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Original Article

Constituents Test and Noun Phrase in Kihehe

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Abstract - This study examines the internal structure of Kihehe noun phrase using constituent tests within the context of Generative Grammar. The paper aims to explore how noun phrases in Kihehe are formed and to determine whether the words inside the noun phrase can function together as one grammatical unit. To achieve this objective, the paper applies constituent tests, including substitution, movement, coordination, question–answer tests, and ellipsis tests. The paper is qualitative with data collected from ten native speakers of Kihehe from Mufindi and Ifunda in Iringa region, and two from Mwanza. Data were collected through interviews, natural spoken conversations, selected written materials, and WhatsApp conversations. The data were analyzed using phrasal structure analysis. The findings show that in Kihehe, the noun is the main word in the noun phrase and acts as the head. The researchers found that other words, such as adjectives, demonstratives, possessives, numerals, and relative clauses, normally come after the noun. These elements agree with the noun in terms of noun class and number, which is an important feature of Bantu languages. The results also show that Kihehe noun phrases pass all the applied constituent tests, which confirms that they function as single units in sentence structure. The study is concluded by showing that Kihehe noun phrases are well organized and follow clear grammatical rules. The study is important because it helps in describing the grammar of Kihehe, supports the study of Bantu languages, and contributes to syntactic theory in linguistics.

Keywords - Kihehe Language, Noun Phrase, Constituent Test, Generative Grammar, Phrasal Structure, Syntactic Analysis.

1. Introduction

This paper applies constituent tests to the noun phrases in Kihehe, a Bantu language spoken mainly in Iringa region in the Southern Highland in Tanzania. It belongs to the Niger-Congo language family under the Bantu branch. Scholars classified Kihehe in various ways. Cust [1] grouped Kihehe under Narrow Bantu together with languages such as Bena and Sangu, while Johnston [2] put Kihehe within the Upper Rufiji group alongside Bena, Mahenge, Mbunga, and Sangu. Guthrie [3] provided a more systematic classification of Bantu languages and placed Kihehe in Zone G code G62, within the Bena–Hehe subgroup. These classifications differ mainly because earlier scholars relied heavily on geographical location and general similarities, while Guthrie applied a structured comparative approach based on linguistic evidence [1-3].

Kihehe is surrounded by several neighbouring Bantu languages, many of which also fall under Guthrie's Zone G such as Luguru (G35) and Gogo (G11) to the north, to the south are Bena (G63) and Pangwa (G64), to the east is Pogoro (G51), and to the west are Kinga (G65), Wanji (G66), and Sangu (G61) [3-4]. These languages form part of the wider Bantu Zone G group. Between them, Kihehe is most closely linked to Bena (G63), showing solid similarities in vocabulary, pronunciation, and noun class agreement patterns, and the two languages prove a higher

level of mutual intelligibility compared to other neighbouring languages [5, 4]. Kihehe has some dialects, including Kalenga, Koisamba, Mufindi, and Sungwa [4].

Many studies on Kihehe have focused on phonology and noun class morphology, leaving phrase structure partly examined. This has created a gap in understanding how sentence constituents in Kihehe are identified, specifically NPs [5,4]. Noun phrases form a basic part of the sentence in Kihehe, functioning as subject, object or even complement. Thus, testing the NPs helps in identifying other constituents like VP and adverbials. The constituent structure of Kihehe remains inefficiently described, even though constituents play an important role in sentence formation. In syntactic theory, constituent structure is important as it explains how words group together to form meaningful units that function as single elements in sentences. Generative Grammar emphasizes that sentence structure is hierarchical, and that constituents can be identified through tests such as substitution, movement, coordination, and deletion [6,7]. This study aims to test the NPs as constituents in Kihehe, which, in the end, shows how complex an NP can be. In this paper, a group of words that pass the constituent tests qualifies to be a noun phrase. These tests have been widely used in the analysis of well-studied languages, but they have not been applied in Kihehe specifically on noun phrases.

2. Literature Review

Constituent tests have been applied by different scholars in many languages. This section presents constituent tests in different languages. Constituent tests are language-specific, just as NP. Bantu languages, which are agglutinating in nature, are expected to exhibit a unique way of applying constituent tests. The discussion in 2.1 presents constituent tests in different languages.

2.1. Constituent Tests in Different Languages

Studies from different parts of the world shows that constituency is an essential idea in syntactic analysis, especially in describing Noun Phrase (NP) structure. In generative grammar and phrase structure theory, constituency is based on the idea that sentences are not flat sequences of words but are hierarchically organized into phrase units. According to Carnie [8], a constituent is a group of words that functions as a single unit in sentence structure. Carnie explains that constituency can be identified using several tests, such as substitution, movement, coordination, and question–answer tests. These tests help linguists determine whether a group of words forms a phrase such as a Noun Phrase (NP), Verb Phrase (VP), or Prepositional Phrase (PP). Chomsky [6] asserts that sentences are organized in a hierarchical structure where words form phrases such as Noun Phrases (NP) and Verb Phrases (VP). Radford [9] explains that a constituent is a group of words that functions as a single unit in a sentence. For example, a noun together with adjectives or other modifiers can form one noun phrase, and this whole group can move or be replaced as one unit.

Similarly, Radford [9, 7], working within phrase structure grammar, argues that noun phrases are built around a noun head, while other elements such as determiners, adjectives, numerals, and possessives function as modifiers. Radford [9] emphasizes that constituent tests are useful for identifying phrase boundaries and internal NP structures. For example, substitution shows whether a noun phrase can be replaced by a pronoun, while movement shows whether a group of words can shift position together without destroying grammaticality. His analysis of English demonstrates that sequences such as the tall boy behave as a single grammatical unit because they can be replaced by pronouns such as he or moved as one unit in restructuring. This theoretical view supports the current study because it provides an approach for testing whether Kihehe noun modifiers form a unit with the noun head. Other scholars also support the importance of constituency. For instance, Haegeman [10] argues that constituent structure is fundamental for understanding how syntactic rules operate because phrases are not random combinations of words but follow hierarchical organization. Similarly, O'Grady, Dobrovolsky, and Katamba [11] argue that constituency is necessary for describing sentence patterns across languages since phrase structure rules

explain why some word combinations are grammatical, and others are not. Tallerman [12] also explains that constituency helps in describing the internal organization of phrases and identifying the positions of modifiers. These works collectively prove that constituency is a common systematic tool that can be applied across languages, including under-described ones such as Kihehe.

Scholars focusing on linguistic methodology argue that constituency tests are also real tools for language explanation. Payne [13], writing from a field linguistics viewpoint, says that diagnostic tests such as substitution, deletion, and question–answer sets are valuable for studying under-described languages because they help expose phrase limits without relying too heavily on native speaker intuition alone. Dixon [14] supports this position by emphasizing that constituency is a key clarifying concept in grammar because it shows how words combine into larger, structured units. Likewise, Haspelmath and Sims [15], from a typological view, highlight that constituent testing is important in identifying how different languages organize morphological and syntactic structures. The general point from these studies is that constituency tests constantly show that noun phrases are structured units headed by nouns and expanded by modifiers. However, many of these studies focus mainly on well-described languages such as English, leaving a gap in applying the same systematic methods to many African languages, including Kihehe.

Studies on African languages, especially Bantu languages, provide other evidence that constituency tests are real for analyzing noun phrase structure. Katamba [16] explains that Bantu languages have noun class systems where nouns are categorized into classes and these classes control agreement markers on adjectives, demonstratives, and possessives. This means that noun phrase structure in Bantu languages is closely linked to morphology because modifiers normally agree with the noun in class and number. This is highly relevant to Kihehe because it is also a Bantu language with noun class agreement, meaning that noun phrase analysis must consider both syntactic structure and agreement morphology. Nurse and Philippson [5] further argue that Bantu languages share common grammatical features such as noun class marking and agreement patterns, and they explain that noun phrases are a major area where agreement is strongly expressed. Their work shows that adjectives, demonstratives, and possessives often carry agreement prefixes, reflecting the structural unity of the noun phrase. Also, Bresnan and Mchombo [17] emphasize that Bantu noun phrases involve strong contact between syntax and morphology, where agreement markers provide evidence for constituency relations and grammatical roles. Zeller [18] also notes that Bantu noun phrases may contain fixed structures such as relative clauses, which function as modifiers within the noun phrase. Although Bantu languages share agreement systems, noun phrase structures may still differ across languages, meaning that each language must be studied independently rather than assumed to follow a uniform pattern. Thus, this paper conducts the constituent tests, which show the demarcation of NPs in the syntactic structures of Kihehe. This reflects the complexity of the structure of the noun phrase, from simple to those made up of clauses.

Other studies using constituency tests on Bantu languages provide clear working models. For instance, Mchombo [19], using elicited data from Chichewa speakers, applies movement, substitution, and coordination tests to show that Chichewa noun phrases are noun-headed and that modifiers form strong constituents with the noun through noun class agreement. This supports the argument that agreement markers serve as indicators of phrase unity in Bantu languages. Similarly, Taji [20] found that Chiyao noun phrases show hierarchical ordering, where modifiers systematically group around the noun head and nouns can be modified by nominal dependent such as relative clauses, quantifiers, demonstratives, or possessives. Their findings confirm that Bantu noun phrases are not random sequences but planned syntactic units. Generally, these Bantu studies show that noun class agreement is a major feature shaping noun phrase structure, and constituency tests provide strong evidence that noun heads and modifiers behave as unified grammatical units. However, most of these studies focus on relatively well-documented Bantu languages such as Chichewa and Chiyao, leaving many Tanzanian Bantu languages, including Kihehe, less explored through similar constituency-based approaches.

Osborne [21] argues that constituent tests verify that certain words and strings of words should be granted the status of constituents, which he also refers to as complete sub-trees. In this paper, fifteen constituent tests are presented, which in this paper are merged into four. Anderson et al. [22] add that, by identifying certain parts of sentences as phrases, we are making a claim that language users represent them as units in their mental grammar. Constituent tests are conducted to find evidence that certain groups of words act together as units. Different from Osborne [21], Anderson et al [22] applies only four tests, including replacement, movement, it-clefts and answers to questions tests. This paper on Kihehe applies five tests, including replacements/substitutions, deletion, movement (passivization and topicalisation), coordination and answers to questions, to test the constituents. The discussion above presents the need for constituent tests, which seem to be language-specific. The uniqueness of each language results from the possible tests which may apply in one language than the other. For instance, Anderson et al [22] claim that the coordination test is not reliable, while this study applies it successfully. Thus, Kihehe forms a unique way of testing constituents.

In Tanzania, scholars have described noun phrase structure in languages such as Kiswahili, Runyambo, and Sukuma, although most studies rely mainly on descriptive grammar rather than systematic constituent testing. Ashton [23] provides one of the earliest detailed descriptions of Kiswahili grammar, showing that noun phrases may include nouns, adjectives, demonstratives, possessives, and numerals, and these elements show systematic agreement with the noun class. Likewise, Mohamed [24] provides a detailed descriptive account of Kiswahili noun phrases, emphasizing that noun phrases are noun-headed and typically take post-nominal modifiers that agree in class. Mgullu [25] also discusses Kiswahili grammar and notes that noun phrase elements are systematically ordered, and agreement markers help indicate grammatical relations within the phrase. These works provide an important foundation for understanding how noun phrases operate in the Tanzanian Bantu context. Moreover, Manyasa [26] analyses constituent tests in Kiswahili and other Tanzanian languages using topicalisation and substitution tests. The study confirms that noun phrases generally function as single units in sentences. Habila Ibrahim-Kunzaar [27] focus on Gogo, and the results of the study show a relationship within noun phrases, especially when pronoun replacement is applied. In addition, Rugemalira [28], in his grammar of Runyambo, reports that demonstratives, numerals, and possessives form structured noun phrases with compulsory agreement, supporting the idea that noun class marking reflects constituency relations. Despite this study not concentrating solely on noun phrase structure, the tests conducted reflect the demarcations of the elements combining to form NPs in the language.

Additionally, Polomé [29] provides descriptions of East African Bantu languages and notes that noun phrases typically show systematic agreement between the noun and its modifiers. Tanzanian Bantu languages have rich noun class systems that affect both syntax and morphology, and agreement markers play an important role in showing relationships inside the noun phrase [20]. Muzale and Rugemalira [30] also highlight that many Tanzanian Bantu languages remain under-described, especially in syntax, and they call for more detailed grammatical studies. This lays the foundation of the need for a study on constituent tests, which contributes to the documentation of the same and the understanding of the syntax of Kihehe in general.

Jackendoff [31] proposes that phrases have layered structures where the head combines with complements and specifiers. This model helps explain why some modifiers appear closer to the noun than others. Applying such theoretical ideas to Kihehe can provide deeper insights into its phrase structure and allow comparison with other Bantu languages because Kihehe also form a layered structure. In Bantu languages, agreement markers show grammatical relationships between the noun and its modifiers. Katamba [32] notes that agreement strengthens the unity of the noun phrase, which supports the idea that these elements function together as constituents. Therefore, understanding agreement patterns in Kihehe is essential for analyzing noun phrase structure. The major finding from Tanzanian-based studies is that noun phrases across these languages show strong noun-headed structure and post-nominal modification, consistent with general Bantu patterns. However, the limitation is that many studies

focus mainly on descriptive grammar and do not apply a wide range of constituency diagnostics such as coordination, deletion, and question–answer tests. Furthermore, much of the detailed research focuses on more documented languages such as Kiswahili, leaving many Tanzanian indigenous Bantu languages without detailed syntactic analysis. The available research on Kihehe has mainly focused on phonology and morphology rather than noun phrase constituency. Mpalanzi [4], for example, discusses key linguistic features of Kihehe but provides little explanation of syntactic phrase structure.

The paper examines whether Kihehe noun phrases behave as single syntactic units when tested through substitution, movement, coordination, deletion, and question–answer diagnostics. This connects Kihehe to other languages, showing how linguistic structures are universal despite language-specific features in every aspect. Thus, the same tests applied by different scholars in the discussion above can be applies similarly or slightly differently on Kihehe despite its unique linguistic structure. Being agglutinating in nature results int unique application of the rules as discussed in the analysis section.

2.2. Theoretical Framework

This study is guided by X-bar Theory, which was developed by Noam Chomsky in 1970 and 1981 as part of Generative Grammar and later explained by Jackendoff [31] and Radford [7]. The theory explains how words combine to form phrases and how every phrase has an internal structure. It argues that phrases are not random groups of words but are organized around one main word called the head [6, 7]. In a Noun Phrase (NP), the noun is the head, while other words, such as adjectives, demonstratives, possessives, numerals, and relative clauses, function as modifiers of the noun (Complements and adjuncts). These elements combine to form one grammatical unit called a constituent [31, 7].

X-bar Theory is based on several important principles. First, every phrase has a head, which is the most important word because it determines the type of phrase. In a noun phrase, the noun functions as the head [6]. Second, phrases have a hierarchical structure, meaning that words are organized into different levels rather than appearing as a simple list. Some words are more closely related to the head than others [31]. Third, modifiers depend on the head. Words such as adjectives, demonstratives, possessives, and numerals modify the noun and together form one noun phrase [7]. Fourth, constituents behave as single units. A group of words that forms a constituent behaves as one grammatical unit, and this can be tested using substitution, movement, coordination, deletion, and question-answer tests [8,7]. Finally, phrase structure follows general principles across languages. Although languages differ in word order, they all organize words into phrases with a head and modifiers [6].

This theory is relevant to the present study because it explains how Kihehe noun phrases are formed and organized. The study aims to identify the constituents of Kihehe noun phrases and determine whether the noun, together with its modifiers, forms one grammatical unit. The theory also provides the basis for applying constituent tests, including substitution, movement, coordination, deletion, and question-answer tests. This is because tests like movement and deletion are best accounted for in GB using X-Bar theory, which indicates the surface and deep structures of the syntactic constructions. Hence, using X-Bar theory allows the proper presentation of the primary position of the elements before deletion/movement. These tests help determine the words that make up NPs in Kihehe. Therefore, X-bar Theory provides an appropriate framework for analyzing the internal structure of Kihehe noun phrases and for determining how their constituents are organized.

3. Materials and Methods

This paper applies a qualitative research approach to describe the structure of noun phrases in Kihehe. The paper is descriptive in nature, focusing on how noun phrases are identified using constituent tests such as substitution, movement, coordination, and deletion. The population consisted of twelve (12) native speakers of

Kihehe who use the language in daily communication based on their availability. The participants were the native speakers of Kihehe residing in Iringa and Mwanza. Convenience sampling was used to select participants with strong knowledge of Kihehe and the ability to provide clear examples of the language.

Data were collected using elicitation tasks (6 informants) by asking participants to produce sentences containing noun phrases, to change sentences from singular to plural to form questions from given declarative sentences, to passivize sentences and form other forms of sentences from the given simple sentences. A sentence questionnaire containing sentences with different structures were given to the remaining six informants to translate from Kiswahili (a national language) to Kihehe. The sentences reflected all the tests. The given samples contained simple and complex noun phrases containing strings of words ranging from phrases to relative clauses within the noun phrases. Second, natural speech observation involved listening to and recording conversations among native speakers to collect naturally occurring noun phrases used in daily communication.

Some data were also extracted from written materials such as *Tukumwiwuka Uyuva veto Telesa* 'We are remembering our mother Telesa', and texts like Savonen [33], *Sarufi ya Lugha ya Kihehe* [34] were analyzed to identify additional examples of noun phrases. The data analysis followed a qualitative approach. First, noun phrases were identified based on the presence of a head noun and its modifiers, including adjectives, numerals, and possessives. Then, constituent tests were applied to each noun phrase to see if the tests left the sentence grammatical of not. The tests are reflected in the sentences through the presentation of Deep and Surface structures. The results were interpreted in relation to Generative Grammar and previous studies on Bantu and non-Bantu languages.

Ethical issues were carefully observed throughout the study as the researchers met with participants and informed them about the purpose of their visit. Their consent was sought before the commencement of data collection. The participants were assured of confidentiality and that the data were for academic purposes only. The identities of participants were kept confidential, and the cultural values and language norms of the Kihehe community were respected. All collected data were used strictly for academic purposes.

4. Results and Discussion

This section presents the discussion of the findings from the field. The collected Kihehe sentences are analysed to test the NP constituents at both the subject and object positions. The noun phrases are identified before they are tested.

4.1. Identification of Noun Phrase in Kihehe

It was found that the noun phrase in Kihehe is made up of several elements. The collected NPs range from simple NPs made up of a single noun to complex ones made up of a combination of heads, complements and even adjuncts, these range from lexical items to clauses, which are clearly demarcated through constituent tests in this section. The collected Noun Phrases (NP) consist of the following parts.

a) Head noun (N), which is the main word of the phrase.
b) Modifiers which provide much information about the noun, and they include adjectives, possessive, demonstratives, numerals, and the relative pronouns referred to in X-Bar theory as complements and adjuncts.
c) Agreement prefixes that mark noun class on other words occurring with nouns within and outside what could be referred to as NP in non-agglutinizing languages

In Kihehe noun phrase can consist of a noun followed by an adjective that agrees with the head noun. The adjectives take a prefix that corresponds to the noun class of the head noun, a characteristic feature of Bantu languages [16].

Adjectives in Bantu languages occur after the noun and show agreement through noun class prefixes [19]. The basic structure of such phrases is Noun (+ adjective), as in 1.

1) a) Umwana umunofu
U-mu-ana u-mu-nofu
AUG-cl.1-child AUG-cl. 1- beautiful
"a beautifully child"
b) Ikigoda kikomi.
Iki-goda ki-komi
Cl.7- chair cl.7-big
"Big chair"
c) Imibiki mitali.
I-mi-biki mi-tali
AUG-cl.4-tree cl.4-tall
"The tall trees"

In Kihehe, adjectives follow the noun head and agree in noun class. For example, the noun *kigoda* 'chair' in 1b) carries the noun class 7 prefix *ki-*, and its modifier *kikomi* 'big' also carries prefix *ki-*. The nouns *umwana* 'child and *imibiki* 'trees' in 1a) and c) carry augmentso- and i- respectively. They also carry noun class prefixes, which are similarly carried by the adjectives that modify them. This Noun Adjective order is characteristic of many Bantu languages, as argued by Hyman [35] and Katamba [16]. The structures in 1) can be presented in X-Bar rules as a complement rule XP > [X; YP] with X representing the head noun and YP representing the Adjective Phrase, hence, NP >[N, AP].

A noun phrase in Kihehe can be specified by a possessive pronoun, as in my book, his house, her child and my house. The possessive element is treated as part of the internal structure of the noun phrase and forms a single constituent with the head [9]. In Bantu languages, possessives are expressed by a possessive marker that agrees with the noun class of the head noun. The possessive pronoun normally comes after the noun following the head modifier order typical of Bantu noun phrases [5]. The structure is Noun + possessive marker + possessor. The examples in Kihehe are presented in 2.

2) a) Ikitabu changu.
I-ki-tabu chi-angu
AUG-cl.7-book cl.7-mine
'My book'
b) Ikigoda chakwe
Iki-goda chi-akwe
Cl.7-chair cl.7-his/hers
'His / her chair'
c) Ikigoda cha muvina.
Iki-goda chi-a mu-vina
Cl.7-chair cl.7-of cl.1-elder
"Elder's chair"

In these examples, ikitabu 'book' and ikigoda 'chair' are the head nouns while the possessives changu 'my', chakwe 'your' and cha muvina 'of elder' function as specifiers leading into the role XP > [X'; Spec] in this case NP > [N', Poss]. The possessive markers changu, chakwe and cha agree with noun classes of the head nouns.

This agreement shows that the noun and the possessive form one noun phrase. Nouns in class 7 and 8 uses chi- for singular and fya- for plural, as in kimage changu 'my knife' and fimage fyetu 'our knifes' (plural).

A noun can be specified by demonstratives like 'this', 'that', 'these', and 'those'. The demonstrative helps the speaker to show exactly which noun is being talked about. In Generative Grammar, demonstratives are seen as part of the noun phrase, and they combine with a noun to form a single unit [9]. In Bantu languages and Kihehe in particular, demonstratives agree with the noun class of the noun they modify. Their position in a noun phrase is flexible. Unlike possessive and adjectives, which come after the noun, demonstratives can come before or after the noun [16] as exemplified in 3.

3) a) Iki kitabu.
Iki ki-tabu
Cl. 7 this cl.7-book
'This book'
b) Kilatu kila
Ki-latu ki-la
Cl.7-shoe cl.7- that
'That shoe'

The examples show how demonstrative pronouns are placed in a noun phrase. They are flexible as they can appear before or after a noun. In 3a), a demonstrative pronoun *iki* 'noun class 7 this' precedes a noun, while *kila* 'noun class seven that' follows a noun in 3b). The structure in 3 can be presented in X-Bar rules as a specifier rule XP > [Spec; X'], specifically, NP > N', Dem.

Noun phrases in Kihehe can also be modified by a numeral such as one, two, three, and so on. The Numerals are used to show the quantity of the noun. In Generative Grammar, numerals are treated as part of the noun phrase, and they form a single constituent together with the head noun [9, 8]. In Bantu languages, numerals normally agree with the noun class of the head noun. This agreement is shown through specific prefixes that match the noun class. Numerals appear after the noun, following the general Bantu noun phrase order in which modifiers come post-nominally [16]. Examples from Kihehe

4) a) Avana vavili
A-va-ana va-vili
AUG-cl2-child cl.2-two
'Two children"
b) Imibiki mihaanu
I-mi-biki mi-haanu
AUG-cl.4-tree cl.4-five
'Five trees'
c) Ikigoda kimwi
I-ki-goda ki-mwi
AUG-cl.7-chair cl.7-one
'One chair'

Kihehe noun phrases can be formed by a combination of nouns and numerals. The numerals are placed after the nouns without any flexibility. Numerals are used to modify nouns in Kihehe, presented in X-bar theory as complements in a complement rule X' > X; YP in this case N' > N, AP(Numeral).

A noun phrase in Kihehe can be formed by a noun and a relative clause. Radford [9] explains that a relative clause functions as a modifier of a noun within a noun phrase, and the head noun and its relative clause form a constituent that can undergo movement, substitution or coordination test. That means the relative clause adds extra information about the head noun in the noun phrase, functioning as a complement in X-Bar theory. Nurse and Philippson [5] note that, in Bantu languages, relative clauses agree in noun class with the head noun where they are introduced by relative markers that correspond to the noun class of the head noun. The noun and relative clause are treated as a single syntactical unit, which is crucial for understanding agreement and sentence structure. In Kihehe, the relative clause is embedded and introduced by the relative pronoun -e, which agrees with the noun with which the clause in question appears. Some of the relative pronouns in Kihehe include ye, che, ve, gwe, dze and fye as exemplified in 4.

5) a) Umuguunda gwe gukaapye.
U-mu-guunda gu-e gu-ka-pi-ir-e
AUG-cl.3-farm cl.3-that cl.3-Pst-be burnt-PERF-FV
'The farm that got burnt'

b) Imbwa ye yibweta
I-m-bwa ya-e ya-i-bwet-a
AUG-cl.9-dog cl.9-that cl.9-Prs-bark-FV
'The dog which bark'

c) Amiho ge gilava
A-ma-iho ga-e ga-i- lav-a
AUG-cl.5-eye cl.5-that cl.5-Prs-see-FV
The eyes which see'

In Kihehe, nouns can occur with relative clauses to form a noun phrase. The clauses function as complements of the noun. The relative pronouns agree with the noun class of the noun being modified by the relative clause. Using general X-Bar rules, the NPs in 5) can be presented as X' > X; YP, which in Kihehe is presented as N' > [N, CP].

A Kihehe noun phrase can be simple, made up of one element, a noun, or a combination of a noun with modifiers or specifiers as discussed above. The elements above can occur within the noun phrase, making them to have specifiers and complements as in *uyu umwana wakwe umunofu* 'this your beautiful child'. Thus, NPs in Kihehe range from simple to complex. Generally, the NP in Kihehe can be presented by X-Bar rules as in,

6) a) Ugu umuguunda gumu gwe gukaapye
[NP [Spec ugu[N' umuguunda [AP gumu [CP gwe [IP [NP gu [I' ka-ire [VP pya]]]]]]]]
[NP [Spec this [N' farm[AP one [CP which [IP [NP it [I' Pst-Perf [VP be burnt]]]]]]]]
'This one farm which got burnt'

b) uyu umwana umunofu ye isafisha umutuka gwangu
[NP [Spec uyu [N' umwana [AP munofu [CP ye [IP [NP i [I'- [VP safisha [NP umutuka [NP gwangu]
[NP [Spec this [N' child [AP beautiful [CP who [IP [NP SM [VP clean [NP car [NP my]]]]]]]]]]
'This is your beautiful child who is cleaning my car'

The NPs in 6) present the X- Bar rules accommodating most of the discussed structures. A comprehensive NP can be presented in a tree diagram in Figure 1.

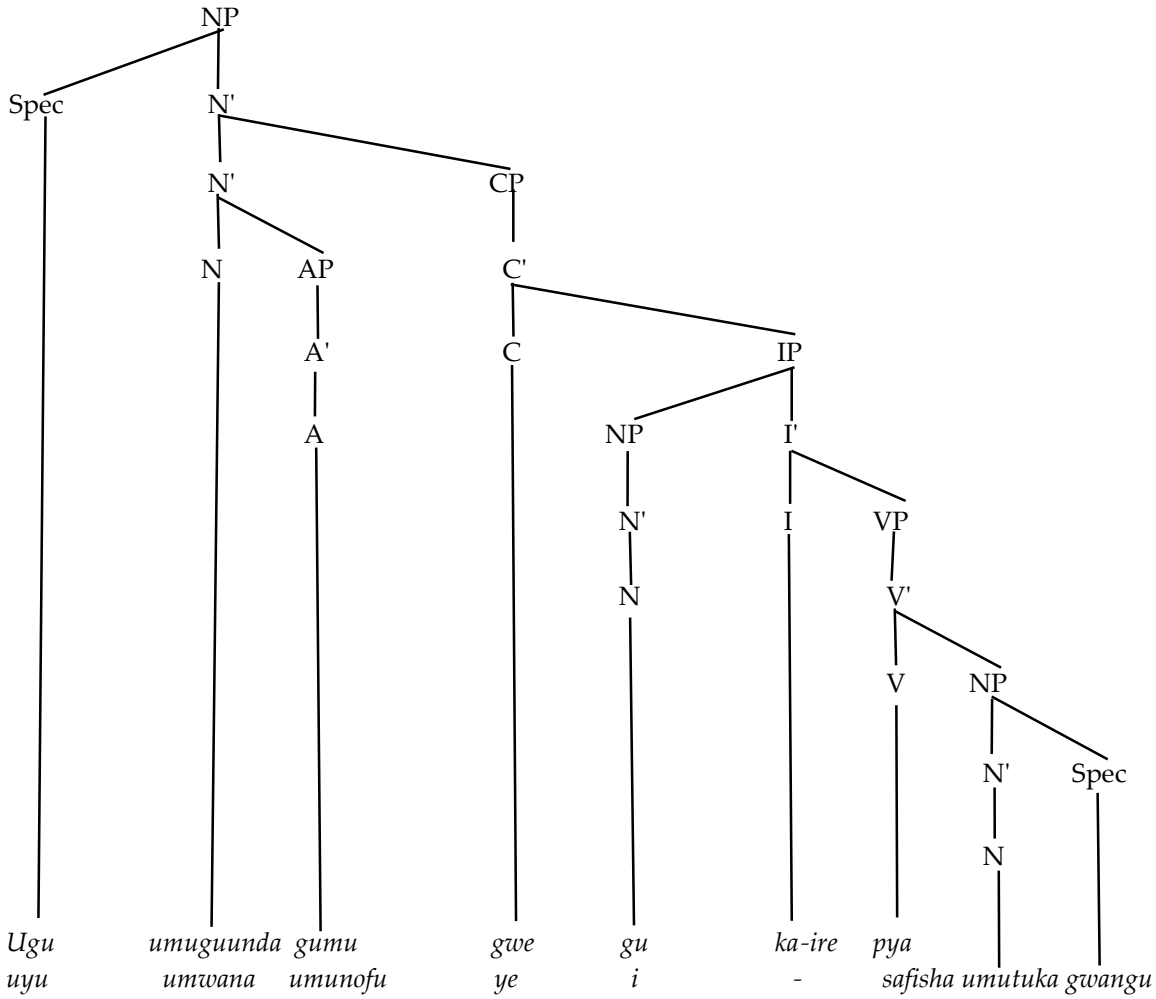

Fig. 1 Noun phrase structure

The sentences in the diagrams in Figure 1 present the structure of a complex NP in Kihehe. For one to be sure that the groups of words in the diagram constitute a constituent, different tests must be conducted. Such tests justify the boundaries between one constituent and the next. The application of the tests requires that the applied activity does not affect the grammaticality of the resulting sentence. The NPs in Figure 1 carry most of the elements of the Kihehe NP, including adjectives, demonstratives, possessive, numerals and relative clauses.

4.2. Constituent Tests on NPs in Kihehe

This section presents the constituent tests on NPs in Kihehe. Different constituent tests are applied on NPs of different kinds.

4.2.1. Substitution/Replacement Test

This is a syntactical tool used in linguistics to determine whether a group of words forms a constituent in a sentence. A group of words in a sentence is replaced by another word, usually a pronoun or a similar element. If a sentence remains grammatically correct and meaningful, the replaced group of words is considered a constituent [8]. In Kihehe, an NP can be replaced by a pronoun as in 7.

7) a) umwana umunofu ye isafisha umutuka gwangu ahele kuboma.
'The beautiful child who is cleaning my car went to town'
b) Umutuka munofu uli kwivala.
'The beautiful car is outside'
c) Umwana ye atelike ichakulya ali kusule.
'The child who cooked the food is at school'

The words in italic in the sentences in 7 are noun phrases. They can be tested through substitution by replacing them with the pronouns, including relative pronouns. This does not affect the agreement marker as the noun class of the NPs in question does not change after replacement. The NPs in 7 can be replaced by a single word as in 8.

8) a) Yumwene akahele kuboma
'She went to town'
b) Ula uli kwivala
'That is outside'
c) Yumwene alikusule
She is at school

The entire noun phrase in 8 is replaced by a pronoun, which evidences that the noun phrase is a constituent. In Kihehe, lexical subjects are optional, resulting into replacement by the pronoun or dropping of the subject NP, leaving the subject marker. The pronouns yumwene 's/he' and ula 'that' are used to replace the NPs. The NPs umwana umunofu ye isafisha umutuka gwangu 'The beautiful child who is cleaning my car went to town' and Umwana ye atelike ichakulya 'a child who cooked the food' in a) and c) respectively are replaced by the pronoun yumwene. In b) the NP Mutuka munofu 'a beautiful car' is replaced by the class 3 demonstrative pronoun ula 'that'. By applying the substitution test (replacement test) in Kihehe noun phrase, the results shows that the group of words can be replaced with a pronoun.

Another instance of replacement is found in verbs, where the lexical object is replaced by the object marked in the verb complex. In some sentences in Kihehe, the presence of the lexical object NP overrules the object marker on the verb. When the lexical object NP is deleted, the OM is included in the verb complex to function as NP. The examples of such are presented hereunder.

9) a) Umwana munofu akawonite inzoka nnalii
U-mu-ana mu-nofu a-ka-won-it-e i-n-zoka n-nalii
AUG-cl.1-child cl.1-beautiful SM-Pst-see-Perf-FV AUG-cl.9-snake cl.9-long
A beautiful child saw a long snake
Replacement: Umwana munofu aka**mu**wonite
'A beautiful child saw it'
b) Jakisoni akagomwee avakimama vavili
Jakison a-ka-gomw-ee a-va-kimama va-vili
Jakisoni SM-Pst- marry-FV AUG-cl.2-wife cl.2-two
Jakisoni married two wives
Replacement: Jakisoni aka**va**gomwee
Jakisoni married them

The examples in 9 evidence the replacement of an object NP with the object marker. In the sentence in 8, the noun phrase inzoka nnalii 'long snake' is replaced by the OM mu 'it'. The object NP avakimama vavili 'two vives' is replaced by the object marker va 'them'. this evidences that the replaced phrases are constituents in the given

sentences. This test is considered authentic by Anderson et al [22] as they apply it in English. If a string of words is applied, it presents that the same is a constituent. The replacement test can be presented on a tree diagram as follows.

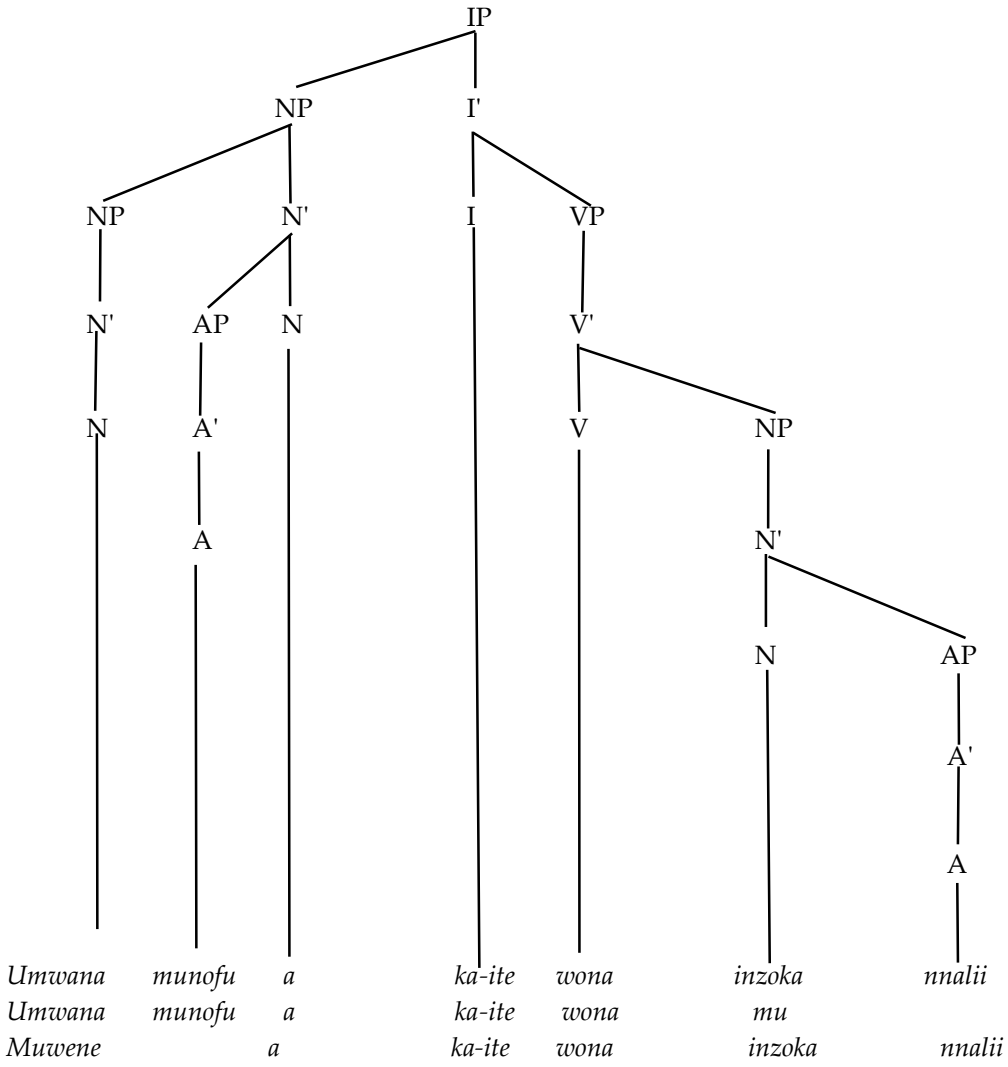

Fig. 2 Replacement test

The sentences in Figure 2 presents the replacement tests of the subject NP umwana munofu and the object NP inzoka nnalii. The object NP is replaced by the object marker affix attached on the verb, while the subject marker is replaced by the pronoun muwene. The three sentences in the tree are grammatical despite having replacements.

4.2.2. Deletion Test

The deletion test is a method in syntax used to test whether a group of words forms a constituent, especially the noun phrase. The method helps to identify which elements in a sentence are functioning as one syntactic unit. Every phrase has a head, which is the main word, and it carries the meaning, such as 'boy', 'house', and 'car'. Other elements in a sentence, like adjectives, prepositions, demonstratives and numerals, are the modifiers that give more information about a noun, but they are optional.

A string of words is referred to as a constituent if it can be deleted without resulting into ungramaticality of the sentence from which it is removed. When the sentence from which a string of words is removed remains grammatical, such words are justified to be a constituent forming a branch in a syntactic tree diagram. Applying it to NPs in Kihehe, the NP can be dropped, leaving the SM/OM marker depending on its position in a syntactic structure. This differs from replacement as no replacement is done, but the lexical NP is dropped, leaving the morphological marker on the verb, which qualifies as the subject or object. The deletion of this kind is reflected in 9.

10) a) Akahele kuboma
'He went to town'
b) Uli kwivala
'That is outside'
c) Alikusule
She is at school

The Subject NPs in 7 can be deleted, leaving the SM to function as the NP as in 10. Bantu languages form a rich morphology which allows the subject marking on the verb. When the Lexical NP is deleted, the SM is left. The same deletion is found on object NPs, where they can be deleted, leaving the object markers on the verb. Such instances are presented here under.

11) a) Umwalimu akagulite imyenda myelu inya marinda madododododo
U-mu-alimu a-ka-gul-it-e i-mi-enda mi-elu i-nya ma-rinda ma-dododododo
AUG-cl.1-teacher SM-Pst-buy-Perf-FV AUG-cl.4-cloth cl.4-white cl.4-with cl.6- pleats cl.6-small
Teacher bought white clothes with small pleats.
Deletion: Umwalimu akagulite
Teacher bought
b) Avana vyelu vakalye ichakulya kinono na lupava
a-va-ana va-elu va-ka-ly-e i-chi-akulya ki-nono na lu-pawa
AUG-cl.2-child cl.2-white SM-Pst-eat-FV AUG-cl.7-food cl.7-good with cl.11-spoon
The white children ate food with spoon
Deletion: Avana vyelu vakalye na Lupava
The white children ate with a spoon

The examples in 11) show how deletion test applies to object NPs in which the object NPs are deleted without affecting the sentence structure. In 10a), the object NP *imyenda myelu inya marinda madododododo* 'white clothes with small pleats' is deleted without affecting the semantics of the sentence. In 10b), the object NP *ichakulya kinono* 'good food' is deleted, leaving the adjunct PP *na lupawa* 'with a spoon' which is not part of the NP as a constituent. Different from replacement, deletion does not include the OM within the verb template. This text is also attested by Osborne [21] and Anderson et al [22] in English. This makes the deletion test universal, though differently manifested through language-specific features. The deletion in the examples in 11 can be presented on an X-Bar tree diagram as in Figure 3.

The sentences in Figure 3 presents the deletion test applied to both the subject and object NPs. In each case, the deleted NP is not replaces and the sentence remains grammatical. The subject NPs are deleted, leaving the SM to function as subject NPs, which are obligatory in the sentence in Kihehe. The objects are deleted and, in this case, not replaced by the OM. The PP na lupava is not deleted together with the NP *ichakulya kinono* 'good food' as it functions as an adjunct. Thus, X-bar theory expresses better the constituent boundaries by showing the deleted phrases clearly.

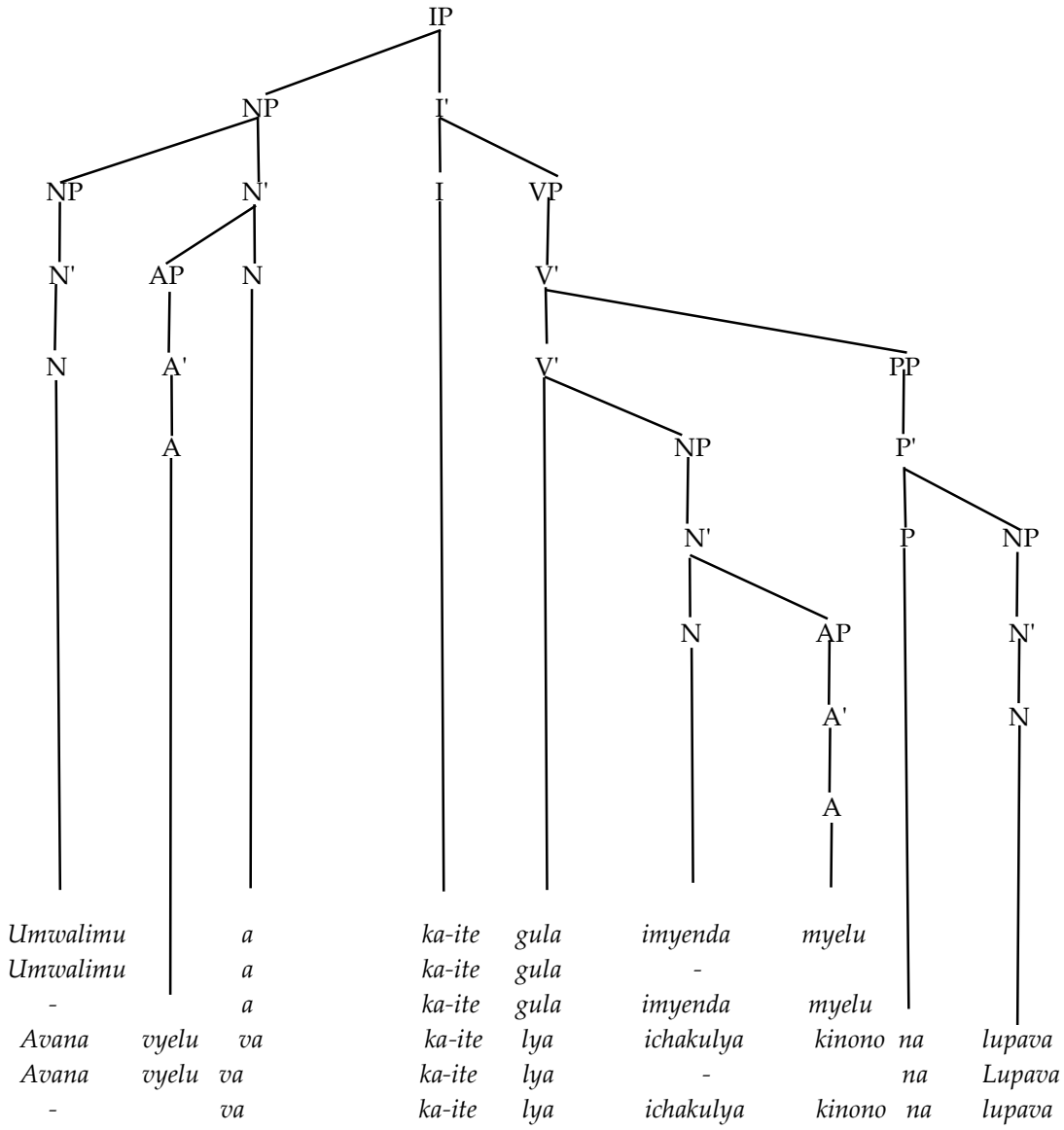

Fig. 3 Deletion test

4.2.3. Movement Test

According to Radford [9], a movement test involves moving a group of words or a phrase to another position in the sentence without making it ungrammatical. If the sentence remains grammatically correct, then the moved group of words is a constituent. Movement test attested in Kihehe is of different types, like topicalisation and passivization. Topicalisation, sometimes referred to as fronting, means moving a phrase to the front position of the sentence to emphasize it, as in 11.

12) a) Vakamuwonite **umwana wa yaya** kabla salavasa.
They saw their uncle's child before sleeping.

Topicalization: Umwana wa yaya$_i$, vakamuwonite t_i pe valimugati.
Uncle's child$_i$, they saw him/her t_i before sleeping.

b) Baba akademwee **ikilatu chelu** na umusumeno.
Father cut the white shoe with a chainsaw.

Topicalization: Ikilatu chelu$_i$, baba akakidemwee **t_i** na umusumeno.

The white shoe, father cut it t_i with a chainsaw.

c) Ndawene **avapigi picha** pe valimugati.
I saw the cameramen in her room.

Topicalization: Avapigi picha$_i$, ndavawene **t_i** pe valimugati.
The cameramen, I saw them t_i in her room.

The sentences in 12) show how a qualified constituent can be moved from one argument position to the other, leaving a trace. Thus, the bold NPs umwana wa yaya 'uncles' child', ikilatu chelu 'a white shoe' and avapigi picha 'camera men' moved from the internal argument (object) to the specifier of the complementizer phrase position. This movement is referred to in X-Bar theory as A' movement. A bar movement refers to the movement of a NP to the non-argument position, i.e., [Spec; CP]. This movement is not done to fulfill case requirements but to show emphasis. The NPs in question are moved to show the emphasis by fronting the topical NP. The DS and SS of such sentences can be presented as follows.

DS: [CP [- [C' [IP [NP [I' [VP [NP [PP]]]]]]]]
SS: [CP [**NP$_i$** [C' [IP [NP [I' [VP [**t_i** [PP]]]]]]]]

The scheme in the rules above are presented in the tree diagrams in Figure 4 and 5,

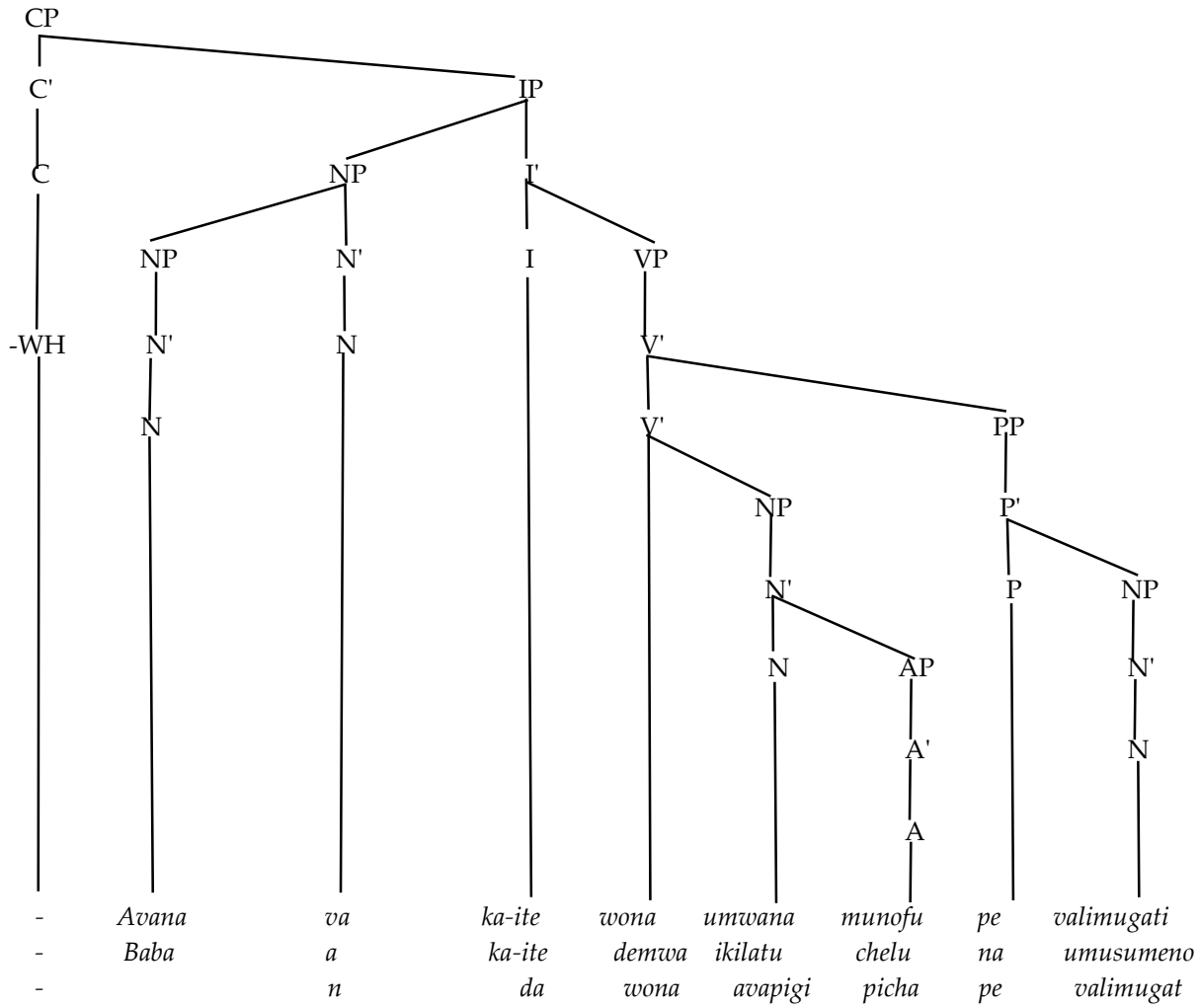

Fig. 4 Deep structure

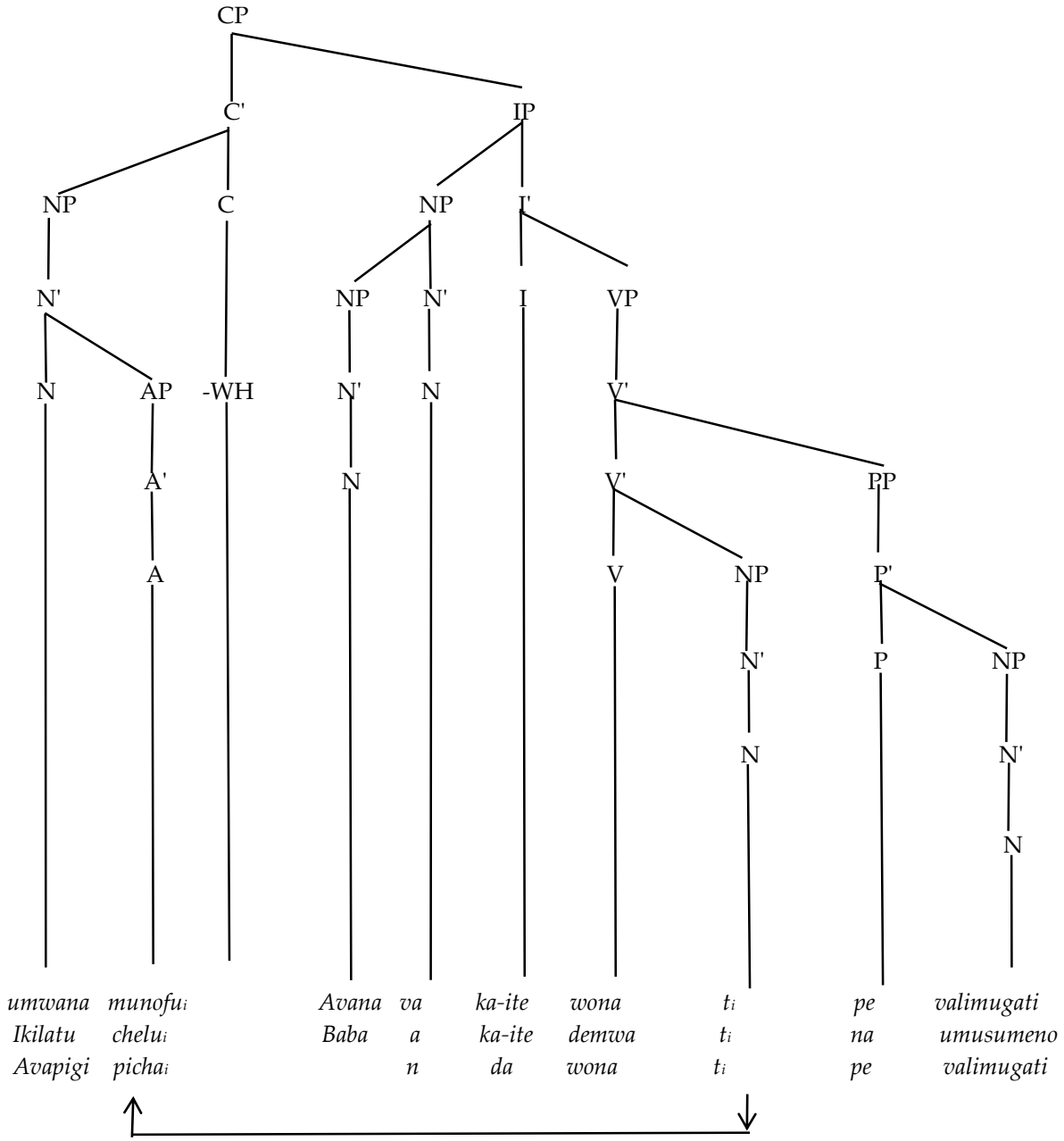

Fig. 5 The surface structure of A -bar movement

The examples show how NP movement takes place as in DS in 4a), in which the specifier of CP is empty while the internal argument position is occupied by the object NP. In 4b), the internal arguments *umwana munofu* 'a beautiful child', *ikilatu chelu* 'white shoe', and *avapigi picha* 'camera men' are moved specifier of CP [Spec: CP], leaving traces at their base position. It is argued by Haegeman [10] that the complementizer phrase determines the type of sentence, be it declarative or interrogative. The CP in 4 therefore introduces a declarative sentence [-WH].

Passivization is another instance of the movement test applied to the NPs in Bantu and in Kihehe in particular. In Kihehe, the object NP can be moved to the empty subject position, showing that the moved group of words makes up a constituent. Such movement is referred to as movement to an argument position as applied in Kihehe in 13.

13) a) Umdala mchepengeᵢ akatovilwe tᵢ na umame.
A beautiful girlᵢ was beaten tᵢ by her mother.
b) Ichakulyaᵢ kikagulilwe tᵢ na umwalimu
The foodᵢ, was bought tᵢ by a teacher.

In the examples in 13, the NPs umdala mchepenge 'a beautiful girl' and ichakulya 'food' are moved from the internal argument position marked as trace to the external argument position. The fact that they can be moved evidences their being complete constituents. This movement is referred to in X-Bar theory as an A movement in which a noun phrase moves to the argument position to be case-marked. The DS and SS of passive sentences are as follows.

DS: [IP [**e** [I' [VP [NP [PP]]]]]]]
SS: [IP [**NP**ᵢ [I' [VP [**t**ᵢ [PP]]]]]]]

The structures differ from those in topicalisation as the movement is done within the IPs from one argument position to another. The moved string of words is referred to as a constituent. The DS and SS structures of the sentences in 13 are presented in Figure 6 and 7.

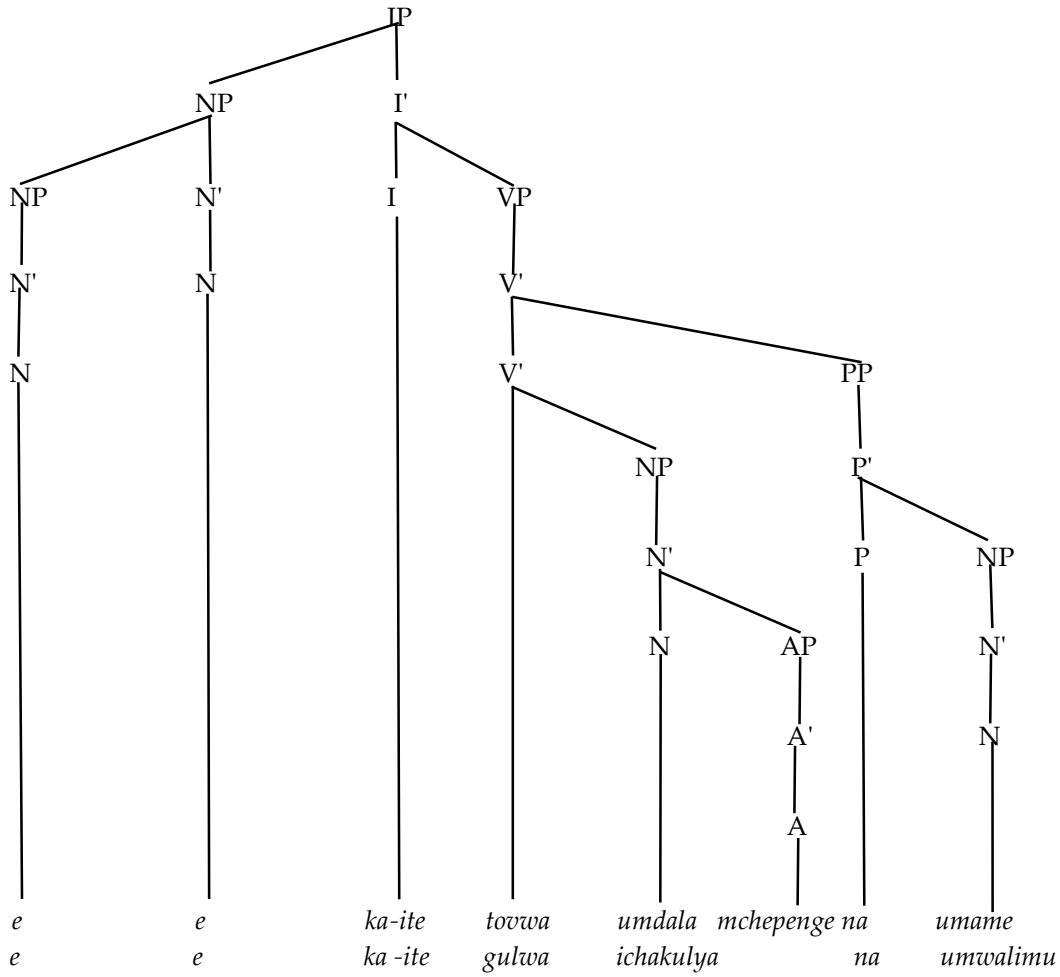

Fig. 6 The DS of passive constructions in Kihehe

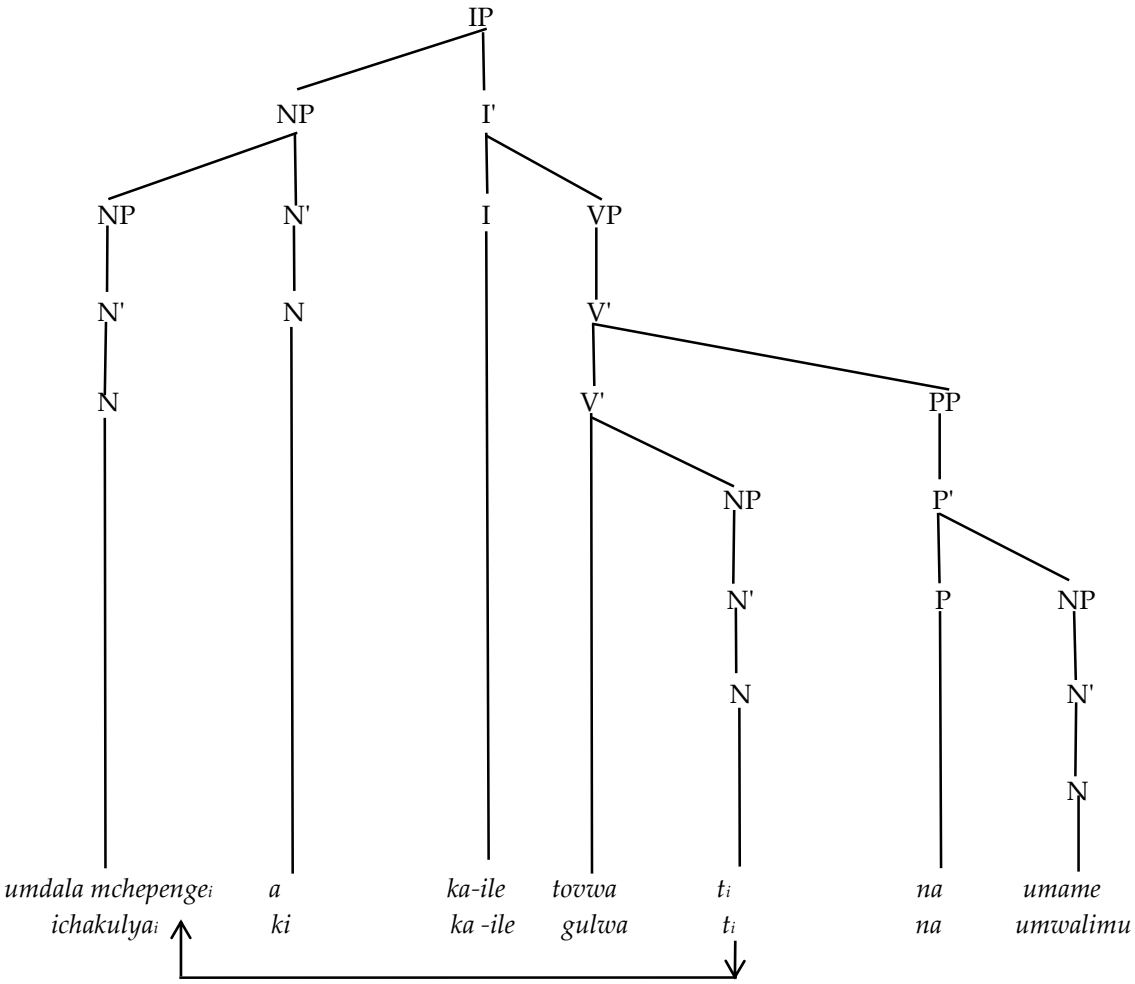

Fig. 7 The SS of passive constructions in Kihehe

The bold string of words in Figure 7 are the NPs functioning as sentence constituents. They are evidenced to be constituents through their ability to move from one sentence position (internal argument position) to another (external argument) position without affecting the grammaticality of the sentence. Their base position is marked by the trace (t_i). Thus, X-Bar theory richly allows the application of the movement test on NPs.

4.2.4. Coordination

Coordination is a syntactic process in which two or more words, phrases or clauses of the same grammatical type are joined together using a coordinating conjunction such as *and, or, but.* It is used in linguistics and diagnostics test to identify constituents. If two elements of the same type can be joined together with a conjunction, each of them is justified to be a constituent of the same category. According to Radford [9], coordination helps linguists determine whether a group of words forms a single syntactical unit in a sentence. Coordination of NPs in 14 suggests that they are constituents.

14) a) Umwana munofu iheka
'The happy child is laughing'.
Coordinate: Umwana munofu na umdala mchangamfu viheka.
'The happy child and the excited girl are laughing'.
b) Inyumba ndodo ilikaribu na libalabala

The small house is near the road

Coordinate: Inyumba ndodo na umutuka gwa daha silikaribu na libalabala
a small house and an old car are near the road.

c) Umuvaha ye akwiyapa umutuka gwangu ina lusungu
The man who is repairing my car is kind.

Coordinate: Umuvaha ye akwiyapa umutuka gwangu na umudala ye isafisha mutuka vanyalusungu.
"The man who is repairing my car and the girl who is cleaning the car are kind"

The sentences in the examples in 14 evidence the presence of a group of words in each, making up a constituent. In a), the coordinated sentence show that the noun phrase umwana munofu 'a beautiful child' is a constituent as it can be coordinated with umdala mchangamfu 'the exited girl'. A similar process is evidenced in b) in which the NP inyumba ndodo 'a small house' is tested by coordinating it with umutuka gwa daha 'an old car'. In c), a complex NP with a relative clause as its modifier is coordinated with another complex NP. This shows that the relative clause umuvaha ye akwiyapa umutuka gwangu 'the man who is repairing my car' is a single constituent. When we apply the coordination test, two or more noun phrases are joined together using coordinating conjunctions, which shows that they function as a single unit [9]. Therefore, the coordination test proves that noun phrases with different modifiers function as one unit in a sentence and helps us understand the structure of noun phrases in Kihehe. On the contrary, Andarson et al [22] claim that the coordination test is not a reliable test. This presents the fact that the reliability of the test depends on the language.

4.2.5. Question and Answer Test

The Questions and Answer Test checks whether a group of words can answer a question naturally and completely. If the words can function as a meaningful answer, then those words are likely to be constituents in the sentence. According to Radford[9], constituent tests such as the questions and answer test helps linguists determine the internal structure of a sentence and identify the syntactic phrases. In Kihehe, an NP forming a constituent can stand alone as an answer to the WH-Question, as in

15) a) **Umdala munofu** apatite isawadi.
'The beautiful girl got a gift.'

Question: Ye nani apatite isawadi?
'Who got a gift?'

Answer: Umdala munofu
'The beautiful girl'

b) **Umwalimu ye ifundisha Kiswahili** asupali neng'uni.
'The teacher who is teaching Kiswahili is absent today.'
Question: Ye nani asupali neng'uni?
'Who is absent today?'
Answer: Umwalimu ye ifundisha Kiswahili.
'The teacher who is teaching Kiswahili'

c) **Inyumbi ya Mwalimu vangu** ili palubali pa mugunda.
'My teacher's house is near the farm'
Question: Kiki che kili kilimulubali mwa mugunda?
'What is near the farm?'
Answer: Inyumbi ya Mwalimu vangu.
'My teacher's house'

The examples in 14) represent the question-answer test, sometimes referred to as a standalone test. The NP qualifies as a constituent only when it can stand alone as an answer to a question. In the examples, the NPs umudala munofu 'a good girl', umwalimu ye ifundisha Kiswahili 'the teacher who teaches Kiswahili' and inyumbi ya mwalimu vangu 'my teacher's house'. This shows that the NPs qualify to be sentence constituents in the sentences in 15. The question-and-answer test help us to identify noun phrases in Kihehe and other parts of the sentence.

In GB and X-Bar theory, this is referred to as A' movement, just as in topicalisation. It is believed that at DS the WH-word is moved to the specifier of CP, where the type of sentence is determined. Thus, the tests can be properly accounted for within the GB, specifically the X-Bar framework.

5. Conclusion

This study examined how constituent tests can be used to analyze the Noun Phrase (NP) in Kihehe. The main aim was to determine whether the noun phrase in Kihehe functions as a single grammatical unit, which in the end presents the structure of the NP in the language. To achieve this, the study applied common syntactic tests such as substitution, movement, coordination, question formation, and deletion (ellipsis), which are widely used in syntactic analysis [9, 8, 22].

The findings show that the noun phrase in Kihehe behaves as one complete syntactic unit, whereby applying the substitution test, it was shown that a full noun phrase can be replaced by a pronoun without affecting grammaticality. This confirms that the noun phrase functions as one constituent in sentence structure [10,9]. The movement test further demonstrated that the whole noun phrase can be moved for emphasis or focus, but its internal parts cannot be moved separately. This supports the idea that constituents move as complete units, not in fragments [8].

The coordination test also provides strong evidence where by noun phrases can be coordinated with other noun phrases of the same type (NP + NP), which confirms that they belong to the same syntactic category [11]. In addition, question formation and deletion tests reveal that when a sentence is questioned, or part of it is omitted, it is the entire noun phrase that is affected, not just individual elements within it.

The use of constituent tests has proven to be a reliable and effective method for analyzing the testing noun phrases in Kihehe, and the findings support principles from generative syntax, especially X-bar theory, which explains that phrases are built around a head and organized in a hierarchical structure [36, 9].

Therefore, this paper demonstrates that the noun phrase in Kihehe is a clear and complete grammatical unit. It has a well-organized internal structure, and it behave in a regular and predictable way in a sentence. The study contributes to the understanding of Kihehe syntax and enriches research on Bantu languages more broadly. It also provides a strong foundation for future research on phrase structure, agreement systems, and comparisons between Kihehe and the study of Bantu languages in general, as well as the analysis in Kihehe and related languages.

Data Availability

The data are available within this paper.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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"Conceptualization, Lea Mpobela and Elizabeth Mbelwa; Methodology, Lea Mpobela and Elizabeth; Software, Lea Mpobela; Validation, Elizabeth Mbelwa and Lea Mpobela; Formal Analysis, Lea Mpobela; Investigation, Elizabeth Mbelwa and Lea Mpobela; Resources, Elizabeth Mbelwa; Data Curation, Lea Mpobela; Writing – Original Draft Preparation, Elizabeth Mbelwa; Writing – Review & Editing, Lea Mpobela; Visualization, Lea Mpobela; Supervision, Lea Mpobela; Project Administration, Elizabeth Mbelwa and Lea Mpobela; Funding Acquisition, Elizabeth Mbelwa and Lea Mpobela.

References

[1] Robert Needham Cust, *A Sketch of the Modern Languages of Africa*, London:Trubner, vol. 1, 1883. [Google Scholar] [Publisher Link]

[2] Harry Hamilton Johnston, *A Comparative Study of the Bantu and Semi Bantu Langusges*, Oxford Clarendon Press, vol. 2, 1922. [Google Scholar] [Publisher Link]

[3] Malcolm Guthrie, *The Classification of the Bantu Languages Bound with Bantu Word Division*, 1st ed., Routledge, 1948. [Google Scholar] [Publisher Link]

[4] Lameck Mpalanzi, *An Analysis of Tense Aspects System in IKihehe: A Case of Affirmative and Negative Construction*, Dissertation University of Dar es Salaam, 2010. [Google Scholar] [Publisher Link]

[5] Derek Nurse, and Philippson Gérard, *The Bantu Languages*, Routledge, vol. 4, 2006. [Google Scholar]

[6] Noam Chomsky, *Lectures on Government and Binding*, Dordrecht, Holland; Cinnaminson, [N.J.]: Foris Publications, 1981. [Google Scholar] [Publisher Link]

[7] Andrew Radford, *An Introduction to English Sentence Structure*, Cambridge University Press, 2009. [Google Scholar]

[8] Andrew Carnie, *Syntax: A Generative Introduction,* John Wiley and Sons, 2021. [Google Scholar]

[9] Andrew Radford, *English Syntax: An Introduction*, Cambridge University Press, 2004. [Google Scholar] [Publisher Link]

[10] Liliane M.V. Haegeman, *Introduction to Government and Binding Theory*, 2nd ed., Blackwell, 1991. [Google Scholar]

[11] John Archibald, and William Delaney O'Grady, *Contemporary Linguistics: An Introduction*, 6th ed., Bedford/St. Martins, 2010. [Google Scholar]

[12] Maggie Tallerman, *Understanding Syntax*, 6th ed., Routledge, 2025. [Google Scholar] [Publisher Link]

[13] Thomas Edward Payne, *Describing Morphosyntax: A Guide for Field Linguistics*, Cambridge University Press, 1997. [Google Scholar]

[14] R.M.W. Dixon, *Basic Linguistic Theory: Methodology*, Oxford University Press, 2010. [Google Scholar] [Publisher Link]

[15] Martin Haspelmath, and Andrea Sims, *Understanding Morphology*, 2nd ed., Routledge, 2010. [Google Scholar] [Publisher Link]

[16] Francis Katamba, Bantu Nominal Morphology, *The Bantu Languages*, 1st ed., Routledge, 2004. [Google Scholar] [Publisher Link]

[17] Joan Bresnan, and Sam A. Mchombo, "The Lexical, Integrity Principle: Evidence from Bantu," *Natural Language and Linguistic Theory*, vol. 13, no. 2, pp. 181-254, 1995. [CrossRef] [Google Scholar] [Publisher Link]

[18] Jochen Zeller, "The subject Marker in Bantu as an Antifocus Marker," *Stellenbosch Papers in Linguistics*, vol. 38, no. 1, pp. 221-254, 2008. [Google Scholar] [Publisher Link]

[19] Sam Mchombo, *The Syntax of Chichewa*, Cambridge University Press, 2004. [Google Scholar]

[20] Julius Taji, "Definiteness in Chiyao," *Ghana Journal of Linguistics*, vol. 9, no. 2, pp. 44-64, 2020. [Google Scholar] [Publisher Link]

[21] Timothy J. Osborne, "Tests for Constituents: What they Really Reveal about the Nature of Syntactic Structure," *Language Under Discussion*, vol. 5, no. 1, pp. 1-41, 2018. [CrossRef] [Google Scholar] [Publisher Link]

[22] Catherine Anderson et al., *Essentials of Linguistics*, 2nd ed., Press Book, 2022. [Google Scholar] [Publisher Link]

[23] E.O. Ashton, *Swahili Grammar (Including Intonation)*, London, Longmans, 1947. [Google Scholar]

[24] Mohamed Abdulla Mohamed, *Modern Swahili Grammar*, Nairobi: East African Educational Publishers, 2001. [Google Scholar] [Publisher Link]

[25] Richard Songelaeli Mgullu, *Linguistics Course: Phonetics, Phonology and Morphology of Swahili*, Longhorn Publishers, 1999. [Google Scholar]

[26] Jonace Manyasa, "When Language Transfer is Negative Analysis of Morpho-Syntactic Interference Errors by Learners of French in Tanzanian Higher Learning Institutions," *Journal for Foreign Languages*, vol. 13, no. 1, pp. 165-190, 2021. [CrossRef] [Google Scholar] [Publisher Link]

[27] Habila Ibrahim-Kunzaar, The Gogo People of Tanzania: A Rich Cultural Heritage of East Africa, 2026. [Online]. Available: https://kunzaar.com.ng/gogo-people-of-tanzania/

[28] Josephat M. Rugemalira, *A Grammar of Runyambo*, Languages of Tanzania Project, University of Dar es Salaam, 2005. [Publisher Link]

[29] Edgar C. Polome, *Swahili Language Handbook*, Center for Applied Linguistics, 1967. [Google Scholar]

[30] Henry R.T. Muzale, and Josephat M. Rugemalira, "Researching and Documenting the Languages of Tanzania," *Language Documentation and Conservation*, vol. 2, no. 1, pp. 68-108, 2008. [Google Scholar] [Publisher Link]

[31] Ray Jackendoff, *X-1 Syntax: A Study of Phrase Structure*, MIT Press. 1977. [Google Scholar]

[32] Francis Katamba, and Jhon Stonham, Morphology, 2nd ed., Red Globe Press, 1993. [Online]. Available: https://api.pageplace.de/preview/DT0400.9781137111319_A35199786/preview-9781137111319_A35199786.pdf

[33] Benjamin Savonen, *Ikihehe Language Guide and Dictionary*, 1st ed., Tulongane Pamwinga, 2013. [Online]. Available: https://www.scribd.com/document/192996076/Ki-He-He-Dictionary

[34] Egidio Crema, Grammar of the Hehe Language. Irole, (Tanzania): Self Published, 1987. [Online]. Available: https://glottolog.org/resource/reference/id/34687

[35] Larry M. Hyman, "Segmental Phonology" *The Bantu Languages*, vol. 42, pp. 128-149, 2003. [Google Scholar]

[36] Noam Chomsky, *Knowledge of Language: Its Nature, Origin, and Use*, Perspectives in the Philosophy of Language: A Concise Anthology, pp. 3-44, 1986. [Google Scholar] [Publisher Link]