

# A Contrastive Study of IciBemba and Mambwe at Phonological Level

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## ABSTRACT

*A contrastive study between IciBemba and Mambwe at phonological level sought to find out how Standard Bemba and Rural Mambwe differ in terms of phonology. The investigation was motivated by the proximity of Bemba and Mambwe speaking communities in Mbala district of Northern province.*

*The researcher used qualitative research design because he sought to focus on words rather than on numbers. His methods were exploratory and descriptive: seeking to unearth the opinions, thoughts and feelings of the respondents. In this study, respondents were freely able to disclose their experiences, thoughts and feelings without constraint. This research design enabled the researcher to have an in-depth involvement by way of semi-structured interviews, focus-group discussions and observation. The researcher had an opportunity to follow up, through focus-group discussions, on the responses given earlier by the key informant who is very proficient in Mambwe. All the informants are proficient in the languages under study. It is this in-depth involvement by the researcher with the informants and his analysis and interpretation of the data that has shaped the outcome of this study.*

*The differences have been noted in segmental phonology with regard to vowels and consonants, the application of deletion, insertion and allophonic rules, sound segments in causative and intensive verbal forms, semivocalisation, coalescence and vowel harmony*

*It is, therefore, concluded from the study that the phonological differences between the languages under study contribute to: (1) mutual unintelligibility between IciBemba and Mambwe speakers who have had no experience of each other's language and (2) the absence of linguistic convergence between IciBemba and Mambwe despite that they are spoken in the same geographical space.*

**Key terms:** Standard IciBemba, Rural Mambwe, Mutual Intelligibility, Linguistic Convergence, Semivocalisation, Coalescence, Vowel Harmony

The proximity of *IciBemba* and *Mambwe* speaking communities was the motivation of this study. By conducting the study to find out how the two languages differ phonologically, the researchers had to establish (1) whether there is mutual intelligibility between speakers of these languages and (2) whether there is linguistic convergence between these languages. With regard to mutual intelligibility, Hudson (1980, p. 36) indicates that ‘The degree of mutual intelligibility depends not just on a number of overlaps between items in two varieties, but on the qualities of the people concerned.’ He mentions two of the qualities which are *motivation* and *experience*.

The study was contextualised by the sociolinguistic landscape of Zambia: Zambia’s geographical location makes it lie in the centre of the *Bantu* speaking area. *Marten* and *Kula* (2008) explain that the present-day *Zambian Bantu* languages resulted from several linguistic developments that ushered in the languages spoken today via the gradual process of migration, language contact and language shift over the last two millennia. It is observed in *Marten* and *Kula* (2008) that the introduction of multiparty democracy brought a paradigm shift whose emphasis was placed on the promotion of the seven *Zambian Regional Official Languages*, namely: *SiLozi*, *CiTonga*, *CiNyanja*, *Lunda*, *Luvale*, *KiiKaonde* and *IciBemba*. These languages are important in relation to national, political and ethnic identities, communication, education and popular culture.

Jimaima (2016) points out that the Bantu languages account for seventy-two dialects in Zambia. He further indicates that these languages are reduced to twenty-six (26) linguistic clusters which are classified on the basis of mutual intelligibility (Kashoki & Ohonessian, 1978; Marten & Kula, 2008; Wakumelo, 2013).

*Bemba* and *Mambwe* are spoken in the Northern province. The former is a language of wider communication and it is the Regional Official language whereas the latter is a minority language.

But, perhaps, the most important observation made by Marten and Kula is that of Zambia being a linguistically complex and dynamic country, with a range of different languages playing different roles in different contexts, and where language plays an important role in the construction and negotiation of social and national identities.

Spitulnik and Kashoki (2001) point out that the *IciBemba*-speaking area stretches from the plateau between the escarpment of the Luangwa River to the east and the Luapula River to the west. In Zambia, *Chibemba* is principally spoken in the Northern, Copperbelt, Luapula and Muchinga provinces. It is also spoken in the southern Democratic Republic of Congo (DRC) and southern Tanzania.

The *Mambwe* speaking people are found mainly in Mbala district of Zambia; they live directly on the junction of the routes between East and Central Africa. *Mambwe* is spoken in the north-east of Northern province (mainly in Mbala), South of Lake Tanganyika. It is also spoken in Tanzania’s Rukwa Region, Sumbawanga district, the south-eastern shore to the south of Lake Tanganyika, (*Mambwe* at Ethnologue).

Wikipedia indicates that the phrase “the Bemba” carries several meanings. It may designate people of Bemba origin, irrespective of where they live: whether in an urban area or the original rural Bemba area. They may encompass a much larger population which includes other ‘eighteen different ethnic groups who with the Bemba constitute closely related ethno-linguistic clusters known as the Bemba speaking people of Zambia. Wikipedia continues to state that there are over thirty (30) Bemba clans named after animals or natural organisms such as the royal clan “the people of the crocodile” (Bena Ng’andu) or the Bena Bowa (Mushroom clan). The Bashimba (Leopard clan) or Bena Ngo living among the Bemba are part of the Bashimba People now living in Tanzania, Uganda and DR Congo.

According to the population Census and housing (2010), IciBemba was found to be the most widely used language of communication spoken by 33.5 per cent of the population in the country, followed by *Nyanja* and *Tonga* at 14.8 percent and 11.4 per cent, respectively.

The Mambwe and Lungu people belong to the same language group known as the Mambwe-Lungu. Thus, Mambwe and Lungu are dialects of this language group. According to the 2002 and 2010 census, there are 500,000 Mambwe speaking people.

Many studies have been conducted on IciBemba, but very few on Mambwe. The studies on Bemba include: Spitulnik and Kashoki’s (2001) brief profile of Bemba, reflecting its location, origin and history, orthography, basic phonology, basic morphology, basic syntax and contact with other languages; Kashoki’s (2000) notes on Mother Tongue; Kashoki and Mann’s (1978) sketch of Bantu Languages; Kashoki’s (1967) inventory of phonemic contrasts in IciBemba; Kashoki’s (1975) work on lexical adoption in IciBemba; Kashoki’s (1977) study on Town IciBemba; Kashoki’s (1978) work on vocabulary correspondence among the selected Zambian Languages, in general, and between IciBemba and Mambwe, in particular; Musonda and Kashoki’s (1982) text on word borrowing between IciBemba and Luunda spoken in Northern Province and Luapula Province, respectively; Kandeke’s (1990) work on IciBemba synonyms; Kangwa’s (2007) study on English derived loan words in IciBemba; Kamfuli’s (2009) work on a grammar of verbal extensions in IciBemba and Lumwanga’s (2015) research on Some Linguistic Variations of Bemba: A dialectological study of Standard Bemba, Luunda and Ŋumbo. Studies on Mambwe include Kashoki’s (1978) study on the lexicon, Halemba’s (1994) Mambwe dictionary and Wermer and Tucker’s (2009) work on Mambwe proverbs. With regard to these and other studies conducted on IciBemba and Mambwe, it should be indicated that there has not been a contrastive study of Standard IciBemba and Rural Mambwe at phonological level. Given this scenario, the statement of the problem in question form is; ‘How does the phonology of Standard IciBemba (STDBEM) contrast with the phonology of Rural Mambwe (RULMAM)?

The purpose of this study was to contrast the phonology of Standard IciBemba with the phonology of Rural Mambwe and to establish whether there is (1) mutual intelligibility between the speakers of IciBemba and Mambwe and (2) linguistic convergence between the two languages spoken in close proximity.

Crystal (2008) indicates that out of the very wide range of sounds that the human vocal apparatus can produce and which are studied by phonetics, only a relatively small number are used distinctively in any one language. He adds that sounds are organised into a system of contrasts which are analysed in terms of phonemes, distinctive features or other such phonological units according to the theory used. The aim of phonology is to demonstrate the patterns of distinctive sounds found in a language, and to make general statements about the nature of sound systems in the languages of the world. However, it was not the intention of this study to make such general statements about the languages of the world. The study has used phonemes which have brought to the fore phonological differences between the languages under study. This study has been informed by the **Lexical Phonology framework** developed by K.P. Mohanan and P. Kiparsky (Udema, 2004). This is a theory in which morphological and phonological rules are brought together within a single framework and, therefore, it acts a base for analysing and interpreting the data. The study also made use of the branch of linguistics known as **Contrastive Linguistics**. Under **segmental phonology**, vowels and consonants, the rules of deletion and insertion, allophonic rules, sound segments in causative and intensive verbal forms, semivocalisation, coalescence and vowel harmony have been used to elicit the differences.

This study was conducted in Mbala district in the Northern province. It is one of the eleven districts in the province that share the border with Tanzania in the north and the east, Mpulungu district in the west and Senga Hill district in the South. Mbala was chosen as a research site because of the proximity of the IciBemba and the Mambwe speaking communities: these are the people whose languages are spoken in the same area; IciBemba happens to be the Regional Official Language widely used in the area.

The study population consisted of all the people who are proficient in Bemba and Mambwe. It was good that the informants are proficient in the languages. This is because in a qualitative study it is important to select knowledgeable participants on the issue under investigation (Kombo & Tromp, 2006).

One key informant was used for the interviews and five participants including the key informant were engaged in focus-group discussions. With this study sample, the researchers were able to obtain phonological differences between the languages under study and to conclude that these phonological differences contribute to (1) **mutual unintelligibility** between the speakers of these languages and (2) **the absence of linguistic convergence** between IciBemba and Mambwe.

Five informants were selected from the study population. The objective of this sampling was to minimise within the limitation of the cost, the gap between the values obtained from the sample and those prevalent in the larger population.

The researchers employed the interview schedule and focus-group discussion and also consulted academic books, scholarly journals and research reports.

This section presents the **findings in relation** to phonological differences between the languages under study.

It is manifest that in the Standard IciBemba (STDBEM) word *boonse* [ó:nse] “all”, the vowel in the second syllable /-nse/ [nse] is the mid front vowel /e/ [e] while in the Rural Mambwe (RULMAM) word *yonsi* [jó:nsi] “all” the vowel in the second syllable /-nsi/ [nsi] is the high front vowel /i/ [i]. The other patterns include *fine* [fine] ‘four’ in STDBEM and *vini* [vini] ‘four’ in RULMAM; *cinelubali* [tʃinelúbáli] ‘seven’ in STDBEM and *cinimbali* [tʃinimbáli] ‘seven’ in RULMAM.

The second syllable /cuu/ [tʃu:] in the STDBEM word *icuuni* [itʃú:ni] “bird” has the long high back vowel /uu/ [u:] whereas the first syllable -cu-[tʃu] in the corresponding RULMAM word *cunyi* [tʃú:ni] has a short high back vowel /u/ [u]. Among other correspondences are: *ukuulu* [ukú:lú] ‘leg’ in STDBEM and *ikulu* [ikúlú] ‘leg’ in RULMAM; *icuungwa* [itʃu:ŋgwá] ‘orange’ in STDBEM and *cungwa* [tʃúŋgwa] ‘orange’ in RULMAM. The study has also shown that in the STDBEM word *impofu* [impófú] “blind person” the second syllable /mpo/ [mpó] has the mid back vowel /o/ [o] while the first syllable /-mpa-/ [mpá] in the RULMAM word *mpafu* [mpáfú] ‘blind person’ has a low central vowel /a/ [a]. The other correspondence is: *icikondo* [itʃikó:ndo] ‘toe’ in STDBEM and *cikando* [tʃíka:ndó] ‘toe’ in RULMAM.

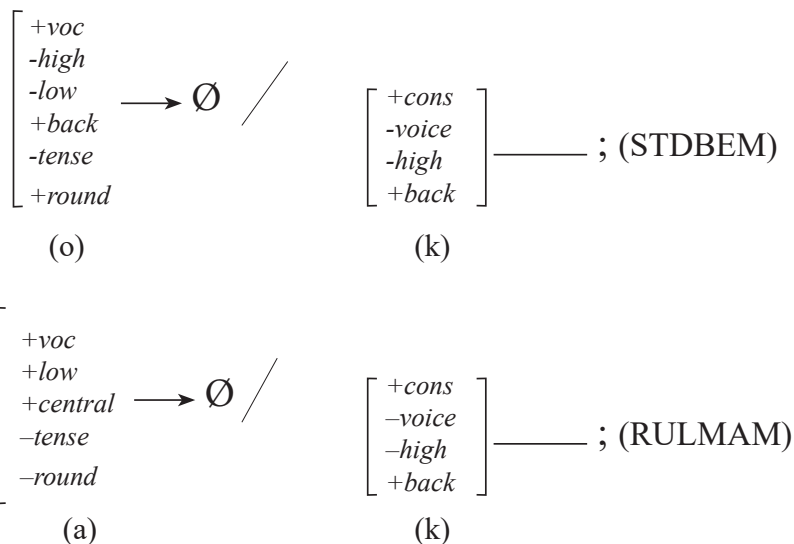
The differences in relation to consonant phonemes have also emerged. It has been noted that in the STDBEM word *boonse* [ó:nse] ‘all’, the first syllable /bo-/ [ó] begins with the voiced bilabial fricative [β] whereas in the corresponding RULMAM word *yonsi* [jó:nsi] ‘all’, the initial syllable /yo-/ [jó] begins with the voiced palatal approximant [j]. The other correspondences include *ibeele* [íβe:lé] ‘breast’ in STDBEM and *iyele* [íje:lé] ‘breast’ in RULMAM; *beemba* [βé:m̩ba] ‘lake’ in STDBEM and *yemba* [jé:m̩ba] ‘lake’ in RULMAM; *baanoko* [βá:nokó] ‘your mother’ in STDBEM and *yanyoko* [já:nokó] in RULMAM.

In the case of the STDBEM word *icuuni* [itʃú:ni] ‘bird’ the terminal syllable /-ni/ [ni] begins with the voiced alveolar nasal /-n-/ [n], but the last syllable /-nyi/ [ni] in the RULMAM word *cunyi* [tʃú:ni] ‘bird’, begins with the voiced palatal nasal /-ny-/ [ɲ]. Similarly, in the STDBEM word *inama* [inámá] ‘animal’, the second syllable /-na-/ [na] begins with the voiced alveolar nasal /-n-/ [n] while in the RULMAM word *nyama* [ɲáma], the first syllable /-nya-/ [ɲa] has the voiced palatal nasal /-ny-/ [ɲ] as its initial consonant phoneme. Besides these, the other correspondences include *shaani* [ʃá:ni] ‘what/how’ in STDBEM and *icanyi* [itʃaɲi] ‘what/how?’ in RULMAM; *nokokulu* [nókokúlú] ‘your grandmother’ in STDBEM and *inyokokulu* [ɲókokúlú] ‘your grandmother’ in RULMAM.

In STDBEM and RULMAM, the words meaning canoe are *ubwato* [úβwa:tó] and *wato* [wá:to], respectively. In the STDBEM word, the second syllable /-bwa-/ [βwa] begins with the voiced bilabial fricative /-b-/ [β], but in the RULMAM word, the second syllable /-wa-/ [wa] begins with the voiced labio-velar approximant /-w-/ [w].

The phonological differences between the languages under study also manifest through the application of the rules of deletion and insertion, (See Sloat, Taylor & Hoard, 1978). It will be noticed that in the STDBEM word *icikondo* [itʃikó:ndo] ‘toe’, the RULMAM word *cikando* [tʃíka:ndó] ‘toe’ syncopically deletes the mid back vowel /o/ [o] in the environment after the voiceless velar stop /k/ [k] and

epenthetically inserts the low central vowel /a/ [a] in the environment after the voiceless velar stop /k/ [k]. The application of the rules can formally be summarised as shown below:



The other correspondences where there is syncopic deletion of the mid front vowel /o/ in the STDBEM words and the insertion of the low central vowel /a/ by the RULMAM words in the spaces of the deleted segment are: *impofu* [impófú] ‘blind person’ and *mpafu* [mpáfú] ‘blind person’, *amoolu* [amó:lú] ‘legs’ and *maulu* [máulú] ‘legs’, respectively.

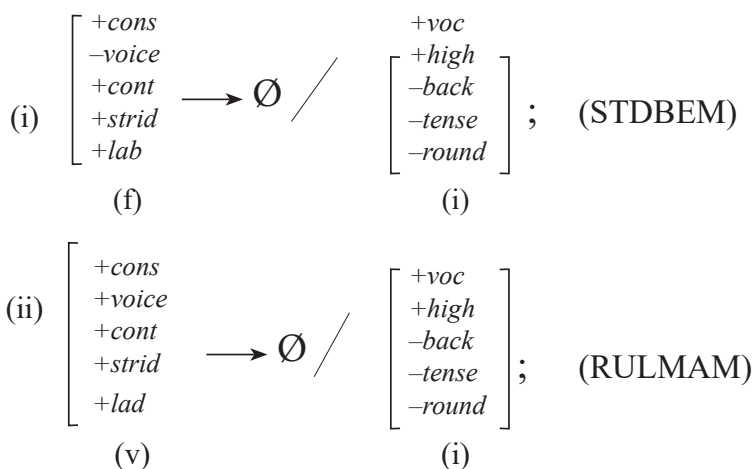
There is syncopation of the voiced bilabial fricative /β/ [β] that immediately precedes the mid front vowel /e/ [e] (i.e., in the second syllable) in the STDBEM word *nkobekela* [ńkoβékélá] ‘fiancée’ by the RULMAM word *nkowekela* [ńkowékélá] ‘fiancée’ that inserts in the space of the deleted segment the voiced labio-velar approximant /w/ [w]. The application of the rules is formalised below:

$$(i) \begin{array}{l} \left[ \begin{array}{l} +cons \\ +voice \\ +cont \\ +distr \\ +lab \end{array} \right] \longrightarrow \emptyset / \left[ \begin{array}{l} +voc \\ -low \\ -back \\ -tense \\ -round \end{array} \right]; \quad (STDBEM) \\ (\square) \qquad \qquad \qquad (e) \end{array}$$

$$(ii) \begin{array}{l} \left[ \begin{array}{l} -cons \\ -voc \\ -cont \\ +lab \\ +back \end{array} \right] \longrightarrow \emptyset / \left[ \begin{array}{l} +voc \\ -high \\ -low \\ -back \\ -tense \\ -round \end{array} \right]; \quad (RULMAM) \\ (w) \qquad \qquad \qquad (e) \end{array}$$

The application of the rules of deletion and insertion in these patterns is also noted in the following words: *iluba* [íluβá] ‘flower’(STDBEM) and *iluwa* [íluwá] ‘flower’(RULMAM); *ubwato* [úβwa:tó] ‘canoe’ (STDBEM) and *wato* [wá:to] ‘canoe’ (RULMAM); *ibaka* [íβaká] ‘a jump/leap’ (STDBEM) and *iwaka* [íwa:ká] ‘a jump/leap’ (RULMAM); *umuseeba* [úmuse:βá] ‘a shell of a cob’ (STDBEM) and *mushewa* [múšewá] ‘a shell of a cob’ (RULMAM); *ukubaasa* [úkuβá:sá] ‘to carve out’ (STDBEM) and *kuwasa* [kúwasá] ‘to carve out’ (RULMAM); *bwela* [βwé:la] ‘come back’ (STDBEM) and *wela* [wé:la] ‘come back’ (RULMAM); *ukubelenga* [úkuβélé:ŋga] ‘to read’ (STDBEM) and *ukuwelenga* [úkuwélé:ŋga] ‘to read’ (RULMAM); *ubwinga* [úβwi:ŋgá] ‘wedding’ (STDBEM) and *winga* [wí:ŋga] ‘wedding’ (RULMAM)

Besides, it is noticed that in the STDBEM words *ifingi* [ífiŋgí] ‘many’, *ifikolwe* [ífikólwe] ‘ancestors’, *fibili* [fibilí] ‘two’, *fitatu* [fítatú] ‘three’, *fine* [fíne] ‘four’, *fisano* [físanó] ‘five’, *ifibimbi* [ífibímbrí] ‘cucumbers’ the voiceless labio-dental fricative /f/ [f] is syncopated by the RULMAM words *vingi* [víŋgí] ‘many’, *vikolwe* [víkolwé] ‘ancestors’, *vili* [vílí] ‘two’, *vitatu* [vítatú] ‘three’, *vini* [víní] ‘four’, *visano* [vísanó] ‘five’ and *vimbi* [vímbrí] ‘cucumber’, respectively, in the environment before the high front vowel /i/. Consequently, there is insertion of the voiced labio-dental fricative /v/ in the space of the deleted segment in each case. The application of the rules is formalised below:



In STDBEM, there are two allophones of the voiced alveolar lateral /l/, and these are /d/ and /l/. The allophonic rule states that the allophone /d/ is applicable if the voiced alveolar nasal /n/ immediately precedes it whereas the allophone /l/ occurs elsewhere. In this study, contrast has been noted in the languages under investigation in relation to this rule.

**Table 1: the allophonic rule operating on consonant /l/; (See Mann, 1999, p. 2)**

Gloss	<i>IciBemba</i> Pronunciation	<i>Mambwe</i> pronunciation
I eat	n-la-li-a → <i>ndalya</i> [ndáljǎ]	n-ka-li-a → <i>nkalya</i> [ŋkaljǎ]
I'm eating	n-lee-li-a → <i>ndeelya</i> [ndé:ljǎ]	n-ku-li-a → <i>nkulya</i> [ŋkuljǎ]

It is evident from the study that the allophonic rule operating on the voiced alveolar lateral /l/ is, in this context, applicable only to STDBEM because the voiced alveolar lateral /l/ in the present simple tense marker -la- and the present progressive aspect marker -lee- is realised as allophone /d/ immediately after the voiced alveolar nasal /n/ which happens to be the subject marker. In contrast to this, the voiceless velar plosive /k/ which is the initial consonant phoneme for both the present simple tense marker -ka- and the present progressive tense marker -ku- in the RULMAM verbs in the table is not part of the allophonic rule stated above despite the fact that both STDBEM and RULMAM verbs in the table convey the same meaning.

The consonant /ɱ/ has two allophones, namely: the voiced bilabial plosive /b/ found in the nasal complex /mb/ and the voiced bilabial fricative /ɱ/ which is used elsewhere. It is clear from this study that the two allophones: the voiced bilabial fricative /ɱ/ and the voiced bilabial plosive /b/ are applicable to STDBEM whereas in RULMAM only the voiced bilabial plosive / b / in the nasal complex /-mb-/ manifests as the table below illustrates:



**Table 2: allophonic rules operating on consonant /β/ (Sourced from Mann, 1999, p. 2)**

Gloss	<i>IciBemba</i> pronunciation	<i>Mambwe</i> pronunciation
work (verb)	<i>bomba</i> [βó: mba]	<i>omba</i> [ó: mba]
people	<i>abantu</i> [aβá: ntú]	<i>antu</i> [á: ntú]
wedding	<i>ubwinga</i> [úβwi: ŋgá]	<i>uwinga</i> [úwi: ŋgá]
come back	<i>bwela</i> [βwé: la]	<i>wela</i> [wé: la]

The corresponding RULMAM words delete the voiced bilabial fricative /β/ in the STDBEM words in the environment before the voiced labio-velar approximant /w/ in the last two words in the table. In the first and second RULMAM words (*omba* and *antu*) in the table, the voiced bilabial fricative /β / has been deleted in the environment before the mid back vowel /o / and the low central vowel /a /, respectively. The study has, therefore, concluded that the allophonic rule of the voiced bilabial fricative /β / applies to STDBEM, but not to RULMAM. In fact, the two allophonic rules are applicable to STDBEM. However, the voiced bilabial plosive /b / occurs in nasal complexes /-mb-/ in RULMAM as is the case in the words *omba* [óm̩ba] ‘work’, *amalumbo* [amálumbó] ‘praises’ and *mpemba* [mpém̩ba] ‘white clay’.

Palatalisation and postalveolarisation occur in causative verbal forms: This section brings to the fore the differences between the languages under study in relation to palatalisation and postalveolarisation in causative verbal extension. The items in the table below illustrates these differences.

**Table 3: Palatalisation and postalveolarisation in causative verbal forms**

Gloss	STDBEM pronunciation	RULMAM pronunciation
to cause something to burst	<i>ukupoosha</i> [úkupó:ʃa]	<i>kupusya</i> [kúpusjá]
to cause (a dog) to hunt	<i>ukulunsha</i> [úkúlú: nʃa]	<i>kulusya</i> [kúlusjá]
to cause somebody to drink	<i>ukunweshya</i> [úku: nwé:ʃa]	<i>kunwesyia</i> [kú: ŋwe: sjá]

The process of palatalisation refers to any articulation involving a movement of the tongue towards the hard palate, (Crystal, 2008). Palatalisation usually occurs in the environment of high front sound such as /i/ or /j/, (*Akmajian, Demers, Farmer & Harnish*, 2001). In some languages, including the languages under investigation, the /s/ and /z/ preceding the /i/ or /y/ [j] undergo palatalisation. For example, the /s/ in the STDBEM and RULMAM words *ukupoosya* /ukupoosja/ and *kupusya* /kupusja/, respectively, is palatalised to /sj/. However, there is deletion of the voiced palatal approximant /j/ in the STDBEM word *ukupoosja* and as a result of that the voiceless alveolar fricative /s/ undergoes postalveolarisation; hence, the STDBEM word *ukupoosha* ‘to cause something to burst’ is phonetically realised as [úkupó:ʃa]. On the other hand, the voiceless alveolar fricative /s/ in the RULMAM word *kupusya* [kúpusjá] ‘to cause something to burst’ remains **palatalised**.

The finding, in this regard, is that the infinitives in RULMAM under causative verbal extension end at palatalisation level whereas those in STDBEM undergoing the same verbal extension go two steps further by having their voiced palatal approximant /j/ deleted and the voiceless alveolar fricative/s/ **postalveolarised**.

**Palatalisation and postalveolarisation feature in intensive verbal forms:**

Palatalisation and the consequent postalveolarisation in STDBEM verbs when they are extended into intensive verbal forms and palatalisation in RULMAM verbs when they are derived into intensive verbal forms are quite similar to what have been discussed earlier under causative verbal forms. The table below illustrates this fact.

**Table 4: Palatalisation and postalveolarisation in intensive verbal form**

Gloss	STDBEM pronunciation	RULMAM pronunciation
to run too much	<i>ukubutukisya</i> /ukuɓutukisja/ [úkuɓútúkíʃá]	<i>kusimulisya</i> [kúsímúlísja]
to shout too much	<i>ukupundisya</i> /ukupundisja/ [úkupú:ndíʃa]	<i>kulaizisya</i> [kúlaízísja]

Morphophonological rule of vowel harmony is used in applicative (or applied) verbal extension:

This section presents some differences between STDBEM and RULMAM in relation to the application of Morphophonological rule of vowel harmony. Morphophonology deals with the analysis and classification of the phonological factors which affect the shape or appearance of morphemes (Crystal, 1991). In other words, morphophonology is concerned with rules or alternations intermediate between morphology and phonology, (Mathews, 2005).

The rule stipulates that in applied verbal extension, the preceding mid vowel, either the mid back vowel /o/ or the mid front vowel /e/ in the verb radical causes the high front vowel /i/ in the applied morpheme /-il-/ to be realised as the mid front vowel [e]. This implies that the high front vowel /i/ in the applied verbal extension morpheme /-il-/ remains unaltered if the vowel in the verb radial is neither the mid front vowel /e/ nor the mid back vowel /o/. It is also important to indicate that this rule applies to both languages under study; however, some minor differences have been noticed.

The study has revealed that the mid front vowel /e/ in the STDBEM verb radical –seep- [se:p] ‘harvest (the millet)’ changes the high front vowel /i/ in the applied verbal extension morpheme /-il-, which carries the semantic value of ‘doing something on behalf of’, to mid front vowel /e/ in order to derive the applied verbal form seep-el-a which become *seepela* [sé:pelá] ‘harvest (the millet) on behalf of. For the RULMAM word sinza [si:nza] ‘harvest (the millet)’, the high front vowel /i/ in the applied verbal extension morpheme /-il-/ does not change to the mid front vowel /e/ because the vowel in the verb radical –sinz- [si:nz] ‘harvest’ is neither the mid front vowel /e/ nor the mid back vowel /o/. Instead, the vowel in the verb radical is the high front vowel /i /. Hence, the applied verbal form derived from –

sinz-a is sinz-il -a which becomes *sinzila* [sí:nzilá] ‘harvest (the millet) on behalf of’. The table below illustrates the facts on vowel harmony

**Table 5: Morphophonological rule: vowel harmony**

Gloss	STDBEM	RULMAM
harvest (the millet) for	seep-il-a → <i>seepela</i> [sé:pelá]	sinz-il-a → <i>sinzila</i> [sí:nzilá]
throw for or on behalf of	poos-il-a → <i>poosela</i> [pó:selá]	sumb-il-a → <i>sumbila</i> [sú:mbilá]
guard for or on behalf of	lond-il-a → <i>londela</i> [ló:ndelá]	lind-il-a → <i>lindila</i> [lí:ndilá]
cut (tree) for or on behalf of	tem-il-a → <i>temena</i> [témená]	tem-ila → <i>temela</i> [témelá]

There are exceptions where the rule applies in the same way as for the verb radicals’ *tem-* for both STDBEM and RULMAM: *tem-il-a* becomes *temena* for STDBEM and *temela* for RULMAM. However, the difference in this case is that in the STDBEM word *temena*, another rule has been applied, and this is **progressive nasal assimilation** — the voiced alveolar lateral /l/ becomes the voiced alveolar nasal /n/ in the environment after the voiced bilabial nasal /m/ which is in the verb radical *tem-*, but for the corresponding RULMAM word *temela*, the voiced alveolar lateral /l/ does not undergo progressive nasal assimilation.

Another theme contributory to this study is semivocalisation (i.e., gliding). The unit at the centre of this sub-theme is the semi-vowel which is phonetically like a vowel, but whose place in a syllable structure is characteristically that of a consonant (Matthews, 2005). As a matter of fact, semivocalisation is a morphophonological process by which semivowels or glides are formed. In this process, the high back vowel /u/ is represented as the voiced labio-velar approximant /w/ in the environment before another vowel with the exception of the high back vowel /u/. In a similar manner, the high front vowel /i/ is realised as the voiced palatal approximant /j/ in the environment before a vowel, except the high front vowel /i/. These phonological rules are formally presented below:

- (i) u → /w/ / [i, o, e, a]
- (ii) i → /j/ / [e, a, o, u]

It is evident from the study that semivocalisation occurs in both languages. However, there are some points of minor differences. For example, in the STDBEM word *u-mu-inshi* which becomes *umwinshi* [úmwi:nʃí] ‘door way’, the high back vowel /u/ in the prefix *mu-* glides with the initial high front vowel /i/ in the base *-inshi* [i:nʃí] ‘door way’ to produce the voiced labio-velar approximant /w/ whereas in the corresponding RULMAM word: *mu-li-ango* which is rendered as *mulyango* [múlja:ngó] ‘door way’, the gliding occurs between the high front vowel /i/ in the second syllable -li-, which is part of the base, and the adjacent low central vowel /a/. The prefix does not feature in the RULMAM word.

The other difference is that in the STDBEM word *u-ku-isala* which becomes *ukwisala* [úkwi:sála] ‘to close’; the high back vowel /u/ in the locative *-ku-* [ku] ‘to’

is semivocalised in the environment before the high front vowel / i / which is in the base –isala [ɪsálá] ‘close’ while there is no semivocalisation of the high back vowel / u / in the locative -ku- [ku] ‘to’ in the corresponding RULMAM word ku-i-ala which becomes *kuyala* [kúja:lá] ‘to close’, but there is the gliding of the high front vowel / i / in the base -i-ala [já:la] ‘close’ in the environment before the low central vowel / a /. A similar situation occurs in STDBEM and RULMAM words u-ku-isula which becomes *ukwisula* [úkwi:súla] ‘to open’ and *ku-i-ula* which is rendered as *kuyula* [kúju:lá] ‘to open’, respectively. This shows that in both the former pair and latter pair, the environments of semivocalisation are totally different.

Coalescence contributes to the differences in this study:

This section of the study presents the differences concerning coalescence, which is also known as merger or fusion. Coalescence is a morphophonological process by which units, in this case phonemes, that are separate at one level of representation are realised by a form in which there is no corresponding boundary (Crystal, 2008; Mathews, 2005).

Some aspects of this process are in focus to show the differences between STDBEM and RULMAM. It has been noted that in STDBEM the low central vowel /a/ in the prefix ba [ɓa] ‘them’ coalesces with the mid back vowel /o/ in the stem –onse [ó:nse] ‘everyone’ into /-oo- /; therefore, the combination of *ba* – and –onse forms the word *boonse* [ɓó:nse] ‘all of them’. It is also worth mentioning that in this word **compensatory lengthening** occurs: the low central vowel /a/ in the prefix *ba-* is lost and the mid back vowel /o/ in the stem –onse is lengthened. In the corresponding RULMAM word, the high front vowel / i / and the mid back vowel / o / fuse (i.e i+o) to form the initial syllable i-o → / yo- / [jo] in the word *yonsi* [jó:nsi] ‘all of them’; semivocalisation of the high front vowel / i / also occurs.

In another instance, it has been noticed that in the STDBEM word, there is fusion of the high front vowel / i / in the prefix /fi-/ [fi] ‘standing for things and the mid back vowel / o / in the stem –onse [o:nse] ‘everything’ into / yoo- / [jo:]. Consequently, this coalescence forms the word *fyoonse* [fjó:nse] ‘all the things’. It has also been noted that in this process, three other processes occur, namely: semivocalisation, palatalisation and vowel lengthening. In the corresponding RULMAM word, the high front vowel / i / in the prefix *vi-* [vi] ‘(standing for things’ has coalesced with the mid back vowel /o/ in the stem –onsi [o:nsi] ‘everything’ to form / -yo / [jo]. This process forms the word *vyonsi* [vjó:nsi] ‘all the things’. Phonologically, there is no doubling of the mid back vowel / o / in the RULMAM word *vyonsi*, like the case is in the STDBEM word *fyoonse*.

*It is, therefore, concluded from the study that the phonological differences between the languages under study contribute to: (1) mutual unintelligibility between Bemba and Mambwe speakers who have had no experience of each other’s language and (2) the absence of linguistic convergence between Bemba and Mambwe despite that they are spoken in the same geographical space.*

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