Sika Notes

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1   Introduction

Sika is a language of eastern Flores. Relatively little linguistic attention has been paid to this language in recent years, though more than has been spent on most languages of the region, notably only Rosen (1986) and Lewis and Grimes (1994). This paper seeks to briefly describe some aspects of the synchronic and diachronic phonology of the language, and to use the latter to explain the system of verbal inflection. A brief comparison of phonological and grammatical features with a dialect of a variety of the Lamaholot language is made, with the conclusion that they are not as closely related as has been assumed (eg., Wurm and Hattôri 1981). Data on a variety of Lamaholot is based on Stokhof (1975) and my own fieldnotes from the Alor and Pantar islands.

The dialect situation in Sika is reportedly rather complex, with several different dialect groups being reported by native speakers (Rosen 1986, who also refers to the language as *Maumere*). I do not intend to deal with the dialect situation in this article, since my materials are limited to phonological data on one speech variety, and I do not have any information about other varieties. I can only mention that the dialect described here does not seem to be the exactly the same as that described by Rosen, having both final -*n* and -*ŋ* in words at a gross phonotoactic level, and displays several differences in phonetic form of the phonemes, and differences in the underlying phonemic system. My informants come from the city of Maumere, though the nature the sub-dialectal variety is unknown (to judge from Rosen's comments on dialectal differences (1986:41), the speaker was from what Rosen called the 'Sika' subdialect). My information is not by any means complete, and is based on only a short period of fieldwork with speakers of the language (all from the same dialet area, by their own account) resident in Ujung Pandang.

2   Phonology

The phonological system of Sika is described in terms of the vowels and the consonants found in the language; there is some interaction between the two (gemination of consonants), and that is dealt with in between the two sections. Stress is non-phonemic, falling on the penultimate syllable, and there do not appear to be any other phonemic suprasegmental features, such as pitch accent or tone, or constrastive voice qualities. The stressed syllable is selected after affixing take place, e.g. *ŋasu* 'hundred' + *ha* 'one' gives [ŋa'suha], and not * ['ŋasuha]. I will examine the vowel system, and then any restrictions that are found in the combinations of vowels possible, and the question of the phonemic status of the glottal stop, by comparing the environments in which they occur in disyllabic words.

2.1 VOWELS

The vowel phonemes are set out in Chart 1:

	Front	Central	Back
	i		u
	e	ə	o
		a	

TABLE 1: VOWEL PHONEMES

Discussion of the phonemes:

/i/ → [ɪ] / __ C #

→ [i] / elsewhere

/e/ → [ɛ] / __ C #

→ [e] / elsewhere

/ə/ → [ə̆]

/a/ → [a]

/o/ → [o] / __ C / __ (C) #
           [+dental]

→ [ɔ] / elsewhere

/u/ → [ɷ] / __ ŋ
          [-stress]

→ [u] / elsewhere

Contrasts establishing the separate identity of some suspicious pairs

/e/ vs /ə/:

['ɛra]   'vagina'   vs   ['ərːa]   'stand'

/e/ vs /i/:

['βaɛn}   'face'   vs   ['βain]   'wife'

/a/ vs /ə/:

['ala]   'head'   vs   ['əlːa]   'fall'

/a/ vs /e/:

['main]   '(head)louse' vs   ['mein]   'blood'

/u/ vs /i/:

[au]   'you'   vs   [ai]   'wood'

/u/ vs /o/:

[hok]   'wipe'   vs   [huk]   'think'

2.1.1 Vocalic possibilities in monosyllables

Not all vowels have equal phonological status in Sika. Sika has restrictions on the positions in which /ə/ can occur, and on the other vowels that can appear in a word with a /ə/. All vowels except /ə/ can occur in monosyllabic words, as seen in the examples below:

Vowel	i	e	ə	a	o	u
Words:	*min*	*le*	—	*ha*	*hok*	*huk*
	'sweet'	'east'		'one'	'wipe'	'think'

TABLE 2: VOWELS IN MONOSYLLABLES

This points to the schwa not fulfilling the concept of the minimal word in Sika. We find similar constraints on the appearance of two vowels in the same (disyllabic) word, and this is examined in the following section..

2.1.2 Vowel sequences

The following sequences of two vowels in adjacent syllables have been recorded whent ehre is no intervening consonant, oral or otherwise. The words presented below are clearly not minimal pairs, but do serve to illustrate the kinds of vowel sequences allowed in the language, though the small number of such forms makes this table in particular rather exploratory (in the table * is used to indicate what is thought to be an accidental gap in the data, and — to indicate a systematic lack of a combination. This convention is followed in the other tables following).

σ₁ \ σ₂	i	e	ə	a	o	u
i	—	*die* 'open'	—	*kiat* 'knife'	*	*niu* 'tooth'
e	*mein* 'blood'	—	—	*lea* 'ginger'	*	*
ə	—	—	—	—	—	—
a	*vair* 'air'	*βaen* 'face'	—	—	*	*au* 'you'
o	*	*voer* 'floor'	—	*	—	*ɾoun* 'leaf'
u	*vui* 'I wait'	*bue* 'food sort'†	—	*rua* 'two'	*	—

†*bue* is a dish of rice and beans.

TABLE 3: VOWELS IN DISYLLABLES

We can conclude that vowel sequences cannot involve /ə/, or two like vowels. It appears that non-back vowels can only combine with a following /u/, and not /o/, a common pattern in diphthongisation across languages, though this may simply reflect insufficient data.

2.1.3 Intervocalic glottal stops

Examining the environments in which intervocalic glottal stops occur (of interest since these stops are the only ones without any place specification), we find that there are some restrictions on their appearance in terms of the vocalic environments to either side of the glottal stop. We can see that there are some similarities in the restriction placed on vowels in this environment, compared to the material in the previous table in which there is no intervening consonant, but there there is still a strong restriction against the appearnce of schwas. Most significantly there is now no restriction against two identical vowels appearing in adjacent syllables, which was the case when there was no intervening glottal stop.

σ₁ \ σ₂	i	e	ə	a	o	u
i	*miʔi* 'urine'	*	—	*iʔan* 'fish'	*tiʔolon* 'bird'	*iʔur* 'tail'†
e	*ʔeʔi* 'this'	*	*eʔən* 'no'	*teʔa* 'sell'	*veʔor* 'tail'†	*teʔu* 'mouse'
ə	—	—	—	—	—	—
a	*taʔin* 'stomach'	*haʔe* 'climb'	—	*paʔa* 'thigh'	*naʔo* 'steal'	*blaʔur* 'frog'
o	*boʔir* 'neck'	*toʔen* 'back'	—	*roʔaŋ* 'monkey'	*roʔon* 'near'	*
u	*huʔi* 'bathe'	*tuʔe* 'sleep'	—	*uʔa* 'I work'	*	*muʔu* 'banana'

†*iʔur* is used for four-legged animals, *veʔor* for animals on two legs (monkeys).

TABLE 4: VOWELS SEQUENCES ACROSS GLOTTAL STOPS

With the exception of *eʔən*, /ə/ does not appear in the vicinity of glottal stops. The missing *uʔo* sequence might be thought to be insignificant, were it not also reflected in the inventory of vowel combinations which are allowed in adjacent syllables without intervening stops.

2.1.4 Vowels in adjacent syllables

When vowels with an interrupting (non-glottal stop) consonant are considered, there are very few restrictions on cooccurrence. This difference in distribution when compared to the intervocalic glottal stops points to a real phonological difference between the glottal stop and the other (oral) consonants in terms of the difference they make to phonotactics. In particular, we might note that the sequence əCV is allowed when the C is an oral consonant, as in the table below, and not when C is a glottal stop. Other than that, there do not appear to be any systematic differences between oral and non-oral stops with respect to the (non-schwa) vowels which may appear to either side of the stop.

σ₁ \ σ₂	i	e	ə	a	o	u
i	*viri* 'left'	*bile* 'lonely'	—	*bliran* 'lukewarm'	*	*niluk* 'sour'
e	*	*bleler* 'thin'	—	*peha-peha* 'different'	*gelok* 'clean'	*meluk* 'clean'
ə	*nətin* 'stick to'	*təker* 'narrow'	—	*təran* 'hard'	*təgor* 'strong'	*həmu* 'old'
a	*blavir* 'far'	*save* 'all'	—	*apar* 'thick'	*ɣaloŋ* 'I return'	*gahu* 'be sick'
o	*vori* 'dry'	*donen* 'beckon'	—	*mosa* 'fat'	*boro* 'cut'	*morun* 'hungry'
u	*hulir* 'forget'	*buhe* 'lie'	—	*bura* 'white'	*	*buluk* 'short'

TABLE 5: VOWELS SEQUENCES ACROSS ORAL STOPS

Only three combinations (other than those involvoing a schwa) are not attested in the data, *uCo* , *iCo* and *eCi*. The fact that the first of these is not found either as a sequence of two vowels, or separated by a glottal stop, may well point to a phonotactic constraint in the language. The lack of *eCi* and *iCo* forms probably reflects defective distribution in the language data, rather than phonotactic constraints in the language.

2.1.5 Long vowels

Vowels are non-phonemically, and inconsistently, lengthened in certain environments. This applies to all non-schwa vowels, and the environments include the following:

1. in monosyllabic words. This form of lengthening is optional, and so the long vowel should not be taken to be an underlyingly long vowel synchronically.

/ma/	→	[maː]	'tongue'
/lun/	→	[luːn]	'tear'

2. in the syllable before another high vowel, if the vowel itself is high. This lengthening is more regular, but still not consistent.

/vivir/	→	['viːvir]	'lips'
/iru/	→	['iːru]	'nose'

BUT

/mata/	→	['mata]; * ['maːta]	'eye'
/aru/	→	['aru]; * ['aːru]	'chin'

3. in the syllable before another like vowel, if the vowel itself is not low

/kokon/ → ['kɔːkɔn] 'eye brow'

BUT

/toʔen/ → ['tɔʔɛn]; * ['tɔːʔɛn] 'back (body part)'

2.2 CONSONANTAL GEMINATION

Sika shows non-phonemic consonant gemination following a schwa. This is a feature found in common with several other languages of the area surrounding the Flores sea (such as the Bugis language from South Sulawesi, Tukang Besi from Southeast Sulawesi, Ngad'a from a more westerly position on Flores island, Sawu from the island of the same name), suggesting that this might be an areal feature. In Sika, this gemination is not found after other vowels.

/kəmaŋ/ → ['kəmːaŋ] 'eel'

/ɣəɣa/ → ['ɣəɣːa] 'I hunt'

2.3 CONSONANTS

The consonant phonemes of Sika are set out in Chart 2, as well as some potentially suspicious segments, with a discussion of some of the more unusual phonemic contrasts below.

	Bilabial	Labio-dental	Dental - alveolar	Velar	Glottal
Stop: - voice	p		t	k	ʔ
+ voice	b		d	g	
Nasal	m		n	ŋ	
Fricative	β	v	s		h
Lateral			l		
Trill			r		
Flap		ɣ	(ɾ)		

TABLE 6: CONSONANT PHONEMES

Some contrasts establishing the separate identity of some suspicious pairs founf amongst the above consonants exist in the following pairs of words:

/r/ vs /ɽ/:

['raha]   'chest'   vs   ['ɽaha]   'rib'

> (this pair show a surface contrast, but 'rib' is likely to be derived from 'chest'
> thorugh the addition of a genitive morpheme, in the same way that [ɽ] is derived from
> /r/ in the verbal paradigms, as described in section 4.1)

/r/ vs /l/:

['mərːa]   'yesterday'   vs   ['məlːa]   'swallow'

/ʔ/ vs Ø:

[aʔu]   'I'   vs   [au]   'you'

['vaʔin]   'foot'   vs   ['βain]   'wife'

/β/ vs /v/ vs /ɣ/:

['βoːtɛr]   ' I buy'   vs

['voːtɛr]   'we (INC) buy'   vs   ['ɣoːtɛr]   'I stand a pole in the ground'

/n/ vs /m/:

['naran]   'name'   vs   ['maran]   'dry (of clothes)'

Notable allophonic variation and phonemic realisations:

/β/   A voiced bilabial continuant, varying between a weak fricative ([β]) and, less
       commonly, a labio-velar approximant ([w]).

/ɣ/   A voiced labio-dental flap. This sound is produced as for a [v] but with labial contact
       with the *inner surface* of the upper teeth; this sound is flapped forward from the start
       to create a sound that is at times affricated ([b̪ɣ]), and sometimes simply a voiced
       labio-dental stop/flap ([b̪]), as has been reported for some ideophones in Margi, a
       West African langue. In careful speech, however, [ɣ] is produced. A preglottalised
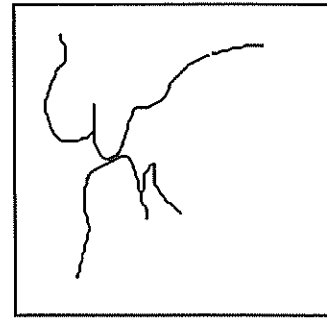   or laryngealised version ([ʔɣ] or [ˁɣ]) was not heard in any position.

The differences between the articulatory positions involved for /β/, /v/ and /ɣ/ are illustrated in
the following diagrams, showing lip and tooth positions for the different X-labial fricatives:
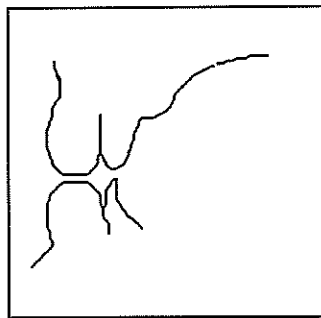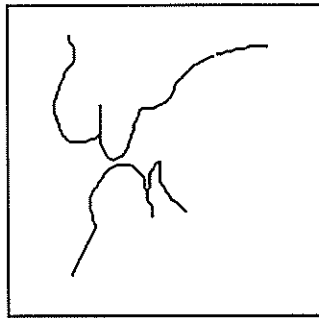
/β/, bilabial fricative   /v/, labio-dental fricative   /ʋ/ , labio-dental flap

TABLE 7: THE THREE BILABIAL FRICATIVES

Notice that the /ʋ/ described here for Sika is not the same as the labio-dental flap described by Ladefoged as occurring "in ideophones in Margi" (Ladefoged 1964:18). With the Margi flap, "the articulation consists of drawing the lower lip back inside the upper teeth, and then allowing it to flap against the teeth as it returns to its normal position." (Ladefoged 1964:18). The first of three stages that Ladefoged describes as occurring in the Margi sound is nearly the same in Sika: "a stop with the lower lip tensed against the upper lip and teeth." In Sika, the lower lip is drawn further in than Ladefoged's photographs (1964: plate 7a) suggests, but following this it is released straight forwards, without "pulling the lower lip back inside the upper teeth" as happens in Margi. Thus, while there are similarities between the two sounds, they appear to be articulated in different ways.

/d/   A voiced alveolar stop, with occasional mildly imploded allophones [ɗ], especially in the vicinity of glottal stops (i.e., /d/ → [ɗ] / ʔ V__, __V ʔ)

[ɽ]   A voiced flapped rhotic, somewhat (but neither significantly nor consistently) retroflexed, sometimes (especially word initially) preglottalised [ˀɽ]. Derived from an underlying /ʔ/ and /r/,

2.4   PHONOTACTICS

Clusters of bilabial or velar stops with a following /r/ or /l/ are allowed initially and medially. Other initial clusters were not observed, but medial clusters of homorganic nasals + stops were observed. A template of the form (C) (r,l) V [(N (C)) V]^2 (N, r) would account for the roots observed, and only a few alterations are needed to account for derived forms.

3   Historical Phonology

The evolution of the consonants and vowels from proto-Malayo-Polynesian is shown in the sections following (For a similar treatment of proto-Malayo-Polynesian as a suitable starting point for reconstuctions, see van den Berg (1991). The argument for this is that considerable simplification of the PAN consonant system that had already occurred by the time that PMP was a separate entity makes the use of several PAN subscripts and phonemes redundant). The derivation

of the consonantal system in particular sheds light on the system of verb classes that is a feature of the language, and is used to explain some of the apparent irregularities and collapses in the verbal system.

It should be noted that, while the changes presented below are consistent with the data available, there are exceptions to the sound changes proposed. These might be the result of borrowings, of irregular sound changes, or of different morphological environments.

3.1   CONSONANTS

The following consonants are not significantly changed from PMP:

*l	>	l		
*m	>	m	(	$>\emptyset$ / __#)
*p	>	p		
*t	>	t		

The following consonants are significantly changed from their PMP forms:

*b, *w	>	v
*D, *j, *R, *Z	>	r
*k	>	$\emptyset$ /#__, ʔ / elsewhere
*n, *ŋ	>	n
*q	>	ʔ
*s	>	h

Phonotocatic changes:

*(N)C	>	C
*$\sigma_1\sigma_2\sigma_3$	>	(C$_1$) σ_2 σ_3

Examples of these changes are given below:

*(N)C

*tanduk	>	tara	'horn'
*muntaq	>	muta	'vomit'

*σ₁ σ₂ σ₃

*qalipan	>	ʔlipan	'centipede'	(*qalipan > **q-lipan)
*qaləjaw	>	lero	'sun'	
*paniki	>	niʔi	'bat'	
*ma-qitəm	>	mita-k	'black'	

*b

*abu	>	avu	'charcoal'
*babuy	>	vavi	'pig'
*batu	>	vatu	'stone'

*d/D

*DəŋəR	>	rəna	'hear'
*Dua	>	rua	'two'
*tanduk	>	tara-n	'horn'

*h

| *kahiw | > | ai | 'tree' |
| *kahu | > | au | 'you' |

(these forms are glottal-stop initial in other dialects of Sika)

*j

*ŋajan	>	naran	'name'
*pajəy	>	pare	'rice'
*qaləjaw	>	lero	'sun'

*k

*ikan	>	iʔan	'fish'
*ikuR	>	iʔur	'tail'
*kita	>	ita	'see (1SG); we (incl.)'
*kutu	>	utu	'(head)louse'

*l

*lima	>	lima	'hand'
*təlu	>	təlu	'three'
*ulaR	>	ular	'snake'

*m

*ama	>	ama	'father'
*lima	>	lima	'hand'
*mata	>	mata	'eye'
*ənəm	>	əna	'six'

*n

*ina	>	ina	'mother'
*paniki	>	niʔi	'bat'
*quZan	>	uran	'rain'

*ŋ

*ŋajan	>	nara-n	'name'
*taŋis	>	tani	'cry'

*p

*pitu	>	pitu	'seven'
*qalipan	>	ʔlipan	'centipede'

*q

*quZan	>	uran	'rain'
*paqa	>	paʔa	'thigh'
*ma-iRaq	>	mera-k	'red'

*R

*bibiR	>	vivir	'lips'
*ikuR	>	iʔur	'tail'
*ulaR	>	ular	'snake'

*s

*siku	>	hiʔu	'elbow'
*susu	>	uhu	'breast'
*tasik	>	tahi	'sea'

*t

*kutu	>	utu	'(head)louse'
*taqi	>	taʔi	'excrement'
*təlu	>	təlu	'three'

*w

*siwa	>	hiva	'nine'
*wahiR	>	vair	'water'
*wiRi	>	viri	'left'

*z/Z

*quZan	>	uran	'rain'
*Zaqit	>	raʔit	'sew'

3.2 VOWELS

The reflexes of PMP vowels and vowel + glide sequences are set out below:

PMP		Sika
*a	>	a
*ə	>	a / __(C)#, > e / __j, > ə / elsewhere
*i, *iw, *uy	>	i
*u	>	u
*aw	>	o
*ay, (*ey)	>	e

Examples:

*ə

*DəŋəR	>	rəna	'hear'
*təlu	>	təlu	'three'
*ma-qitəm	>	mita-k	'black'
*ənəm	>	əna	'six'

*əj

*laləj	>	ʔale	'fly'
*qaləjaw	>	lero	'sun'
*uləj	>	ule	'earthworm'

*əy

*pajəy	>	pare	'rice'

*i

*ina	>	ina	'mother'
*ma-qitəm	>	mita-k	'black'
*paniki	>	ni?i	'bat'

*iw

| *kahiw | > | ai | 'wood' |

*u

*susu	>	uhu	'breast'
*qijuŋ	>	iru	'nose'
*aku	>	a?u	'I'

*uy

| *hapuy | > | api | 'fire' |
| *naŋuy | > | naɲi | 'swim' | (possibly a loanword, because of the irregular *ŋ > ɲ) |

*aw

| *qaləjaw | > | lero | 'sun' |

*ay

| *bəRsay | > | vehe | 'paddle' |

(here it appears that *R has dropped, but not before affecting the quality of the preceding schwa)

| *matay | > | mate | 'die' |

3.3   IMPLICATIONS OF THE HISTORICAL EVIDENCE

The Sika data presented here have important ramifications for some recent proposals regarding the basis for claiming the genetic unity of the Central Malayo-Polynesian (CMP) languages. One of the criteria established by Blust (1990, 1993: 263) to subgroup the languages together was the loss of antepenultimate syllables beginning with PMP *h or *q in all of the languages in the region; Blust writes that

> PMP trisyllables which began with a vowel or a vowel preceded by a laryngeal *h or
> *q (*habarat 'west monsoon', *qasawa 'spouse', *qateluR 'egg' etc.) clearly
> were retained as such in POC, but the cognate forms found in CMP languages
> initially suggest that the first syllable was lost in PCMP.

This (and more general antepenultimate loss) would be illustrated by the Sika words *lero* 'sun' and *ni?i* 'bat':

PMP	*qaləjaw	*paniki
*ə > e / __j	**qalejaw	
*aw > o	**qalejo	
*j > r	**qalero	
*k > ʔ / V__V		**paniʔi
*σ₁σ₂σ₃ > σ₂σ₃	lero	niʔi
	'sun'	'bat'

The application of this rule to other words is not so clear, however. Compare the above with 'centipede', 'black and 'red':

PMP	*qalipan	*ma-qitəm	*ma-iRaq
*ə > a / __(C)#		**maqitam	
*q > ʔ, > Ø / __#	**ʔalipan	**maʔitam	**maiRa
*ay > e			**meRa
*R > r			**mera
*m > Ø / __#		**maʔita	
*σ₁σ₂σ₃ > σ₂σ₃ ?	ʔlipan	mita-k	mera-k
	'centipede'	'black'	'red'

In all three of these examples the antepenultimate syllable plays a part in the form of the resulting word. In the case of ʔlipan, the vowel of *qa- is lost, but the glottal stop arising from the *q combines with the lateral of the second syllable to produce the glottal stop + lateral cluster ʔl; this is a clear exception to Blust's claims about antepenultimate syllables. In mitak the vowel of *ma- is lost, but the consonant is again preserved in the final form (which also shows irregular loss of the glottal stop). In merak we see the consonant similarly preserved, and the low vowel fusing with the high front vowel of the stem to produce a mid front vowel, e. In a sense merak shows the most complete retention of the initial syllable , since both the consonant and the vowel are requirerder to derived the contemporary Sika form.

Another of Blust's criteria for establishing CMP is the voicing of stops after nasals. As can be seen in muta 'vomit', this has not applied to Sika; muta, from *muntaq, does not show any assimilation of voicing, although the nasal is lost (of course, given the variability in reconstructed prenasalisation in Austronesian roots, it might be the case that the Sika muta has arisen from a proto-language which did not have a nasal in this position). In sum, it appears that some of the criteria that have been put forward as evidence of the Central Malayo-Polynesian subgroup will require re-evaluation or refinement in the future, as first suggested by Grimes (1991)..

4 Verbal inflection

There are several verb classes in Sika, and simple knowledge of one of the inflectional forms is not enough to predict the rest of the paradigm. There are, however, at an underlying level regularities in the formation of the verb paradigms, and historically they can be easily explained. In addition to these regular verb classes there are also several irregular verbs, and a large number of verbs that do not inflect.

4.1 MAJOR VERB CLASSES

We can start to examine the nature of the verbal classes with a verb that is vowel-initial, *inu*, 'drink':

1SG	inu	1PL.EXC	minu
		1PL.INC	minu
2SG	minu	2PL	minu
3SG	ninu	3PL	rinu

It is quite clear that the inflection for 1SG involves no addition at all; this is, for this verb class, the unmarked form. The 2SG is derived by means of a prefix *m-*, and the 3SG by means of a prefixed *n-*. Equally unproblematic are 1PL.EXC *m-*, 1PL.INC *m-*, 2PL *m-* and 3PL *r-*:

1SG	Ø-	1PL.EXC	m-
		1PL.INC	m-
2SG	m-	2PL	m-
3SG	n-	3PL	r-

These consonants can explain the alternation that goes on in another of the verb classes. Compare the inflection of the verb *taʔi* 'defecate':

1SG	taʔi	1PL.EXC	daʔi
		1PL.INC	daʔi
2SG	daʔi	2PL	daʔi
3SG	daʔi	3PL	daʔi

Here we see voicing in all but the 1SG form; this corresponds to the positions that voiced prefixes marked the person on the verb *inu*. From the evidence so far presented, I suggest that the underlying form of the paradigm for *taʔi* 'defecate' above is:

1SG	Ø-taʔi	1PL.EXC	m-taʔi
		1PL.INC	m-taʔi
2SG	m-taʔi	2PL	m-taʔi
3SG	n-taʔi	3PL	r-taʔi

Similar alternations exist in words that show a bilabial initial consonant, such as *poro* 'cut':

1SG	poro	1PL.EXC	boro
		1PL.INC	boro
2SG	boro	2PL	boro
3SG	boro	3PL	boro

The paradigm evidenced from words with an initial lateral force this paradigm to be revised. Compare the paradigm for *lema* 'climb':

1SG	ʔlema	1PL.EXC	lema
		1PL.INC	lema
2SG	lema	2PL	lema
3SG	lema	3PL	lema

The lateral is already voiced, so the inflectional prefixes *m-*, *n-*, and *r-* do not produce any changes in teh pronunciation. The 1SG form, however, cannot be derived from the predicted Ø + *lema*, and we must posit an underlying glottal stop. The revised paradigm for verbal inflection is thus as follows:

1SG	ʔ-	1PL.EXC	m-
		1PL.INC	m-
2SG	m-	2PL	m-
3SG	n-	3PL	r-

The glottal stop simply deletes before non-sonorant consonants, not affecting their voicedness, and also before vowels.

There is, however, another paradigm that is found with words that begin (in at least part of their paradigm), on a surface level, with vowels, and that accounts for the missing velar series. Examine the paradigm for the verb *ita* 'see':

1SG	ita	1PL.EXC	gita
		1PL.INC	gita
2SG	gita	2PL	gita
3SG	gita	3PL	gita

(In the Tana Ai dialect reported by Lewis and Grimes, the 1SG form is ʔ-initial, but this is not the case in the variety reported here)

The PMP form for 'see' is *kita; from this the derivation of the above forms follows naturally, resulting in the forms below, given the person/number markers already posited:

1SG	ʔ-kita	1PL.EXC	m-kita
		1PL.INC	m-kita
2SG	m-kita	2PL	m-kita
3SG	n-kita	3PL	r-kita

The cluster ʔ-*kita* reduces to *kita*, and the resulting initial *k* is then deleted through regular processes. In the paradigm for all other person/number combinations, the voiced inflectional consonant fuses with the velar *k, resulting in a voiced velar stop, *g*, which survives to the surface form.

Notice that treating *ita* as a vowel-initial stem will NOT produce the same results; if the synchronically correct form *ita* is the input, the following results:

1SG	ʔ-ita	1PL.EXC	m-ita
		1PL.INC	m-ita
2SG	m-ita	2PL	m-ita
3SG	n-ita	3PL	r-ita

None of which correspond to any of the actually occurring forms. An alternative with a glottal stop initially. similalry fails to predict the *g* that results from the *m-ʔ*, *n-ʔ* and *r-ʔ* clusters; lacking a place feature, we would expect a voiced stop to follow the place of the nasal, resulting in *b*, *d* and *d*, respectively, which is not the attested paradigm.

Two other major paradigms occur, and both follow the *l*-class in that all forms are invariant except the 1SG form. The first occurs with r-stems, and is exemplified with the verb *rəna*, 'hear':

1SG	ʈəna	1PL.EXC	rəna
		1PL.INC	rəna
2SG	rəna	2PL	rəna
3SG	rəna	3PL	rəna

The second occurs on verbs where the major realisation of the initial consonant is *b*, as exemplified by *y̤əli*, 'give':

1SG	y̤əli	1PL.EXC	bəli
		1PL.INC	bəli
2SG	bəli	2PL	bəli
3SG	bəli	3PL	bəli

It is clear in both of these that the /ʈ/ and /y̤/ that mark the 1SG are the result of fusion of the glottal stop with an underlying consonant. In the case of *rəna*, this is /r/, and so we can see that diachronically the phoneme /ʈ/ is the result of the fusion of the sequence /ʔr/. For *y̤əli* we must posit a proto form something like **vəli* in pre-Sika, and we can then see that the synchronic phoneme /y̤/ is derived from /ʔv/. As was the case with 'see', *ita*, derivation of the synchronically surface forms from an underlying form that reflects an earlier stage of the language is needed to provide a consistent derivation. In the case of *y̤əli* 'give', the relevant proto-form is already changed from the PMP **beli*; deriving *y̤əli* from /ʔ + bəli/ is not feasible, and not suggested here. Note that the synchronic identity of the /ʔl/, /ʈ/ and /y̤/ phonemes, at least on a surface level, is certain because of their occurrence in an environment where they are not in paradigmatic alternation with /l/, /r/, and /v/ or /b/, respectively. These include:

['raha]	'chest'	vs	['ʈaha]	'rib'
['liʔan]	'widow'	vs	['ʔlipan]	'centipede'
['voːtɛr]	we (INC) buy	vs	['y̤oːtɛr]	'I stand a pole in the ground'

Summary of the major verb classes:

	Vowel	p-, t-class	*k-class	r-, l-, b-class	Underlying system
1SG	Ø-	p-, t-	Ø-	ʈ-, ʔl-, y̤-	ʔ-
2SG	m-	b-, d-	g-	r-, l-, b-	m-
3SG	n-	b-, d-	g-	r-, l-, b-	n-
1PL.EXC	m-	b-, d-	g-	r-, l-, b-	m-
1PL.INC	m-	b-, d-	g-	r-, l-, b-	m-
2PL	m-	b-, d-	g-	r-, l-, b-	m-
3PL	r-	b-, d-	g-	r-, l-, b-	r-

TABLE 8: PERSON/NUMBER INFLECTION IN DIFFERENT VERB CLASSES

It is interesting to note that my /ʈ/, /ʔl/ and /y̤/ phonemes and honeme clusters correspond to the /ˤr/, /ˤl/ and /ˤw/ phonemes in the dialect that Rosen (1986) describes. Her desciption unites them more

obviously in one class, grouped both phonetically and morphosyntactically. In the dialect here described these phonemes have more diverse phonetic realisations, but their morphosyntactic behaviour, coupled with obvious historical development, is sufficient to unite them into one class. It is obvious that the /ɽ/ in this dialect is recently derived from a glottal stop + rhotic cluster, but the /ɣ/ : /v/ contrast cannot be so easily dismissed as the result of paradigmatic alternation with glottal stop prefixes. Some other members of these verb classes include the following (1SG forms cited):

Vowel		p-, t-class		*k-class		r-, l-, b-class	
ope	'drink'	*pəra*	'squeeze'	*ali*	'dig'	*ɽaʔit*	'sew'
ana	'weave mat'	*paʔat*	'grow'	*iʔi*	'bite'	*ɽoga*	'discard'
		pəle	'tie'	*uʔa*	'work'	*ləra*	'bury'
		popo	'wash'	*əra*	'stand'	*ləsu*	'delouse'
		pano	'walk'	*ide*	'pull'	*ɣəɣe*	'hunt'
						ɣai	'grow'

TABLE 9: VERBS OF DIFFERENT CLASSES

Other examples can be found in Rosen (1986).

4.2   MINOR VERB CLASSES

These are verb classes with much smaller memberships than the other verb classes. They typically (though with exception) mark only the first person singular as against the rest of the paradigm.ost of these verbs I ahve no explanationfor the reasons behind the irregular alternations These verbs include:

naɲi 'swim':

1SG	naɲi	1PL.EXC	suguŋ
		1PL.INC	suguŋ
2SG	suguŋ	2PL	suguŋ
3SG	suguŋ	3PL	suguŋ

(note that only the 1SG form here reflects PMP *naɲuy 'swim')

moret 'live':

1SG	moret	1PL.EXC	oret
		1PL.INC	oret
2SG	oret	2PL	oret
3SG	oret	3PL	oret

plari 'run':

1SG	plari	1PL.EXC	lari
		1PL.INC	lari
2SG	lari	2PL	lari
3SG	lari	3PL	lari

(This might be a borrowing form Malay *lari*, in which case the *p*- in the 1SG form is unexplained)

oru 'weave (cloth)':

1SG	oru	1PL.EXC	noru
		1PL.INC	noru
2SG	noru	2PL	noru
3SG	noru	3PL	noru

woter 'buy':

1SG	woter	1PL.EXC	boter
		1PL.INC	ɣoter
2SG	boter	2PL	boter
3SG	boter	3PL	boter

This verb provides us with evidence that the 1PL.INC category was for this dialect distinct in the not-so-distant past, but has since lost its differences and taken on the characteristics of the exclusive form.

a 'eat':

1SG	oa	1PL.EXC	gea
		1PL.INC	ea
2SG	goa	2PL	ea
3SG	ga	3PL	a

(The verb for eat is often irregular in languages of the region, as discussed in Tryon et al, ed., 1995)

pupi 'blow':

1SG	pupi	1PL.EXC	dupi
		1PL.INC	dupi
2SG	dupi	2PL	dupi
3SG	pupi	3PL	lupi

In addition to these, there are a number of verbs that do not change for person / number at all. These include the following:

hele	'open'	*pləmet*	'suck'
kəla	'boil'	*pəraŋ*	'cook'
ləbe	'play'	*to*	'laugh'
məla	'swallow'	*vauk*	'swell'

Further examples are presented in Rosen (1986).

4.3 COMPARISON WITH OTHER DIALECTS

There are two main differences between the verbal inflection system in this dialect and that reported elsewhere for other dialects of Sika (e.g., Rosen (1986), Lewis and Grimes (1994)). The first is that the variety described here does not maintain the distinction between the first person plural inclusive and exclusive categories. Both Rosen's and Lewis and Grimes' description provide for these two being separate categories. The dialect described here maintains this distinction in some irregular verbs (such as *woter* 'buy', *ea* 'eat'), but has in the main lost it. The second main difference is a result of the historical development of the dialects, and the fact that *k was deleted word-initially in the dialect described here, whilst it is maintained as a glottal stop in the others that have been described. It is of course altogether likely that the deletion of *k in this dialect followed the path *k > **ʔ > Ø, but there are nevertheless words in which the presence vs absence of the initial glottal stop is significant (e.g., *ʔeʔi* 'this').

The stress rules proposed by Grimes and Lewis appear to be different for this dialect, with schwas capable of receiving full stress, and the affixation of morphology providing different environments for the penultimate stress. Lewis and Grimes also recognise the phoneme /j/ (=[dʒ]) in their data. In my corpus of data there were two words with this sound: [dʒala] 'net', an obvious loan from Malay *jala*, or another intermediate language, and [dʒəka] 'push' (invariant for person and number), whose origins are not so obvious. It seems likely, however, in view of the fact that there is only one non-suspicious word in a corpus of over 500 items, that this represents a loan phoneme of recent arrival in the dialect here examined.

5   Lamaholot / Alor

An examination of the sound changes from proto-Malayo-Polynesian found in eastern Lamaholot sheds light on the closeness of the relationship that this langugae shares with Sika. Lamaholot is the language spoken to the immediate east of Sika, on the eastern tip of Flores and stretching out on the adjacent islands as far as Alor. The data used here is drawn from wordlists published in Stokhof (1975), which represent the language as it is spoken in the Pantar and Alor islands at the eastern edge of that range, and my own fieldnotes on the variety spoken in Alor Kecil, on Alor, which includes both lexical and morphological information. As can be seen, there are considerable differences in the historical development on the two languages, and in the verbal system.

PMP	*b	*D	*h	*j	*k	*l	*m	*n	*ŋ
Sika	v	r	Ø	r	Ø, ʔ	l	m	n	n
Lamaholot	w	r	Ø	r	k	l	m	n	n

PMP	*p	*q	*R	*s	*t	*w	*Z
Sika	p	ʔ	r	h	t	v	r
Alor	p	Ø	Ø	h	t	w	r

PMP	*a	*e	*i	*uy	*u	*aw	*ay	(*ey)	*ej
Sika	a	ə, a	i	i	u	o	e	e	e
Alor	a	a	i	e	u	a	e	i	i

TABLE 10: HISTORICAL PHONOLOGY IN SIKA AND (EASTERN) LAMAHOLOT

Shared innovations:

*D, *j, *Z	>	r
*h	>	Ø
*s	>	h
*ay	>	e

Verbal inflectional morphology:

Sika:

1SG	ʔ-	1PL.EXC	m-
		1PL.INC	m-
2SG	m-	2PL	m-
3SG	n-	3PL	r-

Alor:

1SG	k-	1PL.EXC	mi
		1PL.INC	t-
2SG	m-	2PL	mi
3SG	n-	3PL	r-

(Alor subject prefixes are almost entirely obsolete, and are found only in a few words; most words simply use free pronouns or nominals with no verb inflection. The above paradigm is found on, eg., -enu 'drink')

Separate innovations:

Sika:			Alor:		
*b, *w	>	v	*b, *w	>	w
*k	>	Ø, ʔ	*q	>	Ø
*q	>	ʔ	*R	>	Ø
*e	>	ə, a	*e, *aw	>	a
*uy	>	i	*uy, *ay	>	e
*aw	>	o			
*ay, *ey, *ej	>	e	*ey, *ej	>	i

The weight of the evidence is that Sika and Alor, whilst undeniably related as Austronesian languages in the Timor area of eastern Indonesia, do not share, within this group, a specially close relationship with each other, as evidenced by amount of separate historical development that can be seen in the different sound changes present. The common sound changes are significant for uniting them with other Austronesian languges in a large Timor-area grouping, but not for an exclusive grouping of Sika and Lamaholot; the merger of *D, *j and *Z, usually as r, is common in languages of the area around Timor; *h > Ø is common in most areas south of the Philippines, and so not of great use in establishing an exclusive subgrouping.

The change of the diphthong *ay > e is evidence for a closer link, pending the examination of the distribution of this sound change in other langauges of the area; *s > h is seen sporadically in many languages in eastern Nusa Tenggara and south-west Maluku, so the appearance of this sound change in these two languages cannot be taken as diagnostic of a special relationship between the two. The evidence available on the system of verbal inflection is also indicative of languages without a close degree of genetic affinity.

Wordlist

A wordlist of the dialect examined here (a modified version of the Swadesh 200-item list) is given as an aid to comparison with other dialects that have been reported elsewhere in the literature. Obvious recent loans are listed in square brackets.

		Indonesian	Sikka
001	'head'	*kepala*	ala
002	'hair'	*rambut*	ala roun
003	'face'	*muka*	βaen
004	'eye'	*mata*	mata
005	'tear'	*air mata*	lun
006	'nose'	*hidung*	iru
007	'cheek'	*pipi*	pəpi

008	'mouth'	*mulut*	romuŋ
009	'lip'	*bibir*	vivir
010	'tongue'	*lidah*	ma
011	'tooth'	*gigi*	niu
012	'ear'	*telinga*	tilu
013	'neck'	*leher*	boʔir
014	'hand'	*tangan*	lima
015	'fingernail'	*kuku*	unur
016	'breast'	*susu*	uhu
017	'stomach'	*perut*	taʔin
018	'foot'	*kaki*	vaʔi-n
019	'knee'	*lutut*	+vaʔi` tur
020	'body hair'	*bulu*	vulu-n
021	'skin'	*kulit*	[kulit]
022	'meat'	*daging*	[dagiŋ]
023	'fat'	*lemak*	mosa
024	'bone'	*tulang*	luri-n
025	'heart'	*jantung*	vate-n
026	'blood'	*darah*	mein
027	'liver'	*hati*	vate-n
028	'urine'	*kencing*	miʔi
029	'excrement'	*tahi*	taʔi
030	'person'	*orang*	atəbiʔan
031	'man'	*lakilaki*	laʔi
032	'woman'	*perempuan*	duʔa
033	'father'	*ayah*	ama
034	'mother'	*ibu*	ina
035	'child'	*anak*	me
036	'first born child'	*anak sulung*	me vuaolo
037	'last born child'	*anak bungsu*	me vutun
038	'grandchild'	*cucu*	me
039	'grandmother'	*nenek w.*	ina koka
040	'grandfather'	*kakek/tete*	ama moʔa
041	'older sibling'	*kakak l.l.*	vue
042	'younger sibling'	*adik l.l.*	vari
042	'mother's brother'	*paman/ om*	inaʔaʔa

043	'father's brother'	*paman/ om*	amatuʔaŋ
044	'mother's sister'	*bibi/ tante*	inadoʔi
045	'father's sister'	*bibi/ tante*	amadoʔi
046	'slave'	*budak*	lakaŋ
047	'guest'	*tamu*	mamai
048	'companion'	*kawan*	imuŋ
049	'I'	*saya, aku*	aʔu
050	'you'	*kamu*	au
051	'she, he'	*dia*	nimu
052	'we (exclusive)'	*kami*	ami
053	'we (inclusive)'	*kita*	ita
054	'you (plural)'	*kalian*	miu
055	'they'	*mereka*	rimu
056	'horn'	*tanduk*	tara-n
057	'tail'	*ekor*	iʔur / veʔor
058	'bird'	*burung*	tiʔolon
059	'chicken'	*ayam*	manu
060	'egg'	*telur*	telo-n
061	'flea (chicken)'	*kutu ayam*	main
062	'louse (head)'	*kutu kepala*	utu
063	'bat'	*kaluang*	niʔi
064	'mosquito'	*nyamuk*	həpun
065	'fly'	*lalat*	ʔlale
066	'snake'	*ular*	ular
067	'fish'	*ikan*	iʔan
068	'rat, mouse'	*tikus*	teʔu
069	'pig'	*babi*	vavi
070	'dog'	*anjing*	ahu
071	'tree'	*pohon*	ai
072	'leaf'	*daun*	roun
073	'root'	*akar*	ramat
074	'wood'	*kayu*	ai
075	'fruit'	*buah*	[buabuahan]
076	'flower'	*bunga*	[buŋa]
077	'thorn'	*duri*	bain
078	'banana'	*pisang*	muʔu

079	'cononut (ripe)'	*kelapa tua*	kabor
080	'coconut (unripe)'	*kelapa muda*	kabor hokon
081	'bamboo'	*bambu*	pəli
082	'rattan'	*rotan*	[rotan]
083	'betel'	*sirih*	taʔa
084	'betelnut'	*buah pinang*	vua taʔa
085	'short grass'	*rumput*	vaʔan
086	'sword grass'	*alang alang*	urun
087	'pandanus'	*pandan*	riʔi
088	'seed'	*biji*	vini
099	'field rice'	*padi*	pare
090	'hulled rice'	*beras*	pare
091	'cooked rice'	*nasi*	ara
092	'corn'	*jagung*	ləle
093	'sun'	*mata hari*	lero
094	'moon'	*bulan*	vulan
095	'star'	*bintang*	dala
096	'sky'	*langit*	vulan
097	'cloud'	*awan*	gəbu
098	'thunder'	*guntur*	kləkaʔ
099	'rain'	*hujan*	uran
100	'wind'	*angin*	aniŋ
101	'sea'	*laut*	tahi
102	'sand'	*pasir*	ne
103	'earth'	*tanah*	tana
104	'salt'	*garam*	hini
105	'sugar'	*gula*	gula
106	'water'	*air*	vair
107	'spring'	*mata air*	vair mata-n
108	'mountain'	*gunung*	ilin
109	'forest'	*hutan*	utur
110	'river'	*sungai*	vair ban
111	'fire'	*api*	api
112	'smoke'	*asap*	nuhi
113	'ashes'	*abu*	abu
114	'stone'	*batu*	vatu

115	'canoe'	*perahu*	solit
116	'paddle'	*dayung*	vehe
117	'mortar'	*lesung*	vai
118	'rice pestle'	*alu*	alu
119	'knife'	*pisau*	kiat
120	'machete'	*parang*	poron
121	'rope'	*tali*	tali
122	'house'	*rumah*	orin
123	'road'	*jalan*	lalan
124	'big'	*besar*	gəte
125	'small'	*kecil*	kəti-k
126	'good'	*baik, bagus*	əpan
127	'wet'	*basah*	gəma
128	'dry'	*kering*	duʔur / maran
129	'far'	*jauh*	blavir
130	'near'	*dekat*	roʔon
131	'new'	*baru*	vərun
132	'old'	*lama*	goʔit
133	'old'	*tua*	həmu
134	'thick'	*tebal*	apar
135	'thin'	*tipis*	bleler
136	'skinny'	*kurus*	ɽugun
137	'fat'	*gemuk*	mosa
138	'hot'	*panas*	dara
139	'cold'	*dingin*	blatan
140	'warm'	*hangat*	bliran
141	'short'	*pendek*	bulu-k
142	'long'	*panjang*	blon
143	'blind'	*buta*	ŋaŋan
144	'deaf'	*tuli*	pəke
145	'thirsty'	*haus*	mara
146	'hungry'	*lapar*	morun
147	'all'	*semua*	save
148	'many'	*banyak*	gavan
149	'round'	*bulat*	guer
150	'full'	*penuh*	bənu

151	'white'	*putih*	bura
152	'black'	*hitam*	mita-k
153	'yellow'	*kuning*	heret
154	'red'	*merah*	mera-k
155	'green'	*hijau*	daʔan
156	'not'	*tidak*	eʔən
157	'this'	*ini*	ʔeʔi[1]
158	'that'	*itu*	ia
159	'here'	*sini*	embaʔun
160	'there'	*situ*	iambaʔun
161	'one'	*satu*	ha
162	'two'	*dua*	rua
163	'three'	*tiga*	təlu
164	'four'	*empat*	hutu
165	'five'	*lima*	lima
166	'six'	*enam*	əna
167	'seven'	*tujuh*	pitu
168	'eight'	*delapan*	valu
169	'nine'	*sembilan*	hiva
170	'ten'	*sepuluh*	pulu
171	'twenty'	*duapulu*	pulu rua
172	'hundred'	*seratus*	ŋasuha
173	'thousand'	*seribu*	rivuha
174	'left'	*kiri*	viri
175	'right'	*kanan*	vana
176	'west'	*barat*	vava
177	'east'	*timur*	le
178	'under'	*di bawah*	vavapuʔa
179	'over'	*di atas*	retavutu
180	'behind'	*di belakang*	toʔemai
181	'in front'	*di depan*	soβae
182	'outside'	*di luar*	vinamai
183	'inside'	*di dalam*	valiune
184	'edge'	*pinggir*	harin / vutun

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[1] This is the only case of a schwa in a word-final syllable in my data.

185	'day'	*hari*	lero-n
186	'night'	*malam*	guman
187	'know'	*tahu*	raʔinta
188	'say'	*berkata*	liʔar
189	'repeat'	*mengulangi*	puʔan valoŋ
190	'sing'	*menyanyi*	kantar
191	'cry'	*menangis*	dani
192	'laugh'	*tertawa*	to
193	'hear'	*dengar*	rəna
194	'see'	*lihat*	gita
195	'eat'	*makan*	ga
196	'drink'	*minum*	ninu
197	'bite'	*menggigit*	giʔi
198	'fall'	*jatuh*	əla
199	'drop'	*menjatuhkan*	əla leʔu
200	'burn'	*membakar*	nope
201	'pound (rice)'	*tumbuk*	baʔat
202	'die'	*mati*	mate
203	'dry in sun'	*menjemur*	vori
204	'wash (intr.)'	*mandi*	huʔi
205	'wash (tr.)'	*memandikan*	huʔi leʔi
206	'swim'	*berenang*	suguŋ
207	'fly'	*terbang*	horo
208	'kill'	*membunuh*	mate leʔu
209	'give'	*memberi*	bəli
210	'cough'	*berbatuk*	doʔo
211	'spit'	*meludah*	daʔa
212	'vomit'	*muntah*	muta
213	'itch'	*gatal*	gatar
214	'walk'	*berjalan*	bano
215	'stand'	*berdiri*	gəra
216	'sit'	*duduk*	dəri
217	'lie down'	*berbaring*	duʔe
218	'be sleepy'	*mengantuk*	mata duʔe-n
219	'sleep'	*tidur*	duʔe
220	'dream'	*bermimpi*	mipin

221 'wake up'	*bangun*	hogor
222 'awaken'	*membangunkan*	hogor le?u
223 'come'	*datang*	mai
224 'return home'	*pulang*	baloŋ
225 'live'	*tinggal*	dəri
226 'be pregnant'	*hamil*	taʔi-n lora-n
227 'name'	*nama*	naran
228 'what?'	*apa?*	apa
229 'who?'	*siapa?*	hai
230 'where?'	*dimana?*	epae
231 'when?'	*kapan?*	rəmapira
232 'how many?'	*berapa?*	apaha
233 'how?'	*bagaimana?*	ganupae
234 'why?'	*kenapa?*	loniŋapa

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