THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Occurrence and Co-occurrence of Verbal Extensions in Lulogooli

Karen Vudembu Abaya
Student, Department of Literature, Linguistics and Foreign Languages,
Kenyatta University, Kenya
Dr. Gerry Ayieko
Lecturer, Department of Literature, Linguistics and Foreign Languages,
Kenyatta University, Kenya
Dr. Hilda Kebeya
Senior Lecturer, Department of Literature, Linguistics and Foreign Languages,
Kenyatta University, Kenya

Abstract:
This article examines four verbal extensions and their order of co-occurrence in the same verbal unit in Lulogooli, a Bantu dialect of the Luhyia language spoken in Western part of Kenya. A verbal extension refers to a suffix attached to a verb to effect a given meaning. The verbal extensions under this study include passive, reciprocal, applicative and causative. A Minimalist perspective is employed to determine the extent to which the extensions fit within the Pan-Bantu default template by Hyman (2002). The position of the suffixes in the template is directly determined by either syntactic or semantic considerations and the order of the verbal derivations is determined by the morphotactic constrains. Findings reveal that the Lulogooli verbal extensions fit within the Pan-Bantu default template by Hyman (2002), save for the Causative$_2$-Applicative co-occurrence and their order is as a result of attraction and feature-driven movement constrained by the Minimal Link Condition.

Keywords: Verbal extension, minimalist programme, minimal link condition

1. Introduction

Lulogooli, one of the Luhyia dialects, is spoken by about 2.1 million speakers who reside in Western part of Kenya. This is according to the 2019 Kenya Census Report. Maho (2009) classifies Lulogooli as JE41. Rules which account for the structure of words vary from language to language. Nurse (2006) notes that the Bantu verb template may include up to 20 morphemes and gives the following two structures which cover the main possibilities for the one-word verb:

- NEG$_1$ – prefix- formative – object – root - extension – final vowel – post final
- Prefix – NEG$_2$ – formative – object – root – extension – final vowel – post final

Nurse (2006) adds that the only two obligatory constituents are root and final vowel, which co-occur in the imperative and that several morphemes may co-occur at prefix, formative, object, extension and post final, typically in a canonical order. The following is the Bantu Verb Template as proposed by Nurse and Phillipson (2003).

	1	2	3	4	5	6		7	8
Meaning	Pre-initial	Initial	Post-initial	TENSE marker	OM	Verbal base		Fin	Post-Fin
Morpheme	NEG	SM	NEG	Tense	Object marker	Root	Verb ext.	NEG Aspect Mood	

Table 1: Bantu Verb Template as Proposed by Nurse & Phillipson (2003)

Lulogooli can put together more than one element in one word to effect grammatical relation concord and mark tense, mood and aspect, (Murrell 2000).Leung (1986) points out that the Lulogooli verbs have a highly agglutinative segmental morphology that involves both prefixes and suffixes. This view is also echoed by Wangia (2008) who notes that Lulogooli joins several morphemes together into one word-form. She gives the example of the word 'siyaloleka' which can be translated into English as 'She/he was not seen.' The morphemes of the word (sentence) can be isolated as shown below:

Si-y-a-lol-ek-a
Neg- 1SM-   past-see-Stat-FV
'She/he was not seen'

According to Leung (1986), only one object prefix is allowed within one verb in Lulogooli and for a sentence that has both a direct and indirect object, onlyone of them can occur as a prefix within the verb unit. With the exception of the Middle Future Tense where the T/Amarker*na-/*precedes the S.P., the S.P. is the verb initial element. She also notes that the constituent T/A is not the only morphological expression of tense/aspect. Tone, vowel length, and the quality of the Final Vowel are all used in combination to determine tense and other grammatical meaning while stem extensions, hence forth VEmay mark grammatical categories (for example, the causative*/-iz-/,* reciprocal */-an-/,* and others), or, just be semantically empty root expansions (e.g. */-iz-/*and */-ıh-/*) attached to specific types of roots in certain grammatical contexts. The F.Vs are */-a/, /-aa/,/-e/,* or */-i/,* depending on the tense/aspect of the verb and other grammatical factors. Qualitative research design is employed in the achievement of the following objectives: identification of the types of verbal extensions in Lulogooli verb phrase, identification of the co-occurrence restrictions in Lulogooli verb morphology and the analysis of the VEs within the Minimalist Program, hence forth MP (Chomsky 1995). The Minimal Link Condition, hence forth MLC, is used to determine the attraction and feature-driven movement of the verb.

2. Verbal Extensions in Lulogooli Verb Phrase.

Verbal extensions enrich the meaning of a verb by addition of a morpheme which has a specific meaning. A number of researchers have identified various types of VEs all of which derive different meanings when used in a verbal structure. The present study is limited to four VEs as outlined below:

2.1. Passive

Personal passive has a specified implied agent which is either suppressed or demoted to oblique position, according to Siewierska (1984). Lodhi (2002) notes that this form indicates that the subject is acted upon by an agent and such structures as the Applicative, Contactive, Conversive, Causative and Reciprocal can take a passive form. The passive is not possible with the stative and associative constructions. He identifies the post-radical element –wa, -ewa, -iwa or –ibwa used in Passive constructions. There are two broad types of the passive according to Keenan (1985): the periphrastic passives which use auxiliaries and the morphological passives which are derived by processes like internal vowel change, reduplication, infixing or suffixing a passive morpheme to the verb stem. This view is also echoed by Comrie (1989), Chavula (2016). The Lulogooli morphological passive is represented by the morpheme -w-, as shown in Table 2.

Base	English	LulogooliPassive	English Passive
Kuba	Kick	Kub**w**a	Be kicked
Samba	Burn	Samb**w**a	Be burnt
Duya	Hit	Duy**w**a	Be hit
Soma	Read	Somwa	Be read

Table 2: Morphological Passive in Lulogooli

When the passive VE is introduced, the subject DP and the object DP change their positions. The original object becomes the subject of the passive construction while the original subject is relegated to the oblique position of the sentence and is introduced by the preposition 'na'. Changes that take place in the position of the Subject and Object Determiner Phrases are shown in the structure 1a and b below:

1a. Vurendi y-a-kub-a mupira
   1a.Vurendi 1a.SM-past-kick-FV 3.ball
   'Vurendi kicked the ball'
b. Mupiragw-a-kub-**w**-a   (naVurendi)
   3.ball 3.SM-past-kick-PASS-FV (by Vurendi)
   'The ball was kicked by Vurendi'

In structures that have the AO, passivation involves formal features of functional heads that attract corresponding features associated with the theme and the AO. Movement of the theme in passives is blocked by the presence of the AO because the AO c-commands the theme at the relevant stage of the derivation and is always closer to the attracting category. To be noted however is that the blocking effect of a phrase intervening between an attractor and its target disappears once the phrase is moved. According to Chomsky (1999:22), the trace/copy of an XP never blocks attraction of a phrase its c-commands in terms of MLC because the trace/copy of XP is not phonologically realized.In the structures 2a and 2b, the passive suffix is used on an applicative structure. The AO DP needs to check and delete its case feature by incorporation so the case feature of the theme is not deleted after the checking. It remains active once AO undergoes head movement to Pr and moves with the verb to T. Neither the clitic nor its trace/copy block movement of the theme DP from the lower specifier to Spec T. The theme DP can move and check its case feature and T's φ- and EPP-features. Following Burzio (1986), (see also Nakamura 1997, Zeller &Ngoboka 2005), it is assumed that in a passive applicative construction, the structural case of one of the two DPs in SpecAsp remains undeleted after checking the corresponding φ features of Asp. Chomsky (2002) posits that DPs with undeleted structural case features remain active and can undergo further movement. It therefore follows that, in a structure like 2c where the applicative has two objects, the other object is represented by the pronominal 'ya'.

2a.Anzere y-a-zuk-ir-a Mihesoamazi
1.Anzere 1.SM-past-pour-APPL-Asp 1.Miheso6.water
'Anzere poured water on Miheso'

b. Amaziga(Miheso) y-a-zuk-iriy-**w-**i
6.water6.SM (1.Miheso)   1.OMpast-pour-APPL-PASS-Asp
'Water which Miheso had poured on him'
c.Amaziga-y-a-zuk-iriy-**w-**i
    6.water6.SM-1.OM-past-pour-APPL-PASS-Asp
  'Water which he had poured on him'

As shown in Fig1, one of the two object DPs is attracted by the EPP feature in T when the structure is passivized. MLC allows movement and attraction of the infinitival subject from the complement position of the verb to the specifier position. The EPP feature of Agr then attracts the subject. MLC allows the subject to move for interpretation of its subject feature. The subject NP lastly moves to specifier of CP for interpretation of its complement feature before it spells out. The verb on the other hand moves from the internal position of the VP to Agr. MLC allows the verb to move to Agr for interpretation of the Agree feature. The EPP feature in Pass then attracts the verb for interpretation of the Passive feature. The verb then moves to T for interpretation of the tense feature before MLC allows it to move to C for the interpretation of the complement feature. The verb then spells out.
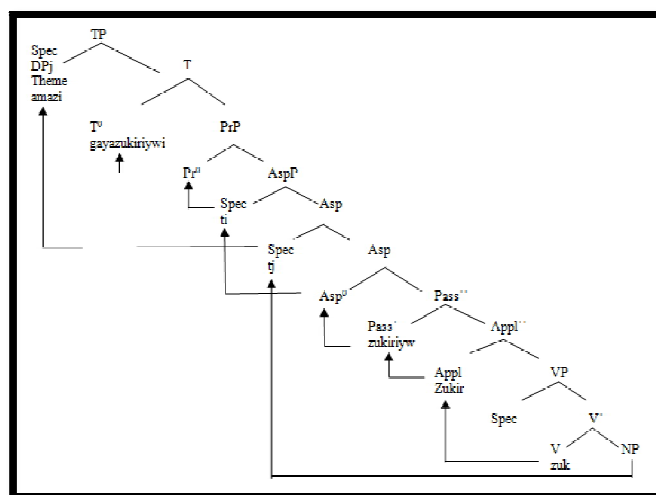

Figure 1: Lulogooli Passive

The Lulogooli passive is marked by the morphological structure: *'Root-w-FV (Final Vowel)*

2.2. Reciprocal

According to Vail (1972), the reciprocal suffix indicates intensity of relationship. Schadeberg (2003), referring to Lichtenberk (2000), Kemmer (1996), Maslova (2007), posits that reciprocal meaning in Bantu is derived from the wider associative meaning because in many Bantu languages, the reciprocal suffix has other related functions. Lodhi (2002) notes that this form indicates the action is reciprocated, done 'to one another' and the usual post-radical element is –na or –ana which often takes a conjunctive construction with –na or –no. Lodhi (2002) gives the following example in Kiswahili: 'Nilionananamtu' to mean 'I and someone saw one another.'

Lodhi (2002) adds that reciprocity can have the form denoting 'among' or 'between' many several objects. It takes the form –anya or –nya. He gives the following example in Lamba: -lekana (divide into two parts) and lekansyanya (divide into many parts or units).Ashton (1944) calls it the 'Associative (Reciprocal)'. Murrell (2012), in his study of the applicative construction and object symmetry in Lulogooli and Kiswahili, points out that in Lulogooli, the applied object may be reciprocalized for all semantic roles except location where such a clause would not make sense. He gives the following examples of reciprocalized applied objects:

Avasomi-   va-sugum-an-ir-a amakaradasi
2-student   2.SM- past push-REC-APPL- FV6-paper

'The students are pushing one another for paper'. Reciprocality can be marked by itinerative situation and plurality. According to Moyse –Faurie (2007) an action can be performed several times (again and again) by one or more participants and itinerative situations are usually characterized by plurality of action and participants. According to Kemmer (1996), it is common to find situations where marked collectives are also reciprocal markers. Lichtenberk (2000),Kemmer (1996) describe the collective as a situation where two or more participants are jointly involved in identical roles.Chavula (2016), in her study of verbal extensions in Chitumbuka, notes that collectives are differentiated from the reciprocal in the sense that in collective situation, participants do not act upon each other but are just companions in a situation involving identical participant roles.Collective situations therefore require co-operation from both or all participants. This view is also echoed by Voeltz (1977), in his study of the Proto-Niger-Congo verb extensions, where he notes that the associative meaning means to do something together or with someone. He adds that, syntactically, the reciprocal requires either a plural subject, a conjoined subject or a subject and object with an associative marker.

A prototypical reciprocal situation is one in which participants are in a mutual relationship such that the relationship in which participant A stands to participant B is the same as that in which participants B stands to participant

A.This is according to Lichtenberk (2000).Both participants play a simultaneous participant role as shown in Table 3 below:

Base	English	Lulogooli Reciprocal	English Reciprocal
Londa	Follow	Londana	Follow one another
Kuba	Fight	Kubana	Fight one another
Ruma	Bite	Rumana	Bite one another
Yanza	Love	Yanzana	Love one another

Table 3: Prototypical Reciprocals in Lulogooli

The reciprocal is used in sentences as shown in 3, 4 and 5:
3. Vandu v-a-lond-**an**-a kunzira
2. people2.SM-Pres-follow–Recip-FV15.road
'People are following one another on the road'
4. Ziŋgoko z-i-kub-**an**-a
10.chicken 10.SM-Pres–fight–RECIP–FV
    'Chicken are fighting'
5. Zimbwa z-i-rum-**an**-a
    10.Dogs 10.SM.-pres-bite-Recip-Asp
    'The dogs are biting one another'
        According to Maslova (2007), languages that have a simple reciprocal construction also have the coordinated strategy of NP conjunctions. This means that the identity of the participants in the subject NP may not be shared.There are atleast two participants of different identity in the subject position which are coordinated. Each of the coordinated participants is acted upon and at the same time acts on the other participants. In Lulogooli, the coordinator is usually the comitative 'na'.The coordinated reciprocal can have a compound subject that has singular entities. According to Mchombo (2004) the reciprocal derivation shows interdependence of an action as the participants interact in the action expressed by the verb; thus, a reciprocal requires a plural or group subject. Where the single entities become coordinated, the subject is said to be compound.An example is given below:

6. Mama naBaba v-a-vug-ana navanavavo.
1.Mama with 1.Baba 2.SM-past-meet-REC-FV with2.their children
'Mother and father met with their children'
Figure 2 shows how the reciprocal extension is attached to a structure that has coordinated reciprocal.
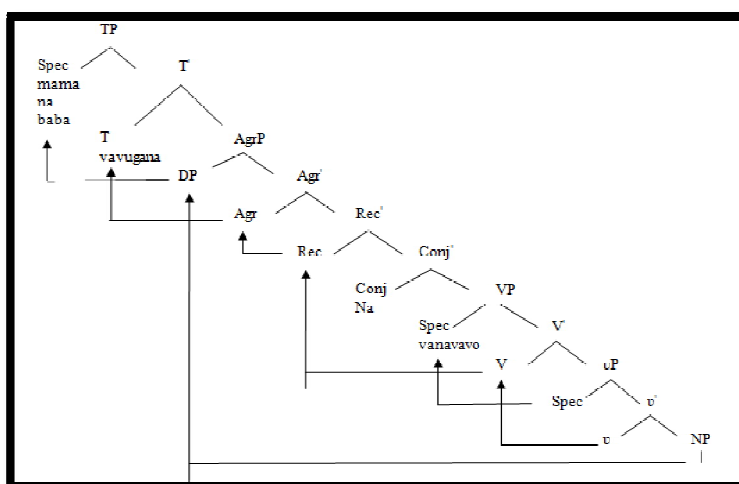

Figure 2: Lulogooli Reciprocal

        Figure 2 has two different participants: mother and father who meet with their children. 'Mother' and 'father' are singular entities in the coordinated subject.The subject moves from the complement position of υP to Agr for interpretation of its agreement feature then to T. Subject marker on the verb is usually plural (class 2) because the coordinated participants are more than one. The participants in split co-participants, one participant is in the subject position while the other is in the comitative phrase after the verb. The comitative strategy makes use of the oblique marker 'with' one of the participant NPs, according to Stassen (2000) and Haspelmath (2004) further add that the two coordinants do not form the same constituent in comitative strategy so plural agreement is not mandatory. This is unlike in co-ordination strategy where singular agreement on the verb is not allowed Haspelmath 2004:7 posits that 'many languages that use the comitative strategy allow extra position of coordinants to the end of the clause so that the construction is no longer continuous. In sentence 6, the subject NP and its co-participants do not form a constituent. It is

however possible in Lulogooli to have both reciprocal co-participants precede the verb.In such a case father, mother and children will be linked by the comitative 'na', as shown in 7. There is no semantic difference between structure 6 and 7.
7. Mama, baba navanav-   a-vugana
1. Mother, 1Father with 2. Children 2.SM-past –meet-recip-FV
 Mother, Father and children met
The Lulogooli reciprocal is marked by the morphological structure: *'Root-an-FV(Final Vowel)*

2.3. Applicative

According to Jeong (2007), Kulikov (2011), the applicative is defined as a construction in which a verb bears a specific morpheme which licenses an oblique or non-core argument that would not otherwise be considered a part of the verb argument structure. Kulikov (2011) adds that the newly introduced argument is a direct object that shows all object properties. Lodhi (2002) notes that this extension is also called 'applied' or 'prepositional' and indicates that the action is applied on behalf of, towards or with regard to some object. The applicative, according to Marten and Mouse (2016) is marked morphologically in many languages, including Bantu, through a derivational suffix of the verb and it licenses the introduction of a new object which can have different thematic roles such as beneficiary, location, instrument, motive, and others. The post-radical elements identified by Lodhi (2002) include –ea, -ia, -ela, -ila, -ena and –ina. Other suffixes identified by Murrell (2012) include –ey and –iy.

The applicative, according to Lam (2007) augments the argument structure of a verb by bringing an additional semantic role which is most frequently a benefactive, instrument or locative role. The 'roles' are identified as 'objects' by Marten &Mouse (2016) who give the additional example of 'motive' and by Jerro (2015) who gives the example of a locative. The applicative in Lulogooli is marked by the suffixes –ey- /-iy- / and –er-/ -ir-. Examples are shown in Table 4:

Base	English	Lulogooli Applicative	English Applicative
Zuka	Pour	zuk**ir**a	Pour on/for
Voha	Tie	voh**ey**e	Tie for
Rumba	Make/prepare	romb**er**a	Make for

Table 4: Lulogooli Applicatives

The realization of the suffix as-er-/ir or –ey-/-iy- is determined by vowel harmony as shown sentences 8 and 9.
8a. Muhengiwamarwa y-a-zuk-a amarwa.
    1. Worker 1SM-past-pour-FV brew
    'The worker poured brew'
b. Muhengiwamarwa y-a-zuk-**ir**-a musakuruamarwa
    1.Worker 1SM-past-pour-   Appl   FV   old man   brew
    'The worker poured brew on the old man'
9a. Mmbone y-a-voh-a kitambaya
    1.Mmbone 1.SM-past-tie-FV 7.scarf
    'Mmbone tied the scarf'
b.   Mmbone y-a-voh-**ey**-e mama kitambaya.
1.Mmbone 1.SM-past-tie-Appl-Asp1.Mother 7.scarf
'Mmbone tied the headscarf for mother'

According to Baker (1988b), (1992), Marantz (1993), Woolford (1993), Nakamura (1997), there are at least two types of Bantu applicative constructions: the prepositional category represented by the locative applicative which involves syntactic Prepositional Incorporation (henceforth PI) and the other is the verbal category represented by the instrumental applicative which does not. The applicative is also identified by Baker (1988a), Nakamura (1997) as a set of closely related grammatical-function-changing processes whereby the addition of an applicative morpheme to the verb makes some oblique become an object. It involves PI where its theme receives inherent case within the VP and cannot trigger agreement or passivize. It cannot control agreement or undergo passivation because according to Chomsky (1995), Nakamura (1997), it stays within the VP throughout the derivation. In order for an NP to trigger agreement, it must be in a specifier-head relation with a functional head.
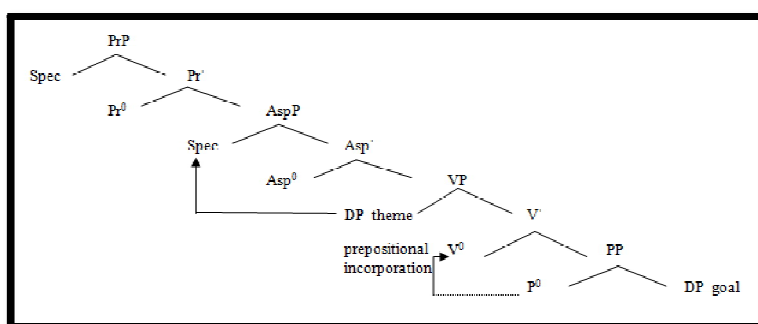

Figure 3: Prepositional Incorporation in Applicative

Prepositional Incorporation in applicative is adapted from Baker (1988, 1992) (see also Zeller and Ngoboka 2008) where Baker argues that the thematic relations between the verb, the theme and the goal argument in a locative applicative are identical to the thematic relations in a non-applied construction such and are therefore identified through identical syntactic relations.

The Lulogooli applicative is marked by the morphological structure: *'Root-er-/ir or –ey-/-iy-FV(Final Vowel)*

2.4. Causative

According to Lodhi (2002), this form indicates 'cause to do' or 'cause to be' and its post radical element varies considerably from region to region in Bantu Africa. It has the form –esa, -isa, -esha, -isha, -eza or –iza and –sha, sa or za. Other complicated forms include –ya and –ra. Lodhi (2002) notes that the most frequently used Causative elements in eastern African Bantu languages are –sa/-isa and –sha/isha.Gluckman& Bowler (2015) point out that '**iz'** is the general causative suffix with many cognates across Bantu. They give the following example in Lulogooli:

Kurera 'to cry' → kurer**iz**a 'to cause to cry.'

This suffix is identified as -**ny**- by Gluckman & Bowler (2015) and –**ya**- by Lodhi (2002). According to Chavula (2016), this suffix is referred to as the transitive suffix in Bantu literature. This view is echoed by Gluckman & Bowler (2015) who note that the suffix is attached to transitive verbs. Payne (1997:176) defines causative constructions as the linguistic instantiations of the conceptual notion of causation. The core arguments in the causative construction are 'the causee' and' the causer'. Croft (1990), Payne (1997) define the 'causee' as the agent of the caused event which is sometimes referred to as the coerced endpoint and 'causer' as the agent of the predicate of cause; also, sometimes referred to as the 'agent of cause'. Lulogooli has three causative extensions. In this paper they are co-indexed as follows: -ik- (Cause$_1$), -ny- (Cause$_2$) and –iz- (Cause$_3$)

2.4.1. The Causative Suffix Ik (Cause$_1$)

In Lulogooli, Caus$_1$introduces a causer which is the subject of the derived construction.

English	Impositive	Meaning
Cover	Kun**ik**a	Cause to be covered
Shine (with a torch)	Mul**ik**a	Cause to be seen

Table 5: The Causative Suffix Ik (Cause$_1$)

Examples in sentences include the following:

10.Muhinziri y-a-kun-ik-a mavere

1.Worker 1.SM-past-cover-Caus$_1$-FV 6.millet

'The worker caused the millet to be covered'

MLC allows attraction and feature-driven movement of the verb from the VP to CAUS node for its Causative feature to be interpreted. Once this is complete, the verb is no longer accessible to the operation again and the EF of the verb becomes syntactically transparent hence accessible to agree and move. MLC enables the verb to move to T where its tense feature is interpreted, then to Agr to enable the Subject –Verb agreement feature to be interpreted. This is where the verb picks the Agr marker 'y'. Lastly, MLC allows attraction and feature driven movement of the verb to C where its complement feature is interpreted and then the verb spells out. This is because, as noted by Al Horais (2013), the complement is opaque and out of reach for further computation. This is shown in Figure 4.
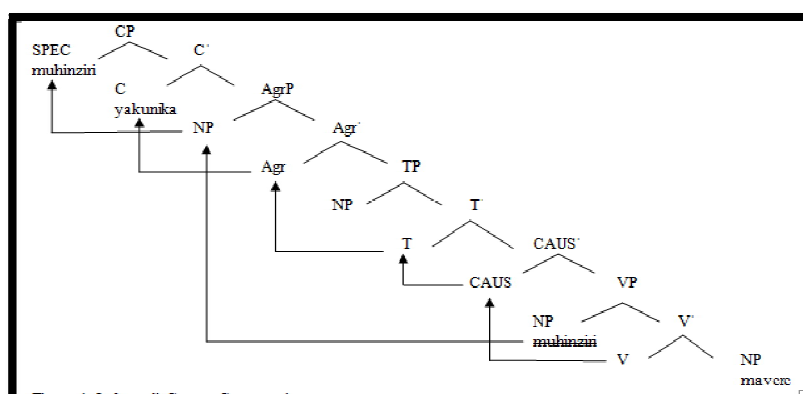

Figure 4: Lulogooli Cause$_1$ Construction

The Lulogooli Caus$_1$ is marked by the morphological structure: *'Root-ik-FV(Final Vowel)*

2.4.2. The Causative Suffix –ny- (Caus$_2$)

This suffix is identified as 'ny' in Lulogooli and is attached to transitive verbs. Caus$_2$ introduces a causer which surfaces as the subject of the derived construction. The following are edited examples extracted from Gluckman & Bowler (2015:16).

Basic Verb	Meaning	Caus₂	Meaning
Kubama	Be flat	kubam**iny**a	Cause to flatten
Kuchiriŋana	Be quiet	kuchiriŋa**ny**a	Cause to be quiet
Kwoma	To dry	kwomi**ny**a	Cause to dry
Adika	Break	ata**ny**a	Cause to break

Table 6: Caus₂ Verbs

The verbs can be used in sentential structures as shown in 11 and 12:
11a. Mudogw-   a-kubam-a
20.matress 20.SM-near past-flat-Asp
'The mattress is flat.
b. Mama y-a-kubam- **iny**-a mudo
1.mother 1.SM-past-flat-Caus₂-asp 20.matress
 'Mother has flattened the mattress/caused the mattress to be flat'
12a. Zinguvo zy-   a-   kwom-a
10.clothes 10.SM-past-dry-Asp
 The clothes are dry
b. Ryiuva ry-a-   kwom-**iny**-a zinguvo
 5.sun 5.SM-past-dry-Caus₂-Asp 10.clothes
     'The sun has dried the clothes/caused the clothes to dry.'
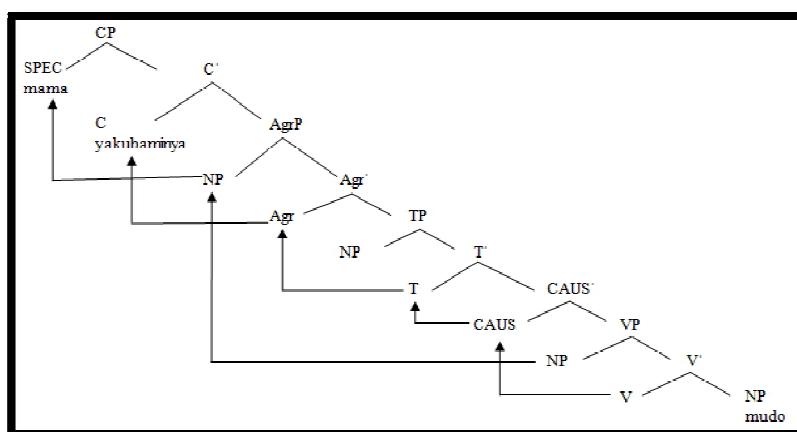

Figure 5: Lulogooli Cause₂ Structure

In Figure 5, the causer is introduced and 'kekombe' becomes an applied object.MLC allows movement of the verb from the VP to merge with CAUS which locates the matching feature in the verb and attracts it. The verb moves and enters a checking configuration where the Caus feature is checked. MLC then enables the verb to move to T for interpretation of tense feature and to Agr where the local checking relation between INFL and its specifier, that is, the subject 'Salome' is done. The subject features of the verb are checked off hence it acquires the nominal marker 'y' of Noun Class 1. Since there is no other element with a similar feature specification which is closer to the potential landing site, that is C, MLC allows the verb to move to C where its complement features are interpreted. Criterial configuration induces freezing effects causing the configuration to be unavailable for further movement.

2.4.3. Causative suffix-iz-. (Cause₃)
In Lulogooli, the Caus₃ suffix attaches to transitive verbs. The cause is the subject while the causee is the object who is introduced through suffixation of the suffix –iz- as shown in Table 7.

Base	Transitive verb	Caus₃	Meaning
Drink	Ŋwa	Ŋw**ez**a	cause to drink
Eat	Rya	Ri**iz**a	cause to eat
Grow	Viruka	Viruk**iz**a	cause to grow
Sit	Ikara	Ikar**iz**a	Cause to sit
Tya	Fear	Ti**iz**a	Cause to fear

Table 7:Caus₃ Verbs

The following are sentential structures formed using the verbs in Table 6
13a.Murwaye y-a-ŋw-a runyasi
 1.patient 1.SM-past-drink-Asp 11.drug
'The patient drunk the drug.'
b. Musaalizi y-a-ŋw-ez-a murwayerunyasi

1.nurse 1.SM-past-drink-Caus$_3$-Asp patient drug
 'The nurse caused the patient to drink the drug.'
14a. Eŋombe y-a-ry-a vunyasi
9.cow 9.SM-past-eat-Asp grass
 'The cow ate grass.'
b. Muhinziri y-a-ry-iz-a eŋombevunyasi
1.worker 1.SM-past-eat-Caus$_3$-Asp 9.cow 14.grass
The worker fed the cow/caused the cow to eat'

Just like in Caus$_1$ and Caus$_2$ constructions, the verb in Caus$_3$ construction raises from the internal position of VP and moves to CAUS node to have the causative feature interpreted. The formal feature of tense which is associated with the functional head T is matched so T attracts the verb which moves and enters a checking configuration. The feature is interpreted and the T feature of the verb is deleted. MLC then allows the verb to move and merge with Agr to check for Subject-Verb agreement. Subject features of the verb are checked off against the corresponding features of the subject-nominal which in this case is 'y' of Nounclass 1a as shown in Figure 6.
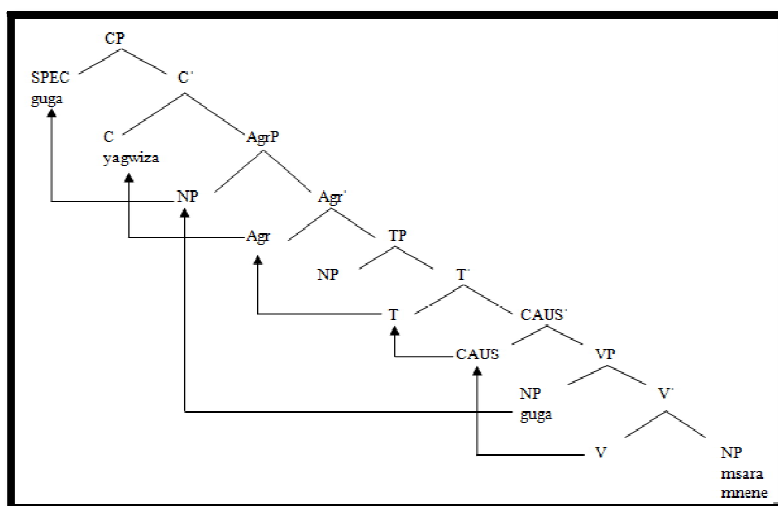

Figure 6: Lulogooli Cause$_3$ Construction

3. VEs Co-occurrence Restrictions in Lulogooli Verbs

According to Schadeberg (2003), Bantu languages have a rich array of verbal extensions which do not form a neat semantic or syntactic system. Rice (2009) notes that factors affecting suffix order may be semantic, phonological or morphological/templatic. Hyman (2002) proposes a Pan-Bantu default template (Causative-Applicative-Reciprocal-Passive (CARP)). According to Good (2005, 2007:212), the extended version of CARP is CARTP and includes: Causative, Applicative, Reciprocal, Transitive, Passive (CARTP). The Transitive is CAUS$_2$ in this thesis. This order is abbreviated as CARCP by Hyman (2003:262,272), Mcpherson and Paster (2009:57). This section seeks to find the extent to which Lulogooli verbal extension co-occurrences fit within the Pan-Bantu template proposed by Hyman (2002).
Lulogooli VEs can occur in twos or threes as outlined below:

3.1. Combinations Involving Two VEs

3.1.1. Combination involving Causative$_2$ and Passive

When CAUS$_2$ and the Passive are used together in the same verbal complex, the order CAUS$_2$-PASS is allowed as shown in Table 8:

Base	English	Causativization	Passivization
Zuka	Pour (into)	Zuga**ny**a	Zuga**nyw**a
Adika	Break	Ata**ny**a	Ata**nyw**a
Nina	Climb	Nyi**ny**a	Nyi**nyw**a

Table 8:CAUS$_2$-PASS Co-occurrence

The verbs are used in sentential structures as shown in 15:
15a. Musimbi y-aku-at-**any**-a kekombe
 1a.Musimbi 1a.SM-near past-break-Caus$_2$-FV 7.cup
 'Musimbi has broken the cup.'
b. Kekombe ch-aku-at-**any**-**w**-a (naMusimbi)
 7.Cup 7.SM-nearpast-break-Caus$_2$-Pass-FV (with1a.Musimbi)
'The cup was broken (by Musimbi).'

The verb selects from the internal position of the VP and moves to Agr node for interpretation of its agreement feature. The verb is attracted by the EPP feature in Caus2 and MLC allows it to move and merge with it. The feature is interpreted and the verb is attracted and moves to Pass for interpretation of the Passive feature as shown in Figure 7.The reverse order is not licensed by Lulogooli as it would result in an ungrammatical structure
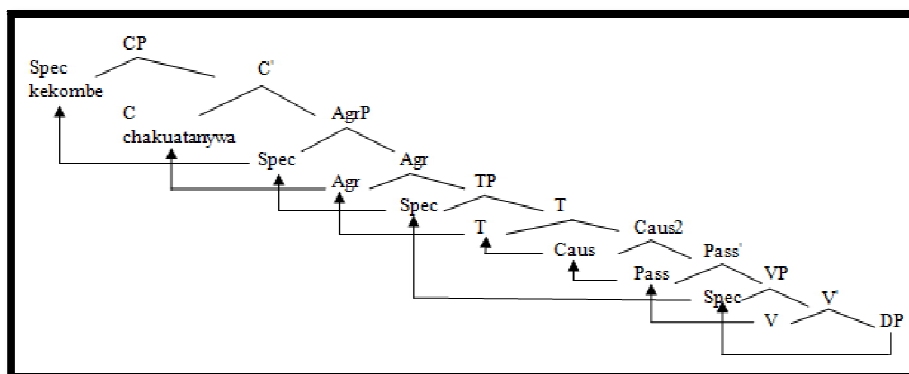

Figure 7: Lulogooli Caus$_2$-Passive Co-occurrence

3.1.2. Combinations involving the Applicative and the Passive

In Lulogooli, the Applicative suffix precedes the Passive when the two are used in the same construction as shown in Table 9.

Base	English	Applicative	Meaning	Passive	Meaning
Ummbaka	Build	Ummbak**ir**a	Build for	Ummbak**irw**a	build on behalf of
Deka	Cook	Dek**er**a	Cook for	Dek**erw**a	Cook on behalf of
Yenya	Look	Yenyera	look for	Yenyerwa	Look for on behalf of

Table 9: Appl-Pass co-occurrence

Use of the verbs in sentences is shown below:
16a. Vatumekiriva Daudi v-e-eny-a mukanamugima
2a.David's servant 2a.SM-past-look-FV 3.virgin
'David's servants loked for a virgin.'
b. VatumekirivaDaudi v-e-ny-**er**-a Daudimukanamugima
2a.Servants of David 2.SM-past-look for-APPL-FV 1a.David 3.virgin
 'Servantsof David looked for a virgin girl for him'
c. Daudi y-e-eny-**er**-**w**-a mukanamugima (navatumekiriveve)
 1a.DavidSM-past-look-Appl-Pass-FV 3.virgin (with 2a.servants his)
'David's servants looked for a virgin for him.'

The introduction of the Passive suffix causes the DO to raise to a higher structural case position that is [Spec,TP]. This follows Baker (1993), Nakamura (1997) who note that passive morphology is tied to Asp and renders structural case marking in [Spec, AspP} impossible. The subject and the object swop positions as seen in 14b and 14c. The applied object now becomes the subject while the subject becomes the agent and is used in the oblique case. Once this derivation is complete, the phase arguments become impenetrable to further syntactic operations. The phases are syntactically independent and are sent out separately to PF to be spelt out as shown in Figure 8. The reverse order is not licensed in Lulogooli.
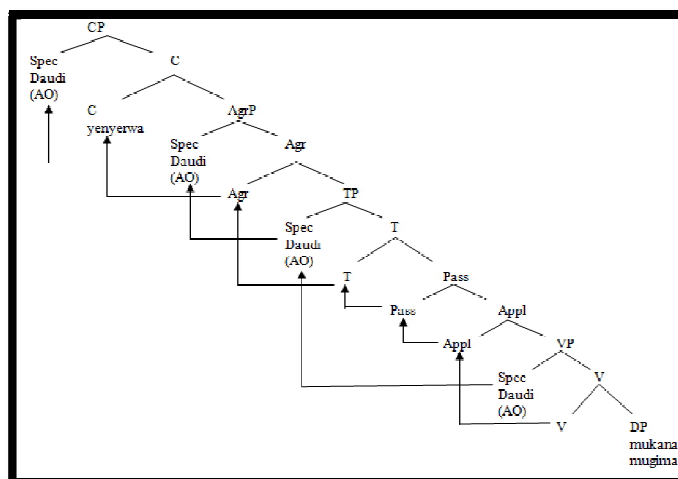
Figure 8: Applicative-Passive Co-occurrence

3.1.3. Combinations Involving the Passive and Causative₃

In Lulogooli, the Causative₃ affix precedes the Passive affix in conformity with the CARCP order as shown in the examples given in Table 10:

Caus₃	English	Caus₃-Pass	English
Li**iz**a	cause to eat	Li**izw**a	cause to be eaten
Ŋgw**ez**a	cause to drink	Ŋgweh**izw**a	cause to be drunk
Viruk**iz**a	cause to grow	Viruk**izw**a	cause to be grown

Table 10: Caus₃-Pass co-occurrence

15.a. mureri y-a-li-**iz**-a mwanachyukurya
1a.Baby-sitter   1a.SM-past-feed-Caus3-FV   1.child   7.food
   'The baby-sitter fed the child.'
  b. mwana y-a-li-**iz**-**w**-a chyukuryanamureri
1.child   1.SM-past-feed-Caus3-Pass-FV7.food with   1a.baby-sitter
   'The child was fed by the baby-sitter.'

The EPP feature in Caus3 allows attraction and feature-driven movement of the light verb to the Caus₃ node. The causative feature is interpreted then MLC allows the verb to move to the Pass node for interpretation of the Passive feature. The verb then selects for the tense, agreement and complement interpretation consecutively before it spells out as shown in Figure 9.
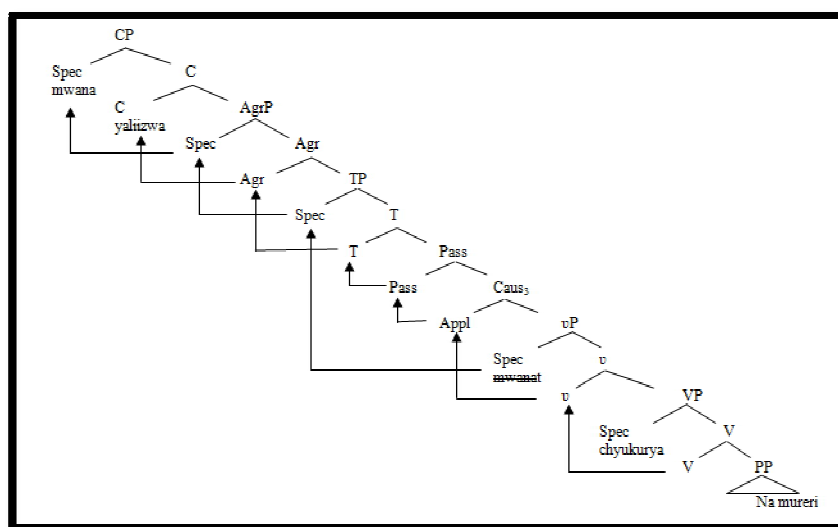

Figure 9: Causative 3-Passive Combination

3.1.4 Combinations Involving Causative₃ and Applicative Suffixes

The Caus₃-Appl order of suffixes in Lulogooliconforms to the default order in Bantu: CARCP. Illustrations are given in Table 11.

Base	English	Base+CAUS$_3$	Meaning	Base+CAUS$_3$+APPL	Meaning
Ŋgwa	drink	ŋgw**ez**a	cause to drink	ŋgw**ezir**a	cause to drink on behalf of
gona	sleep	gon**iz**a	cause to sleep	gon**izir**a	cause to sleep on behalf of
Kina	dance	kin**iz**a	causeto dance	kin**izir**a	cause to dance on behalf of

Table 11: CAUS$_3$-Appl Co-Occurrence

16a. Mwana y-a-kin-a
  1a.child 1a.SM-past-play-FV
  'The child played.'
b. Baba y-a-kin-**iz**-a mwana
  1a.father 1a.SM-past   play-Caus$_3$-FV 1a.child
  'Father caused the child to play.'
 c. Baba y-a-kin-**iz**-**ir**-a mama mwana
  1a.father 1a,SM-past-play-Caus$_3$-Appl-FV 1a.mother 1a.child
  'Father made the child play on behalf of mother.'

Causativization involves the addition of an external argument and assignment of object case as seen in structures 16a, b and c. This follows Burzio (1986). According to Chomsky (1995), Collins (1997), the external role is generated at Spec of υP and υP takes VP as its complement. The verb is generated at V while its external arguments are generated inside VP. The subject argument is generated at Spec of υ and interprets its Caus3 feature followed by the Appl feature as shown in Fig 10.
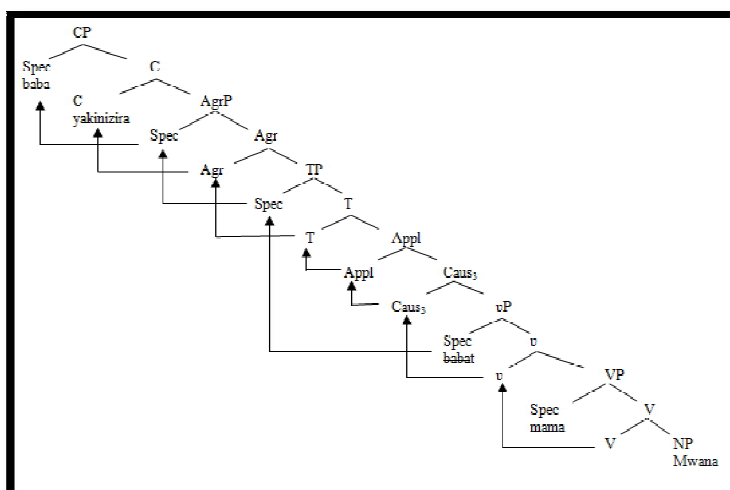

Figure 10: Lulogooli Caus$_3$-Appl Co-Occurrence

This results in a derivation that conforms to Hyman's (2002) Pan Bantu template CARCP.

3.1.5. Combination Involving CAUS$_3$ and REC Suffixes
    Lulogooli follows the Caus$_3$-Rec order which conforms to Hyman's (2002) Pan Bantu template. In this kind of order, two participants are mutual causers and at the same time mutual causees. Examples are given in Table 12.

Base	English	CAUS	English	CAUS$_3$-REC	English
Ria	Eat	Ri**iz**a	Cause to eat	Ri**izan**a	Cause one another to eat
Vuka	Be awake	Vukiza	Awake	Vukizana	Cause one another to be awake
Ŋwa	Drink	Ŋweza	Cause to drink	Ŋwezana	Cause one another to drink

Table 12: CAUS$_3$-Recco-occurrence

17a. Marita y-a-ŋw-a esoda
  1.Marita 1.SM-past-drink FV   9.soda
  'Marita drank soda'
 b. Johana y-a-ŋw-**ez**-a Marita esoda
  1.Johana 1.SM-past-drink-Caus$_3$-   FV   1. Marita 9.soda
  'John caused Marita to drink soda'

c. Marita na Johana v-a-ŋw-**ez-an**-a esoda
    1. Marita with 1.Johana 2.SM-past-drink-Caus₃-Rec-FV 9.soda
    'Marita and Johana made one another drink soda.'

       MLC allows attraction and feature-driven movement of the verb from the VP to Caus3 node. The causative feature in Caus locates the matching features in the verb and attracts it. The verb moves and enters a checking configuration where the Caus feature is interpreted. MLC then allows movement of the verb to Rec for interpretation of the Reciprocal feature. The verb moves to T for interpretation of the Past Tense feature and then to Agr. Here, the local checking relation between the verb and its subject 'Marita na Johana' is done hence the verb acquires the nominal marker 'v' of Noun Class 2. Since there is no other element with a similar feature specification which is closer to the potential landing site 'C', MLC allows the verb to move to C for interpretation of its Complement feature. The verb then spells out. Figure 11 shows that Lulogooli adheres to CARCP order since it allows the order Cause₃-Reciprocal. The reverse order is not allowed.
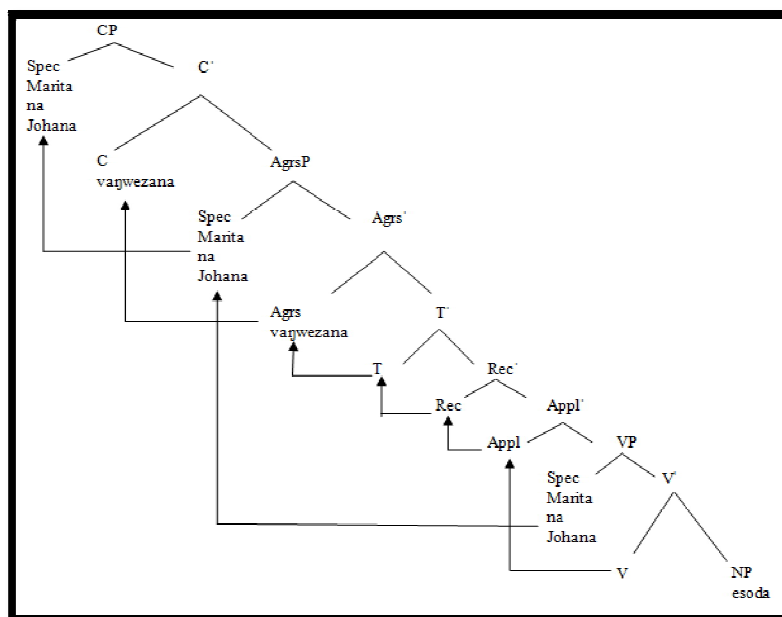

Figure 11: Lulogooli Caus 3-Rec Co-Occurrence

3.1.6: Combinations involving Applicative and reciprocal suffixes
       The order Appl-Rec is possible in Lulogooli as shown in Table 13.

Base	English	APPL	English	APPL-REC	Meaning
Yiva	Steal	Yiv**ir**a	steal from	Yiv**iran**a	steal from one another
Lwana	Fight	Lwan**ir**a	fight for	Lwan**iran**a	fight for something for one another
Vugura	Take	Vugur**ir**a	Take	vugur**iran**a	take for one another

Table 13: Appl-Rec Co-occurrence

18a. Luka y-a-romb-a mudoga
    1a.Luka   1a.SM-past-make-FV 3.vehicle
    'Luka made a vehicle.'
  b. Luka y-a-romb-er-a vanamudoga
    1a. Luka 1a.SM-past-make-Appl-FV 2.children 3.vehicle
    'Luka made a vehicle for the children.'
  c. Luka navana v-a-romb-er-an-a midoga
    2a. Luke and children   2a.SM-past-make-Appl-Rec-FV 4.vehicles
    'Luke and the children made vehicles for one another.'

       Suffixation of the reciprocal suffix makes the structure become monotransitive since the secondary object is joined to the subject. The new subject is a causer hence an agent. This means that both agent and patient suffer from having their money stolen. Without the reciprocal, the meaning that would result would be that the patient did not suffer from having his money stolen. One thief steals from another and the same action is reciprocated. The EPP feature in Appl attracts the verb where its applicative feature is interpreted. MLC then allows movement of the verb to Rec. The Reciprocal feature in Rec locates the matching feature in the verb and the reciprocal feature is interpreted. The verb moves to T and then Agr for interpretation of its tense and agreement feature. The verb lastly moves to C for interpretation of its complement feature before it spells out as shown in Figure 12. The reverse order of Rec-Appl is not licensed in Lulogooli.
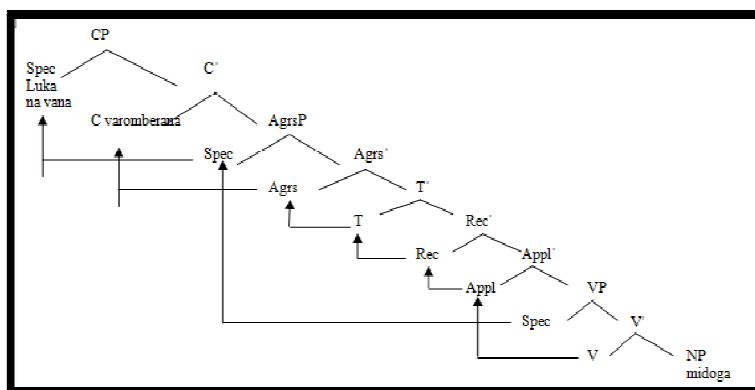
Figure 12: Lulogooli Appl-Rec combination

3.1.7. Combination Involving CAUS$_2$ and APPL Suffixes

In Lulogooli, Cause$_2$ appears before the applicative suffix and this order goes against the CARCP order as proposed by Hyman (2002). This is shown in Table 14.

Cause$_2$	English	CAUS$_2$-APPL	English
At**any**a	Break(glass)	Ata**nyir**a	Break(glass)for
Vun**any**a	Break(dry stick)	Vuna**nyir**a	Break (dry stick)
Zug**any**a	Mix	Zuga**nyir**a	Mix for

Table 14: Caus$_2$-Appl Co-occurrence

19a. mwai y-a-zug-any-a runyasi
    1.Herdsman   1.SM-past-mix-Caus$_2$-FV 11.medicine
    'The herdsman mixed the medicine.'
  b. mwai y-a-zug-any-ir-a rigondirunyasi
1.herdsman   1.SM-past-mix-Caus$_2$-Appl-FV 5.sheep11.medicine
'The herdsman mixed the medicine for the sheep'

Figure 13is a double-object construction so involves embedding a VP in another VP which takes a VP complement. Head to head movement allows the verb to move from the lower V head to the empty V position in the higher VP, i.e the little υ (Chomsky 1995, 1998) where it performs the role of introducing an external argument and enter into a relation with the object. The EPP feature in Caus$_2$ is matched with the verb and the verb moves to Caus2 for interpretation of its causative feature. MLC then allows attraction and movement of the verb to Appl for interpretation of its applicative feature. The verb then moves for interpretation of its tense, agreement and complement features. Criterial configuration induces freezing effects where the configuration is frozen in place and unavailable for further movement.
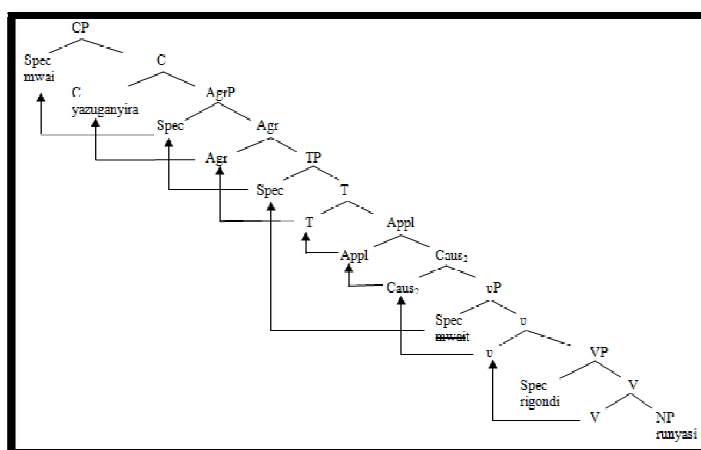

Figure 13: Lulogooli Caus$_2$-Appl co-occurrence

3.2. Combinations involving three VEs

3.2.1. Combination Involving CAUS$_3$, APPL and REC Suffixes

The order CAUS$_3$-APPL-REC is possible in Lulogooli and conforms to the templetic order by Hyman (2002). A combination of the CAUS$_3$ and applicative suffixes reveals that the CAUS$_3$ precedes the APPL. When the REC suffix is used in addition to the above mentioned suffixes, the order in which they occur is CAUS$_3$-APPL-REC, as shown in Table 15.

Base	English	Caus3	English	Appl	English	Rec	English
Lia	Feed	Li**iz**a	Cause to feed	Lii**zir**a	Feed for	liizi**ran**a	Fed for on behalf of one another
Shuiza	Warm (water)	Shu**iz**a	Cause to be warm	shuiz**ir**a	Warm for	shuizi**ran**a	Warm for/on behalf of one another
Gura	Buy	Gur**iz**a	Cause to be bought	guriz**ir**a	Buy for	gurizi**ran**a	Buy for one another

Table 15: Caus₃-Appl-Rec Co-occurrence

20a. Mama y-a-gur-a maduma
 1a.mother 1a.SM-past-buy-FV maize
  'Mother bought maize.'
b. Mama y-a-gur-**iz**-a maduma
1a.mother 1a.SM-past-buy-Caus₃-FV maize
  'Mother bought maize.'
c. Mama y-a-gur-**iz**-**ir**-a   guku   maduma
  1a.mother 1a.SM-past-buy-Caus₃-Appl-FV grandmother maize.'
 'Mother sold maize to grandmother.'
d. Mama naguku v-a-gur-**iz**-**ir**-**an**-a maduma
  2a. mother and grandmother 2a.SM-past-buy-Caus₃-Appl-Rec   FVmaize
 'Mother and grandmother sold maize to one another.'

       In Caus₃-Appl-Rec co-occurrence, the participants of the event cause each other to do things for one another. In Figure 14, mother causes grandmother to sell maize on behalf of mother while grandmother does the same thing. Both the causative meaning and the applicative meaning are reciprocated. MLC allows attraction and feature-driven movement of the verb from the internal position of the VP to Caus₂ for its causative feature to be interpreted. The EF feature of the verb becomes syntactically transparent hence accessible to Agree and Move. The EPP feature in T, Agr and C attracts the verb to those nodes in that order where the past tense, subject-agreement and complement features are interpreted. Since the complement is opaque and out of reach for further computation (Horais 2013), the verb spells out. The reciprocal suffix allows use of a compound subject, since both arguments perform and receive the action. The object remains at the complement position of the VP as shown in Figure 14.
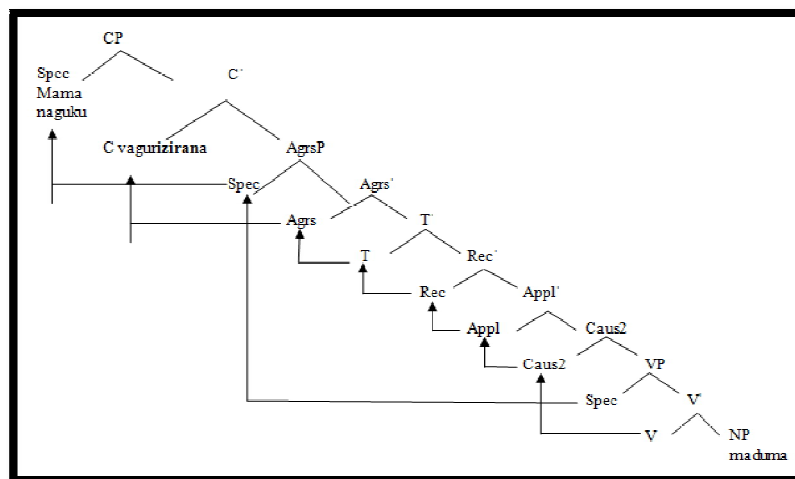

Figure14: Lulogooli Caus₃-Appl-Rec combination

3.2.2. Combinations Involving CAUS₂ APPL and REC
       This order violates the template order CARC₂P where CAUS₂ is used after APPL and REC suffixes. In Lulogooli, CAUS₂ precedes the APPL suffix which in turn precedes the reciprocal suffix as shown in Table 16.

Base	English	Caus2	English	Appl	English	Rec	English
Zuka	Pour into	zuga**ny**a	Cause to mix	zuga**nyir**a	Mix for	zuga**nyiran**a	Mix for one another
Chiriŋana	Be quiet	chiriŋa**ny**a	quieten	chiriŋa**nyir**a	Quieten for	chiriŋa**nyiran**a	Quieten for one another
Soma	Read	somi**ny**a	Cause to read	Somi**nyir**a	Cause to read for	som**inyiran**a	Cause to read for one another

Table16: Caus2-Appl-Rec co-occurrence

The following are examples in sentences.

21a.Mama y-a-zug-**any**-a runyasi

1.Mother 1.SM-past-mix-CAUS-FV11.medicine

'Mother mixed medicine.'

b. Mama y-a-zug-**any**-**ir**-a Maria runyasi

1. Mother 1.SM-past-mix-CAUS$_2$-APPL-FV 1. Maria 11.medicine

'Mother mixed medicine for Maria.'

c. Mama na Maria v-a-zug-**any**-**ir**-**an**-a runyasi

1. Mother with 1.Maria 2.SM-past-mix-CAUS$_2$-APPL-REC-FV medicine

'Mother and Maria mixed medicine for one another'

   In structure 21 the action of mixing medicine is reciprocated. Mother is causing medicine to mix for Maria and Maria is doing the same for mother hence the verb has three suffixes appearing in the order CAUS$_2$–APPL-REC. The subject in the structure is also coordinated to enable the reciprocation take place. MLC allows attraction and feature-driven movement of the verb from the VP to merge with Caus2. Matching causative features are located and interpreted. The verb becomes syntactically transparent hence allows attraction and movement to Appl for interpretation of its applicative feature. MLC then allows the verb to move to Rec for interpretation of the Reciprocal feature. The verb further moves to T, Agr and lastly to C where its tense, agreement and complement features are interpreted. The compound subject moves from the specifier position of the verb to check tor its agreement and complement features respectively. The object selects and attaches at the complement position of the verb. The elements then become inactive and cannot be moved further, (Boskovic 2008). The structure spells out as shown in Figure 15.
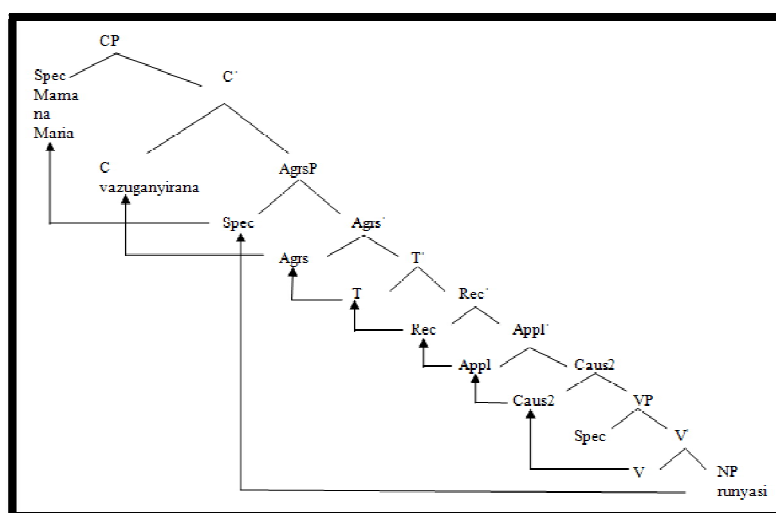

Figure 15: Lulogooli Caus$_2$-Appl-Rec combination

4. The Minimalist Program Analysis of Lulogooli VEs

   According to Chomsky (1995), the MP simplifies syntax by describing the grammars of languages in a minimal way. Language is embedded in a performance system that enables its expression to be used for articulating, interpreting, referring, inquiring and reflecting. Chomsky (1995:165) divides the performance systems into two general types: articulatory-perceptual (A-P) and conceptual-intentional (C-I). Two interface levels contain instructions for each of these systems: Phonetic Form (PF) at the A-P interface which specifies the sound aspect of language and the Logical Form at the C-I interface which specifies the meaning aspect of language.

   A language is assumed to consist of two components: a lexicon and a computational system. The lexicon specifies the item that enters into the computational system, with its idiosyncratic properties. According to Chomsky (1995:130), the lexicon must specify, for each element, the phonetic, semantic and syntactic properties that are idiosyncratic to it. The lexicon has all the lexical and morpho-syntactic information about verbs and nouns. Once the lexicon has been selected from the numeration, its bundles of features –also called formal features or morphosyntactic features- are matched with other elements that have related features. This is done through the Operation Agree. At this stage, the lexicon, also called a probe, probes for a goal through a process called 'probing'. Operations Copy then applies on the lexicon whereby it is copied before it is moved through a process called Move. It then merges with the goal through Merge in order to have its uninterpretable features interpreted. The original lexicon then deletes through the operation called Delete.

   In MP, the syntactic operation Move and Agree which involve a probe-goal relation are motivated by the deletion of an uninterpretable feature on the probe. 'A' movement such as raising is induced by an interpretable EPP feature on the probe instead of an uninterpretable structural case feature on the goal. According to Chomsky 2000:127, the movement of a goal is driven by the uninterpretable feature on its matching probe. This is the Suicidal Creed. On the Active/Local Goal Principle, Chomsky (2000) posits that Movement and Agree require a Goal that is both local and active. Thereafter, a computational process called 'merge' takes place. Merge combines the items into a projection and partial tree via the Bare Phrase Structure.

The Minimalist Program considers sentences to have a phrase structure consisting of a lexical domain, VP and a functional domain. The commonly accepted functional projections are the complementizer phrase (CP), the agreement phrase for the subject (AGRsP), the object (AGRoP) and tense (TNSP). VP is where a verb and its arguments are inserted. Features associated with derivational morphology such as Passive, Causative, Reciprocal and Applicative occupy the projections. Checking can take place at any stage of derivation.

In this study, we examined the operations of the checking principles and the role they play in constraining movement of the verbal elements in the morpho-syntax of Lulogooli. According to the feature-checking theory, movement only takes place for purposes of feature-checking. Using data from Lulogooli, we sought to put this position to test.

According to Chomsky's (1999, 2000) theory of phases, it is assumed that the complete set of lexical items (the lexical array) is selected from the lexicon at the onset of the derivation; however, the computational system does not have constant access to the lexical array throughout the derivation. Chomsky argues that the derivation proceeds in cycles or "phases" during which only a sub-set of the lexical array is available for computation. No element which is not part of this subset can be accessed by the computational system until the respective phase is completed. Once the phase is completed, it is sent off to the interface components and the computation proceeds; the computational system now has access to the lexical sub-array which determines the next phase. Syntactic derivations proceed by phases- derivations take place cyclinically from a closer phase to the next higher phase(s). A phase head is functional rather than lexical and is either propositional or eventive; where the eventive phase should introduce an external argument. A transitive phase head may bear a structural case feature or an Edge Feature (EF).

Derivations by phases are constrained by locality condition where a phase head can only probe a closest goal with-in its C-commanding domain. This is known as Attract Closest Principle (ACP) where a head attracts the closest constituent of the relevant kind (Chomsky 1995:311) or the Minimal Link Condition (MLC) where k attracts α only if there is no β closer to k than α such that k attracts α (Chomsky 1995:311). Locality D(P) is the C-command domain of a P and a matching feature. G is closest to P if there is no G in D(P) matching such that G is in D(G') as summarized in the figure below.
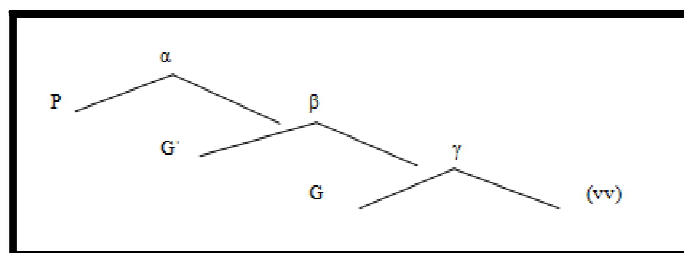

Figure16: Minimal Link Condition (Chomsky 1995:311)

MCL simply means 'minimize the length of chain links' according to Chomsky and Lasnik (1993). Minimal Link Condition requires chain links to be minimal in length, according to Chomsky (1994, 1995), Chomsky and Lasnik(1993), see also Nakamura (1997). Further, Nakamura (1997) adds that the MCL allows comparison of chain links only if they are of the same kind: that is, they are formed by raising non-distinct elements to satisfy equivalent morphological requirements. The notion of the chain length according to Nakamura (1994, 1995, 1997),Baker (1995), is that it is the number of maximal projections that dominate the tail but not the head. Bearing all this in mind, we addressed one of our research objectives that sought to investigate the order of verbal extensions in a Lulogooli verbal structure.

The principle of economy states that there can be no superfluous symbols in a representation. Chomsky (1994, 1995, see also Nakamura 1997) lays claim to the fact that a linguistic expression must satisfy certain natural economy conditions in an optimal way and thus cannot be defined simply as a pair $\{\pi,\lambda\}$ formed by a convergent derivation. Following Nakamura 1997, less economical derivations are blocked by more economical ones even if they converge. Economy conditions involve first of all determining the reference set which Chomsky (1994, 1995) posits consists only of derivations arising from the same numeration. The present study employed the principle of economy in the analysis of the Lulogooli data by ensuring only economical derivations devoid of superfluous symbols were used.

5. Summary, Conclusion and Further Issues

The co-occurrence of the VEs was evidence for the agglutinating nature of Lulogooli. This study sought to find the extent to which selected Lulogooli verbal extensions namely: passive, reciprocal, applicative and causative fit within the Pan-Bantu template proposed by Hyman (2002). As regards the order of the extensions in a verbal structure, the following co-occurrences conformed to the Pan-Bantu default template:

(a) Co-occurrence involving two suffixes

- $Cause_3$- Appl
- $Cause_3$-Rec
- $Cause_2$-Pass
- App-Pass
- App-Rec
- $Caus_3$-Pass
- $Caus_2$-App

(b) Co-occurrence involving three suffixes
- Cause$_2$-Appl-Rec
- Cause$_3$-Appl-Rec
On the contrary, Lulogooli allows certain combinations that violate the Pan Bantu default order (CARCP).
Examples include
- Cause$_2$-App
- Cause2-Appl-Recip

The morpho-syntactic properties of structures concerning suffix order were the result of attraction and feature-driven movement operations constrained by MLC. Properties of Lulogooli verbal extensions and their order are evidence for such principles postulated in the MP such as feature attraction and checking, the MLC, and the Phase Theory.

The study concluded that the Lulogooli verbal complex comprises of, among other constituents, the passive, the applicative, the reciprocal and three forms of the causative VEs. The extensions can be used individually, or in twos or threes in conformity to patterns licensed in Lulogooli though further research could be conducted to determine whether four VEs can be used on the same verbal structure and the order they can take. The Minimalist Theory was adequate in accounting for the Lulogooli verbal extensions as it fully captured the relationship shared by verbs and their extensions.

6. References

i. Ashton, E. (1944). 'Swahili Grammar (Including Intonation)'. London: Longman.
ii. Baker, M. (1988b). 'Theta Theory and the Syntax of Applicatives in Chichewa,' in Natural Language and Linguistics Theory 6, 353-389.
iii. Baker, Mark. 1992. Thematic conditions on syntactic structures: Evidence from locative applicative. In Thematic structure: Its role in grammar, ed. Iggy M. Roca, 23-46. Berlin: Foris.
iv. Baker, Mark. 1995. The polysynthesis parameter. Oxford: Oxford University Press.
v. Chavula, J.J. (2016). 'Verbal derivation and valency in Citumbuka'. LOT Trans 10, 3512 JK Urecht, the Netherlands.
vi. Chomsky, N. (1995). 'The Minimalist Program'. Cambridge Mass.: M.I.T. Press.
vii. Chomsky, Noam (1999). "Derivation by Phase". MIT Occasional Papers in Linguistics 18.
viii. Chomsky, Noam (2000). Minimalist enquiries: The framework. Martin, Roger, David Michaels & Juan Uriagereka(eds.), Step by Step: Essays on Minimalist Syntax in honor of Howard Lasnik, MIT Press, Cambridge, MA,89–115.
ix. Chomsky, Noam (2000). Minimalist Inquiries: The Framework. In: Roger Martin, David Michaels and Juan Uriagereka (eds), *Step by Step. Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge/Mass.: MIT Press, 89-155.
x. Chomsky, Noam, and Howard Lasnik. 1993. The theory of principles and parameters. In Syntax: An interna-tional handbook of contemporary research, ed. Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennemann, 506-569. Berlin: Walter de Gruyter.
xi. Chomsky, Noam. 1994. Bare phrase structure. MIT Occasional Papers in Linguistics 5. MITWPL, Depart-ment of Linguistics and Philosophy, MIT, Cambridge, Mass.
xii. Comrie, Bernard (1988). Passive and Voice. In Masayoshi Shibatani (ed). *Passive and Voice*. Amsterdam/Philadelphia: John Benjamins, 9-24.
xiii. Gluckman, J. &Bowler (2015). 'Transitivity Alternations in Logoori'. UCLA, University of Oregon.
xiv. Good, Jeff. 2005. Reconstructing morpheme order in Bantu: The case of causativization and applicativization. Diachronica 22:3-57
xv. Good, Jeffrey C. 2001. Causativization and applicativization in Bantu: Evidence for an evolutionary approach to morpheme ordering restrictions. Ms. University of California, Berkeley.
xvi. Hyman, Larry M. 2002a. "Cyclicity and Base Non-Identity." In David Restle & Dietmar Zaefferer(eds), *Sounds and Systems. Studies in Structure and Change. A Festschrift for Theo Vennemann*. (Trends in Linguistics. Studies and Monographs), 223-239. Berlin: Mouton de Gruyter.
xvii. Hyman, Larry M. 2003. Suffix ordering in Bantu: a morphocentric approach. In Geert Booij & Jaap van Marle (eds.), *Yearbook of morphology 2002*, 245–281. Dordrecht: Kluwer.
xviii. Jeong, Youngmi (2007). *Applicatives: Structure and interpretation from minimalist perspective*. Amsterdam: John Benjamins.
xix. Keenan, Edward L. (1985). Passive in the World's Languages. In Timothy Shopen (ed) *Language Typology and Syntactic Change Vol I, Clause Structure*. Cambridge: Cambridge University Press.
xx. Kemmer, Suzanne (1996).Collective and Distributive, or where unity meets multiplicity. *The Twenty-third Lacus forum*. Available online at *http://www.lacus.org/volumes/23.*
xxi. Kulikov, Leonid I (2011). Voice Typology. In Jae Jung Song (ed.), *The Oxford Handbook of Linguistic Typology.* Oxford: Oxford University Press, 368-   398.
xxii. Kyle Jerro. 2015. Revisiting Object Symmetry in Bantu. Selected proceeding of the 44th Annual Conference on African Linguistics 130-145
xxiii. Laura E. Mcpherson and Mary Paster   (2009). Evidence for the Mirror Principle and Morphological Templates in Luganda Affix Ordering
xxiv. Leung, E. (1986). The tonal phonology of Llogoori: A study of Llogoori verbs. Ithaca, NY: CLCP Publications.

xxv.   Lichtenberk, Frantisek (2000). Reciprocals without reflexives. In Zygmunt Frajzyngierand Traci S. Curl (eds.). *Reciprocals: Forms and Functions*. Amsterdam: John Benjamins, 31-62.

xxvi.   Lodhi, A.Y. (2002). 'Verbal Extensions in Bantu; the case of Swahilil and Nyamwezi'. Africa & Asia 2: 4-26.

xxvii. Maho, Jouni Filip. 2009. NUGL Online: The online version of the New Updated Guthrie List, a referential classification of the Bantu languages.

xxviii. Marantz, A. (1984). 'On the Nature of Grammatical Functions.' M.I.T. Press: Cambridge, Massachusetts.

xxix.   Maslova, Ellena (2007). Reciprocal and Polyadic (Remarkable reciprocals in Bantu), in Vladimir P. Nedjalkov, Emma Geniušienė and Zlatka Guentcheva (eds) *Reciprocal constructions*. Amsterdam: John Benjamins.

xxx.   Mchombo, S. (2004). 'The Syntax of Chichewa', Cambridge University Press, Cambridge.

xxxi.   Moyse-Faurie, Claire (2007). Reciprocal, sociative, middle, and iterative constructions in East Futunan. In Vladimir P. Nedjalkov, Emma Geniušiene and Zlatka Guentcheva (eds) *Reciprocal constructions*. Amsterdam: John Benjamins.

xxxii. Murrell, P. (2012). 'The Applicative Construction and Object Symmetry as a Parameter of Variation in Kiswahili and Maragoli', in: Southern African Linguistics and Applied Language Studies Vol. 30, Issue 2. 255-275.

xxxiii. Nakamura, Masanori (1997). Object Extraction in Bantu Applicatives: Some Implications for Minimalism. *Linguistic Inquiry*. 28 (2), 252-278.

xxxiv. Nakamura, Masanori. 1994. An economy account of wh-extraction in Tagalog. In Proceedings of the Twelfth West Coast Conference on Formal Linguistics, 405-420. Stanford, Calif.: CSLI Publications. [Dis-tributed by Cambridge University Press.]

xxxv.   Nakamura, Masanori. 1996. Economy of chain formation. Doctoral dissertation, McGill University, Montreal, Quebec

xxxvi. Nurse D. & Phillipson, G. (2003). 'The Bantu Languages'. Routledge Language Series.

xxxvii. Olivia S.-C. Lam. 2007 The Applicative Affix And Morpheme Ordering In Chichewa Proceedings of the LFG07 Conference Miriam Butt and Tracy Holloway King (Editors) CSLI Publications http://csli-publications.stanford.edu/

xxxviii. Payne, Thomas. 1997. *Describing morphosyntax: A guide for field linguists*. Cambridge: Cambridge University Press.

xxxix. Rice, Keren. 2000. *Morpheme order and semantic scope*. Cambridge University Press.

xl.   Schadeberg, Thilo (2003). Derivation. In Derek Nurse and Gérard Philippson (eds.). *The Bantu Languages*. London: Routledge, 71-89

xli.   Siewierska, Anna (1984). *The Passive: a Comparative Linguistic Analysis*. London: Croom Helm.

xlii.   Vail, Leroy H. (1972). Aspects of the Tumbuka Verb. Doctoral Thesis. Wisconsin University.

xliii. Voeltz, Erhard Friedrich Karl. 1977. Proto Niger-Congo Verb Extensions. ProQuest Dissertations and Theses

xliv.   Wangia, J.I (2008) Morphological Issues in Translation: The Lulogooli Bible, Technical Papers for The Bible Translator. V0l 59 No1 Jan, 2008.

xlv.   Woolford, Ellen. 1993. Symmetric and asymmetric passives. Natural Language & Linguistic Theory 11: 679-728.

xlvi.   Zeller, Jochen & Jean-Paul Ngoboka (2006). Kinyarwanda locative applicative and the minimal link condition. Southern African Linguistics and Applied Language Studies 24, 101–124.