



ELSEVIER

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Lingua 116 (2006) 31–63

Lingua

www.elsevier.com/locate/lingua

The asymmetric nature of Bantu applicative constructions

Deo Ngonyani^{a,*}, Peter Githinji^b

^aMichigan State University, Department of Linguistics and Germanic, Slavic, Asian and African Languages, Wells Hall A-614, East Lansing, MI 48824, USA

^bOhio University, Department of Linguistics, Gordy 383, Athens, OH 45701, USA

Received 18 September 2003; received in revised form 21 January 2004; accepted 16 March 2005
Available online 23 May 2005

Abstract

Studies of the applicative constructions in various Bantu languages have revealed two types: symmetrical object languages in which both objects in double object applicatives exhibit the same syntactic properties, and asymmetrical object languages, where the two objects do not behave the same way [Bresnan, J., Moshi, L., 1990. Object asymmetries in comparative Bantu. *Linguistic Inquiry* 21, 147–185]. This study investigates the constituent structure of the applicatives in Kikuyu (a symmetrical object language) and Chingoni (an asymmetrical object language). Following [Ngonyani, D., 1996a. *The Morphosyntax of Applicatives*. Doctoral dissertation, UCLA], VP ellipsis in which only the object is missing is established as a diagnostic tool. The data demonstrate that although the constructions lack only the complement, they exhibit the same syntactic properties as English VP ellipsis, namely, availability of sloppy identity interpretation, possibility of deleting idiom chunks, and lack of island constraints. VP ellipsis reveals that applicative constructions in both languages are generated with the direct object appearing in the lowest predicate, while the applied object appears in the higher VP. This suggests the applicative affix is a head that takes an event as its complement [Pylkkänen, L., 2002. *Introducing Arguments*. Doctoral dissertation, MIT]. The findings show the same pattern of argument positions in the two language thus supporting Baker's [Baker, M., 1988. *Incorporation: A Theory of Grammatical Function Changing*. Chicago University Press,

Abbreviations: AO, applied object; AP, applicative suffix; DO, direct object; FOC, focus marker; FT, future tense; FV, final vowel; OM, object marker; PAS, passive suffix; PF, perfect aspect marker; PR, present tense; PRG, progressive aspect; PT, past tense; RP, recent past; SM, subject marker; NF, near future

* Corresponding author. Tel.: +1 517 353 4051; fax: +1 517 432 2736.

E-mail addresses: ngonyani@msu.edu (D. Ngonyani), githinji@msu.edu (P. Githinji).

0024-3841/\$ – see front matter © 2005 Elsevier B.V. All rights reserved.

doi:10.1016/j.lingua.2005.03.006

Chicago] UTAH. The study brings to light some interesting features of multiple applicatives. For example, the symmetry noted in Kikuyu double object construction is not found in multiple applicatives.

© 2005 Elsevier B.V. All rights reserved.

Keywords: Bantu; Kikuyu; Chingoni; Applicatives; VP ellipsis; Object asymmetries; UTAH

1. Introduction

Bantu languages have a derivational suffix on the verb that licenses an additional object as illustrated in the following sentences contrasting a non-applicative and an applicative construction in Chingoni (or Tanzanian Kingoni).

- (1) a. Kuku i-geg-a li-gela
 1grandpa 1SM-carry-FV 5-hoe
 ‘Grandpa is carrying the hoe.’
- b. Kuku a-ku-va-geg-el-a va-jukulu li-gela
 1grandpa 1SM-PR-2OM-carry-AP-FV 2-grandchild 5-hoe
 ‘Grandpa is carrying a hoe for the grandchildren.’

Sentence (1a) has the basic verb with the subject prefix. The verb takes one object, *ligela* ‘hoe’ in this case. The suffix *-el-* is added to this verb in (1b). In this sentence, there are two objects, the direct object (DO) *ligela* ‘hoe’ and the indirect object *mjukulu* ‘grandchild.’

Research on the phenomenon has uncovered a wide range of empirical facts and has generated an enormous amount of descriptive and theoretical questions about morphology and syntax. Among the facts uncovered is that the additional objects are diverse with respect to their semantic roles and syntactic behavior (Bresnan and Moshi, 1990; Alsina and Mchombo, 1993; Kimenyi, 1980; Ngonyani, 1996a). Another intriguing feature extensively explored in Bresnan and Moshi (1990) is that there exist two types of languages, symmetrical and asymmetrical object languages. The typology is clearly demonstrated by (a) object order, (b) passivization, and (c) object marking. In symmetrical object languages the indirect object can precede the direct object, and the direct object can also precede the indirect object, while in asymmetrical object languages, the indirect object precedes the direct object. With respect to passivization, either object may passivize in symmetrical object languages, while in asymmetrical object languages only the indirect object may passivize. Either object may be marked on the verb in symmetrical object languages, while in asymmetrical object languages only the direct object may be marked. Asymmetries also exist within languages, such as between benefactive and instrumental applicatives. In addition, Bresnan and Moshi uncovered several features that correlate with the asymmetry.

The question that we address in this paper is: What is the constituent structure of the double object constructions? Derivational approaches to this question have converged on Larson’s (1988) stacked VP structure (see for example Hoffman, 1991; Marantz, 1993; Ngonyani, 1996a, 2000; Pylkkänen, 2002; McGinnis, 2001; Anagnostopoulou, 2003) with

the applied object (AO) generated higher than the direct object. Using VP ellipsis, Ngonyani (1996a, 2000) determined that the applicative VP consists of two stacked VPs, with the VP containing the direct object contained in the higher VP containing the applied object. Ngonyani's studies, however, were based on Kiswahili and Kindendeule, both asymmetrical object languages. This paper attempts to replicate the diagnostics on two languages, Kikuyu, a symmetrical object language, and Chingoni, an asymmetrical object language.¹ The objective is to examine whether the symmetry in Kikuyu object properties is found in the constituent structure. Kikuyu exhibits one other interesting feature which it shares with some symmetrical object languages such as Kichaga (Moshi, 1995) and Kinyarwanda (Kimenyi, 1995), namely, it may take more than one applied object. Our study provides support to the incorporation account and stacked VP analysis of applicatives.

We make two claims in this paper. The first claim is that symmetrical object languages have the same constituent structure of applicative VPs as asymmetrical object languages. The second claim is that, at least in Kikuyu, the surface symmetry is limited to constructions that contain only one applied object. When a second applied object is involved, the symmetry disappears and strict asymmetry, reflective of the asymmetry in asymmetrical object languages, is maintained. The findings on how the applied objects are generated will be shown to be consistent with Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH) which states:

- (2) Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. (Baker, 1988: 46)

Our contribution, therefore, is establishing how the applicative VP is base-generated, a question that is important enough to be investigated on its own. In this paper we do not address the logical question that follows after establishing the constituent structure, namely, how the asymmetries arise within a language and across languages.²

The argument is presented in the following way. Section 2 describes the difference between the two languages using word order, passivization and object marking and demonstrates that Kikuyu is a symmetrical object language while Chingoni is an asymmetrical object language. The structure of the applicative VP is the main subject of investigation in this paper. In order to determine the structure, we begin by establishing VP ellipsis as a diagnostic tool in Section 3. We make predictions about the outcomes of this test on applicative constructions. The test is applied in Section 4 where we show that in both Kikuyu and Chingoni the direct object is base-generated lower than the applied object. Fascinating evidence from multiple applied objects in Kikuyu is presented in Section 5 to demonstrate the asymmetry in the derivation of multiple applied objects. In Section 6, we

¹ Kikuyu is a Bantu language spoken in the Central parts of Kenya. It is coded as E.51 in Guthrie's (1967-1971) classification. Data for Kikuyu were obtained from the second author who is a native speaker from the Central Province in Kenya. Chingoni is a Bantu language spoken in Southern Tanzania. Its reference number in Guthrie's classification is N.13. In spite of its name, this language is not immediately related to Southern African Nguni languages. Data from Chingoni were collected by the first author during fieldwork in 2001 and Ngonyani (2003).

² Several researchers have addressed this second question. They include Bresnan and Moshi (1990), Alsina and Mchombo (1993), Marantz (1993), Baker (1992), McGinnis (2001), and Pylkkänen (2002).

discuss the implications of our findings on object properties, the hierarchy of thematic roles, and the morphological structure of the Bantu verb. Concluding remarks are presented in Section 7.

2. Basic facts

Bantu languages have a construction in which a suffix *-il-* and its variants (e.g. *-ir-*, *-el-*, *-er-*, *-i-*) is attached to the verb.³ This affix, also known as the applicative extension, licenses an additional object known as the applied object or indirect object. The verb becomes an applicative verb, and the sentence is generally known as an applicative construction. The examples below show these features in Chingoni:

- (3) a. M-*geni* i-*gul-a* u-*gimbi*
 1-guest PR-buy-FV 14-beer
 ‘The guest is buying beer’
- b. M-*geni* i-*gul-il-a* va-*ndu* u-*gimbi*
 1-guest PR-buy-AP-FV 2-person 14-beer
 ‘The guest is buying beer for people’

In both sentences, the root of the verb is *-gula* ‘buy’. In (3a), where there is no applicative extension, the verb has two arguments, the agent *mgeni* ‘guest’ and the theme *ugimbi* ‘beer.’ In (3b), however, the verb has the applicative affix *-il-* suffixed and, in addition to the two arguments, there is a beneficiary added. The applied objects can be assigned diverse semantic roles, as discussed by, among others, [Kimenyi \(1980\)](#), [Ashton \(1947\)](#), [Ngonyani \(1998\)](#), [Moshi \(1995\)](#), [Alsina and Mchombo \(1993\)](#), [Du Plessis and Visser \(1992\)](#). They may be beneficiaries, recipients, goals, location, and reason to mention some. Here are more examples from Chingoni.

- (4) a. Kuku a-*ku-va-geg-el-a* va-*jukulu* ma-*gela*.
 1grandpa 1SM-PR-2OM-carry-AP-FV 2-grandchild 6-hoe
 ‘Grandpa is carrying hoes for the grandchildren.’
- b. Kuku a-*ku-va-pelek-el-a* va-*jukulu* v-*aki* chi-*viga*.
 1grandpa 1SM-PR-2OM-send-AP-FV 2-grandchild 2-his 7-pot
 ‘Grandpa is taking the pot to his grandchildren.’
- c. Mi-*jokwani* v-*i-dumul-il-a* chi-*pula*.
 4-sugar cane 2SM-PR-cut-AP-FV 7-knife
 ‘They use the knife to cut the sugar cane with.’
- d. Li-*kolo* v-*i-telek-el-a* ma-*tevele*.
 6-vegetable 2SM-PR-cook-AP-FV 6-peanut
 ‘They cooked the vegetables with peanuts.’

³ In many languages, the exact shape of the suffix may be subject to vowel height harmony.

- e. v-i-telek-el-a ku-m-fuleni.
 2SM-PR-cook-AP-FV 17-3-river
 ‘They are cooking at the river.’

The applied object in (4a) is a beneficiary, while in (4b) the additional object can be interpreted as the goal. The instrument in (4c) is the applied object in a structure that is similar to (4d) where the additional object is an ingredient. In (4e), the applied object is a location which is marked with the locative prefix *ku-* before the nominal prefix *m-*. The applied objects do not all have the same syntactic properties in any one language.

In the following section, we examine object properties using three features, object order, object marking and passivization, to demonstrate the differences between a symmetrical object language (Kikuyu) and an asymmetrical object language (Chingoni).

2.1. Object order

Kikuyu allows both the applied object and the direct object to appear adjacent to the verb as the following examples show:

- (5) a. Mũ-geni a- ra- gũr-ĩ-ire ci-ana mũ-bira
 1- guest 1SM-PRG-buy-AP-PF 8-child 3-ball
 ‘The guest bought children a ball’
- b. Mũ-geni a-ra-gũr-ĩ-ire mũ-bira ci-ana⁴
 1-guest 1SM-PRG-buy-AP-PF 3-ball 8-child
 ‘The guest bought a ball for the children’

In (5a), the applied object *ci-ana* ‘children’ appears immediately after the verb and before the direct object *mũ-bira* ‘ball’, while in (5b) the direct object appears immediately after the verb and before the indirect object. Chingoni permits only one order, AO – DO as the examples below show.

- (6) a. M-geni i-gul-i va-ndu u-gimbi⁵
 1-guest PR-buy-AP 2-person 14-beer
 ‘The guest is buying beer for people’
- b. *Mgeni i-gul-i u-gimbi va-ndu
 1-guest PR-buy-AP 14-beer 2-person
 ‘The guest is buying beer for people’

The examples show that the applied object *vandu* ‘people’ must precede the theme *ugimbi* ‘beer,’ as in (6a). A reversal in the order of the objects, as shown in (6b), is ungrammatical.⁶ The difference between the two languages is reflected in object marking.

⁴ In the Kikuyu concord system, noun Class 8 can have either *i* or *ci* prefixes (see Mugane, 1997). The seven vowels of the language are traditionally represented as /i, ī, e, a, o, ū, u/.

⁵ Chingoni optionally deletes verb-final syllables which have /l/ in the onset. Thus *igulila* ~ *iguli* both mean ‘she is buying for’.

⁶ Object marking allows the order of the objects to be more flexible. The word order property discussed here is based on constructions in which object marking is not involved.

2.2. Object marking

The object marker (OM) in Bantu languages appears between the tense marker and the verb stem. The question we consider is which object is marked on the verb. To answer this question, we must first explain how object marking works in each language we are investigating.

In Kikuyu, the object is realized either in the form of full post-verbal DP without object marking, or object marking without a post-verbal DP. The following examples from Bergvall (1986) illustrate this:

- (7) a. *Kamau ne-a-mo-ku:-ire mw-ana.
 Kamau FOC-1SM-1OM-carry-PF 1-child
 ‘Kamau carried (the) child.’
- b. Kamau ne-a-mo-ku:-ire.
 Kamau FOC 1SM-1SM-carry-PF
 ‘Kamau carried her/him’
- Kamau ne-a-ku-ire mwana
 Kamau FOC 1SM-carry-PF1-child
 ‘Kamau carried a child’
- d. *Kamau ne-a-ku-ire
 Kamau FOC-1SM carry-PF
 ‘Kamau carried.’

In (7a), the object marker and the post-verbal DP appear resulting in an ungrammatical construction. The object in the grammatical example (7b), however, is realized in the form of the object marker and no post-verbal DP. There is no object marker in the grammatical (7c), but there is a post-verbal DP. Neither object marking nor post-verbal DP is realized in (7d), resulting in an incomplete and ungrammatical sentence. We adopt Bergvall’s (1986) analysis, which suggests that the gap in (7b) is occupied by a *pro*.

In Chingoni, as in Kiswahili, objects are realized in one of the following three ways: (i) a DP without object marking, (ii) object marking together with its lexical NP, and (iii) object marking without lexical DP. These forms are illustrated in the examples below:

- (8) a. Va-geni va-u-gul-i m-gunda
 2-guest 2SM-3OM-buy-PF 3-farm
 ‘The guests bought the farm’
- b. Va-geni va-u-guli
 2-guest 2SM-3OM-buy-PF
 ‘The guests have bought it (the farm).’
- c. Va-geni va-gul-i m-gunda
 2-guest 2SM-buy-PF 3-farm
 ‘The guests have bought a farm.’

- d. *Va-geni va-gul-i
 2-guest 2_{SM}-buy-PF
 ‘The guests have bought a/the farm’

Unlike Kikuyu, Chingoni can have both a post-verbal DP and the object marker, as illustrated in (8a). The other two forms, namely, post-verbal DP only and object marker without post-verbal DP, are also possible, as shown in (8b) and (8c) respectively. Like Kikuyu, the absence of both in (8d) is not acceptable, except in VP ellipsis structures, as will be discussed later in Section 3.

Having outlined the behavior of object markers in the two languages, we can now test the two languages. Either object can be marked on the Kikuyu verb as (9) shows.

- (9) a. Mū-geni a-ra-*ci*-gūr-ĩ-ire ----- mū-bira
 1_{guest} 1_{SM} PRG-8_{OM}-buy-AP-PF 3-ball
 ‘The guest bought them (children) a ball.’
- b. Mū-geni a-ra-*ũ*-gūr-ĩ-ir-e ci-ana -----
 1-guest 1_{SM}-PRG-3_{OM}-buy-AP-PF 8-child
 ‘The guest bought it (ball) for the children’

In the first sentence, the object marker *-ci-* agrees with the missing *ciana* ‘children’ (AO), while in the second sentence, the object marker *-ũ-* agrees with *mūbira* ‘ball’ (DO). Both are grammatical.

Chingoni presents a different picture in this respect since only one of the objects can be marked on the verb, as the following examples show:

- (10) a. M-geni a-*m*-let-i kuku va-jukulu
 1-guest 1_{SM}-1_{OM}-bring-AP 1grandfather 2-grandchildren
 The guest brought grandchildren to the grandfather
- b. *M-geni a-*va*-let-i kuku va-jukulu
 1-guest 1_{SM}-2_{OM}-bring-AP 1grandfather 2-grandchildren
 ‘The guest brought the grandchildren to (the) grandfather.’
- c. M-geni a-*m*-let-i va-jukulu kuku
 1-guest 1_{SM}-1_{OM}-bring-AP 2-grandchildren 1grandfather
 ‘The guest brought the grandchildren to (the) grandfather.’

When the object marker agrees with the applied object, as (10a) shows, we get a grammatical sentence. Object marking the direct object, as in (10b), results in an ungrammatical sentence. It is possible to interpret the sentence such that *vajukulu* ‘grandchildren’ is the applied object in (10b). This interpretation crucially relies on object marking the applied object, that is to say, the object marker can only refer to an applied object. In Chingoni where the object marker can co-occur with the full object phrase, the order of the objects is much more flexible as demonstrated in (10a) and (10c) when one is object marked.

2.3. Passivization

The differences between Kikuyu and Chingoni are reflected in passivization. Kikuyu passivization is marked by *-wo* on the verb, and in applicative constructions, the passive suffix appears after the applicative affix. Kikuyu allows either object to be the subject of a passive sentence, as illustrated below.

- (11) a. Mũ-*geni* a-*ra-gūr-ĩ-ire* ci-*ana* mũ-*bira*
 1*guest* 1SM-PRG-buy-AP-PF 8-*child* 3-*ball*
 ‘The guest bought children a ball’
- b. Ci-*ana* ci-*ra-gūr-ĩ-ir-w-o* mũ -*bira* nĩ mũ-*geni*
 8-*child* 8SM-PRG-buy-AP-PF-PAS-FV 3-*ball* by 1*guest*
 ‘The children were bought ball by the guest’
- c. Mũ-*bira* ũ-*ra-gūr-ĩ-ir-w-o* ci-*ana* nĩ mũ-*geni*
 3-*ball* 8-PRG-buy-AP-PF-PAS-FV 8-*child* by 1*guest*
 ‘The ball was bought for the children by the guest.’

The applied object *ciana* ‘the children’ is the subject of the passive construction (11b), while in (11c) it is the direct object *mũbira* ‘ball’ that is passivized. Both sentences are grammatical.

Chingoni passivization involves the verbal suffix *-w-*. In applicative constructions, Chingoni permits only applied object passivization, as demonstrated in the examples.

- (12) a. Kuku a-*m-kamul-i* m-*geni* mene.
 1*grandfather* 1SM-1OM-hold-AP 1-*guest* 9*goat*
 ‘Grandpa held/gave a goat for grandpa’
- b. M-*geni* a-*kamul-i-w-i* mene.
 1-*guest* 1SM-hold-AP-PAS-PF 9*goat*
 ‘The guest had a goat held/given to him.’
- c. *Mene ya-*kamul-i-w-i* m-*geni*.
 9*goat* 9SM-hold-AP-PAS-PF 1*guest*
 ‘The goat was held/given to the guest.’

Passivization of the beneficiary *mgeni* ‘guest’ in (12b) results in a grammatical sentence, but the same cannot be done for the direct object *mene* ‘goat,’ as (12c) illustrates.

The results of the three tests on the two languages are consistent with Bresnan and Moshi’s (1990) typology and are summarized in the table below.⁷

⁷ In some Bantu languages, such as Sesotho, a mixed typology is evident with an animacy hierarchy affecting how the objects are realized (Morolong and Hyman, 1977; Demuth et al., 2000). We do not explore object properties in this paper, an extensive area beyond the scope of this paper. For this paper, we have narrowed our investigation to deal with how the applicative VP is base-generated.

(13) A Typology of Applicative

	Symmetrical object languages (Kinyarwanda, Kichaga, Kikuyu)	Asymmetrical object languages (Kindendeule, Kiswahili, Chingoni)
Object order	(i) AO DO (ii) DO AO	(i) AO DO (ii) *DO AO
Passivization	(i) AO (ii) DO	(i) AO (ii) *DO
Object Mark	(i) AO (ii) DO	(i) AO (ii) *DO

From the evidence presented thus far, Kikuyu is a classic case of a symmetrical object language where the two objects seem to exhibit the same syntactic properties with respect to object order, object marking and passivization. Chingoni, on the other hand, is an asymmetrical object language with the applied object exhibiting the primary object properties. The question then is how the structure of the VP is base generated in the two languages. In this paper we attempt a constituent structure analysis of the applicative construction in both languages. Before we embark on the analysis, we discuss the test in the following section.

3. Constituent structure diagnostic – VP ellipsis

In this section, we follow Ngonyani (1996a, 1996b) in establishing VP ellipsis as a diagnostic for constituent structure in the two languages. In both Kikuyu and Chingoni the following constructions with missing objects are common.

- (14) a. Juma *nĩ-a-ra-gũr-a* nyumba (Kikuyu)
 Juma FOC-1SM-PRG-buy-FV 9house
 Juma is buying a house
 ona Amina *nĩ-a-ra-gũr-a*.
 and Amina FOC-1SM-PRG-buy-FV
 and Amina is too.
- b. Juma *nĩ-a-ra-gũr-a* nyumba?ĩ! Nĩ-a-ra-gũr-a
 Juma FOC-1SM-PRG-buy-FV 9house? Yes! FOC-1SM-PRG-buy-FV
 Is Juma buying a house? Yes! He is.
- (15) a. Juma *i-gul-a* nyumba na Amina *i-gul-a* mewa. (Chingoni)
 Juma PR-buy-FV 9house and Amina PR-buy-FV also
 Juma is buying a house and Amina is too.
- b. Amina *i-gul-a* nyumba? Eh! *I-gul-a*.
 Amina PR-buy-FV 9house Yes! PR-buy-FV
 Is Amina buying a house? Yes! She is.

The (a) sentences have coordinate clauses in which the first conjunct is a complete clause while the second conjunct contains the subject and the verb and no object. Hearers correctly interpret the missing object as the same as the one in the first conjunct. The (b) sentences are made of Yes–No questions and their truncated answers. As in (a) sentences, the objects in the responses are missing. Note that in these constructions there are no object markers because, as noted earlier, object marking without postverbal DP contains a pronominal.⁸

Although the verb does not seem to be elided, Ngonyani (1996a, 1996b) analyzes such constructions as VP ellipsis, similar to the more widely studied English VP ellipsis because they exhibit the same syntactic and semantic properties as the English VP ellipsis, and other languages. These include: (a) availability of sloppy identity interpretation, (b) possibility of deleting idiom chunks, (c) appearance of the gap in syntactic islands, and (d) ellipsis of VP adverbs. In this section we show that these features are true of facts found in Kikuyu and Chingoni and thus argue that the gap is not a silent object.

3.1. Availability of sloppy identity interpretation

One important property of VP ellipsis is the availability of a sloppy identity interpretation of a deleted pronoun (McCloskey, 1991; Otani and Whitman, 1991; Culicover and Jackedoff, 1995; Kim, 1999). This property is shared with such languages as English, where the entire VP is deleted, and the verb does not appear in the elliptical sentence. Consider the ambiguity in the following sentence.

- (16) John taught his children, and Peter did too
 i. = John taught John's children and Peter taught John's children
 ii. = John taught John's children and Peter taught Peter's children

In the first interpretation, the entire deleted VP is bound by the antecedent VP. The referent of "his" in the deleted VP is the same as the one in the first clause. This is the non-sloppy identity interpretation. The second interpretation is derived from the possessive pronoun of deleted VP being bound within the second conjunct clause. This is the sloppy identity interpretation. This property is reported in other languages (see McCloskey, 1991 on Irish, Otani and Whitman, 1991 on Brazilian Portuguese).

The availability of sloppy identity interpretation is evident in the following set of examples.

- (17) a. Juma nĩ-a-ra-thom-a i-buku ri-ake (Kikuyu)
 Juma FOC-1SM-PRG-read-FV 5-book 5-her/his
 Juma is reading Juma's book
 na Jamila nĩ-a-ra-thom-a ~~i-buku ri-ake~~ onake.
 and Jamila FOC-1SM-PRG-FV 5-book 5-her/his also

⁸ Bresnan and Moshi (1990) report that in Kichaga unspecified object deletion is possible when one of the objects is marked on the verb. This contrasts with Chichewa where this is not possible. We have no insights regarding the factors behind this difference. We can only note that the examples of the verbs used may play a role in the restrictions. The Kichaga example cited has 'eat' as its verb, while the Chichewa example has 'write.' While food is implicitly the complement of the verb 'to eat,' there is a wider range of complements of 'to write.' We would need to study more data on the subject from various languages to arrive at a better explanation.

= and Jamila is reading Jamila's book

=?Jamila is reading Juma's book

b. Zenda i-lim-a m-gunda w-ake (Chingoni)

Zenda PR-cultivate-FV 3-farm 3-his/her

Zenda is cultivating his farm

na Mvula i-lim-a ~~m-gunda w-ake~~ mewa.

and Mvula PR-cultivate-FV 3-farm 3-his/her also

and Mvula is too.

=Mvula is cultivating Mvula's farm

=Mvula is cultivating Zenda's farm

In (17a), the deleted VP includes a possessive pronoun that is bound by the subject of the elliptical clause. This is the sloppy identity interpretation, an interpretation that is also available in the Chingoni example (17b). The sloppy identity interpretation is available because the VP in the second conjunct is reconstructed with its clause-internal binding. The non-sloppy identity interpretation (strict reading) is a result of the option of treating deleted VP as a copy of the VP in the first conjunct. This interpretation is not quite clearly acceptable in Kikuyu while in Chingoni, on the other hand, the non-sloppy identity interpretation is available.

Note that the Chingoni and Kikuyu constructions are unlike unspecified object deletion found in English as:

(18) John is teaching his children and Joseph is teaching too.

=*Joseph is teaching Joseph's children.

=Joseph is teaching John's children

The second conjunct is not ambiguous. Thus although the Chingoni and Kikuyu examples look like the English unspecified object deletion constructions because of the presence of the verb in the second conjunct, their interpretation parallel English VP ellipsis where the verb is not available on the surface.

3.2. Deletion of idiom chunks

It is widely known that objects of idiom chunks do not pronominalize. This is shown in the English sentences below where two idiom chunks, *pay lip service* and *take advantage of* are used.

(19) a. The secretary pays *lip service* to the party.

b. *The secretary pays *it* to the party.

(20) a. The guest took *advantage* of our hospitality.

b. *The guest took *it* of our hospitality.

Sentences (19a) and (20a) have the complete form of the idiom with the verb and the noun after it. Pronominalization of the object noun as done in (19b) and (20b) results in ungrammatical sentences. However, it is possible to elide the idiomatic VP and retain idiom meaning, as demonstrated below.

- (21) a. The secretary pays lip service to the party,
and the chair does so too.
- b. *The secretary pays lip service to the party,
and the chair pays too.
- (22) a. The guest took advantage of our hospitality,
and the sponsors did so too.
- b. *The guest took advantage of our hospitality,
and the sponsors took too.

Deletion of the object alone produces ungrammatical sentences, as (21b) and (21b) illustrate.

In Bantu languages the pronominalization of the object takes the form of object marking without the object phrase. As in English, pronominalization of the object in idioms is not possible, as demonstrated below with Kikuyu examples.

- (23) a. Njoki nĩ-a-ring-a mũ-kũyũ.
Njoki FOC-1SM-hit-FV 3-fig tree
Njoki has hit the fig tree
'Njoki is lucky.'
- b. *Njeri nĩ-a-ũ-ring-a
Njeri FOC-1SM-3OM-hit-FV
Njeri has hit it
'Njeri is lucky.'

In (23a), the idiom *kuringa mũkũyũ* 'hit a fig tree' means to become lucky in Kikuyu. The noun *mũkũyũ* 'fig tree' is the object in this idiom. This object is pronominalized by means of object marking in (23b) resulting in an ungrammatical sentence just like English pronominalization.

The crucial test then is whether the construction we identify as VP ellipsis in Bantu behaves like the English VP ellipsis (21a) and (22a), where the entire idiomatic VP is elided, or as (21b) and (22b), where only the object is missing resulting in ungrammatical constructions. The behavior of the Kikuyu (24a) and Chingoni (24b) idiom chunks is the same as the English VP ellipsis constructions (21a) and (22a) even though the verb appears in the elliptical clause and looks like English (21b) and (22b).

- (24) a. Njoki nĩ-a-ring-a mũ-kũyũ, na Njeri nĩ-a-ring-a onake
Njoki FOC-1SM-hit-FV 3-fig tree and Njeri FOC-1SM-hit FV also
Njoki has hit the fig tree and Njeri has too.
'Njoki has become lucky and Njeri has too.'
- b. Moyo a-geg-i mdala na Kifaru a-geg-i mewa (Chingoni)
Moyo 1SM-carry-FV 1woman and Kifaru 1SM-carry-FV also
Moyo carry woman and Kifaru carry also
'Moyo is married and Kifaru is married also'

In the second conjunct of both sentences, only the verb appears, but the idiomatic meaning is retained. In (24a), it means Njeri has 'hit the fig tree too' meaning she is lucky too, and in

(24b), ‘carry a woman’ means a man getting married. The verb ‘carry’ which appears in the second conjunct cannot be construed as carrying anything else. These facts support our VP analysis of the two Bantu languages.

3.3. Appearance in syntactic islands

VP ellipsis gaps can appear in syntactic islands such as *wh*-clauses, where extractions are not allowed. The following examples from Kikuyu and Chingoni show the phenomenon in question is not sensitive to island constraints.

- (25) a. I-buku rĩ-rĩa rĩ-rĩ-na mbica (Kikuyu)
 5-book 5SM-that 5SM-is-with 9pictures
 A book which has pictures
 na rĩ-ngĩ [rĩ-rĩa rĩ-ta-rĩ ---]
 and 5SM-another 5SM-that 5SM-NEG-is ---
 and another which does not.
- b. I-jov-a mwanja i-geg-a m-dala yu-ngi (Chingoni)
 PR-say-FV FUT PR-carry-FV 1-woman 1-other
 He says he will marry another wife
 na ne ni-many-i [ndava ya ki mwanja i-geg-a ---]
 and I I-know-PF [because of what FUT PR-carry-FV --]
 and I know why he will.

In the Kikuyu example (25a), the *wh*-island marked by square brackets lacks the object of the verb. The antecedent *mbica* ‘pictures’ is found in the first clause. A similar feature is found in the Chingoni example in (25b). The antecedent could not have been moved from the gap in the island. The gap must be a result of VP ellipsis.

3.4. Adverbial ellipsis

Another property of VP ellipsis is that VP adverbs that modify the VP are deleted together with the rest of the elided VP material. This feature is clearly attested in Chingoni.

- (26) V-ana va-kali-tungu yembe kanyata-kanyata (Chingoni)
 2-child 2SM-PT-pick 10mango quickly-quickly
 ‘Children were picking mangoes quickly
 na dadi w-avi a-kali-tungu mewa.
 and 1father 1-their 1SM-PT-pick also
 and their father did so too.’

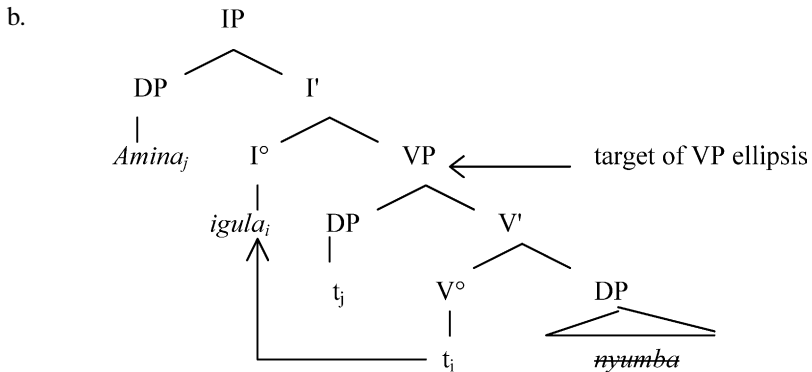
In the Chingoni example (26), *kanyatakanyata* ‘quickly’ appears in the first conjunct and does not appear in the elliptical clause. This patterns well with English VP ellipsis as the examples below show.

- (27) a. The children were picking mangoes quickly
but their father was not. (i.e. was picking mangoes but not quickly)
- b. The children were picking mangoes quickly
but their father was not picking. (i.e. was not picking mangoes)

Example (27a) illustrates VP ellipsis where the verb and the adverb are elided. Example (27b), however, shows the verb remains on the sentence and only the unspecified object and the adverb are deleted. The result in the former case is similar to the Chingoni and Kikuyu examples which otherwise look like the latter English example. Therefore, the gap in the Bantu languages is a result of deletion of VP together with its adverb.

We have discussed four properties of VP ellipsis, namely, availability of sloppy identity interpretation, deletion of idiom chunks, appearance in syntactic islands, and adverb ellipsis. We have shown that all of them are clearly attested in the constructions in Kikuyu and Chingoni, where the complement of the verb is missing, but the verb appears together with other remnant material. This suggests that the verb has moved out of the VP to an Infl node, as shown in the tree diagram below.

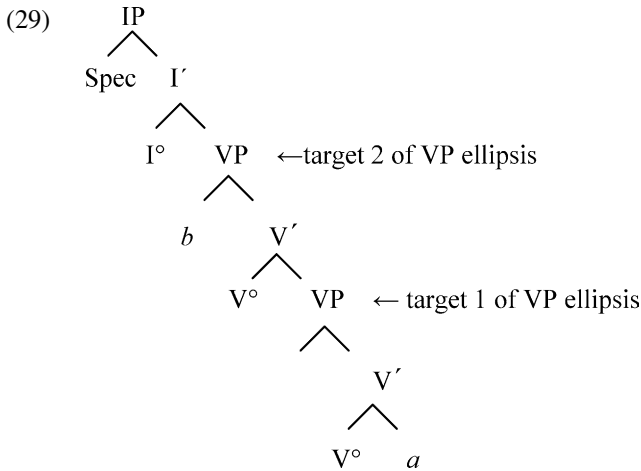
- (28) a. Amina i-gul-a ~~nyumba~~ mewa. (Chingoni)
Amina PR-buy-FV 9house also
Amina is buying a house too.



The tree diagram shows the target VP with the head raised to an Infl node outside the VP. This way only the object is eliminated and the verb survives because it is located outside the VP.

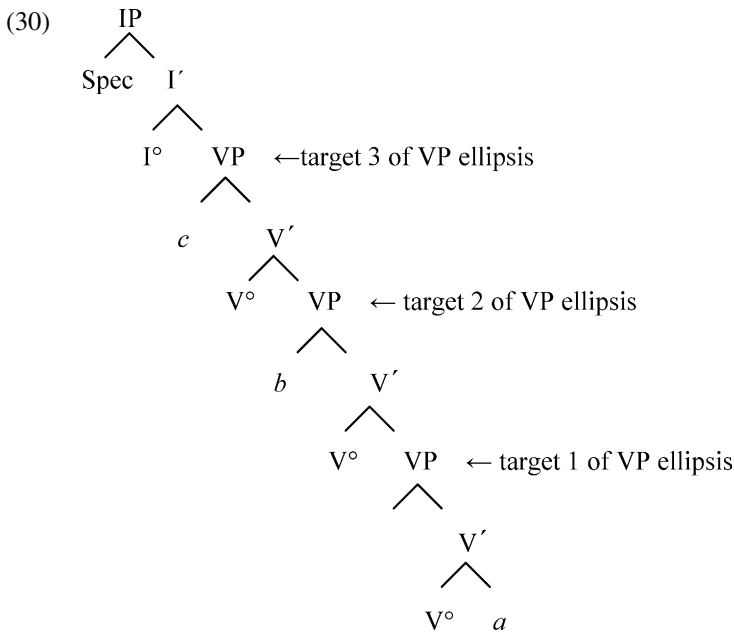
3.5. Predictions

This diagnostic tool enables us to make several empirical predictions about constituent structure of the applicative VPs. The first prediction is that, if the structure of the complex predicate is an asymmetrical stacked VP, as proposed by Larson (1988), Marantz (1993) and Hoffman (1991), we should have two targets of VP ellipsis in double object constructions. This prediction is shown in the following tree diagram.



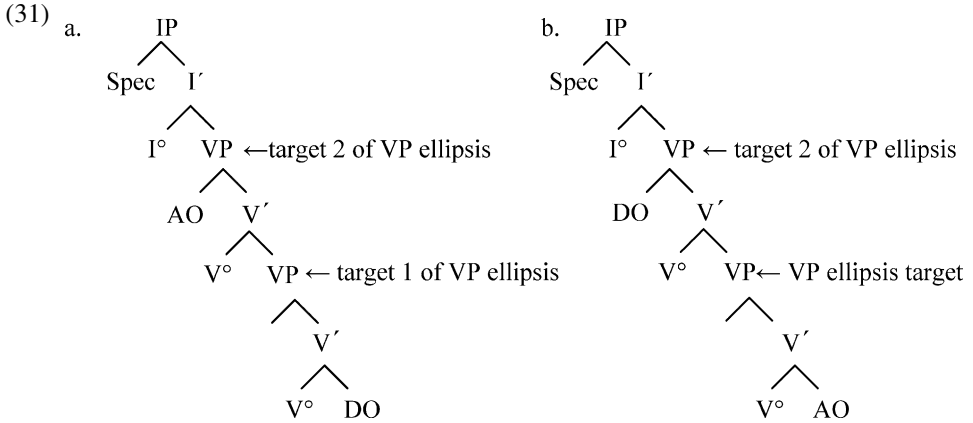
The two objects are marked as *a* and *b* on the tree. The object *a* appears in the lowest VP, a VP which does not include the other object, *b*. This second object is located in the VP that contains the minimal VP. When VP ellipsis targets the lowest VP, only *a* will be eliminated. The other object, *b*, can only be eliminated when both objects are eliminated, that is when the deletion targets the higher VP.

The second prediction is that if more than one applied object are involved in an asymmetrical structure like the one shown above, we should have three or more VP ellipsis targets. The tree below captures this prediction.



In this case we have three objects-one direct object and two applied objects. The three possible targets each have an object that may be affected by the ellipsis.

Another prediction concerns symmetrical object languages. If the two objects are truly symmetrical in the constituent structure, we expect to find alternative structures, represented as (31a) and (31b).



The direct object can occupy the lower position, as in (31a), in which case it can be eliminated without the applied object. Alternatively, it can occupy the higher position, as shown in (31b), in which case it can survive an ellipsis that affects the indirect object. In short, each object can be eliminated alone. We should expect to find such alternations for multiple applicatives also.

4. VP ellipsis in applicative constructions

In this section we test the predictions just presented. First, we attempt to eliminate one object, and then we apply the test to both objects, before testing multiple applicative constructions.

4.1. Deletion of direct object

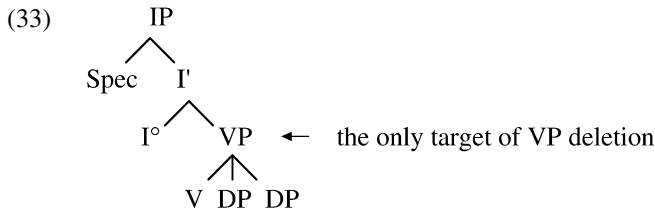
When the direct object is eliminated, we get grammatical sentences in both languages as these examples show.

- (32) a. Mũ-geni nĩ-a-ra-gũr-ĩr-a ci-ana kī-heo (Kikuyu)
 Iguest FOC-ISM-PRG-buy-AP-FV 8-child 7-gift
 The guest is buying presents for the children
 ona nyina nĩ-a-ra-ci-gũr-ĩr-a pro kī-heo
 and 9mother FOC-ISM-PRG-8OM-buy-AP-FV 7-gift
 and the mother is too.

- b. M-geni a-ka-gul-i va-ndu vi-dengu (Chingoni)
 1-guest 1SM-RP-buy-AP 2-person 8-basket
 The guest bought baskets for the people
- na mawu a-ka-gul-i v-ana ~~vi-dengu~~ mewa.
 and 1mother 1SM-RP-buy-AP 2-child 8-basket also
 and the mother did too.

In the Kikuyu example (32a), the verb in the elliptical clause is marked for the applied object. The direct object, therefore, is the only missing object. Similarly, in Chingoni (32b), the eliminated object is the direct object. In both languages, these sentences are grammatical.

We draw two conclusions from these facts. The first conclusion is that a ternary branching structure for the applicative VP is independently ruled out. If two objects were sisters, as shown in the tree structure in (33) below, VP ellipsis would have only one target. This means both objects would be eliminated, and no object could be eliminated without the other.



This structure shows that both the direct object and the indirect object are dominated by the same VP node. The fact that it is possible to delete the direct object without the applied object suggests the two objects are not sisters or daughters of one node. This is evidence against ternary branching structure for double object constructions.

The second conclusion is that the applicative VP structure is probably stacked with the direct object appearing in the lowest VP. This is confirmed when we attempt to delete the applied object alone.

4.2. Deletion of the applied object

Unlike the direct object, which can be eliminated by itself, the applied object cannot be eliminated alone, as both languages reveal.

- (34) a. *Mũ-geni nĩ-a-ra-gũr-ĩr-a ci-ana ma-buku. (Kikuyu)
 1-guest FOC-1SM-PRG-buy-AP-FV 8-child 6-book
 The guest is buying children books
- na nyina nĩ-a-ra-gũr-ĩr-a ~~ci-ana~~ ma-buku
 and 9mother FOC-1SM-PRG-buy-AP-FV 8-children 6-book
 and the mother is buying (them) books

- b. *Mũ-*geni* nĩ-a-ra-gũr-ĩr-a ma-buku ci-ana.
 1-guest FOC-1SM-PRG-buy-AP-FV 6-book 8-child
 The guest is buying children books
- na nyina nĩ-a-ra-gũr-ĩr-a ma-buku ~~ci-ana~~
 and 9mother FOC-1SM-PRG-buy-AP-FV 6-book 8-children
 and the mother is buying (them) books
- (35) a. *M-*geni* a-ka-gul-i va-ndu vi-dengu (Chingoni)
 1-guest 1SM-RP-buy-AP 2-person 8-basket
 The guest bought baskets for the people
- na mawu a-ka-gul-i ~~va-ndu~~ vi-dengu mewa.
 and 1mother 1SM-RP-buy-AP 2-person 8-basket also
 and the mother did too.
- b. *M-*geni* a-ka-gul-i va-ndu vi-dengu
 1-guest 1SM-RP-buy-AP 2-person 8-basket
 The guest bought baskets for the people
- na mawu a-ka-gul-i vi-dengu ~~va-ndu~~ mewa.
 and 1mother 1SM-RP-buy-AP 8-basket 2-person also
 and the mother did too.

In Kikuyu (34a), the applied object *ciana* ‘children’ is deleted from the second conjunct leaving behind the direct object *mabuku* ‘books’, resulting in an ungrammatical sentence. Notice that object order does not contribute to ungrammaticality. In Chingoni (35b), the applied object *vandu* ‘people’ has been eliminated leaving the direct object *videngu* ‘baskets’. As in Kikuyu, deletion of the applied object alone is ungrammatical. The results of this diagnostic are the same for Kikuyu, a symmetrical object language which permits both object orders, as well as in Chingoni, an asymmetrical object language which allows only AO DO order when the object is not marked on the verb.

These data indicate that there is no minimal VP in which the object is the applied object. This is true of both the symmetrical and asymmetrical object languages. The third prediction that allowed for alternative structures and alternative positions for the two objects is therefore not borne out. Ngonyani (1996a) demonstrates that in Kiswahili and Kindendeule, the instrument and the direct object behave in a somewhat similar manner with respect to object order, passivization, and object marking. However, with respect to VP ellipsis the instrument is generated higher than the direct object.

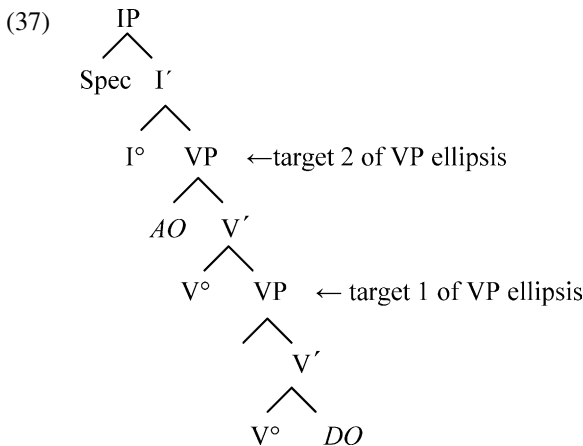
4.3. Deletion of both objects

The deletion of both objects is grammatical in both Kikuyu and Chingoni, and the examples below illustrate this.

- (36) a. Mũ-geni nĩ-a-ra-gũr-ĩr-a ci-ana kĩ-heo, (Kikuyu)
 1-guest FOC-1SM-PRG-buy-AP-FV 8-child 7-gift
 The guest is buying the children a gift,
 ona nyina ~~ci-ana-kĩ-heo~~ onake
 and 9mother 8-child 7-gift also
 and the mother is doing so too
- b. M-geni a-ka-gul-i va-ndu vi-dengu (Chingoni)
 1-guest 1SM-RP-buy-AP 2-person 8-basket
 The guest bought baskets for the people
 na mawu a-ka-gul-I ~~va-ndu-vi-dengu~~ mewa.
 and 1mother 1SM-RP-buy-AP 2-person 8-basket also
 and the mother did too.

In the Kikuyu example (36a), both the applied object *ciana* ‘children’ and the direct object *kĩeho* ‘gift’ are eliminated. In Chingoni, the beneficiary *vandu* ‘people’ and the theme *videngu* ‘baskets’ are eliminated. The elimination of both objects is grammatical, indicating that both objects appear in the same larger complex VP.

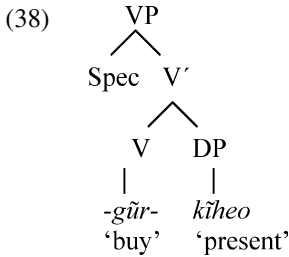
Let us summarize the results of the test. In both the symmetrical object language (Kikuyu) and the asymmetrical object language (Chingoni), the direct object may be eliminated alone. This means the direct object appears in the lowest VP. The applied objects can only be eliminated together with the direct object. These facts are consistent with the prediction presented as (29) above. We repeat the structure here, placing the direct object in the lowest VP and the applied object in the higher position.



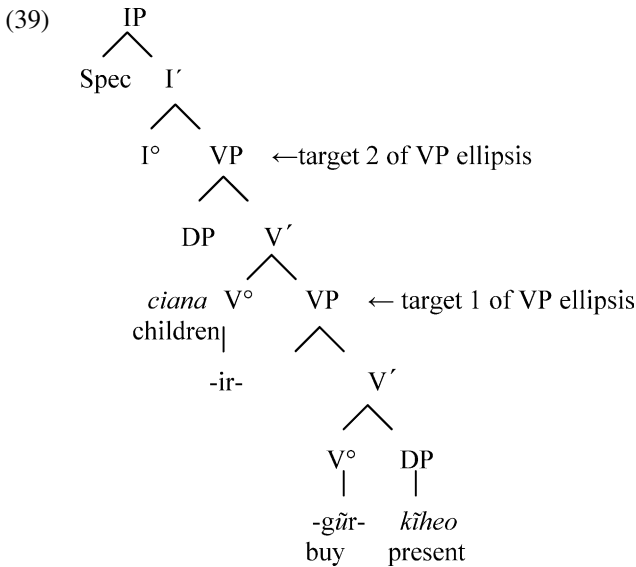
The VP containing the direct object is a constituent in the VP which has the applied object. This Larsonian VP structure replicates results obtained by Ngonyani (1996a) on two asymmetrical object languages, Kiswahili and Kindendeule. The applicative

VPs in symmetrical and asymmetrical object languages are base-generated the same way.

If we assume that the direct object is selected by the verb root, we will place the verb in local relation with the direct object.



The minimal VP is the event phrase and is headed by the verb root, as shown here, with the DO as its complement. The applicative affix is a syntactic head that selects the minimal VP and the applied object as an argument. This means that the applicative head takes an event as its complement. The verb moves to the applicative head constrained by head-to-head movement (Travis, 1984; Koopman, 1984; Baker, 1988). In Kayne’s (1994) theory of antisymmetry, the moved head attaches to the left of the host. In the Bantu languages, this will result in the applicative affix appearing as a suffix. The applicative VP is represented in the following way.



In conclusion, both the symmetrical object language (Kikuyu) and the asymmetrical object language (Chingoni) exhibit the same asymmetrical constituent structure of the

applicative VP.⁹ The symmetry observed in Kikuyu must be a result of some derivation and argument mapping. We defer an account of such mapping to future investigation. For now we limit ourselves to the constituent structure.

The evidence presented in this section and the proposed analysis is not consistent with a ternary branching structure of the applicative VP and strongly supports binary branching structure. It supports an asymmetrical analysis of the objects as argued by Barss and Lasnik (1986) and stacked VP structure proposed by Larson (1988) and applied to Bantu applicatives by Marantz (1993). Ngonyani (1996a) applies the constituency tests on applicatives of diverse semantic interpretations including instrumental, ingredient, malefactive, reason, and locative. He shows that all of them behave consistently in the same way. The applied object, regardless of its semantic role, is base generated higher than the direct object. This picture of double objects is complicated when we examine applicatives with more than two objects as found in Kikuyu.

5. Multiple applicatives

Like Kinyarwanda and Kichaga, Kikuyu permits more than one applied object on a verb. In Kikuyu and Kinyarwanda, each applied object may be licensed by an applicative suffix. The affixation and double applicatives are demonstrated in the following examples.

- (40)
- a. Mũ-ciari a-ra-tu-a mata
1-parent 1SM-PRG-spit-FV 6saliva
'The parent is spitting saliva'
 - b. Mũ-ciari a-ra-tu-ĩr-a mw-ana mata
1-parent 1SM-PRG-spit-AP-FV 1-child 6saliva
'The parent is spitting the child saliva.'
 - c. Mũ-ciari a-ra-tu-ĩr-ĩr-a mw-ana mata gĩthũri
1-parent 1SM-PRG-spit-AP-AP-FV 1-child 6saliva 7 chest
'The parent is spitting the child saliva on the chest.'

Example (40a) contains a non-applicative verb *aratua* 'she/he is spitting' which takes only one object, *mata* 'saliva.' In (40b), the same verb takes the applicative suffix *-ĩr-* and an additional object *mwana* 'child', while in (40c) another suffix is added with the second applied object *gĩthũri* 'on the chest.'

⁹ On the basis of event compositionality, Pylkkänen (2002) proposes to analyze the symmetrical applicatives as High Applicative and asymmetrical applicatives as Low Applicative similar to English double object constructions. The examples illustrated in the proposal show transfer of possession in the English examples and non-transfer of possession in the Kichaga (symmetrical) examples. Bantu applicatives, however, are very diverse. They include those that denote transfer of possession (recipient), as well as those that do not denote transfer of possession (e.g. benefactive). In fact, they include goals, malefactive, instruments, goal, ingredient, motive, location, and theme, as well. Ngonyani (1998) demonstrates that in Kiswahili and Kindendeule, benefactive, recipient, goal, and malefactive exhibit the same syntactic properties with respect to passivization, object marking, and reciprocalization. That is to say they behave the same way regardless of whether there is transfer of possession or not.

The multiple applicative constructions raise many interesting questions with respect to symmetry. In this section we address two questions: (a) Does the symmetrical object behavior extend to the multiple applicatives? (b) What is the constituent structure of such constructions?

5.1. Object properties

Object symmetry does not appear to extend to constructions with more than one applied object. In Kichaga, a Bantu language spoken in Tanzania, the multi-applicative constructions exhibit fixed object order, as illustrated in the following sentence.

- (41)

		Ben	Rec	The	Inst	Loc
mangi	n-a-le-rumbi-a	mka	mana	nyama	kishu	kilrin-nyi
chief	FOC-1SM-PST-cut-AP-FV	wife	child	meat	knife	room-in

 ‘The chief cut for the wife for the child the meat with a knife in the room.’
 (Moshi, 1995)

In this sentence, there are four applied objects, namely, a beneficiary *mka* ‘wife’, a recipient *mana* ‘child’, an instrument *kishu* ‘knife’ and a location *kilrinnyi* ‘in the room’¹⁰. These objects and the direct object are found in a fixed order: Beneficiary – Recipient – Theme – Instrument – Location. A similar pattern can be seen in the Kikuyu sentence below.

- (42)

		Ben	Rec	The	Go	Loc
a.	Mwangi e-ĩkĩr-ĩr-a	nyina	ng’ombe	maĩ	mũharatĩ	kiugũ-inĩ
	Mwangi 1SM-put-AP-FV	9mother	9cow	6water	2trough	7cow-pen-in
		‘Mwangi put for his mother water for the cows in a trough in the cow-pen’				
b.	*Mwangi e-ĩkĩr-ĩr-a	ng’ombe	nyina	maĩ	mũharatĩ	kiugũ-inĩ
	Mwangi 1SM-put-AP-FV	9cows	9mother	6water	2trough	7cow-pen-in
		‘Mwangi put for his mother water for the cows in a trough in the cow-pen’				

The applied objects in these multiple applicative are beneficiary, recipient, theme, goal and location. The order does not directly reflect the constituency tests which generate the direct object in the lowest position.

One of the features of symmetrical object languages is that either object can be marked on the verb. Surprisingly, this symmetry does not extend to multiple applied objects in Kikuyu.

- (43) a. Mũthoni nĩ-e-kũ-he-er-a Wanjirũ mw-ana irio,
 Mũthoni FOC-1SM-NF-give-AP-FV Wanjirũ 1-child 8food
 Mũthoni will give for Wanjirũ baby food
 ‘Mũthoni will give Wanjirũ’s baby food for her,’
- b. ona Njoki nĩ-e-kũ-mũ-he-er-a.
 and Njoki FOC-1SM-NF-1OM-give-AP-FV
 and even Njoki will give for her
 ‘and even Njoki will do so too’

¹⁰ Locative arguments are licensed the same way as any other DP and trigger agreement in the same way and not as prepositional phrases.

The two applied objects in this example are human and are in the same noun class with the same object marker. Therefore, logically, the object marker can agree with either applied object. Object marking, as in the second conjunct, however, cannot refer to the recipient. It can refer to the beneficiary only.

Another object feature, passivization, confirms the asymmetry in multiple applicative constructions. Recall that Kikuyu can passivize either object in double object constructions. In multiple applicatives, however, there are restrictions regarding which object can be passivized, as the examples below demonstrate.

- (44) a. Mũthoni nĩ-e-kũ-he-er-a Wanjirũ mw-ana irio
Mũthoni FOC-1SM-NF-give-AP-FV Wanjirũ 1-child 8food
'Mũthoni will give food to the baby for Wanjirũ.'
- b. Wanjirũ nĩ-e-kũ-he-er-wo mw-ana irio nĩ Mũthoni
Wanjirũ FOC-1SM-NF-give-AP-PAS 1-child 8food by Mũthoni
'Wanjirũ will be given food to the baby for by Mũthoni'
- c. *Mw-ana nĩ-e-kũ-he-er-w-o Wanjirũ irio nĩ Mũthoni
1-child FOC-1SM-NF-give-AP-PAS Wanjirũ 8food by Mũthoni
'The baby will be given food for Wanjirũ by Mũthoni.'
- d. ??Irio nĩ-i-kũ-he-er-w-o Wanjirũ mw-ana nĩ Mũthoni
8food FOC-8SM NF-give-AP-PAS Wanjirũ 1-child by Mũthoni
'Food will be given for Wanjirũ to the baby by Mũthoni'

The examples attempted to passivize each object and show that there is no symmetry for the three objects. Example (44b), where the beneficiary, Wanjiru, is passivized, is the only grammatical sentence. Passivization of the recipient, *mwana* 'child' (44c) is ungrammatical while passivization of the direct object *irio* 'food' (44d) is marginal.

5.2. The constituent structure of multiple applicatives

We begin by determining which object can be eliminated alone. The following paradigm, in which two applied objects Mwangi (the beneficiary) and *ng'ombe* 'cows' shows that no object can be deleted alone.

- (45) a. Njoroge nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe maaĩ
Njoroge FOC-1SM-NF-fetch-AP-FV Mwangi 9cow 6water
'Njoroge will fetch for Mwangi water for the cows'
- ona Kamau nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe maaĩ
and Kamau FOC-1SM-NF-AP-FV Mwangi 9cow 6water
'and Kamau will fetch for Mwangi water for the cows'
- b. *ona Kamau nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe ~~maaĩ~~
and Kamau FOC-1SM-NF-fetch-AP-FV Mwangi 9cow ~~6water~~
'and Kamau will fetch for Mwangi water for the cows'

- c. *ona Kamau nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe maaĩ
and Kamau FOC-1SM-NF-fetch-AP-FV Mwangi 9cow 6water
'and Kamau will fetch for Mwangi water for the cows'
- d. *ona Kamau nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe maaĩ
and Kamau FOC-1SM-NF-fetch-AP-FV Mwangi 9cow 6water
'and Kamau will fetch for Mwangi water for the the cows'

The examples show that no object can be eliminated by itself. The pattern obtained from these examples is shown below.

- (46) a. [V DP DP DP] (45a)
b. *[V DP DP ~~DP~~] (45b)
c. *[V DP ~~DP~~ DP] (45c)
d. *[V ~~DP~~ DP DP] (45d)

Given the structure discovered in the previous section, this result is surprising. We expected (45b) to be grammatical because we assumed that, as in double object constructions, the direct object is located in the lowest VP. It appears that the objects can be deleted in clusters, as clearly shown in the following paradigm.

- (47) a. Njoroge nĩ-e-gũ-tah-ĩr-a Mwangi ng'ombe maaĩ
Njoroge FOC-1SM-NF-fetch-AP-FV Mwangi 9cow 6water
'Njoroge will fetch for Mwangi water for the cows'
- b. ona Kamau nĩ-e-gũ-tah-ĩr-a Mwangi ~~ng'ombe maaĩ~~ onake
and Kamau FOC-1SM-NF-fetch-AP-FV Mwangi ~~9cow 6water~~ also
and Kamau will fetch for Mwangi water for the the cows
- c. *ona Kamau nĩegũtahĩra Mwangi ~~ng'ombe maaĩ~~ onake
and Kamau FOC-1SM-NF-fetch-AP-FV Mwangi ~~9cow 6water~~ also
and Kamau will fetch for Mwangi water for the the cows
- d. ona Kamau ~~nĩegũtahĩra~~ Mwangi ng'ombe maaĩ onake
and Kamau ~~FOC-1SM-NF-fetch-AP-FV~~ Mwangi ~~9cow 6water~~ also
and Kamau will fetch for Mwangi water for the the cows

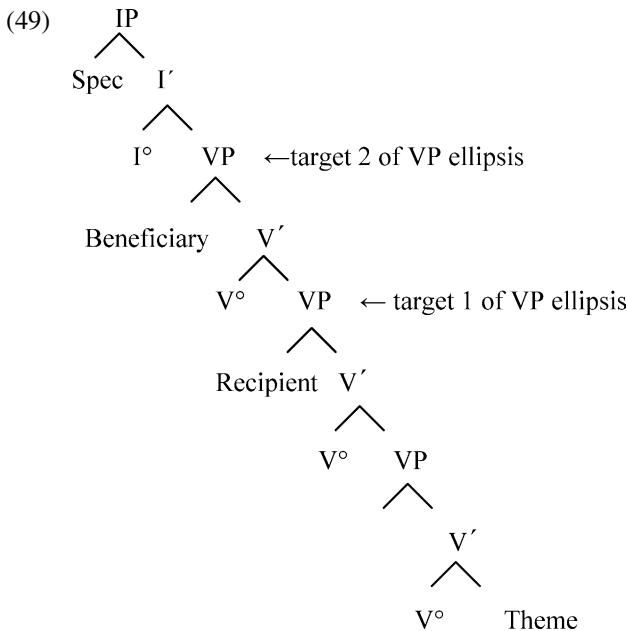
The patterns are summarized in the following way.

- (48) a. [V DP DP DP] (45a)
b. [V DP ~~DP DP~~] (47b)
c. *[V ~~DP DP DP~~] (47c)
d. [~~V DP DP DP~~] (47d)

In these examples, two objects, the recipient and the DO, can be eliminated together (47b). This suggests that the two objects are lower than the beneficiary, which survives this

deletion. However, the three objects cannot be eliminated without the verb, as (47c) shows. Eliminating the three objects is possible when the verb is also eliminated together with them, as (47d) illustrates.

We draw two important conclusions from the test. The first conclusion is that there are two targets of VP ellipsis in double applicative constructions. Target 1 is the VP in which we find the direct object and one of the applied objects, and target 2 includes all objects. The second conclusion is that the beneficiary is base-generated in the higher VP, while the recipient is base-generated lower than the beneficiary. We combine these findings with earlier tests on double object applicatives and conclude that the following structure underlies the VP in Kikuyu with three objects.



The verb in the second conjunct of the multiple applicatives behaves in a manner that is not predicted by Ngonyani's (1996a, 1996b) VP ellipsis analysis presented earlier in which the verb moves out of the VP to Infl. While we think this analysis is on the right track, we have no insights to offer for now regarding why the verb must be eliminated unlike double object constructions, and why the direct object cannot be eliminated alone. One possibility that needs further investigation is the possibility that the two lower objects are generated in Low Applicative structure suggested by Pykkänen (2002). Pykkänen proposes that in Lower applicatives there is transfer of possession. This is indeed what is reflected in the example above where the recipient and the DO must remain together for VP ellipsis. Yet the findings lead us to other important observations, to which we now turn.

6. Implications for further research

From the foregoing discussion, we draw conclusions regarding three important issues, namely, the antisymmetry of objects, the hierarchy of thematic roles, and the syntactic input into verbal derivation. This section discusses implications of the findings to these issues.

We have demonstrated that symmetrical and asymmetrical object languages have the same constituent structure of double object constructions. The structure contains the direct object in the lowest VP and the applied object is base-generated higher in a VP that contains the lowest VP as its complement. In multiple applicatives found in Kikuyu, we have shown that the beneficiary is generated higher than the recipient. Given our earlier findings on double object applicatives, we conclude that the three objects we examined are generated in a hierarchy, with the beneficiary as the highest object followed by the recipient and the theme as the lowest.

These facts from Kikuyu strongly suggest that the hierarchy of thematic roles is to some extent reflected in the hierarchical structure of the applicative construction and provides some support for the Universal Theta Assignment Hypothesis (Baker, 1988) and its predecessor the Universal Alignment Hypothesis (Rosen, 1984; Perlmutter and Postal, 1984). However, there are at least three issues that call for further investigation into the issue. The first issue is that while there is a general consensus about the existence of a hierarchy, the exact nature of the hierarchy is not agreed upon as the following sample of proposals show.

- (50) a. Agent>Beneficiary>Goal/Experiencer>Patient/Theme>Location
(Bresnan and Kanerva, 1989)
- b. Agent>Theme>Goal/Beneficiary/Location
(Baker, 1989)
- c. Agent>Patient/Beneficiary>Theme>Location/Source/Goal
(Jackendoff, 1990)
- d. Agent>Experiencer>Goal/Source/Location>Theme
(Grimshaw, 1992)

The Bresnan and Kanerva hierarchy reflects the order of arguments in multiple applicatives in Kikuyu and Kichaga, in which the beneficiary appears higher than the goal, which is higher than the patient or theme. Baker's hierarchy places theme higher than all the applied objects, contrary to our finding that the direct object is the lowest object. It must be borne in mind that the applied objects are generated as objects of the verb by virtue of the affix and incorporation as discussed earlier. They are not objects of prepositions. Further research on multiple objects should prove very fruitful in offering insights about the details of the hierarchy.

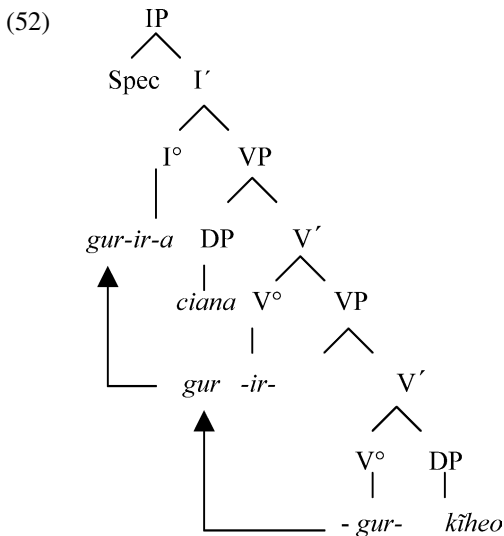
The second issue is the fact that in Kindendeule and Kiswahili, Ngonyani (1996a) found that the direct object is consistently generated in the lowest VP. Given the rigid object order we noted in the multiple applicative construction, Kichaga and Kikuyu data

present the theme (usually the direct object) between a series of applied objects, as illustrated below.

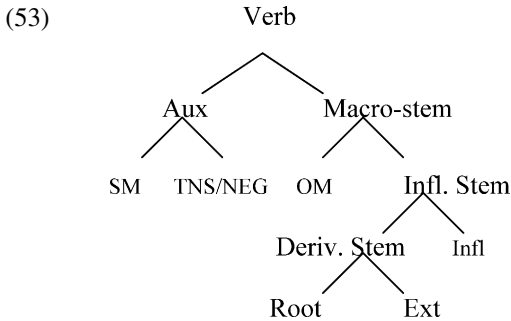
- (51) Ben Rec The Inst Loc
 mangi n-a-le-rumbi-a mka mana nyama kishu kilrin-nyi
 chief FOC-1SM-PSTcut-AP-FV wife child meat knife room-in
 ‘The chief cut for the wife for the child the meat with a knife in the room.’
Kichaga (Moshi, 1995)

In Ngonyani’s (1996a) study, all applied objects are generated higher than the theme or patient. While the study of Kikuyu multiple applicatives suggests that the hierarchy of thematic roles is derived from the asymmetrical VP shells, the appearance of theme in the middle of the applied objects needs further investigation. Ultimately, this question may be related to the mapping of the objects to their functional positions and the symmetry–asymmetry divide.

Following Ngonyani (1996a, 1996b), we assume that syntactic operations contribute to the morphological structure of the word (1996a). We have demonstrated that the verb root projects a maximal projection which is a complement of the verb phrase headed by the applicative affix. The two heads, the verb root and the applicative suffix, are combined by the syntactic operation Attract F (Chomsky, 1995). The applicative suffix attracts the closest element that has the feature [+Verb], resulting in the verb root attaching to the left of the host through head movement. The applicative projection, on the other hand, is attracted by I°, where I may be the mood markers (glossed here as final vowels, and subjunctive marker) or the perfective marker.



This derivation accounts for the order of morphemes in the verbs of not only Kikuyu and Chingoni, where the applicative suffix appears on the right edge of the verb stem, but also in Kiswahili and Kindendeule and possibly many other Bantu languages. The prefixes pose a different challenge to the syntactic account. The morphological structure of Bantu verbs is described as made up of two parts, an auxiliary cluster of prefixes and a macro-stem (Myers, 1998; Barrett-Keach, 1986).¹¹ This structure is shown below.



As mentioned above, the verb is made up of two morphological constituents, namely, the auxiliary and the macro-stem. The auxiliary consists of the subject marker (SM), tense marker and negation, while the macro-stem is made up of the verb stem with an object marker and sometimes the relative marker.¹² The inflectional stem consists of a derivational stem and inflection. The inflection part that appears as a suffix on verbs includes mood and perfect aspect, *-ire* and *-ile* in Kikuyu and Chingoni, respectively. The derivational stem consists of the root and the extensions such as applicative and causative.

The account presented here explains the structure of the Inflectional Stem. The subject marker and the object marker exhibit different distributional patterns from the recognizable

¹¹ Myers' (1998) hypothesis of the two domains of the verb in Bantu is motivated on phonological grounds. Barrett-Keach's (1986) analysis is based on phonological as well as morphological grounds. She points out that the relative marker, which has the invariant *-o*, shares its distributional features with other pronominal affix of the same form. It appears on the right edge of the word except in relative clauses where it appears between the tense marker and the verb stem. She concludes that even in this case it should be considered the right edge of the auxiliary domain which does not stand on its own phonologically. Building on this idea, Ngonyani (1999) suggests that in Kiswahili, Aux is headed by Tense or Aspect and demonstrates that the Aux and the macro-stem are two heads that can potentially move to C in relative clauses. When the appropriate tense is present, it moves to incorporate to the right of the host C, resulting in the *-o* appearing after the tense marker before the macro-stem. In tenseless verbs, however, it is the macro-stem that moves to C resulting in the relative marker appearing after the macrostem. Therefore, there are phonological, morphological as well as syntactic arguments for the division of the verb into two domains.

¹² The position of negation in the tree here reflects Kiswahili negation and not necessarily all Bantu languages. Bantu languages exhibit many diverse strategies of marking negation as Güldemann (1999) and Westphal (1958) show. Some languages mark negation on various slots of Aux, some mark it as part of the final inflectional affix, some use negation particles before the verb or after the verb.

syntactic heads. We will assume that they are not syntactic heads, but rather agreement markers instantiated by a Spec-Head relation. The subject marker is an agreement that appears on the left edge of the Aux, while the object marker appears on the left edge of the macro-stem. Tense and negation are the heads that form the Aux the head that the subject agrees with. The head on which the object marker appears is the verb stem which, as we noted is built from the root, to the derivations. An examination of the properties of the subject and object markers, their use or non-use as well as their semantic properties is beyond the scope of this paper.¹³ How the Aux and the macro-stem combine is not clear yet, since movement of the macro-stem to a higher node would result in the regular Aux prefixes appearing as suffixes. Suffice to note here that even with a syntactic approach we have assumed here, not all word building processes are result of the same syntactic operation (Julien, 2002).

Some of the languages that have multiple applicatives also have multiple applicative affixes, as the examples below from Kinyarwanda show.

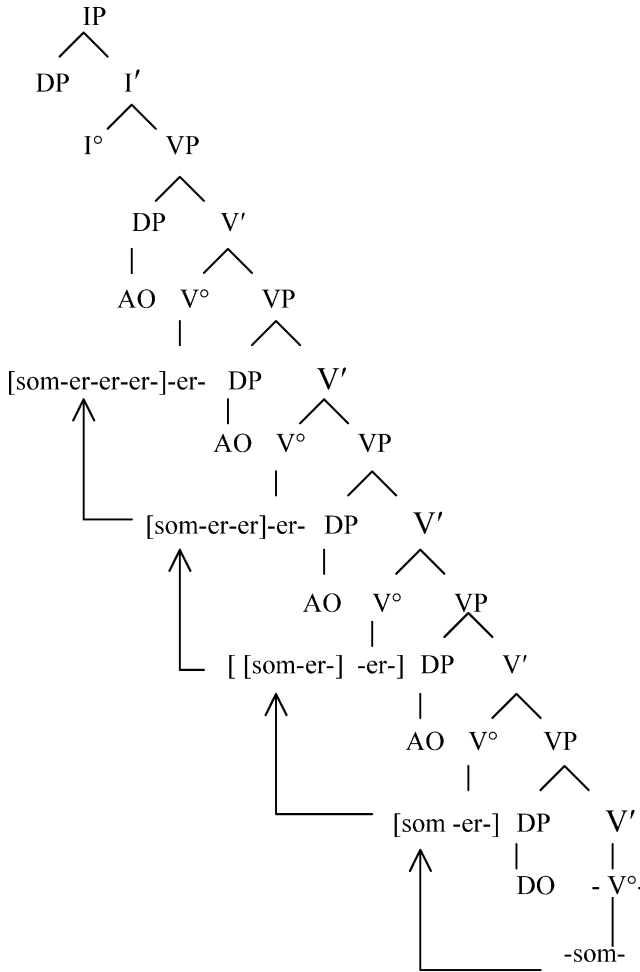
- (54) a. Umu-goré a-ra-som-er-a igi-tabo ama-faraanga
 1-woman 1SM-PRT-read-AP-FV 7-book 6-money
 ‘the woman is reading the book for money.’
- b. Umu-goré a-ra-yí-ki-mw-íi-som-er-er-er-a mó
 1-woman 1SM-PRT-9OM-7OM-1OM-REFL-read-AP-AP-AP-FV LOC
 ‘The woman is reading it to him in it.’
- c. Umu-goré a-r-ii-som-er-er-er-er-a umw-álimú igi-tabo
 1-woman 1SM-PR-RF-read-AP-AP-AP-AP-AP-FV 1-teacher 7-book
 abá-ana ama-faraanga muu nzu
 2-child 6-money in house
 ‘The woman is reading the teacher’s book to the children in the house for money’ (Kimenyi, 1995)¹⁴

In (54a), there is only one applied object and one applicative suffix, while in (54b) there are three applied objects and 3 applicative suffixes. (54c) has five applicative suffixes with five applied objects. Such suffixation is consistent with an incorporation analysis, as shown in the following tree diagram.

¹³ Several descriptive and theoretical issues in Bantu agreement are explored by Bresnan and Mchombo (1987), Bergvall (1986), Keach (1995), Kinyalolo (1991), Schneider-Zioga (1995), Letsholo (2003), Morolong and Hyman (1977), to mention a few. The brief mention here is intended only to show where subject marking and object marking fit in our overall picture of verb morphology.

¹⁴ In an earlier publication, Kimenyi (1980: 87) claims that the applicative cannot be doubled. In subsequent work, however, he indicates that two or more applicatives are possible. For example: *ku-som-ir-a* → *gusomera* ‘to read to’, *ku-som-ir-ir-a* → *gusomerera* ‘to read to for’ (Kimenyi, 2002: 68).

(55)



This structure represents the verb root as base-generated in the lowest VP and then raising by head-to-head movement, thus accumulating the suffixes. This structure should predict the order of verbal extensions, an issue we defer to future research. These operations do not distinguish between inflectional morphology and derivational morphology.

7. Conclusion

This paper set out to address two problems. The first problem concerns whether the symmetry observed in symmetrical object languages is extended to the base-generated structure. The second problem was whether the asymmetry extends to multiple applicative constructions. In order to answer these questions we established VP ellipsis as a diagnostic tool. We show that although the verb in both Chingoni and Kikuyu appears on the surface,

the constructions in coordinate clauses exhibit the same semantic features as English VP ellipsis where both the verb and the complement are eliminated. We have demonstrated using VP ellipsis that there is no difference between the constituent structure of symmetrical and asymmetrical object languages. In both Kikuyu (a symmetrical object language) and Chingoni (an asymmetrical object language), the direct object or non-applied object is generated lower than the applied object. Multiple applicative constructions do not exhibit the symmetry found in double object constructions. The cascading VP structure is also attested in the multiple applicatives.

Apart from leading us to conclusions regarding the questions we set out to explore, we discovered other interesting features. One of the findings is an unmistakable indication that the hierarchy of thematic roles has a structural basis, with the beneficiary base-generated higher than other applied objects. This lends support to Baker's UTAH since the languages studied exhibit different surface order but are shown to have the same base-generated structure. Further research needs to be conducted using languages such as Kichaga and Kinyarwanda, where more than two applied objects may appear in the same sentence. The facts revealed by VP ellipsis are consistent with a syntactic account of the morphological structure of the verb. In the analysis presented in this paper, the verb root is base-generated in the lowest VP and acquires applicative suffixes by successive head movement to the next higher head, in this case, the applicative affix. This calls for further investigation on a syntactic account of the Bantu morphological structure.

Acknowledgements

We are indebted to many people for discussions that crystallized into ideas presented here. Many thanks to Hilda Koopman, Dominique Sportiche, Tom Hinnebusch, Murat Kural, Kasangati Kinyalolo, Sam Mchombo, Victor Manfredi, Nhlanhla Thwala, Anoop Mahajan, Matt Pearson, Felicia Lee, Javier Rexach, Jeanette Schaeffer, and Manuel Espanol-Echevarria. We are grateful to participants of discussions of the 28th Annual Conference on African Linguistics and the Michigan State University Linguistics Colloquium where parts of the analysis were discussed. Two anonymous reviewers provided insightful comments that made it possible for us to clarify some points. We bear responsibility for any shortcomings the paper may have. The work on Chingoni was supported by a grant from the Michigan State University Intramural Research Grant Program 2001. We thank Rebecca Roedder for proofreading the paper.

References

- Alsina, A., Mchombo, S., 1993. Object asymmetries and the Chichewa applicative construction. In: Mchombo, S. (Ed.), *Theoretical Aspects of Bantu Grammar*. Center for the Study of Language and Information, Stanford, pp. 17–45.
- Anagnostopoulou, E., 2003. *The Syntax of Ditransitives: Evidence from Clitics*. Mouton de Gruyter, Berlin.
- Ashton, E., 1947. *Swahili Grammar (Including Intonation)*. Longmans, Green and Co, London.
- Baker, M., 1988. *Incorporation: a Theory of Grammatical Function Changing*. Chicago University Press, Chicago.
- Baker, M., 1989. Object sharing and projection in serial verb constructions. *Linguistic Inquiry* 20, 513–553.

- Baker, M., 1992. Thematic conditions on syntactic structures: evidence from locative applicatives. In: Roca, I.M. (Ed.), *Thematic Structure: Its Role and Grammar*. Foris, New York.
- Barrett-Keach, C., 1986. Word-internal evidence from Swahili for AUX/Infl. *Linguistic Inquiry* 17, 559–564.
- Barss, A., Lasnik, H., 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17, 347–354.
- Bergvall, V., 1986. A typology of empty categories for Kikuyu and Swahili. In: Dimmendaal, G.J. (Ed.), *Current Approaches to African Linguistics III*. Foris, Dordrecht, pp. 55–70.
- Bresnan, J., Kanerva, J., 1989. Locative inversion in Chichewa: a case of factorization in grammar. *Linguistic Inquiry* 20, 1–50.
- Bresnan, J., Mchombo, S., 1987. Topic, pronoun and agreement in Chichewa. *Language* 63, 741–782.
- Bresnan, J., Moshi, L., 1990. Object asymmetries in comparative Bantu. *Linguistic Inquiry* 21, 147–185.
- Chomsky, N., 1995. *The Minimalist Program*. MIT Press, Cambridge, MA.
- Culicover, P.W., Jackendoff, R., 1995. Something else for the binding theory. *Linguistic Inquiry* 26, 249–275.
- Demuth, K., Machobane, M., Moloi, F., 2000. Learning word-order constraints under condition of object ellipsis. *Linguistics* 38, 545–568.
- Du Plessis, J.A., Visser, M., 1992. *Xhosa Syntax*. Via Africa, Pretoria.
- Grimshaw, J., 1992. *Argument Structure*. MIT Press, Cambridge, MA.
- Güldemann, T., 1999. The genesis of verbal negation in Bantu and its dependency on functional features of clause types. In: Hombert, J.-M., Hyman, L. (Eds.), *Bantu Historical Linguistics: Theoretical and Empirical Perspectives*. CSLI, Stanford, pp. 545–587.
- Guthrie, M., 1967–1971. *Comparative Bantu*, vol. I–IV. Gregg Press, Farnborough.
- Hoffman, M., 1991. *The Syntax of Argument-structure Changing Morphology*. Doctoral dissertation, MIT.
- Jackendoff, R., 1990. *Semantic Structure*. MIT Press, Cambridge, MA.
- Julien, M., 2002. *Syntactic Heads and Word Formation*. Oxford University Press, Oxford.
- Kayne, R., 1994. *The Antisymmetry of Syntax*. MIT Press, Cambridge, MA.
- Keach, C., 1995. Subject and object markers as agreement and pronoun incorporation in Swahili. In: Akinbiyi, A. (Ed.), *Theoretical Approaches to African Linguistics*. Africa World Press, Trenton, NJ, pp. 109–116.
- Kim, S., 1999. Sloppy/strict identity, empty objects and NP ellipsis. *Journal of East Asian Linguistics* 8, 255–284.
- Kimenyi, A., 1980. *A Relational Grammar of Kinyarwanda*. University of California Press, Berkeley.
- Kimenyi, A., 1995. Kinyarwanda applicatives revisited. Paper presented at the 8th Niger-Congo Syntax Semantics Workshop. Boston University, 25–26 October, 1995. Now available at: <http://www.kimenyi.com/kinyarwanda-applicatives-revisited.php>.
- Kimenyi, A., 2002. *A Tonal Grammar of Kinyarwanda: an Autosegmental and Metrical Analysis*. The Edwin Mellen Press, Lewiston, NY.
- Kinyalolo, K.K., 1991. *Syntactic Dependencies and the Spec-head Agreement Hypothesis in KiLega*. Doctoral dissertation, UCLA.
- Koopman, H., 1984. *The Syntax of Verbs: From Verb Movement Rules in the Kru Languages to Universal Grammar*. Foris Publications, Dordrecht.
- Larson, R., 1988. On double object constructions. *Linguistic Inquiry* 19, 335–391.
- Letsholo, R., 2003. *Syntactic Domains in Ikalanga*. Doctoral dissertation, University of Michigan.
- Marantz, A., 1993. Implications of the asymmetries in double object constructions. In: Mchombo, S. (Ed.), *Theoretical Aspects of Bantu Grammar*. Center for the Study of Language and Information, Stanford, pp. 113–150.
- McCloskey, J., 1991. Clause structure, ellipsis and proper government in Irish. *Lingua* 85, 259–302.
- McGinnis, M., 2001. Variation in the phase structure of applicatives. In: Johan Rooryck, Pierre Pice, (Eds.), *Linguistic Variation Yearbook*, vol. 1. John Benjamins, pp. 105–146.
- Morolong, M., Hyman, L., 1977. Animacy, objects and clitics in Sesotho. *Studies in African Linguistics* 8, 199–218.
- Moshi, L., 1995. Multiple object constructions in KiVunjo-Chaga. Paper presented at 8th Niger-Congo Syntax & Semantics Workshop. Boston University, October, 1995.
- Mugane, J., 1997. *A Paradigmatic Grammar of Kikuyu*. Center for the Study of Language and Information, Stanford.
- Myers, S., 1998. Aux in Bantu morphology and phonology. In: Hyman, L., Kisseberth, C. (Eds.), *Theoretical Aspects of Bantu Tone*. CSLI, Stanford, pp. 231–264.

- Ngonyani, D., 1996a. The Morphosyntax of Applicatives. Doctoral dissertation, UCLA.
- Ngonyani, D., 1996b. VP ellipsis in Swahili and Ndebele applicatives. In: Garrett, E., Lee, F., (Eds.), *Syntax at Sunset: UCLA Working Papers in Syntax and Semantics*, vol. 1, pp. 109–128.
- Ngonyani, D., 1998. Properties of applied objects in Kiswahili and Kindendeule. *Studies in African Linguistics* 27, 67–95.
- Ngonyani, D., 1999. X° -movement in Kiswahili relative clause verbs. *Linguistic Analysis* 29, 137–159.
- Ngonyani, D., 2000. The constituent structure of Kindendeule applicatives. In: Carstens, V., Parkinson, (Eds.), *Advances in African Linguistics*. Africa World Press, Trenton, NJ.
- Ngonyani, D., 2003. *A Grammar of Chingoni*. München, Lincom-Europa.
- Otani, K., Whitman, J., 1991. V-raising and VP-ellipsis. *Linguistic Inquiry* 22, 345–358.
- Perlmutter, D.M., Postal, P.M., 1984. The 1-advancement exclusiveness law. In: Perlmutter, D., Rosen, C.G. (Eds.), *Studies in Relational Grammar*, vol. 2. The University of Chicago Press, Chicago, pp. 81–125.
- Pykkänen, L., 2002. *Introducing Arguments*. Doctoral dissertation, MIT.
- Rosen, C.G., 1984. The interface between semantic roles and initial grammatical relations. In: Perlmutter, D., Rosen, C.G. (Eds.), *Studies in Relational Grammar*, vol. 2. The University of Chicago Press, Chicago, pp. 38–77.
- Schneider-Zioga, P., 1995. Specifier/head agreement in Kinande. *Cahiers linguistiques d'Ottawa* 23, 67–96.
- Travis, L., 1984. *Parameters and Effects of Word Order Variation*. Doctoral dissertation, MIT.
- Westphal, E., 1958. An introductory comparative study of negation in Bantu. *Mitteilungen des Istituts für Orientforschung* 6, 284–320.