

THE ROLE OF SPIRANTISATION IN EXPLAINING PHONOLOGICAL MICRO-VARIATION IN CISUKWA, CINDALI AND CILAMBYA

Atikonda Akuzike Mtenje-Mkochi¹

Abstract

The paper discusses phonological micro-variation in Cisukwa, Cindali and Cilambya and how it can be accounted for by the diachronic process of spirantisation. The paper demonstrates that variation exists in SuNdaLa's consonant inventories, their sound correspondences and phonotactic constraints. It shows that spirantisation accounts for the occurrence of fricatives in the SuNdaLa varieties but argues that the variation that exists among them is due to the varieties being at different stages of Hinnebusch's (1981) spirantisation process. Cilambya is still at stage one of the process while Cindali and Cisukwa are at stage two. It is also argued that the devoicing of other obstruents in Cisukwa and Cindali may have occurred together with spirant devoicing. Issues of language contact are also discussed as they may be able to account for the reason why Cilambya diverges from the other two varieties.

Keywords: Cisukwa, Cindali, Cilambya, variation, phonology, spirantisation

1. Introduction

This paper discusses the role of spirantisation in explaining phonological micro-variation in Cisukwa, Cindali and Cilambya which are referred to elsewhere (cf. Mtenje, 2016) under the term SuNdaLa. Cisukwa (M202²), Cindali (M301) and Cilambya (M201B) are closely related varieties spoken in Malawi, Tanzania and Zambia. The analysis that is provided in this paper is for the varieties spoken in Malawi, particularly in Chitipa district of the northern region of the country. Other languages spoken in the area include Cinyiha (M23), Cinamwanga (M22), Cimambwe (M14), Cibemba (M42), Citumbuka (N21) and Kyangonde (M31D).

In their language mapping survey, conducted in 2006, the Centre for Language Studies (CLS) at the University of Malawi – on the basis of a presumed mutual intelligibility as well as selected shared linguistic features in the lexicon and phonology – grouped the three varieties together as one language. Similarly, Mtenje (2016), further provides evidence for an analysis that argues that the varieties are on a dialect continuum. She argues that a high percentage of the shared lexical items, phonological and morpho-syntactic properties are evidence in support of the dialect continuum position. It should be noted, however, that, in sharp contrast to this linguistic classification, the speakers of these varieties insist that they are distinct languages (CLS, 2006).

¹ Malawi University of Science and Technology. Limbe, Malawi. Email: amkochi@must.ac.mw

² The codes that have been used in this paper appear in the New Updated Guthrie list, a referential classification of the Bantu languages by Jouni Filip Maho.

The paper sets out to do the following: i) analyse phonological micro-variation in Cisukwa, Cindali and Cilambya and in doing so provide insights into the areas in which closely related varieties in a particular geographic space exhibit variation and change; and ii) discuss how spirantisation can be used to account for the phonological variation discussed in i).

Spirantisation is a diachronic process that involves the change of stops into fricatives in environments where they precede the vowels /i/ and /u/. Schadeberg (1995) uses geographical and areal factors to explain why some languages underwent spirantisation while others did not, and also why there are differences in the stages represented by the different languages. Janson (2007) also provides an analysis along similar lines. Both scholars note that the Bantu area is a multilingual space which enables speakers to transfer elements from one language to another. Nurse (1988, 1999), Nurse and Park (1988), Nurse and Phillipson (2003), and Labrousse (1999) have made groupings of the Eastern Bantu languages spoken in the 'Corridor' between Lakes Nyasa (Malawi) and Tanganyika. Nurse (1999) placed Cindali in the Nyakyusa group together with Nyakyusa, Nkonde and a number of other varieties (probably including Cisukwa because it is a close dialect of Cindali). He also has another grouping known as the South Western Tanzania group which includes Nyika and Mwika groupings. In the Nyika group, there is Lambya, Tambo, Nyiha, Malila, Safwa while the Mwika group has Pimbwe, Fipa, Rungu, Mambwe, Wanda, Namwanga, Iwa (and other varieties found in Zambia). Nurse (1999) further makes two major groupings based on evidence from spirantisation and he argues that the ancestors of the languages represented these two groupings. The first group consists of Great Lakes, Kilimanjaro-Taita, North East Coast, Southern Tanzania Highlands, Rufiji-Ruvuma, South West Tanzania, Nyakyusa and Kilombero and this combines with south and west of East Africa group to form one group. The second group has ancestors from Central Kenya, West Tanzania, Langi and Mbugwe and Northern Mozambique.

Of interest to this paper is the indication that the South Western Tanzania cluster (which includes Lambya) and the Nyakyusa group which includes Cindali and probably Cisukwa had common ancestors. Mtenje-Mkochi (forthcoming) has also indicated that SuNdaLa speakers originated from a common area - Tanzania. From the literature (cf. Kalinga, 1978; and Phiri, Kalinga and Bhila, 1992) and the narratives of the SuNdaLa speakers, it can be postulated that the speakers were clans of one cluster of people who came from Ubena and Ukinga in Tanzania and moved into present day Northern Malawi.

The Lambya (speakers of Cilambya) founded the Ulambya kingdom and are situated south of Misuku hills. The Ndali (speakers of Cindali) and the Sukwa (speakers of Cisukwa) settled in the Misuku hills. These areas were already occupied by other inhabitants. Kalinga (1978) states that in Ulambya, the Mwaulambya (clans of Lambya speakers) found the Sikwese. In the Misuku hills, the Msukwa found the Silumbu and the Simwayi who

had earlier migrated from the northwest, probably from northern Unyaha.

The paper therefore argues that the phonological micro-variation exhibited in SuNdaLa can be attributed to the diachronic process of spirantisation that occurred in the language groupings spoken in the language corridor. Issues of spirant devoicing and language contact are also discussed to account for some variations. The analysis of the micro-variation in these varieties will be a point of departure for further studies concerning the relationship among other languages within the corridor that have been linked to the SuNdaLa, for instance, Nyika, Nyakyusa and Kyagonde. The paper is structured as follows: Section 2 explains the methodology of the paper; Section 3 discusses phonological micro-variation in Cisukwa, Cindali and Cilambya; Section 4 discusses spirantisation as an explanation to the variation presented in Section 3; and Section 5 provides concluding remarks.

2. Methodology

Data used for the analysis were collected from elicitation sessions from 5 native speakers of each of the SuNdaLa varieties. The speakers were purposively sampled because the researcher, her assistant or a traditional authority in the village knew the speakers of a particular SuNdaLa variety. Of the five speakers for each variety, there were 2 female and 2 male speakers and 1 person who was consulted for clarifications. Data were collected mainly in the Chitipa district.

The data collection tools included a modified version of the Swadesh 100 Word List (Swadesh, 1955) and the SIL Comparative African Wordlist (Snider and Roberts, 2006). The lists include, among others, nouns such as kinship terms, food items, animals, body parts and plants. The word lists comprised what are generally considered basic terms. Phonological phenomena were examined to determine similarities and differences in phonology. Secondly, direct elicitation sessions based on the Everett (2012) phonological questionnaire were also employed.

3. Phonological Micro-Variation in Cisukwa, Cindali and Cilambya

Phonological micro-variation in Cisukwa, Cindali and Cilambya is exhibited in the consonant inventories, correspondence patterns and phonological processes in the environments of nasal-consonant sequences.

3.1 Variation in Consonant Inventories

The Proto-Bantu (PB) consonant inventory as reconstructed by Meeussen (1967, p. 82) had only 11 consonants: “/p/, /b/, /t/, /k/, /c/, /d/, /j/, /g/, /m/, /n/ and /ɲ/”. Reference is made to Proto-Bantu in order to show some of the changes that have occurred between Proto-Bantu sounds and those found in the present day SuNdaLa varieties. Present day Bantu languages have remnants of this Proto-Bantu system, but some modifications have been made and new sounds have been added. The SuNdaLa consonant inventories

vary from PB in that they have additional fricatives. SuNdaLa also has labialised and palatalised consonants (cf. Section 3.3) which are not found in PB. The most prominent variation concerning the consonant inventories of the SuNdaLa varieties is that while both Cisukwa and Cindali do not have voiced counterparts of some consonants (for instance stops, fricatives and affricates), they are attested in Cilambya. Cisukwa and Cindali, therefore, do not have the voiced sounds /b/, /d/ and /g/ that were reconstructed for PB. A detailed discussion making reference to spirantisation and language contact in order to account for the variation patterns is presented in section 4.

As a consequence of the variation mentioned above, among the three SuNdaLa varieties, Cilambya has the largest inventory (22 simple consonants). Cisukwa has 16 simple consonants while Cindali has 17 simple consonants (the variety has an additional consonant /ʃ/ that is not attested in Cisukwa and Cilambya). In section 3.3, the paper discusses labialised and palatalised consonants as additional consonants to the SuNdaLa phonemic inventories. We will now discuss the consonant inventories of the individual SuNdaLa varieties.

3.1.1 Consonant Inventory for Cisukwa

As mentioned above, 16 consonants, which spread across seven places of articulation, are identified in this variety. The glottal fricative /h/ was not included in Mtenje (2010) for it was missed out in her analysis at that time. However, it is now added in Figure 1 below:

	bilabials	labio-dentals	alveolars	palatals	velars	labio-velars	glottals
stops	p		t		k		
nasals	m		n	ɲ	ŋ		
fricatives	β	f	s		ɣ		h
affricates				tʃ			
approximants				j		w	
laterals			l				

Figure 1: The Cisukwa Phonemic Chart (Mtenje, 2016, p. 46)

Except for the fricatives /ɣ/ and /β/, Cisukwa does not have phonemic voiced stops, voiced fricatives or affricates in its inventory. The voiced sounds that are present are approximants and nasals. Voiced stops only appear after nasals because of the process of post-nasal stop voicing.

3.1.2 Cindali consonant inventory

The consonant inventory for Cindali differs from that of Cisukwa since it has an additional alveo-palatal sound /ʃ/ (thus bringing the total number of simple consonants to 17) as shown below:

	bilabials	labio-dentals	alveo-lars	alveo-palatals	palatals	velars	labio-velars	glot-tals
stops	p		t			k		
nasals	m		n		ɲ	ŋ		
fricatives	β	f	s	ʃ		ɣ		h
affricates					tʃ			
approxi-mants					j		w	
laterals			l					

Figure 2: The Cindali Phonemic Chart (Mtenje, 2016, p. 46)

It can be seen from the chart that Cindali does not have voiced stops, fricatives or affricates apart from the fricative /ɣ/ and /β/.

3.1.3 Cilambya consonant inventory

The Cilambya consonant inventory is larger than the inventories of Cisukwa and Cindali. It has 22 consonants while Cisukwa has 16 and Cindali has 17. This is because unlike in Cisukwa and Cindali, Cilambya has voiced stops and voiced fricatives. This is illustrated below:

	bilabi-als		labio-dentals		alveolars		palatals	velars	labio-velars	glottal
stops	p	b			t	d		k	g	
fricatives		β	f	v	s	z		ɣ		h
affricates							tʃ	dʒ		
nasals	m				n		ɲ	ŋ		
approximants							j		w	
laterals					l					

Figure 3: The Cilambya phonemic chart (Mtenje, 2016, p. 47)

It can be observed from the three inventories that Cisukwa and Cindali have inventories that are more similar to each other than they are to that of Cilambya.

3.2 Sound Correspondences within SuNdaLa

The differences in the phonemic inventories can also be seen through sound correspondences. In some environments where Cisukwa and Cindali have the voiceless stops /p/ and /t/, Cilambya has voiced stops /b/ and /d/, respectively. However, lexical items with such correspondences are rare.

Furthermore, where Cisukwa and Cindali use the fricative /f/, the voiced fricative /v/ sometimes occurs in Cilambya. There is also a three-way correspondence of the fricative /s/ in Cisukwa, /ʃ/ in Cindali and /z/ in Cilambya.

The voiced velar stop /g/ in Cilambya corresponds in some cases to the bilabial fricative /β/ in Cisukwa and Cindali. The correspondence of the voiceless stop /k/ in Cisukwa and Cindali and the voiced stop /g/ in Cilambya was not attested in the data. However, /g/ also occurs only rarely in Cilambya and in Nasal Consonant (NC³) clusters. Examples illustrating these correspondences are given below.

3.2.1 /p/ and /b/ correspondence

Only one lexical item was found in the data showing the correspondence between /p/ and /b/, namely *puluk-a* with an initial voiceless bilabial stop /p/ for the verb ‘fly’ for Cisukwa and Cindali which in Cilambya is *buluk-a* with a voiced bilabial stop /b/.

3.2.2 /t/ and /d/ correspondence

There are only two examples provided in (1) below which show the correspondence of the sounds /t/ in Cisukwa and Cindali and /d/ in Cilambya. The sound /d/ is also very rare in Cilambya and occurs mainly in NC clusters.

(1) Cisukwa, Cindali	Cilambya	English gloss
<i>túβi</i>	<i>dúβi</i>	‘ram’
<i>túmul-a</i>	<i>dúmul-a</i>	‘cut’

3.2.3 /s/, /ʃ/ and /z/ correspondence

There is a three-way correspondence of the voiceless alveolar fricative /s/ of Cisukwa, the voiceless palatal-alveolar fricative /ʃ/ of Cindali and the voiced alveolar fricative /z/ of Cilambya. Table 1 below provides examples for this common sound correspondence among the varieties. The relevant sounds are shown in bold.

Table 1: The Correspondence of /s/, /ʃ/ and /z/

Cisukwa	Cindali	Cilambya	English gloss
<i>u-mw-éesi</i> AUG-1-moon	<i>u-mw-ééʃi</i> AUG-1-moon	<i>u-mw-éezi</i> AUG-1-moon	‘moon’
<i>ii-m-busi</i> AUG-9-goat	<i>ii-m-buʃi</i> AUG-9-goat	<i>ii-m-buzi</i> AUG-9-goat	‘goat’
<i>ís-i</i> 9DC-DEM	<i>íʃ-i</i> 9DC-DEM	<i>íz-i</i> 9DC-DEM	‘this’

³ The following abbreviations are used in this study: NC: nasal consonant, CG: consonant glide, AUG: augment, PR: phonetic representation, UR: underlying representation, DC: demonstrative concord, DEM: demonstrative.

<i>u-ku-sílik-a</i> AUG-15-faint	<i>u-ku-ŷílika</i> AUG-15-faint	<i>u-ku-zílik-a</i> AUG-15-faint	‘to faint’
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3.2.4 /f/ and /v/ correspondence

Another common correspondence observed in SuNdaLa is that of Cisukwa and Cindali’s voiceless labiodental fricative /f/ and Cilambya’s voiced labiodental fricative /v/. Examples are provided in Table 2 below:

Table 2: The Correspondence between /f/ and /v/

Cisukwa	Cindali	Cilambya	English gloss
<i>u-mú-ŷimba</i> AUG-1-corpse	<i>u-mú-ŷimba</i> AUG-1-corpse	<i>u-mú-viimba</i> AUG-1-corpse	‘corpse’
<i>i-ŷi-lóombe</i> AUG-8-maize	<i>i-ŷi-lóombe</i> AUG-8-maize	<i>i-vi-lóombe</i> AUG-8-maize	‘maize’
<i>ii-n-déŷu</i> AUG-9-beard	<i>ii-n-déŷu</i> AUG-9-beard	<i>ii-n-dévu</i> AUG-9-beard	‘beard’
<i>a-má-ŷi</i> AUG-6-faeces	<i>a-má-ŷi</i> AUG-6-faeces	<i>a-má-vi</i> AUG-6-faeces	‘faeces’

3.2.5 /g/ and /β/ correspondence

The voiced velar stop /g/ in Cilambya can also correspond to the bilabial fricative /β/ in Cisukwa and Cindali as shown in the Table below:

Table 3: The Correspondence of /g/ and /β/

Cisukwa, Cindali	Cilambya	English gloss
<i>u-kú-βa</i> AUG-15-fall	<i>u-kú-gwa</i> AUG-15-fall	‘to fall’
<i>u-mú-βosi</i> AUG-1-old person	<i>u-mú-gosi</i> AUG-1-old person	‘old person’

It can be seen from the correspondence patterns presented above that, except for the /s/, /ʃ/ and /z/ pattern of Cisukwa, Cindali and Cilambya respectively, Cisukwa and Cindali have similar correspondences which vary from those found in Cilambya because the two varieties have inventories which are closer to each other than to the inventory of Cilambya.

Sound correspondences have also been observed in other studies of Bantu dialects or closely related languages. Downing and Mtenje (2017, pp. 44-46), for instance, illustrate sound correspondences between the dialects of Chichewa (N31) – a language spoken in Malawi where the SuNdaLa varieties are also spoken. They note that there is a correspondence of the sounds /ts/, /tʃ/ and /s/, and /dz/, /dʒ/ and /z/ among the standard variety of Chichewa, Nkhotakota dialect and Chiradzulu and Zomba dialects respectively. This is illustrated in the examples in Table 4 below:

Table 4: Correspondences in the Dialects of Chichewa

Standard Chichewa	Nkhotakota dialect	Chiradzulu/Zomba dialect	English gloss
<i>tsiiku</i>	<i>tʃiiku</i>	<i>siku</i>	‘day’
<i>tsaamba</i>	<i>tʃaamba</i>	<i>saamba</i>	‘leaf’
<i>dzuulo</i>	<i>dʒuulo</i>	<i>zuulo</i>	‘yesterday’
<i>dzina</i>	<i>dʒina</i>	<i>zina</i>	‘name’

From the Chichewa data in Table 4 above, it can be seen that wherever the sound /ts/ appears in Standard Chichewa, the Nkhotakota dialect has the sound /tʃ/ and the Chiradzulu/Zomba dialect has the sound /s/. In cases where the Standard dialect has the sound /dz/, the Nkhotakota dialect has the sound /dʒ/ while the Chiradzulu/Zomba dialect has the sound /z/.

Trask (1996) argues that the existence of systematic correspondences provides powerful support for a sound change hypothesis and that languages with these correspondences are likely to be genetically related. Trask goes on to argue that languages that have systematic sound sequences had a common ancestor which had the same sounds that have changed regularly but differently in each language. The sound correspondences provided in this section seek to demonstrate that these varieties are closely related and derive from the same ancestor. Furthermore, the correspondences show the synchronic variations that are exhibited among these closely related languages. In Mtenje-Mkochi (forthcoming), it is shown that historical evidence connects the speakers of the three varieties as coming from Tanzania and as having migrated into northern Malawi. Therefore, it can be proposed that the varieties have a lot of similarities and systematic differences as a result of language change. It is also argued in that paper that some of the variations could be attributed to contact with other neighbouring languages.

In section 4, the paper attempts to account for some of the variation found in relation to consonant inventories by looking at a number of language change factors arising from spirantisation and language contact. In the next section, however, the paper highlights and discusses labialised and palatalised segments and their correspondence patterns and the variation that is exhibited among the three varieties.

3.3 Complex Segments

Cisukwa, Cindali and Cilambya have palatalised and labialised counterparts of the consonants presented in sections 3.2.1 to 3.2.4 above. These include /p^j/, /p^w/, /β^w/, /t^j/, /t^w/, /k^w/, /s^w/, /l^w/, /l^j/ /m^w/, /m^j/, /n^w/, /f^j/, /f^w/ in all the SuNdaLa varieties. /s^j/ in Cisukwa, /k^j/ in Cindali and /v^w/, /v^j/, /z^j/ and /z^w/ in Cilambya. /b^w/ is attested only in the word /bwana/ in all SuNdaLa varieties, but it is probably a borrowing from Kiswahili. Kiswahili is in close contact with the SuNdaLa varieties since Chitipa district where the SuNdaLa varieties are found borders with Tanzania where Kiswahili is spoken. There

was only one example in the data of /kʲ/ in Cindali, and this segment is not attested in the other varieties. The segments /gʷ/, /dʷ/ and /dʸ do not exist in Cilambya even though the unpalatalised and unlabialised counterparts are found in the consonant inventory.

The palatalised and labialised segments discussed in this section also show particular correspondences. For instance, in some contexts /fʷ/ in Cisukwa and Cindali corresponds with /vʷ/ in Cilambya. /sʲ/ in Cisukwa also corresponds with /ʃ/⁴ in Cindali and /zʲ/ in Cilambya. There is also a correspondence of /f/ in Cisukwa and Cindali with /vʲ/ in Cilambya. These correspondence patterns are presented in Tables 5, 6 and 7.

/fʷ/ and /vʷ/ correspondence

Consider the examples in Table 5 below. In the words where there is /fʷ/ in Cisukwa and Cindali, in Cilambya it occurs as /vʷ/. For instance, the word *ijʷiifʷi* ‘mud wasp’ in Cisukwa and Cindali has the sound /fʷ/ but in Cilambya it is attested as *ivʷiivwi* with the sound /vʷ/.

Table 5: /fʷ/ and /vʷ/ correspondence

Cisukwa	Cindali	Cilambya	English gloss
<i>i-fʷiifʷi</i> AUG-Ø-mud wasp		<i>i-vʷiivwi</i> AUG-Ø-mud wasp	‘mud wasp’
<i>fʷaal-a</i> dress-FV		<i>vʷaal-a</i> dress-FV	‘dress’

Correspondence involving /sʲ/, /ʃ/ and /zʲ/

Table 6 shows the correspondence of the sounds /sʲ/, /ʃ/ and /zʲ/ that occur in Cisukwa, Cindali and Cilambya respectively.

Table 6: Correspondence of /sʲ/, /ʃ/ and /zʲ/

Cisukwa	Cindali	Cilambya	English gloss
<i>u-ku-kapʲsʲ-a</i> AUG-15-blink-FV	<i>u-ku-kapʲʃ-a</i> AUG-15-blink-FV	<i>u-kukapʲzʲ-a</i> AUG-15-blink-FV	‘to blink’
<i>u-kw-itʲsʲ-a</i> AUG-15-call, invite-FV	<i>u-kw-itʲʃ-a</i> AUG-15-call, invite-FV	<i>u-kw-itʲzʲ-a</i> AUG-15-call, invite-FV	‘to call, invite’
<i>u-ku-palʲsʲ-a</i> AUG-15-thank,praise-FV	<i>u-ku-palʲʃ-a</i> AUG-15-thank, praise-FV	<i>u-ku-palʲzʲ-a</i> AUG-15-thank, praise-FV	‘to thank, praise’

4. Although on the surface /ʃ/ does not look like a palatalised consonant, it is underlyingly /ʃʲ/, but in a hiatus environment, the vowel gets deleted instead of being palatalised like its counterparts. This is because of phonotactic restrictions that disallow two palatal consonants.

<i>u-ku-longósʃ-a</i> AUG-15-lead, guide-FV	<i>u-ku-longóʃ-a</i> AUG-15-lead, guide-FV	<i>u-ku-longóʒ-a</i> AUG-15-lead, guide-FV	‘to lead, guide’
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/fʃ/and /vʃ/ correspondence

The examples provided in Table 7 below are of morpheme concatenation resulting in secondary articulation. The first example is the result of the combination of the noun class prefixes *fi-* and *vi-* in Cisukwa/Cindali and Cilambya respectively and the noun stem *éeni* ‘forehead’. While the remaining two examples are combinations of *fi-* (for Cisukwa and Cindali) and *vi-* (for Cilambya) with the agreement markers for demonstratives for the third person plurals. These demonstrative markers are *i* and *o*. The forms undergo secondary articulation because the stems and markers that follow them, i.e., *eeni*, *i* and *o* are all vowel initial and, hence, create a hiatus situation. Secondary articulation is done to ‘repair’ the vowel vowel sequence.

Table 7: /fʃ/and /vʃ/ correspondence

Cisukwa, Cindali	Cilambya	English gloss
<i>i-fʃ-éeni</i> AUG-8-forehead	<i>i-vʃ-éeni</i> AUG-8-forehead	‘forehead’
<i>ifʃ-i</i> 8DC-DEM	<i>ivʃ-i</i> 8DC-DEM	‘these’
<i>ifʃ-o</i> 8DC-DEM	<i>ivʃ-o</i> 8DC-DEM	‘those’

The examples of correspondences in Tables 5, 6 and 7 show similar patterns as those of the simple consonants (i.e., /f/ and /v/, /s/, /ʃ/ and /z/) discussed above. In other words, where /f/ in Cisukwa and Cindali corresponds with Cilambya’s /v/, /fʃ/ and /fʷ/ in Cisukwa and Cindali also correspond with Cilambya’s /vʃ/ and /vʷ/ respectively. Furthermore, while the simple consonant /s/ in Cisukwa corresponds with Cindali’s /ʃ/ and Cilambya’s /z/, the palatalised /sʲ/ of Cisukwa corresponds with /ʃ/ of Cindali and /zʲ/ of Cilambya.

The correspondence patterns of the palatalised and labialised consonants are further evidence that Cisukwa and Cindali are closer to each other than they are with Cilambya. Except for the three-way correspondence of the sounds /sʲ/, /ʃ/ and /zʲ/, we can see that Cisukwa and Cindali behave similarly with the same sounds (/fʷ/ and /fʃ/) corresponding with Cilambya’s /vʷ/ and /vʃ/. In the next section we discuss variation in NC sequences found in the varieties.

3.4 Variation in NC Sequences

Variation in SuNdaLa also exists in the environment of a nasal-consonant sequence. The processes of post-nasal stop voicing, post-nasal stop aspiration and nasal deletion attest to these variations. Post-nasal stop voicing applies

in Cisukwa and Cindali while Cilambya exhibits the process of post-nasal stop aspiration. Cisukwa and Cilambya also delete nasals before fricatives while this does not happen in Cilambya.

3.4.1 Post-nasal stop voicing

Post-nasal stop voicing, a process where stop consonants which occur after nasals are voiced, is attested in several Bantu languages even those spoken in Tanzania, Zambia and Mozambique - countries that all border with Malawi. These languages include Ciyao (P21) (Ngunga, 2000), Mbunga (P15) (Odden, 2015) and Matuumbi (P13) (Odden, 2015). Ngunga (2000) provides the Ciyao examples *m-busi* ‘goat’ (cf. with *ka-pusi* ‘kitten’), *n-dewu* ‘beard’, (cf. with *lu-tewu*) to show post-nasal stop voicing. When the noun stems are preceded by prefixes that are not nasal, for instance, the noun stem *pusi*, preceded by the prefix *ka*, they begin with a voiceless consonant (/p/, in this case). When the noun prefix is a nasal for instance /n/ in *ndewu*, the stem *dewu* starts with a voiced consonant. In the SuNdaLa varieties, Cisukwa and Cindali have a similar rule and stops in NC sequences always appear voiced. As a result of this process, only voiced NC sequences are allowed in the two SuNdaLa varieties. This rule does not apply in Cilambya, however, where NC sequences which have voiceless obstruents are attested.

The application of post-nasal stop voicing in Cisukwa and Cindali is illustrated in the examples below where noun stems which were originally voiceless become voiced when they follow the nasal prefix of class 10. All forms in (2) are identical in the two varieties; thus, they represent both Cisukwa and Cindali.

(2) Class 11	English gloss	Class 10	English gloss
<i>u-lu-késo</i> AUG-11-ladle	‘ladle’	<i>ii-ŋ-géso</i> AUG-10-ladle	‘ladles’
<i>u-lú-kwi</i> AUG-11-firewood	‘firewood’	<i>ii-ŋ-gwi</i> AUG-10-firewood	‘firewood (pl)’
<i>u-lú-tondwa</i> AUG-11-star	‘star’	<i>ii-n-dondwa</i> AUG-10-star	‘stars’

In the examples above, the noun *u-lú-kwi* ‘firewood’ has the stem *-kwi* with the voiceless stop /k/, which in turn becomes a voiced stop [g] when the nasal noun class prefix /ŋ/ of class 10 is attached to it. Similarly, in *u-lú-tondwa*, ‘star’, the alveolar stop /t/ of the stem *tondwa* becomes voiced through the same process.

3.4.2 Post-nasal stop aspiration

In Cilambya, unlike in Cindali and Cisukwa, stops become aspirated after a nasal. The examples in Table 8 below illustrate this phenomenon.

Table 8: *Cilambya Forms with Post-Nasal Stop Aspiration*

Class 11	English gloss	Class 10	English gloss
<i>u-lú-kama</i> AUG-11-milk	‘milk’	<i>ii-ŋ-k^hama</i> AUG-10-milk	‘milk’
<i>u-lú-paso</i> AUG-11-fence	‘fence’	<i>ii-m-p^h-aso</i> AUG-10-fence	‘fences’
<i>u-lú-konje</i> AUG-11-fishing line	‘fishing line’	<i>ii-ŋ-k^honje</i> AUG-10-fishing line	‘fishing lines’
<i>u-lú-tondwa</i> AUG-11-star	‘star’	<i>ii-n-t^hondwa</i> AUG-10-star	‘stars’

The examples above show that the nouns in class 11 have voiceless stops at the beginning of their stems. When these nouns are paired with a class 10 noun prefix which has a nasal, the stem-initial voiceless stops, become aspirated, hence the change from /k/ to [k^h] in *u-lú-konje* and *ii-ŋ-k^honje* as seen in the data. More examples from the variety showing this process are presented below in Table 9. The forms are compared with the lexical items in Cisukwa and Cindali where post-nasal stop voicing is observed. The paper attempts to explain this diversion of Cilambya in Section 4.

Table 9: *Nouns in Cisukwa, Cindali and Cilambya*

Cisukwa and Cindali	Cilambya	English gloss
<i>ii-ŋ-gwapa</i> AUG-9-arpmit	<i>ii-ŋ-k^hwapa</i> AUG-10-arpmit	‘arpmit’
<i>ii-n-dáamyo</i> AUG-10-problem	<i>ii-n-t^háamyo</i> AUG-10-problem	‘problem’
<i>ii-n-dumi</i> AUG-10-messenger	<i>ii-n-t^humi</i> AUG-10-messenger	‘messenger’
<i>ii-m-bale</i> AUG-9-polygamy	<i>ii-m-p^hale</i> AUG-10-polygamy	‘polygamy’
<i>ii-m-búungu</i> AUG-10-funeral	<i>ii-m-p^húungu</i> AUG-10-funeral	‘funeral’

A comparison of forms from Table 9 shows that Cilambya has post-nasal stop aspiration while Cisukwa and Cindali have a post-nasal stop voicing rule. For instance, the form *ii-ŋ-k^hwapa* ‘arpmit’ in Cilambya has an aspirated [k] that occurs after the nasal while its counterpart in Cisukwa and Cindali *ii-ŋ-gwapa* has the voiced form /g/.

The non-application of post-nasal stop aspiration in Cisukwa and Cindali is expected since aspiration ordinarily applies to voiceless stops and in these two varieties where post-nasal stop voicing applies, the stops are no longer available for aspiration since they have already become voiced. This means that in the interaction of rules available in the environment of NC sequences, post nasal stop voicing appears first in Cisukwa and Cindali and

it bleeds aspiration of the voiceless stop after a nasal. For Cilambya, it is the aspiration process after nasals that occurs first and, hence, bleeds post nasal stop voicing since a voiceless stop that can be voiced is one that is not aspirated. It should be noted that both processes have functional unity in an environment of a nasal and a voiceless unaspirated stop (see Kager, 2004, on functional unity). They have a common goal but have different ways of approaching the goal. Post-nasal stop aspiration can also be observed in other Bantu languages such as Chichewa (Downing and Mtenje, 2017) and Mushunguli (G31) (Odden, 2015).

3.4.3 Nasal consonant deletion before fricatives

In Cindali and Cisukwa, a nasal is deleted when it is followed by a fricative. There are other Bantu languages where this process also occurs, for instance, Ciyao, Siluyana (K31) (Kula, 2002), Kihehe (G62) (Kula, 2002), Lubukusu (K33) (Odden, 2015), and Malawian Citonga (N15) (Mkochi, 2005), among others. Mkochi (2005) provides examples of Malawian Citonga words such *sato* ‘python’, *somba* ‘fish’ which have an underlying nasal prefix that is deleted because of the fricative /s/ which is the initial sound in each of the nouns provided. Examples of this phenomenon in Cisukwa and Cindali are presented in Table 10 below. In order to clearly see the application of the rule, the examples are compared with those where the stem initial consonant is not a fricative, i.e., contexts where the process does not take place⁵.

Table 10: *Cisukwa and Cindali Nouns*

Cisukwa and Cindali nouns with fricatives	Underlying representation	English gloss	Cisukwa and Cindali nouns without fricatives	Underlying Representation	English gloss
<i>iisófu</i> ⁶	/i-N-sófu/ AUG-9-elephant	‘elephant’	<i>iindáfu</i>	/i-N-táfu/ AUG-9-locust	‘locust’
<i>iifuu</i>	/i-N-fu/ AUG-9-hippo	‘hippo’	<i>iingata</i>	/i-N-kata/ AUG-9-headpad	‘headpad’
<i>iisómi</i>	/i-N-sómi/ AUG-9-maggot	‘maggot’	<i>iimbesu</i>	/i-N-pesu/ AUG-9-cockroach	‘cockroach’
<i>iifula</i>	/i-N-fula/ AUG-9-rain	‘rain’	<i>iingalamo</i>	/i-N-kalamo/ AUG-9-lion	‘lion’

As is generally the case in Bantu languages, noun classes 9 and 10 have prefixes which include nasals. These are shown in the examples in the table above in nouns where the nasal is followed by a stop consonant which undergoes post-

⁵ In Nyakyusa, this process affects the class 9/10 nominal prefixes which are underlyingly the palatal *ɲ*, the 1st person singular object prefix, also underlyingly *ɲ* and the nasal in base-final NC sequences where the causative suffix *-i* induces spirantisation. Deletion is, however, blocked when the resultant word is monosyllabic and instead the nasal surfaces as syllabic.

⁶ Augments that underlyingly occur together with a nasal prefix appear as long vowels. In fact, all augments that occur before the nasal prefix are long.

nasal stop voicing as discussed in 3.4.1. Where the nasal prefixes are followed by fricatives and not stops, they are deleted and therefore not realised on the surface. The deletion of nasals before fricatives is not attested in Cilambya as can be seen in the examples in (3) below.

(3) Nasal prefixes followed by fricatives in Cilambya

Cilambya word	Underlying Representation	English gloss
<i>iinzóvu</i>	i-N-zovu AUG-9-elephant	‘elephant’
<i>iimvuu</i>	i-N-vuu AUG-9-hippo	‘hippo’
<i>iinsómi</i>	i-N-somi AUG-9-maggot	‘maggot’
<i>iimvula</i>	i-N-vula AUG-9-rain	‘rain’
<i>iinswi</i>	i-N-swi AUG-9-fish	‘fish’

The forms in (3) above have nasals followed by fricatives. For instance, in *iinzovu* ‘elephant’, the fricative /z/ is preceded by the nasal /n/.

Just as has been seen in the consonant inventories and sound correspondences, the phonological processes in the SuNdaLa cluster also demonstrate micro-variation within the varieties. Firstly, Cisukwa and Cindali have post-nasal stop voicing while Cilambya has the post-nasal stop aspiration rule. Secondly, in situations where a nasal is followed by a fricative, Cisukwa and Cindali delete the nasal while it remains in Cilambya. The variation patterns exhibited by the three varieties show a closer relationship between Cisukwa and Cindali whilst Cilambya is somewhat apart in a number of ways. Section 4 attempts to account for the patterns shown by the three SuNdaLa varieties.

4. The Role of Spirantisation in Phonological Micro-variation of SuNdaLa

In this section, the paper accounts for some of the variations exhibited in the SuNdaLa cluster. In section 3, it was observed that Cisukwa and Cindali have voiceless fricatives, stops and affricates while Cilambya has both voiced and voiceless ones. Based on literature on spirantisation (cf. Schadeberg, 1995; Mpiranya, 1997; Labroussi, 1999; Kula, 2000; Bostoen, 2005; and Janson, 2007) and the consistency of the environments of the sound changes, the paper argues that spirantisation can be used to account for all of the changes observed.

Schadeberg (1995) explains that there are two historical phonological changes that took place between the shift from Proto-Bantu to present day Bantu languages. For some languages, the 7 vowel Proto-Bantu system was

reduced to a five vowel one. The other process involved the change of stops into fricatives in environments where they preceded the vowels /i/ and /u/. Schadeberg (1995, p. 77) notes the following languages concerning the diachronic changes:

- Languages which have undergone neither spirantisation nor the 7-to-5 vowel merger;
- Languages which have undergone spirantisation but not the 7-to-5 vowel merger; and
- Languages which have undergone both spirantisation and the 7-to-5 vowel merger.

The SuNdaLa cluster has undergone the 7-to-5 vowel merger. As a result, all three varieties have five vowel systems. In addition, the cluster has also undergone spirantisation.

Spirantisation in SuNdaLa, as in other Bantu languages, affected the Proto-Bantu plosives /b, p, d, t, and k/ as these sounds were changed into fricatives. Consider the examples in Table 11 below where SuNdaLa varieties are compared with Proto-Bantu sounds (the sound change in SuNdaLa and also the affected sounds in Proto-Bantu are shown in bold).

Table 11: Spirantisation in SuNdaLa

Proto Bantu sound affected	Cisukwa	Cindali	Cilambya	Proto-Bantu ⁷	English gloss
p		<i>ífiyo</i>		<i>*pígò⁸</i>	‘kidney’
b			<i>ukufiimba</i>	<i>*bimb</i>	‘swell’
	<i>umwiifi</i>	<i>umwiifi</i>		<i>*jibi</i>	‘thief’
	<i>ífula</i>	<i>ífula</i>	<i>ímvula</i>	<i>*búdà</i>	‘rain’
	<i>íβiingu</i>	<i>íβiingu</i>	<i>íβiingu</i>	<i>*i-βingvo</i>	‘cloud’
t	<i>músitu</i>	<i>úmuβitu</i>		<i>*títù</i>	‘forest’
	<i>úsiku</i>	<i>úβiku</i>	<i>úβusiku</i>	<i>*bo-tikvo</i>	‘night’
l/d	<i>ukúsima</i>		<i>ukuzimja</i>	<i>*dím</i>	‘to extinguish’
	<i>mbáfu</i>		<i>líβazu</i>	<i>*badu</i>	‘rib’
	<i>indéfu</i>	<i>indéfu</i>	<i>indévu</i>	<i>*dedu</i>	‘beard’
	<i>ukufwáala</i>	<i>ukufwáala</i>	<i>ukuzwáala</i>	<i>*dúad</i>	‘to wear’
k	<i>isiingo</i>	<i>íβiingo</i>	<i>íβiingo</i>	<i>*kíngo</i>	‘neck’

⁷ The Proto-Bantu forms are sourced from the Bastin and Schadeberg (2003) – The BLR3 database – a database with 10,000 entries that are proposed to be Proto-Bantu reconstructions. It is still being updated.

⁸ The asterisks mean that the words are reconstructed Proto-Bantu words and do not occur in any sources.

	<i>iljóosi</i>	<i>iljóofi</i>	<i>iljoosi</i>	<i>*jóki</i>	‘smoke’
	<i>amáfuta</i>	<i>amáfuta</i>	<i>amáfuta</i>	<i>*kúta</i>	‘oil’
	<i>fwa</i>	<i>fwa</i>	<i>fwa</i>	<i>*kú-a</i>	‘die’
	<i>icifuwa</i>	<i>cifuwa</i>	<i>cifuwá</i>	<i>*kúba</i>	‘chest’
	<i>ífupa</i>	<i>ífupa</i>	<i>ífupa</i>	<i>*kúpa</i>	‘bone’
	<i>βóna</i>	<i>βóna</i>	<i>N/A</i>	<i>*gona</i>	‘sleep’
j	<i>ísuwa</i>	<i>ísuwa</i>	<i>ízuwa</i>	<i>*jjoba</i>	‘sun’

Data in the Table above show that the Proto-Bantu sounds /p, b, t, d and k/ underwent some changes in environments where they preceded the vowels /i/ and /u/. Thus, the SuNdaLa varieties belong to the group of languages that underwent both the 7-to-5 merger and spirantisation. The consonant changes are summarized as follows:

/p/ before [i] becomes [f]

/b/ before vowel [i] becomes [f]

/b/ before vowel [i] becomes [β]

/b/ before vowel [u] becomes [f] in Cisukwa and Cindali and [v] in Cilambya

/t/ before vowel [i] becomes [s] in Cisukwa and Cilambya and [ʃ] and Cindali

/d/ before vowel [i] becomes [s] in Cisukwa and Cindali and [z] in Cilambya

/d/ before vowel [u] becomes [f] in Cisukwa and Cindali and [z] and [v] in Cilambya

/k/ before vowel [i] becomes [s] in Cisukwa and Cilambya and [ʃ] in Cindali

/k/ before vowel [u] becomes [f]

One other factor that can be observed in the SuNdaLa data presented in Table 11 is that there are variations in the phonetic outputs of the changes that took place from Proto-Bantu. In cases where the phonetic output was [s] in Cisukwa and Cilambya, in Cindali there is the sound [ʃ]. The second variation is as follows: in some instances, where the phonetic outputs are voiceless fricatives in Cisukwa and Cindali, Cilambya has voiced fricatives. This can be seen in the words *indefu* ‘beard’, *ifuula* ‘rain’, *ukufwaala* ‘to wear’ for Cisukwa and Cindali and *indevu*, *imvula* and *ukuzwala* respectively for Cilambya. Of particular relevance for this paper is the second type of variation in which Cisukwa and Cindali have voiceless fricatives and Cilambya has voiced fricatives.

Janson (2007) presents an areal distribution of the process of spirantisation. He shows that there are some Bantu languages, especially those of the northern part of the Bantu language speaking area, i.e., most of

zones A, B, C and D⁹, that have not taken part in the spirantisation process. There is another group of languages where spirantisation has taken place but the output forms include both affricates and fricatives. This is the case in the central part of the Bantu speaking areas. There is yet another group of languages where spirantisation has taken place and fricatives are only attested as reflexes of the process and the voicing contrast of Proto Bantu is maintained. Most languages in this group are in the area from the Great Lakes to the western coast. There are also other languages which also have fricatives as reflexes, but they have been devoiced. These languages occur from the east coast to the west coast.

Janson (2007) also demonstrates that the phonetic outputs in the present day Bantu languages are not the same. Janson's analysis echoes that of Hinnebusch (1981, p. 38) who notes that there are stages involved in the spirantisation and consonant loss process:

- Stage 1: Spirantisation yields /f, s, v, z/
- Stage 2: Spirant devoicing gives /f, s/
- Stage 3: Spirant weakening: /f, s/ become /h/
- Stage 4: /h/ becomes \emptyset

It could be argued that for SuNdaLa, Cilambya is at stage 1 since it has both voiceless and voiced fricatives. Cisukwa and Cindali which only have voiceless fricatives are therefore at stage 2. These explanations could account for the variation in the fricative sounds of the SuNdaLa varieties.

In section 3, it was noted that the variation of voiced versus voiceless features in SuNdaLa is not only restricted to fricatives but also to stops. In Mtenje (2016), it is argued that although /b/, /d/, /g/, /z/ and /v/ (voiced stops and fricatives) are only found in Cilambya, they are not common except for /z/. It is suggested in this work that Cilambya might at one point have had a phonemic inventory similar to that of Cisukwa and Cindali, i.e., without voiced stops and voiced fricatives and that the synchronic distribution shows that these voiced sounds have not yet been fully integrated. This would therefore account for the observation that Cilambya has only a limited number of lexemes with these sounds.

However, upon closer examination of the process of spirantisation in SuNdaLa and other languages, an analysis which shows that Cisukwa and Cindali had an inventory similar to that of Cilambya seems more plausible. The three varieties would, therefore, once have had fricatives that were both voiced and voiceless. Cisukwa and Cindali moved to stage 2 of the spirantisation process while Cilambya remained at stage 1.

It has been mentioned that apart from having only voiceless fricatives, Cisukwa and Cindali also have voiceless stops. It should be noted that according to Meeussen's (1967) reconstruction, Proto-Bantu contrasted voiced and voiceless stops. This means that, historically, these sounds in Cisukwa and Cindali went through a devoicing process. Nurse (1999) notes

⁹ The zones are as specified in Guthrie (1967/1971).

the relationship between spirant devoicing and general obstruent devoicing. He notes that it is possible that spirant devoicing is closely linked to obstruent devoicing where the voicing contrast of obstruents is removed. This means that when Cisukwa and Cindali went through the process of spirant devoicing, the other obstruents in these languages also became devoiced. Consequently, the inventories of the two varieties no longer had voiced stops, fricatives and affricates. It could also be said though that the fact that voiced stops are rare in Cilambya (even though they are attested), could be an indication that at one point the devoicing of stops began but was not completed. The relationship between spirant devoicing and general obstruent devoicing in SuNdaLa is an area that needs further investigation and analysis.

Language contact phenomena can also be used to explain some of the variation. First, consider the present day language map of SuNdaLa varieties below:

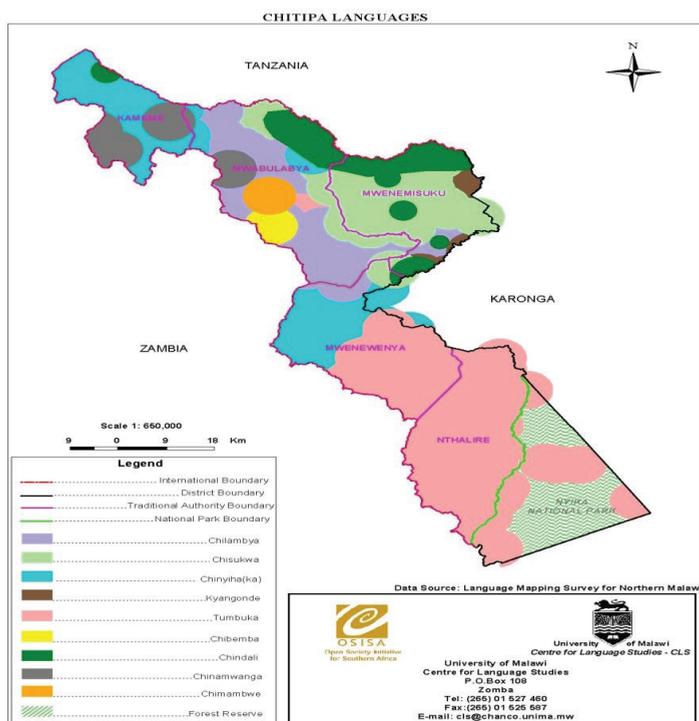


Figure 4: Map of Chitipa district showing Cisukwa, Cindali and Cilambya¹⁰

In their present day location, i.e., Traditional Authority Mwaulambya, the Lambyas are bordered by different language groups than those that are in

10. The map was sourced from the 2006 Centre for Language Studies report for Language Mapping Survey for Northern Malawi.

contact with the Sukwa and the Ndali. Cisukwa and Cindali, which are mostly spoken in the mountains, are secluded from other languages while Cilambya is in contact with more languages.

The language map shows that the Lambya are in contact with more languages than the Sukwa and the Ndali. The Lambya are bordered by the Tumbuka (speakers of Chitumbuka), the Nyiha (speakers of Cinyiha), the Ndali, the Mambwe (speakers of Cimambwe), the Sukwa and the Namwanga (speakers of Cinamwanga). The Ndali are in contact with the Sukwa, partly with the the Ngonde (speakers of Kyangonde) and the Nyiha in the case of the Cindali variety that is spoken away from the Misuku hills. The Sukwa are bordered by the Ndali, and by the Lambya and to a lesser extent the Nyiha. What does this say about the current linguistic status of the three varieties?

It has been already mentioned that when the SuNdaLa clans migrated into Malawi, they encountered other inhabitants who were already living there. Phiri, Kalinga and Bhila (1992, p. 626) observe that:

Cilambya and the language of Kameme are dialects of the indigenous Nyiha while Kyangonde and Kinyakyusa are dialects of the Ngulube peoples' language. In other words, the Mwaulambya and Kameme and their followers were assimilated linguistically while in Ungonde and Unyakyusa the indigenous people were assimilated by the immigrants. Modern Cisukwa is a dialect of Ndali (a linguistic group north of the Songwe) understood by the Nyiha – speakers and relatively easier to learn by the Ngonde than Nyiha proper. Cisukwa thus forms a bridge between the Nyiha and Ngonde languages.

From this quotation, we see that the Lambya who were part of the Ngulube group were assimilated linguistically into the Nyiha when they founded the Ulambya kingdom. A linguistic analysis of the relationship between Chinyiha and Cilambya supports this analysis. A quick examination of Cinyiha shows that apart from sharing most lexical items with Cilambya, the two languages have similar phonological properties and these properties are the ones in which Cilambya diverges with Cisukwa and Cindali. Cinyiha also has both voiced and voiceless fricatives just like Cilambya (cf. Section 3.1). For example, in Cinyiha, there are forms such as *izuwa* 'sun', and *invula* 'rain' which have the voiced sounds /z/ and /v/ respectively. There is also a closer relationship between Cilambya and Cinyiha in other phonological structures, i.e., the presence of both voiced and voiceless stops as well as post-nasal stop aspiration, amongst others.

Cilambya has also been in sustained contact with Citumbuka which also has a voicing contrast in fricatives and stops, and in a number of the same phonological phenomena such as post-nasal stop aspiration. The contact between Cilambya and Citumbuka could therefore have contributed to the maintenance of voicing contrasts in Cilambya while Cisukwa and Cindali which are surrounded by different languages could have been 'free' to make

the natural changes that come with spirantisation.

5. Conclusion

This paper has discussed phonological micro-variation in Cisukwa, Cindali and Cilambya – three closely related varieties spoken in northern Malawi which have not been discussed in detail in previous publications. The paper has demonstrated that the SuNdaLa varieties differ in their consonant inventories, with Cilambya having a larger inventory than Cisukwa and Cindali. Sound correspondences have also been presented to further illustrate the variation patterns found in the languages. Other phonological variations discussed were the patterning of nasal plus consonant sequences. The paper has shown in detail that Cisukwa and Cindali have a process of post-nasal stop voicing while Cilambya has post-nasal stop aspiration instead. Furthermore, Cisukwa and Cindali delete nasals before fricatives while this does not happen in Cilambya.

The phonological patterns discussed in the paper have shown that Cisukwa and Cindali are synchronically closer to each other than they are to Cilambya. The paper attempts to account for some of the variation attested by referring to spirantisation and the contact between Cilambya and other neighbouring languages such as Cinyiha, Chitumbuka and Chichewa. It attributes some of Cilambya's diversion from Cisukwa and Cindali to the varieties being at different stages in Hinnebusch (1981)'s spirantisation process. Cisukwa and Cindali are at stage two of the process and therefore have devoiced fricatives while Cilambya is at stage one with fricatives that have a voicing contrast. It is also argued that the devoicing of other obstruents in Cisukwa and Cindali could have occurred together with the spirant devoicing. In addition, the phonological patterns discussed provide clues of a genetic relationship to an ancestor language.

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