

The Structure of the Kikuyu Determiner Phrase Focusing on Modifiers: An X-Bar Theory Perspective

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ABSTRACT

This research article investigates the structure of the Kikuyu Determiner Phrase (DP) from an X-bar theory perspective, with a focus on the modifiers of the DP. Kikuyu is a Bantu language spoken by approximately 6.6 million people in Kenya, with a highly agglutinative S-V-O structure. However, limited studies have been conducted on the structure of the Kikuyu DP, which makes this study significant in providing valuable information for researchers and speakers of the language. The study aims to determine the structure of the Kikuyu DP by analyzing the Kikuyu determiners or modifiers of the noun. In the context of constituent structures, the X-bar theory is employed to depict the varied positions of modifiers within the Determiner Phrase (DP), as evidenced by the phrase structure trees. The research utilizes a descriptive-qualitative method of data analysis, with data collected from resourceful informants and selected Kikuyu texts. The self-introspection method is used, as the researcher is a native speaker of the Kikuyu language. The findings of the study reveal that Kikuyu determiners can be both pre-nominal and post-nominal, with some having the ability to be pre-posed and post-posed like demonstratives. This study contributes to the understanding of the Kikuyu language structure and provides insights for future research.

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1. Introduction

Phrases are crucial in learning a language. The majority of Kikuyu speakers are predominantly situated in the region encompassing Nairobi, Nyeri, and Murang'a. The noun phrase may stand alone or may be embedded in the determiner phrase in the Kikuyu language. A speaker's choice of dialect or variation often depends on their background, geographic location, and cultural affiliations (Wahome & Subiyanto, 2023). The Kikuyu determiner phrase has agreement markers, prefixes, and the Kikuyu grammarians appreciate the existence of prefixes in noun phrases which mark the noun class membership except for some exceptional nouns like *cukari* 'sugar', *tata* (sg.) 'aunt', *tata* (pl.) 'aunts', *bati* (sg.) 'parties', *bati* (pl.) 'parties' (Englebretson and Wa-Ngatho, 2015). Kikuyu grammarians have provided comprehensive insights into the Determiner phrase (DP). In their analyses, they explored the various functions of the DP within sentences, identifying its roles as a subject, object, or object of a preposition. Additionally, the grammarians delved into the diverse modifiers that can affect the DP, encompassing adjectives, relative clauses, and prepositional phrases, with specific attention given to modifiers unique to the Kikuyu language, such as possessives, demonstratives, and cardinal numbers. However, their discussions did not extensively cover the positional aspects of all determiners within sentence constructions. Therefore, this research paper will exclusively deal with the positions of the modifiers in sentences, and categorize them into those that are pre-posed and those that are post-posed.

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There are different types of phrases in languages: Determiner phrases, noun phrases, verb phrases, and inflectional phrases.

Englebretson and Wa-Ngatho (2015) present a comprehensive classification system for Kikuyu nouns, delineating 17 distinct classes, each distinguished by specific prefixes. For instance, Classes 1 and 2 utilize the *mũ-* and *a-* prefixes to signify singular and plural forms of person nouns, respectively. In Classes 3 and 4, the *mũ-* and *mĩ-* prefixes differentiate between the singular and plural manifestations of certain nouns. Natural entities in Classes 5 through 8 are identified by prefixes such as *rĩ-/i-*, *ma-*, *kĩ-/gĩ-*, and *ci-/i-*. Classes 9 and 10 introduce the *N-* prefix to indicate singular and plural forms of animal nouns in Kikuyu. Subsequent classes, spanning from 11 to 17, encapsulate various concepts, including animals, body parts, and spatial references, each denoted by a distinct prefix.

We utter phrases in our daily communication knowingly or unknowingly. Therefore, there is an urgent need for us to familiarize ourselves with different phrases and their structures. In this case, we are going to look at the modifiers in the Determiner phrase in the Kikuyu language which is spoken by the Kikuyu people in Mount Kenya. This study is justifiable because few linguists have studied the various modifiers in the Kikuyu Determiner phrase using the X-bar theory in a single research paper. As a result, this paper will create awareness among scholars and learners of the Kikuyu language at large. It is possible for a phrase to have a verb without its subject or the verb may be the subject of the same verb (Hurford, 2019). The simplest phrase structure occurs in communication, and its level of difficulty increases through daily writing. Academic writing poses the greatest complexity (Biber et al., 2003). Understanding and applying these rules accurately can be daunting for non-native speakers. Common issues include differentiating between verb tenses, using articles correctly, and forming complex sentences (Wahome and Suharno, 2023).

When we have expressions of morphology and syntax properties on various lexicons, then we have inflection (Alexiadou, 2022). An inflectional phrase reflects the inflectional properties. A noun phrase is a grammatical construction that has the noun as the head of the phrase; this means that the noun is the main constituent in that phrase. A verb phrase has the verb as the head or we may say that a verb phrase constitutes a verb, its modifiers or complements, and objects which syntactically function as a verb (Hanks, 1979). A determiner entails a functional name, not a formal category (Hopper, 1999). There must be an agreement between modifiers and the noun in the Kikuyu determiner phrase; therefore, it is agreeable to say that the Kikuyu determiner phrase can be inflected. The category that introduces the noun phrase is the determiner projection like what happens to the inflectional phrase which introduces the sentence. Therefore, this means that we have verb phrases and noun phrases that are incorporated into the sentence (Zamparelli, 2000). Abney (1987) contends that determiners head functional projections and select NP complements.

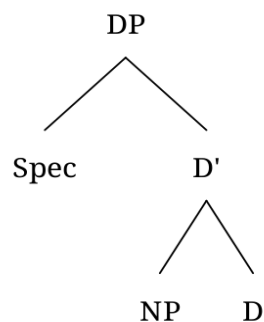


Figure 1: Abney's Determiner Phrase Structure

Source: Abney, 1987

Zamparelli's (2000) account gave rise to the determiner phrase with D- as the functional head enabling it to determine the noun phrase complement or be independent on its own. It can be illustrated as follows.

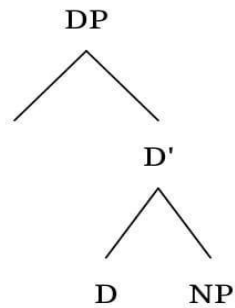


Figure 2: Zamparelli's Determiner Phrase Structure
Source: Zamparelli, 2000

One important concept in constituent structure analysis is the notion of phrase structure rules. These rules describe how constituents can be combined to form larger constituents. For example, in the English sentence "The cat sat on the mat", the phrase structure rule might be $S \rightarrow NP VP$, which means that a sentence (S) can be composed of a noun phrase (NP) followed by a verb phrase (VP).

Phrase structure rules can be combined to form a grammar, which is a set of rules that describes the structure of a language. Grammar can be used to generate all and only sentences that are well-formed in a language. The process of generating a sentence based on grammar is called parsing, and it can be done using either a top-down or a bottom-up approach. In the top-down approach, the parser starts with the highest-level constituent and works its way down to the individual words. In the bottom-up approach, the parser starts with the individual words and builds up to the highest-level constituent.

Another important concept in constituent structure analysis is the notion of syntactic ambiguity. Syntactic ambiguity arises when a sentence can be parsed in more than one way. For example, the sentence "I saw her duck" is ambiguous because it can be parsed as either "I saw the duck belonging to her" or "I saw her while she was ducking". Syntactic ambiguity can be resolved using various strategies, such as relying on context or using statistical models to determine the most likely parse. Statistical models employ algorithms to evaluate the likelihood of various syntactic structures in a given sentence. These models utilize machine learning methodologies and training data to discern patterns in language usage. By analyzing the frequency and co-occurrence of specific syntactic constructions in the training data, statistical models assign probabilities to parsing alternatives, facilitating the selection of the most probable interpretation for a given sentence.

It's worth noting that constituent structure analysis is just one aspect of syntax. Other aspects include the study of sentence meaning (semantics) and the study of how sentences are used in context (pragmatics). Together, these areas of study help us to better understand the complex system of language and how it is used to communicate meaning.

There are previous studies which are conducted on the study of determiner phrases. However, this research paper will deal with the structure of the Kikuyu determiner phrase focusing on modifiers that have been deemed necessary by the researcher due to limited studies on it in the Kikuyu language. The previous studies outlined below do not discuss the modifiers at length and their positions in the determiner phrase in the Kikuyu language. They do not also look at the forms of the determiner phrase and the constituent structures of the determiner phrase using the X-bar theory in the Kikuyu language in detail. Therefore, this research paper will explain and illustrate the different forms and constituent structures of the Kikuyu determiner phrase. Some of these previous studies are detailed below. One study conducted by (Wambui, 1997) investigated the Kikuyu determiner phrase by basing it on the principles and parameters of Chomsky and Lasnik (1991). This study also looks at the structure of the Kikuyu determiner phrase focusing on agreement markers using different theories like Binding theory, X-bar theory, Theta theory, and Government theory. However, this study does not provide exhaustive information about the constituent structures and the forms of the DP in Kikuyu.

Another study was conducted by (Obasi, 2011). This study examined the components and structures of the Determiner phrase in the Igbo Language. Its objective was to shed light on the Igbo Phrase Structures. It revealed that Indo-European Languages, English, and French had their determiners

pre-posed on the N-headword in the Determiner phrase. It also showed that neither genitives nor particularizers existed in these languages. Shifting focus to Ekugusii, Basweti (2014) re-analyzed the Ekegusii noun phrase as a determiner phrase (DP). The research investigates the symmetrical relationship between sentential agreement and internal concord in the Ekegusii DP, proposing that feature checking theory and full interpretation (FI) within the Minimalist Program offer an adequate analysis. The study, employing the Minimalist Program, establishes the NP's domain within the Ekegusii DP and explores the order of determiners, ultimately concluding that the Minimalist Program's principles are crucial for ensuring grammaticality and convergence in Ekegusii constructions. Another study in the realm of Dholuo, (Okuku et al., 2014) explored the syntactic analysis of the Determiner Phrase (DP) in Dholuo using 'move' and 'merge' operations within the Minimalist Program. The research scrutinized various DP elements, such as Adjective Phrases (AP), Quantifier Phrases (QP), Relative Clauses (R.cl), Prepositional Phrases (PP), Possessives (Poss), Demonstratives (Dem), and Quantifiers (Q), elucidating their positions and movements during derivation.

Consequently, Kanampiu (2019) conducted a study in the exploration of the Kĩtharaka Determiner phrase. It revealed the ordering of the modifiers in the Determiner phrase and analyzed the Kĩtharaka Determiner Phrase modification. This is achieved by looking at various elements that constitute the Determiner Phrase. In another context, Moller (2011) studied different elements that are part of the noun phrase, the way they agree with the head noun, and how they occur in the noun phrase. Another investigation was carried out by (Ng'ang'a, 2011). It presented the definition of inflectional morphology grammar for Swahili within the Grammatical Framework. Morphological constituents are implemented using the Functional Morphological Approach.

Transitioning to studies in English, (Junaid, 2018) investigated the learner's ability to come up with noun phrases in the English language and also explored the causes of inaccuracy in constructing English noun phrases. In another study, Kumbara Omar et al. (2022) conducted a study to investigate the types and structures of English noun phrases. To further the investigation, Lan et al. (2022) researched to investigate how the use of noun phrases is associated with L1 and L2 English Language backgrounds in academic writing. Noun Phrase complexity was operationalized to the 11 noun modifiers. Also, Insua and Guerra (2011) analyzed the English noun phrase, with a focus on key features such as structural status, determination, and characterization of its head from various theoretical perspectives. The discussion covered morphosyntactic, semantic, and cognitive aspects, as well as structural slots and word order possibilities. The topic was approached comprehensively from structural, syntactic, functional, and cognitive angles.

This study uses the X-bar theory (Chomsky et al, 1970) to explain the different structures in the noun phrase and determiner phrase in the Kikuyu language. It is prudent to note that the X-bar theory uses a single uniform schema called the X-bar schema. This means that every phrase is an XP which is the maximal projection. In the X-bar theory, the head level refers to the bottom level. However, the top is called the phrase level and the mid position is called the bar level hence the term X-bar. Complements and specifiers are enclosed in brackets to show that they are optional. X-bar theory (Noam et al, 1970), XP is the maximal projection that can be a determiner phrase or a noun phrase in this case. It branches to X' which is the head or the intermediate projection which is later split into the minimal projection X.

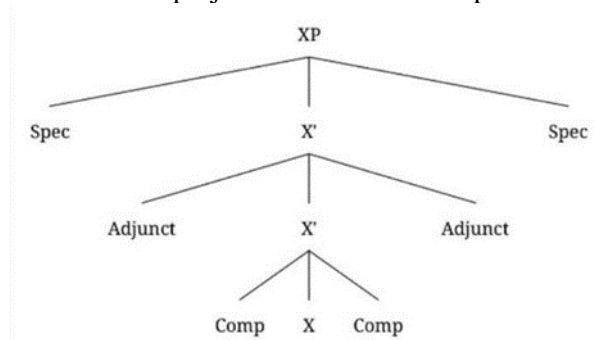


Figure 3: Diagrammatic Representation of X-bar Theory

Source: Chomsky 1993:6

Moreover, the X-bar theory, developed by Chomsky (1970), is a linguistic framework used to analyze the structure of phrases in natural language. This theory posits that every phrase in a language has a hierarchical structure that can be represented by a tree diagram. The X-bar theory assumes that there is a universal underlying structure for all phrases, which can be represented by a single schema.

In the X-bar theory, every phrase is an XP, which is the maximal projection. XP can be a determiner phrase or a noun phrase. The head level, which refers to the bottom level of the tree, contains the main lexical item of the phrase. In a noun phrase, the head is usually a noun, while in a determiner phrase, the head is a determiner.

The phrase level, which refers to the top level of the tree, contains the entire phrase itself, while the bar level, which refers to the intermediate level, contains the functional elements of the phrase, such as prepositions and conjunctions. Complements and specifiers are enclosed in brackets, indicating that they are optional.

The X-bar theory explains the different structures in the noun phrase and determiner phrase in the Kikuyu language by breaking down each phrase into its constituent parts. Each phrase is analyzed as a hierarchical structure, with the XP as the maximal projection, branching into X', which is the head or intermediate projection. X' is then split into the minimal projection, X, which contains the head and any complements or specifiers.

This research investigation is centered on the composition of the Kikuyu determiner phrase, with a specific focus on modifiers that have undergone limited examination in the context of the Kikuyu language. The aforementioned prior inquiries have not extensively scrutinized the positions of modifiers within the determiner phrase, nor have they presented exhaustive analyses of the forms and constituent structures of the Kikuyu determiner phrase through the lens of the X-bar theory. Consequently, the objective of this paper is to elucidate and exemplify the diverse forms and constituent structures inherent in the Kikuyu determiner phrase. This scholarly inquiry seeks to address the subsequent questions:

- (1) What are the forms of the Kikuyu determiner phrase?
- (2) What are the constituent structures of the Kikuyu determiner phrase?
- (3) Are Kikuyu modifiers pre-posed, post-posed, or both?

2. Methods

The research method used in this study is a qualitative and descriptive approach. This approach is suitable for exploring and understanding complex phenomena, such as language acquisition and use, in-depth. The data for this study were collected from linguistics experts working at different universities and colleges in Kenya who were native Kikuyu speakers. The researchers selected these informants purposively based on their language competency, age, gender, and academic portfolio. The informants were picked based on the parameters: (a) All the informants could articulate themselves skilfully and exude prowess in the mastery of the Kikuyu language and its syntax, (b) The resourceful people were native Kikuyu speakers (3 males and 3 females) who were esteemed speakers of the Kikuyu language and held positions in institutions of higher learning in the departments of Linguistics and Literature and some were Kikuyu language consultants, (c) The informants were 40 years old or more as language learning is a continual process, and (d) Language competency and ability to tactfully respond to questions asked by the researcher. The data sources for this study were two selected texts from the Kikuyu language: (a) *A Basic Sketch Grammar of Gikũyũ* (Englebretson & Wa-Ngatho, 2015), and (b) *Modern Gikuyu Dictionary: Gikuyu-English, and English-Gikuyu* (Kasahorow, 2014). These texts provided a rich source of data for the study.

The data collection techniques involved the use of questionnaires and interviews. The researcher evaluated the language competency and ability of the informants based on how well they filled out the questionnaires or responded to interview questions. The data collection technique also involved the self-introspection method, where the researcher who speaks the language engaged some people in interviews while taking notes. The data were classified based on the forms of the determiner phrase and the constituent structures of the determiner phrase. The researcher explained the noun phrases, verb phrases, and inflectional phrases in the Kikuyu language in the constituent structures. The data analysis technique used in this study was an analytical descriptive technique. This technique involved the identification, explanation, description, and evaluation of the research problems in question. The

researcher recorded the information obtained from the informants regularly to ensure that the data were adequately analyzed. In addition to the above techniques, the researcher also used Silverman's (2009) guidelines for qualitative data analysis. Silverman's approach involves six steps, which include familiarization with the data, identifying a thematic framework, indexing, charting, mapping, and interpretation. These steps helped the researcher to organize the data and identify themes and patterns in the data.

3. Results and Discussion

In this section, the study elucidates the Kikuyu Determiner Phrase (DP) by dividing the discussion into two distinct segments:

(1) *Forms of the Determiner Phrase (DP)*: The study embarks on an exploration of the diverse forms that constitute the Kikuyu Determiner Phrase (DP). By dissecting the linguistic elements that contribute to the formation of the DP, the aim is to unravel the intricacies of how determiners are employed within the Kikuyu language. This analysis will provide a comprehensive understanding of the various expressions and structures that manifest in the determiner component of Kikuyu sentences.

(2) *Constituent Structures of the Determiner Phrase (DP)*: Moving beyond the forms, the study explores the constituent structures of the Kikuyu Determiner Phrase (DP), conducting a thorough examination of the syntactic and semantic components that interact within the DP to shape its overall structure. Scrutinizing these constituent structures, the research aims to uncover the underlying grammatical principles that govern the Kikuyu DP. Through this dual approach, valuable insights are sought to contribute to the broader field of linguistic analysis, shedding light on the complexities of the Kikuyu language.

3.1. Forms of the Determiner Phrase (DP)

Six distinct syntactic patterns characterize the Determiner Phrase (DP) in the Kikuyu language, as delineated by explicit rules outlined below. These patterns exhibit varying structures, with optional elements enclosed in brackets, contributing to the language's overall syntactic flexibility.

1. DP → Noun + Demonstrative
2. DP → Demonstrative + Noun
3. DP → Noun + Cardinal Number
4. DP → Noun + Quantifier
5. DP → Noun + Possessive
6. DP → Noun + (Possessive, demonstrative, number) + Adjective

In comprehending the constituents and structures of the Kikuyu determiner phrase, a requisite understanding of syntactic criteria and functional categories is imperative. The former pertains to the positional allocation or distribution of lexical categories within a sentence construction, whereas the latter is concerned with morphological categories. This discussion elucidates that Kikuyu determiners exhibit variability in placement, with some positioned after the words they modify (post-posed), and others positioned before the words they modify (pre-posed). The latter is a convention that is prevalent in the English language.

As exemplified in the Kikuyu language, a phrase such as *mwana ucio*, with the literal meaning "child that" and the gloss of "that child," is permissible. However, this construction contrasts with English language norms, wherein determiners are typically pre-posed. For instance, the phrase "few men," with "few" as the determiner, adheres to the English convention. Notably, in the Kikuyu language, only demonstratives can function as both post-posed and pre-posed determiners, while distributive determiners exclusively appear in pre-posed positions.

3.1.1. DP → Noun + Demonstrative

The first pattern, DP → Noun + Demonstrative, materializes when a noun combines with a demonstrative, as illustrated in the provided example. Nevertheless, the versatility of Kikuyu demonstratives, which can function both pre-nominally and post-nominally, introduces an alternative structure. In this configuration, the demonstrative precedes the noun in sentence construction, exemplifying the

subsequent pattern as DP→Noun+ Demonstrative, elucidated further in the subsequent explanation.

Andũ acio marakire nyũmba nakwĩyendera

<i>Andũ</i>	<i>acio</i>	<i>marakire</i>	<i>nyũmba</i>	<i>nakwĩyendera</i>
People	Those	build-PST	house	With-passion
NOM.PL	DEM.DIST	build-PST	N.9.house	With-passion

‘Those people built the house with passion.’

In Kikuyu, a noun phrase typically consists of a noun and a modifier, which can be a demonstrative pronoun, adjective, or possessive pronoun. In this sentence, *andũ* ‘people’ is the noun, and *acio* ‘those’ is the modifier. *Nyũmba* ‘house’ is the object of the verb *marakire* ‘built’, which is in the past tense, and *nakwĩyendera* ‘with passion’ is a prepositional phrase.

The glossing rules represent the grammatical and syntactical structure of a sentence in a succinct and standardized way. In this case, the glossing shows the parts of speech and grammatical categories of each word in the sentence.

The first column of the glossing table represents the words in the sentence, while the second column provides a gloss (a one-word translation of the word's meaning). The third column provides the morphological category or grammatical feature of the word.

In the glossing for this sentence, "NOM.PL" indicates that *andũ* is a plural noun in the nominative case. "DEM.DIST" indicates that *acio* is a demonstrative pronoun in the distal (far) demonstrative form. "build-PST" indicates that *marakire* is a verb in the past tense and "N.9.house" indicates that *nyũmba* is a noun of class 9, which includes inanimate objects. "With-passion" indicates that *nakwĩyendera* is a prepositional phrase. This sentence can be translated as "Those people built the house with passion," and the glossing provides a way to analyze the grammatical and syntactical structure of the sentence systematically.

3.1.2. DP→Demonstrative +Noun

The DP structure with a Demonstrative plus Noun illustrates the interplay between determiners and substantive elements, showcasing the relationship where the demonstrative specifies or emphasizes, while the noun acts as the core lexical component conveying substantive meaning. In Kikuyu, the pronominal placement of demonstratives within the noun phrase (DP →Demonstrative + Noun) is observed when indicating proximity or specific reference. This pattern emphasizes the relationship between the demonstrative and the subsequent noun, highlighting their cohesive connection in the Kikuyu language structure.

Aya akora manyitĩrwo haha

<i>Aya</i>	<i>akora</i>	<i>manyitĩrwo</i>	<i>haha</i>
These	criminals	catch-PST	here
DEM.PROX	N.2.criminal	catch-PST	here

‘These criminals were caught here.’

In this sentence, *aya* ‘these’ is a demonstrative pronoun that modifies the noun *akora* ‘criminals’. *Manyitĩrwo* ‘caught’ is the verb in the past tense, and *haha* ‘here’ is the adverb indicating the location. The noun phrase “N.2.criminal” represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix “N.2” indicating that it is a noun of class 2.

Words that refer to some specific entities with the idea of relative distance (proximal) are called demonstratives (Rustipa, 2015). They are always followed by a noun in the English language. In the Kikuyu language, demonstratives move to the D-position which is usually a strong head position (Giusti, 1997). Let us look at the following example.

Demonstratives e.g. *aya* ‘these’ and *acio* ‘those’ can be pre-posed or post-posed in the Kikuyu language. Several elements modify the nouns in the DP (Giusti, 1992). The Kikuyu demonstratives *acio* and *aya* can modify the nouns towards the left or right. The generation of determiners which are modifiers of the noun in the Kikuyu language comes from the noun (N-head). It is also notable that the Kikuyu noun phrase can take the noun initial order or noun final order in the DP. The initial position is raised because of the agreement features (Principle of Economy and Derivation). In the Kikuyu

language, the noun and complement may be influenced by movement despite being base generated. The Kikuyu demonstratives have occupied the D-node just like what Abney proposed earlier on. We don't have bare nominal in the Kikuyu language or what some people may call null determiners represented by a theta symbol (θ). When we look at the NP *akora*, and *andu* in the examples above, they complement the determiners in question *aya* and *acio* respectively.

3.1.3. DP → Noun + Cardinal Numerals

The DP in this pattern is formed by combining a noun and a cardinal numeral or a distributive determiner. In the Kikuyu language, the grammatical positioning of cardinal numerals is observed to be post-posed. Additionally, the distributive determiners exhibit a varied syntactic structure, with some being pre-posed and others post-posed. For instance, the determiner *othe* "all" is positioned post-nominally, whereas *o* "each, every" is situated pre-nominally. Distributive determiners deal with a group or an individual within a larger group. They show a single entity. The Kikuyu language has *o*, *kana*, and *othe* as the distributive determiners meaning 'each/every', 'either', and 'all' respectively. In subject-verb agreement (concord), a plural subject takes a plural verb and vice versa.

Atumia kenda marenda kīhooto

<i>Atumia</i>	<i>kenda</i>	<i>marenda</i>	<i>kīhooto</i>
Women	nine	want	justice
NOM.PL	NUM.9	want	N.7.justice

'Nine women want justice.'

Kikuyu is a Bantu language spoken in Kenya, and it has a rich system of noun classes that are indicated by prefixes on the nouns. The noun classes are numbered from 1 to 17, and each class has a corresponding singular and plural prefix.

In this sentence, *atumia* is in the plural form and belongs to the noun class 2, which includes people and animals. The modifier *kenda* is a numeral indicating the number of women, and it agrees with the noun in class and number.

The verb *marenda* is in the present tense, which is indicated by the absence of a tense marker. In Kikuyu, the verb agrees with the subject in class and number. The object *kīhooto* is in noun class 7, which includes abstract nouns, and it agrees with the verb in class.

In Morphology, we have affixes and the Kikuyu language being highly agglutinative has prefixes marking numbers (Cartens, 1993): *mu*-referring to singular and *a*-referring to plural

Mūnini- sg. 'Younger person'
Anini- Pl. 'Younger persons'

Pre-nominal constructions using cardinal numbers and post-nominal constructions using distributive determiner *o* "each/every" are grammatically incorrect.

**erĩ andũ* 'people two' **mũndũ o* 'person each'
 **kenda atumia* 'women nine' **ihinda o* 'time every'

3.1.4. DP → Noun + Quantifier

In this pattern, the DP is formed by combining a noun and a quantifier. Beghelli (1997) categorizes quantifiers by basing them on the syntax quantifier scope. Kikuyu quantifiers have an agreement with the Kikuyu nouns in terms of numbers. The quantifiers occupy the D-node in the Kikuyu language.

Ciana nyingĩ cireetia itĩ cirakarite

<i>Ciana</i>	<i>nyingĩ</i>	<i>cireetia</i>	<i>itĩ</i>	<i>cirakarite</i>
Children	many	ask-PRES	Seats	with anger
NOM.PL	QUANT	ask-PRES	N.8.seat	with anger

'Many children are asking for seats with anger.'

In this sentence, *ciana* ‘children’ is the noun and *nyingĩ* ‘many’ is the quantifier/modifier. *Cireetia* ‘ask’ is the verb in the present tense, and *itĩ* ‘seats’ is the object of the verb. *Cirakarite* ‘with anger’ is a prepositional phrase that modifies the verb and indicates the manner or attitude of the action. "N.8" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.8" indicating that it is a noun of class 8.

The DP is *ciana nyingĩ* and the NP is *ciana*. The NP keeps a check on the agreement and number features by looking at the determiner *nyingĩ*. From the example above, it is evident that Kikuyu quantifiers don’t move. This is because they are base generated. Interestingly, it is seen from the sentence constructions that the Kikuyu quantifiers function as adjectives. Adjectives act as noun modifiers and that is the same role played by the Kikuyu quantifiers.

The quantifiers in this case complement the N-Complement as *nyingĩ* does to *ciana*. We can further give examples like

Itanda nene ‘beds **big**
atumia anini ‘women **few**
arwaru othe ‘patients **all**’

} The bolded quantifiers can be used with the cardinal numerals.

Itanda nene
Itanda *nene*
 Beds **big**
 N.6.bed **big**
 ‘Big beds’

In this phrase, *itanda* ‘beds’ is the noun, and *nene* ‘big’ is the adjective that modifies it. "N.6" represents the class of nouns that includes all plural objects in Kikuyu, with the prefix "N.6" indicating that it is a noun of class 6.

Atumia anini
Atumia *anini*
 Women **few**
 N.2.woman **QUANT**
 ‘Few women’

In this phrase, *atumia* ‘women’ is the noun, and *anini* ‘few’ is the quantifier that modifies it. "N.2" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.2" indicating that it is a noun of class 2.

Arwaru othe
Arwaru *othe*
 Patients **all**
 N.2.patient **all**
 ‘All patients’

In this phrase, *arwaru* ‘patients’ is the noun, and *othe* ‘all’ is the quantifier that modifies it. "N.2" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.2" indicating that it is a noun of class 2.

When cardinal numerals are used with the quantifiers in sentence/ phrase constructions, they play a pivotal role in the agreement patterns in the sentence/phrase constructions. For example;

Itanda igĩrĩ nene
 Beds two big
 ‘Two big beds’

We have free-choice quantifiers. This is evident in the Kikuyu quantifier of the meaning ‘all’ and it serves as the quantifier indicating the totality or entirety of the noun. It conveys the notion that all

patients, without exception, are being referred to in the given phrase.

3.1.5. DP → Noun + Possessive

Another pattern of the DP is having a noun combined with a possessive. To possess is to own. Therefore, possessives are types of determiners in the Determiner Phrase (DP) showing belongingness. The D-node has a possessive pronoun. The use of ‘mine’ and ‘thine’ pre-nominally stopped in the 18th century in the English language (Gelderen, 2010). Likewise, the Kikuyu possessives are used post-nominally.

Glossing rules are a standardized way of representing the grammatical and syntactic structure of sentences or phrases. DP → Noun + Possessive. "DP" refers to the Determiner phrase. "Noun" refers to the head of the phrase, which indicates the object or thing that is being possessed. "Possessive" refers to the pronoun that shows belongingness or ownership. For example,

Mabuku makwa

Mabuku makwa

Books my

‘My books’

Mabuku means ‘books’, which is the noun.

makwa means ‘my’ which is the possessive pronoun.

The DP pattern with a noun and possessive is a way of indicating ownership or belongingness in a sentence or phrase, and the glossing rule provides a standardized way of representing such patterns concisely and systematically. The noun *mabuku* is the head of the phrase above *mabuku makwa*. In the Kikuyu language, singularity and plurality are embedded in the noun phrase.

i buku ‘a book’ *i embe* ‘a mango’

Ma buku ‘Books’ *ma embe* ‘Mangoes’

The possessor and the possessed are adjoined and the NP remains in situ.

3.1.6. DP → Noun + (Possessive, demonstrative, number)+Adjective

Kikuyu adjectives function similarly to the determiners discussed earlier. The Kikuyu Determiner Phrase (DP) can be constructed with a noun and an adjective, as outlined in the syntactic rule above. However, possessives, demonstratives, and numbers are considered optional. An adjectival phrase exists where the adjective functions as the head. Cinque (1994) suggests that attributive adjectives preceding the modified nouns should be treated as specifiers. In the Kikuyu language, adjectives are post-posed.

Athuri anene

Athuri anene

Men big

N.2.man big

‘Big men’

In this phrase, *athuri* ‘men’ is the noun, and ‘*anene*’ ‘big’ is the adjective that modifies it. "N.2" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.2" indicating that it is a noun of class 2.

Makorobia meru

Makorobia meru

Avocadoes ripe

N.6.avocado ripe

‘Ripe mangoes’

In this phrase, *makorobia* ‘avocadoes’ is the noun, and *meru* ‘ripe’ is the adjective that modifies it. "N.6" represents the class of nouns that includes all plural objects in Kikuyu, with the prefix "N.6" indicating that it is a noun of class 6.

Ciŭria nditŭ

<i>Ciŭria</i>	<i>nditŭ</i>
Questions	difficult
N.8.question	difficult
‘Difficult questions’	

In this phrase, *ciŭria* ‘questions’ is the noun, and *nditŭ* ‘difficult’ is the adjective that modifies it. "N.8" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.8" indicating that it is a noun of class 8.

Some scholars claim that adjectival phrases should be treated as possessives and demonstratives. It is organic that adjectives can co-occur with other determiners like cardinal numerals, possessive determiners, and demonstratives.

Athuri erĩ anene

<i>Athuri</i>	<i>erĩ</i>	<i>anene</i>
Men	two	big
N.2.man	NUM.2.two	big
‘Two big men’		

In this phrase, *athuri* ‘men’ is the noun, *erĩ* ‘two’ is the numeral indicating quantity, and *anene* ‘big’ is the adjective that modifies ‘men.’ "N.2" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.2" indicating that it is a noun of class 2. "NUM.2" indicates that the numeral is in class 2 and modifies the noun ‘men’.

Makorobia makwa meru

<i>Makorobia</i>	<i>makwa</i>	<i>meru</i>
Avocadoes	mine	ripe
N.6.avocado	POSS.1sg	ripe
‘My ripe avocadoes’		

Ciŭria ici nditŭ

<i>Ciŭria</i>	<i>ici</i>	<i>nditŭ</i>
Questions	these	difficult
N.8.question	DEM.PROX	difficult
‘These difficult questions’		

In this phrase, *ciŭria* ‘questions’ is the noun, *ici* ‘these’ is the demonstrative pronoun indicating proximity, and *nditŭ* ‘difficult’ is the adjective that modifies ‘questions.’ "N.8" represents the class of nouns that includes all singular countable objects in Kikuyu, with the prefix "N.8" indicating that it is a noun of class 8. "DEM.PROX" indicates that the demonstrative pronoun is in the proximal (near) form, indicating that the questions are close to the speaker.

At the specifier position, every different class of adjectives is base generated (Cinque, 1994). This means that there is no hindrance to the movement of the noun. Just like demonstratives, the Kikuyu adjectives occupy the D-node and act as noun complements.

3.2. Constituent Structures of the Kikuyu Determiner Phrase (DP)

Constituent structure, also known as phrase structure, involves the analysis of syntactic categories and sentence patterns. This method, employed in syntax, breaks down sentences into constituent parts, forming parse trees that depict the relationships between these elements. Constituents, defined as cohesive word groups within a sentence, can be single words or multiple-word combinations. Phrase structure grammar and dependency grammar are utilized for this analysis, focusing on hierarchical relationships and word dependencies, respectively. This analytical tool is crucial for understanding how sentence components collaborate to convey meaning in natural language. Additionally, it facilitates the exploration of cross-linguistic syntax variations, comparing structures across languages to reveal insights into diverse phrase structure rules and word orders that convey similar meanings.

3.2.1. DP → Noun+Demonstrative

<i>Andũ</i>	<i>acio</i>	<i>marakire</i>	<i>nyũmba</i>	<i>nakwĩyendera</i>
People	Those	build-PST	house	With-passion
NOM.PL	DEM.DIST	build-PST	N.9.house	With-passion

‘Those people built the house with passion.’

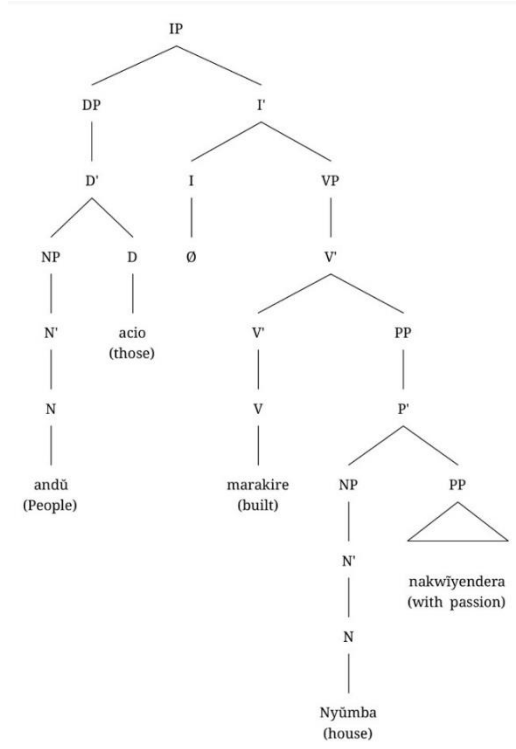


Figure 4: Sentence Structure

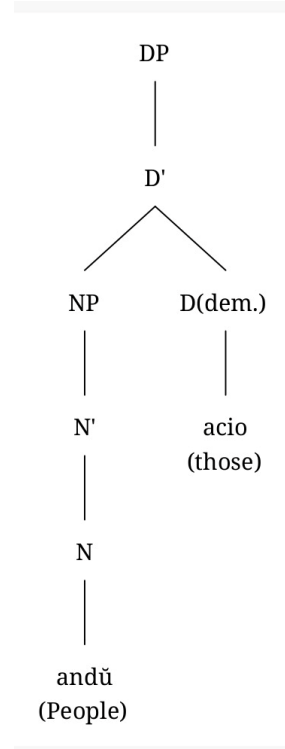


Figure 5: Determiner Phrase Structure

In this type of DP, a noun is combined with a demonstrative to form a constituent that functions as a determiner. The demonstrative serves to indicate which specific instance of the noun is being referred to. The resulting structure is shown in the parse tree provided, where the DP is broken down into its constituent parts.

In the example sentence *Andu acio marakire nyumba nakwĩyendera*, the DP *acio andu* functions as a determiner for the noun *marakire*. The demonstrative *acio* indicates that the speaker is referring to a specific group of people. The resulting meaning of the sentence is ‘Those people built the house with passion’.

The parse tree shows that the noun and the demonstrative are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb, the prepositional phrase, and the object.

It's worth noting that the structure of the DP "Noun + Demonstrative" is similar to that of the DP "Noun + Adjective", where a noun is combined with an adjective to form a constituent that functions as a determiner. Both types of DPs can be analyzed using constituent structure analysis to gain insights into the underlying structure of language.

Demonstratives can also be used pre-nominally and hence take this pattern. A demonstrative pronoun is a pronoun that points to a specific person, place, or thing. In Kikuyu, demonstrative pronouns are used to indicate proximity or distance from the speaker and can also indicate whether the noun being referred to is singular or plural.

3.2.2. DP → Demonstrative+ Noun

<i>Aya</i>	<i>akora</i>	<i>manyit̄rwo</i>	<i>haha</i>
These	criminals	catch-PST	here
DEM.PROX	N.2.criminal	catch-PST	here

‘These criminals were caught here.’

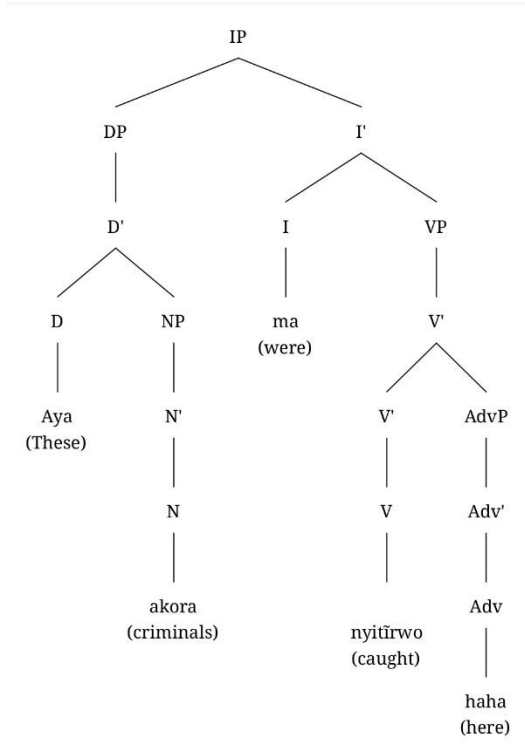


Figure 6: Sentence structure

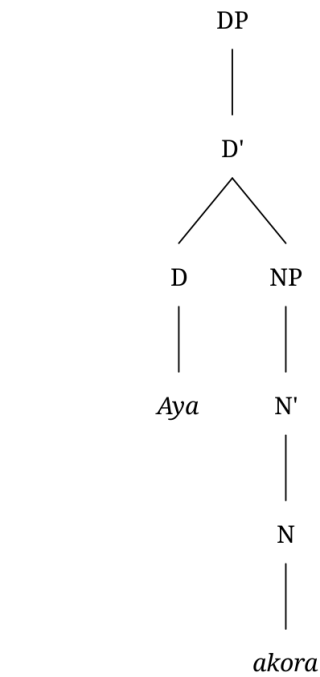


Figure 7: Determiner Phrase Structure

In the example provided, the DP is broken down into its constituent parts, which are the noun and the demonstrative. The parse tree shows that the noun and the demonstrative are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb and the object. A demonstrative is combined with a noun to form a constituent that functions as a determiner. The demonstrative serves to indicate which specific instance of the noun is being referred to. The resulting structure is shown in the parse tree you provided, where the DP is broken down into its constituent parts.

In the example sentence *Aya akora manyit̄rwo haha*, the DP *Aya akora* functions as a determiner for the verb *manyit̄rwo*. The demonstrative *Aya* indicates that the speaker is referring to a specific group of criminals. The resulting meaning of the sentence is ‘These criminals were caught here’.

The parse tree shows that the demonstrative and the noun are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb and the adverbial phrase.

3.2.3. DP → Noun + Cardinal Numbers

<i>Atumia</i>	<i>kenda</i>	<i>marenda</i>	<i>k̄ihooto</i>
Women	nine	want	justice
NOM.PL	NUM.9	want	N.7.justice

‘Nine women want justice.’

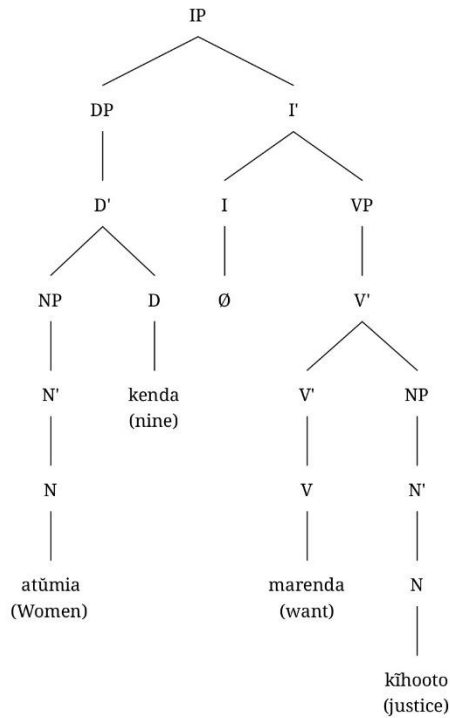


Figure 8: Sentence Structure

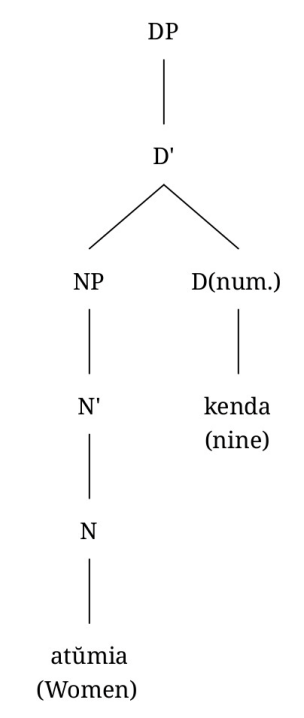


Figure 9: Determiner Phrase Structure

In this type of DP, a noun is combined with a cardinal number to form a constituent that functions as a determiner. The cardinal number indicates the quantity of the noun. The provided parse tree shows the resulting structure, where the DP is broken down into constituent parts.

In the example sentence *Atumia kenda marenda kũhooto*, the modifier *kenda* functions as a determiner for the noun *atumia*. The cardinal number *kenda* indicates that there are nine women. The resulting meaning of the sentence is "Nine women want justice".

The parse tree shows that the noun and the cardinal number are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb and the object.

It's worth noting that the structure of the DP "Noun + Cardinal Numbers" is similar to that of the DP "Noun + Adjective", where a noun is combined with an adjective to form a constituent that functions as a determiner. Both types of DPs can be analyzed using constituent structure analysis to gain insights into the underlying structure of language.

3.2.4. DP → Noun + Quantifier

<i>Ciana</i>	<i>nyingĩ</i>	<i>cireetia</i>	<i>itĩ</i>	<i>cirakarite</i>
Children	many	ask-PRES	Seats	with anger
NOM.PL	QUANT	ask-PRES	N.8.seat	with anger

‘Many children are asking for seats with anger.’

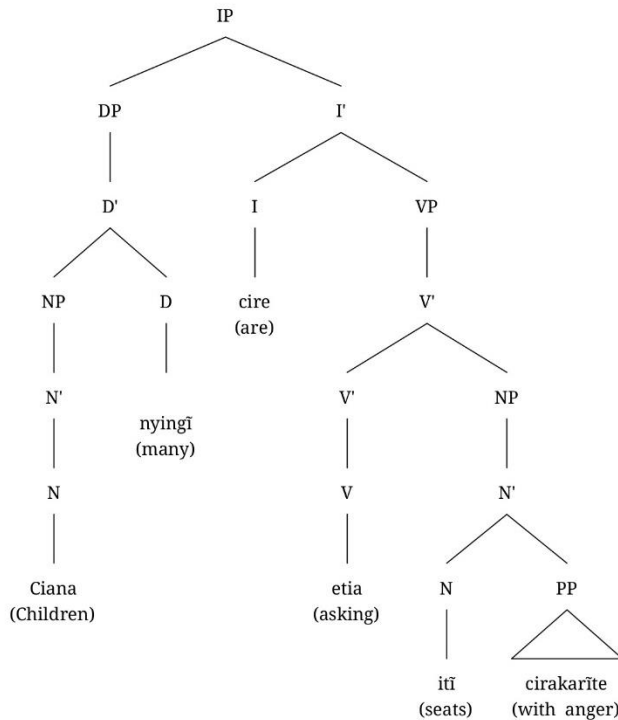


Figure 10: Sentence Structure

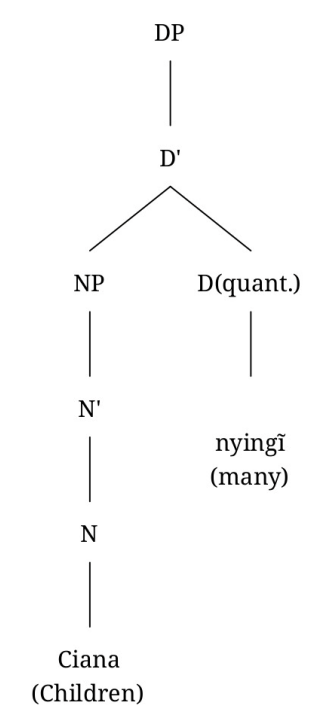


Figure 11: Determiner Phrase Structure

From the above illustration, it is evident that the Kikuyu quantifiers remain in situ in the D-node. It is also notable that adjunction occurs with quantifiers in this language. *cirakarĩte* ‘with anger’ is the adjunct which is a prepositional phrase. D-being a strong head position, the quantifier *nyingĩ* fills that position and complements the NP which is *ciana* ‘children’. The parse tree provided shows the structure of the DP "Noun + Quantifier". The noun and the quantifier are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb, the prepositional phrase, and the object. Like the "Noun + Cardinal Numbers" DP structure, the "Noun + Quantifier" DP structure is used to express the quantity of a noun in a sentence. However, instead of using specific numbers, it uses quantifiers such as "many", "few", "several", and "some".

3.2.5. DP → Noun + Possessive

Mabuku makwa twĩ-nake
 N6 POSS.1SG with.him
 ‘My books with him’

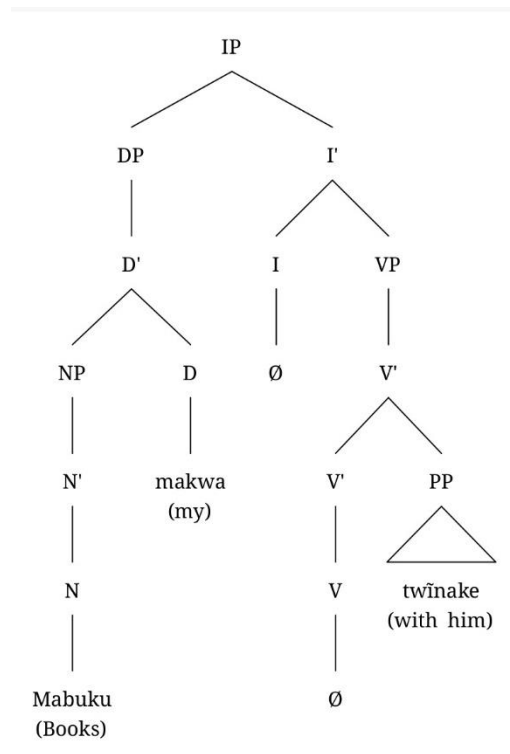


Figure 12: Phrase Structure

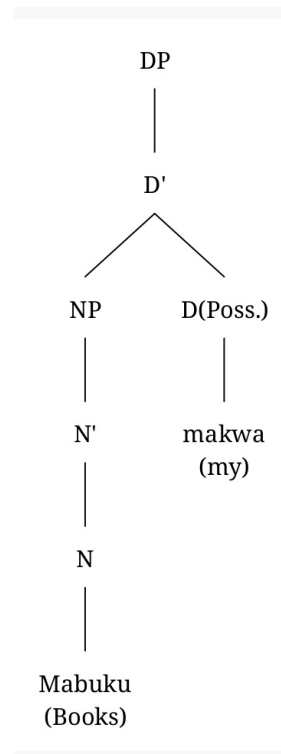


Figure 13: Determiner Phrase Structure

In this type of DP, a noun is combined with a possessive marker to form a constituent that indicates possession. The possessive marker serves to connect the noun to the possessor. The resulting structure is shown in the parse tree provided, where the DP is broken down into its constituent parts.

In the example phrase *Mabuku makwa twĩnake*, the DP *Makwa mabuku* functions as an object of the preposition "twĩnake". The possessive marker *makwa* indicates that the speaker is referring to books that belong to them. The resulting meaning of the sentence is ‘My books are with him’.

The parse tree shows that the noun and the possessive marker are connected by a branch, indicating that they form a single constituent. This constituent is then connected to other constituents in the sentence, such as the verb and the prepositional phrase.

It's worth noting that the structure of the DP "Noun + Possessive" can vary depending on the language. In some languages, such as English, the possessive marker typically comes after the noun e.g. ‘my books’. In other languages, such as Swahili, the possessive marker may come before the noun e.g. *vitabu zangu*. Here, you can observe that the possessive marker *zangu* “mine/my” precedes the noun *vitabu*, “books” which is a characteristic feature of Swahili grammar.

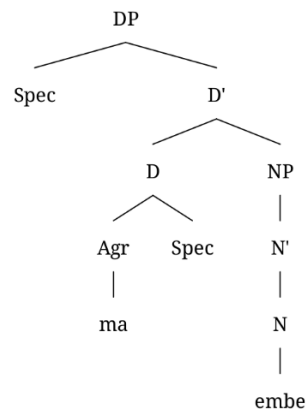


Figure 14: Possessive Agreement

In example 2, the DP ‘Wambui’s mangoes’ is formed using an agreement marker and a noun. The agreement marker *ma* agrees with the possessor *Wambui* to indicate possession. The noun *embe* ‘mango’ agrees with the agreement marker *ma* in gender and number.

The resulting structure is shown in the parse tree provided, where the DP is broken down into its constituent parts. The specifier "spec" indicates that the DP has a determiner, and the determiner "D" has the agreement marker *ma*. The noun phrase "NP" contains the noun "N", which is *embe* ‘mango’. The specifier "spec" before the noun "N" can also indicate any additional modifiers that the noun may have. The function of this DP is to indicate possession, specifically that the mangoes belong to Wambui.

3.2.6. DP → Noun + (Possessive, demonstrative, number) + Adjective

Athuri aya anene
 N2.man DEM.PROX big
 ‘These big men’

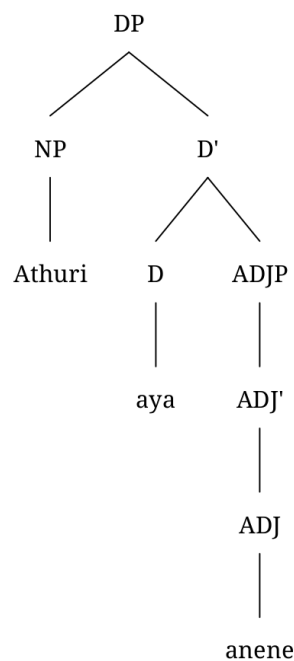


Figure 15: Determiner Phrase Structure

In this type of DP, a noun is combined with one or more modifiers, such as a possessive, demonstrative, or number, and an adjective to form a constituent that functions as a determiner. The modifiers serve to provide additional information about the noun. The provided parse tree shows the resulting structure, where the DP is broken down into constituent parts. In the example phrase *Athuri aya anene*, the DP *Athuri aya anene* functions as a subject. The adjective *anene* modifies the noun *Athuri* to indicate that the men referred to are big. The tree nodes represent individual components in the phrase, showcasing the hierarchical organization within the Determiner Phrase. The connections or branches between nodes visually depict relationships among linguistic elements, revealing how *aya*, *athuri*, and *anene* combine in the structured phrase *Athuri aya anene*. So, to reiterate, the phrase *Athuri aya anene* includes a determiner *aya* along with a noun *athuri* and an adjective *anene*, forming a Determiner Phrase (DP) that effectively conveys additional information about the referred men, specifying both their size and proximity.

The use of modifiers such as possessives, demonstratives, and numbers can further specify the noun in the DP. For example, *andũ erĩ me gĩkundiiniĩ giitũ* means ‘two people who are in our group’. The DP *andũ erĩ*, ‘two people’ indicate that the group being referred to belongs to the speaker, as indicated by the possessive *giitũ* ‘our’.

4. Conclusion

This research paper has provided a comprehensive analysis of the Kikuyu Determiner phrase, specifically focusing on the modifiers of the noun using Noam Chomsky's X-bar theory. The study has revealed that Kikuyu determiners can be pre-nominal, post-nominal, or both and that modifiers and nouns are generated from the noun phrase, assuming different positions within it. Through the use of X-bar phrase structure trees, the paper has illustrated the constituent structures of the DP, highlighting the relationship between the DP, D', NP, and D, and how some agreement markers are embedded in the NP. The analysis of the Kikuyu Determiner phrase using the X-bar theory has shown that this linguistic framework provides a useful tool for understanding the structure of noun phrases in Kikuyu and other languages. The study has also highlighted the importance of considering the position of modifiers in the noun phrase, as well as the agreement markers embedded in the NP. By providing a detailed analysis of the Kikuyu DP, this paper contributes to the broader field of linguistics and provides a foundation for future research on the structure of Kikuyu and other African languages. This research paper has demonstrated the complexity of the Kikuyu language and the importance of using linguistic frameworks such as the X-bar theory to analyze its grammatical structures. By focusing on the determiners of the noun, the study has provided a detailed analysis of the Kikuyu DP and highlighted the different patterns and forms it can take. The findings of this study contribute to our understanding of the Kikuyu DP structure and provide a basis for further research on Bantu languages and their grammatical structures.

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