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A First Phonology of Elopi

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A
FIRST
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OF
ELOPI

by

I. & S. Green

1988

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1 INTRODUCTION

The Tilopi speak a language which they call Elopi, which has often been referred to in the past as Dou. They live in an area of the western Lakes Plains in Mulia Kecamatan, Paniai Kabupaten, in the Indonesian province of Irian Jaya, approximately between 137 degrees 15 minutes and 137 degrees 30 minutes East and between 3 degrees and 3 degrees 20 minutes South. Most Tilopi live along the River Tariku (formerly the Rouffaer), which they call the Lopi. They number just over seven hundred.

The Tilopi are a semi-nomadic people, most of whom have two houses, one on their own clan land and now also one in one of the five villages in the area, which were all founded about a dozen years ago. They are a largely matrilineal people. Because of these facts and of the additional one that most men have had more than one wife in their lifetime and some men more than one at the same time, dialect could be said to vary more from person to person than from clan to clan!

The data on which this paper is based has been collected on many visits of a month or two each from 1981 to 1988, mainly in the village of Kodesi (often referred to as Kordesi).

The UNCEN-SIL Project has enabled this research to take place. Many Tilopi people have helped in this, but especially Kuahuda Touda with the consonants and vowels.

The phonetic script used is that of the International Phonetic Alphabet. 1, 2, 3 and 4 represent four phonetic levels of tone, 1 being the highest. In the phonemic writing the mid tone is unmarked, and the others are: ^ (high), v (low), / (rise) and \ (fall). Syllable breaks within words are marked by commas, if the following syllable begins with a vowel.

In most literature tone is written

/ = high

\ = low

^ = fall

v = rise

*Lithographically you may refine (it makes more sense too)
but phonologically it would be best to use the international
system*

2 LANGUAGE CHANGE

It seems that considerable changes are occurring in Elopi. Until we assumed this, no consistent analysis of the phonology was possible. Things would seem to keep changing. An analysis that seemed right, would, on checking again, be wrong, but sometimes later there would be a change back to an earlier analysis or something close to it.

The tone seemed to be a four or five tone system, later it was analysed as a two tone one, but during trial literacy we were forced back to accepting that it is a five tone system, though it seems that other tones are in free fluctuation with mid tone, apart from tones in pairs or sets of words which can only be distinguished by tone, in which case the other tones are normally kept.

/kɛti/	[kɛ ³ ti ³ ~ kɛ ³ ti ²⁻³]	'a kind of banana'
/babi/	[ba ² bi ³ ~ ba ¹⁻⁴ bi ³ ~ ba ²⁻³ bi ³ ~ ba ³ bi ³]	'island'
/b [^] it [^] a/	[bi ² ta ²]	'basket'
/bita/	[bi ³ ta ² ~ bi ³ ta ³⁻² ~ bi ³ ta ³]	'pole'

In fact not all distinctions seem to be kept in the minimal sets, for example /ada/ 'a kind of tree' is not /[^]ada/.

/ [^] ada/	[a ² da ²]	'God'
/ada/	[a ² da ³ ~ a ³⁻² da ³]	'a kind of tree'
/ada/	[a ³ da ³]	'foot'

In the following pair of words only the high tone remains the same all the time, the phonetic fall tone now is in free fluctuation with mid, so that it is phonemically Mid Tone.

/dau/	[dau ¹⁻⁴ ~ dau ²⁻³ ~ dau ³]	'container'
/dau/	[dau ²]	'crocodile'

The vowels seem to be reducing in number too. /+/ is in free fluctuation with [i] for many speakers.

/biidi/	[b ⁺ di ~ bidi]	'ironwood'
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Some speakers use [ɒ] for certain words in free fluctuation with [ɔ], whereas others use only [ɔ]. Words containing [ɔ] or [o] usually keep that particular sound, although one is not wrong to use the other one, and in some words there is free fluctuation between them both.

/bobo ^u /	[bɔbo ^u ~ bobo ^u]	'chin'
----------------------	--	--------

/ho/	[hɔ̃ ²]	'grass'
/ho/	[ho ~ hɔ̃]	'(finger)nail'

[ɛ] and [e] are in free fluctuation in more words than [o] and [ɔ̃], though /ɛ/ and /e/ contrast and in most words there is either [ɛ] or [e] without any variation. Furthermore /tɛ/ becomes /te/ when the verb /sai/ 'to eat' is added: /te sai/.

/se, ⁱ a/	[sɛ, ⁱ a ~ se, ⁱ a]	'rat'
/ɛ̃/	[ɛ̃ ¹]	'ant'
/ẽ/	[ẽ ¹]	'ear'

During the last two years, we have sometimes heard [j] fluctuating with [dʒ] where previously we had heard only [dʒ], and [dʒ] fluctuating with [j] where previously we had heard only [j].

/ja/	[dʒa ~ ja]	'mother'
/se, ⁱ a/	[se, ⁱ a ~ sedʒa]	'rat'

It seems that Elopi is compensating for the reduction in phonemes by adding words to make things clearer.

/si/	'tail'
/si ta ¹ /	'tail'
/si/	'urine'
/si badiɛ̃/	'urine'

The conclusion that these changes are occurring in Elopi seems to explain the problems we had with analysing [e] and [ɛ], [o], [ɔ̃] and [ɔ̃], and the tone.

3 RELATED LANGUAGES

The chief difficulty we had in arriving at this analysis, is that in Iau tone carries a very high functional load, both lexically and grammatically, and Iau is the most closely related language lexically if one compares consonants and vowels. (See the Bibliography.)

The following two tables compare the consonants and vowels and their allophones in Elopi with those of two languages of the same family, Iau and Fayu. Diphthongs are not included since these have been discovered in Fayu but not yet fully analysed, and have only recently been discovered in Iau. After these there is a table comparing tone in Elopi and Iau only, since Fayu tone has not yet been analysed. Where more than one symbol occurs within the same rectangle, they are allophones of the one phoneme.

I A U			E L O P I				F A Y U				
P	t	k	p ^h	t ^h	t ^h	k ^h	b	f	d	dʒ	gɟ
				t	t						
ɓ	ɗ		ɓ ^h	ɗ ^h			ɓ	ɗ			
m	n		m	n			m	n			
ɸ		x h	ɸ			h	ɸ				h
	s		β	s				s	ʃ		ɟ ɟ
	l			l				l			
				f				f			
			</								

IAU.				ELOPI.				FAYU.		
i	j	ɨ	ü u	i	ɨ		u	i	ü	u
ɪ	j		ü u	ɪ				ɪ		
				e			o	e		o
ɛ			ɔ ɛ	ʌ		ɔ	ɛ		ɔ
æ		æ̃			ɑ				ɑ	

TABLE 2. VOWEL COMPARISON (EXCLUDING DIPHTHONGS).

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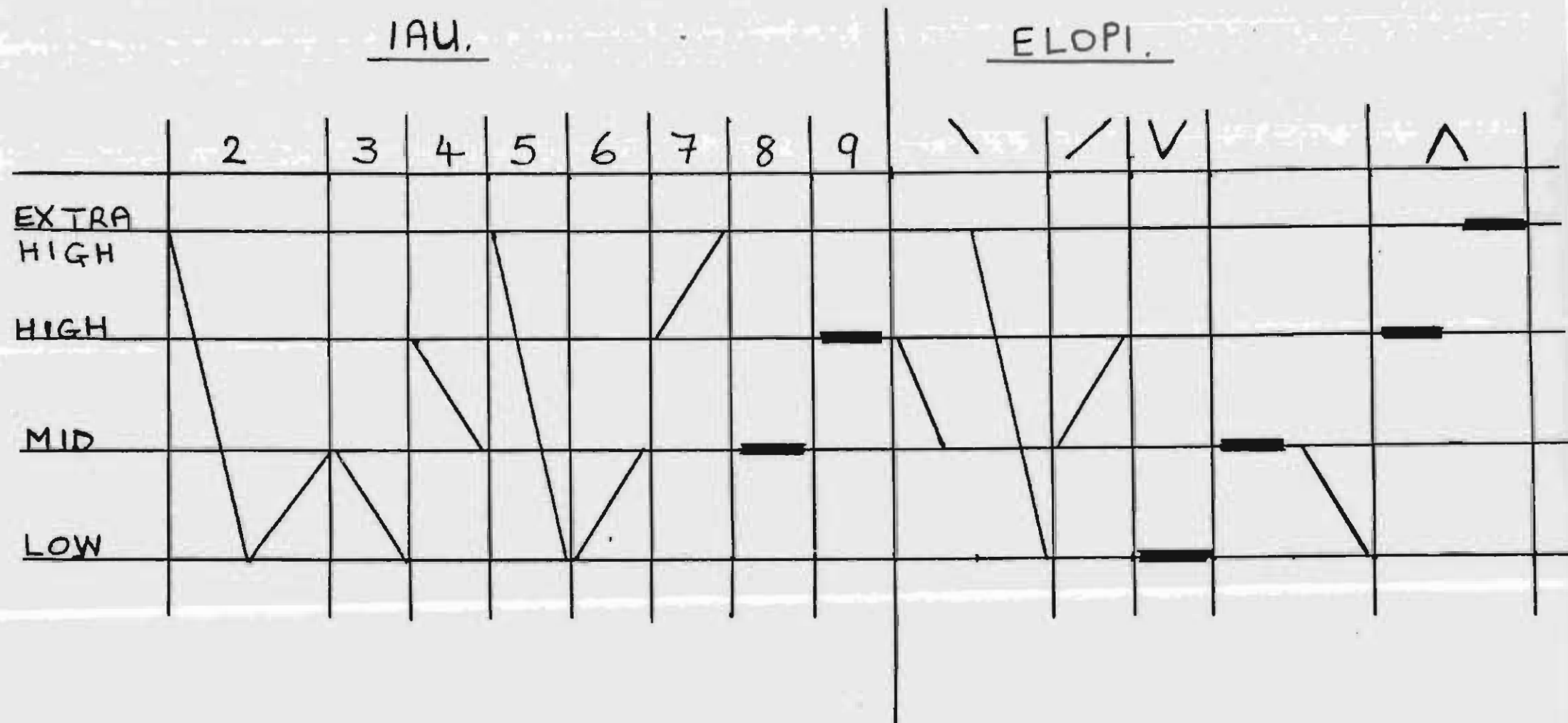


TABLE 3. TONE COMPARISON.

It can be seen that for consonants Iau and Elopi have similar sounds and phonemes, though not identical ones.

In considering vowels one can see similarities and differences between Elopi and both Iau and Fayu. Iau has up to three vowels in a syllable, whereas Elopi has only up to two.

Considerable differences can be seen in the tone, as well as some similarities. Iau, however, often has more than one tone to a syllable, whereas Elopi seems to have only one.

4 CONSONANTS

The Elopi language has nine contoid phonemes: /b/, /d/, /h/, /j/, /k/, /p/, /s/, /t/ and /t̪/. These are charted below according to their distinctive features:

		Labial	Alveolar	Dorsal
	Unaspirated		t̪	
Plosive	Aspirated	p	t	k
	Voiced	b	d	j
Fricative			s	h

Table 4: Consonant Phoneme Chart

It should be noted that the labels of this consonant chart are not precisely contrastive. /b/ and /d/ have nasal and fricative allophones and /h/ a labial allophone.

VOICELESS UNASPIRATED PLOSIVES

/t̪/ [t̪] is a voiceless unaspirated alveolar plosive.

/t̪ada/ [t̪ala] 'wasp'

/t̪aɪ/ [ati] 'bow (for arrows)'

([t̪]) a voiceless alveolar plosive is used by some speakers instead of [t̪].

/t̪ada/ [t̪ala] 'wasp'

/t̪aɪ/ [at̪i] 'bow (for arrows)'

VOICELESS LIGHTLY ASPIRATED PLOSIVES

/p/ [p^h] is a voiceless lightly aspirated bilabial plosive.

/pata/ [p^hata] 'joist'

/bopa/ [bop^ha] 'a kind of snake'

([p]) a voiceless unaspirated alveolar plosive is used by some speakers in free fluctuation with [p^h].

/pata/ [p^hata ~ pata] 'joist'

/bopa/ [bop^ha ~ bopa] 'a kind of snake'

/t/ [t^h] is a voiceless lightly aspirated alveolar plosive.

/tu/ [t^hu] 'sago'

/beta/ [bet^ha] 'stone axe'

([t^h]) a voiceless lightly aspirated dental plosive is used by some speakers instead of [t].

/tu/ [t^hu] 'sago'

/beta/ [bet^ha] 'stone axe')

/k/ [k^h] is a voiceless lightly aspirated velar plosive.

/kɛ/ [k^hɛ] 'a kind of banana'

/boke/ [bɔk^he] 'an edible snake'

([g]) a voiced unaspirated velar plosive is used by some speakers preceding back vowels.

/kua/ [gua] 'ground')

VOICED PLOSIVES

Both /b/ and /d/ have nasal, prenasalised and fricative allophones.

/b/ [b] is a voiced unaspirated bilabial plosive.

/bu/ [bu] 'mouth'

/dɛbɛ/ [dɛbɛ ~ dɛβɛ] 'dog'

[m] a voiced bilabial nasal, and

[^mb] a voiced prenasalised bilabial plosive

occur in free fluctuation with each other and with [b].

/bau/ [bau ~ mau ~ ^mbau] 'head'

/badi/ [badi ~ madi ~ ^mbadi] 'fly'

[β] a voiced bilabial fricative occurs in free fluctuation with [b].

/bohe/ [bɔβe ~ bɔbe] 'jaw'

/aβibɛtɛ/ [atibɛt^hɛ ~ atibɛt^hɛ] 'pumpkin'

/d/ [d] a voiced unaspirated alveolar plosive, and

[l] a voiced alveolar lateral

occur in free fluctuation with each other.

/dau/ [dau² ~ lau²] 'crocodile'

/sadi/ [sadi ~ sali] 'kangaroo'

([ⁿd] a voiced prenasalised alveolar plosive is used by some speakers word initially in free fluctuation with [d] and [l].

/doita/ [ⁿdoita ~ doita ~ loita] 'back')

[ɖ] a voiced unaspirated retroflexed plosive,

[ɭ] a voiced alveolar flapped vibrant, and

[n] a voiced alveolar nasal

all occur word medially in free fluctuation with each other and with [d] and [l], though [n] is rarer than the others.

/bada/ [baɖa ~ baɭa ~ bana ~ bada ~ bala] 'path'

/j/ [dʒ] is a voiced palato-alveolar affricate, which occurs word initially only.

/ja/ [dʒa] 'mother'

/josidi/ [dʒosidi] 'whose?'

([j] a voiced unrounded palatal semivowel is used by some speakers in free fluctuation with [d].

/ja/ [ja ~ dʒa] 'mother'

/josidi/ [josidi ~ dʒosidi] 'whose?')

FRICATIVES

/s/ [s] is a voiceless alveolar grooved fricative.

/sadi/ [sadi] 'kangaroo'

/toisi/ [tʰisi] 'scrub fowl'

([z] a voiced alveolar grooved fricative is used by some speakers word medially in free fluctuation with [s].

/ise/ [ize ~ isè] 'a kind of bird')

/h/ [h] a voiceless glottal fricative, and

[ɸ] a voiceless bilabial fricative

both occur in free fluctuation with each other.

/hede/ [hɛlɛ ~ ɸɛlɛ]

'eye'

/biho/ [biɸ ~ biɸɔ]

'stone'

5 VOWELS

There are fourteen vowel phonemes in Elopi, seven simple ones and seven diphthongs. They are: /a/, /aⁱ/, /a^u/, /'a/, /^ua/, /e/, /ɛ/, /ɛⁱ/, /i/, /ɨ/, /o/, /oⁱ/, /o^u/ and u. These are charted below according to their distinctive features.

	Front	Central	Back
Close	i	ɨ	u
Half-close	e		
Half-open	ɛ		o
Open		a	
Front off-glide	ɛ ⁱ	a ⁱ	o ⁱ
Back off-glide		a ^u	o
Front on-glide		i ^a	
Back on-glide		u ^a	

Table 5: Vowel Phoneme Chart

The vowels will now be described together with each allophone. Contrasts between vowels are shown in Appendix B.

FRONT VOWELS

/i/ [i] is a voiced close front unrounded vowel.

/idu/ [idu] 'thumb'

/bɛbi/ [bɛbi] 'belt'

/e/ [e] is a voiced half-close front unrounded vowel.

/[^]e, i[^]a/ [e², i^{a2}] 'turtle'

[ɨ] a voiced well-centralised close front unrounded vowel occurs word medially, and sometimes finally, in free fluctuation with [e].

/hesi/ [hesi ~ hɨsi] 'pencil'

/ape/ [ape ~ apɨ] 'wing'

[eⁱ] an off-glide

from a voiced half-closed front unrounded vowel
to a voiced close front unrounded vowel
occurs word finally in free fluctuation with [e].

/tu,e/ [t^hu,eⁱ ~ t^hu,e] 'nipple'

/bobe/ [b>be ~ b>beⁱ] 'chin'

/ɛ/ [ɛ] is a voiced half-open front unrounded vowel.

/ɛke/ [ɛk^he] 'hornbill'

/hokɛdi/ [h>k^hɛli] 'turtle'

CENTRAL VOWELS

/ɨ/ [ɨ] is a voiced close central unrounded vowel

/bɨdi/ [bɨdi] 'ironwood'

/ɨ/ [ɨ] 'edible reeds'

/a/ [a] a voiced open central unrounded vowel
occurs in both stressed and unstressed syllables.

/asi/ [asi] 'a kind of bird'

/badi/ [badi] 'fly'

[ʌ] a voiced half-open central unrounded vowel
occurs in free fluctuation with [a] in unstressed
syllables.

/doka/ [dok^ha ~ dok^hʌ] 'bud'

/bita/ [bit^ha ~ bit^hʌ] 'pole'

BACK VOWELS

/u/ [u] is a voiced close back rounded vowel.

/uda/ [uda] 'house'

/dohu/ [dohu] 'lake'

/o/ [o] a voiced half-close back rounded vowel, and

[ɔ] a voiced half-open back rounded vowel

occur in free fluctuation with each other,
though in certain words [o] is usually used,
in others [ɔ] usually is,
whereas in yet others both are common.

/ota/	[ot ^h a]	'knuckles'
/tadabo/	[t ^h alabo ~ t ^h adabo]	'a kind of tree'
/osi/	[ɔsi]	'name'
/biho/	[bihɔ]	'stone'
/ho/	[ho ~ hɔ]	'(finger) nail'
/dodidi/	[dodidi ~ dɔdidi]	'to see'

([ɔ] a voiced open back rounded vowel is used by some speakers in free fluctuation with [ɔ] in stressed syllables in certain words only.

/bobe/	[bɔbe ⁱ ~ bɔbe ⁱ]	'jaw'
/hoko ^u /	[hɔko ^u ~ hɔko ^u]	'bottom, seat'

DIPHTHONGS

All the diphthongs glide either from or to close vowels, either the front one or the back one, the more pronounced vowel always being the other one.

OFF-GLIDES GLIDING TO THE FRONT

/oⁱ/ [ɔⁱ] is an off-glide from a voiced half-open back rounded vowel to a voiced close front unrounded vowel.

/o ⁱ /	[ɔ ⁱ]	'banana'
/boi/	[bɔi]	'older sibling'
/jubo ⁱ /	[dʒubɔ ⁱ]	'who?'

/ɛⁱ/ [ɛⁱ] is an off-glide from a voiced half-open front unrounded vowel to a voiced close front unrounded vowel. (It is not common.)

/hu,ɛ ⁱ /	[hu,ɛ ⁱ]	'shoulder'
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/aⁱ/ [aⁱ] is an off-glide from a voiced open central unrounded vowel to a voiced close front unrounded vowel

/a ⁱ /	[a ⁱ 2]	'a kind of snake'
/buba ⁱ /	[buba ⁱ 2]	'yellow'

OFF-GLIDES GLIDING TO THE BACK

/o^u/ [o^u] is an off-glide
from a voiced half-open back rounded vowel
to a voiced close back rounded vowel.

/bo^u/ [bo^u] 'forehead'

/obo^u/ [ɔbo^u] 'upper leg'

/a^u/ [a^u] is an off-glide
from a voiced open central unrounded vowel
to a voiced close back rounded vowel.

/a^u/ [a^u] 'breadfruit'

/badā^u/ [ba³{a^u3-2}] 'snake'

ON-GLIDES

/i^a/ [i^a] is an on-glide
from a voiced close front unrounded vowel
to a voiced open central unrounded vowel.
It does not occur word initially.

/se, i^a/ [se, i^a] 'rat'

/te, i^a/ [t^he, i^a] 'taro'

([dʒa] a voiced palato-alveolar affricate
together with a voiced back central unrounded vowel.
is used by some speakers in free fluctuation with [i^a].

/se, i^a/ [sedʒa ~ se, i^a] 'rat'

/te, i^a/ [t^hedʒa ~ t^he, i^a] 'taro'

/u^a/ [u^a] is an on glide
from a voiced close back rounded vowel
to a voiced open central unrounded vowel.

/u^aabidi/ [u^aabili] 'a kind of bird'

/a, u^a/ [a, u^a] 'father'

6 TONE

Elopi has five tones: /[~]/ (high), / / (mid), /^v/ (low), /[/]/ (rise) and /[\]/ (fall). These are charted below with their phonetic relative pitch.

Tone Name	High	Mid	Low	Rise	Fall
Symbol	~	/	v	/	\
Phonetic:					
Very High 1					
High 2					
Mid 3					
Low 4					

Table 6 Tonemes

It should be noted that the very high allophone of high occurs only in monosyllables that lack contours. The mid to low gliding allophone of Mid occurs only utterance finally.

Except in the case of pairs or sets of words which differ only by tone, all other tones seem to be in free fluctuation with Mid Tone.

/biho/ [bi²h³ ~ bi³h³] 'stone'

/bɛbi/ [bɛ³bi³ ~ bɛ³bi²] 'belt'

Each tone is closely associated with a particular syllable. The change from one tone to another, however, does not always occur at the same moment as that from one syllable to another.

/kɛdi/ [kɛ³li³ ~ kɛ²li³ ~ kɛ²li²⁻³ ~ kɛ²⁻³li³] 'a grass'

Furthermore, perhaps because Mid Tone is considered normal, a High Tone word initially may be heard as a rise, and a High Tone word finally as a fall.

/bidi/ [bi³⁻²di²⁻³ ~ bi²di²] 'crest'

/babi/ [ba³bi³ ~ ba²bi³ ~ ba¹⁻⁴bi³ ~ ba²⁻³bi³] 'island'

Sometimes the difference between two words is only that one has a particular tone, while the other word can fluctuate between the same tone and Mid Tone.

/a^u/ [a^{u3} ~ a^{u2-3}] 'breadfruit'

/a^u/ [a^u2-3] 'a kind of bird'

Early in the investigation stress made us think we heard an additional rise tone, 4-3. So we thought we heard

[soⁱ4-3 hu3-2]

for

/soⁱ hu/ [soⁱ3-2 hu3-2 ~ soⁱ3 hu3-2] 'aeroplane'

The tonemes will now be described together with each allotones. Contrasts between the tonemes are shown in Appendix C.

LEVEL TONES

/ˆ/ [1] a very high level tone
occurs only in monosyllables that lack consonants.

/eˆ/ [e¹] 'ear'

/ɛˆ/ [ɛ¹] 'ant'

[2] a high level tone
occurs elsewhere.

/bɛˆ/ [bɛ²] 'thorn'

/adaˆ/ [a²la²] 'God'

/biˆdi/ [bi²di³] 'a kind of bird'

/ / [3-4] a mid to low falling tone
occurs utterance finally.

/ida sai/ [i³da³ sai³⁻⁴] 'drink water'

[3] a mid level tone
occurs elsewhere,
often in free fluctuation with other phonetic tones.

/boⁱ/ [boi³] 'older sibling'

/a^u/ [a^u3] 'breadfruit'

/au/ [au³] 'female'

/apu/ [a³p^hu³] 'wing'

/ko^uda/ [k^ho^u3da³ ~ k^ho^u3da²] 'red'

/babi/ [ba³bi³ ~ ba²bi³ ~ ba¹⁻⁴bi³ ~ ba²⁻³bi³]

	/dɛbɛ/	[dɛ ³ bɛ ² ~ dɛ ³ bɛ ³]	'island'
			'dog'
/˘/	[4]	is a low level tone.	
	/bi [˘] di [˘] /	[bi ⁴ di ⁴]	'a kind of wood'
	/tɛ [˘] di [˘] /	[tɛ ⁴ di ⁴]	'bend'
/ˊ/	[3-2]	is a mid to high rising tone.	
	/ou ^ˊ /	[ou ³⁻²]	'(tree) stump'
	/hu ^ˊ /	[hu ³⁻²]	'canoe'
	/bi ^ˊ ,e ^ˊ /	[bi ³ e ³⁻²]	'smoke'
/ˋ/	[2-3]	is a high to mid falling tone.	
	/da ^ˋ u ^ˋ /	[da ⁴⁻³]	'a kind of tree'
	/hau ^ˋ /	[hau ²⁻³]	'a kind of tree'
[1-4] a very high to low falling tone occurs in free fluctuation with [2-3] in many words.			
	/fou ^ˋ /	[tou ¹⁻⁴ ~ tou ²⁻³]	'(fishing) line'
	/sau ^ˋ /	[sau ¹⁻⁴ ~ sau ²⁻³]	'child'

7 STRESS

The first syllable of a word seems to be the one that is slightly stressed. It is difficult to hear and at one stage we thought that we heard stress on different syllables in different words, though we no longer do. Stress in Elopi is force and slightly higher pitch, perhaps also very slight lengthening of the syllable.

S	/bɛ/	'fire'
SW	/ada/	'foot'
SWW	/hokɛdi/	'turtle'
SWWW	/hat ^h ɛbada/	'white'

8 SYLLABLE STRUCTURE

Syllables in Elopi consist of an optional initial periphery, which may contain one consonant, and a following nucleus, which may contain either one or two vowels.

/obe/ = o + be 'upper leg'

We may say that there are two types of syllable: the one having a nucleus that contains only one vowel, and the other having a nucleus containing two vowels. Both can occur in both stressed and unstressed syllables.

/buata/ 'stone axe holder'

/bada^u/ 'snake'

/bɪ̃/ 'egg'

/dau/ 'container'

All consonants may occur syllable initially, except tha /j/ occurs only word initially.

On-glides do not occur following a contoid. Otherwise, when the syllable nucleus contains only one vowel, all the vowels may occur in it, both in stressed and unstressed syllables.

When the syllable nucleus contains two vowels, one of them is always a close one, and no diphthongs occur.

The following tables, 7 - 10, show, with examples:

- 7) which pairs of vowels occur in the same syllable,
- 8) on-glides
- 9) off-glides
- 10) which vowels meet across syllable boundaries.

\ Second V	i	e	a	o	u
First Vowel					
i					
e					
a	ai 'not'				au 'female'
o	boi 'older sibling'				bou 'forehead'
u	tibui 'cassava'	kue 'a snake'	kua 'ground'		

Table 7 Two Vowels in the Same Syllable

\ Second V	i	e	a	o	u
First Vowel					
i			se, i 'rat'		
e					
a					
o					
u			uabidi 'a bird'		

Table 8 On-glides

Second V	i	e	ə	o	u
First Vowel					
i					
ɛ	hu, ɛ ⁱ 'shoulder'				
a	ʌ ⁱ a ⁱ 'a snake'			a ^u 'breadfruit'	
o	o ⁱ 'banana'			o ^u 'heart'	
u					

Table 9 Off-glides

Second V	i	e	ɛ/ɛ ⁱ	a/a ^u	u
First Vowel					
i	bi, e 'smoke'	bi, ɛdi 'throw post'	hi, a 'fish'		oɔi, a ^u , a ^u 'many'
e	se, i ^a 'rat'				
a					a, u ^a 'father'
o					to, u ^a 'hairs'
a ^u /u	tu, e 'nipple'	hu, ɛ ⁱ 'shoulder'	du, a 'slowly'		a ^u , a 'a snake'

Table 10 Vowels Meeting Across Syllable Boundaries

In all the above four tables we can see that only a few of the possibilities have been noted to occur.

The following table, Table 11, shows the vowel sequences and diphthongs that commence with a close vowel or a glide from a close position.

Sequence of Vowel Sounds situation	u + a	u + e	i + a	i + ε
Word Initial	<u>u</u> abidi 'a kind of bird'			
After a Vowel	a, <u>u</u> 'father'		se, <u>i</u> 'rat'	
After a non-alveolar Plosive	<u>k</u> ua 'ground'	<u>k</u> ue 'praying mantis'	<u>b</u> i, <u>a</u> 'razor blade'	<u>b</u> i, <u>ε</u> di 'to throw post in hole'
After Alveolars & Fricatives	<u>s</u> u, <u>ʔ</u> 'small, broken sago'	<u>t</u> u, <u>e</u> 'nipple'	<u>h</u> i, <u>a</u> 'fish'	

sɔapɔ 'butterfly' is the exception.)

TABLE II DIPHTHONGS OR VOWEL SEQUENCES ?

From the preceding tables we can conclude that:

1) i + another vowel sound

- a) after a consonant, are in different syllables,
- b) after a vowel, is a diphthong, and
- c) does not occur word initially.

2) u + another vowel sound

- a) after non-alveolar plosives, are two phonemes but in the same syllable
- b) after other consonants, are in different syllables, and
- c) elsewhere is a diphthong.

3) other vowel sounds + close vowel sound

can be either a diphthong, or a sequence within a syllable, but do not have a syllable boundary between them.

9 ORTHOGRAPHY

We were unable to complete the analysis of Elopi phonology until we had taught a group of Tilopi to read and write. The orthography that had evolved by the end of the trial literacy classes is listed below.

PHONEME	SYMBOL	PHONEME	SYMBOL
ɛ	th	a	a
p	p	a ⁱ	ai
t	t	a ^u	au
k	k	i ^a	ia
b	b	u ^a	ua
d	d	u	u
j	j	o	o
s	s	o ⁱ	oi
h	h	o ^u	ou
i	i	high tone	ˊ
e	x	mid tone	
ɛ	e	low tone	ˋ
ɛ ⁱ	ei	rise tone	ˊˋ
		fall tone	ˋˊ

Table 12 Orthography

This orthography does not distinguish between off-glides and sequences of two vowels within a syllable.

au	/a ^u /	'breadfruit'
au	/au/	'female'

Nor does it distinguish between vocoid + on-glide and off-glide + vocoid.

aua	/a ^u .a/	'father'
aua	/a ^u .a/	'a kind of snake'

In the future it will probably become unnecessary to distinguish 'i' from 'ii', and 'e' from 'x', since there are so few minimal pairs. The context would usually help readers in this situation. Near the end of the trial literacy classes the group was asked whether they would prefer to change from 'x' to 'ey', but they did not wish to change. In view of the possibility that in the future both 'e' and 'x' may be written 'e', it would probably be wiser not to try to change to 'ey'.

It may, however, eventually be unnecessary to mark tone at all. If, however, neither the tone differences nor the vowel difference, as to whether the syllable contains two vowels or a vowel-glide, is shown in the orthography, care must be taken to see that reading has not become too difficult in sets of monosyllabic words that differ in both tone and in whether there are 2 vowels or a vowel-glide, but in no other way.

boi	/boi/	'older sibling'
boi	/bo ^ˈ i/	'a kind of tree'
and		
dau	/dau/	'container'
dau	/da ^ˈ u/	'a kind of tree'
dau	/da ^ˌ u/	'crocodile'

It would probably be best to keep to the present orthography for the first group of people taught to read in each village, unless the grammatical investigation changes the phonological analysis, or dialectal investigation shows that change is necessary.

10 CONCLUSION

It is interesting to note that it was not possible to write this phonology until a few native speakers had learnt to read and write Elopi. Only during and after this trial literacy course did certain important facts emerge that explained the phonological system of Elopi.

One example of this is that Mid Tone freely fluctuates with another tone in most syllables. Another is that /j/ was needed rather than [dʒ] occasionally fluctuating with [j] word initially before vowels, being explained as part of /i/, as distribution allowed.

More knowledge of dialectal differences and more Tilopi able to read is necessary before revising the phonology and orthography if necessary.

APPENDIX A - CONSONANT CONTRASTS

VOICELESS PLOSIVES

/t ^h o ^h /	[to ^h]	'horsefly'
/pou/	[p ^h ou]	'post'
/tou/	[t ^h ou]	'scrotum'
/kou/	[k ^h ou]	'arm'
/bopa/	[bop ^h a]	'a kind of snake'
/ota/	[ot ^h a]	'knuckle'
/doka/	[dok ^h a]	'bud'

VOICED PLOSIVES

/bada/	[bala]	'path'
/da/	[da]	'day'
/ja/	[dʒa]	'mother'
/babi/	[babi]	'island'
/badi/	[badi]	'fly'

ALVEOLARS

/t̪a/	[ta]	'paddle'
/ta/	[t ^h a]	'flesh'
/da/	[da]	'day'
/sa/	[sa]	'leaf'
/ja/	[dʒa]	'mother'
/aɕi/	[ati]	'bow' for arrows
/hisadi/	[hisali]	'possum'
/asi/	[asi]	a kind of bird

LABIALS

/pou/	[p ^h ou]	'post'
/bou/	[bou]	'forehead'
/hou/	[hou]	'shorter side'
/api/	[ap ^h i]	'wing'
/babi/	[babi]	'island'

APPENDIX B - VOWEL CONTRASTS

FRONT & CENTRAL VOWELS

/i/	[i]	'bone'
/ê/	[e ^l]	'ear'
/ɛ̃/	[ɛ ^l]	'ant'
/ɨ/	[ɨ]	'edible rushes'
/a/	[a]	'I'
/a ⁱ /	[a ⁱ 2]	a kind of snake
/a ^u /	[a ^u]	'breadfruit'
/ida/	[ida]	'water'
/ɛ dɛ da/	[ɛ l ɛ la]	a bird
/ada/	[ala]	'foot'
/daida/	[daida]	'thunder'
/a ^u da/	[a ^u da]	'nest'
/api/	[ap ^h i]	'wing'
/obe/	[ɔbe]	'upper leg'
/bodapɛ/	[bɔ l ap ^h ɛ]	'pen'
/bopa/	[bop ^h a]	a kind of snake
/ɛ ke/	[ɛ k ^h e]	'hornbill'
/kɛ/	[k ^h ɛ]	a banana
/ka/	[k ^h a]	'bundle'
/ka ⁱ /	[ka ⁱ 2-3]	'thigh'
/tibui/	[t ^h iɓui]	'cassava'
/kue/	[k ^h ue]	'praying mantis'

/tu,e/	[tu,e]	'nipple'
/hu,ɛ'/	[hu,ɛ']	'shoulder'
/hu,a/	[hu,a]	'throat'
/hu,ai/	[hu,ai]	'adam's apple'

BACK & CENTRAL VOWELS

/ha/	[ha]	'excrement'
/ha'/	[ha']	'raw sago'
/ho [^] /	[ho ²]	'grass'
/ho'be/	[ho'be]	'a few'
/hu/	[hu]	'owl'
/dadada/	[dalala]	'mountain'
/da ^u /	[da ^u 2-3]	a tree
/dodi/	[doli]	a snake
/do'ta/	[do'tha]	'back'
/duda/	[dufa]	'cucumber'
/ada/	[ada]	a tree
/hoda'/	[ho(a)']	'to cut'
/bada ^u /	[baɖda ^u 3-2]	'snake'
/sɛdo/	[sɛlo]	'spoon'
/hɛdo ^u /	[hɛlo ^u]	'upper arm'
/budu/	[buɸu]	'beard'

APPENDIX C - TONE CONTRASTS

/h [^] u/	[hu ²]	'ridge beam'
/hu/	[hu ³]	'owl'
/h ^v u/	[hu ⁴]	a kind of bird
/h ^ˊ u/	[hu ³⁻²]	'canoe'
/h ^ˋ u/	[hu ²⁻³]	a kind of wasp
/h [^] au/	[hau ²]	'axe'
/hau/	[hau ³]	'wind'
/h ^ˊ au/	[hau ³⁻²]	'worm'
/h ^ˋ au/	[hau ²⁻³]	a kind of tree
/b [^] i ^ˋ d ^ˋ i/	[bi ² di ²]	'crest'
/b [^] i ^ˋ d ^ˋ i/	[bi ² di ³]	a kind of bird
/bidi/	[bi ³ di ³]	'tooth'
/b ^v i ^v d ^v i/	[bi ⁴ di ⁴]	a kind of tree
/tɛ ^v d ^v i/	[tɛ ³ di ⁴]	'bend'
/bi,é/	[bi ³ e ³⁻²]	'smoke'
/bub [^] a ^ˋ i/	[bu ³ ba ^ˋ i ²]	'yellow'
/s ^ˊ u,á/	[su ³⁻² a ²]	a kind of tree
/s ^ˋ u,á/	[su ² a ²]	'small broken sago'

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