

ARTICLES

Lionel Posthumus

University of Johannesburg
ORCID 0000-0001-5553-5318

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.

Linguist 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

by another morpheme ending on a vowel. (In the case of the imperative mood containing an object morpheme the object morpheme is not preceded by another morpheme, therefore there is no vowel juxtaposing). These two instances of vowel juxtaposing, which do not follow the default rules for vowel change, are illustrated below.

2.1. The indicative negative morpheme (k)a- followed by a subject morpheme that comprises a vowel only

The juxtaposing of the negative morpheme (k)a- to a subject morpheme which comprises a vowel only does not lead to the expected vowel changes as explained in the preceding discussion. The expected vowel change, in the case of for instance (k)a + i > (k)e does not occur. Instead semi-vowel insertion takes place between the vowel /a/ of the negative morpheme and the vowel of the particular subject morpheme (if the subject morpheme has the phonological structure /V/). Consider the examples:

le nja (a + i >) *ayilumi* 'this dog does not bite'

amantombazane (a + a >) *awafundi* 'the girls are not learning'

wena (a + u >) *awuphuzi?* 'you do not drink?'

lo mfula (a + u >) *awugobozi* 'this river is not flowing'.

2.2. The object morpheme (comprising a vowel only) preceded by another morpheme

The use of an object morpheme which comprises a vowel only in a verb where it is preceded by another morpheme also does not lead to the expected vowel changes. The object morpheme is again preceded by the appropriate semi-vowel in these instances. Consider the examples below:

abafana (ba + ya + i + geza >) *bayayigeza imoto* 'the boys are washing it, the car'

isiguli (a + si + u + phuzi >) *asiwuphuzi umuthi* 'the patient is not drinking it, the medicine'

(si + zo + a + bala >) *sizowabala amaqanda* 'we will count them, the eggs'.

3. The vowel strength hierarchy of Zulu

The back vowel phonemes /u/ and /ɔ/ are the strongest vowels while the front vowel phonemes /i/ and /ɛ/ are the weakest vowels in Zulu. This vowel phoneme strength hierarchy is depicted in Fig. 1.

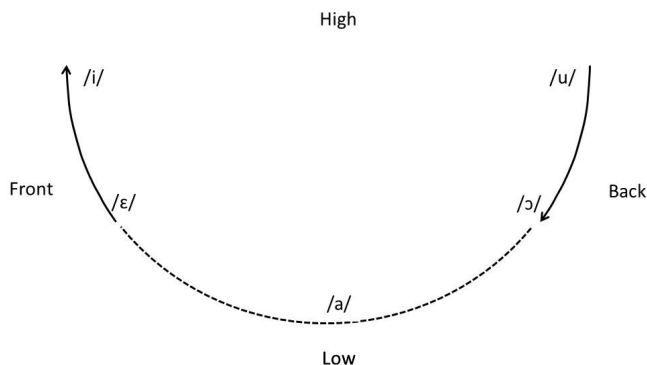


Fig. 1. The strength hierarchy of Zulu vowels

While the two back vowel phonemes /u/ and /ɔ/ in the phoneme sequence /VV/ are generally either retained or their quality retained by the introduction of the semi-vowel /w/, the two front vowel phonemes /i/ and /ε/ are generally omitted. In instances where the quality of the front vowel phonemes has to be retained, the semi-vowel /j/ is used for this purpose.

Not only is the position on the vowel phoneme chart of the two individual vowel phonemes involved in the inadmissible sequence /VV/ important, the order of these vowels when juxtaposed is obviously also important: /a/ + /i/ for instance, results in /ε/ while /i/ + /a/ will result in either /a/ or /ya/.

The vowel changes that take place owing to the inadmissible structure /VV/ will now be discussed systematically under four broad headings based on the position of the two vowels involved in the inadmissible vowel sequence on the vowel phoneme chart. The discussion is thus based on instances where the first vowel is lower than the second vowel, the first vowel is a front vowel while the second vowel is a back vowel, the first vowel is a back vowel while the second is a front vowel and the first vowel is a lower vowel than the second vowel on the vowel phoneme chart.

4. The combination of a lower vowel phoneme followed by a higher vowel phoneme

In Fig. 2. the origin of the arrow indicates the first vowel phoneme while the point of the arrow indicates the second vowel phoneme within an inadmissible vowel sequence /VV/. The resultant form is indicated on the arrow line in each instance.

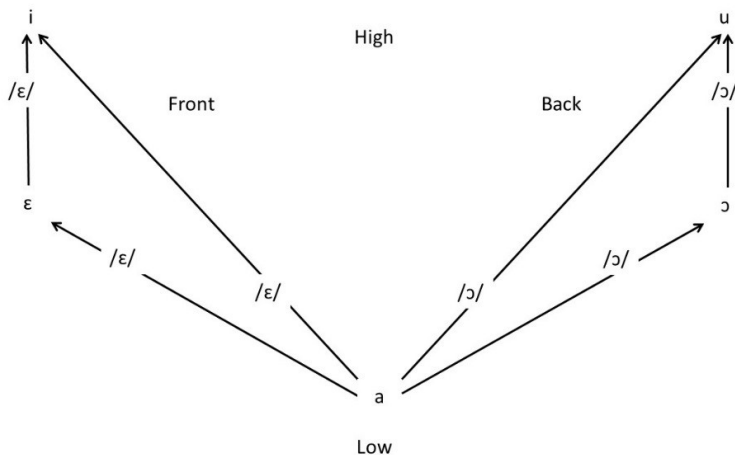


Fig. 2. /VV/ with a lower vowel followed by a higher vowel

If the first vowel phoneme in the sequence /VV/ is a lower vowel phoneme than the second, the phoneme /ε/ is the resultant phoneme in the case of the front vowels, while the phoneme /ɔ/ is the resultant vowel phoneme in the case of the back vowels.

Consider the examples below.

4.1. Vowel changes owing to the inadmissible sequence /VV/ involving the front vowels where the first vowel is a lower vowel

a + i > /ε/

(1) *Amantombazana (a + izwa >) ezwa umsindo.*

'The girls hear a noise.'

(2) *Iqanda (la + isikhukhukazi >) lesikhukhukazi lesi likhulu.*

'The egg of this hen is big.'

(3) *Abantu (ba- + -iza >) beza manje.*

'The people are coming now.'

(4) *UVusi ukhonkotha (njenga +inja >) njengenja¹.*

'Vusi barks like a dog.'

¹ Note that in this example and in the case of examples such as (9), (11) and (12) the vowel juxtaposing does not take place within a single linguistic word.

(5) *Abantwana badlala ((i)mvula + -ini >) emvuleni.*

'The children are playing in the rain.'

a + ε > /ε/

(6) *Abañana (ba- + elula >) belula ucingo.*

'The boys straighten/stretch the wire.'

ε + i > /ε/

(7) *Imfene ihlezi ((i)tshe + -ini >) etsheni.*

'The baboon is sitting at/on ... the rock.'

4.2. Vowel changes owing to the inadmissible sequence /VV/ involving the back vowels where the first vowel is a lower vowel

a + u > /ɔ/

(8) *(Ngiza- + u(ku)bona >) Ngizo(ku)bona.*

'I will see.'

(9) *Sihamba (na + umama >) nomama.*

'We are going with mother.'

a + ɔ > /ɔ/

(10) *Obabamkhulu (ba- + -osa >) bosa inyama.*

'Grandfather and company are frying meat.'

(11) *(Na + obaba >) Nobaba basemsebenzini.*

'Father and company are also at work.'

ɔ + u > /ɔ/

(12) *(Lo + umuntu >) Lo muntu uyagula*

'This person is ill.'

5. The combination of a front vowel phoneme followed by a back vowel phoneme

If the first vowel phoneme is a front vowel and the second vowel phoneme a back vowel within the inadmissible sequence /VV/ the resultant phoneme will be the back vowel in question, thus either /u/ or /ɔ/. Consider Fig. 3.

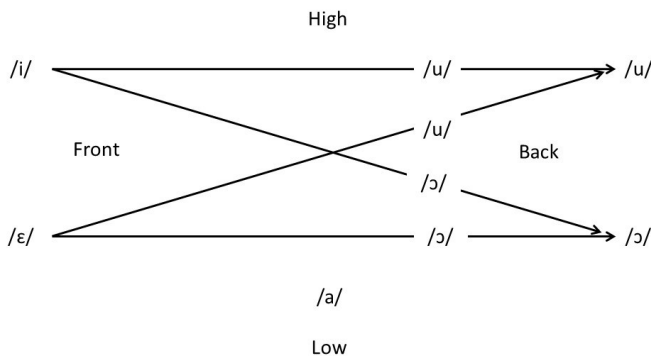


Fig. 3. /VV/ with a front vowel followed by a back vowel

Consider the following examples:

i + u > /u/

(13) (*Angizi* + *ukuqeda* >) *Angizukuqeda namhlanje.*

'I will not finish today.'

i + ɔ > /ɔ/

(14) *Thina* (*si-* + *-osa* >) *sosa inyama.*

'We are frying meat.'

(15) (*Li-* + *-onke* >) *Lonke itafula limanzi.*

'The whole table is wet.'

(16) *Ngibona izimbuzi* (*zi-* + *-odwa* >) *zodwa.*

'I see only the goats.'

ε + u > /u/

(17) *Wena* (*ube-* + *usebenza* >) *ubusebenza kuthangi?*

'Were you working the day before yesterday?'

(18) (*Use-* + *uyahamba* >) *Usuyahamba manje?*

'Were you leaving now?'

(19) (*Uke-* + *udlale* >) *Ukudlale nabantwana?*

'Do you sometimes play with the children?'

ε + ɔ > /ɔ/

(20) *Ngimbone* (*e-* + *-osa* >) *osa inyama.*

'I saw him frying meat.'

In instances where the first vowel phoneme /i/ is not preceded by a consonant but followed by a back vowel, the resultant form will contain the semi-vowel /j/. Consider the example below.

i + o > /yo/

(21) *Indoda (i + o_{sa} >) yosa inyama.*

'The man fries meat.'

(22) *Iphelile (i + onke >) yonke imali.*

'All the money is finish.'

6. The combination of a back vowel phoneme followed by a front vowel phoneme

If the first vowel phoneme is a back vowel and the second vowel phoneme is a front vowel in the inadmissible phonological sequence /VV/ the resultant form will be the front vowel in question, but preceded by the semivowel /w/. (Note however, that the resultant form of the vowel sequence /o/ + /i/ is /wε/ and not /wi/ as would be expected).

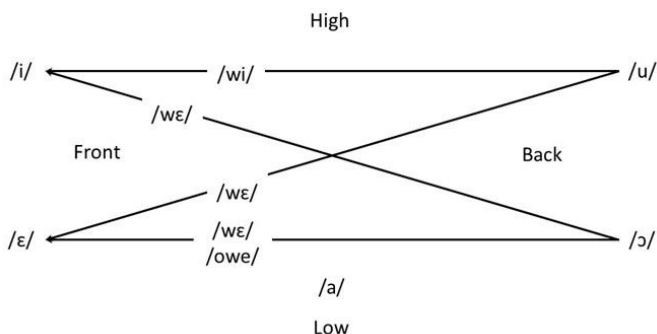


Fig. 4. /VV/ with a back vowel followed by a front vowel

Consider the following examples:

Cu + i > /Cu/

(23) *Ukhozi (lu + -izwa >) luzwa igundane.*

'The hawk hears the mouse.'

u + i > /wi/

(24) *((i)zulu + -ini >) ezulwini*

'in/at ... heaven'

Cu + ε > /Cwε/(25) *Ufudu* (**u-** + **-ehla** >) **lwehla entabeni**.

'The tortoise comes down the mountain.'

u + ε > /wε/(26) *UThembi* (**u-** + **-ethuswa** >) **wethuswa isongololo**.

'Thembi is scared by a multipede.'

Cɔ + i > /Cwε/(27) (*isango* + **-ini** >) **esangweni**

'at/on ... the gate'

In the case of the relative subject morpheme *o-* of class 1/1a the vowel juxtaposing leads to a semi-vowel being inserted between the /ɔ/ and the vowel of the vowel verb stem. (As with subject morphemes comprising a vowel only the integrity of the subject morpheme is thus not compromised). Consider example (28) below.

ɔ + ε > /ɔwε/(28) *Umakhi* (**o-** + **enza** >) **owenza lo msebenzi ukhuthela**.

'The builder who does this work is industrious.'

The inadmissible phonological structure */bw/ will always result in the elision of the semi-vowel /w/ regardless of the vowel that follows */bw/ or palatalization will be triggered. Consider examples (29) and (30) below.

(29) *Lobu tshwala* (**bu-** + **-ehla** > ***bwehla** >) **behla ngesiphundu**.

'This beer goes down at the back of the neck./This beer goes down well.'

(30) *Utshani* (**bu-** + **-ala** > ***bwala** >) **bala ukuvutha ngoba bumanzi**.

'The grass refuses to burn because it is wet.'

The phonological structure */lwo/ is also inadmissible and in cases where the resultant form is */lwo/ the semi-vowel /w/ will also be elided as is evident in example (31) below.

(31) *Unyawo lomfana* (**lu** + **opha** > ***lwopha** >) **lopha kabi**.

'The boy's foot is bleeding badly.'

7. The combination of a higher vowel phoneme followed by a lower vowel phoneme

If the first vowel phoneme is higher than the second vowel phoneme in the phonological sequence //VV/, the resultant phoneme will be either the lowest

phoneme, or the lowest phoneme preceded by the semi-vowel /j/ or /w/. The semi-vowel /j/ realizes in cases where the front vowels are involved and the semi-vowel /w/ in cases where the back vowels are involved in the inadmissible sequence /VV/.

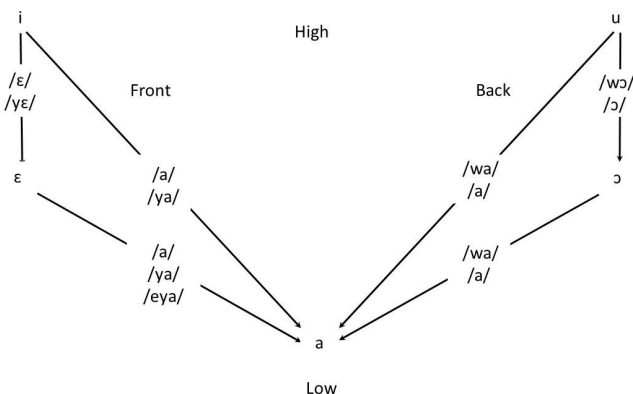


Fig. 5. /VV/ with a higher vowel followed by a lower vowel

The vowel changes that take place in instances where a higher vowel phoneme is followed by a lower vowel phoneme in the inadmissible vowel phoneme sequence /VV/ will now be discussed below with elucidating examples.

7.1. Vowel changes owing to the inadmissible sequence /VV/ involving the front vowels and the vowel phoneme /a/ where the first vowel is a higher vowel than the second vowel

In the case of the front vowels and the vowel phoneme /a/ the default resultant phoneme is the lowest vowel phoneme without the semi-vowel, thus /a/ or /ε/.

Ci + a > /Ca/

(32) (*Ng*i- + -*akha* > *ngi*- + -*akha* >) *Ngakha indlu*.

'I am building a house.'

(33) *ihhashi* (*li*- + -*a*- + *mi(na)* > *li*- + -*a*- + *mi(na)* >) *lami*

'my horse'

Ci + ε > /Cε/

(34) (*Ng*i- + -*esaba* > *ngi*- + *esaba* >) *Ngesaba isicabucabu*.

'I fear a spider.'

Cε + a > /Ca/(35) (*itshe* + *-ana* > *itshe* + *-ana* >) *itshana*

'a small stone'

The vowel phoneme /i/ becomes /j/ followed by the particular lower vowel in instances where the /i/ is not preceded by a consonant. Consider examples (36) and (37).

i + ε > /yε/(36) *Intombi* (*i-* + *-enza* >) *yenza itiye*.

'The girl makes tea.'

i + a > /ya/(37) *Inyoni* (*i-* + *-akha* >) *yakha isidleke*.

'The bird builds a nest.'

In example (38) below the first vowel /e/ behaves as if it is not preceded by a consonant owing to the occlusion caused by the preceding bilabial sound, thus generating a semi-vowel /j/ which leads to palatalisation.

ε + a > /ya/(38) *isithebe* + *ana* > **isithebyana* > *isithetshana*

'a small eating mat'

The integrity of the subject morpheme is retained in example (39) below by the insertion of the semi-vowel /j/ between the subject morpheme and the initial vowel of the vowel verb stem.

ε + a > /eya/(39) *indoda e* + *akha* > *eyakha isibaya iyakwazi ukwakha ngamatshe*.

'The man who is building a kraal can build with stone.'

7.2. Vowel changes owing to the inadmissible sequence /VV/ involving the back vowels and the vowel phoneme /a/ where the first vowel is a higher vowel than the second vowel

In the event that the back vowels appear in the inadmissible structure /VV/ and the first vowel phoneme is the higher vowel phoneme, thus /u/ or /ɔ/ the default resultant form is with the semi-vowel, thus /wɔ/ or /wa/.

Cu + a > /Cwa/(40) *Unwabu* (*lu* + *-akha* >) *lwakha indlu*.

'The chameleon builds a house.'

(41) (*indlu* + *-ana* >) *indlwana*

'a small house'

u + a > /wa/

(42) *umlomo* (*u* + *a* + *kho* >) *wakho*

'your mouth'

In the case of a resultant inadmissible phoneme sequence such as a bilabial consonant followed by the semi-vowel /w/ the resultant form will be /a/ or /ɔ/ owing to the elision of the semi-vowel /w/. The phonological sequence */bw/ (as is evident from examples (43) to (46)) is inadmissible.

bu + a > */bwa/ > /ba/

(43) *Uboya* (*bu-* + *ala* > **bwala* >) *bala ukuphuma ehlweni*.

'The (animal) hair refuses to come out of the eye.'

bɔ + a > */bwa/ > /ba/

(44) (*ingubo-* + *-ana* > **ingubwana* >) *ingutshana*

'a small blanket'

bu + ε > */bwε > /bε/

(45) *Ubulwembu* (*bu-* + *esatshwa* > **bwesatshwa* >) *besatshwa izingane*.

'The spider web is feared by the children.'

bu + ɔ > */bwɔ/ > /bɔ/

(46) *Utshani* (*bu-* + *okheka* > **bwokheka* >) *bokheka kalula*.

'The grass is easy to set fire to.'

'The grass is flammable.'

The phonological sequence */Cwo/ (as is evident from example (47)) is also inadmissible

Cu + ɔ > */Cwɔ/ > /Cɔ/

(47) *Unyawo* (*u-* + *opha* > **lwopha* >) *lopha kakhulu*.

'The foot is bleeding a lot.'

u + ɔ > /wɔ/

(48) *Wena* (*u-* + *-osa* >) *wosa inyama*.

'You are frying meat.'

Cɔ + a > /Cwa/

(49) (*i*) *sango* + *-ana* >) *isangwana*

'a small gate'

ɔ + a > /wa/

(50) (*into* + *-ana* >) *intwana*

'a small thing'

(51) (*ihlo* + *-ana* >) *ihlwana*

'a small eye'

The inadmissible consonant sequence */mw/ in example (52) below triggers palatalisation.

ɔ + a > /a/

(52) (*intamo* + *-ana* > *intam* + *wana* > **intamwana* >) *intanyana*

'a small neck'

8. The inadmissible vowel sequence /VV/ involving two identical vowel phonemes

One vowel is elided in the event that two of the same vowel phonemes appear in immediate succession, thus /V₁/ + /V₁/ > /V/

i + i > /i/

(53) ((*i*)*nyoni* + *-ini* >) *enyonini*

'at/on ... the bird'

ɛ + ɛ > /ɛ/

(54) *Ngimfice* (*e* + *eba* >) *eba imali*.

'I found him while stealing money.'

a + a > /a/

(55) *Amadoda* (*a* + *-akha* >) *akha indlu*.

'The men build a house.'

(56) (*inja* + *-ana* >) *injana*

'a small dog'

9. Palatalisation: The result of a triggered semi-vowel in the inadmissible vowel sequence /VV/

From the foregoing discussion it transpires that the semi-vowel phonemes /w/ and /j/ (which themselves are triggered by the inadmissible phonological structure /VV/), in turn trigger palatalisation because the resultant semi-vowels then

form part of an inadmissible consonant sequence². Palatalisation is primarily caused by the inadmissibility of a bilabial or alveolar consonant followed by a semi-vowel /w/ or /j/ (however it is not restricted to these cases only). Palatalisation takes place in passivization, locativization and diminutive formation and in the case of the class 14 noun class prefix *ubu-* being prefixed to the noun roots *-ala* and *-ani* to form the words *utshwala* (< *ubu-* + *-ala*) and *utshani* (< *ubu-* + *-ani*).

In the event that the first vowel phoneme is /a/ and it is preceded by a bilabial consonant, the resultant form will be /wa/. The resultant inadmissible sequence bilabial + /w/ is then palatalised. Consider the examples below.

mba + a > *mbwa > nja

(57) *ithemba* + *-ana* > *ithemb* + *wana* > **ithembwana* > *ithenjana*

'a minor belief'

(58) *isikhumba* + *-ana* > *isikhumb* + *wana* > **isikhumbwana* > *isikhunjana*

'a small skin'

When palatalisation is triggered by the passive morpheme *-w-* the passive morpheme is retained after palatalisation has taken place. (See examples (59) and (60) below).

² Palatalisation is not the major focus of this article and therefore instances of "analogous palatalisation" will not be discussed here, suffice it to say that one of the reasons Herbert (1977: 158) suggests is that palatalisation in the case of Zulu passives is probably fully morphologically conditioned in the numerous instances where palatalisation takes place without the semi-vowel /w/ being juxtaposed to a bilabial consonant (consider for instance example 1 below where palatalisation takes place in spite of the passive morpheme *-w-* no longer appearing immediately after the bilabial consonant /p^h/).

1. *umama ubophel* + *-w-* + *-a* > *ubosh-* + *-el-* + *-w-* + *-a* > *uboshelwa umthwalo*

'mother has her load been tied down for her'

In examples 2 to 4 below there is no resultant semi-vowel generated by the inadmissible phonological structure /VV/. The vowel /a/ followed by /a/ generally results in one vowel /a/ being omitted without triggering a resultant semi-vowel, yet in these instances palatalisation still takes place as if a semi-vowel has been generated.

2. *iqatha* + *-ana* > *iqath* + [y]ana > **iqat[y]ana* > *iqashana*

'a small chunk (of meat)'

3. *intaba* + *-ana* > *intab* + [y]ana > **intab[y]ana* > *intatshana*

'a small mountain/hillock'

4. *isikhumba* + *-ana* > *isikhumb* + [y]ana > **isikhumb[y]ana* > *isikhunjana*

'a small hide/skin'.

m + w > *mw > nyw

(59) *Ingane (ilum + w + e > *ilumwe >) ilunywe yinja.*

'The child was bitten by a dog.'

mb + w > *mbw > njw

(60) *Impala (ibamb + w + e > *ibambwe >) ibanjwe yingwenya.*

'The impala was caught by a crocodile.'

In morphological environments not involving the passive morpheme, the generated semi-vowel phonemes /j/ and /w/ are generally omitted after palatalisation. Consider for instance examples (61) to (68) below.

mo + i > *mwe > *nywe > nye

(61) *(u)mlomo + -ini > emlom + weni > *emlomweni > *emlonyweni > emlonyeni*

'in/on the mouth'

bo + a > *bwa > tsha

(62) *ingubo + -ana > ingub + wana > *ingubwana > *ingutshwana > ingutshana*

'a small blanket'

mbu + a > *mbwa > nja

(63) *ithumbu + -ana > ithumb + wana > *ithumbwana > *ithunjwana > ithunjana*

'a small bowel/gut'

bi + a > *bya > tsha

(64) *inkabi + -ana > inkab + yana > *inkabyana > *inkatshyana > inkatshana*

'a small ox'

be + a > *bya > tsha

(65) *isithebe + -ana > isitheb + yana > *isithebyana > *isithetshyana > isithetshana*

'a small eating mat'

pi + a > *pya > tsha

(66) *ikopi + -ana > ikop + yana > *ikopyana > *ikotshyana > ikotshana*

'a small mug'

mpe + a > *mpya > ntsha

(67) *impempe + -ana > impemp + yana > *impempyana > impentshyana > impentshana / impempana*

'a small whistle'

phu + a > *phwa > sha(68) *impuphu* + *-ana* > *impuph* + *wana* > **impuphwana* > *impushana*

'a small quantity of maize meal'

If the consonant before the resultant semi-vowel is an alveolar preceded by a nasal, palatalisation may or may not occur. Consider examples 69 and 70 below.

ndu + a > ndwa > ndwa / njwa(69) *umsundu* + *-ana* > *umsund* + *wana* > **umsundwana* > *umsunjwana* / *umsundwana*³

'a small earthworm'

ndo + a > ndwa > ndwa / njwa / nja(70) *isondo* + *-ana* > *isond* + *wana* > **isondwana* > *isonjwana* / *isonjana* / *isondwana*

'a small wheel'

In instances where an alveolar sound occurs before the resultant semi-vowel, palatalisation takes place regularly. Consider examples (71) and (73) below.

nto + a > *ntwa > ntshwa / ntsha(71) *umkhonto* + *-ana* > *umkhont* + *wana* > **umkhontwana* > *umkhontshwana* / *umkhontshana*'a small *assegaai*'**ti + a > *tya > tsha**(72) *ikati* + *-ana* > *ikat* + *yana* > **ikatyana* > *ikatshana*

'a small cat'

the + a > *thya > sha(73) *intethe* + *-ana* > *inteth* + *yana* > **intethyana* > *inteshana*

'a small locust'

³ While this article does not focus on palatalisation per se, it became apparent that even Zulu mother tongue speakers differ in terms of the acceptability of some variant forms of the diminutives that may occur with or without palatalisation. I am indebted to my Zulu speaking colleagues, Mr. Themba Madingiza, Dr. Ike Mndawe, Ms. Nomusa Sibiyi and Mr. Dumisani Sibiyi for their feedback on the acceptability of alternative forms of the variant forms of diminutives. From this quick survey it transpired that they all accepted the palatalised versions of the diminutives indicated in examples (69) and (70) while some of them accepted the unpalatalised forms as well. In the case of example (71), one colleague accepted the unpalatalised variant *umkhontwana* as being grammatical while three accepted *umkhontshwana* as being grammatical and one also accepted *umkhontshana* as being grammatical.

The alveolar nasal /n/ followed by the resultant semi-vowel /j/ will inevitably result in the palatalised /ny/. Consider examples (74) and (75) below.

ni + a > nya

(74) *inyoni* + *-ana* > *inyon* + *yana* > *inyonyana*
 'a small bird'

ne + a > nya

(75) *impukane* + *-ana* > *impukan* + *yana* > *impukanyana*
 'a small fly'

10. Instances of the inadmissible sequence /VV/ not resulting in the default vowel changes

Instances where the inadmissible phonological structure /VV/ does not change as explicated above, are those instances where such change would obviate the meaning or drastically alter it. Such a change would render the end result unrecognizable. Consider in this regard the negative forms below.

a + u > awu

(76) *Wena* (*a-* + *-u-* + *-hambi* >) *awuhambi* ≠ **ohambi*.
 'You are not walking/going.'

a + i > ayi

(77) *Indoda* (*a-* + *-i-* + *-boni* >) *ayiboni* ≠ **eboni*.
 'The man does not see.'

a + a > awa / aka

(78) *Amadoda* (*a-* + *-a* + *-gijimi* >) *awagijimi* / *akagijimi* ≠ **agijimi*.
 'The men do not run.'

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