# CARP Affix Ordering: Problematic in Lubukusu

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| ARTICLE INFORMATION | ABSTRACT |
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Hyman and Mchombo (1992), Babye (1985), (Myers 1987), (Rice 2000), and Hyman (2002 & 2003) have shown that there is affix ordering in Proto-Bantu languages that obeys the 'CARP' (Causative-Applicative-Reciprocal-Passive template). Drawing data from Lubukusu, a Bantu language, the current study analyzes affix ordering of class-changing morphemes, arguing against the templatic morphology that most researchers have shown to be dominant in Bantu languages. The current study uses Bybee's (1985) principle of iconicity (principle of relevance), where it is proposed that affixes closer to the verb stem are more 'relevant' to the verb than to the rest of the sentence and those affixes further away are less relevant. Based on Baybee's relevance principle, the study argues that there are various affix ordering orders in Lubukusu, which are semantically motivated. The data that are used in the analyses are self-generated and verified by three native Lubukusu speakers who are competent in the language. Findings show that as much as Lubukusu obeys the templatic morphology, the same is violated in various morpho-semantic contexts. The study recommends more studies on affix ordering in the Lubukusu language based on other existing frameworks that have been tested on languages rather than those from the proto Bantu family.

## 1. Introduction

Lubukusu is one of the 18 dialects of Luhya, a Bantu language. Other dialects include Lutachoni, Lukabras, Lutsotso, Lumarachi, Lumarama, Lutiriki, Lukisa, Lulwisukha, Lulwidakho, Luwanga, Lunyore, Lulogoli and Lusamia. Luhyas are mainly found in the Western parts of Kenya, although there are a few that are scattered in other parts of the Republic of Kenya as well as in the Eastern parts of Uganda. Luhyas are part of about 500 African languages that belong to the Benue-Niger division of the Niger-Congo branch of the Niger-Kordofanian language family. These languages descend from a common Proto-Bantu language, whose origin is present-day Cameroon in Central Africa. Bantu languages are spoken from Southern Cameroon, Eastward to Kenya, and Southward to the Southernmost tip of the African continent.

Like other Bantu languages, Lubukusu is a tonal language and as such, tone is distinctive, it is used to indicate differences in meaning. With regard to Lubukusu phonemic inventory and syllable structure, this language consists of ten vowels; five of them short; that is, [a, e, i, o, u], while the other five being long; that is, the vowels [a: e: i: o:, u:]. Lubukusu has twenty consonant phonemes, as shown in *Table 1* below:

Table 1: Consonants in Lubukusu

| | Bilabial | Labio-dental | Alveolar | Palatal | Velar |
|---|---|---|---|---|---|
| Plosives | P | | t | c | k |

| Fricatives | B | f | s | | x |
|---|---|---|---|---|---|
| Nasals | M | | n | ɲ | ŋ |
| Liquids | | | l, r | | |
| Glides | | | | j | w |
| Pre-nasal stops | ᵐb | | ⁿd | ᶮɟ | ᵑg |

Lubukusu is typically made up of open syllables of CV clusters; even in borrowed words (which are nativized to comply with the Lubukusu structure). Consequently, the syllable structure of Lubukusu is CCCV as in [ndwa.la] 'I am sick', CCV as in [fwa] 'die', CV as in [su.ta] 'carry', V as in  [a.li.ma] 'He is digging' and Ṇ (nasal) as in [m.mi.la] 'I swallow'.

In Lubukusu, a voiced obstruent does not occur singly. For these sounds to occur, they have to be pre-nasalized as in [e.*mb*wa]. 'a dog'. The two; that is, the nasal and the stop (pre-nasalized stops) are considered as one segment.  This applies to voiced bilabial stop /b/, the voiced alveolar /d/, the voiced velar stop /g/, and the voiced palatal /j/. Thus, despite Lubukusu having open syllables, the language allows consonant clusters of two or three consonants, mainly at the initial and the medial position of words but not in the final position. This is the case even in borrowed words that tend to end with consonant clusters as in 'register', which becomes [e.re.che.si.ta], the word 'shilling' becomes [e.si.li.ngi].

Being an agglutinating language, Lubukusu makes use of various morphemes per word. Consequently, complex words are formed in this language using several morphemes that are strung together. This paper seeks to analyze affix ordering in this language, making reference to the templatic morphology. The paper argues that despite the fact that Lubukusu to a larger extent, conforms to CARP as proposed by Hyman (2002 & 2003), the language also violates the same in equal measure and that this is motivated by the relevance of the morphological affix to the verbal root.

## 2. Literature Review
According to Hyman (2003), the general template to Bantu languages is Causative- Applicative- Reciprocal- Passive (CARP). Likewise, Abasheikh (1978:28) cited in Hyman (2003) says "In Chimwi:ni, unlike some other Bantu languages, the order of the extensions is restricted. The following ordering of the extensions is as follows: Verb Stem- Causative- Applied-  Reciprocal- Passive. It is not possible to put these extensions in any other order."

With regard to the fixed order, Hyman (2002: 2) argues that "neither semantic scope (or 'compositionality') nor the syntactic MP can account for the full range of suffix ordering facts in any Bantu language. Instead, each suffix system represents a language-specific resolution of a basic tension between two competing pressures: the pressure for affix ordering to be compositional ordering is driven by a Pan-Bantu default template, with the oft-reported mirroring effects resulting from 'exceptional' overrides; that is, from suffix specific cases where MIRROR (B, A) outranks the default TEMPLATE (A, B)". In his conclusion, Hyman (2002) cited in Rice (2009: 13) says, "the inescapable conclusion is that suffix ordering does not reflect compositionality/semantic scope."

Based on cross-linguistic studies on affix orders, Bybee (1985) on the other hand says that the order of affixes is determined by the semantic function and scope of each affix, whereby the affixes that are more relevant in relation to the action of the verb root will always appear closer to it as compared to those affixes that are less important to the action of the verb. The current study takes Bybee's semantic motivation for affix order but more importantly, it seeks to explore the violation of CARP by Lubukusu morphology.

Contrary to Hyman's (2002 & 2003) and Bybee's (1985) position on affix order in Bantu languages, Baker (985) proposes that the order of affixes is not necessarily fixed but rather determined by specific syntactic operations; that is, the Mirror principle.
Unlike the other scholars, both Myers (1987) and Rice (2000), who analyzed Templatic prefix systems in Bantu and Athabaskan languages respectively agree that the templatic systems only apply to few language families of the world.

Despite the varying views on templatic morphology, what is true is that the existing body of research findings shows that Bantu languages conform to the templatic system.
The current study argues that despite the fact that Lubukusu, a Bantu language spoken in the Western parts of Kenya, conforms to the CARP template, there are numerous affix orders that are allowed in its morphological operations that do not necessarily

conform to the templatic system as proposed by Hyman (2002 & 2003) and that the morphological positions taken by valence-changing affixes at any given time is semantically motivated. Thus, in the analysis, the current study adopts the relevance principle *as proposed by Baybee (1985).*

## 2.1 Theoretical Framework

The current study uses Bybee's (1985) principle of iconity (principle of relevance), where the assumption is that affixes closer to the verb stem are more 'relevant' to the verb than to the rest of the sentence and those affixes further away are less relevant to the verb. In this principle, therefore, morphological affixes are analyzed depending on their proximity to the verbal root. Based on Baybee's relevance principle, the study argues that there are various affix orders in Lubukusu (and not just the ones that conform to the CARP template), which are semantically motivated. The analyses will enable us not only to account for Lubukusu class-changing morphemes and the CARP template but also to account for the licensing of the various affix orders in this language.

## 3. Methodology

This is a descriptive study that makes use of self-generated data. Derived words that bear class-changing affixes that relate to the CARP template were generated (these excluded the stative affixes). The derived words were then verified by three Lubukusu native speakers who are competent in the language. This was done for purposes of both grammatical and semantic judgment. In total, 19 derived verbs were generated and analyzed, which enabled us to come up with 9 different class-changing affix ordering categories (these are besides those that conform to the CARP affix order), which violate Hyman's (2002 & 2003) dominant morphological template.

## 4. Discussion and Results

### 4.1 Interplay of Class- Changing Affixes and the Templatic Morphology

Hyman (2003: 249) proposes a morphological template known as CARP, which determines the default order of four common extensions in Bantu languages; that is, the causative, applicative, reciprocal, and the passive. Lubukusu being a Bantu language largely conforms to Hyman's (2002 & 2003) morphological template. However, despite this, the language also violates the same template, which regulates the relative order of the four derivational affixes in Bantu languages.

In this sub-section. We discuss Lubukusu affix orders that conform to the CARP template and argue that their morphological position is motivated by their semantic relevance to the verbal root. Below are derived morphological structures that conform to the CARP template:

1) ba- som-  ***esi***-  ***el***-  ***an***-  a

    3pl. read  caus. appl.  rec.  fv

    "They cause to read X for each other's Y.'

The structure in 1) above obeys the CARP template in the sense that the causative morpheme precedes the applicative, which in turn precedes the reciprocal morpheme; thus, the order of affixes is ***causative- applicative- reciprocal***. This ultimately means that the causative rule feeds the applicative rule, which in turn feeds the reciprocal rule. In this sentence, the occurrence of the causative affix near the verb root gives it more prominence and relevance as compared to the other affixes; that is, the applicative and the reciprocal that is far removed from the verbal root. The semantics of the causative affix ***-esi-*** triggers the occurrence of the *benefactive* 'Y'; its proximity to the verb root contributes to its wider semantic scope.

Another illustration is provided below, where the CARP template is also observed:

2) ka-  chukh-  ***il***-  ***w***-  a

    agr.  pour  appl.  pass.  fv

    'X was poured for.'

The morphological structure in 2) above conforms to CARP; that is, the affix order is ***applicative- passive***. The emphasis in this structure is *for whom the action is done*; that is, the benefactive 'X'. The semantics of the applicative *-il-* licenses the occurrence of the *benefactive* 'X' and therefore, the proximity of the applicative to the verb root determines the semantic scope of the entire structure.

Besides, the causative rule feeds the reciprocal rule in Lubukusu. In such cases, the two affixes; that is, the ***causative- reciprocal*** affix order, obey the templatic morphology and the proximity of the causative to the verb root determines the semantic scope of the same as illustrated below:

3). loman- **isi- an-** a

    quarrel   caus.   rec.   fv.

    'cause to quarrel each other's X'

In 3) above, the occurrence of 'X' (assign the theta role of goal) is licensed by the causative affix *-isi*, whose proximity to the verb root defines its wider semantic scope.

The **applicative-reciprocal** affix order also conforms to the morphological template of CARP. In this case, *the* applicative rule feeds the reciprocal rule and the semantics of the applicative affix have a wider semantic scope because of its proximity to the verbal root. This is shown in 4) below:

4) Chukh- **il- an**- a

    pour    appl.   rec.   fv

    'pour X for each other'

In 4) above, the applicative affix *-il-* triggers the occurrence of 'X', which assigns the theta role of a *theme*.

### 4.2 Against the CARP Template
Despite the fact that Lubukusu conforms to the CARP Templatic morphology, the language also violates the same through various affix combinations. Basically, for such combinations, the semantics of the affix that is closest to the verb root tends to have a wider scope. Likewise, despite the fact that such morphological structures violate the CARP template, they are grammatical and semantically acceptable in the language. In this sub-section, we analyze morphological structures whose combination of the valence-changing affixes defies the dominant templatic system.

Besides Lubukusu allowing the causative- reciprocal combination that conforms to the template, it does allow the **reciprocal-causative** affix order in specific semantic environments as illustrated in 5) i) below:

5) i) *ba-*      *sut-*   **an- isy-**    *a*

    *3pl.*     *carry   rec.   caus.   fv*

    *'cause X to carry each other'*

In 5) i) above, although the CARP template is violated as the order is reciprocal-causative, the structure is grammatical and semantically acceptable; the semantic scope is determined by the reciprocal affix, which occurs closer to the verbal root and not the causative. The occurrence of 'X', which is assigned the theta role of *the agent* is triggered by the presence of the reciprocal affix *-an-*.

The semantic of the same structure would have been different if the causative were closer to the verb root, hence obeying CARP as illustrated in 5) ii). Below:

ii) *ba-*      *sut-*   **isy- an-**    *a*

    *3pl.*     *carry   caus.   rec.   fv*

    *'cause each other to carry X''.*

Hyman (2002), intimates that only two languages, Emakhua (Katupha, 1991) and Ciyao (Ngunga, 2000) allow the order of **applicative- causative**, hence violating the templatic order. However, data from Lubukusu shows that this language also allows the **applicative-causative** order as illustrated in 6) below. However, despite the templatic violation, the structure is grammatical and semantically appropriate.

6) i) *alikha- chukh-* **il- isy-**    *a*

    *3sg.*    *pour   appl.   caus.   fv.*

    *"cause to pour/water X for'*

In both 6) i) above, the semantics of the morphological affix that is closer to the verb root; that is, the applicative *-il-* determines the overall semantic scope. The argument 'X' is licensed by the applicative morpheme *-il-,* which assigns it the theta role of the *benefactive*.

The counterpart of 6) i) above that conforms to the template would be as in 6 ii) below:

ii) alikha-   chukh-   **isy-**   **il-**   a

   3sg.      pour    caus.  appl.  fv.

  'cause to pour/water X on behalf of'

In 6) ii), the causative affix *-isy-* licenses the occurrence of the *benefactive* X. Each of the above morphological structures; that is, 6) i) and ii) has different semantics because of the positions occupied by the respective morphological affixes and their relative positions to the verbal root, which determines their semantic scope.

CARP template demands that Bantu languages conform to the template, where the affix order is applicative-reciprocal (Hyman 2002). However, Lubukusu allows the affix order of reciprocal-applicative as demonstrated in the morphology below:

7).   ba-      lom-     ***an-***   ***il-***   a

   3pl.    quarrel   ***rec.***   ***appl***.   fv.

  'X quarrel each other over Y'

Whereas CARP template requires that the applicative process acts as input to the reciprocal process (since the applicative rule is supposed to apply before the reciprocal as per the CARP requirements), in 7 above, the reverse is the case as the reciprocal processes feeds the applicative, hence the order **reciprocal- applicative**, which does not conform to the template. However, the morphological structure is grammatical and semantically correct. The proximity of the reciprocal affix *-an-* determines the semantic scope and it licenses the occurrence of the argument 'X', which is assigned the theta role of *agent*.

The morphological structure in 7) above contradicts what Hyman (2002) says about Bantu languages with respect to **reciprocal-applicative** affix order. In reference to this order, he says "*I know of no Bantu language that requires an opposite order of the inherited PB suffixes, e.g. no language requires -il-its-, -an-il- etc*" pg 14; (where *-il-its-* are the applicative and causative affix respectively; while *-an-il-* are the reciprocal and applicative respectively in Chichewa, a Bantu language.

Just as with the affix order of **reciprocal- applicative** in 7 above, which contradicts Hyman's argument, Lubukusu still contradicts Hyman's (2002) claim that '...*no Bantu language allows -il-its- (*applicative- causative) affix order. This order is allowed in Lubukusu as demonstrated 6) i) above; repeated here as 8) below:

8) *alikha-   chukh-*   **il-**   **isy-**   *a*

   *3sg.       pour*    *appl. caus.   fv.*

  "cause to pour/water X for'

Lubukusu also allows the morphological order of **applicative- reciprocal- causative**, which violates the templatic system that is advocated for Bantu languages. The resultant structure in 9) i) is grammatical and semantically acceptable.

9) i) *ba-     som-*   **el-**   ***an-*** *isy-*   *a*

   *3pl. read   appl.   rec.   caus-  fv*

  *'cause to read X on behalf of each other.'*

In 9) i) above, the semantics of the structure is determined by the applicative morpheme *-el-,* whose proximity to the verbal root gives it a wider semantic scope. Likewise, Lubukusu allows the affix order of **causative-reciprocal-applicative** as in 9) ii) below, which violates the CARP template in as much as the structure is grammatical and semantically appropriate.

ii) *ba-     som-*   **esy-**  ***an-***  **il-**   *a*

   *3pl. read    caus. rec.   appl-  fv*

  *'caused each other's X to read'.*

Unlike 9) i) and ii) which violates the CARP template, 9) iii) which has the same morpheme combinations conform to the template; that is **causative- applicative- reciprocal** and the causative, affix, which is closer to the verbal root, has a wide semantic scope as compared to applicative and the reciprocal, which are far removed from the verbal root. This is shown below:

iii) ba-   som-   ***esy***-  ***el*** -  ***an***- a

   3sg.   read      appl.   rec.   caus- fv

   'caused to read X for each other'.

Lubukusu also allows for double affixation of the reciprocal morphology, especially when it occurs with the applicative, hence the affix order of **reciprocal- applicative- reciprocal**, which does not conform to the CARP template. This is demonstrated below:

10). ba-   p-   ***an- il-   an***- a

   3pl.  fight      rec.  appl.  Rec.  fv

   'X fight each other for/ because of X'

The affix order in 10) above violates the templatic system as the first reciprocal rule feeds the applicative rule, which in turn feeds the following reciprocal rule. However, the structure is grammatical and semantically acceptable. The first reciprocal affix -an-, which is closer to the verbal root licenses the occurrence of the *agent* 'X'.

Double affixation is also observed where, the **applicative-reciprocal- applicative** affix order is allowed in Lubukusu. Just as in 10) above, this double affix order violates the CARP template in as much as the morphological structure is grammatical and semantically acceptable. Likewise, the semantics of the applicative affix, which is closer to the verbal root is relevant in determining the semantics since it has a higher scope as compared to the reciprocal and the following applicative. This is illustrated in 11) below:

11) *Chukh-   il-   an-   il-   a*

   *pour      appl.   rec.   appl.  fv*

   *'pour X on behalf of each other'*

The first applicative affix *-il-,* licenses the theta role of *the theme* that is assigned to 'X'.

Likewise, whereas the first applicative in 11) above obeys the CARP template as it precedes the reciprocal, the final applicative does not as it comes after the reciprocal, which is in violation of the CARP template.

Besides double applicative occurring with an intervening reciprocal, Lubukusu also allows double applicative with the causative occurring in between, hence giving the affix order of **applicative- causative- applicative.** Below is an illustration:

12. *chukh-   il-      is-   il-   ia*

   *pour         appl.  caus.  appl  fv*

   *"cause to water X on behalf of Y."*

Whereas the first combination of **applicative-causative** violates the templatic requirement, the second; that is, **causative-applicative** conforms. The first applicative -il- triggers the occurrence of the *benefactive* 'Y'.

The applicative also co-occurs without any other affix (of a different category as provided for by CARP template) as illustrated below:

13 a) *i-      kul-   il-   il-   a*

   *3sg.   open  appl.  appl.  fv.*

   *"open X on behalf of Y".*

In 13) above, the first applicative rule feeds the second and it is the one that determines the semantics. The morphological structure is appropriate in terms of grammar as well as the semantics and the occurrence of the *benefactive* 'Y' is triggered by the presence of the first applicative affix in its morphological position close to the verbal root. The assumption in this morphological structure

is that there is an implied benefactor. Such co-occurrence of affixes is also observed with the causative, which can co-occur without negatively affecting the syntax or semantics of the structure as much as it violates the CARP template. This is illustrated in 14) below:

14) *a-      khin-    is-     isy-     e*

    3sg.    dance    caus.    caus.    fv

   *'X caused Y to cause Z to dance'*

The illustrations in 13) and 14) above show that as much as the co-occurrence (the same affix recurring) of the applicative and causative respectively is not realized in most languages (Hyman 2002), this is not the case in Lubukusu. Consequently, with regard to the co-occurrence of the applicative as well as the causative, Lubukusu violates the CARP template as it does not account for such co-occurrence of the affixes. The two co-occurrences also violate Menn and MacWhinney's (1984) Repeated Morph Constraint (RMC). According to Lieber (2010), repeated morph constraint prevents the same affix from being applied twice in succession. From the Lubukusu data discussed above, there seems to be evidence to show that Bantu languages are likely to behave differently as much as they have shared morphological structures.

Contrary to the above affix combinations, it is hardly possible to have the order of ***passive- applicative*** in Lubukusu; such an order results in structures that are ungrammatical as in 15) below.

15) *lia-       rumikh-    **w-     il**-     a

     pst/sg.     use        pass.    apl.    fv

     'it was used'.

In 15) above, there is no morphological explanation as to why the affix order of ***passive-applicative*** is unacceptable in the language; this occurrence could be by default.

## 5. Conclusion
The paper set out to discuss the templatic morphology and the problem it poses to Lubukusu, a Bantu language spoken in the Western parts of Kenya. From the data analyzed, it has been shown that Lubukusu (just as many other Bantu languages) to a large extent conforms to the CARP template. However, the paper has also shown that this language violates the template in the same measure. From the analyzed data, we have shown that Lubukusu allows *ten* affix orders that do not conform to the CARP template; namely, reciprocal-causative; applicative-causative; reciprocal-applicative; applicative-reciprocal-causative; causative-reciprocal-applicative; reciprocal-applicative- reciprocal; applicative-reciprocal-applicative; applicative-causative-applicative; causative-causative, and applicative-applicative. Despite the fact that these affix orders violate the template requirements, we have shown that they are all grammatical and semantically acceptable. Likewise, we have applied the relevance principle in arguing that the affix's proximity to the verbal root determines the semantics of the morphological word under consideration as it has a wider semantic scope as compared to those affixes that are far removed from the verbal root.

## 6. Recommendation
This study only focused on a few verbal extensions; namely, the causative, the applicative, the reciprocal, and the passive as captured by the CARP template, whose results may not be quite conclusive with regard to affix ordering in Lubukusu. Consequently, I recommend that more research on other verbal extensions that are not captured by the CARP template be done in order to establish their affix ordering system and their motivation. Such verbal extensions include; the reversive, the stative, the intensive, and the positional.

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