3s cook +pst very well/good

'The food that she cooked is good'.

The subjects 'Nósá' and 'Ọ' (she) are moved out of their positions as subjects of their respective sentences, thereby leaving an empty position. Also, the object NPs 'àlìmoí' (orange) and 'èvbàrè' (food) are moved out of their object position to the initial position of the sentence (out of which 'Nósá' and 'Ọ' have been moved), consequently the object positions are replaced with traces. A relative marker is (compulsorily) inserted as an item that connects the NPs 'Nósá' (in 20) and 'Ọ' (in 21) with the new subjects of the sentences- 'àlìmoí' and 'èvbàrè', and the predicate of the clause 'àlìmoí ọghòghò' is realised as the predicate of the whole sentence. The movement of relative marker in English is A¹ bound while in Edo, the resumptive pronoun stands as quasi-argument for the relative NP which is moved. The pronoun 'nẹ' shares the same property with the resumptive pronoun.

Also, the data above shows that duplication of NP is peculiar to Edo relative

construction (for example as evidenced in the sentence above). The NP 'Òkpiá Ókpá' (one man) in the sentence is duplicated in the subject position of the insert clause, though replaced by the pronoun 'ò'. In English, such a subject position does not occur, else the sentence becomes ungrammatical. Another striking difference between relative clauses in English and Edo is their constituents. While the relative marker is always obligatory in Edo, English demonstrates zero relative; hence, relative markers are sometimes optional in English. Finally on the difference between relative clauses in English and Edo, English makes a distinction between the types of relative marker that are permitted in different expression (cf *wh*-relatives and *that*-relatives above). Each of these markers is exclusively permitted in a given sentence for the grammaticality of such sentence while the other is not; such distinction does not exist in Edo. Thus, while the relativisation takes place in both languages, they differ in the syntactic transformations involved.

Applicability of the principles and parameters constraints in crosslinguistic data

This section briefly considers constraints (principles and conditions) within principles and parameters theory, providing some illustrations as regard their applicability in natural languages. It should be noted that the order in which the constraints discussed here are arranged does not indicate any form of hierarchy. Efforts have only been made to ensure that constraints relating to particular module of GB are discussed together. As much as possible, some constraints that have featured in the discussions in section 4.1 are left out in this section, to avoid repetition. Some of these are projection principle, extended projection principle and the endocentricity principle in the X-bar module.

Before we begin discussion of other constraints, it would be helpful for us to note that the projection principle applies strictly in the languages for which data were presented in section 4.1.1. This implies that the projection principle may be regarded as a core component of universal grammar, and thus indication the universality of grammar. Also, the extended projection principle applies in both languages for which data were presented. One may still query the universality of this constraint as it is not that some languages such as Mandarin and Italian are *pro*-drop languages (Vollmer, 2019). However, it may be argued as well that such empty category element only lacks phonetic content, not logical representation (LF).

The ungrammatical sentence 8 above shows that English does not allow projection of two functional heads in a DP. Sentence 22 below shows such projection is possible in a language like Yoruba.

22. Ore re yi rewa
 Friend your this beautiful
 (This friend of yours is beautiful)

“E” has neither syntactic nor semantic function. It is only necessary in the speech to fulfill a prosodic feature because nouns in Bini begin with a vowel. It is a ‘filler’

Despite the selection of two determiners, the Yoruba sentence is grammatical. It could be surmised therefore that endocentricity principle is not core, but periphery.

4.2.1 Spec-head Agreement

Agreement is a component of the functional head I^0 in PPT. Thus, agreement is a functional head (Udoka, Umoh and Etuk, 2022). The spec-head agreement specifiers agree with their heads in all categorical features. These categorical features include all morphosyntactic (such as number, case, gender and the like) as well as semantic features. It is recalled that the PPT architecture presented above shows that constituents ultimately have two levels of representation. In some languages like English, morphosyntactic features such as tense, number/person agreement have phonetic representation. Sentences 23a-c below is an illustration.

23a. The athlete jumps over that fence every morning.

23b. The athletes jump over that fence every morning.

23c. The athlete jumped over that fence (every morning).

The voiceless alveolar plosive and the physical third person singular morpheme distinguish the verb 'jumps' from other lexemes of the verb. Thus, it is easily noticeable whether or not there is agreement between the subject which is the Spec,IP and the TeNSE and AGReement features that are represented in the INFLection node which is the (functional) head of an IP. In discussing the agreement feature, it is easily noticeable whether a sentence meets the spec-head agreement condition or not. In other language, like Yoruba for instance, such PF or physical morphological marker is not seen.

24a. O mo nipa oran naa.

3sg know about matter the

(He knows about the matter.)

24b. Won mo nipa oran naa

3Plr know about matter the

(They know about the matter.)

24c. O mo nipa oran naa

3sg know+pst about matter the

(They know about the matter.)

This is a common feature of what is commonly regarded as Atkinson. In such language, the agreement is more of an abstract mental representation.

The illustrations here show that English and Yoruba (as well as other Nigerian languages that may be considered in further studies) vary in agreement features. While agreement features in English often have physical, phonological as well as mental representation, Yoruba agreement features are largely mental construct.

Hence, the Spec-head agreement could be considered as part of periphery component of UG within the PPT.

Adjacency Condition

The adjacency condition is a structural requirement that constrains the separation of case-marked NPs from their case assigners. Such separation occurs when there is an intervening element between the case assigner and the element to which case is assigned. The two should be adjacent.

25a. Angela speaks English fluently

25b. *Angela speaks fluently English

26a. Bolu sọ Yoruba daadaa

26b. *Bolu sọ daadaa Yoruba

In 25a, the verb 'speaks' takes an NP complement English and the VP include the adjunct fluently. The subject NP, Angela, is case-marked by the finite INFL, and the NP English is case-marked by verb speak. The same constituents are contained in 25b and yet the sentence is ungrammatical. This is because the verb 'speak' and the complement NP English are not adjacent to each other. The same applies to the Yoruba data. The verb 'sọ' has scopal authority (Lamidi, 2004) over Yoruba with the adjunct 'daadaa', and the two constituents are adjacent. Such adjacency is missing in 26b, and hence the ungrammaticality of the sentence. The data from English and Yoruba reveal that adjacency condition is a requirement in both languages. A lack of adjacency between a case-marked NP and the case assigner results in ungrammaticality in both languages. Thus, it adjacency condition is considered a core component of UG.

Empty Category Principle

The Empty Category Principle (ECP) is a principle of transformational grammar by which traces are made visible, i.e. they must be identifiable as empty positions in the surface structure, similar to the principle of reconstruction for deletion. Empty Category Principle states that a non-pronominal empty category must be properly governed- (Ouhalla 1999:265). This reminds us of the notion of proper government. The sentences below exemplify this claim:

27. The eggs_i we broke t_i

28. Owo_i ti o gba t_i

Money REL 3sg collect

The money that you collected

In sentences 27 and 28 above, proper government occurs either if the empty position is governed by a lexical category (especially if it is not a subject) or if it is co-indexed with a maximal projection which governs it (antecedent government).

Binding Principles A, Band C

Binding theory is principally concerned with the distribution and interpretation of

NPs in a sentence (Lamidi, 2025), determining the situation in which they can occur or must be co-indexed with other NPs. In other words, the module regulates NP interpretation. There are three principles in this theory A, B and C, each respectively regulating anaphors, pronominals and R-expression.

29a. *I_i saw me_i.

29b. I saw you.

29c. I_i saw myself_i

29d. *She saw myself

30a. *Mo_iri mi_i

1sg NOM see+pst 1sg ACC

30b. Mo ri e

1sg NOM see+pst 2sg ACC

30c. Mo_iri ara mi_i

1sg NOM see+pst body 1sg ACC

30d. *O ri ara mi

1sg NOM see+pst body 1sg ACC

Binding Principle A requires that pronominal are free within their governing category. Loosely, the interpretation of this principle is that there should be no nominal element that interprets a pronoun with the minimal IP that dominates such pronoun. Sentence 29a and 30a above violate this condition. The pronoun 'me' co-indexed with the subject pronoun 'I' shows that the former is bound (by the latter, which interprets it). Likewise, the pronoun 'mi' is coindexed with 'mo', and the same maximal node dominates the two items. These are cases of violation of Binding Principle A. These contrast with 29b and 30b, which also have accusative pronominals 'you' and 'mi'. However, there is no semantic interpretation shared with the other pronouns in the sentence. Thus, Principle A is not violated. Likewise, principle B which requires that anaphors are bound in bound within their governing category. This contrasts with 29c and 30c in which the anaphors 'myself' and 'ara mi' do not have antecedents that interpret them. These principles can be regarded as universal

Summary/Conclusion

The study has explored the core and periphery components of UG within the context of Principles and Parameters Theory. It substantiates the lexicon, headedness and movement are common properties of natural languages, and it explicates patterns of variation in position of heads in phrases. It considers the projection principle and extended projection principle of X-bar theory, empty category principle and adjacency condition of government theory as well as the binding principles A, B and C of Binding theory as general constraints applicable to natural languages. The study considers endocentricity principle and spec-head agreement of X-bar are some

periphery features within the Principles and Parameters Theory. One of the limitations of this study is its restriction to X-bar, government and binding subtheories. It is hoped that future studies would explore other constraints in PPT such as the case filter, theta criterion, PRO theorem, subjacency and strict cycle conditions. More studies can as well explore the universality of grammar in the context of Minimalist Program. In addition, the data presented in this study are largely from English and Yoruba, with minimal representation of many other numerous languages. The scope of the study may be further expanded to consider more languages.

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