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A PRELIMINARY COMPARISON BETWEEN HIDE AND LAMANG PHONOLOGY

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ABSTRACT

This paper is a preliminary write-up of the Hide phonology. Syllable structure, problems of interpretation, and segmental phonology are treated in this paper. Hide phonology is compared to Lamang phonology which was analyzed by Ekkehard Wolff. Lamang which is spoken in Nigeria, is related to Hide. The comparison sheds light on the Hide phonology.

RESUME

Cet article est la première rédaction de la phonologie sur la langue Hidé. La structure des syllabes, des problèmes de l'interprétation, et la phonologie segmentale sont traités dans l'article. La phonologie de Hidé est comparée à la phonologie de Lamang qui a été analysée par Ekkehard Wolff. Les deux langues, Lamang et Hidé, sont parentées. Lamang est parlée au Nigéria. La comparaison éclaire la phonologie de Hidé.

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ABBREVIATIONS

ART.	article
C	consonant
©	syllabic consonant
DEM ADJ	demonstrative adjective
IDE	ideophone
IMPER PN	impersonal pronoun
INCL	inclusive pronoun
POSS ADJ	possessive adjective
SUBJ	subject
V	vowel
VB	verb
Y	palatalization of the word
1sg	first person singular
2pl	second person plural

Bolding is used for phonemic representations.

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1.0 INTRODUCTION

Hide is the language spoken by approximately 26,000 Hide people who live in the Mayo-Tsanaga Department in the Extreme North Province of Cameroon and by 5,000 people in Nigeria who live in Borno State. This report presents the results of research carried out in Hide from December, 1988 to February, 1990. It is a comparison between Hide phonology and Ekkehard Wolff's analysis of Lamang. In *A Grammar of the Lamang Language (Gwäd Lāmār)*, Wolff states, "The Lamang language (gwäd lāmār) is spoken by approximately 60,000 people in northeastern Nigeria and in adjacent areas of northern Cameroon (where the language and the people are known and referred to by the name 'hide') on and along the western slopes of the Mandara Mountains." (E. Wolff, 1983 : p.7) We considered it important to compare the two phonologies to see similarities and differences since he classified Hide as part of Lamang. In January, 1990, SIL conducted a sociolinguistic survey between Hide, Ngossi, Mabas, and Lamang. The results show that Hide is a different language though related to Lamang. (See Primary Report Section 2.4.)

Hide belongs to the Afro-asiatic phylum and the Central Chadic family under the Western sub branch of Wandala. In the *Atlas Linguistique de l'Afrique Central Alac...* it is classified in zone 1-2 under number 122.

Section 2 briefly presents syllable patterns in Hide. Interpretation problems are treated in Section 3 in which ambiguous consonant clusters and vocalic sequences are treated. Section 4 sets forth the phonemic vowels and consonants.

2.0 SYLLABLE STRUCTURE

Hide has open and closed syllables. One problem encountered immediately is how to interpret phonetic consonant clusters in a syllable which is typical for Chadic languages. There are no unambiguous consonant clusters in Hide. Podoko (J. Swackhamer, 1981), Daba (R. Lienhard and M. Giger, 1986), and Mofu-Gudur (D. Barreteau, 1988) break up phonetic consonant clusters by the insertion of a vowel which is a vocalic transition in slow speech. Labialized consonants and schwa-desegmentation play a role in the interpretation of syllable structure. (See 3.3 and 3.4)

Vowels, syllabic nasals, and syllabic trilled liquids occur as syllabic peaks. The syllable structures are shown in the following table.

(1) Syllable Structures

Syllable Pattern	Example	Gloss	Syllable Pattern of This Example
V	[i]	<i>list marker</i>	V
	[usa]	<i>blood</i>	V.CV
Ç	[ŋ]	<i>what?</i>	Ç
CV	[za]	<i>eat</i>	CV
CVC	[xis]	<i>two</i>	CVC

One syllable pattern that is still ambiguous is VC. There is no evidence in monosyllabic structures, but VC is found word initial in polysyllabic structures.

(2) VC [ufna] *peanut* VC.CV

Wolff (1983) presents two models of analysis for syllable patterns in accordance to his 4 vowel system and 3 + 1 vowel system. Hide syllable structures seem to fit into his 4 vowel system analysis of Lamang. The only questionable pattern (VC) is mentioned above. Reduction of schwa to phonological 0, known as schwa-desegmentalization occurs where there are syllabic sonorants present in initial position in the environment of a non-syllabic sonorant or when both consonants agree in voice.

(3) mətasl [mtai] *cold*
sləpada [ɨpada] *axe*

Hide like Lamang has a tendency to have a vocalic transition between two sonorant consonants.

(4) nəgha [nəya] *see*
pəgha [pəɣa] *pour more than one object*

Wolff prefers the 3 + 1 vowel system, thus eliminating the importance for syllable patterns by using syllabification rules to indicate the insertion of epenthetic and prothetic vowels. (E. Wolff, 1983 : p.56) At this point in time, due to the lack of conclusive data, we cannot reduce Hide to a 3 + 1 system.

3.0 INTERPRETATION PROBLEMS

Five phenomena: pre-nasalized consonants, vocalic sequences, labialization (referred to by Wolff as labiovelarization), schwa-segmentalization, and palatalization will be treated in this section. The first four phenomena help to determine syllable structure.

3.1 Pre-nasalized Consonants

Chadic languages usually treat the pre-nasalized consonants as one phoneme. Lamang has seven pre-nasalized consonants: /mb/, /nd/, /ŋg/, /ŋgw/, /ndz/, /nz/, and /ŋw/. (E. Wolff, 1983) Mofu-Gudur has six pre-nasalized consonants: /mb/, /mgb/, /nd/, /nj/, /ng/, and /ngw/. (D. Barreteau, 1988) In Hide, there are six pre-nasalized consonants: /mb/, /nd/, /ndz/, /nz/, /ng/, and /ngw/. Since there are no unambiguous consonant clusters and other Chadic languages treat them as one phoneme, Hide pre-nasalized consonants will be considered as one phoneme.

(5)	mba waremba	[mba] [wafmba]	herd VB in front of the kitchen
	ndəfiŋ vinda	[ndəfiŋ] [vinda]	finger write
	^Y ndzaghwata	[njəɣwata]	bump into and fall down
	^Y ndzika	[njika]	kind of insect
	nzakwa pərukutunzum	[nzakwa] [pfukutunzum]	live story
	ngərma nguduf	[ŋgɛma] [ŋguduf]	good heart
	ngwa kwalangway	[ŋgwa] [kwalangway]	succeed tools

3.2 Vocalic Sequences

There are no unambiguous vowel sequences in Hide. Vowel sequences that do occur include [i] and [u] as the second member of the sequence. The [Vi] diphthong form occurs as [ei] and [ai]. The examples below show these vocalic sequences.

(6)	sey	[sei]	until-used leave taking
	dayday	[deidei]	in the process of cooking
	say	[sai]	to drink
	zay	[zai]	to eat

In these cases [Vi] will be interpreted as /Vy/ with /y/ acting as a consonant. The lack of unambiguous vowel clusters leads to this conclusion and it does fit the syllable patterns: CV and CVC.

(7)	kumay	[kumai, kumay]	to want
	pelay	[plai, play]	to pay

There are also vowel sequences where [i] precedes [a] as [iV]. [iV] is interpreted as /yV/ with /y/ being a consonant.

(8)	maya	[maya]	hunger
	yaya	[yaya]	gave birth
	xiya	[xiya]	millet
	yaku	[yaku]	produce

The [uV] is interpreted in a similar way. Again for the lack of unambiguous vowel clusters and the adaptation to present syllable patterns, the semi-vowel /w/ is considered a consonant. In rapid speech there is elision of the final [u] when preceded by the approximant [w].

(9)	wuda	[wuda]	a large pot
	wuday	[wudai]	to throw
	wa	[wa]	who?
	luwa	[luwa]	sky
	kinawu	[kinau, kinaw]	how?
	yawu	[yau, yaw]	when?

Wolff (1983 : p. 27) considers y/w neither consonant nor vowel. He gives the feature [-syllabic] to distinguish these semi-vowels from other consonants and vowels. This could also serve Hide as a description, since these semi-vowels occur on the onset or the coda of a syllable.

3.3 Labialization

Labialization is found most frequently in vowel clusters with /i/ and /a/ and rarely before all other vowels. There are no examples with [Cwu].

(10) Cooccurrence of Vowel Phonemes with /w/

Front

/i/	fəlugwi	[flugwi]	elbow
	swit	[swit]	broom

Central

/a/	zwanga	[zwanga]	child, boy
	gwada	[gwada]	speak

Back

[o]	zwada	[zwoda]	to get lost
	xwada	[xoda]	mix

Labialization occurs usually at the onset position of a syllable. It is not constrained to only word initial. It can be word medial as well as word final. V, CV and CVC are the only unambiguous syllable patterns.

Thus, when there are two consonants together because of schwa-desegmentalization and followed by the approximant [w] labializing the previous consonant, a problem of interpretation arises. The approximant [w] is considered a consonant in vowel clusters. Due to the lack of unambiguous consonant clusters, the consonant preceding the [w] is considered labialized. This increases the inventory of phonemes, since a labialized consonant is in contrast with its unlabialized counterpart.

(11) Onset of Syllable

	swit	[swit]	broom
	fəlugwi	[flugwi]	elbow
	kwesida	[kwšida]	newborn baby
	kwerizaku	[kwfizaku]	cry until tears are falling
Medial			
	səkwi	[skwi]	thing
	səkwa	[skwa]	buy or sell 1 object
	ngwa	[ngwa]	succeed
Word Final			
	pitsakw	[pitsakw]	hoe
	ghatalakw	[ɣatalakw]	chicken
	kwitikw	[kwitikw]	very small

Contrast in Distribution

ka	[ka]	2sg SUBJ
kwa	[kwa]	gourd
gha	[ɣa]	2sg POSS ADJ
ghwa	[ɣwa]	water source

The table below shows which phonemes can occur with labialization. Labialization cooccurring with a consonant is marked (+) and (-) is marked where there is not cooccurrence. Labialization occurs with velar stops and fricatives. The consonants [p], [b], and [m] are labialized, but only in loan words.

(12) Cooccurrence of Labialization with Consonant Phonemes

p	b	t	d	k	g	mb	nd	ng	ɓ	ɗ	ts	c	dz	j
-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
f	v	s	z	x	gh	nz	sl	zl	m	n	r	l	y	w
+	+	+	+	+	+	-	-	-	-	-	-	-	-	-

Lamang has labialized velar stops, velar fricatives and velar nasals Wolff (1983). Hide has a larger number of consonants that can be labialized as seen above. All fricatives (inter-dental, alveolar, and uvular) can be labialized.

3.4 Schwa Desegmentalization

Fast speech has created phonetic consonant clusters causing elision of the schwa. Voice seems to play a role in the schwa-desegmentalization. If both consonants have the same voice feature whether voiced or voiceless, the schwa disappears. The schwa is also desegmentalized in the environment of sonorants. In slow speech the schwa is once again inserted thus breaking up ambiguous consonant clusters. Again the lack of unambiguous consonant clusters leads to this conclusion.

(13)	tsekana tsəka	[tskana tska]	have gathered
	sləpada	[ɪpada]	axe

Under Wolff's 4 monophthong system, this same phenomenon takes place, but he opts for the 3 + 1 vowel analysis. He sees there is no need for syllable structure descriptions "...syllabification thus being treated as a pure surface-level phenomenon." (E. Wolff, 1983 : p.55) "This analysis requires explanations for the frequent occurrences of epenthetic and prothetic (i.e., [-seg]) vowels which are being inserted by syllabification rules." (E. Wolff, 1983 : p.56)

3.5 Palatalization

Palatalization can occur as a word level prosody. It affects central vowels in raising and fronting them. /a/ can be realized as [e] or [ɛ]. Alveolar consonants especially fricatives are affected by palatalization at the word level. At this point in time, the palatalized word will be noted by /Y/ at the onset of the word.

Palatalization is weakest at the end of the word where it allows the underlying vowel /a/ to surface. There are categories of palatalized words: complete and partial.

(14) Complete Palatalization

Ydada	[dede]	just right
Ydalawar	[dɛleweʃ]	book
Ycakelak	[čckɛlɛk]	garlic
Yfɛcakw	[fčckw]	small quantity
Yca	[čɛ]	all

Partial Palatalization

Ysada	[šɛda]	witness
Ybəzlagha	[bɛʒɛɣwa]	water carrying pot
Ykeravazla	[kʃɛveʒa]	round
Ynjaghwata	[nʒɛɣwata]	bump into and fall down

4.0 SEGMENTAL PHONOLOGY

Evidence for the phonemic contrasts of the vowels and consonants in Hide will be presented in this section. The surface realization of the phonemes will also be treated in this section to demonstrate how the phonemes were determined.

4.1 Vowels

4.1.1 Surface Vowels

The front and central vowels (non-back) are unrounded, with the exception of [ɤ], while back vowels are rounded. Closeness and openness is not phonemic in nature, but rather openness is conditioned by its environment. There are nine surface vowels in Hide which differs from Lamang which has ten surface vowels. Lamang has [ɨʉ] which Hide does not have and Hide has [ɤ] which is not found in Lamang. The phonetic vowels, known as surface vowels, are shown in the table below.

(15) Lamang Surface Vowels

i	ɨ	ɤ	u
e		ə	o
ɛ		a	ɔ

(E. Wolff, 1983 : p.32)

(16) Hide Surface Vowels

		Front	Central Rounded Unrounded	Back
High	Close Open	i		u
Mid	Close Open	e ɛ	ɤ ə ʌ	o
Low	Close Open		a	

The circles in the table show allophones. The surface vowels can be reduced to six vowels as some of the phonetic vowels are considered allophones. (See Section 4.1.2 Phonemic Contrast of Vowels.)

[4.1.1]

(17) 6 Vowel System

	Front	Central	Back
High	i		u
Mid	e	e	o
Low		a	

Most linguists working on Chadic languages reduce the vowels to a 4 or 3 vowel system. It seems highly probable that Hide can be reduced to a 4 vowel system in view of word-level palatalization.

(18) Hide 4 Vowel System

	Front	Central	Back
High	i		u
Mid		e	
Low		a	

(19) Lamang 3 + 1 Vowel System

	[-back]	[+back]		[-back]	[+back]
[+high]	i	u	+	↑	→
[-high]	a				

(E. Wolff, 1983 : p. 33)

His 3 + 1 Vowel System includes /i/, /a/, /u/ and /aY/ (3 vowels and a diphthong). The /aY/ is always realized as [e] or [o]. His analysis finds /aY/ only occurring word final in polysyllabic structures. [o] and [e] appear word final in Hide in monosyllabic structures as well as in non-final syllables in polysyllabic structures.

(20)	Yca	[če]	all
	Yrəka	[fke]	gives sense of invitation
	Ydada	[dede]	just right

There seems to be too many holes or problems in trying to make Hide fit into a 3 + 1 Vowel System. Languages are dynamic and they need to be treated in that light. Wolff presented alternative solutions (4 Vowel and 3 + 1 Vowel Systems), because "...the vowel system of Lamang must be seen as dynamically developing from one with few underlying vowels to one with a greater number of distinctive vowel segments, as a result of a

still ongoing process involving the phonologizing of distributional variants..." (E. Wolff, 1983 : p. 46)

4.1.2 Phonemic Contrasts of Vowels

The phonemic vowels and conditions of their surface realization will be presented in this section. There are 4 vowels in Hide as presented above. The position of the phonemes in a syllable will be indicated. Evidence for phonemic contrasts will be given in minimal pairs wherever possible, otherwise contrast in analogous environments will be used.

The Phoneme /i/

The phoneme /i/ is the front unrounded open vowel [i]. The phoneme /i/ can be found morpheme initial, medial, and final.

(21) Position in a Syllable

Initial

imi	[imi]	water
iri	[iʃi]	eye
ingi	[ingi]	Give it to me!
		polite form

Medial

gita	[gita]	today
ghita	[ɣita]	half
sigā	[siga, šiga]	cooking pot

Final

ci	[či]	3sg SUBJ
vi	[vi]	I do not want
ni	[ni]	3sg POSS ADJ

Contrastive Pairs

(22) i/a

ni	na	kiʔa	kaʔa
[ni]	[na]	[kiʔa]	[kaʔa]
3sg POSS ADJ	this	small	he, she said
imi	ima	ingi	angi
[imi]	[ima]	[ingi]	[angi]
water	year	Give it to me!	yes

(23) i/u

mimi	mu	xiʔi	xuʔa
[mimi]	[mu]	[xiʔi]	[xuʔa]
in the water	1pl SUBJ INCL	kind of	grind
		grasshopper	
kiʔa	uʔa		
[kiʔa]	[uʔa]		
small	milk, breast		

(24) i/ə

xida	xədi
[xida]	[xədi]
wise	xədi

The phoneme /a/

The phoneme /a/ is most commonly realized as central, unrounded, low phoneme [a]. It can have surface realizations of [ʌ, o, e, and ɛ]. The phoneme /a/ is realized as [ʌ] if followed by /ng/ in a CVC syllable. There is only one example of this phonetic realization.

(25) tang [tʌŋ] 3 POSS ADJ

The variants [e] and [ɛ] are allophones of /a/ when conditioned by palatalization as a word level prosody.

(26)	Ybəzlaghwa	[bəʒəgwa]	water carrying pot
	Yfəcakw	[fɔ̄ɛkw]	small quantity
	Yndang	[ndɛŋ]	one - used in counting double digit numbers

The phoneme /a/ is realized as [o] in non-final syllables under the influence of labialization or vowel harmony. Native speakers can pronounce words with [o] as [o] or [Cwa], a labialized consonant followed by [a]. Fast speech seems to reduce the labialization of the consonant to a back rounded vowel.

(27) Labialization

ghwayak	[goyak]	cloud
gwayaf	[goyaf]	go together
xwada	[xoda]	mix

Vowel Harmony

Vowel harmony in Hide works from right to left as in Lamang. (E. Wolff, 1983) Vowel harmony causes /a/ to become [o] if it occurs before a sonorant consonant that is followed by [u].

(28)	maghzu	[moʁzu]	<i>Moghzu - proper name</i>
	kandruku	[kondʁuku]	<i>non-alcoholic millet drink</i>

The phoneme /a/ can be found morpheme initial, medial, and final.

(29) Position in a Syllable

Initial

angi	[aŋgi]	<i>yes</i>
aʔa	[aʔa]	<i>no</i>
ama	[ama]	<i>but</i>

Medial

sagha	[saʁa]	<i>come</i>
dzagha	[dzʁa]	<i>home</i>
rada	[rada]	<i>scorpion</i>

Final

mbega	[mbega]	<i>mouse</i>
vəga	[vəga]	<i>body</i>
xəga	[xəga]	<i>house</i>

Contrastive Pairs

(30) a/ə

mbaday	mbəday
[mbaday]	[mɛdəy]
<i>to walk</i>	<i>to count</i>
tsakala	tsəkanata
[tsakala]	[tskanata]
<i>group</i>	<i>sweep</i>

(31) a/u

dali	guli	aʔa	uʔa
[dali]	[guli]	[aʔa]	[uʔa]
<i>sauce</i>	<i>also</i>	<i>no</i>	<i>milk, breast</i>
la	lu		
[la]	[lu]		
<i>go</i>	<i>IMPER PN</i>		

a/i see i/a

The Phoneme /u/

The phoneme /u/ is realized as the high back rounded vowel [u] and also, as

mid back rounded vowel [o]. /u/ occurs morpheme initial, medial, and final. There seems to be free fluctuation between [u] and [o] word final. The same speaker pronounces words ending with [u] as [u] or [o].

(32)	yu daxaghu	[yu,yo] [daxaɣu, daxaɣo]	1sg SUBJ yesterday
------	---------------	--------------------------------	-----------------------

(33) Position in a Syllable

Initial

uʔa	[uʔa]	milk, breast
uva	[uva]	cat
usa	[usa]	blood

(34) Medial

mutsa	[mutsa]	have
sula	[sula]	grill
luwa	[luwa]	sky

(35) Final

yu	[yu]	1sg SUBJ
gu	[gu]	goat
vu	[vu]	fire

(36) Contrastive Pairs

u/ə

ghuni	səni	kuta	kədaʔa
[ɣuni]	[sni]	[kuta]	[kdaʔa]
2pl POSS ADJ	I know	animal skin	last year

u/i see i/u

u/a see a/u

The phoneme /ə/

The phoneme /ə/ is realized as the mid central unrounded vowel [ə] and mid front rounded vowel [œ]. [œ] seems to be in free fluctuation with [ə]. This is substantiated by speakers pronouncing the same words with the two different sounds.

(37)	zleghaf	[ɣəɣaf, ɣəɣaf]	<i>received</i>
	zleŋga	[ɣəŋga, ɣəŋga]	<i>to be afraid</i>
	dərmək	[dʁmək, dʁmək]	<i>hundred</i>

The phoneme [ə] is found only morpheme medial. In slow speech the schwa will appear, breaking up consonant clusters while in rapid or normal speech the schwa is desegmentalized. Also, [ə] is a vocalic transition between two consonants with the second having a sonorant feature. In Wolff's 4 vowel system description, he describes these two phenomena occurring in Lamang. (E. Wolff, 1988) The following Hide examples show [ə] as a vocalic transition.

(38)	təghas	[təɣas]	<i>eight</i>
	nəgha	[nəɣa]	<i>see</i>
	pəgha	[pəɣa]	<i>pour</i>

4.2 Consonants

4.2.1 Phonetic Realization of Lamang Consonants

"Lamang has 37 distinctive non-vowel segments, i.e., 34 consonantal segments plus 3 'glides'." (E. Wolff, 1983 : p. 25) This differs from Hide in that Lamang has /ŋ/ and /ŋw/. There are fewer labialized consonants in Lamang. Wolff considers the glottal as an approximant while in Hide it is a glottal stop.

(39) The Consonantal Segments of Lamang

	Pre-alveolar/ labial	Alveolar	Post-alveolar/ velar	
			Unrounded	Rounded
Obstruents				
Stops:				
voiceless	p	t	k	kw
voiced	b	d	g	gw
prenasalized	mb	nd	ŋg	ŋgw
glottalized	ʔ	ɗ		
Affricates:				
vl		ts		
vd		dz		
nas		ndz		
Fricatives:				
vl	f	s	x	xw
vd	v	z	gh	ghw
nas		nz		
Lateral Fricatives:				
vl		tl		
vd		dl		
Sonorants				
Nasals	m	n	ŋ	ŋw
Liquids:				
Trilled		r		
lateral		l		
Approximants				
	Pre-velar/ palatal	Velar	Post-velar/ glottal	
Approximants	y	w	ʔ	

(E. Wolff, 1983 : pp 25-26)

4.2.2 The Phonetic Realization of Hide Consonants

The phonetic realization of consonants in Hide is shown in the table below. The circled consonants group the phonetic consonants as one phoneme. There are two sets of stops, voiceless and voiced. The voiced stops can be pre-nasalized. Bilabial and alveolar implosives are part of the consonant inventory. There are voiceless and voiced alveolar and

palatal affricates. The fricatives have voiceless and voiced counterparts as labio-dental, alveolar, and uvular consonants. A pre-nasalized fricative is included in the fricative category. Also, there are a voiceless and a voiced lateral fricative. Nasals are made at the bilabial, alveolar, and velar points of articulation. Trilled and flap [r] along with a lateral fill the liquid category. Glottal stop is phonemic. There are two semi-vowels: palatal and labiovelar. Labialization has created another set of phonemes involving velar stops and all positions of fricatives.

(40) Phonetic Realization of Hide Consonants

	Bila- bial	Labio- dental	Alveo- lar	Pala- tal	Velar	Uvular	Glott- tal	Labio- velar
Obstruents								
Stops	vl	p	t		k, kw		ʔ	
	vd	b	d		g, gw			
	nas	mb	nd		ŋg, ŋgw			
Implosives		ɓ	ɗ					
Affricates								
	vl		ts	c				
	vd		dz	j				
	nas		ndz	nj				
Fricatives								
	vl	f, fw	s, sw	š		x, xw		
	vd	v, vw	z, zw			gh, ghw		
	nas		nz					
Lateral Fricatives								
	vl		ɬ					
	vd		ɮ					
Nasals								
		m	n		ŋ			
Liquids								
	Flap		ɾ					
	Trill		ʀ					
	Syllabic		ʁ					
	Trill							
	Lateral		l					
Semi-vowels								
				y				w

4.2.3 Phonemic Contrasts of Consonants

There are 39 consonant phonemes in Hide which are listed in the table

below. Contrastive pairs are used whenever possible to give evidence for phonemes.

(41) Consonant Phonemes

		Bila- bial	Labio- dental	Alveo- lar	Pal- tal	Velar	Uvular	Glott- tal	Labio- velar
Obstruents									
stops	vl	p		t		k, kw		ʔ	
	vd	b		d		g, gw			
	nas	mb		nd		ng, ngw			
Implosives									
		ɓ		ɗ					
Affricates									
	vl			ts					
	vd			dz					
	nas			ndz					
Fricatives									
	vl		f, fw	s, sw			x, xw		
	vd		v, vw	z, zw			gh, ghw		
	nas			nz					
Lateral Fricatives									
	vl			sl					
	vd			zl					
Nasals									
		m		n					
Liquids									
	Trilled			r					
	Lateral			l					
Semi-vowels									
					y				w

4.2.3.1 The Labial Stop Phonemes: /p/, /b/, /mb/, and /ɓ/

The phoneme /p/ occurs morpheme initial, medial, and final.

(42) pala	tersip
[pala]	[tʃšip]
stone	stick

(43) Contrastive Pairs

p/b

lapla
[lapla]
diglabla
[labla]
Leave! sgpela
[pla]
paybela
[bla]
expensive(44) paya
[paya]
repairbay
[bay]
to build

p/b

(45) pala
[pala]
stonebala
[bala]
breakpapla
[papla]
hailbabax
[babax]
shoes

p/f

(46) pesay
[psay]
dig upfesay
[fsay]
to grill

The phoneme /b/ occurs morpheme initial, medial and final, but in word final position the voicing is neutralized to [p]. There is little data to substantiate this, except that [d] and [g] do not occur word final. It stands to reason that the neutralized voicing holds true in the case of [b]. There is one example of voice neutralization.

(47) sab [sap] come out of

This example occurs in rapid speech while usually in slow speed [a] would follow [b] saba. The voicing remains strong intervocalically.

(48) labla [labla] Go away! sg
[lab la]
labwala [labwala] Go away! pl
[labwa la]

Contrastive pairs give evidence for the phoneme /b/.

b/p see p/b

(49) b/b

ba
[ba]
buildba
[ba]
need to whitenxəbata
[xbata]
attachbəxata
[bxata]
voyage,
travel

(58) Contrastive Pairs

mb/b see b/mb

mb/m

mba
[mba]
herd VBma
[ma]
in, intodambu
[dambu]
thousandmamu
[mamu]
there is

The labial implosive phoneme /b/ occurs morpheme initial and medial.

(59) Position in Morpheme

Initial

basa
[basa]
saddenbɛliwa
[bɛliwa]
sweet potato

(60) Medial

ghubisla
[ɣubiɬa]
squashmbibi
[mbibi]
pickaxereɬisɬ
[ɣbiɬ]
earth, dirt

(61) Contrastive Pairs

b/p see p/b

b/b see b/b

4.2.3.2 The Alveolar Stop Phonemes: /t/, /d/, /nd/, and /d/

The phonemes /t/ and /d/ occur morpheme initial, medial, and final, while /d/ and /nd/ never appear word final.

(62) Contrastive Pairs

t/d

ta
[ta]
fetch waterda
[da]
cooktabi
[tabi]
betweendaba
[daba]
ground,
terrain(63) gita
[gita]
todaytida
[tida]
in

(64) d/nd

da	nda	dawa	ndawu
[da]	[nda]	[dawa]	[ndaw]
<i>father</i>	<i>with</i>	<i>to whose house</i>	<i>it's</i>
<i>nothing</i>			

(65) d/d

da	da	dafa	dafa
[da]	[da]	[dafa]	[dafa]
<i>father</i>	<i>1sg POSS ADJ</i>	<i>baton</i>	<i>boule</i>

(66) sladu	badu
[ɪadu]	[baʔ, badu]
<i>stand</i>	<i>day</i>

4.2.3.3 The Velar Stop Phonemes: /k/, /g/, and /ng/

The voiceless velar stop /k/ occurs morpheme initial, medial, and final, while the voiced velar stop /g/ never occurs morpheme final. The phoneme /ng/ has two realizations [ŋ] and [ŋ]. /ng/ is pronounced as [ŋ] when it precedes another consonant other than a syllabic [ʃ] and when it occurs word final. In all other environments it is pronounced [ŋ].

(67)		[ŋ]	
	xəŋ	[xəŋ]	<i>3pl SUBJ</i>
	ghəŋ	[gəŋ]	<i>head</i>
	kuzlangta	[kuʃaŋta]	<i>hurts him/her</i>
		[ŋ]	
	dzanga	[dzanga]	<i>read</i>
	zwanga	[zwanga]	<i>child, boy</i>
	ngudidar	[ŋgudidaʃ]	<i>fever</i>

(68) Contrastive Pairs

k/g

ka	ga	kəla	gəla
[ka]	[ga]	[kla]	[gla]
<i>2sg SUBJ</i>	<i>where</i>	<i>take</i>	<i>big, tall</i>

- | | | | | |
|------|--------------------------------|-----------------------------------|---|-------------------------------------|
| (69) | kəri
[kʁi, kʁa, kʁa]
dog | gəra
[gʁa, gʁa]
male friend | kay
[kai]
marker of some-
thing already
mentioned | gay
[gai]
to play a
game |
| (70) | g/ng | | | |
| | ga
[ga]
where | nga
[ŋga]
for | maga
[maga]
do, make | manga
[manga]
knife |
| (71) | n/ng | | | |
| | na
[na]
DEM ADJ | nga
[ŋga]
for | ni
[ni]
3sg POSS ADJ | ingi
[ingi]
Give it
to me! |
| (72) | zwani
[zwani]
children | zwanga
[zwanga]
child, boy | | |

4.2.3.4 The Labialized Velar Stop Phonemes: /kw/, /gw/, and /ngw/

There are labialized counterparts to the velar stops which are phonemic. They are phonemic, because there are no unambiguous consonant nor vowel clusters, thus, warranting the necessity to make them separate phonemes. (See Section 3.2.)

- | | | | | |
|------|------|-------|--------|-------------------------|
| (73) | CəCV | səkwi | [skwi] | thing |
| | CəCV | səkwa | [skwa] | buy or sell 1
object |

(74) Contrastive Pairs

k/kw

ka
[ka]
2sg SUBJ

kwa
[kwa]
gourd

- | | | |
|------|-----------------------|-------------------------------------|
| (75) | kəsa
[ksa]
stop | kwasakwasa
[kosakosa]
garbage |
|------|-----------------------|-------------------------------------|

(76) g/gw

gay	gwayaf
[gay]	[goyaf]
<i>to play a game</i>	<i>put together</i>

(77) ng/ngw

nga	ngwa
[nga]	[ngwa]
<i>for</i>	<i>succeed</i>

4.2.3.5 The Glottal Stop Phoneme: /ʔ/

Hide differs from Lamang in that the glottal stop [ʔ] is phonemic. Wolff (1983) treats the glottal as a non-consonantal glide with it occurring word initial in borrowed words and in an intervocalic position in the expressive word-class. Elision of the final vowel often occurs in rapid speech. In words where the final syllable has an alveolar implosive, it becomes a [ʔ], thus alternation takes place between [d] and [ʔ].

(78)	badu	[baʔ]	day
------	------	-------	-----

It occurs intervocalically.

(79) Medial Position

dzaʔa	dzagha	diʔing	ding
[dzaʔa]	[dzaga]	[diʔin]	[din]
<i>go</i>	<i>home</i>	<i>far away</i>	<i>smoke</i>

(80) xiʔi	xiya
[xiʔi]	[xiya]
<i>kind of</i>	<i>millet</i>
<i>grasshopper</i>	

4.2.3.6 The Affricate Phonemes: /ts/, /dz/, and /ndz/

The phoneme /ts/ occurs morpheme initial, medial, and final, while /dz/ and /ndz/ occur only morpheme initial. All three are palatalized before high and front vowels and are realized as voiceless and voiced palatals: [tʃ] and [dʒ].

Wolff (1983) states that the affricates become palatalized before high and front vowels. The auditory realizations are more palatalized rather than actual palatals, though he uses the palatal symbols for their representation.

I have only found the palatalized pre-nasalized voiced alveolar affricate [nʃ] and assume there is an alveolar pre-nasalized voiced affricate counterpart due to symmetry in sound systems.

(81) tsa	cidiptsa	dza	jidza
[tʃa]	[čidiptsa]	[dʒa]	[ʃidʒa]
cut	had cut for me	hit	had hit
me			

(82) Yndzaghwata
[nʃeɣwata]
bump into and
fall down

There are still questions to be investigated concerning whether the palatals are phonemic or not. A few examples do not fit the pattern, in that they occur with [a], but more conclusive data is required to substantiate this.

(83) ɸac	ɸats	takwaca
[ɸač]	[ɸats]	[takoča]
a little	IDE time	star
	passing	

(84) Contrastive Pairs

ts/dz

tsa	dza	vitsa	midza
[tʃa]	[dʒa]	[vitsa]	[midʒa]
cut	hit	examine	grand- mother

4.2.3.7 The Fricative Phonemes: /f/, /v/, /s/, /z/, /nz/, /x/, and /gh/

The labio-dental fricatives are realized as [f] and [v]. Both /f/ and /v/ occur morpheme initial, medial and final. The alveolar fricatives are realized as [s], [š], [z], and a nasalized [nz]. [s], [š], [z], and [nz] occur morpheme initial, while only [s], [š], and [z] occur morpheme final. Only [s] and [š] occur medial. The alveolar fricatives, especially /s/, becomes palatalized before a high and front vowel. There seems to be conditioned fluctuation since the speakers may pronounce a word both with [s] and [š]. The are conditioned by palatalization prosody. There are, also, uvular voiceless and voiced fricatives: /x/ and /gh/.

(85) siga	fəsigul	Ysada	kwəsida
[siga, šiga]	[fsigul, fšigul]	[šeda]	[kwšida]
cooking pot	kind of ant	a witness	newborn baby

(86) Contrastive Pairs

f/v

fu	vu	refi	rəvu
[fu]	[vu]	[ffi]	[fvu]
<i>tree</i>	<i>fire</i>	<i>I am happy</i>	<i>calf</i>

(87) fwad	vwax
[fwaʔ]	[vwax]
<i>four</i>	<i>field</i>

(88) f/fw

fa	fwa
[fa]	[fwa]
<i>sing</i>	<i>hot</i>

f/p see p/f

v/b see b/v

v/f see f/v

(89) v/vw

vaʔa	vwax
[vaʔa]	[vwax]
<i>bother</i>	<i>field</i>

(90) s/sw

sa	swa	dasu	daswa
[sa]	[swa]	[dasu]	[daswa]
<i>drink</i>	<i>stir</i>	<i>sorry</i>	<i>slowly</i>

(91) s/z

sa	za	swata	zwani
[sa]	[za]	[swata]	[zwani]
<i>drink</i>	<i>eat</i>	<i>stirred</i>	<i>children</i>

(92) təghas	raz
[təgas]	[faz]
<i>eight</i>	<i>insult</i>

(93) s/ts

sa
[sa]
drink

tsa
[tsa]
cut

suxwa
[suxwa]
cough VB

tsukwa
[tsukwa]
sweep

(94) basa
[basa]
sadden

datsa
[datsa]
dice VB

(95) z/zw

zanap
[zanap]
forgot

zwani
[zwani]
children

(96) z/dz

za
[za]
eat

dza
[dza]
hit

zala
[zala]
flowing water

dzaʔa
[dzaʔa]
go

(97) kuzung
[kuzun]
grass

budzang
[budzan]
fishing trap

(98) x/xw

xiya
[xiya]
millet

xwaya
[xoya]
run

musuxa
[musuxa]
vegetables

suxwa
[suxwa]
cough VB

(99) x/gh

xa
[xa]
plural marker

gha
[ɣa]
2sg POSS ADJ

xəŋ
[xəŋ]
3pl SUBJ

ghəŋ
[ɣəŋ]
head

(100) kidix
[kidix]
donkey

kidagh
[kidax]
how much, how
many

(101) gh/ghw

gha [ɣa] 2sg POSS ADJ	ghwá [ɣwá] mountain	ghala [ɣala] steal	ghwala [ɣwala] ripe
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(102) gh/r

ra [řa] question marker	gha [ɣa] 2sg POSS ADJ	vara [vařa] bean	vegha [veřa] body
----------------------------------	-----------------------------	------------------------	-------------------------

(103) zləra
[ɬřa]
begin

pegha
[peřa]
pour

4.2.3.8 The Labialized Fricative Phonemes: /fw/, /vw/, /sw/, /zw/, /xw/, and /ghw/

Labialization occurs with all the fricative phonemes except the alveolar pre-nasalized fricative [nz]. They are considered phonemic, because they fit into the existing syllable patterns: CV or CVC.

(104) Contrastive Pairs

fw/vw

fwad [fwaʔ] four	vwax [vwax] field
------------------------	-------------------------

fw/f see f/fw

vw/v see v/vw

sw/s see s/sw

(105) sw/zw

swata [swata] stirred	zwani [zwani] children
-----------------------------	------------------------------

zw/z see z/zw

(106) zw/zl

zwanga	zləŋga
[zwanga]	[ʎəŋga]
child, boy	to be afraid

xw/x see x/xw

ghw/gh see gh/ghw

Lamang has the same fricatives as Hide, but differs in that only the voiceless and voiced uvular fricatives are labialized. All fricatives except the pre-nasalized fricative may be labialized in Hide.

4.2.3.9 The Lateral Fricative Phonemes: /sl/ and /zl/

The phonemes /sl/ and /zl/ are always realized as voiceless and voiced lateral fricatives. They both occur morpheme initial, but only /sl/ occurs morpheme final.

(107) Contrastive Pairs

sl/zl

sləray	zləray	slislik	zlibi
[ʎfay]	[ʎfay]	[ʎiik]	[ʎibi]
to hit some- thing metallic	to begin	egg	thousand

(108) sl/s

sla	sa	sləna	səna
[ʎa]	[sa]	[ʎna]	[sna]
cow	drink	work	know

(109) tsasla	kasa
[tʂaʎa]	[kasa]
chop st. tender	catch pl objects

(110) sl/x

sla	xa	sləga	xəga
[ʎa]	[xa]	[ʎga]	[xəga]
cow	plural marker	plant VB	house

(111) mətasl	zlax
[mtaʎ]	[ʎax]
cold	maybe

(112) sl/l

slaxa [ɬaxa] cows	laxa [laxa] song	sləka [ɬka] millet stock	ləka [lka] enter
-------------------------	------------------------	--------------------------------	------------------------

(113) ngusling
[ŋguɬiŋ]
white

ngulika
[ŋgulika]
kind of ant

(114) zl/z

kuzlangta [kuɬaŋta] hurts him/her	kuzung [kuzuŋ] grass	zlava [ɬava] barrier around a field	zala [zala] flowing water
---	----------------------------	--	------------------------------------

(115) zl/dz

zləgha [ɬəɣa, ɬəɣa] receive	dzagha [dzaga] home
-----------------------------------	---------------------------

zl/zw see zw/zl

(116) zl/l

zləgha [ɬəɣa] receive	laghu [laɣu] go down	zlənga [ɬəŋga] to be afraid	lənga [ləŋga] cold
-----------------------------	----------------------------	-----------------------------------	--------------------------

(117) mizli
[miɬi]
Mizli village

tili
[tɪli]
moon, month

dazlay
[daɬay]
later vague

ɖalay
[ɖalay]
to slice

4.2.3.10 The Nasal Phonemes: /m/ and /n/

There are three phonetic nasals, but only /m/ and /n/ are phonemic. [ŋ] is an allophone of /ng/. (See Section 4.2.2.3.) The phonemes /m/ and /n/ occur morpheme initial, medial, and final.

(118)	mista nimtak məgham	[mista] [nimtak] [myam]	under wild animal chief
	ni sani xəkan	[ni] [sani] [xəkan]	3sg POSS ADJ other three

(119) Contrastive Pairs

m/n

ma [ma] in, into	na [na] DEM ADJ this	maya [maya] hunger	niya [niya] what?
------------------------	----------------------------	--------------------------	-------------------------

(120) makwa [mokwa, makwa] girl	naku [naku] transforms
---------------------------------------	------------------------------

m/mb see mb/m

(121) m/ng

təm [təm, təm] onion	tang [taŋ] 3 POSS ADJ
----------------------------	-----------------------------

(122) n/nd

na [na] DEM ADJ this	nda [nda] with	nəgha [nəga] see	ndəgha [ndəga] numerous
----------------------------	----------------------	------------------------	-------------------------------

(123) mana [mana] in this	manda [manda] while
---------------------------------	---------------------------

Hide differs from Lamang in that Wolff considers the velar nasal and its labialized counterpart phonemic. The phonetic [ŋ] occurs intervocalically and syllable final as an allophone of /ng/. Hide does not seem to have the labialized velar nasal /ŋw/.

4.2.3.11 The Liquid Phonemes: /r/ and /l/

The alveolar trilled phoneme and the lateral phoneme occur morpheme initial, medial, and final. The phoneme /r/ is realized as [r̄], [r̄], and [r̄]. There seems to be fluctuation between allophones [r̄] and [r̄] in morpheme initial and final positions, though the [r̄] seems to have a stronger

tendency in these positions. There can be variation in pronunciation of the same words. [ř] usually is manifested between vowels.

(124) Variation

kəri	[kři, kři]	dog
gəra	[gřa, gřa]	male friend

(125)

[ʃ]

vərda	dərnək	ngərma	tsərba
[vřda]	[dřnək, dřnək]	[ngřma]	[tsřba]
truth	hundred	good	straight

(126)

[ř]

iri	mara	Ydawra
[iři]	[mařa]	[dewořa]
eye	show	shirt

(127)

[ř]

rini	urna	bikwir
[řini]	[uřna]	[bikwiř]
domestic animal	peanut	hawk

(128) Contrastive Pairs

r/l

ra	la	iri	tili
[řa]	[la]	[iři]	[tili]
question	go	eye	moon,
marker			month

(129) paturi
[patuři]
cat

guli
[guli]
also

r/gh see gh/r

The liquid lateral /l/ is phonemic occurring morpheme initial, medial, and final.

(130) luma	kəlipi	xul	gwal
[luma]	[klipi]	[xul]	[gol]
market	fish	back	people

(131) Contrastive Pairs

l/r see r/l

l/sl see sl/l

l/zl see zl/l

Lamang, also, has /r/ and /l/ as consonantal segments. Wolff makes no mention of possible allophones for /r/.

4.2.3.12 The Approximant Phonemes: /y/ and /w/

The approximants or semi-vowels /y/ and /w/ act as consonants in Hide since there are no unambiguous vowel clusters. /y/ and /w/ occur morpheme initial and final, but /w/ can, also, occur medial. In the latter case, it labializes the preceding consonant. The phoneme /y/ in the word final position renders verbs to their infinitive state.

(132)

y#

dawa
[dawa]
ask

daway
[daway]
to ask

da
[da]
cook

day
[day]
to cook

(133)

məna
[mna]
say, tell

mənay
[mnay]
to say, to tell

(134)

w#

yawu
[yaw,yau]
when?

kinawu
[kinaw,kinau]
how?

dawa
[daw]
ask

(135) Labialized Final Consonant

pitsakw
[pitsakw]
hoe

marakw
[maʔakw]
wife

kwitikw
[kwitikw]
very little

(136)

/y/

yawu
[yaw,yau]
when

yaku
[yaku]
produce

paya
[paya]
repair

ghwayak
[ɣoyak]
cloud

(137) Contrastive Pairs

w/b

wa	ba	luwa	zliba
[wa]	[ba]	[luwa]	[ɣiba]
who	build	sky	thousand

(138) wutak	batak
[wtak, wutak]	[batak]
sand	kind of grasshopper

Wolff (1983) includes /ʔ/ as an approximant along with /y/ and /w/.

	pre-velar/ palatal	velar	post-velar/ glottal
Approximants	y	w	ʔ

(E. Wolff, 1983 : p.26)

He considers them non-consonantal and non-vowel glides. Wolff states, "it remains to be seen whether not only in lamang, but in other Chadic languages at least of the central ("Biu-Mandara") Branch as well, the glides are more than Hide just non-syllabic manifestations of the corresponding vowels (cf Wolff et al 1981, Wolff 1983; also the notion of 'weak radical consonants'/'radical vowels' in traditional Afroasiatic/Hamitosemitic linguistics:

[+syll]	[-syll]
i	y
u	w
a	ʔ

(E. Wolff, 1983 : p. 27)

4.2.4 Tone

Hide is a tonal language. At this point in time the Hide tone system has not been analyzed. General observations are noted in this section.

4.2.4.1 Lexical Tone

Lexical tone function is minimal in Hide though there are a few minimal contrastive pairs where tone changes the meaning. Mid tone is not marked.

(139) ndəfang	ndəfàng	ghwá	ghwa
[ndəfan]	[ndəfàn]	[ɣwá]	[ɣwa]
seven	glue	mountain	water
source			

Lamang has "no minimally contrastive pairs based on tone alone" in the categories of nominal and verbal bases but they occur in the word class of "expressives" and grammatical morphemes. (E. Wolff, 1983 : p.74)

4.2.4.2 Grammatical Tone

Hide has grammatical tone but we do not understand much of what it all signifies at this time. Grammatical tone does distinguish tense/aspect. A high tone in the beginning position of a tone sequence marks completive aktionsarten in the perfective aspect. The same pattern occurs in Lamang. (E. Wolff, 1983) The following Hide example demonstrates this phenomena.

(140) Perfect I

ká báftá ká tá xégà
 past marker have built you (sg) ART. house
You have built the house.

Perfect II (Incomplete)

ka baftá ká tá xégà
 past marker have begun to build you (sg) ART. house
You have begun to build the house.

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