

Notes on the Structure of the
Sunwari Transitive Verb

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0.0 Introduction

Sunwari is a Tibeto-Burman language spoken in the area of the Likhu and Tamba Kosi rivers in the Okhaldhunga district of eastern Nepal.¹ It is a member of Benedict's (1972) Bahing-Vayu subgroup, which is also known as Kiranti. Benedict divides Kiranti into two units, one of which includes Bahing, Sunwari, Dumi, Khaling and Rai, and the other unit containing Limbu, Rodong, Yakha and others. Benedict also puts Vayu and Chepang into this branch; while Vayu is clearly part of the Kiranti group (Michailovsky 1975), the grouping of Chepang here is questionable.

The original data for this analysis consisted of fifty-two transitive verb paradigms. These were all written out by my informant, Mr. Tanka Raj Sunuwar, of the Khiitsi village in the Okhaldhunga district, whom I began working with in Kathmandu in the spring of 1987. Mr. Sunuwar shows a remarkable talent for linguistic analysis, and studied his native language independently prior to meeting me or any other linguist. He transcribed the verb paradigms using a phonemically based orthography. Since the Sunwari verb has complex conjugation patterns with the person and number of both the agent and patient determining the verb forms, the paradigms were transcribed onto a form with a nine by nine matrix. For each person/number/role combination Mr. Sunuwar transcribed the past, negative past and non-past verb forms. This data has now been supplemented by further field work which I have conducted with Mr. Sunuwar who has come to the USA. This has allowed me to obtain more paradigms and check idiosyncracies in the written data. This paper is a revised and shortened version of an earlier version which I circulated.² Although this paper represents a further stage of analysis than the earlier draft, the analysis is by no means complete. This paper is intended to be a summary of my current understanding of the data, and leaves much unsaid.

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²That paper, entitled 'Preliminary observations on fifty-two Sunwari verbs' differs from the present primarily in the discussion of verb classes, and in the analysis of tone.

Structure of the Sunwari Verb. The Sunwari verb can be divided into two parts, the stem and the suffix. While it is possible to augment the stem with certain morphemes (such as the reflexive, reciprocal and passive), augments of this type have been excluded from this study. The structure and classification of Sunwari verb stems is discussed in section 1.0. The structure of the suffixal complex is discussed in 2.0, while section 3.0 examines the Sunwari data in a Tibeto-Burman perspective.

Tone. There are four tones in Sunwari, which are divided by two independent binary parameters: a high/low contrast and a level versus falling contour distinction. These distinctions can be seen in the following minimal set:

- | | | | |
|-----|--------|-----------------|--|
| (1) | daatsa | HF ³ | 'to like' |
| | daatsa | LF | 'to swallow' |
| | daatsa | HL | 'to wait for a chance to do something' |
| | daatsa | LL | 'to light a lamp or candle' |

The facts of tone are actually more complicated than this in Sunwari. For one thing, the above set is arguably not a true minimal set, since examples are taken from different inflectional verb classes. While the Sunwari verbs for 'to like' and 'to swallow' are from the class of verbs with /k/ finals, the other two, 'to wait for a chance' and 'to light a lamp or candle' are members of the class of verbs with /q/ finals. /k/ finals consistently have falling contour and /q/ finals consistently have level contour. However, as far as I can tell at this stage of the analysis, there are verbs which follow inflectional patterns such that the final never surfaces in the inflectional paradigm. In such cases it is the evidence of the tone contour, along with other morphophonemic behavior, that allows us to establish the class of the verb. And, in the majority of forms, such as the infinitives above, tone contour is the most salient clue that differentiates the countless minimal pairs. Therefore I have decided to consistently mark tone contour as well as the high/low distinction throughout this paper.⁴

Inflection. Sunwari is a 'complex pronominalized

³Tone marks will follow the cited forms in this paper. HF indicates high tone with falling contour, LF low falling, HL high and level contour, and LL low level.

The segmental analysis used follows Bierl and Schulze (1971) in most respects.

⁴There are apparently alternations in contour and, to a lesser extent, in pitch, throughout paradigms of certain verb classes. Full exposition of these changes must await further analysis.

language', meaning that information about the person (1st, 2nd, 3rd) and number (singular, dual, plural) of both the subject and the object can be coded by the verb. Not all person/number combinations take unique marking, and the amount of information coded is dependent on the tense of the verb. The details of the inflectional paradigms will be the topic of section 2.0 below. However it is necessary to introduce some information about the inflectional system prior to our discussion of stem classes.

Sunwari verbs inflect with one of two conjugation patterns, which I have labelled Conjugation 1 and Conjugation 2. The two patterns are only differentiated in the past and negative past tenses; they are identical in the non-past. Conjugation 1 is characterized by the long vowel /aa/ in the past tense morpheme; in Conjugation 2 the vowel is a neutral vowel (/V/) which undergoes a harmony process and takes on the quality of the vowel in the following syllable (see below), i.e. Conj. 1 taasi, Conj. 2 tisi 2d/1d past. In the negative past, tense is marked only in the Conjugation 1 forms; in Conjugation 2 the tense marker is excluded: Conj. 1 -ti < -tVyi, Conj. 2 -yi 2s/1s neg.past. This last fact allows for certain morphophonemic alternations to arise in the verb stems, which provide us with crucial information for the analysis of stem classes.

1.0 Sunwari Verb Stems

1.1 Structure of the Verb Stems

Sunwari verb stems have the canonical pattern C(C)V(V)(C). The second consonant in initial clusters must be a member of the set /y w r dl⁵/. Stem class is determined by the structure of the rhyme and the patterns of inflection.

1.2 Stem Classes

Sunwari verb stems can be classified by the phonological structure of the rhyme. The following classes can be identified:

- | | | |
|-----|-------------|---------|
| (2) | p-stems | m-stems |
| | t-stems | n-stems |
| | k-stems | ŋ-stems |
| | l-stems | r-stems |
| | N/m/p-stems | C-stems |

p-stems. The stem final consonant of the p-stem verbs is consistently present throughout the paradigm. However, the final undergoes some morphophonemic alternations. When a p-stem verb is followed by a suffix beginning with a voiced

⁵Mr. Sunuwar clearly pronounces the lateral phoneme as a laterally released affricate following stops.

stop, vowel or glide, the stem consonant will be voiced:

- | | | | |
|-----|-----------|----|----------------------------|
| (3) | thab-ba | HF | 'pay, 3s/3s, non-past' |
| | ma-gub-i | LL | 'pick up, 2s/3s, neg.past' |
| | ma-lob-yi | HL | 'boil, 2s/1s, neg.past' |

The following rule accounts for this regressive voicing assimilation:⁶

Regressive Voicing Assimilation

A stop will assimilate in voicing to a following oral segment.

Note that in the examples in (3) the contour of the verb preceding a consonant initial suffix is falling, whereas when the suffix begins with a vowel or glide the contour is level. In the latter case, the final of the verb is functioning as a syllable onset (with or without a following glide), leaving the syllable structure of the verb to be simply CV. In this case, the contour is level.

Another process which affects p-stems is the nasalization of the final to /m/ before some nasal-initial suffixes:

- | | | | |
|-----|-----------|----|----------------------------|
| (4) | ma-gum-n | LF | 'pick up, 1s/2s, neg.past' |
| | ma-gum-ni | LF | 'pick up, 2p/1d, neg.past' |

Note that such assimilation does not occur when the stems precede the non-past suffix nV. Thus nasal assimilation is restricted to the negative past verb forms. The conditioning environment for this rule is only present in the second conjugation, since in the second conjugation of the negative past stems are followed directly by the person/number marker without an intervening tense marker. The following rule accounts for regressive nasal assimilation:

Regressive Nasal Assimilation

In negative past tense forms, a stop becomes nasalized when it precedes a nasal consonant.

M-stems, l-stems and r-stems. These three stem classes will be treated together since they evidence the same morphophonemic behavior. The only morphophonemic change that involves stems of these classes is again restricted to the negative past tense. In the first conjugation of the negative past, the /t/ initial of the suffix is voiced

⁶ For expository purposes I have decided to write out all phonological rules in prose, rather than formalize them within the constructs of a phonological theory. My impression is that all of the rules are best accounted for within the framework of autosegmental phonology, but that analysis will not be presented here.

following a stem-final /m/, /l/ or /r/:

(5)	hem-taan	HF	'shake off, 1s/2s, past'
	ma-hem-dan	HF	'shake off, 1s/2s, neg.past'
	khal-taan	HF	'mix food, 1s/2s, past'
	ma-khal-dan	HF	'mix food, 1s/2s, neg.past'
	hir-taan	HF	'turn away, 1s/2s, past'
	ma-hir-dan	HF	'turn away, 1s/2s, neg.past'

This progressive voicing assimilation is consistent throughout the negative past paradigm.

Progressive Voicing Assimilation

In the negative past tense, a stop becomes voiced when it follows a sonorant consonant.

T-stems. T-stem verbs can be readily identified by a characteristic rhyme consisting of a diphthong with a high front offglide, sometimes followed by a glottal stop,⁷ and a falling contour. Most of the t-stem verb forms have this rhyme. No morphophonemic changes occur in the past and non-past tenses. Complexities do arise in the negative past.

When a t-stem verb is followed directly by a vowel-initial suffix (which occurs only in the negative past of the second conjugation) a dental stop surfaces and the vowel offglide disappears. At the same time, the tone contour changes from falling to level, as it did with the p-stem verbs:

(6)	kdlai-ca	HF	'bite, infinitive'
	ma-kdlad-u	HL	'bite, 1s/3s, neg.past'
	ma-kdlad-es	HL	'bite, 3d/3s, neg.past'
	hui-ca	HF	'scoop up, infinitive'
	ma-hud-i	HL	'scoop up, 2s/3s, neg.past'
	ma-hud-es	HL	'scoop up, 3d/3s, neg.past'

The alternation between a simple vowel followed by a dental consonant and a diphthong offglide followed by an (in this case 'optional') glottal stop is commonly found as a historical change in Bodic languages, as pointed out by Michailovsky (1975b). In addition, it is common in Tibeto-Burman languages for syllable final stops to be glottalized. Thus we can form a hypothesis about one possible path of development whereby the original final stops of the t-stem verbs were glottalized before a following consonant. The oral features of the stop amenable to vocalic association were shifted to the vowel in a diphthongization process, and all the oral consonantal features were subsequently lost. The result was the realization of this consonant simply as a

⁷The conditions under which the glottal stop appears are not currently known. Sometimes instead of a glottal stop, we find devoicing of the offglide.

glottal stop, which now appears only under certain conditions. In historical terms, the most plausible sequence would involve an intermediate stage where both the diphthong and the final consonant were present, thus *vt? -> v¹t? -> v¹?(->v¹).

The fact that this rule did not apply in the forms with vowel initial suffixes (as in 6) can be seen as the result of syllabification, since before a vowel the final consonant of the stem would be functioning as a syllable onset, and therefore would not be glottalized. Again we see a change in the contour when the syllable which carries tone simplifies to CV structure.

N-stems. N-stem verbs can easily be identified by nasalization of the nucleus, which consists of a long vowel or diphthong⁸. The underlying /n/ surfaces when adjacent to a vowel-initial suffix (again this only occurs in the second conjugation):

(7)	phdlīi-ca	HF	'untie, infinitive'
	phdlin-o	HL	'untie, imperative'
	pōi-ca	LF	'spin wool, infinitive'
	pon-o	LL	'spin wool, imperative'

Again we see the change in contour from falling to level when the dental consonant surfaces as a syllable onset.⁹

K-stems. K-stems are characterized by a long non-nasalized vowel in the rhyme, and consistently falling contour. The final /k/ surfaces before a vowel, but unlike the t- and n-stem verbs, the vowel remains long in this environment, and the tone contour remains falling:

(8)	duu-ca	LF	'change position, infinitive'
	duuk-q ¹⁰	LF	'change position, imperative'

Note that Regressive Voicing Assimilation does not apply here, since the vowel of the imperative is underlyingly voiceless. The rule does apply when k-stem verbs directly

⁸Front vowels in N-stem verbs are lengthened; all other vowels have a high front offglide.

⁹One puzzle that remains unsolved in the analysis of n-stem verbs is that when most n-stem verbs are followed by a t-initial suffix that suffix is voiced, as predicted by Progressive Voicing Assimilation. However, for a handful of verbs in my corpus the stop is not voiced but voiceless. The conditioning environment for this distinction is not currently known.

¹⁰Underlined vowels in numbered examples are voiceless. In this case, the vowel of the suffix is underlyingly voiceless; it appeared voiced in earlier examples because it followed a sonorant.

precede a voiced vowel. In this case the final surfaces, but is voiced:

- (9) ma-neeg-u HF 'finish eating s.t., 1s/3s, neg.past'
 ma-teeg-es HF 'block the way, 3d/3s, neg.past'
 ma-roog-i LF 'open, 2s/3s, neg.past'
 ma-syoog-a HF 'sow seed, 3s/3s, neg.past'

ŋ-stems. ŋ-stem verbs are similar to k-stem verbs in that the vowel of the rhyme is long. However, whereas k-stem verbs have consistently falling contour, the contour of -ŋ stem verbs is consistently level. The final consonant is recoverable in forms with vowel-initial suffixes:

- (10) lee-ca HL 'sell, infinitive'
 ma-leeŋ-u HL 'sell, 1s/3s, neg.past'
 kii-tsa LL 'stretch, infinitive'
 ma-kiiŋ-es LL 'stretch, 3d/3s, neg.past'
 coo-ca LL 'accompany, infinitive'
 ma-cooŋ-a LL 'accompany, 3s/3s, neg.past'

ŋ-stem verbs all have a regular tone alternation in the paradigm. Past tense forms (including negative past) have level contour, whereas non-past forms have falling contour:

- (11) kii-tOn LL 'stretch, 1s/2s, past'
 mO-kii-n LL 'stretch, 1s/2s, neg.past'
 kii-nOn LF 'stretch, 1s/2s, non-past'
 lee-tOn HL 'stretch, 1s/2s, past'
 mO-lee-n HL 'stretch, 1s/2s, neg.past'
 lee-nOn HF 'stretch, 1s/2s, non-past'

All k-stem verbs and ŋ-stem verbs have long vowels, regardless of whether or not the stem-final consonant is present. This is problematic in terms of the analysis, since compensatory lengthening is not a possible explanation to account for vowel length. In addition, there is no evidence of any glottal stop, and ŋ-stem verbs leave no trace of nasalization on the stem vowel. From this we can conclude that when velar consonants were deleted they left no trace of either oral or suboral features. When we compare the morphophonemics of the stem classes from the three places of articulation we find an interesting pattern:

Bilabial	Consonant retained
Dental	Consonant lost, features transferred to vowel
Velar	All traces lost except with vowel initial stems

From this we can see that a different morphophonemic analysis is needed to account for the velar consonant-stems than for the dentals or bilabials.

It is important to separate out the diachronic and synchronic analyses when we address problems associated with the consistently long vowel. There are two possible explanations of this phenomenon in diachronic terms. The first is that all velar final roots had long vowels associated with them, hence the canonical shape C(C)VVC. While this significantly simplifies the analysis, requiring only deletion of the final C before a consonant, there is no independent evidence to support this contention. On the contrary, since we find no syllables of this shape in the synchronic data it is undesirable to posit this structure for an earlier stage of the language.

The second diachronic analysis is that the original syllable structure of these stems was C(C)VC, and that the vowel was lengthened when the consonant was deleted. What differentiates this set from the stems with the dental consonants, is that the long vowel was then reanalysed as a characteristic feature of velar stem verbs and extended to all forms.

In synchronic terms, the simplest analysis is to posit the long vowel as underlying in all velar-stem verbs (although a different analysis, in terms of syllable structure, may also be possible).

N/m/p-stems. This class of verbs is characterized by a variable root final, either /p/ or /m/, and in some forms by nasalization of the stem vowel (here indicated by N). These finals occur primarily in the past tense. Otherwise the stems consist of a simple CV sequence. When we examine the distribution of the consonants we find an interesting pattern emerging:¹¹

¹¹In this and other charts throughout this paper, the person and number of the object are arranged along the horizontal axis, while the person and number of the subject are arranged along the vertical axis. Different configurations of the person and number of the subject vis-a-vis that of the object result in different verb forms, displayed in the appropriate box in the matrix.

Obj:		1			2			3														
		s	d	p	s	d	p	s	d	p												
1	s				N			Ø														
	d																					
	p																					
2	s	N						p	m													
	d							N														
	p																					
3	s	Ø	N	Ø	p																	
	d		m																			
	p																					

Table 1. Finals in Sunwari N/p/m-Stems

The distribution of these consonants is reminiscent of the pattern of person agreement markers found in Sunwari and elsewhere (see DeLancey 1981, to appear b, and the discussion of person and number suffixes below). Assuming that the nasalization of the stem vowels is a reflex of an old /n/ final, then the configurations in which /n/ occur all contain second person participants; the configurations with /p/ all have third person singular participants, and /m/ appears in configurations with third person dual and plural. When we compare these with the Sunwari person/number suffixes of the same phonological form, we find that /n/ as a suffix marks 1/2 configurations, /m/ marks third non-singular, and /b/ marks third person singular (in the non-past only). These morphemes are not restricted to Sunwari, but are found in other Kiranti languages and to some extent throughout Tibeto-Burman (DeLancey 1980, 1981, to appear b, and see below).

Michailovsky (1975a) cites a similar set of consonants ending open root verbs in Bahing, except that the distribution is somewhat different, and the set also includes a /k/, which is reminiscent of the first person plural exclusive /kø/ in Bahing, and the first person plural subject morpheme /ka/ in Sunwari.

Obj:		1			2			3		
		s	d	p	s	d	p	s	d	p
1	s				n					
	d				∅					
	p							k		
2	s							p		
	d							∅		
	p									
3	s	∅	k				p			
	d			∅			n			
	p						m			

Table 2. Finals of Open Root Verbs in Bahing
(based on Michailovsky 1975a)

While the set and distribution of consonants in Bahing are not identical to those in Sunwari, the patterns are clearly equatable. Michailovsky considers this set of consonants to be epenthetic, and accounts for their distribution (with some exceptions) with a morphophonemic rule of epenthetic reduplication, which reduplicates the second consonant in the suffix into the root final position. /p/ is excluded from this rule (since it never shows up in the Bahing suffixes) and is epenthetically inserted separately. The fact that the majority of the Bahing data can be accounted for by this approach is interesting. However, it is clear that in Sunwari no morphophonemic explanation for the distribution of consonants is possible. For example, a large number of the Sunwari forms which take the nasalization reflective of /n/ do not have /n/ in the suffix:

- (12) gēē-tisi LF 'give, 2d/1s, past'
gēē-tasku LF 'give, 1d/32, past'

Similarly /m/ which occurs in the Sunwari third person non-singular subject forms is clearly not derived from the third person dual suffix -tes.

Since we cannot resort to a morphophonemic explanation to account for this Sunwari data, we must turn to the morphology. The fact that the pattern of these consonants is roughly the same as that found in the person/number indices suggests that these are the reflex of an older morphological concatenation in both Bahing and Sunwari. The amenability of the Bahing data to a morphophonemic epenthesis rule suggests

that in Bahing the same morpheme was used both in the older concatenation, where it surfaces now as a single consonant with open stem verbs, and as the second syllable in what is synchronically analyzable as the verb suffix, thus:

- (13) Bahing (from Michailovsky 1975)
 gi-k-ta-kø 'give, 1pEX/3s, past'
 gi-m-ta-me 'give, 3p/3s, past'

This explanation accounts for the exceptions to the rule of reduplicative epenthesis, such as the failure of the second syllable to reduplicate in gi-ti-mi 'give, 2s/3p, past'. The lack of the /m/ in the root of this form, rather than being an anomalous exception to a phonological rule, now needs to be accounted for by an analysis of person and number marking in Kiranti and the development of the Bahing and Sunwari systems.

This historical account of these consonants leaves unresolved the problem of establishing an underlying synchronic representation. I will assume that these verbs have unpredictable allomorphic variation, and represent the stems as {CV}, following Michailovsky. Evidence that this is the correct approach is found in the imperative forms of these verbs. Here, no final consonant is found before the vocalic suffix, as in the consonant-final classes:

- (14) bu-ca HL 'carry child on back, infinitive'
 bu-o HF 'carry child on back, imperative'
 cu-ca LL 'pound in mortar, infinitive'
 cu-o HF 'pound in mortar, imperative'

Note the changes in tone in these forms; imperatives of N/m/p-stems are always high and falling, although other forms are high or low, and level. While we have seen other evidence of alternations in contour, this is the only alternation I know of between high and low within the paradigm of a single verb.

C-stems. The last class of verbs to be discussed is characterized in most of the verb forms by gemination of the initial consonant of the suffix:

- (15) rec-ca HF 'to draw'
 ret-tan HF 'draw, 1s/2s, past'
 reb-ba HF 'draw, 3s/3s, non-past'
 ma-res-si HF 'draw, 2d/3s, neg.past'

When the suffix initial consonant is /y/, the gemination results in a high vowel:

- (16) ma-rei-yiski HF 'draw, 2s/1d, neg.past'

Before the non-past suffixes beginning with /n/, a glottal stop is inserted instead of gemination:

- (17) re?-nan HF 'draw, 1s/2s, non-past'
 re?-nis HF 'draw, 3d/3s, non-past'
 re?-niki HF 'draw, 1p/3s, non-past'

In the negative past forms of the second conjugation, some of the suffixes begin with a consonant cluster as opposed to a simple consonant. In these cases there is no gemination and no glottal stop:

- (18) ma-re-sku HF 'draw, 1d/3s, neg.past'
 ma-re-nsi HF 'draw, 1s/2d, neg.past'

This data is most readily accounted for in terms of syllable structure constraints. Apparently these verbs have as part of their representation the information that the syllable of the verb root must be closed. Thus, when a suffix begins with a cluster, the syllable is closed by the initial of the cluster, and no gemination or glottal-stop insertion is necessary. I will represent these stems morphologically as (CVC) with the final consonant position left empty to signal the need for a coda.

When we compare this class of verbs to the Bahing classes described by Michailovsky, it becomes apparent that this class is cognate to the Bahing class with the T-augment (1975:200). Michailovsky describes this augment as originally having a causative or benefactive meaning; the augmentation is not productive, and most verbs of this class do not have an unaugmented counterpart. The cognacy of these classes is apparent for several reasons. First, one of Michailovsky's examples of a verb from this class clearly has a Sunwari cognate; compare Bahing BRETT- 'call' to Sunwari blecca H 'to call'. Second, reconstructing an alveolar stop in this position allows us to explain why we have a glottal stop inserted before /n/ as opposed to gemination, since this is similar to the pattern that characterizes t-stem verbs. Third, in some of the second conjugation negative past forms, an alveolar stop does surface (the difference in voicing of the final is once again due to Regressive Voicing Assimilation):

- (19) ma-red-u HF 'draw, 1s/3s, neg.past'
 ma-red-em HF 'draw, 3p/3s, neg. past'
 ret-q HF 'draw, imperative'

It is unclear at this point if this reflects the alveolar stop of the T-augment, or if for some reason the augment was lost (or was never suffixed to begin with) preceding vowel-initial suffixes, in which case the alveolar stop in these forms is reflective of the original unaugmented stem and not the augment. Other unresolved questions include why the augment left a glottal stop before the non-past forms and not elsewhere, and what is the historical connection between augmentation, gemination and syllable structure.

Sunwari Transitive Past Verb Forms (Affirmative)				taa-n	taa-n-si	taa-n-ni	taa-q	taa-q-si	taa-q-mi
Conjugation 1 Conjugation 2				ta-n	ta-n-si	ta-n-ni	taa-(q)	taa-(q)-si	taa-(q)-mi
				taa-sku ta-sku					
				taa-k(a) ta-k(a)					
taa-yi	taa-(yi)- ski	taa-(yi)- ki					taa-yi	taa-m-si	taa-mi
ti-yi	ti-(yi)- ski	ti-(yi)- ki					ti-yi	ti-m-si	ti-mi
taa-yi-si	taa-si							taa-si	
ti-yi-si	ti-si							ti-si	
taa-yi-ni	taa-ni							taa-ni	
ti-yi-ni	ti-ni							ti-ni	
taa-yi	taa-ski	taa-ki		taa-ye	taa-(ye)- si	taa-(ye)- ni	taa-u	taa-m-si	taa-mi
ti	ti-ski	ti-ki		te	te-si/ti-si	te-ni/ti-ni	tu	ti-m-si	ti-mi
taa-(yi)-si				taa-ye-si	taa-s(e)				
ti-si				.	te-s				
				te-si					
taa-(yi)-mi				taa-ye-mi	taa-m(e)				
ti-mi				te-mi	te-m				

Table 3. Sunwari Affirmative Past Agreement

2.0 Suffixal Paradigms

In this section I will describe the inflection of the Sunwari transitive verb. The data that I am considering are the past, non-past and negative past tenses. The negative non-past does not have its own inflectional paradigm; it is formed by prefixing the negative morpheme onto a verb inflected with the normal non-past morphology. None of the verbs of this study are inflected with any morphology other than the tense/person/number (t/p/n) suffixes. A number of derivational morphemes can occur between the stem and the t/p/n suffixes. Since I am lacking complete data on these constructions they have been omitted from the study.

The t/p/n suffixes can be divided into three position classes. The first class (PC1) contains the tense markers (taa/ta past, na non-past) and the second two (PC2,3) combined form the person/number complex. The tense markers are obligatory in all forms of the first conjugation; in the second conjugation they occur in the past and non-past but not the negative past. The structure of the person/number complex will be discussed in detail below.

2.1 Affirmative Past Suffixal Morphology

The set and distribution of the affirmative past tense suffixes are given in the table on the following page.

Conjugations 1 and 2. The two conjugation patterns are distinguished in the affirmative past tense by the quality of the vowel in the tense marker. The same forms of the person/number complex are found with both conjugation patterns (with the exception of the 1/3 -u being optional in Conjugation 2, a fact for which I have no ready explanation), so there are no cooccurrence restrictions between this position class and the other two. The Conjugation 1 vowel is /aa/ throughout the paradigm, whereas the vowel in the Conjugation 2 forms varies with the suffix. The quality of this vowel can be accounted for in the majority of the cases by a vowel harmony rule which copies the quality of the first vowel of the person/number complex onto the vowel of the tense marker. Unambiguous cases are as follows:

(20)	ta-ka	1p/3s	ti-yi(-X)	2s/X
	ti-si	2s/3s	ti-ki	3s/1p
	ti-ni	3s/2p	ti-mi	3s/3p

If we assume that the second conjugation tense marker has as its underlying representation a vowel without features, then the vowel harmony process can be seen as copying features of the second vowel onto the preceding non-specified vowel.

Note that the vowel is not copied if there are two consonants intervening between the vowels concerned (the exception being 3s/1d tiski about which see below), instead the vowel /a/ is inserted:

(21)	ta-sku	1d/3s	*tu-sku
	ta-nsi	1s/2d	*ti-nsi
	ta-nni	1s/3p	*ti-nni

Thus two consonants block the harmony process. The vowel harmony rule can be written as follows:

Vowel Harmony

A vowel with no inherent features copies the features of the following vowel, providing that no more than two consonants separate the two vowels. If such a separation does occur, the featureless vowel is realized as [a].

In cases like 2s/3d timsi and 2s/1d tiski it appears that vowel harmony has occurred despite the intervening consonant cluster, hence these cases appear to be contradictions to the above claim concerning consonant clusters. However, there is clear evidence that the underlying representation of these forms do not have medial consonant clusters, but are underlyingly tV-mi-si and tV-yi-ski (see below). Thus it appears that in these cases, the vowel of the second syllable has been deleted. In addition, in some cases not only is the vowel deleted, but if the consonant preceding the vowel is /y/, then it is also deleted: 2s/1d tV-yi-ski /tiski/. We can account for this data by the following syncope rule:

Syncope

The second vowel in a CVCV(C)(V) structure is deleted; if the preceding consonant is /y/, it is also deleted.

The forms of the t/p/n suffixes can be derived as follows (using data from Conjugation 1 for confirmation of the underlying representations):

	<u>UR</u>	<u>Occuring</u>	<u>Rules</u>
1s/2s	tV-n	tan	V-Harmony
1s/2d	tV-nsi	tansi	"
1s/2p	tV-nni	tanni	"
1d/3s	tV-sku	tasku	"
1p/3s	tV-ka	taka	"
2s/1s	tV-yi	tiyi	"
2s/1d	tV-yi-ski	ti(yi)ski	V-H, Syncope
2s/1p	tV-yi-ki	ti(yi)ki	V-H, Syncope
2s/3s	tV-yi	tiyi	V-Harmony
2s/3d	tV-mi-si	timsi	V-H, Syncope
2s/3p	tV-mi	timi	V-Harmony
3s/1s	tV-yi	ti	V-H, Syncope
3s/1d	tV-ski	tiski	ANOMALY
3s/1p	tV-ki	ti-ki	V-Harmony
3s/2s	tV-ye	te	V-H, Syncope
3s/2d	tV-si	tisi	V-Harmony
	tV-ye-si	tesi	V-H, Syncope
3s/2p	tV-ni	tini	V-Harmony

	tV-ye-ni	teni	V-H, Syncope
3s/3s	tV-u	tu	V-H, Syncope
3s/3d	tV-mi-si	timsi	V-H, Syncope
3s/3p	tV-mi	timi	V-Harmony
3d/1s	tV-si	tisi	V-Harmony
3d/2s	tV-ye-si	tesi	V-H, Syncope
3d/3s	tV-se	tes	V-H, Syncope
3p/1s	tV-mi	timi	V-Harmony
3p/2s	tV-ye-mi	temi	V-H, Syncope
3p/3s	tV-me	tem	V-H, Syncope

While it is impressive that these rules take care of this much data, there are two anomalies. One is the form 3s/1d form tiski from tV-ski, where vowel harmony should be blocked. One could attribute this to paradigm pressure, which is somewhat unsatisfying (an alternative analysis will be presented below). The other problem is with the 1s/3 forms, where the vowel is consistently /aa/, apparently by analogy with Conjugation 1. One can account for this synchronically in a number of ways by manipulating various formal devices, but the question of why these forms are different still remains a puzzle.

The origin of the two conjugation patterns is unclear. They are primarily differentiated by the nature of the vowel of the tense marker, either a featureless /V/ or /aa/. In addition the two are differentiated in the negative past by the presence of the tense marker tV in Conjugation 1 and its absence in Conjugation 2. This suggests that the Conjugation 2 negative past suffixes may originally have been tense-neutral agreement markers for the negative mood.

The Person/Number Complex. The person/number complex for the transitive verb can be divided into two position classes, PC2, which directly follows the tense markers of PC1, and PC3, which is word final. The morphemes that fall into these two classes are as follows:

<u>PC 2</u>		<u>PC 3</u>	
n	1s/2	sku	1dSubj
ŋ	1s/3	ski	1dObj
yi	1sObj	ka	1plSubj
yi	2sSubj	ki	1plObj
ye	3/2	si	dual
u	3s	ni	2p
mi	3p	mi	3p
∅		∅	

All of the PC3 morphemes are explicitly non-singular, so this class carries the majority of the functional load for number agreement, although all of them, with the exception of si, also carry person and role information. The 1st person non-singular forms sku and ka never co-occur with PC2 morphemes so their status in PC3 class is questionable; I have chosen this assignment on the basis of agreement patterns with non-singular subjects discussed below. The third person plural

mi is the only morpheme to belong to both classes; this is not a desirable analysis, but the 2s/3d and 3s/3d forms ending in m-si require its assignment to PC2, while 1s/3p -mi, indicates its status in PC3. It is likely that the dual membership of this morpheme is a later development, since it does not participate in most of the paradigms involving PC2, and its use in msi serves to differentiate third person dual from second person dual, which is always marked with plain si. An alternative analysis, where msi is analyzed as an indivisible PC3 morpheme, is examined below.

These two position classes occur in interesting patterns throughout the paradigm. In the forms with singular subjects and singular objects only morphemes from PC2 are found:

	n	ŋ
yi		yi
	ye	u

Table 4. Sunwari Singular/Singular Forms

This is not surprising since both participants are singular and PC3 always indicates non-singular number. When we analyze this portion of the paradigm it is hard to understand the overall organizational pattern. Agreement is not consistently with subject or with object, nor in a split ergative pattern. Particularly troublesome is yi which marks the seemingly disparate categories of 1st person singular object and 2nd person singular subject. Note the similarity of this paradigm to the same set of morphemes in Bahing (adapted from Hodgson 1858):

	na	qa
yi		i
	ye	ua

Table 5. Bahing Singular/Singular Forms

The strikingly similar patterns found in these two languages suggest close genetic relationship. Bahing morphology will be discussed in more detail below.

In the non-singular forms both position classes are present and the morphemes from PC3 fall into analyzable patterns. Consider first the forms with singular subjects and non-singular objects:

1d	1p	2d	2p	3d	3p
		n-si	n-ni	q-si	q-mi
yi-ski	yi-ki			m-si	mi
ski	ki	ye-si	ye-ni		

Table 6. Sunwari Singular/Non-Singular Forms

From the organization of the chart, we can see that the PC3 morphemes occur in columns, which indicates agreement with object. The PC2 morphemes fall into a pattern that is similar, but not identical, to the singular/singular paradigm:

	n	q
yi		m
Ø	ye	Ø

Table 7. Sunwari Position Class 1 Morphemes
In Singular/Non-Singular Forms

Here the distribution of yi is much more restricted than in the singular/singular forms. One possible diachronic explanation for this is that the PC2 morphemes originate from an older stage of agreement that was frozen in these forms when the PC3 morphemes were suffixed to form number

agreement.¹²

There is an alternative analysis of the suffixes in the singular subject/non-singular object forms that seems to resolve a number of otherwise anomolous details. This is to analyze the surface forms msi, mi, ski, and ki, as having the PC2 morpheme yi in the underlying representation. By this analysis the surface msi would be a single indivisible morpheme of PC3 meaning 3rd person dual. The yi morpheme would then have almost the same distribution in the singular/non-singular forms as it has in the singular/singular forms. And the loss of the phonemic representation of this morpheme is automatically accounted for by the syncope rule discussed above. In addition, this morpheme would trigger Vowel Harmony prior to deletion, thereby accounting for the quality of the vowel in Conjugation 2 tiski, which was previously anomolous.

While this analysis certainly takes care of a lot of otherwise problematic detail, two objections can be raised. First, we have no independent evidence for the presence of yi in the Conjugation 1 forms taamsi, taami, taaski and taaki. This objection can be countered by the fact that Syncope sometimes applies to Conjugation 1 forms; for example the morpheme yi is 'optional' in the 2s/1n.s. forms taa(yi)ski and taa(yi)ki. So perhaps Syncope is working through the paradigm and already applies obligatorily to the non-singular object forms. The second objection is more serious, namely the form of the Conjugation 2 3s/3d suffix timsi. Here we do not expect yi since neither first nor second person are involved. And, since by this analysis msi is a single morpheme, we would predict that the consonant cluster would block Vowel Harmony, which it does not. Thus it is not clear which of the two analyses is preferable.

The remainder of the affirmative past paradigm consists of the forms with non-singular subjects:

¹² One slight problem with this analysis is that the similarity of the Sunwari and Bahing singular/singular paradigms suggests that the analysis of yi as a first person singular object marker predates the Bahing/Sunwari split. While this does not strictly rule out the possibility of conservatism in this position, it does cast some doubt on this explanation.

	1s	1ns	2s	2ns	3
1d			sku		
1pl			k(0) ¹³		
2d	yi-si	si			si
2pl	yi-ni	ni			ni
3d	yi-si	s(e)	(ye-si)		s(e)
3pl	yi-mi	m(e)	(ye-mi)		m(e)

Table 8. Sunwari Non-Singular Subject Forms

The 3/2s forms are optional; they show up as a possible alternative to the se/me forms in the transcription of some verbs.

In this paradigm the PC3 morphemes appear consistently in rows, i.e. they agree with the subject. The only PC2 morphemes that appear in these forms are yi and ye marking respectively first and second person singular objects; PC2 morphemes never occur in configurations where both participants are non-singular.

We can draw the following conclusions about the structure of the transitive past affirmative paradigm:

PC2 morphemes primarily serve to mark person configurations with singular participants. Their distribution is somewhat idiosyncratic without a clear synchronic organizational pattern.

PC3 morphemes roughly code number agreement. They agree with a plural participant, if there is one, and with the subject if both participants are plural.

Subject Agreement Forms. There is another set of verb suffixes used with transitive verbs which co-exist with this complex verb morphology. This is a set of subject agreement forms; they are available for all persons and numbers of subject except for first person singular. It is unclear what factors condition the use of the complex or simplified set of suffixes in any given circumstance, but my informant's intuition is that the subject agreement forms are used when

¹³A single vowel in parentheses indicates that the vowel is 'optional'. These vowels are often either voiceless or deleted entirely, then turn up in certain configurations. There is clearly some complex phonological conditioning for the realization of these vowels, but I have yet to pinpoint what it is.

the subject is emphasized and the complex forms are used when the object is emphasized. The subject agreement forms are the same forms that would be used with a third person singular object, therefore I will label them as such, although they actually have a wider distribution (the following forms exclude tense marking):

1d/3s	-sku
1p/3s	-k(a)
2s/3s	-yi
2d/3s	-si
2p/3s	-ni
3s/3s	-u
3d/3s	-s(e)
3p/3s	-m(e)

Table 9. Subject Agreement Forms
For Affirmative Past

Note that while most of these forms belong to PC3, *yi* is a member of PC2 by our classification above. Rather than continue analyzing these forms as having two position classes in the person/number complex, I prefer to analyze them as following the pattern of intransitive inflection, with only two available position classes: PC1, which includes the tense markers, and PC2, which includes the morphemes of the above list. Thus while these forms can be used with semantically transitive verbs, verbs with this inflection are structurally intransitive.

2.2 Negative Past Suffixal Morphology

The t/p/n morphology of the negative is similar to that of the affirmative past in most respects. There are two primary differences. The first, discussed above, is that while the first conjugation forms have the tense marker *tV* throughout the paradigm, the second conjugation forms have no tense marker at all, instead the person/number complex is suffixed directly to the verb. Note that the tense marker of the first conjugation in the negative past is identical to that of the second conjugation in the affirmative past, with identical morphophonemics.

The second major difference between the affirmative and negative past tense paradigms is a slightly different distribution of the PC1 morphemes, as illustrated in the table below:

	n	ŋ
yi		yi
	ye	u

Past Affirmative

	n	u
yi		yi
	ye	a

Past Negative

Table 10. PC1 Morphemes, in the Negative and Affirmative Past, Singular/Singular

The suffix -u which marks 3/3 configurations in the affirmative, is found marking 1/3 configurations in the negative. The 3/3 slot is then occupied by /a/. Another interesting difference is that the 2/3 and 3/3 forms which surface as msi in the affirmative, are simply realized as si, without the third person m in the negative. This is evidence that the concatenation of msi is relatively recent.

The last distinction between the affirmative and negative paradigms is that the Conjugation 2 negative forms have some nasalization associated with the 3s/2s configuration:

p-stem	ma-gyam-e	HF	'buy, 3s/2s, neg.past'
C-stem	ma-ren-e	HF	'draw, 3s/2s, neg.past'
t-stem	ma-tan-e	LL	'kick, 3s/2s, neg.past'
t-stem	ma-klon-e	LL	'burn, 3s/2s, neg.past'
K-stem	ma-seeq-e	LF	'pick fruit, 3s/2s, neg.past'
K-stem	ma-khaaq-e	HF	'tear, 3s/2s, neg.past'

All of these stems have an oral voiced stop at the same place of articulation in the 3s/3s forms. Therefore we must also posit a separate 2s/3s morpheme which is realized as nasalization of the preceding stop. This morpheme will be assigned to PC1 since the nasalization must precede the PC2 ye, and it never co-occurs with a tense marker. This disrupts the functional unity of PC1, but the only other alternative is to establish a new position class. Both solutions seem to me to be equally undesirable, although for different reasons, so I'll arbitrarily choose the first option.

2.3 Non-Past Suffixal Morphology

The non-past paradigm is simpler than the other two. In the non-past the person and number of the object only affect the marking of the verb when the subject is first person singular. For all other persons, the verb in the non-past agrees with the subject. Thus, like the optional subject agreement forms for the affirmative past, non-past verbs with all persons except 1s subject are structurally intransitive, with the suffix consisting of only two position classes. In addition, the markers of the non-past transitive paradigm are

almost identical to those of the non-past intransitive paradigm:

Non-Past		
	TR	INTR
1s	xx	xxx
1d	na-sku	na-sku
1p	ni-k(i)	ni-k
2s	ne-(ye)	ne
2d	ni-si	ni-si
2p	ni-ni	ni-ni
3s	b(a)	b(a)
3d	ni-s	ni-s
3p	ni-m	ni-m

Table 11. Sunwari Transitive and Intransitive Non-Past Suffixes (excluding 1s forms)

The tense marker nV is a member of PC1 and is subject to the same morphophonemic processes as the past tense tV discussed above. The remaining morphemes belong to PC2 of intransitive verbs.

When the non-past transitive verb has a first person singular subject, the structure of the suffixal complex is transitive, with three position classes following the verb root:

Object:	2s	2d	2p	3s	3d	3p
1s	na-n	na-n-si	na-n-ni	nu-q	nu-q-si	nu-q-mi

Table 12. Sunwari Transitive Non-Past Forms with First Person Singular Subject

The tense marker is again nV, the /a/ vowel of the 1s/2 forms is accounted for by Vowel Harmony, and the /u/ vowel in the 1s/3 forms gives us the underlying structure qu for the PC2 suffix, with the vowel copied and then deleted in the occurring form.

The structure of the person/number complex of the 1s/2 forms is identical to that of the past tense paradigm. The 1/3 forms have PC2 qu, as opposed to the affirmative past PC2 u, and the negative past PC2 u. Nevertheless the structure of the non-past transitive forms is identical to that of the transitive past.

2.4 Summary

The suffixal complex of the Sunwari verb can be divided into two structural types: intransitive verbs, with only two position classes, and transitive verbs, with three. PC1 consists of the tense markers taa, tV, and nV, and possibly also the nasalization characteristic of 3s/2s negative past forms. PC2 for intransitive verbs contains subject agreement morphemes; the set of morphemes varies somewhat with whether

the verb is affirmative past, non-past or semantically intransitive. PC2 for transitive verbs contains the set of morphemes which primarily mark actions involving singular participants; again the set varies somewhat depending on the tense. PC3 roughly codes number agreement. If only one participant in the event is non-singular, it will be marked by a PC3 morpheme. If both participants are non-singular, the PC3 morpheme will agree with the subject of the verb.

3.0 Sunwari Verb Morphology in a Tibeto-Burman Perspective

The description of verb morphology in any previously undescribed Tibeto-Burman language is fuel for the study of the reconstruction of T-B finite verb morphology, a field recently pioneered by Bauman (1975), and DeLancey (1980, 1981, to appear a, b). While a full account of the relevance of Sunwari for current reconstruction schemes is beyond the scope of this paper, several observations can be made.

The division of the Sunwari person/number complex of the transitive verb into PC2, which contains a class of morphemes with obscure synchronic function, and PC3, which indicates number agreement, reflects two diachronic layers of morphology. The PC1 morphemes apparently are the older set, descended from the old PTB agreement system, while the number agreement forms are younger, dating back to Proto-Kiranti, the deepest level for which number agreement can at present be confidently reconstructed.

The degree of relationship between the PC1 morphemes and the older morphology can be seen when we examine the forms in light of a reconstructed suffixal paradigm for PTB (from DeLancey, to appear b):

	1st	2nd	3rd
1st		n	ŋ
2nd	ŋ		n
3rd	ŋ	n	u

Table 13. Reconstructed Suffixal Paradigm
for Proto-Tibeto-Burman (DeLancey, to appear b)

It is clear that the 1/3 *ŋ and the 3/3 *u directly match the Sunwari forms of the affirmative past paradigm. The *ŋ which occurs in the first person object configurations may possibly be related to Sunwari (and Bahing) yi; compare Thulung qi (Allen 1975) which has the same distribution as the Bahing and Sunwari form, suggesting that the initial /ŋ/ may (or may not) have been palatalized and reduced before /i/. The Sunwari 1/2 n probably reflects the PTB 2nd person suffix *na(), thus would be cognate with the 3/2 *n reconstructed for PTB. Although there is currently no clear evidence for a PTB 3/2 *ye, the rest of the PC2 morphemes, and their distribution, can be traced to early stages of the TB family.

We can establish the Proto-Kiranti provenience of the Sunwari number markers by comparing the wide distribution of

the cognate morphemes across the family.¹⁴ For example, languages with a first person exclusive non-singular /k/-initial suffix include Bahing (ki 1nsOBJ, ku 1dsUB, ka 1pSUB), Dumi (ka 1pexcl, ki 1plincl), Thulung (ki 1nsOBJ, ku 1nsSubj), Chamling (ka, 1ns), Hayu (kok ?< ka-u-k 1pexcl, ke ?< ka-i 1pincl), Kulung (ka 1ns), Bantawa (ka 1ns), and Jinghpaw (1pl. ga). Languages with an /m/ suffix indicating 3rd non-singular are Bahing (mi 3p), Thulung (mi 3p and pl), Kulung (num 2p/3, am 1p/3, and Hayu (me 3p). Forms with a ni for 2p include Dumi, Bahing, Thulung and Limbu; the same form is used in 2p/1s configurations in Kulung, and in 1 and 2 non-singular configurations in Bantawa. Compare also Hayu ne 2p, and Bantawa in 2pOBJ. The dual si/ci is found in some form in virtually all of the languages mentioned above.

While it is clear from the above evidence that we can reconstruct number agreement for Proto-Kiranti, it is not clear what pattern to reconstruct, since the number agreement systems for which we have evidence vary greatly in their complexity. For some languages, such as Bantawa and Kulung, it is difficult to assign simple glosses to morphemes, or to extract an intelligible system of agreement. Other languages, like Sunwari and Bahing, have relatively simple systems, with clear meanings assignable to each morpheme.

Of the languages I've studied in a cursory examination of Kiranti verb morphology, Bahing and Sunwari are the two that have the most in common. The two sources on Bahing, Hodgson 1858 and Michailovsky 1975, give somewhat different paradigms, with the forms from the older source falling into a regular pattern, and the younger paradigms being somewhat reduced, less complex, and less regular. The non-past paradigm from Hodgson is given on the following page.¹⁵ The similarity between the two paradigms is most striking in the singular/singular forms:

¹⁴Data on the following languages are from these sources: Bahing, Hodgson 1858 and Michailovsky 1975; Dumi, Van Driem to appear; Thulung, Allen 1975; Chamling, Ebert (1988); Bantawa, Weidert (p.c. to S. DeLancey); Kulung, Holzhausen 1973; Hayu, Michailovsky 1974; Limbu, Weidert and Subba 1985; Jinghpaw, DeLancey p.c.

¹⁵Bahing, like most Kiranti languages, distinguishes inclusive and exclusive first person non-singular participants. Thus the inclusive dual and inclusive plural add two more cells to the nine by nine matrix, changing the geometry of the paradigm. I have not been able to elicit an inclusive/exclusive distinction in Sunwari, which is odd, since this division is common in Kiranti.

	n	ŋ
yi		yi
	ye	u

Sunwari

	na	qa
yi		i
	ye	ua

Bahing

Table 15. Singular/Singular in Bahing and Sunwari

The only differences in the two paradigms are the presence of Bahing /a/ in the 1s subject and 3/3 forms (compare the Sunwari 3/3 /a/ in the negative past paradigm), and the lack of the glide /y/ in the 2/3 form. However, when we compare the other cells, we find that number agreement in Bahing does not follow the same pattern as that in Sunwari.

In Sunwari, as we saw above, the verb agrees in number with a non-singular participant if there is one. If both participants are non-singular, then the verb agrees with the subject. In Bahing, if there are two non-singular participants, the verb is marked for both. If the object is a first or second person, then the number of the object will precede the number of the subject. If the object is a third person participant, then the number of the subject precedes the number of the object. Note that this double marking fosters a separation of forms by grammatical role, so that we can pair the Bahing suffixes as follows:

	<u>SUBJECT</u>	<u>OBJECT</u>
1s	qa	yi
1d	suku	siki
1p	ka	ki
1dinc	sa	so
1pinc	ya	so
2s	i	ye
2d	si	si
2p	ni	ni
3s	wa	∅
3d	se	si
3p	me	mi

Table 16. Bahing Agreement Morphemes

If we look at the distribution of the first element only, we find the following agreement pattern:

	1/2		1
	2		
1			2
	2	3	

Table 17. Agreement Pattern for First Element in
Bahing Suffixal Morphology

These forms are arranged in a split-ergative pattern; agreement is with first and second person over third. If both participants are local, then agreement is with patient. The second element in the Bahing person/number complex therefore marks the other participant in the event; if the split-ergative pattern requires that the first element agree with the subject, then the second element will agree with the object and vice versa. Thus while Bahing and Sunwari share a lot of verb morphology, and while they both have relatively simple agreement patterns, the patterns are only partially equatable.

Compare now the more recent Bahing forms, given in the paradigm on the following page. It is interesting that in Bahing the non-past retains more of the original morphology, and the past forms are more reduced. This is the opposite of what we found in Sunwari. In the non-past, the forms that are the most reduced are those with non-singular subjects (1st and 3rd), and non-singular objects of the 1st and 2nd person. This pattern of reduction can be accounted for by loss of the second suffixal element. In the past tense, most of the second suffixal elements are lost in forms where the person marked by the first element is non-singular. A few forms have 'optional' marking of the second element, thus the loss of these forms is not yet complete. It is interesting that the reduced paradigm of modern Bahing looks more similar to Sunwari than do the older data of Hodgson.

Assuming that Hodgson's data represents an older form of Bahing, we can compare this with the Sunwari paradigm, and reconstruct forms for Proto-Bahing-Sunwari in the cells which have (almost) identical marking. This gives us the following partial paradigm of Proto-Bahing-Sunwari:

(Modern) Bahing (Michailovsky 1975)				Non-Past Past				na			na-si		na-ni		nga		nga-si		nga-ni				
								ta-na		ta-na-si		ta-na-ni		to nga		to nga-si		to nga-ni					
								su		ta-su		su		ta-su		su-si		ta-su		su-mi		ta-su	
								ka		ta-kø		ka		ta-kø		ka-si		ta-kø		ka-mi		ta-kø	
												sa		ta-sa		sa-si		ta-sa		sa-mi		ta-sa	
												ya		ta-ya		ya-si		ta-ya		ya-mi		ta-ya	
												i		ti		i-si		ti-si		i-mi		ti-mi	
												si		ta-si		si-si		ta-si		si-mi		ta-si-mi	
												ni		ta-ni		ni-si		ta-ni		ni-mi		ta-ni	
												wa		ta		wa-si		ta-si		wa-mi		ta-mi	
												se		ta-se		me		ta-me					
												me		ta-me									

Table 18. Modern Bahing Suffixal Morphology

				n(a)	nasi	nani	ŋ(a)	ŋasi	ŋami
							suku		
							ka		
							(sa)		
							(ya)		
yi			(y)i						
yisi			si						
yini			ni						
yi	siki	ki	so	ye	si	ni	u(a)		
yisi				yesi			se		
yimi				yemi			me		

Table 19. Partially Reconstructed Paradigm for Proto-Bahing-Sunwari

The reconstructible forms mark the majority of configurations which have at least one singular participant. The only forms of this category which cannot be reconstructed are the 2s/3ns forms (which would be reconstructible if we accepted the hypothesis that these forms had an underlying *yi*), and the 3s/3ns forms (which differ in that Sunwari does not preserve the 3s/3s *u* here, while Bahing does). The fact that these forms are reconstructible, whereas the forms with two non-singular persons are not, implies that the number agreement was first innovated in these configurations, and later spread, by different paths, to the rest of the paradigm. Note that the distribution of the first element in the above forms is split-ergative as in Bahing.

The divergence of the Bahing and Sunwari number marking strategies must have occurred in the extension of number marking to the non-singular/non-singular configurations. In Bahing, the same number marking pattern that already existed in the forms with one singular and one non-singular participant were extended to the rest of paradigm. This was apparently accompanied by the pairing of forms by grammatical role. The result was the systematic pattern recorded by Hodgson, which was roughly based on split-ergative agreement. This pattern was later simplified to the modern Bahing distribution.

In Sunwari, it appears that number agreement was expanded to the entire paradigm by a different strategy, extension of the subject agreement forms to all non-singular/non-singular configurations. This gives the modern Sunwari pattern, whereby number agreement is with the subject if both participants are non-singular.

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