

# ARTICLES

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## **A systemized explanation for vowel phoneme change in the inadmissible phonological structure /VV/ in Zulu**

### **Abstract**

This article offers a systematic and comprehensive account of vowel changes that take place in the inadmissible phonological sequence /VV/ within a word in Zulu. Instead of discussing vowel changes in terms of vowel coalescence, vowel elision and glide insertion (as is conventionally done) this approach discusses the vowel changes with regard to the position of the two juxtaposed vowel phonemes on the vowel chart. The resultant form is predictable in terms of five basic combinatory possibilities, namely that the first vowel is a higher vowel than the second; the first vowel is a lower vowel than the second; the first vowel is a front vowel while the second is a back vowel; the first vowel is a back vowel while the second is a front vowel or the two vowels in the inadmissible sequence /VV/ are identical vowels. This article furthermore demonstrates that palatalisation is triggered by a semi-vowel generated by the inadmissible phonological structure /VV/ in the case of diminutives and locatives derived from nouns containing a bilabial or alveolar consonant in the final syllable.

**Keywords:** vowel changes in the inadmissible phonological structure /VV/ in Zulu, vowel coalescence, vowel deletion, semi-vowel insertion, vowel juxtaposing, vowel hiatus in Zulu

## 1. Introduction

### 1.1. Aim

The aim of this article is to offer a holistic and systematic account of vowel changes as a result of the inadmissible phonological structure /VV/ in Zulu (or vowel hiatus resolution as it is commonly referred to).

### 1.2. Vowel juxtaposing and its analysis

Vowel change owing to the inadmissibility of the structure /VV/ is very common in the Bantu languages. Vowel juxtaposing and the vowel changes that take place owing to this inadmissibility are, however, not discussed systematically and holistically in Zulu grammars and other sources focusing on this grammatical phenomenon. The changes to vowels triggered by the inadmissible phonological sequence /VV/ are generally discussed on an *ad hoc* basis as they appear in particular grammatical structures.

Linguists often discuss vowel change focusing on only one outcome at a time. Harford (1997: 70) discusses vowel changes that take place in Shona under the heading “vowel coalescence”. However, she includes at least one instance of vowel elision in her discussion.

Sibanda (2009), on the other hand, discusses vowel changes in the four Nguni languages under the subheadings “coalescence”, “gliding”, and “vowel deletion”. Kadenge (2010) discusses the vowel changes of Nambya under the headings “vowel harmony”, “glide formation”, “vowel elision”, and “vowel coalescence”. Mudzingwa and Kadenge (2011: 204) point out that vowel hiatus resolution in Karanga and Nambya occurs in the form of glide formation, elision, vowel coalescence, secondary articulation, and consonant epenthesis. Moreover, they point out that these strategies do not apply to all grammatical structures in the same way. Simango and Kadenge (2014: 81, 85) discuss vowel hiatus resolution in ciNsenga under three subcategories, namely glide formation, secondary articulation, and vowel elision. They too draw attention to the fact that these strategies are dependent on morphosyntactic and phonological considerations.

The discussion of vowel changes has also led to the recognition that in instances where the inadmissible phonological structure /VV/ leads to the generation of a semi-vowel /w/ or /j/, where the juxtaposing of this resultant semi-vowel to a bilabial consonant in turn leads to palatalisation. Herbert (1977: 143 *et seq.*)

asserts that the sound alterations in the case of palatalisation and velarization should not be treated synchronically in the domain of phonological fusion but rather in the domain of morphophonology. Van der Spuy (2014: 73), on the other hand, regards bilabial palatalisation as morphologically conditioned.

The realisation of the patterns of vowel changes taking place in the context of vowel hiatus has led to the identification of underlying vowels in certain instances that trigger sound changes even though such vowels are not present in the surface structure. This is, for instance, true of the underlying vowel phoneme /i/ in the verb stem *-(i)zwa* with an underlying vowel phoneme /i/ as is evident in an example such as, *Abafana bayezwa* (< *ba-ya-izwa*) 'The boys are hearing'. The underlying vowel [i] in such contexts exerts its influence only on a preceding vowel phoneme /a/.

Some scholars refer to the underlying sounds as "ghost sounds" or "ghost segments", as do, for instance, Sibanda (2009) and Mudzinga and Kadenge (2013).

Sibanda's (2011: 132) postulation of a ghost segment /j/ in examples such as *si + a + eza > sa + eza > syeza > seza*, 'she (the old lady – *isalukazi*) came', or (2011: 136) *yakha* (< *i + akha*) 'it (the bird – *inyoni*) builds' or *yoma* (< *i-oma*) 'it (the cloth – *indwangu*) dries' seems to be unfounded. Firstly, /j/ gliding is blocked if the first vowel /i/ is a (subject) morpheme with the syllabic structure /CV/. The same rule as that specified for ciNsenga by Simango and Kadenge, applies to Zulu. They (2014: 90) formulate the rule for vowel elision in ciNsenga as follows:

When glide formation and secondary articulation are blocked, vowel elision is employed. There are two main phonological contexts in which vowels are elided in ciNsenga: (1) when  $V_1$  is /i/ and is preceded by an onset...

The postulation of a form *\*syeza* is thus erroneous.

Secondly, the glide /j/ in the latter two examples above is the default resultant form due to the vowels *i + a > ya*. Neither the subject morpheme *i-* nor the verb stems *-akha* or *-oma* contain an underlying (or ghost element) /j/.

In this article the vowel changes that take place as a result of the inadmissibility of the phonological structure /VV/ are also done from a morphophonological perspective.

## 2. Broad principles of vowel change in the inadmissible sequence /VV/ in Zulu

Posthumus (1978) attempted to analyse vowel change in the inadmissible phonological structure /VV/ within a word holistically instead of discussing the changes under separate headings such as vowel coalescence, vowel deletion, and gliding.

The vowel phoneme changes that take place in Zulu owing to the inadmissibility of the phonological sequence /VV/ can be accounted for systematically considering four possible vowel combinations, namely (1) a lower vowel followed by a higher vowel; (2) a front vowel followed by a back vowel; (3) a back vowel followed by a front vowel, and (4) a higher vowel followed by a lower vowel. These four combinatory possibilities are depicted in Fig. 2, 3, 4, and 5 and discussed below.

Vowel changes that take place as a result of the inadmissible phonological structure /VV/ can be explained systematically in terms of the vowel phoneme chart and are governed by five overriding principles, namely the vowel phoneme strength hierarchy, the tendency of the language to retain a vowel quality by means of semi-vowel insertion, the order of the vowels in the inadmissible structure /VV/, the position of the two juxtaposed vowels on the vowel phoneme chart, and sound changes that take place owing to the resultant semi-vowel contributing to a second inadmissible phoneme sequence.

The vowel changes accounted for in this article include the following domains of vowel juxtaposing:

1. Vowel verb stems: (*ba* + *ehla* >) *behla esitimeleni* 'they are disembarking from the train'.
2. Locativization of nouns: (*intaba* + *ini* >) *entabeni* 'on/at/from... the mountain'.
3. Diminutive formation: (*inyosi* + *ana* >) *inyosana* 'a small bee'.
4. Emphatic pronoun formation: (*zi* + *o* + *na* >) *zona* 'they (the dogs)'.
5. Inclusive quantitative pronoun formation: *abantu* (*ba* + *o* + *nke* >) *bonke* 'all the people'.
6. Exclusive quantitative pronoun formation: *imithi* (*i* + *o* + *dwa* >) *yodwa* 'only the medicines'.
7. Demonstrative pronoun formation: *uluphondo* (*la* + *ulu* >) *lolu* 'this horn'.

8. Possessive particle/"concord" formation: *ukhezo* (*lu* + *a* >) *lwakhe* 'his/her spoon'.
9. Juxtaposing of the possessive particle/"concord" and the possessor noun: *izinkomo* (*za* + *isilo* >) *zesilo* 'the king's cattle'.
10. Remote past tense formation: *umfana* (*u* + *a* >) *wabaleka* 'the boy ran away'.
11. Noun class prefix prefixed to vowel verb roots, e.g. class 14. *ubu-* followed by *-ala*: (*ubu* + *ala*) > *\*ubwala* > *utshwala* 'beer'.
12. Future tense formation (positive): (*siza* + *ukubona* >) *sizo(ku)bona* 'we will see'.
13. Future tense formation (negative): (*asizi* + *ukubona* >) *asizu(ku)bona* 'we will not see'.
14. Relative tense formation: *wena* (*ube* + *usebenza* >) *ubusebenza?* 'were you working?'.
15. Consecutive mood agreement formation: *izinyamazane ziphume* (*zi* + *a* >) *zabaleka* 'the antelopes got out and ran away'.
16. Associative copulative formation: (*ngina* + *ibhayisikili* >) *nginebhayisikili* 'I have a bicycle'.
17. Juxtaposing of associative particle to noun: *sihamba* (*na* + *umama* >) *nomama* 'we are walking/going with mother'.
18. Juxtaposing of comparative particle *njenga* to noun: *ugijima* (*njenga* + *ihhashi* >) *njengehhashi* 'he/she runs like a horse'.
19. Juxtaposing of comparative particle *nganga* to noun: *impangele* (*inganga* + *inkukhu* >) *ingangenkukhu* 'a guineafowl is as big as a chicken'.
20. Adjective qualificative particle/"adjective concord" formation: *Izinkunzi* (*a* + *izi* >) *ezinkulu* (< *ezi-zinkulu*) 'the bulls that are big/the big bulls'.
21. Qualificative particle/"relative concord" formation: *Izinkunzi* (*a* + *izi* >) *ezimanzi* 'the bulls that are wet/the wet bulls'.
22. Qualificative/relative agreement morpheme: *umfana* (*a* + *u* >) *ohlekayo* 'the boy who is laughing'.

The two domains where the systematic vowel changes referred to above do not apply, are instances where the negative morpheme (*k)a-* of the indicative mood is juxtaposed to a subject agreement morpheme comprising a vowel only, and the use of an object morpheme in a verb where the object morpheme is preceded