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Abstract
This paper aims to analyze the factors triggering suffix ordering in the Hangaza language spoken in Tanzania. Suffix ordering pertinent to verb extensions has been controversial since the twentieth century. This is because languages display general and specific morphological, phonological, semantic, or/and syntactic linguistics features of affix ordering of verb extension. Some scholars argue that the order of suffixes is triggered by semantic scope, others claim that suffix combinations are triggered by syntax and morphology, and another group agrees that is triggered by the default templatic formative approach. Some of the morphemes in Hangaza regarding suffix ordering cannot be sufficiently explained in the present schematized approaches, this needs analysis. The research used the Mirror Principle and Morph Ordering Theories for data analysis. The former captures the scopes of morpheme ordering with each of their meaning. The suffix with narrow scopes appears closer to the root than the one with a wide scope. The latter was selected for explaining silent semantic scopes of the combined morphemes when the former seemed inadequate such as in Bantu languages. Documentary review and unstructured interviews were the instruments of data collection. The paper found that the tense – aspect, tone, semantic scope, morphotactic, personal pronouns, and phonology are factors for suffix ordering in Hangaza language. This paper recommends that there is a need for careful study of non-linguistic factors that may trigger affix ordering in our natural languages to see how they behave in making morphs to be ordered or attached from the verb root or stem.

Introduction

In the current twentieth century, there has been considerable interest in searching why strings of affixes co-occur in certain orders. Most of the explanations given by linguists have been adopted from either a semantic or syntactic nature found in the publication under 'relevance theory' (Bybee, 1985) and the Mirror Principle (Baker, 1975, 1988). Hyman (2002, p. 1) argued that Bybee and Baker have in common that they seek to find a morphology-external explanation for why affixes occur in the observed combination. Later, the factors for affix ordering came to be explained in Hyman (2002) through the Pan-Bantu default suffix ordering template known as causative, applicative, reciprocal, and passive (C-A-R-P). Hyman shows that morphological templates determine affix ordering for at least a portion of the affixes in many Bantu languages such as Chichewa and that these templates must be strictly adhered to even in the face of semantic scope considerations that would seem to require a different affix ordering.

The study by Hyman does not agree with the Mirror Principle or compositionality. To him, "The inescapable conclusion is that suffix ordering does not reflect compositionality or semantic scope." Morphemes are ordered by a template (formalised as restrictions on ordering particular morphemes concerning one another). In the same line of thinking, Good (2007) concluded that the affix ordering in the Luganda language obeys the so-called 'C-A-R-P' template that Hyman (2003) reconstructs for Proto-Bantu However, even though the CARP principle seems to explain affix ordering of verb extensions, the principle faces challenges when it comes to language specificity and even when a certain language offers ordering similar morphemes in a single verb. However, the Kihangaza language of Tanzania seems to offer challenges to the proposed theoretical principle, especially when morphemes of the same form but different semantics are combined together, thus needing a careful study.

Ngonyani (2016, p. 52) stresses two questions on Swahili verb extensions: (a) What is the order of the extensions in relation to the applicative? (b) How can the order be accounted for? The results of the search for Pairwise combinations with the applicative reveal the following: (a) The reversive appears before the applicative; (b) the applicative may appear before or after the causative and reciprocal; and (c) the stative must appear before the applicative. The findings are consistent with the Semantic Scope Hypothesis as they show the following: (a) A variable affix order that corresponds to different meanings and scopes, (b) the reversive and stative exhibit a narrower scope than the applicative, and (c) the passive, with its wider scope, always appears after the applicative (Cf Swahili language). Ngonyani's result would be helpful in the current study. Still, it leaves much to be investigated as the affix -ij- in Kihangaza is neither accounted for by Ngonyani's concluded hypothesis since it is not triggered by the or preceding morphs as suggested in this study. Thus, Hangaza's peculiarities of affix ordering need much investigation to come up with new idea on the phenomenon of affix ordering in the language and their associated factors.

Under the level of analysis, it has been noted that such a proposed factor does not work in languages with this order, including Hangaza language. For example, it is said that CARP orders affix concerning one another. It is considered the default situation by Hyman (2003), and Good (2002) argues that some variability is allowed (depending on the language). With this base, CARP is not a stable theory of accounting affix ordering in Bantu languages. This needs a study that would develop factors triggering affix ordering in Bantu under the Morph Ordering Theory (Simon, 2018) and Lexical Mapping Theory (Bresnan & Moshi, 1990, p. 169).

Scholars have used the presence of the Mirror Principle as one of the factors of affix ordering in Bantu languages. On the one hand, Katamba (1993) argues that the order of verbal extensions in Luganda follows the Mirror Principle. The principle states that 'the order of affixes reflects the order in which the associated syntactic 'operations' apply. The same principle was applied in the study by McPherson and Paster (2007) on the Evidence for the Mirror Principle and Morphological Templates in Luganda Affix Ordering. These scholars (Cf, argued that the order of affixes in Luganda follows the Mirror Principle or scope and C-A-R-P. This theoretical apparatus has manifested a little bit as far as affixes ordering in the Bantu language; the current study in Kihangaza investigates beyond the present principles in literature because in this language, it seems that some suffixes are ordered without following the C-A-R-P and Mirror Principle, this needs analysis to see what triggers their ordering.
Some scholars have attempted to follow relevance theory as a factor for affix ordering in Bantu languages. Muysken (1986, p. 639) discusses affix ordering in Bolivian Cochabamba Quechua and, in doing so, provides a synopsis of how Bybee's (1985) principle of relevance as a determinant factor of affix ordering that operates in the Quechua language. The idea of relevance determining affix ordering is that affixes which are more directly relevant to the root's lexical content will be positioned closer to

the root (Barasa, 2022). In contrast, those mostly or exclusively relevant to the syntax will be expressed farther from the root. Bybee's theory predicts the order: *STEM-VALENCE.CHANGING-VOICE-ASPECTTENSE- MOOD-NUMBER-PERSON-GENDER*. Muysken (1986, p. 639) concluded that this order does not match the order attested in Cochabamba Quechua. Differently, the theory of relevance has not considered the ordering of affixes of the same nature whose semantics are either different or the same. The current analysis promises to provide satisfaction of these forms of affixes.

Chavula (2016), in his study of verbal derivational and valency in the Citumbuka language spoken in the Northern Region of Malawi and in the Lundazi district of Zambia, did not account for new factors for suffix ordering. Still, he adapted the same phenomena as Hyman's (2002) C-A-R-P and Baker's (1988) Mirror/scope. The problem of the former is that it has not been applied to many languages, making failure to be conclusive. The latter's claim has been a restrictive theory of how valence-changing morphemes should be ordered in verbs. Specifically, the Mirror Principle suggests that morphemes whose semantics have a narrower scope over the semantics of a root should appear closer to the root than morphemes whose semantics have a wider scope. This is a challenge to the Kihangaza language of Tanzania following the fact that the vice versa is true. Thus, re-analysis is desired at length to investigate factors triggering morph ordering, especially post-radical morphs that are ordered and influenced by aspect or person pronouns using the Morph Ordering Theory (Simon, 2018).

Damonte (2004) investigated 'The Mirror Principle and the Order of Verbal Extensions: Evidence from Pular language, the language spoken in middle Guinea, particularly in the Northwestern portion of the country. The author investigated how the affix in this language is ordered. The behavior of verb extended morphs, and their ordering in the Pular language has attracted different consideration and discussion. There are those which are framed in the scope of C-A-R-P Fagerli (1994) in the Mirror/scope. The general argument of the author is that C-A-R-P cannot handle parcel affix ordering in Bantu and that even the Mirror Principle (MP) seems unable to deal with those cases in which affixes are not rigidly ordered. This can be exemplified in the ordering of causative and applicative from Pular language in 1 below:

1. (a) ??*O* *goll-in-d-ii-lan* *e* *Rabiatou*
   He work-Caus-Com-Past-me with Rabiatou
   "He made me work with Rabiatou"

   (b) *O* *goll-in-d-in-ii-lan* *e* *Rabiatou*
   He work-Caus-Com-Caus-Past-me with Rabiatou
   "He made me work with Rabiatou" (Fagerli (1994, p. 348)

From Pular example, we observe that *–in-* and *–in-* are two causative morphs though the meaning of each is not specified by hypothesis, the first causative extension is the low causative head and introduces the external argument of the verb, while the causer is introduced by a higher causative head, which is not spelled out in its semantics. In other words, there are two causative extensions, but the sentence does not have a double causative meaning, that is, it does not mean "He made (someone) make me work with Rabiatou". This can be accounted for if the lower causative extension is assumed to introduce the causee - *lan* "me", while the higher one introduces the causer *o* "he". This analysis predicts that when the base lexical root is a stative predicate, the double causative form should again lack a double causative meaning, since stative predicates do not have external arguments. However, the fundamental question is what makes such kind of ordering? The current study on Kihangaza language of Tanzania answers this question in explanatory way.

Ngwira et al. (2016) made an analysis of Verbal Extensions in Malawian Tonga: Towards Mirror Principle and Templatic Morphology (Hyman, 2002, 2003; Baker, 1985). Their study examined the structure of suffix ordering in Malawian Tonga by examining the two theories. On morpheme co-

occurrence, the study reveals that causatives and applicative, as argument-structure increasing suffixes, should always precede other extensions which are argument-structure reducing suffixes in order to be consistent with the tenets of the two theories. To them there are some observable cases where prescriptions of these theories breed ungrammatical structures in Tonga. However, this study tended to conclude that, Tonga verbal extensions interact with each other but with some limitations. The study has discovered that the sentence's meaning should determine verbal extension morphemes' order (and co-occurrence). It was also finalised that in Tonga, causatives and applicative being argument-structure increasing suffixes should always precede other extensions, which are argument-structure reducing suffixes, and this is consistent with Mirror Principle and Templatic Morphology. In some cases, it has been discovered that passive and neuter extensions can precede the applicative and this happens when the sentences are in passive form. As a result, Templatic Morphology fails because applicative and causatives must always precede all other verbal extensions because they are argument-structure-increasing suffixes. It is further noted that Mirror's Principle predicted the ungrammatical structure in Tonga (Ngwira, 2016). Some verbal extensions, such as intensives, are never captured by Templatic Morphology. With this regard, Mirror Principle and Templatic morphology offered optimal accounts of morpheme sequence in the verb stem of Tonga.

In some cases, these theories must capture relevant observations pertinent to affix ordering. We note that Baker's Mirror Principle and Hyman's Templatic Morphology can be extended to all languages with morphological structures but with some limitations (Ngwira et al., 2016, p. 16). However, these conflicting theories have debated affix ordering in Bantu languages, though something to note in their study is that semantics has been regarded as a factor in some contexts. From this basis, the current study investigated the factor for affix ordering to see if the suggested semantic factor can be applied and others, including CARP and Mirror or scope theories.

Rice (2000) claims that semantic scope determines affix order in the Athabaskan verb and that the verb root in languages in that family moves to its surface position. She suggests that semantic scope is instrumental in determining affix order in other languages. This means that semantic considerations influence affix ordering according to at least two independent principles: one is semantic scope proper, where one affix seems to "scope over" another, influencing its interpretation, and the second is, prominence by root-adjacency, where the closer an affix is to the root, the more influential it is as part of the verb complex's overall meaning. Semantic scope proper is only half of what must be explained when considering semantically influenced affix ordering. Regarding factor, the cover of phonotactics following the fact one suffix over the other is natural and phonotactics and not external to semantics. Affixes of the same nature or suffixes that are suffixed without being triggered by the other suffix, like in Kihangaza, cannot be scoped in the semantic scope factor. Thus, we need to offer other factors that would handle the phenomenon regarding the Kihangaza language of Tanzania.

The available advised frames for affixes ordering face challenges in handling the order of the suffixes in Bantu languages seem not satisfactory and have no explanatory adequacies on suffix ordering and the theories for handling the forms of ordering suggested. The data for example, from Kihangaza language offers a challenge to handle. This triggers the current study to be done under the Mirror and Morph Ordering Theories that guided the study. The former refers to the theory of grammatical function-changing processes, which was propounded by Baker (1985, 1988). The Mirror Principle ties syntax and morphology together so that any constraint in one system will automatically constitute a constraint on the other. The theory states that:

> *Morphological derivations must mirror or directly reflect the syntactic derivations and vice-versa. The general assumption is that the order of the affixes is inversely related to the order of the structures in the syntax* (Baker, 1985, p. 375).

This means that derivational affixes which mark Causative, Applicative, Passive, Reciprocal, and others are each affiliated with certain syntactic operations. In the same way, the ordering of verb extended morphs reflects the order in which the syntactic operations apply. See more in Katamba, (1993, p. 277). Therefore, the MP has been selected for use in this work because its reflections on morph incorporations in Bantu languages are tangible morphologically and syntactically. 'Morphological derivations must directly reflect syntactic derivations (and vice versa) Baker, (1985).

It must be noted that the theory cannot handle the situation in which the ordered morphs cannot explicitly show their semantics per language specific. Some languages do not reflect each ordered morph's semantic scope.

This made to approach the so-called Morph ordering Theory henceforth (MoT). The Morph ordering Theory was proposed by Simon (2018) in his PhD thesis for handling both morphs whose semantics are displayed and vice versa. In other words, the theory captures morpho-lexical operations of verb extended morphs' ordering in the style of semantic or cognitive grammar. MoT has two tenets, namely, Morph Uncanonical Condition and Morph Canonical Condition, which are used to explain complex morph ordering structures languages. The former refers to ordering morphs that should not dictate the one-to-one function of suffixes. In other words, there must be no necessary relationship between form (structure or number of morphs) and function other than generality, which is the vice versa of the later tenet. Thus, the canonical condition is not used in the way applied in the knowledge of linguistics. Here, it connotates on morph restrictive conservation of θ-role identification or transparent; in other words, each morph preserves its semantic scope.

Methodology

As stated in this paper, this paper was one of the research objectives on Kihangaza verb extensions and their co-occurrences. The research was a case study design; Punch (2005) argued that almost anything can serve as a case. To him, typical cases include individuals, a role or occupation, features, an organisation, a policy, a community, or even a country. The study used a case study design from this base because of its uniqueness. Bryan (2004) points out that a unique case is a case whose behaviors or patterns or characteristic differ from others. Thus, Hangaza language possess features which do not appear other Bantu languages, for example the double ordering (occurrences) of one morpheme while having specific sense for each one. Thus, 'a *unique case*' for a study to be done. A qualitative approach was used to describe factors triggering combinations of post-radical morphs of the verbs.

Two data collection instruments were applied: unstructured interview and documentary review. The former was used whereby four Hangaza native speakers who were born and grew up in the Hangaza community, their competence in speaking and writing Hangaza made them fit in the study. In other words, they could translate words from Swahili to Hangaza and can tell grammatical or ungrammatical structures in their language. One hundred extended verbs selected randomly from the Kiswahili textbook (Cf Khamis, 1985), were the discussion guide. These verbs covered all aspects of verbs' conjugation, such as action verbs, finite and non-finite verbs, monosyllabic, disyllabic, trisyllabic, and quadrasyllabic verbs, to infinitival verbs. These verbs justified a complete representative sample. The data from the field were presented by using the *Leipzig Glossing Rule*s. This is the way of glossing languages for the reader to understand his or her foreign language. The *Leipzig Glossing Rules* have three levels of representation: word order and parsing level, the literal translation, and the free translation level (Christian, (1982).

Results and discussion of the findings

This subsection discusses the findings pertinent to why the strings of affixes co-occur and the order in which they do. The section argues that affix ordering in our natural languages is not new. Still, the

parametric features have yet to be handled in the previous literature. The previous study would not be ignored since it created a basis for the current analysis. Thus, it will be applied together with other principled accounts in the next discussion where possible.

Semantic scope – a factor

The meaning of morphs in the verb root or stem has been observed as a determinant factor for suffix ordering in the verb root or stem. In other words, the study has discovered that the sentence's meaning should determine the order (co-occurrence) of verb extended morphs in the Hangaza language. The causative (narrower scope) in Kihangaza language is a factor for ordering other post-radical morphs, being it an applicative for the present example. The causative has made its proceeding allomorph line up, whereby if it could not be the preceding causative, such lined morph could not be lined up. This means that the caused morph cannot occur alone in (some) context until it has been triggered by its preceding morph being its causative one. See the field data in 2 below:

2. *James* *ya-a-ndik-ish-ij-é* i-kalamu
   'James 2P-SP-write-CAUS-APPL-FV Pr-Pen
   'James has made to write with a pen'

The data in (2) shows that the meaning of the causative morpheme *-ish-* has made applicative morpheme-*ij-* to be attached. Thus, the semantic scope compositionality has been in place as it is displayed affixes with a narrower scope appear in linear order closer to a root than affixes with a less narrow scope (Cf, Rice 2000). By principle, the order in which morphemes (-ish-, -ij-) appear on the verb *ndika* 'write' reflects the order in which the morphological processes that add these morphemes apply, thus morphological ordering of these morphemes must match their syntax and the vice versa, in turn this makes Mirror Principle meaningful. This means that without a causative morph, an applicative morph could not have been ordered or does not appear alone in this context. The structure like '**andikija*' is ill-formed in the Hangaza language because it is unpronounced and meaningless. However, the presence of causative has made the ordering not only applicative but also passive *-w-* morph in this language. Consider the following example in 3:

3. *James* *ya-a-ndik-ish-ij-w-é* i-kalamu
   James 2P-SP-write-CAUS-APPL-PASS-FV Pr-Pen
   'James has been made to write by using a pen'

The structure in (3), like in applicative *-ij-*, the causative *-ish-* has attracted the ordering of *-w-* morph. It must be attested that the structure like **andikishwa i*s ill-informed in Kihangaza language; this means the ordering of CAUS-PASS (ish+w) is disallowed in this language which is the expense of CARP. Here, causative is a triggering factor that has made applicative and passive to lineup for grammatical and semantic interpretations, as it has been exemplifying in 2-3 data. It should be noted that semantic scopes go hand in hand with the parsimony principle of affixes' occurrences from the word root. See data in 4:

4 (a) *I-shur-a*
SP-reply -FV
'Answer'

(b) *Ba-ríshur-ij-e*
SP-reply-CAUS-ASP
'They made to reply'

(c) *Ꞵa-ríshur-ish-ij-e* *Ikalamu*
SP-reply-CAUS-APPL-ASP(FV) pen
'They made to reply by using (with) a pen.'

The data in 4(a) shows that *-shu-* is the root which means 'answer or reply'. In 4(b) it is shown that the extended morpheme *-ij-* syntactically and semantically is a causative morph. In other words, it attracts the presence of new arguments known as '*ikalamu* meaning 'a pen'. Unlike in 4(b), the *-ij-* morph in 4(c) is applicative morph. This means that suffixes of the same semantic scope or grammatical function cannot co-occur together despite their either similar or different form; this is relevance to parsimony principle which states that affixes of the same function cannot co-occur. In other words, affixes occur in a particular order which conforms to intuitions about scope, thus an affix is to the right of one in its scope (Rice 2000). The data in 4(c) conforms to Mirror Theory following the fact that the morph representing causative meaning should be ordered first as it has narrower scope than the next suffixed applicative whose semantic scope is wider compared to the former. Thus, example (4c) would claim that semantic and syntactic process associated with the affix morpheme *-ish-*must occur before the syntactic process associated with *-ij-*, in Mirror/scope, morpheme *-ish-* influences morpheme *-ij-* to lineup. It is from this base that Baker (1985, pp. 375-380) was in a position of concluding that 'morphological derivation must directly reflect syntactic derivation (and vice versa). This can also be attested in *the grammar of slave in* the Athapaskan languages, where the pre-verb to the right has scope over the one to its left as ***te-ká****-yi-ya* (water-out of) 's/he got out of water' (Rice, 2000, p. 86). Also see in Kari (1990, p. 5350). Under the level of analysis, scope has contributed to the lining up of morphs in this context.

Personal pronoun – a factor

Hangaza language of Tanzania has been observed that its personal pronouns make some post radical morphs to lineup at lengh**.** Pronouns like *ya* 'he or she'; *Ꞵa* 'they' *na* 'i' and *tu* or *twa* 'we' are pronouns found in Hangaza language. When are attached to the verb root, they select the form of morph to be attached. Consider the following derivation in 5:

5. (a) *Lim-a*
Dig-FV
'Cultivate'

(b) *Lim-w-a*
Dig-PASS-FV
'Be cultivated'

(c) *Lim-ish-a*
Dig-CAUS-FV
'Make to cultivate'
'Be made to cultivate'

(d) *Lim-ish-wa-a*
Dig-CAUS-PASS-FV
'The data in (4) follows the Item'

The data in 5(a) shows that the verb *lima* meaning 'cultivate' has been extended with passive morph –w- in 5(b) and morphologically reads *limwa* to mean 'be cultivated', while this is true, the data in 5(c) shows that the verb *lima* 'cultivate' attaches causative morpheme *-sh-* which reads *limishwa* 'make to cultivate'. In 5(d), the causative *-ish-* and passive -w- lineup together in sequence. The passive should precede causative as it is far from the root compared to causative. The Mirror Theory comes into play (Cf, Baker, 1985) – 'morphological derivations must directly reflect syntactic derivations (and the vice

versa). This requires the context that the syntactic effect of passive must happen before the syntactic co indexing suffixing causative morpheme. With this regard, if somebody cultivated, the addition of causative morph may imply that he or she was made to cultivate. This means that argument has been reflected and the vice versa. However, this is quite different from Hangaza manifestations of pronouns; the use pronoun in this language has made the ordering of morphs without the addition of meaning for Hangaza native speakers. See structures in 6:

6 (a) *ßa-lim-ish-ij-e*
SP-dig-CAUS-APPL-ASP
'They have made to cultivate'

(b) *Ya-lim-ish-ij-iw-e*
dig-CAUS-APPL-PASS-ASP
'He has been made to cultivate'

The data in (6) shows that the number of suffixes being ordered from the root or base do not reflect the semantics of free translation senses. The Hangaza native speakers construct or use these structures for implying that the action has only causative. That is to say, the structure as in *limishwa* (Cf. 5d) differs significantly with that of 6(c) following the fact that the former combination is possible, but the latter is impossible without pronouns. This means that when pronouns are used they trigger the presence of semantic silence semantics *-ij-* in Hangaza language of Tanzania. From this base, agreements of syntactic grammatical pronouns trigger the ordering of morph in specific contexts and not all the verb environments. Concerning example 5, the meaning of the three morphemes attached does not reflect the sum of their numbers; in other words, the Morph Ordering Theory captures such a situation through its apparatus of Morph Uncanonical Condition, which claims that the ordering of morphemes should not dictate one to one meaning of attached or combined suffixes. Thus, there must be no restriction or function of each morpheme other than generality. From that base, applicative morph's meaning is in situ, which neither is nor spelt out.

Tense and aspect – a factor

Tense and aspect have been observed causing suffix ordering or combinations in the Hangaza language of Tanzania. It was observed that tense and aspect influenced much the presence of some verb extended morphs' ordering in the predicate structure. See in data in 7 – 8 data below:

7. (a) ßa zo Pf-ish-a aßana
SP-FT-die-C-FV children
'They will make children die'

(b) ßa-lá-Pf-ish-ij-e aßana
SP-PT-die-C-APPL-ASP children
'They made children die'

8. (a) *N-shuh -il - iz - a*
SP-boil-APPL-CAUS –FV
'H. S has made to boil for me'

(b) *Ya lá n -shuh -íl - ij - e*
SP- PT -OM-boil-APPL-CAUS -ASP
'H. S made to boil for me'

The sentences in 7(a) shows that the future aspect does not attract another particle to be ordered, thus it reads only one causative morph. This is quite different from the structure in (7b) whereby the present of past tense attracts the context for the silence semantic morph *-ij-* to be ordered. The data in 8(a) shows the ordering of applicative and causative allomorph in present perfective aspect. Unlike in 8(a), the data in 8(b) confirms its ordering with applicative and causative -ij-; the question is, why not causative -z- in 8(b)? Therefore, it is the past tense that has influenced its attachments. It must be noted that the past tense has been toned; hence in some contexts, prosody contributes to affix ordering. This shows that the tense and aspect are among the syntactic factors of affix ordering in Bantu languages. This follows the Mirror Principle, where the reflection of syntactic features mirrors the argument structures of the subject or object in the predicate structure. In other words, the different syntactic constituency, the different number agreement suffixed on the verb, means that Mirror Theory ties syntactic and morphological agreement constituencies, thus pronoun n selects quite a different number of morphemes to lineup to predicate structure compared to the pronoun ya 'he or she' and ßa 'they'. By principle (Cf. Baker, 1975, p. 380), this binding reflects the relational function between verbal morphemes and the noun phrase (person pronoun for the current study) that determines the grammatical structure of the sentences.

Morphotactic – a factor

Morphotactic is "the set of rules that define how morphemes (morpho) can touch (tactics) each other. The language's complex morphology is defined by its constituents. The language morphotactic is in the scope of the morpheme-based approaches to morphology that emerged in the twentieth century; a language's morphotactic principles are constraints on the concatenation of morphemes in the base or root of the word either by infixation, suffixation and prefixation. It must be noted that applying a rule of affixation may be conditioned by the grammatical properties that it realises and by the properties of the stem to which it applies. However, it is not directly sensitive to applying any other rule of affixation (Soukka, 2000). Morphotactic is observed as the factor observed in Hangaza verb extended morphs' ordering. The factor shows that native speakers use some extended shape of verbs for fitting the morph phonological phenomenon or canonical phenomenon of the derivation. Consider the following derivation from the verb *ambala* 'cover or put on the clothes' in 9:

9. (a) *A - mb -ik - a*
SP – put on- CAUS-FV
'Make to put on'(of clothes)

(b) *A - mb -ik- ik - a*
SP – put on- CAUS-STAT-Fv
'State of being able to cause putting on'

The data in 9(a) shows that *-ik-* is the causative morph in the Hangaza language. While this is true, the data in 9(b) shows co-occurrences of causative -ik- and stative -ik- each has a different semantic scope, as shown in its free translation (glossing). The factor that has made such ordering is canonical morph-tactics. In this context, the causative has not triggered the ordering of the stative and vice versa. However, Bybee's (1985) "relevance" generalisation that affixes of greater relevance to the verb will generally occur closer to the verb stem and that those of lesser relevance will generally occur at a distance does not work in this context. In other words, the constraints or restriction for the two morphemes of the same form is that when the stative comes first and the causative latter it forms a formed structure in the language under discussion. This is true to Mirror scope that causative should be ordered first, followed by stative morpheme.

Template – a factor

Pan-Bantu "default" template framework cannot be ignored because it handles a few cases in Bantu languages. At a certain angle, affix ordering is directly determined by the morphology proper. That is, languages can impose specific morphotactic constraints without synchronic extra-morphological explanation. If correct, one would expect cases where equivalent affixes arbitrarily appear as AB in one language but as BA in another. The so-called morphotactic constraints might represent a relation between pairs of specific morphs or define an overarching "template" by which multiple affixes are automatically ordered (Hyaman, 2002, p. 3). Thus, Hyman argues that the default suffix ordering is Causative-Applicative-Reciprocal-Passive or CARP in Proto-Bantu (PB) and most Bantu languages, which have these suffixes. However, the template seems to work in a few contexts pertinent to the Hangaza language of Tanzania. However, in a few cases, we observed some ordered morphs adhere to Templatic morphology. The data available in Hangaza adhere to 5% because most of the data do not co-occur in accordance with this theory. See the data in 10:

10. (a) *Gu-pf-ish-a*
INF–die-CAUS-FV
'Cause to die'

(b) *Gu-pf-ish-w-a*
INF–die-CAUS-PASS-FV
'Be made to die'

The extended verb morph in 10(b) follows the principle of templatic approach of which causative and passive are within the scope of CARP. It must be noted that this functions in a narrow context especially in infinitival derivation and not in sentence structures. When sentence structure is derived from the data in 9(b), the tone or tense affects such ordering and becomes ungrammatical. As we have seen elsewhere that tense triggers suffix ordering in this language. Despite the fact that Pan-Bantu "default" template is able to handle 9 data above, still is not stable, see in 11:

11. (a) *N-shuh-il-z-a*
SP-boil-APPL-CAUS-FV
'Cause to boil for me'

(b) *Shuh-il-z-w-a*
Boil-APPL-CAUS-PASS-FV
'Be made to boil for or with'

The data in 11(a) and 9(b) does not adhere to Hyman's proposed Pan-Bantu "default" template CARP following the fact that causative has been ordered after applicative and vice versa is not true. With this regard, Good (2003) said that a linearity domain in which some aspects of the linear relations amongst constituents must be specified independently of their hierarchical order and that the order of affixes could be stipulated, not a consequence of any general linguistic principles, but pure morphology. Inkelas (1993, p. 560) defines a template as 'morphological systems in which morphemes or morpheme classes are organised into a total linear ordering with no apparent connection to syntactic, semantic, or even phonological organisation. The Templatic principle has never accounted for the data in 10 from this base. However, such data can be accounted with MP in that the order of the affixes is inversely related to the order of the structures in the syntax' (Cf, Baker, 1985, p. 375). From that base, causative has the scope over applicative that made applicative come before causative morph and be preceded by applicative; in other words, affixes with a narrower scope appear in linear order closer to a root than affixes with a less narrow scope (Cf, Rice, 2009). The same phenomenon is accounted in MoT via its theoretical apparatus: Each attached morph reflects its semantics.

Prosodic – a factor

The phonology and morphology interface issue have a root in the theoretical literature, particularly in the formal analysis of morphologically conditioned phonology (Cf Kiparsky 1982a, b and Mohanan 1986 on Lexical Phonology). The one, stress, and intonation, to mention a few, may trigger allomorphs ordering on the verb. This has been observed as the factor triggering the ordering of verbal suffixes in the Hangaza language of Tanzania. The pronunciation of the native speakers has been observed, causing some post-radical suffixes to be ordered and others not. Consider the following structure in 12:

12. (a) *Ba-lá-pf-ish-ij-w-e*
SP-FT-die-CAUS-APPL-PASS-ASP
'They were made to die'

(b) *Ba-giye-gu-pf-ish-w-a*
SP-go-INF-die-CAUS-PASS-FV
'They are going to be made to die'

(c) **Ba-lá-pf-ish-w-a*
SP-FT-die-CAUS-PASS-FV
*'They were made to die'

The data in (12) shows how prosody has triggered the ordering of applicative suffixes in the Hangaza language of Tanzania. In 12(a), the presence of a perfective aspect but being influenced by high tone made the attraction of *-ij-* suffix be ordered through Hangaza speakers, mostly instigating silence semantics. In some contexts, they are applied when their complement is either instrument, benefactive or direction. It must be noted that phonological conditioning between stem and affix can be bidirectional and that conditions on allomorph selection can be located anywhere in the world (Pater, 2009). This means that the ordering condition is not fixed to a certain position, but any position lasts but one or at the lastmost position of the root or stem.

The 12(b)'s structure is accepted because there is no influence of tone or intonation, and it has applied infinitive *-gu-* which attracts normal ordering as in CARP. Unlike in 10(c), the structure is ungrammatical since the presence of tone attracts an addition of the suffix *-ij-*. *Thus*, how it is written is ungrammatical and unpronounced within the Hangaza community. The data in 12(a) offers different things in accordance with the semantic scope or compositionality principle under the scope of semantic account. For example, it is argued that 'affixes with a narrower scope appears in linear order closer to a root than affixes with a less narrow scope. Such explanations do not function or work in the 12(a) and others.

Phonological – a factor

Phonological influences have triggered the appearance of affix ordering in Bantu languages and Hangaza in particular. Thus, phonology can affect the placement of an affix concerning the root. Consider the following data in 13:

13. (a) *a mb-ik-a* SP-wear-CAUS-FV
'Cause to wear'(of clothes)

(b) **Ba lá mb-ik-w-e* SP-PST-wear-*CAUS-PASS-ASP
*'Was to made to wear' (of clothes)

(c) *Ba lá mb-ich-w-e*
SP-PST-wear-CAUS-PASS-ASP
'Was made to wear' (of clothes)

Regarding 13 data, we observe that the phonological process has affected the presence of causative morph in the Hangaza language. In 13(a), the *-ik-* is the causative among the causative allomorphs in this language; such causative allomorph *-ik-* cannot follow a passive morph *-w-* unless otherwise the phonological process interacts at length. In other words, the cause –ik- in 13(a) has undergone a phonological process known as affrication. The process refers to a change in which a sound, usually a stop, sometimes affricative, becomes an affricate (Campbell, 2006, p. 45). Affrication is a phonological process in which sounds which are not affricates are changed into affricates' place of articulation. Concerning 12 data, the causative /k/ has changed into causative /tʃ/ (ch) for allowing the ordering of passive morph –w- in Hangaza language in which it is restricted, or it cannot be ordered with causative *-k-* (Cf. 13b). This shows that in some context's phonology has a role in affix ordering in some languages including the language under discussion.
The data in 13 differ from those provided by Hyman (2006), who thought that phonology can affect the placement of an affix concerning a root. Note that the data are quite different from the explanation. Let us see an example from Tiene, a Bantu language for Fusion vs. infixation in 14:

14	(a)	Mat-a 'go away'	Maa**s**-a	'cause to go away'
	(b)	Kal-a 'be'	Kaa**s**-a	'cause to be, become'
	(c)	Taan-a 'get thin'	Taa**s**-a	'cause to get thin'
	(d)	Lab-a 'walk'	La**s**ab-a	'cause to walk'

Hyman's discussion centred on phonology being the factor for affix ordering in 13 data. In a quite different way, such data are not attached or ordered with other suffixes rather than being one each. This means we could have observed more than one morph's ordering restrictions triggered by the phonological phenomenon. It is like *seka* 'laugh' and *secha* 'make to laugh' in Kisukuma (Simon, 2016, 2017) be claimed as affix ordering while it is a phonological process known as *affrication* process.

Conclusion

The paper has explored various factors triggering morphemes ordering in Bantu languages, particularly Hangaza. It has been shown that various linguistic factors can be involved in determining the ordering of affixes in Bantu languages and Hangaza in particular. These are phonological influences, syntactic (Templatic factor), prosodic influences, person pronouns' effect, semantic scope (mirror-related properties), and morphotactic factors. These factors may be involved only in some languages but language-specific, like the influence of person pronoun works in Hangaza language but not in Chichewa, Luganda, Kisukuma or Citumbuka languages. With this regard, it is advised that each language needs careful research to see which factors are involved and how they interact. This will help to establish a fuller picture of the factors for suffix ordering in Bantu languages and other world languages. The study of affix ordering in Bantu languages is critical because languages exhibit uniqueness concerning verb extensions. An investigation is endless due to the uniqueness they possess. Another study is proposed on how non-linguistic factors may trigger affix ordering in the natural languages we use to communicate.

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