

Some notes on Lele Phonology and Orthography

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Introduction:

The following description is based upon sporadic work in Lele from the period beginning April, 1980 to January, 1987.

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The Lele Language Group:

The Lele language is spoken by approximately 1800 people who live on the north coast of Manus Island west of Lorengau and inland to the south about 1/2 the width of the island. Manus Island is the largest island of the Admiralty Island group and is situated approximately 147° East and 2° South. The population is spread among many small hamlets throughout the area but concentrated mostly along the coast and the main inland highway. The main village areas are Tingou, Puluso, Sabon 1, Sabon 2, Warembai, Warembu, Powat, Rosun, Lundret, Ndrancou, and Yiringou. The dialects spoken in both Rosun and Yiringou are considerably divergent from the rest of the language area.

Sounds of Lele:

Following is a chart of most of the phonetic sounds that characterize Lele.

Contoids:

	Labial	Alveolar	Alveopalatal	Velar	Pharangeal
Vl Stop	p	t		k	ʔ
Vd Stop	b	d		g	
Vl Aspirated Stop	p ^h	d ^h		k ^h	
Vl Affricate	pp				
Syllabant		s			h
Vl Trill		R (I'm using this symbol as a vl., alveolar, trill)			
Vd Trill	ʙ	ʀ			
Flap		ɾ			
Lateral		l			
Syllabic Nasal	ɱ	ɳ			
Nasal	m	n	ɲ	ŋ	
Semivowels	w		y		

Vocoids:

	Front Unrounded	Mid Unrounded	Back Rounded
High Tense	i		u
High Lax	ɪ	ɨ	
Mid Tense	e		o
Mid Lax	ɛ	ə	
Low Tense			
Low Lax		a	

In addition, there are the following single sounds and sequences of sounds that may be interpreted as functioning as a unit or a sequence:

Contoid Segments:

	Labial	Alveolar
Syllabic		
Nasal	m	n

Contoid Sequences:

	Labial	Alveolar	Velar
Prenasalized			
Vd Stop	m _b	n _d	
Prenasalized			
Vl Trill		n _R	
Prenasalized			
Vd Trill		n _ɾ	
Labialized			
Vl Stops	p ^w		k ^w
Labialized			
Nasal	m ^w		

Vocoid Sequences:

Long Vocoids	i:		u:
			o: (?)
Glides:	ui		iu
	ei	oi	eu ou
		ai	au

Unambiguous syllable shapes:

The following syllable shapes are reasonably unambiguous for Lele:

CVC	[nes]	'climb up'
	[tam]	'your father'
	[sap]	'to carry'
	[pat]	'stone'

#CCV(C).. [plɛŋ] [klɛh] [snɛl] [ksou]	'garden' 'OK' 'masalai' 'IRR-remain here'	note: ~ [pɛlɛŋ]
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note: This last example is actually polymorphemic. The initial [k-] is the irrealis morpheme and readily prefixes to most consonant initial verbs. (Sometimes, however, with an intervening transition vocoid.)

[kmeʔ]	'IRR-come'
[kroʔ]	'IRR-stay'
[ksop ^w ani]	'IRR-help'

#CV [po] [kɛʔ] [ta] [lɛ] [mɛ] [so]	'to do or make' 'only, just' 'to exit' 'to go' 'to come' 'to remain suspended'
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..(C)VCC# [soln] [malolt]	'many' 'disappear'
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#V(C)...	[ɛ] [ɪlki] [ansu] [aka] [ini]	'and' 'to place or put' 'their food' 'this' 'to eat'
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note: The presence of the glottal stop in the final position in the above examples depends upon the flow of speech. In the middle of an utterance (ie. mid sentence) the final glottal is usually not present. The words spoken in isolation are usually checked with a glottal if they end in a vowel and the vowel is not part of a glide, lengthened, or followed by an [h].

I have found no unambiguous examples of unambiguous vocoid sequences in my data since all glides either begin or end with a high vocoid.

Interpretation of ambiguous sequences:

Prenasalized contoids:

From the above syllable shapes it would be possible to interpret many of the ambiguous contoid sequences as sequences and not segments since they occur word or syllable initially. I prefer, however, to interpret at least the prenasalized contoids as single segments because prenasalization is a ubiquitous feature of many if not most languages in Papua New Guinea and secondly because, as I will discuss under contrastive features, prenasalization is the primary contrastive feature between the voiced and voiceless series of stops in Lele.

Labialized contoids:

The labialized contoids present a different problem. Most of the evidence would lead me to interpret them as sequences. It fits the allowable CV patterns and there is severe collocational restriction in that [u] never follows them. (Of course I'm not sure how one would pronounce it if it did.) The labialized contoids also never cluster with other consonants. On the other hand, a few words have shown some 'free' variation between the labialized and non labialized forms which would be easier to describe as the presence or absence of labialization than the presence or absence of a [w] or a [u] (if it were interpreted as C[u]..).

eg	[m ^w a ^h ʔih] ~ [ma ^h ʔih]	'sun'
also	[p ^w an]	'ground'
	[pu.an]	'his pig (to eat)' nb. could also transcribe this as [pu.wan]
	[pan]	'coming later'

For convenience in this paper I'll call them labialized contoids but the matter is not closed. I could just as easily call them sequences but since other Manus languages are described as having labialized consonants (notably Nali which is most closely related to Lele) I'll choose to follow their lead unless I find strong evidence to the contrary. Orthographically it would be the same either way as I'll discuss later.

Syllabic Nasals:

Syllabic nasals are odd in that they are not a complete set. Conspicuously the syllabic [ŋ] is absent. [ŋ] and [ɲ] exist but these seem to be in very limited distribution: ie. they only occur at the end of words and represent the 2nd sing and 3rd sing possessive suffix respectively. Given this restriction it seems most likely to interpret them as [Vm] and [Vn] - a sequence that phonologically becomes reduced to a single syllabic nasal.

I also have one incidence in my data of a syllabic [l]. Again, it occurs word finally but is not a separate morpheme as the nasals are. It is in variation with [Vl] in the word [kaml] ~ [kamɛl] 'man(male)'. It is also interesting to note that this occurs adjacent to a nasal. This fits with the general tendency in Lele for many speakers to delete vowels in unstressed syllables. This will be discussed under the section on morphophonemics.

The only problem with interpreting these syllabic nasals as a sequence of a vowel and a nasal is that often the vowel quality is unrecoverable. No one seems to know what sound it ought to be. This is also true in some cases of vowel deletion but then the deleted vowel can usually be recovered from the same morpheme in another word.

Allophonic variation of consonants in Lele:

As with all languages, the sounds of Lele vary considerably as they are spoken in context with other sounds and as they are spoken by different speakers. In this section I'll attempt to deal with those variations which

are predictable (or freely varying) and fairly representative across the language group.

Aspiration of voiceless stops:

All the voiceless stops except the glottal stop vary with a slightly aspirated form of the stop. This is most pronounced when the stop precedes an [h] either within a word, across a syllable boundary, or across a word boundary. In addition stops are slightly aspirated word or utterance finally. This aspiration is not contrastive and, except when preceding [h] is never as pronounced as in English. Actually, in general terms, the voiceless stops in Lele vary between slightly voiced and unaspirated to voiceless and slightly aspirated. Voicing or aspiration then is not a contrastive feature of stops but rather the presence or absence of prenasalization. This opposition is often difficult for English speakers to accommodate and not infrequently leads to miscommunication.

v1 stop → v1 aspirated stops / _# (#)[h]
#_

eg. [atən] 'his' [at^h#homu] 'a man's'
[i mət] 'he died' [i mət^h] 'he died' (free variation)
[hok^hhat] 'one pile'
[rok^hhi] 'to gather'

note: In the above examples there is no example of [p]. Actually in my data this is observed much more frequently with [k] than any other stop. All of my word medial examples of aspiration preceding [h] involve [k].

Voicing of voiceless stops:

Technically the voiceless stops are prototypically not completely voiceless. There is no perceived contrast between voiceless unaspirated stop and the voiced counterpart. Voicing is especially notable word medial when voiced segment precede and follow the stop.

nb. It is recognition of this status of the voiceless stops as phonetically somewhere between voiceless and voiced that resulted in a previous orthography having no voiceless stops represented. All stops were represented orthographically as voiced and the only distinction was the presence or absence of a preceding nasal.

Word final devoicing:

Just as voiceless stops are voiced in the environment of voiced segments, prenasalized voiced stops and trills are devoiced word and utterance finally.

Eg. [ᵐbunwaᵐpp] ' (a village name)' note: here the bilabial
trill becomes an
voiceless affricate.
[ᵐbuᵐR] 'banana'
[sɛɛᵐR] 'half'

Flapping (or shortening) or trills:

As one would expect, trills are often reduced to simple flaps intervocally. Word initial and final the trills remain trills. This is most notable in fast speech. The bilabial trill [^mb] becomes more of a plosive than a true flap.

Eg.	[aʔi yi]	'strike him'
	[eʔui]	'pull up'
	[heʔon]	'listen'
	[na ^m bulun]	'his or her spouse'
	[nu ^m buɛn]	'his body'

Palatization of alveolar nasal:

This alternation is tenuous at best. Actually I've only discovered the alveopalatal [ɲ] in one word: [ɲiu] 'coconut'. Normally this could be ignored but since this particular word has a considerable usage in Lele I really need to discuss it. The [n] in this word is palatalized presumably due to the vowel sequence [iu] which follows it. It is a relatively natural process but it is odd in that palatization does not occur noticeably preceding [i] alone.

Velar backing of [k]:

In most utterances [k] is pronounced slightly further back in the mouth when preceding [u]. This is hardly noticable for the most part except when the [u] is followed by [i]. Under these circumstances the [k] becomes very backed [k^ʷ] and the [u] all but disappears. I first noticed this in the following example:

/tokui/ > [tok^ʷi] or [tok^ʷi] 'to walk'

nb. I had transcribed this word as [toki] for years and only discovered the backed [k] and "hidden" [u] this year when watching a man from the language transcribe a story.

Lele contrastive phonemes:

Following is a list in chart form of the contrastive sounds and their phonemic representation. There are 16 consonants (including 2 semivowels) and 5 vowels.

Consonants:

	Labial	Alveolar	Alveopalatal	Velar	Pharangeal
Vl Stop	p	t		k	
Labial Stop ¹	p ^w			(k ^w)	
Presalized Vd Stop	m _b	n _d		(2)	
Sillabant		s			h
Vd Trill		ʀ			
Lateral		l			
Nasal	m	n		ŋ	
Labial nasal ¹	m ^w				
Semivowels ³	w		y		

Vowels:

	Front Unrounded	Mid Unrounded	Back Rounded
High	i		u
Mid	e		o
Low		a	

Notes:

1 As noted in the interpretation section, the status of these labialized consonants is uncertain.

2 There is some asymetry noted in the above consonant chart. Most significantly the absence of a prenasalized voiced velar stop. One would have expected it to be there.

3 An alternative analysis could eliminate the need for semivowels but failing the unambiguous presence of vowel clusters I've choosen to include them. More on this discussion in the Orthography section.

Examples of Contrasts in Lele:

Following is an example of some of the phonological contrasts in Lele. The data will be presented in sets of similar phonological units.

Labial Consonants

Word initially:

/p/	[pat] 'stone' [pen] 'look for'	[pit] 'drift' [pu:] 'pig'	[poʔ] 'with'
/ᵐb/	[ᵐbut] 'kind of fish'	[ᵐbue] 'don't'	[ᵐbʔeʔ] 'work'
/m/	[mut] 'split' [mu:] 'flow'	[moʔ] 'you two' [met] 'to die'	[maʔ] 'eye'
/pʷ/	[pʷan] 'ground'	[pʷen] 'finished'	[pʷi] 'no'
/mʷ/	[mʷan] 'fire'	[mʷenɪn] 'straight'	[mʷi:] 'dog'
/w/	[wum] 'house' [wu:] 'we two'	[wuʔ] 'sand crab' [wah] (an expletive)	[wene] 'able'

note: The labialized consonants are not followed by back vowels in my data.

Medially:

/p/	[hapik] 'one group' [ipiah] 'afternoon' [kempo] 'continued the same'	[ɛpah] 'carry me' [apsowi] 'call'	[hɛpke] 'but' [kɛlap] 'side of house'
/ᵐb/	[sɛᵐbush] (proper name) [tuᵐbu] 'my grandparent'	[pɛʔᵐbuso] 'island' [ʔᵐʔeᵐbush] (proper name)	[naᵐbulun] 'his spouse'
/m/	[pomut] 'finished' [atmu] 'your PL' [kɛʔmɛn] 'your tongue'	[amet] 'die' [himoro] 'wrestle' [lekmat] 'fly'	[amaʔ] 'come' [momun] 'bad' [ʔdimi] 'garmut'
/pʷ/	[kapʷi] 'IRR say'	[kopʷat] 'climb up'	[impʷan] 'sit down'
/mʷ/	[kamʷan] 'ashes' [koʔmʷan] 'feces'	[kosmʷi] 'IRR answer'	[tulmʷi] 'burn'
/w/	[kowi] 'kind of flower' [hawe] 'my shoulder' [paʔwas] 'vine' [pelwan] 'second wife'	[ʔdowo] 'my strength' [ɛswɛ] 'to paddle' [Sowe] (proper name)	[yowu] 'we EXC' [maʔwoh] 'two' [honwai] '1st born feast'

Word final:

/p/	[ap] 'you say' [kup] 'S.E. wind'	[hakep] 'one leaf' [Yap] 'Yap island'	[ʔdop] 'basket'
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/mb/ [mbunuwampp] (Village name)

/m/	[am] 'you come'	[atɛm] 'yours'	[tam] 'your father'
	[hom] 'one man'	[kum] 'hair'	[wum] 'house'

/p^w/ no examples in my data

/m^w/ no examples in my data

/w/ no examples in my data

Note: As can be seen from the above data, or the lack of it, labialized consonants do not occur in my data. [w] on the other hand, could be represented if I had transcribed the word final glides ending in [u] as a closed syllable ending in [w]. I could do this inasmuch as, as I have already mentioned, there are no unambiguous vowel clusters in my data. The problem is that most of the folks I've asked in the language say that writing [w] at the end of a word doesn't "feel" right.

Alveolar Consonants

Word Initially:

/t/	[tam] 'your father'	[tɪlɲi] 'see'	[tok ^h i] 'walk'
	[towɪ] 'put'	[tu] 'we INCL'	[tono] 'I know'
/ ^h d/	[^h dan] 'dance'	[^h dɛɪɲan] 'his ear'	[^h dol] 'canoe'
	[^h duh] 'sugar'	[^h dikti] 'serve up'	[^h dokʔo] 'in the middle'
/n/	[nano] 'my mother'	[nah] 'spear'	[noh] 'afraid'
	[ni] 'fish'	[nu] 'wash'	[nowii] 'wave'
/ ^h ʃ/	[^h ʃan] 'water'	[^h ʃih] 'kind of fish'	[^h ʃun] 'his bone'
	[^h ʃɛ] 'on top of'	[^h ʃokou] 'wooden plate'	[^h ʃah] 'bamboo'
/ʃ/	[ʃai] 'come down'	[ʃi:] 'it'	[ʃɛʃ] 'tear'
	[ʃosni] 'throw down'	[ʃɛŋ] 'cry'	[ʃuwoh] 'two'
/l/	[lan] 'sky'	[likes] 'heavy rain'	[len] 'shore line'
	[lu:] 'leaf'	[lokasal] 'middle of the road'	
/s/	[sam] 'outrigger'	[sap] 'carry'	[soʔo] 'two people'
	[sih] 'one'	[scheʔ] 'who'	[su] 'they'

Word medially:

/t/	[hiti] 'get'	[ɛtuh] 'climb down'	[tɛtɛh] 'dad'
	[oto] 'my'	[ɪpti] 'to marry'	[lukto] 'put'
	[portou] 'hold'		
/ ^h d/	[a ^h dɪn] 'dance'	[ma ^h da] 'village centre'	[me ^h di] 'away from'
	[sɛ ^h dɛmani] 'ask'	[lo ^h die] 'inside'	

/n/	[anən] 'his food' [enɪ] 'eat' [mɛʔnal] 'sun'	[ini] 'eat' [m ^w anan] 'far'	[nəno] 'my mother' [nənuɪ] 'decorate'
/ŋ/	[hɛ ^ŋ ʔe] 'half' [sɪ ^ŋ ʔi] 'cut'	[ma ^ŋ ʔɛ] 'POSS. skin' [mu ^ŋ ʔul] 'hungry'	[m ^w a ^ŋ ʔi] 'sun' [ɪɪ ^ŋ ʔi] 'see'
/ʔ/	[maʔau] 'light rain' [lɛʔi] 'to it' [oʔo] 'stay'	[hɛʔŋ] 'listen' [wuʔu] 'year' [kuʔm ^w an] 'feces'	[hiʔɛk] 'stand up' [kɛʔmɛm] 'your tongue' [maʔiye] 'one tree'
/l/	[alaʔ] 'go' [ɪɪ ^ŋ ʔi] 'see' [^ŋ dɛlo] 'island'	[pulul] 'come down' [hiɪlou] 'run' [hɛlsan] 'laughter'	[polo] 'my head' [wulu:] 'high tide'
/s/	[hasih] 'one nut' [pisoʔ] 'my sister'	[moso] 'reef' [osm ^w iɪ] 'answer'	[musɪk] 'skin & bone' [mesaR] 'born'

Word Finally:

/t/	[at] 'POSS' [lout] 'kapul' [mat] 'low tide'	[kut] 'louse' [put] 'break' [ŋat] 'hole'	[pɛlt] 'masalai' [tut] 'shut'
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/^ŋd/ (not in my data but would probably be [...nt])

/n/	[an] 'POSS food' [lu:n] 'it's leaf' [maʔŋ] 'his eye'	[hiyan] 'good' [pihin] 'female' [m ^w ɛnɛn] 'straight'	[hinɛn] 'do' [^ŋ ʔun] 'his bone' [^ŋ don] 'still/yet'
/ŋ/	[^m bu ^ŋ R] 'banana' [Pipalna ^ŋ ʔi ^ŋ R] '(proper name)'	[ŋɛ ^ŋ R ŋa ^ŋ R] 'cough'	[sɛhɛ ^ŋ R] 'half'
/ʔ/	[aR] 'FUT.' [mɛtɪR] 'sleep'	[iR] 'remain' [ʔɛR] 'rip'	[maR] 'eye' [poR] 'with'
/l/	[al] 'go' [yɪl] 'war' [pul] 'head of tree'	[hal] 'laugh' [sul] 'torch'	[lol] 'go down' [^ŋ dol] 'canoe'
/s/	[has] 'gather' [^ŋ das] 'ocean'	[sus] 'to paddle' [paʔwas] 'vine'	[ŋas] 'to climb' [his] 'jump'

Velar Consonants

Word initially:

/k/	[kal] 'IRR go' [krut] 'IRR forget'	[kina] 'already gone' [kohon] 'hide'	[kou] 'fence' [kur] 'pot'
/ŋ/	[ŋat] 'hole' [ŋɛs] 'climb up'	[ŋoh] 'to blew' [ŋu ^ŋ ʔɛi] 'creator'	[ŋoʔoʔ] 'my name' [ŋɪR] 'base of'
/h/	[hal] 'laugh' [hɛtɪ] 'get'	[hinɛn] 'make' [homu] 'one person'	[howɛn] 'new' [huʔi:] 'carry'

Word medially:

/k/	[akaʔ] 'that' [ʔdiken] 'his leg' [tɛkɛʔ] 'like' [lukto] 'it's place'	[okoʔ] 'this' [soukaʔ] 'kind of bird' note: This alternates in some ideolects with [tɛŋɛʔ] [ɛʔkai] 'walk!'	[lukos] '(place name)' [maʔkoR] 'far neighbors' [ʔdokaʔ] 'mid-'
/ŋ/	[haŋah] 'part way' [hiŋi] 'to smell' [tuŋou] '(place name)'	[ʔaŋɛʔ] 'today' [loŋu:] 'something'	[noŋen] 'talk' [meŋun] 'dry'
/h/	[ɛhɛʔ] 'yes' [ŋohoto] 'smell of' [lonhou] 'jungle'	[oho] 'where' [lɛhɛn] 'his teeth' [meheʔɛʔ] 'come up'	[kohon] 'hide' [huʔhuR] '(Proper name)'

Word finally:

/k/	[hipak] 'hurry up' [ŋok] '(expression of contempt)'	[nak] 'intend to IRR'	[pek] 'frus. intent' [musik] 'skin & bone'
/ŋ/	[heʔon] 'listen' [plen] 'garden'	[son] 'go inside' [ʔan] 'day'	[piŋ] 'night' [lɛŋ] 'beach'
/h/	[hakah] 'mid (stream)' [kah] 'look for' [kuh] 'come up' [tɛtɛh] 'dad'	[pah] 'market' [noh] 'afraid' [sih] 'one' [waʔah] 'moon'	[loh] 'call to' [moh] 'tomorrow' [soʔoh] 'meat'

- nb. Actually the important contrast word finally is between [h], a long vowel or glide [V:] or [VV], and a vowel cut short by a glottal stop [Vʔ]. It took me some time to recognize this three way contrast because it carries a low functional load. It is nevertheless significant and a learner will be corrected if he doesn't maintain the distinction.

Example:	[tu] 'we INCL'	[tuh] 'climb down'
	[pu:] 'pig'	[puh] 'explode'
	[ma] 'with'	[mah] 'taro'
	[wo] 'you SG'	[woh] 'blow away'

You'll notice that I don't have any examples of a three way contrast. That's not an oversight, I just don't have any minimal sets in my data. My observation about the long vowel or glide being in contrast with [h] and a short vowel word finally is simply that: I have no examples in my data of a word final [h] preceded by a long vowel or a glide. More discussion on this point under 'unresolved issues'.

Nasals

The three nasal consonants are clearly in contrast as shown by the following examples:

/m/	[mat] 'low tide'	[moh] 'tomorrow'	[mi] 'seated'
/n/	[nak] 'intend IRR'	[noh] 'afraid'	[ni] 'fish'
/ŋ/	[ŋat] 'hole'	[ŋoh] 'to blow'	[ŋiR] 'close to'

Vowels contrast and variation in Lele

Lele has at least 5 contrasting vowel qualities. Earlier in my investigation I began to suspect 6 or 7 contrasting vowels but have been unable to conclusively demonstrate the contrast. My suspicions were aroused because of reported differences in vowel from a single informant. Later checks demonstrated that this reported difference was a perception of an individual (ie. idiolect) and not the entire speech community. Contrastive vowel length is another area where it has been difficult to distinguish between individual preferences on the one hand, and trends in the speech community on the other. For those reasons, I will cite clear examples of vowel contrast and reserve other reported contrasts to the section on "unresolved issues".

/a/	[amaʔ] 'come' [nah] 'spear'	[alaʔ] 'go' [kaR] 'IRR uncertain'	[atəm] 'his' [la] '3rd PL go'
/e/	[ɛloh] 'call out!' [nɛmɛn] 'his hand'	[ɛni] 'eat!' [kɛʔmɛʔ] 'my tongue'	[ɛtɛʔ] 'stand up!' [le] '3rd SG go'
/i/	[ini] 'eat' [ni] 'fish'	[ilki] 'put' [kiR] 'IRR stay'	[itɛʔ] '3rd SG stand' [li] 'Progressive Part.'
/o/	[onoʔ] 'my food' [noh] 'afraid'	[oʔoʔ] 'you stay' [koR] 'village'	[otoʔ] 'my' [loh] 'call out for'
/u/	[ukini] '1st SG be with child' [nu] 'wash'	[kuR] 'pot'	[ulki] '1st SG put' [lu:] 'leaf'

note: There are several allophones above which I've made no attempt to explain in the section on "variation". These are between [e] and [ɛ] & between [i] and [ɪ]. No matter what kind of 'rule' I try to devise, there are exceptions and the 'rules' to cover the exceptions do not seem well motivated. On the other hand, I have no evidence of contrast between these tense and lax vowels so I'm considering them as allophones until I have data to show otherwise. These variants may be bound up with vowel length somehow but such an investigation is beyond the scope of this paper.

Glides, sequences of vowels, and long vowels

What follows is a series of examples of vowel glides and vowel sequences. I will make little or no attempt to contrast the different glides with one another or to contrast them with pure vowels. They are included here only as examples of what sequences do occur in Lele and to provide a basis upon which further discussion can proceed. I'll also include long vowels in this section.

/u:/	[su:] 'disembodied spirit'	[pu:] 'pig'
	[sou:] (or [sou.u]) '(a village name)'	[lu:] 'leaf'
	[mu:] 'to flow out (as blood from a wound)'	[wu:] 'infected sores'
	[peu:] 'shark'	
/u/	[su] 'they'	[mu] 'you PL'
		(see above for more)
/ou/	[sou] 'mat' & 'women's house'	[kous] 'friend'
	[lout] 'kapul'	[po.kiou] (man's name)
	[sou.u] '(village name)'	[ndou.ai.ni] 'strengthen'
	[sou.ka] 'name of a bird'	[ndou.o] 'my strength'
	[kiou] 'IRR leave'	[lou] 'family'
	[oun] '2nd SG say'	
/au/	[lau] 'fellow workers'	[pau] 'kind of fruit'
	[sa.li.au] 'kind of fish'	[iau] 'leave'
	[hau.e] 'my shoulder'	[kei.au] 'egg'
	[kau.a] 'sago bag'	
/eu/	[kam.eu] or [kam.e.u] 'left'	[peu:] 'shark'
	[sa.leu] or [sa.le.u] 'kind of fish'	[reu] 'to come up'
/iu/	[ʔiu] 'coconut'	[ʔiu] 'pull'
	[kai.u] 'IRR leave'	[lum. ⁿ ʔiu] 'grass'
		[wa.siu] 'kanda vine'
		[hi.ue neʔ] or
		[hi.we.neʔ] 'visit'
/ui/	[po.ʔou.i] 'hold'	[ʔui:] or [ʔu.i:] 'pull'
	[ap.sou.i:] 'call'	[iʔ.ɲui] 'poisoned'
	[to.kui] or [to.k ⁿ i] 'walk'	[tou.i] 'put'
		[me.tiʔ.ui.ni] 'sleep with'
/uo/	[maʔ.u.oh] 'two'	[ⁿ deʔ.u.on] or [ⁿ deʔ.won] 'sand'
	[peɫ.u.oʔ] or [peɫ.woʔ] 'fellow wife'	[wo] 'you SG'
	[wop] 'run away'	[won] 'speak'
		[wot] 'boil'
/ua/	[eʔ.u.aR] 'latter today'	[hoʔ.u.an] 'good'
	[pa.lu.a.suk] 'stretcher'	[hon.wai] or
	[ⁿ ʔo.muʔ.u.a] 'drown'	[paʔ.was] 'vine'
	[muʔ.wan] or [muʔ.u.an] 'deep'	[peʔ.wan] 'heavy'
	[wa.ʔah] 'moon'	[was] 'blood vessel'
		[walch] 'cry out'
/ue/	[el.u.en] 'long'	[eʔ.u.ei] 'pull out'
	[lu.lu.e] 'to lower'	[har.uʔ.u.e.ni] 'think about'
	[^m bu.e] 'crocodile'	[tu.e.ni] 'boil'
	[we.lau] 'round'	[we.nei] 'able'
		[ku.ɛh] 'flute'
		[wou.en] 'you SG PERF'
		[we.ʔeʔ] 'song'
/i:/	[ha.ki:] 'piece'	[le.ʔii] 'to it'
	[nou.i:] 'wave'	[ⁿ di:] 'away from'
	[yii] 'war'	[yi.pi:] 'sago'
		[to.ni:] 'bury'
		[i.ʔei:] 'to beat'
		[yii] '3rd SG pn'

/ie/	[hei.e] 'one canoe' [pi.e.ni] 'throw' [ye.ʔe?] 'my liver'	[lo. ⁿ di.e] 'inside' [tu.li.e.ni] 'pull up' [pi.ep] 'wild pig'	[si.ɛh] 'who' [wo.ni.e.ni] 'to try' [yen] 'eat'
/ia/	[hi.an] 'good' [yau] 'go' [ya.hən] 'kandere'	[loh.i.a] 'calling' [poʔ.tou.i.a] 'holding' [ya.lɪŋ] 'like'	[pe.li.a] 'sail' [tok.i.ai] 'walking' [yas] 'sago trough'
/io/	[kiou] 'IRR leave' [yo] 'I'	[po.kiou] 'a man's name' [yoR] 'wind'	[p ^w i.yoh] 'never' [yo.wu] 'we EXCL'
/ei/	[kei] 'tree' [p ^w ei] 'say' [soi.ei] 'dig' [wou.ei] 'beetle nut tree'	[ho. ⁿ ʔei] 'write' [ʔei:] 'beat' [mei.is] or [mei.yis] 'cooked'	[mol.hei] 'nothing' [tei.ɛ?] 'like'
/ai/	[hai] 'north west wind' [ɲai.ŋon] 'nose' [ⁿ dou.ai.ni] 'strengthen' [p ^w a.yi] 'scold' -->	[hon.wai] 'birth feast' [mu.ʔai] 'short' [ma.yin] 'maybe' --> contrasts with -->	[hɛl.sai] 'laughter' [ⁿ ʔai] 'blood' [ta.yi] 'beat him' [p ^w ai] 'say'
/oi/	[soi.e] 'dig' (not many of this sequence)	[yoi] (exclamation)	[po.yi] 'angry'

First, it should be noted that the syllable breaks indicated in the above examples are etic breaks as far as I can tell. Also, I've included semivowels in the transcription of some to help make the phonetics clear. I have not written semivowels, however, where they were redundant transitions between a high and a non-high vowel across a syllable boundary . . . with a few exceptions.

Long vowels:

I have a few, limited examples of contrast between long and short vowels. (See above) Given the wide variety of vowel sequences present in the data these are probably best dealt with as gemminates or double vowels rather than emic long vowels. It is interesting to note that well over 95% of the long vowels are word final or in the last syllable of the word. It is also curious that only [u] and [i] are lengthened in this way. An alternate interpretation could be [iy] and [uw]. Nyindro (another Manus language) has gone this way but I prefer leaving just as long vowels. Most of the Lele speakers write them as [Vowel-Vowel]. Don't know what the hyphen is for but the point is that they do not write [VowelSemil].

One syllable or two?

As a general rule, it seems that if the high vowel is second in the sequence, (eg. [ai], [ou] etc.) the sequence is pronounced as a single syllable and the high vowel becomes non-syllabic (ie. [y] or [w]). If the high vowel is first in the sequence, (eg. [ia], [ue] etc.) the sequence is pronounced as two syllables - the high vowel is syllabic except when the high vowel is also word initial, in which case it is non-syllabic. Some sequences beginning in [e] also behave this way. This holds for most of the cases with the exception

of some limited morpheme boundaries (eg. [po.yil] should be *[poil] but it is a compound of [po-] 'male prefix' and [yil] 'war').

Geminates are pronounced as long mono-syllables except, if no semi-vowel is introduced, in words like [mei.is] 'cooked'. (There is no intervening glottal in these words.)

When both vowels of the cluster are high I find that I can not make a clear statement predicting syllabification (is that a word?). More often, the sequenced is pronounced as a long syllable with a complex nucleus. It depends a lot, though, upon who is pronouncing the word and what I'm listening for at the time. Words like [ɛʔu.i] 'pull' are usually pronounced (the [ui] sequence that is) as two syllables whereas words like [tokui] 'walk' never are. In this last example, in some ideolects (speech of one individual) the [u] is missing altogether and the preceding [k] is backed. The same is true for the [iu] sequences though these tend to bi-syllabic with the exception of the word [niu] 'coconut', which is always a single syllable.

Semivowels

From reviewing the data, it seems that it would be possible to eliminate semivowels from the phonological description of Lele. Most, if not all, of the phonetic non-syllabic high vowels can be accounted for in one way or another through the following phonological rules:

- 1) When a high vowel ([u] or [i]) occurs word initially and precedes another vowel, it becomes non-syllabic and is pronounced as an on-glide.

eg. /uum/	> [wum] 'house'
/uon/	> [won] 'speak'
/ualeh/	> [walɛh] 'cry out'
 /iap/	 > [yap] 'sickness'
/ior/	> [yoR] 'wind'
/ielin/	> [yelin] 'like'

- 2) Gemminate high vowels ([ii] and [uu]) are part of separate syllable nuclei when preceded or followed by another vowel.

eg. /meiis/	> [mei.is] 'cooked'
/louu/	> [low.u] 'our family'
/souu/	> ʔ[sow.u] 'village name'

- 3) When a high vowel is first in a vowel sequence, it is syllabic except when following a voiced continuant ([l] or [r]) when the high vowel tends to be non-syllabic.

eg. /hian/	> [hi.an] 'good'
/ʔdoua/	> [ʔdow.a] 'my strength'
/kueh/	> [ku.ɛh] 'flute'
/eluen/	> [ɛl.u.ɛn] or [ɛl.wɛn] 'long'
/paʔuas/	> [paʔ.was] or [paʔ.u.as] 'vine'

- | | | |
|-----|--------|----------------------------------|
| but | /kiou/ | > *[ki.ow] |
| | | > [kyow] 'IRR go' |
| | /kuel/ | > *[ku.ɛl] |
| | | [kwɛl] 'sago beating instrument' |
- 4) When a high vowel is second in a vowel sequence, it is non-syllabic.
- | | | |
|-----|---------|--------------------------|
| eg. | /motou/ | > [mo.tow] 'knife' |
| | /kaiu/ | > [kay.u] 'IRR leave' |
| | /ouŋ/ | > [owŋ] '2nd sing speak' |

Well, as I mentioned, the rules covered most of the examples. No doubt one could contrive additional phonological rules that would cover the exceptions but I'm not sure the effort would be worth while or actually reflect reality for the speakers of Lele. Orthographically it seems to make little difference.

Stress

Stress for the most part is unpredictable on a purely phonological basis. Etically the following stress patterns have been observed:

```

s' s      the most common
s s'
s s' s
s' s s
s' s s'
s s' s s
s' s s s
s' s s" s
s' s s s" s
s s s" s s s'

```

The trends I've observed are as follows:

- On nouns, stress is most often associated with the first syllable.
- On verbs, stress is most often associated with the first syllable of the stem. Prefixes are usually unstressed.
- The transitive suffix [-eni] usually receives secondary stress as [-e".ni].
- Syllables containing long vowels or glides are, other things being equal, more prominent and tend to receive stress.

Unresolved issues in Lele Phonology: Aren't there always?

Additional vowels?

Some speakers of the language maintain that there are one or two additional high vowels [ɨ] and [ɤ]. The former occur in unstressed syllables and are so reduced when associated with a nasal consonant that they are all but lost - the nasal becoming syllabic.

[atɨn] > [atɨ̃] 'his'
[ʰʂamɨt] > [ʰʂamɨ̃] 'man'

The latter [ɤ] was proposed by a speaker of Lele when I questioned him about two apparent homonyms:

[moso] 'reef' & 'I've had enough'

He claimed that the word for 'reef' was [mɔsɔ] and that was different from [moso] 'I've had enough'. For a long time I accepted this distinction but found that few were able to consistently identify what words had what vowel sound. Just recently I asked another Lele speaker about these two words and his response was that the word for 'reef' had a long vowel whereas the other didn't.

I.e. [mo:sɔ] 'reef'
[moso] 'I've had enough'

I've not had a chance to test this second hypothesis but it is of little consequence since, if there is a contrast, the functional load is so low that it is inconsequential.

Long vowels:

There is a great deal of inconsistency in my data concerning long vowels. There are many words I've transcribed at one time with long vowels and at another time with short vowels. I'm also suspicious about long vowels following a glide like [ʂui:] 'pull' and [tai:] 'kill'. In both these cases the words are monosyllabic and all my other examples of long vowels following glides are in separate syllables (eg. [tow.i:] 'put'). I would need much more evidence to accept the presence of essentially 3 vowel syllable nuclei.

In addition, the distribution of long vowels is suspicious. Why do they almost exclusively occur at the end of a word? Maybe what they are marking is the absence of [h] of a final [ʔ].

Labialized consonants:

In the section on interpretation I mentioned that that status of labialized consonants was somewhat in question. An alternative interpretation could be that, given the observation that labialized consonants were never followed by [u], they are simply the phonetic realization of [p] or [m] followed by a [uV] sequence. Omitting them would introduce more complications for rules governing vowel sequences but it is a possibility. I also have

observed at least one incidence of an apparent labialized velar [kw] in the word [k^wɛl] 'sago beating instrument'. This is clearly monosyllabic and contrasts with [ku.ɛh] 'flute' which is two syllables.

Morphophonemics - the interaction of grammar and phonology

[h] appenthesis:

This process is hardly worth describing because it is trivial in nature and a quite natural phonetic process. I'm including it here, however, because it is this process that allows speakers not familiar with word final [h] to recognize its presence.

Words beginning with a vowel [V], become [hV] following words ending in [h]. I.e. you hear the word final [h] on the following word if it is vowel initial.

Eg. /ŋah aten/ → [ŋah hatɛn] 'his kambing'
 /^hduh atsu/ → [^hduh hatsu] 'their sugar'

nb. I suspect this process is responsible in part for many [a] vowel initial pidgin words being pronounced [ha...] on Manus.

Eg. /amamas/ → [hamamas]
 /as/ → [has]

Vowel deletion:

Under some circumstances, vowels in unstressed syllables are frequently deleted. This occurs most often with Irrealis prefixes on verbs and possessive suffixes on nouns.

Eg. /ki-hiti/ 'IRR get' → [khitɪ]
 /ki-met/ 'IRR die' → [kmet]
 /ki-pomut/ 'IRR finish' → [kpomut]

 /at-en/ 'his' → [atɪ]
 /at-em/ 'your' → [atɪ]

and also

/^hɛamɛt/ 'man' → [^hɛamt]

Vowel insertion:

This is somewhat more dubious but often a problem for individuals first exposed to Lele sounds. Voiceless stops (/p/, /t/, /k/) preceding a voiced continuent ([r], [l], [n] etc.) often appear to be separated from that second consonant by a 'transition vowel'.

Eg. /plɛŋ/ 'garden' → [p^əlɛŋ]
 /kle/ 'IRR go' → [k^əlɛʔ]
 /lapnen/ 'large' → [lap^ənɛn]

nb. In practice one often wonders just which process is taking place. Is there a vowel there that is being deleted or is there really no vowel supposed to be there and it just sounds like there is? I have found this particularly troublesome and there are still many words that I'm not sure about. The tendency for native speakers transcribing texts is for them not to write the vowel in either case.

Vowel harmony: (vowels sounding the same)

There is often a considerable variation in the stem vowels of both nouns and verbs when affixed for person. With verbs, the initial vowel often becomes:

- an [o] or [u] when affixed for Irrealis 1st person
- an [e] or [o] when affixed for Irrealis 2nd person
- an [i] or [e] when affixed for Irrealis 3rd person

Eg. /hiti/ 'get'
 /you kuhuti/ 'I IRR get'
 /wo hēti/ 'you get' note: no irrealis in 2nd person
 /yi kihiti/ 'he IRR get'

With nouns, the stem vowel frequently, though not always, changes with 1st person to [o] or [u].

Eg. /pal/ 'head'
 /palem/ 'your head'
 /pal su/ 'their head'
 /polo/ 'my head'

/ⁿdikem/ 'your leg'
 /ⁿdike su/ 'their leg'
 /ⁿduko/ 'my leg'

/tam/ 'your father'
 /tamen/ 'his father'
 /tomo/ 'my father'

Methasis: (sounds changing order.)

The first two segments stem or base form of the verb are occasionally reversed when inflected for the second person singular.

Eg. /yi soling . . . / 'he prays . . .'
 /(wo) osling . . . / '(you) pray . . .'

/i tine . . . / '(he) stood up . . .'
 /etne . . . / '(you) stand up . . .'

/yi sopwani tu/ 'he helps up'
 /(wo) ospwani tu/ '(you) help us'

/yi pokulue su/ 'he look after them'
 /(wo) opkulue su/ '(you) look after them'

/yi wong le ⁿʔo su/ 'he spoke to them'
 /(wo) oung le ⁿʔo su/ '(you) speak to them'

Lele Orthography - past and present

German missionaries from the Libenzel mission first came to Manus in 1914. One of the first works they began was among Lele speakers. Schools were established in Lele and eventually the New Testament and a song book were published in the language. Unfortunately the publication of these materials did not come until after the war and the language policy had changed to favor the use of English instead of the vernacular. The song books nevertheless became quite popular but the New Testament was virtually unused. One of the many factors contributing to the lack of use of the N.T. was a difficult orthography used in its printing. It was quite unlike English in some respects and had a different orthography for borrowed words than for Lele. Listed below are the contrastive sounds in Lele, the orthography used in the Lele New Testament (Nongen Helian), and the current orthography being used by Lele speakers in vernacular work.

<u>Phoneme</u>	<u>Old Orthography</u>	<u>Current Orthography</u>
/p/	b	p
/t/	d	t
/k/	g	k
/ ^m b/	mb	mb
/ ⁿ d/	nd	nd
/ ⁿ ʔ/	ndr	ndr
/p ^w /	bo	pw
/m ^w /	mo	mw
/s/	s	s
/h/	h	h
/ʔ/	r	r
/l/	l	l
/n/	n	n
/m/	m	m
/ŋ/	ng	ng
/w/	u (v)	w

/y/	i (j)	y
/i/	i	i
/e/	e	e
/a/	a	a
/o/	o	o
/u/	u	u

almost no final [h] written

few long vowels written

Problems with the old orthography:

The single most important weakness of the old orthography is that it is quite un-English like. It's not similar to Pidgin either so the literate Lele speaker, of whom there are many, would find reading materials printed in this orthography difficult at best. It is also interesting to note that the orthography reflects the belief of the divisors that Lele has no voiceless stops. That would be an interesting development to say the least inasmuch as there are no other language in the world that have voiced stops but not voiceless.

A third difficulty is the lack of consistency. Borrowed words like "prophet", "Satan", "Peter", "Pharisee" etc. were all spelled with voiceless stops and, in addition, in some cases maintained the spelling conventions of the language from which they had been borrowed.

Eg. Satan	-->	Satan
prophet	-->	provet
Peter	-->	Petrus
Pharisee	-->	Pharisi
Messiah	-->	Messias
pound	-->	pound
king	-->	king
Jesus	-->	Jesu
Jerusalem	-->	Jerusalem
Pilate	-->	Pilatus
Sabbath	-->	Sabbath
Psalm	-->	Psalm

The lack of consistency also showed itself in the spelling of words which contained labialized consonants.

Eg. [m ^w enɪn] 'straight'	-->	monen
but [momen] 'bad'	-->	momen
[moni] 'money'	-->	moni

[pwi] 'no'	-->	bui
[p ^w ei] 'say'	-->	boi
[pohaʔni] 'confess'	-->	boharni
[poho] 'mouth'	--	boho

Word initial semivowels were generally not written except for borrowed words like 'Jesu', however when the initial sequence was [wo...] the word was usually (though not always) written with a semivowel.

Eg. [wum] 'house'	-->	um
[womu] 'you PL'	-->	umu
[wuʔu] 'year'	-->	uru
[wo] 'you SG'	-->	uo
[woŋ] 'speak'	-->	vong
[wonei] 'able'	-->	vonei
[woh] 'blow away'	-->	voh
[wovei] 'bettle nut'	-->	vovei
[was] 'vine'	-->	vas
[yii] 'war'	-->	iil
[yo] 'I'	-->	io

Current orthographical conventions:

Semivowels:

The semivowels [y] and [w], though in most cases predictable, are being written when they occur word initially and sometimes when syllable initial when the syllable break is not clear otherwise. (This is not, however, consistently practiced.) This is generally following the practice of Pidgin.

As off glides, they are written as [i] and [u] respectively, again, following the practice of Pidgin.

Prenasalization:

As with most other languages in PNG, the prenasalization is largely predictable (with the exception of the prenasalized trill [ʎ]). Nevertheless, these are written as digraphs as is also the practice in most PNG languages. The prenasalized alveolar trill is written as a trigraph 'ndr' following a long established practice in Manus languages.

Labialization:

Though the status of these segments is somewhat in doubt, the practice is to write them as digraphs 'pw' and 'mw'. This seems to cause no problem for readers and avoids the confusion caused by the earlier 'bo' and 'mo' conventions.

Velar Nasal:

Written as 'ng' as in many other languages of PNG and to maintain similarity to English and Pidgin.

Transitions and Deletions:

Increasingly there is the trend of writers of Lele to drop out vowels that are, or can be, deleted in actual speech. "Transition vowels" are never written because they are phonetic features not perceived by the speakers. The early orthographies included many of them.

Voiceless Stops:

Written as 'p', 't', and 'k' as in English and Pidgin.

Borrowed words:

Are phonemicized and written with the current orthography.

Example texts:

Old orthography from 'Nongon Helian':

Mark 7:1-4

1. Bersi su Pharisi e su ndremda pohernou per Jerusalem su me ndro
[peʔsih su paʔisi e su ⁿʔemta poheʔnou peR yeʔusaleɲ su me ⁿʔo]

Jesu. 2. Su ilndri su lao ad Jeus (sp error) su da ian gan su de surhi nemesu
Yesu su ilⁿri su lao at Yesu su ta yan kan su te suʔhi: nimesu

hanu bui, su habai su. 3. Su Pharisi e su Juda masi su surhi nemesu sidesi be
hanu p^wi su ? su su paʔisi e su Yuta masih su suʔhi: nimesu sidesi pe

su kain gan, dogoro su hinen nongen asu lapenen per goru. 4. Dogoro su iao
su kayin kan ? su hinen nongen asu lapnen peR koʔu ? si yau

bah, su me lie su surhi su hanu, boen su ian kan. Dogoro su hinen longu
pah su me le su suʔhi: su hanu p^wen su yan kan ? su hinen longu:

mabosanged su surhi lumiandran, boged, lus ma geao asu.
maposanet su suʔhi lumiyaⁿʔan p^wakt lus ma keiau asu]

New orthography from Lele Mark:

Mark 7:1-4

1. Su Perasi ma su tiken per hanunuan su to Yerusalem su me to mandrkos
[su peʔasi ma su tiken peR hanunuan su to yeʔusaleɲ su me to maⁿRkos

Yesu. 2. Su ha yindri su lau at Yesu tiken, su ha yan kan an su, su te surhii
yesu su ha yiⁿri su lau at yesu tiken ə əɲ əɲ əɲ ɛ ʔhi

nime su pwi, teke su Perasi kin hanunuen su. Su masih kesurhii nime su hanu,
nime su p^wi teke su peʔasi kin hanunuwen su su masih kesuʔhi: nime su hanu

pwen su keyenyan.
p^wen su keyenyan]

3. Su Perasi ma su Yuta masih le, su to ndrupo nongen su hiti ndro su
[su pɛʔasi ma su yuta masih le su to nʔupo nongen su hiti nʔo su

tumbu su. Kle su te surhii nime su pwi, teke sal ndangen at su tumbu su, ar
tu^mbu su kle su te suʔhi: nime su p^wi teke sal nʔangen at su tu^mbu su aR

su te yenyany pwi. 4. Nde su te yini hepsa you pah me pwi kle su te surhii
su te yenyany p^wi nʔe su te yini hepsa you pah me p^wi kle su te suʔhi:

nime su teke nongen at su tumbu su. E su to ndrupo su nongen soln le, su ha
nime su teke nongen at su tu^mbu su e su to nʔupo su nongen soln le su ha

hurii ndro su tumbu su, per surha su pweniu su kur su ndrokou, e perlet.
huʔi: nʔo su tu^mbu su pɛR suʔha su p^weniu su kuR su nʔokou e pɛʔlet]

Lele Dialects

There are three dialects of Lele. The first is spoken in and around Tingou (near Lugos mission station). This dialect comprises approximately 1/3 to 1/2 of the speakers of Lele. The second is spoken in Ndranou and villages nearby including most of the inland villages of Lele (not coastal). The third is spoken only in Rosun and is phonologically similar to Lele but lexically different. In addition, there are lexical differences throughout the language area due to regional preferences and word taboos.

Phonologically the differences are as follows:

Tingou	Rosun	Ndranou
[ʔ]	[ʔ]	[l]
[ʔaŋɛʔ]	[ʔaŋɛʔ]	[laŋɛʔ ʔa
[mɛtiR]	[mɛtiR]	[mɛtɪl] 'sleep'
[waʔah]	[waʔah]	[walah] 'moon'
[l]	[l]	[y] or [i]
[lɛŋɪn]	[lɛŋɪn]	[yiŋɪn] 'rain'
[muʔai]	[muʔai]	[molai] 'short'
[sal]	[sal]	[sai] 'road'

In all the above examples, the Rosun dialect is identical to the Lele dialect but this lexical identity is a recent development. Historically the Rosun dialect was a distinct dialect, especially lexically, and some counted it a different language. In the past generation or two the lexical distinctness has disappeared and the young people now from Rosun for the most part speak the Tingou dialect of Lele. The r/l distinction in the rest of the language remains and shows no indications of disappearing.