Empty categories in Gokana syntax: A government-binding analysis

Baridisi Hope Isaac
Department of Linguistics
& Communication Studies
University of Port Harcourt, Nigeria
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Abstract

Empty categories in language structure seem to reflect inner resources of the human mind and provide a source for determining properties of syntactic and semantic representations and the rules that form them. This paper investigated the types of empty categories that occur in Gokana and analyzed their syntactic distribution within the framework of Government – Binding Theory. The study found that three major types of empty categories are attested in Gokana: NP – trace, WH – trace and PRO, the understood subject of an infinitive clause. The study found only a vestige of the null subject pro. And interestingly claimed that this may perhaps be a pointer to the fact that proto – Gokana was a pro – drop language given a diachronic analysis. The paper argued that NP – trace and WH – trace are created through movement at S– structure but PRO as an empty category is base generated in the D – structure and remains in – situ. PRO cannot be assigned case since it precedes a [- Tense] INFL ; and a lexical NP and PRO are in complementary distribution in Gokana syntax. The study found that Gokana WH – trace is motivated by pragmatic considerations of focus and noted that there can be no WH – fronting in Gokana without focus marking. The paper recommended that the two – valued syntactic primitives motivated for overt NPs should also apply to categorize the different types of empty categories in Gokana.

Keywords: Gokana, Empty Categories, Traces, Subjacency Principle, Complamentizer.

Introduction

The study provides a principled account of the types of empty categories attested in Gokana clause structure and their syntactic distribution within the framework of Government-Binding theory. Gokana is spoken in Gokana Local Government Area of Rivers State, Nigeria by approximately 200,000 people. It is closely related to Baan, Eleme, Tee and Kana. These languages form a genetic unity and are classified as Delta – Cross of Cross River within the Bantoid – Cross of the East Benue – Congo branch of Benue – Congo[1].

This paper investigated the types of empty categories that occur in Gokana and analyzed their syntactic distribution in the clause structure of the language within the framework of Government-Binding Theory.

The Phenomenon of Empty Categories

According to Chomsky:

> *The question of the nature of empty categories is a particularly interesting one for a number of reasons. In the first place, the study of such elements, along with the related investigation of anaphors and pronouns, has proven to be an excellent probe for determining properties of syntactic and semantic representations and the rules that form them. But apart from this, there is an intrinsic fascination in the study of properties of empty elements.*
> *These properties can hardly be determined inductively from observed overt phenomena, and therefore presumably reflect inner resources of the mind. If our goal is to discover the nature of the human language faculty, abstracting from the effects of experience, then these elements offer particularly valuable insights[2].*

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[1]Williamson, Kay and R. Blench. Niger Congo. In:Bernd Heine and Derek Nurse (eds.), African Languages: an introduction. (2000),33.
[2]Chomsky, Noam.Lectures on Government and Binding. Dordrecht: Foris Publications.1981,55.

Koopman (1983), sells (1985), Horrocks (1987) and Radford (1981) *argued that the two – valued features of [± anaphoric] and [± pronominal] motivated for overt NPs should also apply to categorize the different types of empty categories.* Ndimele and Riemsdijk and Williams *claimed that the WH – trace , NP – trace and pro as empty categories have the same distributional regularities as their overt referential Expression, anaphor and pronominal respectively while PRO has a distinct characterization[3].*

An empty category is used in grammatical description to refer to an element introduced into a structure to ensure its grammaticality. In generative grammar, empty elements are displayed in phrase markers … Empty categories include pro, PRO and trace[4]. In Government – Binding Theory, there is a consensus of opinion that empty categories can be base-generated or created through permutation. A distinction is also made between a variable trace and a non-variable trace.

Chomsky[5]distinguishes between trace and PRO as empty categories on the basis that trace is governed, the antecedent of trace is not in a theta position and the antecedent – trace relation satisfies the subjacency condition while PRO lacks all these properties. Basically, PRO is ungoverned; its antecedent (if there is one) has an independent theta – role, as does PRO; the antecedent – PRO relation (where PRO has an antecedent) need not satisfy subjacency condition. And PRO need not have an antecedent while trace always has an antecedent.

Empty Categories in Gokana

Two types of empty categories are attested in Gokana clause structure: Trace and PRO
According to Crystal:

> *Trace is a term introduced into transformational*
> *Generative Grammar of the mid 1970's to refer to*

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[3]Ndimele, O-M. The Parameters of Universal Grammar: A Government-Binding approach. Owerri: African Educational Services.1992,44.
[4]Crystal, David. A dictionary of linguistics and phonetics, 4th Edition updated and enlarged. Oxford: Basil Blackwell.1997,135.
[5]Chomsky, Noam. Lectures on Government and Binding. Dordrecht: Foris Publications.1981,56

> *a formal means of marking the place a constituent once held in a derivation before it was moved to another position by a transformational operation. The position from which the constituent was moved is known as a trace, which is said to be bound by the constituent. The moved constituent and the empty node it leaves behind are co – indexed[6]*

Chomsky *asserts that trace is governed and has two sub – types: NP trace and WH-trace. The antecedent of trace may occur in a theta position which generates an NP trace or a theta-bar position which generates a WH-trace.*

On the other hand, Ndimele claims that PRO has a life of its own. It is not created by a permutation rule. PRO also subsumes into two types: PRO as subject of the infinitive clause and <u>pro</u> as a null subject recovered from the verbal morphology in pro-drop languages.
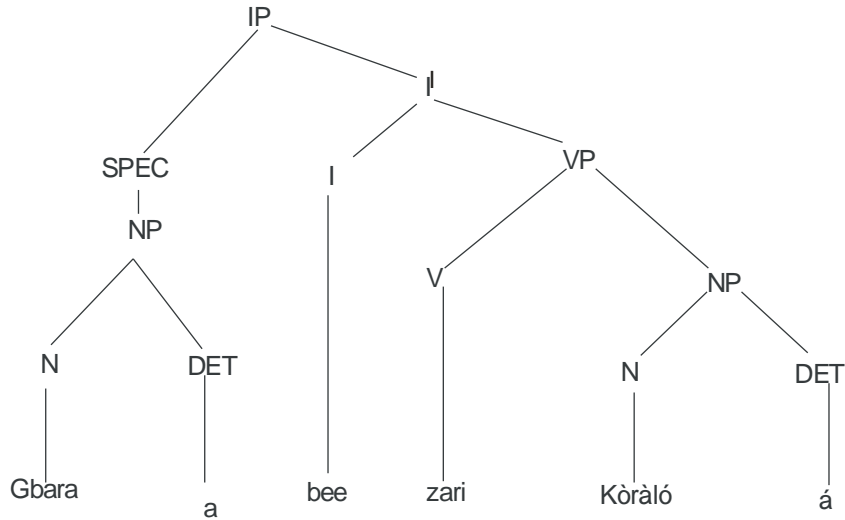
In what follows, we examine and analyze the syntactic features of the different trace and PRO within Gokana clause structure.

NP-Trace in Gokana Clause Structure

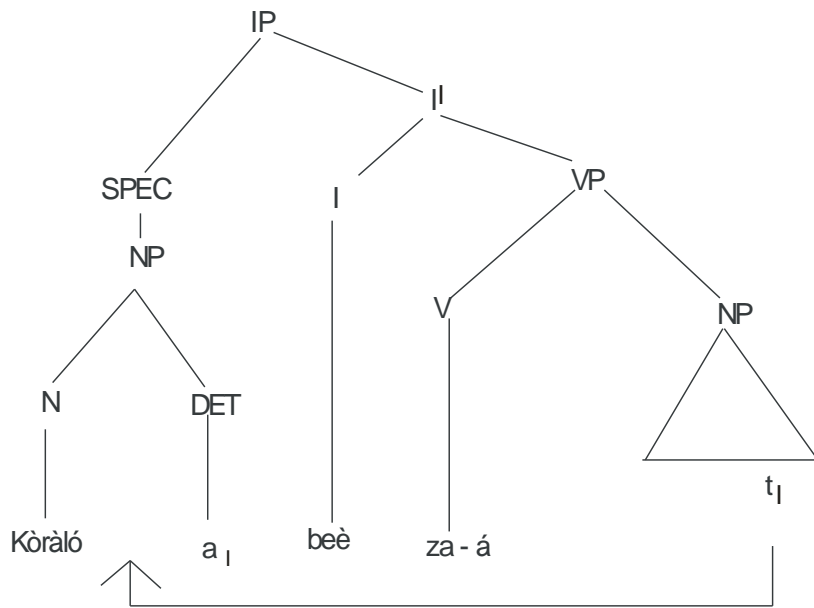An NP trace is a non-variable trace whose operator is found in an A-position. Let us consider passive structures and NP movement in the analysis of Gokana NP-trace. Consider the following data:

a) Gbara   a   beè   zarí   kòràló á

man   the   PST buy   shirt   the

'The man bought the shirt'
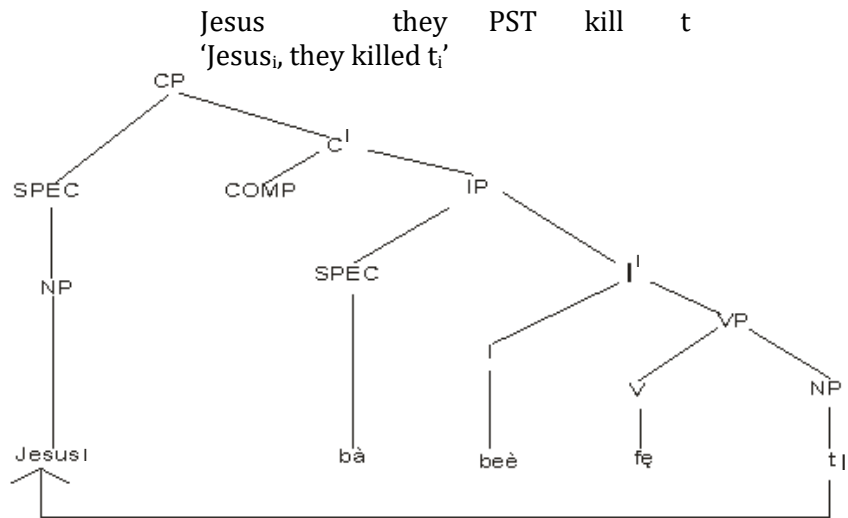
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[6]Crystal, David. A Dictionary of Linguistics and Phonetics, 4th Edition updated and enlarged.1997,135
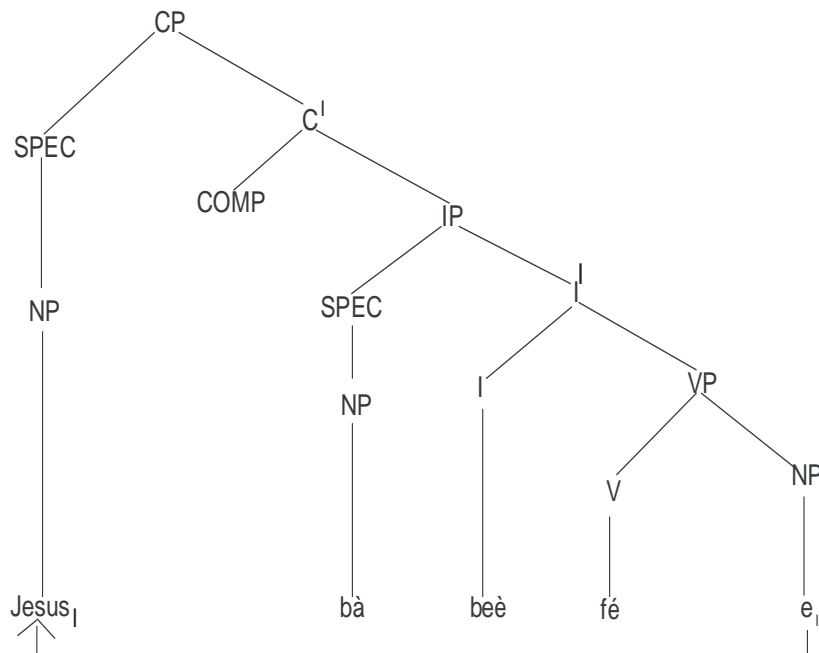
b) Kòràló   ái   beè   za - á   ti
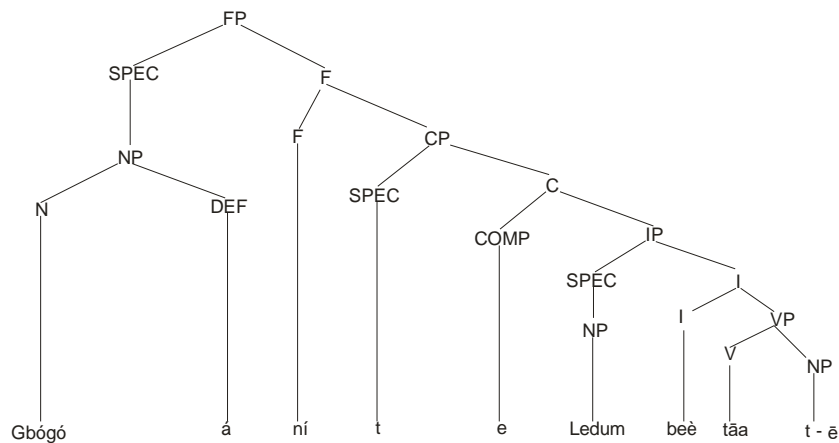   Shirt   the   PST   buy   suff   trace
   'the shirt was bought'

Observe that (1a) is a basic sentence (IP) to which no
grammatical operation has applied. But in (1b), the subject Gbara

a 'the man' in SPEC I[1] position is deleted and the object noun phrase kòràló á' the shirt' moves into the empty SPEC I[1] position of the minimal IP and leaves behind a covert trace at its source position. The trace is co-indexed with the moved constituent in order to show the history of derivation. The moved constituent kòràló á 'the shirt' inherits the case and theta role assigned by the verb to the source position. This explains why kòràló á 'the shirt' although occupying a subject postion still retains the accusative case and has a 'patient' interpretation in (1b).

Thus, the moved constituent kòràló á 'the shirt' is the antecedent and it constituent commands (henceforth c-command) the empty trace as shown in the tree diagram in (1b). Also observe that the moved constituent and the trace share the same minimal clause (i.e. the IP). And the antecedent of the trace occurs in an A-position which accounts for the NP-trace as a non-variable trace. Also observe that the extraction site where the moved object NP constituentkòràló á 'the shirt' vacates is not bridgeable as no other NP constituent can occupy the extraction site because of the presence of the covert trace of the moved constituent. This accounts for the ungrammaticality of (2):

2) *	kòràló á á		beè	za	á		fàa
	shirt		the	PST	buy	int-stuff	
		car	the				

The NP-trace and an overt NP are not in mutually exclusive distribution. So the trace of the moved constituent is still present at the source position and the new NP constituent fàaá 'the car' crashes.

In Gokana, NP-trace can also have an operator (antecedent) across a minimal IP. We draw our data from topicalization, left-disclocation and focus structures, as exemplified in the data in (3-4):

3a)	bá	beè	fé	Jesus
	they	PST	kill	Jesus
	'They killed Jesus'			
b)	Jesus$_i$	bà	beè	fę	t$_i$
	(Topicalization)				

Jesus   they   PST   kill   t

'Jesus$_i$, they killed t$_i$'

c)   Jesus$_i$ bà   beè   fé   ẹ$_i$

Jesus   they   PST   kill   t

'Jesus$_i$, they killed him$_i$

4a)   Ledum beè   tāa   gbógó á
        PN   PST   shoot   dog   the
        'Ledum shot the dog'

b)   Gbógóá$_i$ nít$_i$e   Ledum beè   tāa   t$_i$– ē
        Dog   the   FOC   RCM PN   PST
shoot   t   EM
        'It was the dog that ledum shot'

Observe that the structure in (3a) is a basic IP. Topicalization applies to (3a) to generate the construction in (3b). The object NP constituent of (3b) 'Jesus' moves into SPEC C' position across a minimal IP barrier node in order to acquire prominence as the topicalized constituent. The moved constituent leaves behind a covert NP-trace that is coindexed with it.

A similar grammatical operation holds in (3c) except that an overt trace ẹ 'a resumptive pronoun' is left behind in the extraction site where the NP constituent 'Jesus' had vacated into SPEC C' position. The overt trace is also coindexed with the moved constituent 'Jesus' that functions as its referent.

Thus, the difference between topicalization and left-dislocation is in the content of the extraction site. While topicalization leaves a null trace, left-dislocation leaves in its source position a resumptive pronoun, an overt NP-trace that is coindexed with the moved constituent.

The movements in (3b) and (3c) are both unbounded as they occur across a bounding node which is the minimal IP as is clearly captured in the tree diagrams in (3b-c). But the moved constituent still retains the case and theta-role assigned by the verb to the source position through the trace in the source position as the NP-trace and the moved constituent share the same grammatical features.

Also observe that (4b) is derived from the minimal IP in (4a). The object noun phrase gbógó á 'the dog' in (4a) is moved into SPEC F' position in (4b) in order to acquire focus as the most prominent constituent in the construction. But movement is in smaller hops in accordance with the subjacency principle. The object NP constituent gbógó á 'the dog' moved from the source position in the VP of the minimal IP across the IP barrier node into SPEC C' where it leaves a covert trace before moving into SPEC F' position of the focus clause.

A movement chain that transmits grammatical properties between an antecedent and its trace is established between the source position of the moved object NP constituent gbógó á 'the dog' and the landing site. The movement comprises a tail(trace at source position), a link (trace in SPEC C' position) and a head (the moved object constituent gbógó á 'the dog') in SPEC F' position of the focus construction.

Wh-Trace in Gokana Clause Structure

In Gokana syntax, the Wh-trace is generated by wh-movement which is an unbounded (A-bar)movement. Chomsky recognizes two types of WH-movement: syntactic WH-movement(English) and LF WH-movement (Chinese and Japanese) or both (French)[7].

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[7]Chomsky, N. Barriers. Linguistic Inquiry, Monograph 13.1986[b]

From our analysis, Gokana clause structure is generated by syntactic WH-movement as is evident from the data in (5):

5a) O beèkot$_i$koòJohn beèzigàt$_i$koò o beèmon meeé ?
youPSTsayRCM PN PST believe RCMyou PSTsee who Em
        'You said that John believed that you saw who'
b) mée$_i$nío beèkot$_i$koò John beèzigàt$_i$koòo beèmont$_i$ ē
   who FOC you PSTsay RCMPN PST believe RCM you PST see
Em
'who did you say that John believed that you saw'

The construction in (5a) is the base structure from which (5b) is derived. Observe that in (5a), the WH-constituent mee 'who' originates as the object of the verb of the most internal IP but the same constituent is fronted in (5b) as the initial constituent of the construction; while a covert WH-trace is left in the source position of the moved item. The trace is co-indexed with the moved WH-constituent mee 'who'.

Any analysis that treats the fronted mee 'who' in (5b) as a single fell swoop movement from source position across three bounding nodes (minimal IPs) at a time would violate the subjacency principle which stipulates that unbounded movements should be successively cyclic i.e. in smaller hops through several SPEC C' nodes.

We should therefore posit that the fronted Wh-constituent mee 'who' in (5b) moved from its source position in smaller hops across one bounding node (IP) at a time; through successive SPEC C' nodes until it got to its landing site in the maximal projection.

Each instance of movement leaves behind a trace at each SPEC C' node as a history of derivation (see the traces in (5b)). The traces inherits the grammatical features assigned by the verb of the most internal IP to the source position . The inherited grammatical features are shared between the traces in the movement chain and the fronted WH- constituent mee 'who' in (5b).

We can clearly show the WH-traces in the Gokana clause-structure and the history of movement by reproducing the derived construction in (5b) on a tree-diagram as (6):

6)   mee$_i$ní o   beèkot$_i$koòJohn beèzigat$_i$koo o
        who FOC you PST say t RCM PN   PST
believe t RCM you   beèmont$_i$– ē
     PST see t EM
'who did you say that John believed that you saw'
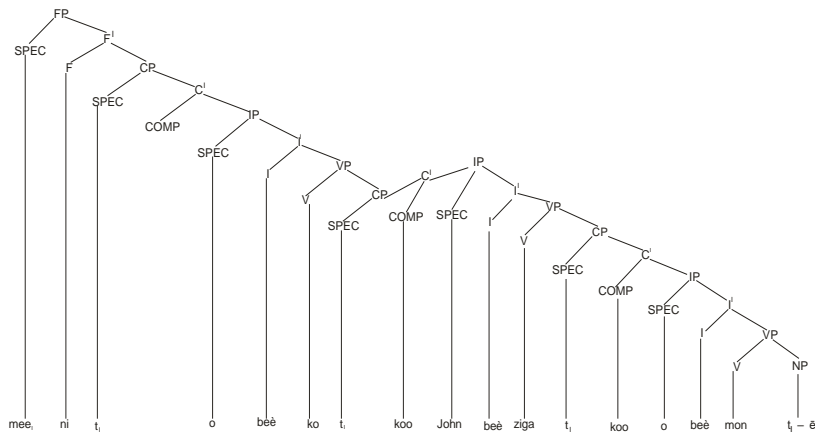
Observe that the overall projection of the fronted WH-phrase <u>mee</u> 'who' in (6) in a focus projection. It appears that in Gokana, WH-fronting in motivated by considerations of focus science the moved WH-constituent in addition to forming a question becomes emphatic in the fronted position.

PRO in Gokana Clause Structure
PRO as an empty category is the understood subject of the Gokana infinitive clause. Ndimele argues that "control theory entails a relationship of referential dependence between PRO and another constituent, whereby the features of the constituent determine those of the understood subject. The overt constituent is referred to as the controller, while the unexpressed subject is the controlee"[8].

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[8]Ndimele, O-M. The Parameters of Universal Grammar: A Government-Binding Approach.(1992),34

Functional and anaphoric control are distinguished within control theory. The former specifies the grammatical features of the controller and the controllee to be identical while the latter requires an identity of reference between the controller and the controllee. Thus, functional control is syntactic, while anaphoric control is semantic.

Syntactic control is attested in Gokana, as any construction involving PRO requires a relation between two theta-positions, one of them, an empty category. Let us consider the data in (7)

> 7) Ledum$_i$ beè gbí e$_i$ gè mòn a
> va
> PN PST want ec im see
> his wife
> 'Ledum wanted to see his wife'

Observe that in (7), <u>Ledum</u> is the subject of both the superordinate clause and the infinitive clause given the coreference between <u>Ledum</u> and the empty category . We argue here that the syntactic relation between <u>Ledum</u> and PRO, the empty gap position which is subject of the infinitive cannot be through movement since such an analysis would violate the theta-critertion. <u>Ledum</u> did not originate in the empty position (PRO) in the infinitive clause. The INFL <u>ge</u> in the vicinity of PRO is not a [+tense] INFL and so can not assign case or theta-role to the position occupied by the PRO.

The empty category PRO is base generated in the D-structure and is not created by movement. It simply gets its interpretation from <u>Ledum</u> (the subject of the matrix clause) through coreference (co-indexation). <u>Ledum</u> and PRO are assigned different theta-roles since they occupy different theta-positions: <u>Ledum</u> is in a theta-marked position while PRO is in a theta-bar position. Thus, PRO is not a trace since there is no evidence in our analysis that it is created by a permutation rule.

It appears that in Gokana clause structure, a lexical NPcan not be replaced with PRO in the same syntactic environment. Let us consider the data in (8):

8a)   Ledum$_i$ beè   zìgà   [PRO$_i$ ge   mòn   a   vígà]

PN   PST   agree   PRO   im   see   his   brother

'Ledum agreed to see his brother'

 b) *   Ledum beè   zìgà   [Penu ge   mon   a   vígà]

PN   PST   agree   PN   im   see   his   brother

Observe that whereas (8a) is grammatical with PRO as the subject of the infinitve clause whose referent Ledum is in the SPEC I^I position of the matrix IP. (8b) is uninterpretable and semantically deviant because Penu, a lexical NP, occurs in the syntactic position designated for only PRO. Sincea   lexical NP cannot occur in the SPEC I^i position of the infinitive clause;   a lexical NP and PRO are therefore in complementary distribution in Gokana syntax.

Null Subject pro as Empty Category

The empty category, null subject pro is a syntactic feature that permits a minimal IP to which no grammatical operation has applied to have a 'missing' subject in its structure. But the missing subject is recovered through a rich verbal morphology as the verb is able to show person/number inflection which renders the subject pronoun redundant. Riemsdijk and Williams[9] asserts that languages that display this tendency are commonly referred to in the linguistic literature as pro-drop languages and noted Spanish and Italian as classic examples.

In our analysis, we are unable to find Gokana data showing a full extant characterization of the pro-drop phenomenon. But we , however , argue that the single grammaticalized person/number marker found in Gokana verbal morphology is a vestige (remnant) of the pro-drop phenomenon in Gokana. Consider this data:

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[9]Riemsdijk, H.V. and E. Williams. Introduction to the Theory of Grammar.(1986),299.

9a) a   beè   ko ,   é   beè   dú   be
     he   PST   say   we   PST   come
home
     'he said, we should come home'

9b) a   beè   ko ,   o   beè   du –   i
  be
     he   PST   say   you   PST   come   you
      home
     'he said, they should come home'

9c) a   beè   ko ,   bà   beè   du   be
     he   PST   say   they   PST   come
home
     'he said, they should come home'

Whereas the subject specification will be 'missing' and the constructions become under specified and ungrammatical if we delete the subject pronouns from the reported constructions in (9a) and (9c) as shown in (10) and (11):

10) * a   beè   ko , - beè   du   be
       he   PST   say   Ø PST   come   home

11) * a   beè   ko ,   -   beè   du   be
       he   PST   say   Ø   PST   come
home

The reported construction in (9b) will still retain its grammaticality and subject specificity even with the the 'missing' pronoun subject since the subject is recovered as a verbal affix within the verbal morphology of the language as seen in (12):

12)   a   beè   ko , - beè   du –   i   be
      he   PST   say   Ø   PST   come
      you home
      'he said you should come home'

Perhaps diachronic analysis could show that proto-Gokana was a pro-drop language and the person marker –i in the verbal morphology of the language is only a remnant that points to the existence of an earlier pro-drop system in Gokana. Maybe a full

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pro-drop system is reconstructable in a detailed diachronic study of this phenomenon in Gokana.

Apart from this line of thought, it seems there is no grammatical as well as pragmatic justification why a person suffix should be found on the verb in Gokana. And this occurrence must be accounted for. Moreover, that the marker is a grammaticalized phenomenon makes our argument even compellingly plausible.

Syntactic Primes and Empty Categories

Drawing on the findings in our analysis of empty categories in Gokana, the same two-valued syntactic primitives motivated for overt NPs in the language can also apply to empty categories. It is evident from the study that the non-variable NP-trace can be classified as [+Anaphor, -Pronominal], while the variable WH-trace can be classified as [-Anaphor, -Pronominal] and PRO which is not generated by permutation rule but has a life of its own should be classified as [+Anaphor, +Pronominal].

Conclusion and Recommendations

In this paper, we have analyzed empty categories in Gokana. We found three major types of empty categories in the language: NP-trace, WH-trace and PRO, the understood subject of the infinitive clause. Intrestingly, we found only one suffix –i '2ndperson marker' as a remnant of the pro-drop system in Gokana. We claimed that the empty categories that occur in the language can be subsumed into two broad categories trace and PRO. We argued that the traces are created through movement at S-structure but PRO is base generated in the D-structure and has a life of its own.

The paper showed that a [-Tense] INFL is not a case assigner and this explains why PRO is not assigned any case but is understood in the context of its referent. The paper claimed that no substantive NP can substitute PRO in the same syntactic environment. Thus a lexical NP and PRO are in complementary distribution in Gokana syntax.

We observed that WH-trace is generated by thematic considerations of focus as there can be no WH-fronting in Gokana

without focus marking. We argued that WH-movement must be successively cyclic in order not to violate subjacency principle. We noted that an IP constitutes a bounding node, therefore no instance of WH-fronting can be in one fell swoop rather movement must be through successive SPEC C^inodes until the moved constituent gets to the final SPEC C^i position of the maximal projection.The paper showed bounded and unbounded movement and the history of derivation of empty categories in Gokana drawing on structures from passivization, topicalization, left-dislocation and focus constructions.

 The paper recommended that categorization of the different types of empty categories attested in Gokana should also utilize the two-valued syntactic primitive motivated for overt NPs.

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