



AN APPRAISAL OF GOVERNMENT AND BINDING PROCEDURE IN SELECTED ENGLISH AND HAUSA SENTENCES

¹Saminu Isyaku, PhD and ²Tanimu Yusuf, Ph.D

¹Department of English Ahmadu Bello University, Zaria **Email:** saminuisyak@yahoo.com
08036848314

²Department of English Faculty of Arts Nasarawa State University Keffi
Email: tanimuy@nsuk.edu.ng tanyumus@gmail.com 07037627496

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Abstract: This paper appraises one of the modular theories in Generative Grammar. The aim of the paper is the application of Government theory to the structural analysis of selected English and Hausa equivalent sentences. This is to study syntactic behavior of some elements in terms of the way they are governed in structures. Government and Binding Theory is one of the relatively recent developments in Generative linguistics. This paper reviews some aspects of Generative Grammar as a general and unified theory that has undergone several modifications. Specifically, the paper adopts Government and Binding theory as a theoretical stand point. Government and Binding refers to two central sub theories of the Generative theory; government which is an abstract syntactic relation applicable, among categories to the assignment of case; and binding, which deals with the relationship between pronouns and the referential element with which they are co-referential. The paper is particularly concerned with the significance of syntactic analysis across languages in both formal and applied linguistics. In formal linguistics, linguists are of the view that syntactic study of languages provides illuminating facts about the nature of human languages. In applied linguistics, syntactic studies of different languages provide information needed for solution to communicative challenges in different fields of human endeavor. Syntactic component of grammar comprises a complex syntactic properties that can relatively be accounted for by a particular model of analysis. Syntax is a very wide and complex aspect of linguistic analysis therefore, a study of Government and Binding principles as related to English and Hausa sentences is the concern of this paper.

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INTRODUCTION

There are different theories that account for the grammatical features of human language. Since the period of Traditional Grammar, efforts are being made from different schools of linguistics to describe the formal and functional properties of grammatical categories that are universal across human languages, hence the idea of Universal Grammar. ‘Universal’ in linguistics, according to Aarts, (2014:428), refers to “a grammatical feature that is common to all natural languages”. Thus, grammatical universals are grammatical characteristics which feature in all languages. For example, all languages have nouns and verbs, have ways of talking about time and place, and distinguishing between speaker and addressee. Universal Grammar consists of a set of unconscious constraints that let us decide whether a sentence is correctly formed. The mental grammar is not necessarily the same for all languages. But according to Chomskyan theorists, the process by which, in any given language, certain sentences are perceived as correct while others are not is universal and independent of meaning. Thus, we immediately perceive that the sentence “*John book reads the*” is not grammatical in English, even if we have the idea of what it means. Conversely, we recognize that a sentence such as “*Colourless green ideas sleep furiously*” is grammatically correct in English, even though it is meaningless.

Some Development in Generative Grammar

Transformational Generative Grammar (TGG) is a model of grammar proposed by Noam Chomsky in 1957, which describes language in terms of transformations applied to an underlying logical deep structure, in order to

generate the surface structure of sentences that can actually occur. It is a theory of grammar in which transformational rules first introduced by Noam Chomsky play an essential part. TGG recognizes two levels of analysis namely ‘Deep Structure’ – an abstract underlying structure that incorporates all the syntactic information required for the interpretation of a given sentence (Crystal, 2008:131); and ‘Surface Structure’ (a structure that incorporates all the syntactic features of a sentence that are needed to convert the sentence into a spoken or written version (Crystal, 2008:466). In other words, ‘Deep’ and ‘surface’ structures are often used in simple binary (two parts) opposition with the deep structure representing ‘meaning’ and the ‘surface structure’ being the actual sentence (utterance) (Aarts, Chalkter, and Weiner, 2014:401). Chomsky is believed to have turned linguistics from the pre-scientific stage of the collection and classification of interesting facts to focus on construction and validation. He claims that the rigorous methods stressed by the structuralists were trivial, their position perhaps leads to false conclusions (Kess, 1992:105). The native speaker of a given language is believed to know exactly what is acceptable and what is not in the grammar of his language. Thus, TG does explicitly what the native speaker does implicitly with his language (Gleason, 1970:243) and it is strong in the use of formulas with more accuracy and complexity, (Tomori, 1977:65).

Chomsky believes that native speakers have grammatical competence in their native language. This means, they have tacit knowledge of the grammar of their language. They know how to form and interpret words, phrases, clauses and sentences in the language. Chomsky (1965:4) says that competence in the speaker-

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header's knowledge of his language, where performance is the actual use of language in concrete situations. Therefore, he draws distinction between competence (the fluent native speaker's tacit knowledge of their language) and performance (what people actually say or understand by what someone else says on a given occasion).

Phrase Structure Grammar

A phrase-structure grammar analyses sentences or utterances in terms of its syntactic constituents. The instruction formula known as rewrite rules for example states that $X \rightarrow Y$ means rewrite X and Y (Tomori, 1977:67). In 'Syntactic Structures', Chomsky (1957) gives the $\text{Sentence} \rightarrow \text{NP} + \text{VP}$.

$\text{NP} \rightarrow \text{T} + \text{N}$

$\text{VP} \rightarrow \text{verb} + \text{NP}$

$\text{T} \rightarrow \text{the}$

$\text{N} \rightarrow \text{man, ball, etc.}$

$\text{Verb} \rightarrow \text{hit, took, etc.}$

However, the above phrase-Structure Rule is not fixed, it is flexible, it can be re-written in different contexts. Phrase-structure rule is context sensitive.

Considering the Phrase-structure rule, Chomsky (1957) shows the dissection of the sentence "the man hit the ball" in strings where the last line is known as the terminal string shown below:

Sentence

$\text{NP} + \text{VP}$

$\text{T} + \text{N} + \text{VP}$

$\text{T} + \text{N} + \text{verb} + \text{NP}$

$\text{the} + \text{N} + \text{verb} + \text{NP}$

$\text{the} + \text{man} + \text{verb} + \text{NP}$

$\text{the} + \text{Man} + \text{hit} + \text{NP}$

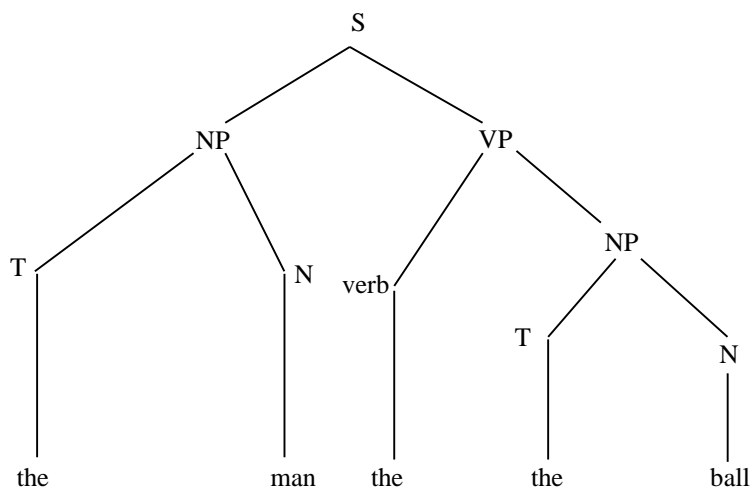
$\text{the} + \text{man} + \text{hit} + \text{T} + \text{N}$

$\text{the} + \text{man} + \text{hit} + \text{the} + \text{N}$

$\text{the} + \text{man} + \text{hit} + \text{the} + \text{ball.}$

Apart from labeling the sentence elements with the string pattern, it can equally be shown in its constituent structure in a tree diagram as follows: (Chomsky 1957)

fig.1



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That is to say that PS rules analyses grammar in terms of its syntactic constituents (Olu-Tomori, 1977:67). Firstly; the rules above are expanded in details as:

$S \rightarrow NP + VP$

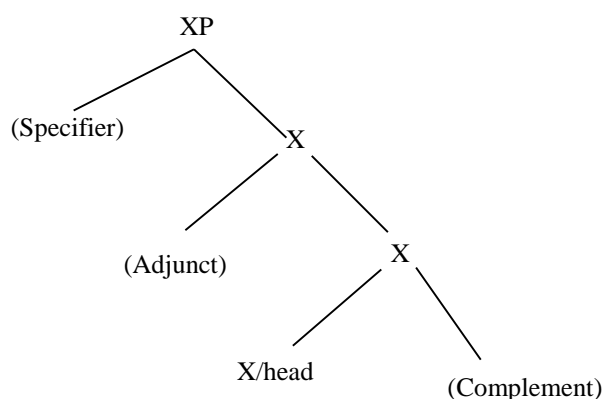
$NP \rightarrow \{\text{Art (Adj) N, (Pro/PN)}\}$

$VP \rightarrow V NP (pp) (Adv)$

$PP \rightarrow \text{prep NP}$

In the case of the first example, NP means Noun Phrase and VP means Verb Phrase. The second (T) example means a noun phrase can have an article to function as determiner, as adjective, a noun or pronoun (or proper noun). In the constituent, the element in bracket is optional and only one of noun (N), pronoun (Pro) or proper noun (PN) can be used at a time in a slot. The VP rewirtes as a verb (V), a noun phrase (NP), a prepositional phrase (pp), and adverbial phrase (adv.) where elements in bracket are not obligatory. They are only applied where the context requires.

These rules help to identify and describe the elements of a sentence. It is an attempt to describe sentence elements in linear order. For fig.2



instance, in the sentence “John saw the boy” has the structure ‘Subject + Verb + Object, we see PS grammar in action (Olu-Tomorio, ibid).

Secondly, just like the PS rules generate structures at the phrase level, the other rules are the lexical rules which generate structures that specify which words can be used when we rewrite constituents such as N, PN, Art, Pro, Adj., etc. They are as follows:

$PN \rightarrow \{\text{Mary, George}\}$

$N \rightarrow \{\text{girl, dog, boy}\}$

$\text{Art} \rightarrow \{\text{a, the, an}\}$

$\text{Pro} \rightarrow \{\text{it, you}\}$

$V \rightarrow \{\text{followed, helped, saw}\}$

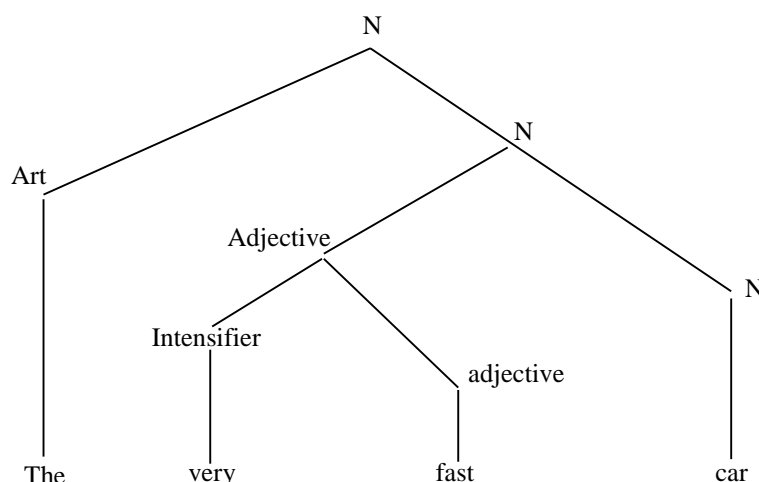
The X-Bar Syntax

Aarts *et al.* (2014:444) views the X-bar theory of syntax as “model of syntax, introduced by the American Linguist Noam Chomsky into Generative Grammar, that treats all phrases as having the same skeletal hierarchical structure, as shown in the following diagram: it is a modified version of Phrase-structure model. X-bar theory accounts for intermediate categories in addition to phrasal and lexical categories

XP stands for a phrase headed by X (to obligatory head), where X stands for N(oun), V(erb), A(djective), P(reposition), and sometimes Adv(erb). In this representation, X (read 'X bar') is called 'a bar level category, i.e., a category that is intermediate between XP and X; optional adjuncts are linked by adjunction to the left of the lower X in the tree above (e.g. [v – quickly open {or opened the door} quickly]). (Crystal, 2008:444).

In particular, within the main phrase, the need is felt to recognize intermediate categories larger than the noun but smaller than the phrase. For

example, 'very fast' or 'very fast car' in the phrase "the very fast car". These intermediate categories which have no status in previous phrase structure models are formally recognized in x-bar syntax by a system of phrasal expansion. Given a lexical category, X, X_0 = with no bars; X_i = X_1 = X single bar; X_{ii} = X_2 = X with double bars; X_{iii} = X_3 = X treble bars; and so on. The following trees illustrates two levels of expansion for N_0N -bar and N-double bar):



Each of the categories corresponding to X is known as a bar projection of X. The value of recognizing intermediate categories in this way is widely agreed, but discussion continues about the number of categories which need to be recognized, and how far it is possible to generalize rules for the analysis of sentence structure.

Government-Binding Theory (GB, GBT)

Government and binding (GB, GBT) is a theory of syntax and a phrase structure grammar (as opposed to a dependency grammar in the

tradition of Transformational Grammar developed principally by Noam Chomsky in the 1980s. This theory is a radical revision of earlier theories and was later revised in minimalist program and several subsequent papers, the latest being three factors in language design (2005, 456).

The name refers to two central sub theories of the theory; government which is an abstract syntactic relation applicable, among other things, to the assignment of case; and binding, which deals with the relationship between

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pronouns and the referential elements with which they are co-referential. GB was the first theory to be based on principles and parameters model of language, which also underlines the development of the minimalist program.

Binding is used, along with particular binding principles, to explain the ungrammaticality of statements. The applicable rules are called binding principles A, principle B and principle C.

Principle A: An anaphora (reflexive or reciprocal, such as 'each other') must be bound in its governing category (roughly, the clause). Since 'himself' is not c-commanded by 'John' in sentence (3), principle A is violated.

Principle B: a pronoun must be free (that is, not bound) within a defining category (roughly, the clause). In sentence (1) *him* is bound by *John*, violating principle B.

Principle C: an R-expression must be free (that is not bound). R-expression (for example, 'the dog or 'John') are referential expression: unlike

pronouns and anaphora, the independently refer, that is, pick out entities in the world.

In sentence (4), the first instance of 'John' binds the second, violating principle C.

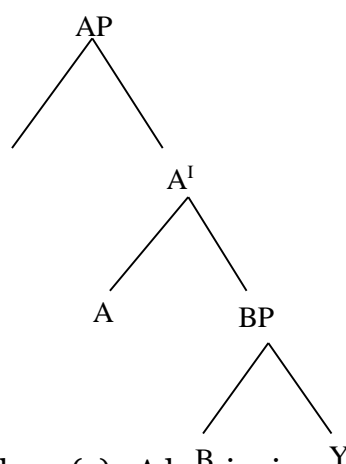
Note that: principles A and B refer to 'governing categories' domains which limit the scope of binding.

Government is defined as follows; A governs B if

- A is a governor and
- A commands B and
- No barrier intervenes between A and B

Governors are heads of the lexical categories (N, V, A, P) and tensed I (T). A commands B, if A does not dominate B, and B does not dominate A and the first maximal projection of A dominates B, where the maximal projection of a head X is XP. This means that for example in a structure like the following, A commands B, but B does not command A

Fig.4



In addition, barrier is defined as follows (a); A barrier is any node Z such that:

- Z is a potential governor for B and
- Z commands B and
- Z does not command A.

The government relation makes case assignment unambiguous. The tree diagram below illustrate how NPS are governed and assigned case by their governing heads:

fig.5

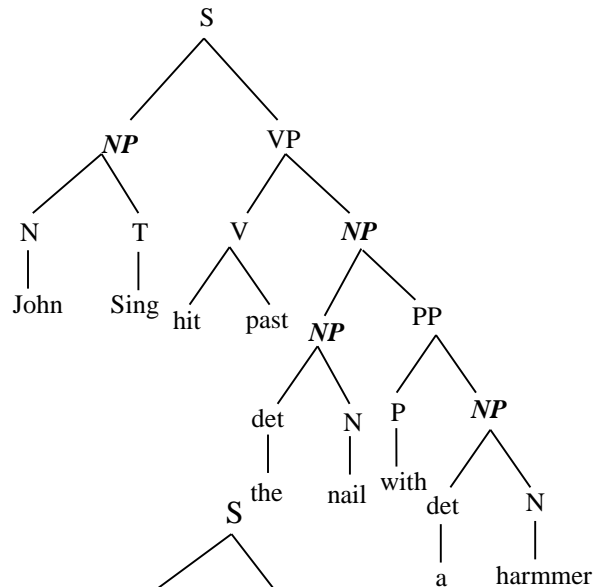
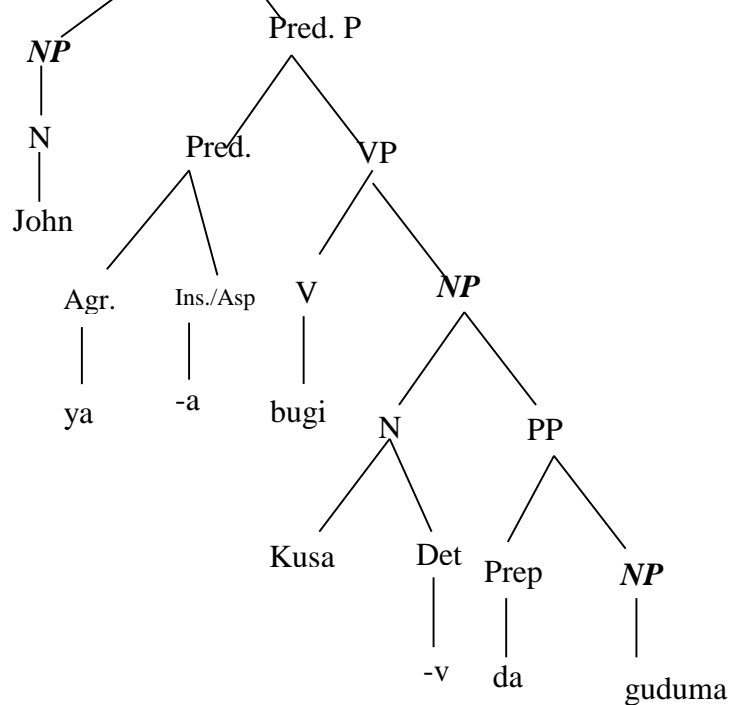


Fig.6

Hausa



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Another important application of the government relations constrains the occurrence and identity of traces as the empty category principle requires them to be properly governed.

Binding

Binding can be defined as follows:

An element α binds an element β if and only if α c-commands β , and α and β co-refer. Binding is syntactic relation by which one constituent binds another sentential constituent if certain conditions such as c-command and indexation are met. More formally binding can be defined as in (1):

(1) α (alfa) binds β (beta) if α c-commands and is coindexed with .

Consider the example in

John loves himself.

In the above sentence *John* binds *himself* because *John* c-commands and is coindexed (i.e.

it is co-referential) with *himself*. There are two types of binding: A-binding and A-bar binding. A-binding is a relation in which the antecedent is in an A-position (Argument position), A-bar binding is a relation in which the antecedent is in an A-bar position (non-Argument position). Non-Argument position is the position occupied by operators such as what or who in wh-questions, such as who in

Who does John love?

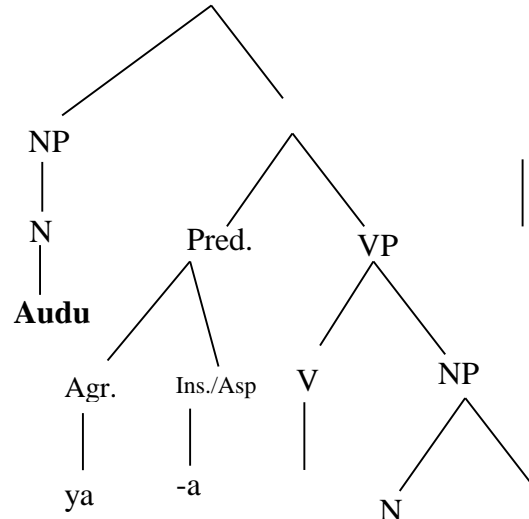
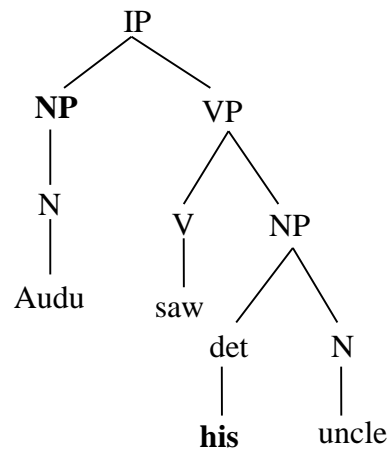
In the above *who* binds the trace which represents a variable in the position that occupied who before the question was formed: John loves who?

Consider the sentences:

Audu saw his uncle

John saw his mother

fig 7



Gloss: *Audu he saw uncle his*. In the Hausa version of the sentence, the preverbal pronoun *ya* is bound by *Audu* not the IP. And the pronoun *shi* is also bound to *Audu* in a rather different syntactic environment. This is quite different from the English version where in which only exists in the deep structure.

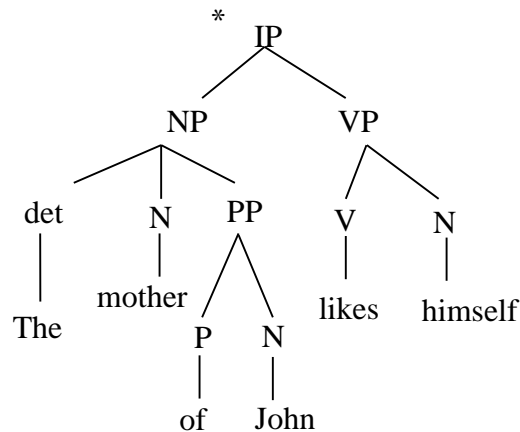
The NP “john” c-commands 'his' because the first parent of the NP, S, contains 'his' and co-referential (they refer to the same person.), therefore 'john' binds 'his'.

On the other hand, in the ungrammatical sentence 'the mother of John likes himself, so

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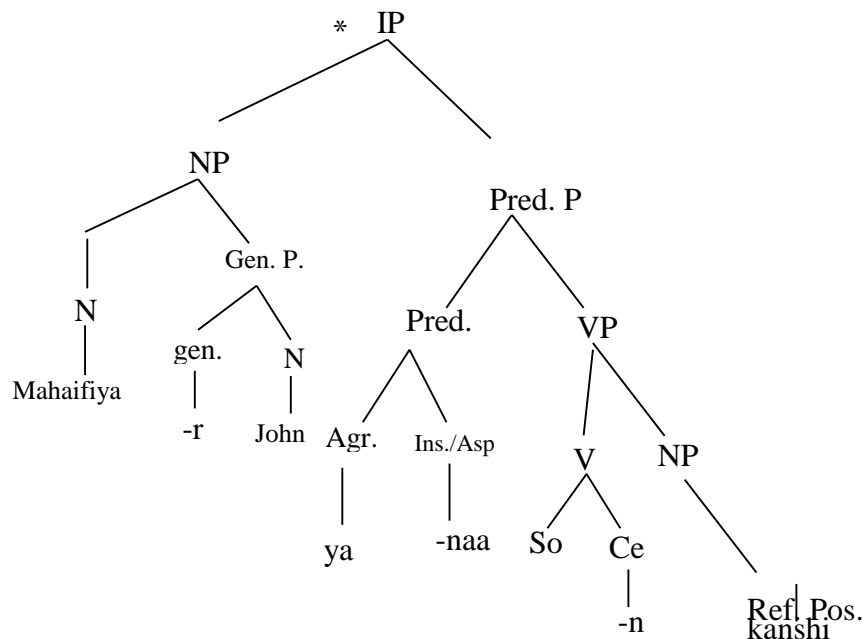
they have binding relationship despite the fact that they do not co-refer.

fig.8



Gloss: *Mother of John he is loving himself

Fig.9



\The above Hausa sentence is ungrammatical as the English equivalent because of the misuse pronoun *himself* (*kansh* in Hausa) in the

governing domain. The importance of binding is shown in the grammaticality of the following sentences:

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English

Hausa

Gloss: Hausa equivalent

- | | |
|----------------------------|---------|
| 1. John saw him. | John |
| gan shi. John ya gan shi | |
| 2. John saw himself. | John ga |
| kan shi John ya ga kan shi | |
| 3. *Himself saw John | Kanshi |
| ga John *Kanshi ya ga John | |
| 4. John saw John. | John |
| ga John John ya ga John. | |

In the above examples, *Himself* renders the third sentence in both English and Hausa ungrammatical because it occupies a wrong syntactic domain as such government and bonding cannot be accounted for. In sentence 4, the second John can be free it refers to a different John from the subject of the sentence. Here we can see the similarity between English and Hausa sentences in terms of government and binding relations.

Conclusion

In conclusion, this paper attempts to describe one of a modular theories in Transformational Generative Grammar. The paper explores some of the developments in Transformational generative Grammar propounded by Chomsky and his associates. Some English sentences and the equivalents in Hausa were analysed to compare the syntactic pattern of elements in both languages. From the analysis, the paper confirms that the goal of Government and Binding (GB) Theory is to move toward a modular model of syntax and toward a program of comparative syntax and Universal Grammar (UG).

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