NEPALESE LINGUISTICS

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ACOUSTIC CORRELATES OF WORD STRESS IN MAITHILI*

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Abstract: *This paper investigates three acoustic features (e. g. duration, intensity and fundamental frequency) and attempts to determine the probable acoustic correlates of word stress in Maithili. The results show that of the three parameters investigated in this study, duration appears to be the single most important cue. Relative intensity in itself offers little cue to stress in Maithili. Probably, a combination of duration and fundamental frequency might be considered as satisfactory acoustic correlates to stress in Maithili. Or, perhaps, the three acoustic features (duration, fundamental frequency and relative intensity in that order) collecctively may be associated with what might be termed "stress" in Maithili.*

1. INTRODUCTION. Maithili, like most Indo-Aryan languages, is a stress language. However, stress in Maithiii is far weaker than in English. Vowel reduction in unstressd positions is not as great in Maithili as in English. Also, stress in Maithili is less significant playing only a marginal role in distinguishing words.

Little has been published on the phonetics and phonology of Maithili. The only studies that I have personal knowledge of are: Jha (1941, 1958); Ingemann and Yadav (1978); and Yadav (1976, 1979 a,b,c).

Previous experimental studies of stress in various languages of the world, including English, have shown that stressed syllables differ from those that are unstressed along at least five parameters: duration, intensity, fundamental frequency, vowel reduction, and vowel quality. Little, however, has been published on the acoustic correlates of stress in modern Indo-Aryan languages of India and Nepal. The present paper investigates three acoustic features (e.g. fundamental frequency, relative intensity, and duration) in detail and attempts to determine the probable acoustic correlates of word stress in Maithili.[1]

2. EXPERIMENTAL METHOD.

2.1 TEST MATERIAL. For this study, a list of Maithili word pairs was prepared. The word pairs were read three times in isolation and were recorded in the order presented in Table 1. The speaker was a native speaker from the Tarai of Nepal. The test words chosen for this study were all disyllabic and of the CVCV type. The word pairs differed primarily in their stress pattern and were of the type in which one word was a noun and the other a causative verb–with the exceptions of ['giro] 'may he fall' and [gi'ro] '(you) cause to fall', which were both verbs. Table I lists the stress pairs used in this study.

['bəca]		'child'			
[bə'ca]		'cause to save'			
['suta]		'heavy thread'			
[su'ta]		'cause to sleep'			
['giro]		'may he fall'			
[gi'ro]		'(you) cause to fall'			
['gəla]		'throat'			
[gə'la]		'cause to melt'			
['pota]		'grandson'			
[po'ta]		'cause to whitewash'			

Table I : Maithili stress pairs

Fq (in Hz)

Word	Vowel	1	2	3	Average
['bəca]	['ə]	131	131	125	129 Hz
	[a]	114	120	125	120
[bə'ca]	['a]	134	134	125	131
	[ə]	114	103	108	108
['suta]	['u]	145	145	134	141
	[a]	103	106	131??	113
[su'ta]	['a]	131	131	131	131
	[u]	117	111	117	115
['giro]	['i]	134	134	134	134
	[o]	128	128	128	128
[gi'ro]	['o]	117	122	122	120
	[i]	128	128	128	128
['gəla]	['ə]	131	128	128	129
	[a]	114	117	134??	122
[gə'la]	['a]	122	120	122	121
	[ə]	111	114	108	111
['pota]	['o]	145	134	134	138
	[a]	123	100	134	119
[po'ta]	['a]	134	131	134	133
	[o]	106	111	106	108

Table II: Peak Fundamental Freqencies (ln Hz) of Maithili Stress Pairs.

2.2 APPARATUS AND MEASUREMENTS. Three recordings of each Maithili stress pair were made on an Akai GX reel-to-reel taperecorder in a soundproof studio of the Language Laboratory of the University of Kansas, U.S.A.

Fundamental frequency was measured from narrow band spectrograms by dividing by ten the frequency of the tenth harmonic. In some cases (e.g. [i o u]) where the tenth harmonic was not visible, the fundamental frequency was estimated on the basis of the fifth harmonic.

Intensity was measured from intensity tracings produced by the F. J. Electronics Intensity Meter.

Duration was measured on both wideband spectrograms and oscillographic wave forms.

3. RESULTS AND DISCUSSION. Results of the measurement are given in Tables II–V.

Table II lists the fundamental frequency (in Hz) measured at the peak for each of the three tokens of each stress pair and their average fundamental frequency. The values show that stressed vowels in Maithili usually have a higher fundamental frequency than the corresponding unstressed vowels. On the average, a stressed vowel in Maithili has a fundamental frequency of 15 Hz higher than the fundamental frequency of an unstressed vowel.

It has been known for some time that the presence or absence or voicing during consonant environment has an influence upon the fundamental frequency of the adjacent vowel. The fundamental frequencies of vowels in voiceless environments are in general higher than in voiced environments. However, as House and Fairbanks (1953:110) have concluded: "......the effects of consonants upon fundamental frequency, although significant, are probably less than the variations in fundamental frequency natural to the vowels themselves when consonant environments are constant."

Other studies (Peterson and Barney 1952; Lehiste 1961, 1970) have shown that there is also a close connection between the phonetic quality of a vowel and its intrinsic fundamental frequency. Other things being equal, a high vowel has a higher fundamental frequency.

Although the corpus used in this study was extremely limited, both the above observations are borne out by the present study. For instance, Table II shows that the stressed ['a] occurring after voiceless consonants [t] or [c] have considerably higher fundamental frequency values than the one occurring after the (voiced) lateral [l]. Also, the intrinsic fundamental frequencies of Maithili vowels (computed frome Table II and listed in Table III) show that Maithili high vowels too have higher fundamental frequencies. As a matter of fact, the results presented in Table III show a striking similarity between the intrinsic fundamental frequency values obtained for English stressed vowels by Peterson and Barney (1952) (as reported in Lehiste 1970:69) and those of the Maithili stressed vowels.

Table IV lists the relative intensity (in dB from an arbitrary 0) measured at the maximum level for each of the three tokens of each Maithili stress pair and their average intensity. The figures show that the stressed vowels in Maithili have a slightly higher average

[3]

	['i]	134 Hz
	['ə]	129 Hz
	['a]	128 Hz
	['o]	129 Hz
	['u]	141 Hz

Table III: Intrinsic Fundamental Frequency (Hz) of Maithili stressed Vowels.

Intensity (in dB)

Word	Vowel	1	2	3	Average
['teca]	['ə]	21.5	23.5	23	23
	[a]	19.5	21	20.5	20
[be'ca]	['a]	20	22	22.5	21.5
	[ə]	17	18	22	19
['suta]	['u]	21	21.5	22.5	22
	[a]	18.5	18.5	21	19
[su'ta]	['a]	20.5	20	21.5	21
	[u]	17	21	21.5	20
['giro]	['i]	22.5	24	25	24
	[o]	18.5	22.5	21.5	21
[gi'ro]	['o]	22	24	23.5	23.5
	[i]	21	23.5	23	22.5
['gəla]	['ə]	22.5	23.5	23	23
	[a]	18.5	21	20.5	20
[gə'la]	['a]	20.5	22	22.5	25
	[ə]	18.5	20.5	20.5	29
['pota]	['o]	21.5	22	23.5	22
	[a]	17.5	17.5	18.5	18
[po'ta]	['a]	20	21	21	21
	[o]	15.5	18	18.5	17

Table IV: Peak Intensity (in dB) Values for Maithili Stress Pairs.

intensity than the unstressed vowels. On the average a stressed vowel in Maithili has a 3 dB higher relative intensity than an unstressed vowel. This is, however, not a considerable difference as compared to the 4 to 5 dB range established for American English and 12 dB range for Hungarin (as reported in Lehiste 1970:121).

Previous investigators (Fairbanks, House and Stevens 1950; Fonagy 1966; House and Fairbanks 1953; Lehiste 1961, 1970) have emphasized the connection between the phonetic quality of a vowel and its intrinsic intensity. They have also considered the differing consonant environment (especially the presence or absence of voice) as an important factor in determining the intrinsic vowel intensity.

Considering the limited number of stress pairs used in this study, no claim will be made as to the intrinsic intensity of the Maithili stressed vowels. Nevertheless, looking at the intensity values provided in Table IV, the following observations may be made:

(i) Studies of other languages have shown that in general a high vowel has a lower relative intensity. However, the Maithili stressed high front vowel ['i] has a high relative intensity. This may be so because the presence of the continuous voicing throughout the word ['giro] has caused the intensity to go higher. Similarly, the high relative intensity value of the Maithili stressed high back vowel ['u] may have been so because of the preceding fricative consonant [s] in the word ['suta].

(ii) The low vowel [a] is known to have higer intrinsic intensity. However, the values registered for the stressed ['a] in this study are rather low. This may be explained in terms of the fact that all instances of [a] occur in the second syllable of the word.

(iii) Voicing of the consonant environment is known to increase the intensity of the adjacent vowel. This may be observed in the case of the stressed vowel ['o] in the word ['pota] which has a lower intensity than in the word [gi'ro] even when the stress falls on the second syllable in the latter word. Thus, it appears that voicing of the consonant environment may be a more important factor than the word structure in determining the relative intensity of a vowel.

Table V lists the duration (in msec) of each of the three tokens of the Maithili stress pairs and their average duration. The figures show that all the stressed vowels of Maithili are considerably longer in duration than the unstressed vowels. The greatest durational difference is observed between the [stressed and unstressed [o] and [ə]: on the average stressed ['o] and ['ə] are 76 msec and 60 msec longer in duration than the unstressed [o] and [ə]–with the average ratio of 1.00 to 1.59 and 1.00 to 1.80, respectively. Similarly, on the average stressed ['i], ['u] and ['a] are 47 msec, 40 msec and 34 msec longer than the unstressed [i u a] respectively–with the average ratio of 1.00 to 1.47, 1.00 to 1.70 and 1.00 to 1.18, respectively. On the average, a stressed vowel in Maithili is about 50 msec longer in duration than an unstressed vowel.

Word	Vowel	Duration (in msec)			
		1	2	3	Average
['bɔca]	['ə]	160	100	80	113 msec
	[a]	150	160	190	167
[bə'ca]	['a]	220	240	200	220
	[ə]	70	70	70	70
['suta]	['u]	100	90	100	97
	[a]	220	130	230	193
[su'ta]	['a]	200	190	220	203
	[u]	50	50	70	57
['giro]	['i]	170	120	150	147
	[o]	180	190	220	197
[gi'ro]	['o]	240	220	280	247
	[i]	100	100	100	100
['gola]	['ə]	160	150	160	157
	[a]	180	180	190	183
[go'la]	['a]	200	200	230	210
	[ə]	80	80	80	80
['pota]	['o]	160	160	160	160
	[a]	190	140	190	173
[po'ta]	['a]	220	220	220	220
	[o]	50	70	50	57

Table V: Duration (in msec) of Maithili Stress Pairs.

Duration is a much more robust cue of word stress in Maithili than fundamental frequency since no particular pitch contour can be observed to correlate well with stress. For instance, the word pairs ['giro] and [gi'ro] cannot be differentiated on grounds of pitch since no difference in pitch contour is observed on the narrow band spectrograms: both words have rising pitch on the first vowel followed by a falling pitch on the succeeding vowel. Further evidence that rising pitch cannot be said to be a uniform cue for stress is that both stressed and unstressed [i] and [ə] are observed to have rising pitch, while the stressed ['o] and ['u] have only level pitch. Also, both stressed [a] and [o] occurring in the second syllable usually have falling pitch; occasionally they have level pitch. Information on duration, on the other hand, is straightforward and unambiguous and all the stress pairs can be differentiated on the basis of duration.

4. CONCLUSION. Much more detailed investigation needs to be made in order to arrive at definitive statements on the acoustic parameters of word stress in Maithili. Nevertheless, the results show that of the parameters investigated in this limited study, duration appears to be the single most important cue. Since relative intensity in itself is not an adequate cue to stress in Maithili, a combination of duration and fundamental frequency, or of all three acoustic features (duration, fundamental frequency and relative intensity in that order) collectively may be associated with that might be termed 'stress' in Maithili.

[6]

Notes

1 This Study forms part of Chapter V of Yadav (1979 c)

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THE TREATMENT OF GLIDES IN NEWARI PHONOLOGY

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Abstract: *The most common practice in the linguistic description of Newari is to represent the glides /y/ and /w/ as phonetic variants of [i] and [u], or the result of assimilation processes such as palatalization or labialization. But we take the view that vowels and glides belong to different phonological systems, and glides for this reason need to be recognized as underlying phonological units apart from their non-distinctive phonetic realizations. In this paper we examine the criteria that condition the occurrence of glides and propose a principled basis for representing them unambiguously within Newari syllable structure.*

1. Statement of the Problem.

The status of Glides may be one of the most difficult single questions in the phonological description of Newari. Earlier works on Newari Phonology such as that of Hale and Hale (1969) placed priority upon the morpheme rather than the syllable and was seen to obscure the distinction between glides and vowels: [i] and [y] were both represented as /y/; [u] and [w] were represented as /w/ in the environment of front vowels and back vowels respectively. Since there is no contrast between [i] and [y] or between [u] and [w] in identical environments, both [y] and [w] may be regarded as phonetic variants of [i] and [u]. But we would like to take the view that there is more than one source for the phonetic surface which we call glides, i. e. vowels and glides belong to different phonological systems and we need to distinguish between glides as realization of underlying phonemes and as the result of allophonic phonological processes. In other words, the glides that occur word–initially or syllable–initially as in /waye/ 'to throw, spill' or /yāye/ 'to do', and in CGV mono-syllabic sequences such as /dwii/ 'caste name' or /dyu/ 'stop !' have phonemic status and do not arise from phonetic assimilations. This approach would contribute to the interpretation of the syllable as a phonological unit and provide a coherent transcription scheme that will be adequate not only for representing native words contrastively but also for pronouncing loan words in Newari. In this paper we would like to examine briefly the criteria required to represent the glides unambiguously within Newari syllable structure.

2. Glides and Syllable Structure.

In Newari we shall consider CV or CGV syllable structure to be the basic pattern and any alternations that produce more complex structures such as CVC or CGVC under morphological conditions will not be discussed in this paper. We shall also assume that the syllable

structure rules which apply to the constituents of the syllable will determine the sequential constraints imposed on possible syllable shapes. When we consider the severely restricted clustering pattern in Newari syllables, it may be true to say that there are no CC– clusters at the beginning of a syllable involving true consonants. We would thus expect that initial clusters such as /pl-/, /kl-/, /sl-/ etc. would be prohibited in the language. This leaves us with the glides /y/ and /w/ which manifest the highest clustering potential with the initial C if we take $[\ p^w,\ k^w,\ t^y,\ g^y\ ]$ as occupying two C positions instead of only one as unit phonemes. In this respect the glides can cluster with any consonant irrespective of whether it is a stop, liquid or nasal. But while a stop–glide or liquid–glide cluster is permissible, a glide cannot be followed by a liquid within any given syllable. As suggested above, glides can also occur in syllable–initial positions which in a way compel recognition of their occurrence in syllables as consonants in their own right. Similar is the case with the breathy and aspirated series of consonants where the glottal fricative /h/ cannot be said to cluster with any other consonant, and may appear syllable–initially as a relatively stable consonant. We propose to discuss such constraints in syllable structure with explicit reference to syllabic nuclei and syllable–medial glides.

2.1 Syllabic Nuclei (Vowels and Vowel sequences)

The system of syllabic nuclei in Newari syllables can be represented in the form of the following chart :

(1) V ⟶

i	u	ei	eu	(āe)
e	o	ai	āu	(ae)
ā	a	ai	au	
		(ui)		

We posit here six vowel phonemes for Newari, although Hale (1970:313) describes a system of only four contrasting vowels /i, ā, a, u/, and later raised the number of vowels to five basic vowels / i, e, ā, a, u / (Hale and Shresthacharya, 1972: 4). Newari vowels function as simple and complex nuclei of the syllable. The simple nuclei may be short or long, and the complex nuclei may be rising or non–rising. All nuclei, short or long and simple or complex have oral and nasal counterparts. Our introduction of /o/ as a vowel phoneme can be justified on the ground that although /o/ often has a phonetic on-glide $[\ ^w o\ ] \cup [\ ^w ə\ ]$, there is no systematic contrast between /o/ and /wa/. Hale and Hale (1969), Hale (1970), and Hale and Shresthacharya (1972) had respresented /o/ as the sequence /wa/, and /e/ as the sequence /ya/. This approach complicates the interpretation of the glides /y/ and /w/ on the one hand, and a glide plus a vowel sequence on the other. On phonological grounds we can represent the alternation between glides and vowels unambiguously. i. e., to retain /o/ in place of /wa/,and/e/in place of/ya/which could also contribute to the readability of the trans–cription.The vowel sequences /ui/, /āe/ and /ae/ which are included in parentheses occur only in open syllables (usually morpheme–finally), and in normal speech the last two are mono-phthongized to [ae] and [ɛ:], respectively. Hale and Hale (1975: 14) note that the sequence

/ui/ is phonologically in contrast with /wi/, as in /dui/ 'two' and /dwii/ 'caste name' or /swii/ 'thirty'.

The contrast between /ui/ and /wi/ presupposes that a glide which occurs after the initial C can form either a CC-cluster or is a part of the assimilation process in which case the initial C is either labialized or palatalized in certain contexts. It is however reasonably clear to this point that sequences such as /dwʲi/ and /swii/ can be interpreted as consonant-glide clusters rather than unit phonemes, and that there are obvious restrictions on the distribution of glides within the syllable. The consonants which are palatalized and labialized can freely precede only low vowels, and the plain consonants have an unrestricted distribution with the high vowels. One can however get the plain and the labialized consonants before high front vowels, and plain or the palatalized consonant contrastively before high back vowels. But the palatal glide /y/ cannot precede a high front vowel, and the labial glide /w/ cannot precede a high back vowel. Thus, while we have $\left[\text{p}^{\text{j}}\text{a:} \right]$ 'is wet' and $\left[\text{p}^{\text{w}}\text{a:} \right]$ 'stomach' as palatalized and labialized consonants, one can also get /puu/ 'is hot' or /pyuu/ 'waits', and /pii/ 'to plant' or /pwii/ 'to wear', which indicate a contrast for the glide phonemes following the initial consonants. So the distinction between /dui/ and /dwi/ referred to above is not one of contrast between plain and labialized stop, but the presence or absence of the glide phoneme /w/ within disyllabic and monosyllabic patterns. The fact that the glides can also occur syllable-initially or word-initially and they manifest greater strength in these positions than in the environment of vowels, seems to suggest that vowels can be analysed independently of glides.

In summary, the distribution of vowels and vowel sequences will have the following forms:

(2)   a.   # [+cons.) V ([+cons.]) #

       b.   # [+cons.] $\left\{ \begin{matrix} y \\ w \end{matrix} \right\}$ V ([+cons.]) #

       c.   # [+cons.] VV ([+cons.]) #

This framework would capture three facts about the distribution of vowel nuclei:

(a) Given the primary sequence CV (in which C is a true consonant), there is no restriction on the occurrence of syllabic nucleus following the initial consonant, i.e. any vowel can follow the initial C.

(b) The constraints would be evident when a vowel is preceded by a glide, i.e. a glide cannot follow a glide or a flap, and /i/ and /u/ do not follow /y/ and /w/ respectively.

(c) All the complex syllabic nuclei can potentially occur in syllable-final or word-final positions, so that the final consonant may be regarded as optional following all vowel sequences.

However, the severe limitations on /ui/, /āe/ and /ae/ suggest that these sequences are confined only to the final positions (usually morpheme-final), and do not occur between two consonants. The case of /ui/ and /wi/ has already been mentioned, and within this interpretation we take /wi/, /āe/ and /ae/ as monosyllabic representations with the possible exception of /dui/ which seems normally to be disyllabic, and for this reason belongs to our

third category (2c) rather than (2b). Further, the feature [syllabic] serves to distinguish glides from vowels, so that from the point of view of syllable structure, /y/ and /w/ cannot be used to represent both glides and vowels (cf. Hale and Hale, 1969; Shresthacharya, Maskey, and Hale, 1971).

2.2. Syllable-Medial Glides.

Hale and Hale (1975:12) rightly point out that "labial and palatal glides are natural patterns in non-loan vocabulary. The flap-medial is a loan pattern. The two patterns participate in different kinds of sequential constraints." We can formulate two kinds of sequence redundancy rules for Newari, after Stanley (1967).

(a) Syllable Structure Conditions, and (b) If-then Conditions. A typical Newari syllable structure would have the following form:

$$\# \; (\; [-\text{syllabic}] \;) \; (\; [-\text{syllabic}] \;) \; [+\text{syllabic}]$$

Given this syllable structure and given that /r/ and /rh/ are eliminated from the system of initial consonants, then there is no limitation on the sequence of initial consonant followed by a medial glide, either palatal or labial. Another constraint to be noted here is the sequence, glide followed by syllabic nucleus. As pointed out in the preceeding section (2.1), the glide /y/ cannot occur before /i/ and the glide /w/ cannot be followed by /u/. This syallable structure with respect to medial glides can be expressed in terms of the following syllable structure conditions (SSC):

(3) If (condition) ———→ # [+cons.]   [-syll.]   [+vocalic]

                                                [-cons.]

    Then (condition) ———→ $\left\{\begin{array}{l}[+\text{obstruent}]\\ [+\text{nasal}]\\ [+\text{liquid}]\\ \vdots\end{array}\right\}$ $\left\{\begin{array}{l}[y]\\ [w]\end{array}\right\}$ $\begin{array}{l}[+\text{high}[\\ [\;\propto\text{back}]\end{array}$

where /wu/ and /yi/ sequences are excluded, but allows the occurent forms /yu/ and /wi/.

Notice that all features are not mentioned in the 'then' part of the rule as additional features can be predicted from segment redundancies. What this rule states is that if there is a syllable-initial CC-cluster, the first member is an obstruent, nasal or liquid, and the second a medial glide followed by [+high, ∝back] syllabic nucleus. An alternative view would be to treat these as palatalization (PR) and labialization (LR) rules which will have the following structural descriptions:

(4) (a) C ———→ c^y / $\left\{\begin{array}{l}i\\ e\end{array}\right\}$

   (b) C ———→ c^w/ $\left\{\begin{array}{l}u\\ o\end{array}\right\}$

In (4a) however we need to correlate the position of a syllable within a word, with the degree to which front vowels exert palatalizing influences upon the consonants which precede them. We need also to distinguish 'stressed' or 'strong' positions within the word

from 'unstressed' or 'weak' positions. For example, the two syllables in /nene/ 'to ask' are phonetically quite distinct. In the first syllable we have quite a pronounced palatal glide followed by a vowel that is considerably lower and more central than that of the second syllable. In the second syllable the palatal glide is hardly, if ever, present. We could thus probably have a phonetic rule that specifies three values for palatalization, i. e. the /nene/ with the highest value for the first syllable, the lowest for the second syllable, and the intermediate value would perhaps apply to the first syllable of a word like /dene/ 'to sleep'. This view would support our interpretation of Rules (4a) and (4b) as assimilatory rules rather than a cluster of /Cy/ or /Cw/. But as noted earlier, the initial consonants cannot be palatalized or labialized contrastively when followed by high front vowels and high back vowels respectively. On the other hand, the palatalized consonants can contrastively precede high back vowels, and labialized consonants can contrastively precede high front vowels. These facts then serve to indicate the extent to which glides participate as non-contrastive assimilatory features and as contrastive medial segments in CC- clusters. Rules (4a) and (4b) which function as assimilatory rules could then be expressed in feature notations, where the feature [+high] is substituted by [−low,−back] and [+round.]:

(5) (a) $[+\text{cons}] \longrightarrow \begin{bmatrix} +\text{high} \\ -\text{back} \end{bmatrix} \bigg/ \underline{\quad} \overset{V}{\begin{bmatrix} -\text{low} \\ -\text{back} \end{bmatrix}}$ (PR)

(b) $[+\text{cons}] \longrightarrow \begin{bmatrix} +\text{high} \\ +\text{round} \end{bmatrix} \bigg/ \underline{\quad} \overset{V}{[+\text{round}]}$ (LR)

Rules (5a) and (5b) can be collapsed as (5c) :

(c) $[+\text{cons}] \longrightarrow \begin{bmatrix} +\text{high} \\ \propto \text{back} \\ \beta \text{ round} \end{bmatrix} \bigg/ \underline{\quad} \overset{V}{\begin{bmatrix} -\text{low} \\ \propto \text{back} \\ \beta \text{ round} \end{bmatrix}}$

These rules would now allow us to obtain the following forms :

(6) /tuu/ 'mustard seed' $[\ t^{w}u:]$ (LR)

/too/ 'matched' $[\ t^{w}o:]$ ''

/tii/ 'mole' $[\ t^{j}i:]$ (PR)

/tee/ 'to press' $[\ t^{j}e:]$ ''

/ta̅ a̅/ 'lock' $[\ ta:\ ]$ (No assimilation)

What this means therefore is that the presence of glides as assimilatory processes must be distinguished from C + glide clusters where we need to recognize the existence of glides in the underlying representations, as in the following:

(7) /twii/ 'will last' [twi :]

/twee/ 'will undress' [twɛ:]

/twa̅a̅/ 'chin' [twa:]

/tyuu/ 'presses' [tju :]

/tyaa/ 'is allowed' [tjə :] ∽ [t i ɔ :]

/tya̅a̅/ 'wins' [t j a:]

[13]

There is good reason to consider these as CC– clusters rather than unit phonemes, as it is not possible to interpret /wi/ as /ui/, or /yu/ as /iu/.

3. Conclusions.

The solution thus seems to lie in the approach which takes as relevant the fact that labialization and palatalization in all clear cases occur only in **strong or stressed syllables** beginning with C (not with G), and the occurrence of [y] and [w] in **weak or unstressed syllables** as derivations from the underlying source. This approach would imply that our citation forms for infinitives such as /kā-ye/ 'to take', /bi-ye/ 'to give' etc are correct phonemically. The rationale is that the second syllable –ye is a weak syllable where the palatalization rule could not have been responsible for the [y] in the clarity norm pronunciation of such words. The same would be true for the occurrence of glides in other weak syllables of words like /i-woŏ/ 'the year after next', /u-ye/ 'to bark' or in clear cases such as /ā-waā/ 'roof maker' and /ā-yu/ 'life span' which must be regarded as underlying phonemic glides. Accordingly, we would also take as very strong and relevant the observation that while /u/ can impose labialization in a preceding consonant within a strong syllable, /u/ does **not** trigger a word-initial on-glide [w], e. g. /u-ye/ 'to bark', /u-le/ 'to uncover'. Similarly, /i/ can impose pala-talization in a preceding consonant within a strong syllable, but /i/ likewise fails to trigger the occurrence of a word-initial on-glide [y], e. g. /i-lae/ 'on time' /i-ne/ 'to distribute', /ae-lāa/ 'wine', etc. We thus need to represent these words phonemically as not having on-glides in distinction from those that do have on- glides. Further, the decision to represent word-initial [y] and [w] as phonemic and contrastive before /e/ and /o/ is merely an extension of the relatively clear case of representing them as contrastive before /a/ or/ā/ and before /u/ and /i/, respectively. On the basis of this kind of reasoning, we can arrive at four conclusions :

(1) The glides /y/ and /w/ are phonemic in word-initial positions whenever we get [y] and [w] word-intially.

(2) In syllable-initial positions where the syllables in question are weak within the word, [y] or [w] would also rate a phonemic glide.

(3) In strong syllables we would have /y/ and /w/ as phonemic wherever the presen-ce of [w] cannot be explained by assimilation rules. That is, before the vowels /i/, /e/, /ā/, /a/, /ae/, /āe/ and their long counterparts, a phonetic [w] would be traced to phonemic /w/; and before the vowels /u/, /o/, /a/. /ā/, /ae/ /āe/ and their long counterparts, [y] would be traced to /y/.

(4) Finally, the presence of [y] and [w] can be traced to palatalization and labiali-zation rules, i.e., palatalization occurs in syllables with initial consonants which occupy 'strong' positions within a word (word-initial or the initial syllable of a word within a compound) and which have the vowels /i/ or /e/;and labialization occurs in the same kinds of syllables but where the vowels are /u/ or /o/.

As a result of these criteria, we would have phonemic representations such as /ye-kwo/ 'much, many' where the occurrence of the palatal on-glide word-initially gives us a

phonemic glide, and the presence of a labial [w] in the second syllable also has a phonemic status since that is a weak syllable, and we are restricting the labialization rule to strong syllables. In the representation /bye-koo/ 'bent', however, the first syllable which is a weak syllable has a phonemic /y/, but the second syllable being a strong syllable will have a labialized $\left[\ k^w\ \right]$ at the surface. By the same token, in words like /ne-ne/ 'to ask' and /co-ne/ 'to stay' we would expect the palatalization and labialization rules /n/ ——→ $\left[\ n^j\ \right]$ and /c/ ——→ $\left[\ ts^w\ \right]$ to apply in strong syllables.

This we feel is a reasonable solution and one that can be applied with some degree of consistency.

Appendix: Phonemic and Phonetic Glides.

1. **Phonemic Glides:**

1.1. Syllable–Initial

/wāye/	[wa.je]	'to throw, spill	/yeko/	[je.kwo]	'much, many'
/wāsaa/	[wa.sə:]	'medicine'	/yāko/	[ja.kwo]	'arm-pit'
/wosaa/	[wə.sə:]	'clothes'	/yākaa/	[ja.kə:]	'alone'
/jawo/	[dzə.wo]	'right'	/yela/	[je.lə]	'Patan'
/khawo/	[khə.wo]	'left	/yeye/	[je.je]	'to like, love'
/iwŏŏ/	[i.wŏŏ]	'the year after next'	/y ã̄la̱/	[jə̃.la]	'11th Newari month'
/āwaa/	[a.wa:]	'roof-maker'	/āyuu/	[a.ju:]	'life span'
/w ã ẽ /	[w ç̃:]	'mad man'	/uye/	[u.je]	'to bark'

1.2. **Syllable-medial:**

/lwii/	[lwi:]	'will pour'	/dyuu/	[dju:]	'stops'
/lwee/	[lwç̃:]	'disease'	/dyaa/	[djə:]	'God'
/lwaa/	[lwa:]	'fights'	/d y ã a/	[dja:]	'sustains loss'
/kwāe/	[kwç̃:]	'bone'	/ky ã ẽ/	[kjç̃:]	'younger sister'
/k hw ã ẽ /	[khw ãe]	'deaf man'	/khyae/	[khjae]	'to frighten'
/lwāpu/	[lwa.pu]	'quarrel'	/jyāpu/	[dzya.pu]	'farmer'
/juhwā/	[dzu.hwa]	'gambler'	/naikyāa/	[nəi.kja:]	'coconut'
/gwāli/	[gwa.li]	'heel'	/lyāsye/	[lja.sje]	'young girl'
/pweelā/	[pwç̃:.la]	'3rd Newari month'	/panyuu/	[pə.nju:]	'flat cooking ladle'
/swaane/	[swa:.ne]	'staircase, ladder'	/pyanu/	[pja.nu]	'moist'
/yeko/	[je.kwo]	'much, many'	/pyekaa/	/pje.kə:/	'four times'

2.**Phonetic Glides:**

/nene/	$\left[\ ^{\prime}n^j\ e.\ ne\ \right]$	'to ask'	/cone/	$\left[\ ^{\prime}ts^w\ o.ne\ \right]$	'to stay'
/dene/	$\left[\ ^{\prime}d^j\ e.ne\ \right]$	'to sleep'	/dona/	$\left[\ ^{\prime}d^w\ ə.nə\ \right]$	'is mistaken'

/sene/	[$\cdot$s^{j}e. ne]	'to teach'	/sola/	[$\cdot$s^{w}o.lə]	'(he) looked'
/tiye/	[$\cdot$t^{j}i. je]	'to close'	/toye/	[$\cdot$t^{w}o.je]	'to undress'
/biye/	[$\cdot$b^{j}i. je]	'to give'	/boye/	[$\cdot$b^{w}o.je]	'to display'
tepa/	[$\cdot$t^{j}e.pə]	'bronze water container'	/tope/	[$\cdot$t^{w}o.pe]	'to help, assist'
/deema̅/	[$\cdot$d^{j}e:.ma]	'large plate'	/kotha̅/	[$\cdot$k^{w}o.tha]	'room'
/gathe/	[gə.$\cdot$th^{j}e]	'how?'	/bho̊o̊mi/	[$\cdot$b^{w}o̊:mi]	'resident of Banepa'
/satii/	[sə.t^{j}i:]	'near'	/bhutuu/	[b^{w}u. $\cdot$t^{w}u:]	'kitchen'
			/byekoo/	[bje. $\cdot$k^{w}o:]	'bent'
			/saphuu/	[sə. $\cdot$ph^{w}u:]	'book'

Acknowledgment

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ch– AS A NONPAST MARKER IN NEPALI

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Abstract. *This paper examines a set of Nepali verbs ending in* **ch** *and tries to examine the relation of the ending* **ch** *with the time of speech. It also deals with the tense system in Nepali, determines that there are only two tenses in Nepali– the past and the non-past– and then suggests an untraditional way of tense division based on the verbal form.*

1. Aim and scope

1.1 Aim. This paper attempts to demonstrate that the element **ch** in the Nepali verb is a non–past marker.

1.2 Scope. This paper does not discuss the use of **ch** as a full verb or a copula"(verb). It also excludes the discussion of those elements or features which might indicate the present (or non-past) tense in Nepali.

2. Method of study

For the present study a list of verbal forms with **ch** as tense marker [1] suffix as well as auxiliary was prepared and analyzed. The list of verbal forms is given in the following matrix :

No.	Verbal forms	traditional names	Examples
1	stem + ch + concord	sa:ma:nya vartama:n 'simple present'	bas–(ta/da)–ch–a
2	stem + $\left\{ \begin{matrix} t \\ d \end{matrix} \right\}$ + $\left\{ \begin{matrix} o \\ i: \\ a: \\ ai \end{matrix} \right\}$ +ch+con	apu:rna vartama:n 'present cont.'	bas–t/d–ai–ch–a
3	stem + ek + $\left\{ \begin{matrix} o \\ i: \\ a: \end{matrix} \right\}$ + ch + con	pu:rna vartama:n 'present perfect'	bas–ek–o–ch–a
4	stem + $\left\{ \begin{matrix} e \\ i \end{matrix} \right\}$ + ch + concord	ajna:t bhu:t 'unknown past'	bas–e–ch–a
5	stem + ne + ch + concord	sa:ma:nya bhavisyat 'simple future'	bas–ne–ch–a

[17]

3. The verbal system in Nepali

The finite verbal system in Nepali is illustrated in the following rules:-

I. Finite verb[2] ⟶ stem [3] + (aspect) + tense + concord
    + (negative) + (mood)

II. stem ⟶ root (causative) (passive)

  (a) root ⟶ {paDh, lekh, bas, ja:, .. }
  (b) causative ⟶ {-a:u}
  (c) passive ⟶ {-i}
  (d) causative + passive ⟶ {-a:i (> -a:u + -i)}

III aspect [4] ⟶ $\left\{ \begin{array}{l} \text{perfective} \\ \text{progressive} \\ \text{prospective} \end{array} \right\}$

  (a) perfective ⟶ -ek-GN [5]

  (b) progressive ⟶ $\left\{ \begin{array}{l} t \\ d \end{array} \right\}$ + $\left\{ \begin{array}{l} GN \ [6] \\ \text{emphatic} \end{array} \right\}$

  (c) prospective ⟶ {-ne-}

  (i) GN ⟶ $\left\{ \begin{array}{l} \text{/o/ 'masculine singular'} \\ \text{/i:/ 'feminine singular' } [7] \\ \text{/a:/ 'masculine/feminine plural'} \end{array} \right\}$

  (ii) emphatic ⟶ {-ai}

IV tense ⟶ $\left\{ \begin{array}{l} \text{non-past} \\ \text{past} \end{array} \right\}$

  (a) non-past ⟶ {-ch-}
  (b) past ⟶ {-y-}

V concord ⟶ person gender number (PGN)[8]
VI negative ⟶ {na}[9]
VII mood ⟶ (h)-PN-1-G

4. Review of previous grammars

The traditional grammars of Nepali do not always agree on the classification of verbal forms into tenses. Among the five forms given above they have unanimity only on Nos. 1 and 5. The form mentioned in No. 2 is not included for discussion in the grammars by Dikshitacharya (1912) and Pradhan (1920). Dikshitacharya (1912: 86) includes the following past tense form as **apu:rṇa bhu:tka:1** 'past continuous' :

basdathye, i. e. stem + d + th + y + concord (here first person singular) but does not include its corresponding form– **basdachu**– in the persent tense.

The following form is considered **ta:tka:lik vartama:n** 'present continuous' by Pradhan (1920/1970: 53–54) :

kha:irahecha (i. e. stem + i + rah + e + ch + concord)

[18]

but this form of the verb is not considered for classification under tense by other grammarians.

The form given in No. 3 is classed as **a:sanaa bhu:t** 'near past' by Dikshitacharya 1912: 64))and Pradhan (1920/1970: 57), whereas Pandey (1913) and Bhattarai (1976) have classified it as **pu:rna vartama:n** 'present perfect'.

Pradhan does not mention the form stem + e/i + ch + concord (for example, base-ch-a) – in his discussion of tense.

The form as given in No. 5 is discussed by all grammarians and is classed under future tense. The present writer would like to establish its relation with the present tense and suggest that it ought in fact to be grouped under the presnt tense. In this verbal form it is the ending –ne that denotes futurity and not –ch; –ch–, on the other hand, establishes a very strong relation with the present. Thus, this form may be compared to the forms No. 2 and 3 where –tai/ dai– and –ek–o / i / a: denote progressiveness and perfectivity, respectively, and where –ch– denotes their relation with the present time.

5. Arrangement of materials

The discussion on the selected five forms of the Nepali verbs (as given in the matrix) has been presented as follows:

firstly, the two verbal forms (Nos. 1 ond 2) which place the time of event or action at 'contemporaneous' relation with the moment of utterance; secondly. the other two forms (Nos. 3 and 4) which consider the past actions in terms of their effect, experience, memory, or awareness at the time of speech; and lastly, the verbal form (No. 5) which expresses promise, prediction, plan, or observation made at the present time.

6. In this section we discuss the two verbal forms wich include the moment of utterance in the time denoted by them. These are the forms given in the matrix Nos. 1 and 2.

6.1 stem + ch + concord

This verbal form is used to express certain truth or fact the validity of which is not limited by time– or, at least, this is what the speaker perceives it to be at the moment of utterance. Consider the following examples:

1. su:rya pu:rva disha:ma: uda:ũ cha   (ud–a ũ –ch–a)
    sun east direction– in rise–s
    The sun rises in the east.

2. a:gole   polcha   (pol–ch–a)
    fire–**agentive**   burns
    Fire burns (something).

3. hiũ ciso huncha   (hu–n–ch–a)
    snow cold is
    Snow is cold.

[19]

4.   mehanatle   ma:nis thulo huncha   (hu–n–ch–a)
     labour-**agentive** man   great becomes
     Labour makes a man great.

Sentences 1, **2** and 3 denote eternal or timeless truth, and sentence 4 shows at least the conviction of the speaker that its truth value is not bound by time.

Usually such sentences do not take any adverb of time.

This form of the verb is not normally changed into the past tense. When sentences with this verbal form are however changed into the past tense, they denote, not eternal truths, but particular instances. Example:

5.   su:rya pu:rva disha:ma: uda:yo   (u-da-y-o)
    The sun rose in the east

6.   a:gole polyo   (pol-y-o)
    Fire burnt (Tr.)

7.   hiu   ciso bhayo
    snow became cold.

Sentences (henceforward written as S.) 5 and 6 refer to particular instances of the sun rising in the east, or of fire burning someone or something; but S. 7 seems absurd because **ciso** 'cold' is the intrinsic quality of snow and thus reference to a particular instance of snow becoming cold may imply as if the speaker meant that **hiu** 'snow' was not cold at other times.

This same form of the verb– stem+ch + concord–may be used to denote a 'habit' or a fact bound by the limits of time– a habit that has been existent for some time in the past and exists at the present moment, i. e. the moment of utterance. Examples:

8.   ma curot kha:nchu   (kha-n-ch-u)
    I cigarette eat
    I smoke cigarettes.

9.   usko da:i sadhai   sku:l ja:ncha   (Ja:-n-cha)
    his elder brother always school goes
    His elder brother goes to school daily.

10.   yo ga:i pa:c ma:na: du:dh: dincha   (di-n-ch–a)
    this cow five ma:na: milk gives
    This cow gives five **manas** of milk.

The verbs in such sentences, which denote 'habit', take –th–y– in the past tense instead of the usual past tense marker –y–.
For example:

11.   ma curot kha:-n–th–y–e   (kha:–n–th–e) [10]
    I cigarette eat–uesd–to
    I used to smoke cigarettes.

[20]

12. usko da:i sadhaĩ sku:l ja:-n-th-y-o
    his elder brother always school go-used-to
    His elder brother used to go to school daily.

13. yo ga:i: pãːc ma:na: du:dh di-n-th-y-o
    this cow five **ma:na:** milk give-used-to
    This cow used to give five **manas** of milk.

The sentences 8,9 and 10 may also be changed into the past tense in the following manner:

14. maile curot kha:e   (Kha:-ẽ)
    I-**agentive** cigarette ate
    I smoked a cigarette.

15. *usko da:i sadhaĩ sku:l ga-y-o
    his elder brother always school went
    His elder brother went to school always.

16. yas ga:ĩle pãːc ma:na: du:dh di-y-o
    this cow- **agentive** five ma:na: milk gave
    This cow gave five **manas** of milk.

If the underlying meaning of the sentences 8 and 10 is 'habit' they will have sentences 11 and 13 as their past tense. But if they (Ss. 8 and 10) refer to particular instances (of the event) they will be changed into the past tense given in Ss. 14 and 16. The adverb **sadhaĩ** 'always' in S. 9 restricts its application **only** to 'habit' and therefore S. 15 is unacceptable.

The extent of the present time may still be narrowed down to cover only the moment of speech or the time immediately following it (as if in continuation of the speech). And in each case this form of the verb denotes a particular instance. Consider the following examples:

17. ma pustakko pa:na: palt:ãuchu   (palt-ãu-ch-u)
    I book-**genitive** page turn
    I turn over the pages of the book.

18. u: dhoka: khol-ch-a
    he door opens
    He opens the door.

19. usko sa:thi: bhitra pas-ch-a
    his   friend   in   enters
    His friend enters.

Without the aid of the context or of the proper adverbs of time it is very difficult to claim that these verbs are used to indicate particular instances; but when they are used to do so they refer either to actions performed simultaneously with the speech (say, as used by the teacher while demonstrating) or to actions that immediately follow the speech.

However, the verbal form under discussion (i. e. stem+ch+concord) may indicate 'habit' or 'a particular instance', and very often the adverbs of time help us in determining the meaning.

The point common in all the three uses (timeless truth, habit, and simultaneous instance) of the verbal form–stem+ch+concord–is that the moment of utterance is always included in the time denoted by the verb.

6.2 Stem+tai/dai+ch+concord

Another verbal form that includes the time of speech is the form given in No. 2 in the matrix above and repeated here for the purpose of convenience:

$$\text{stem} + \left\{ \begin{array}{c} t \\ d \end{array} \right\} + \left\{ \left\{ \begin{array}{c} o \\ i: \\ a: \\ ai \end{array} \right\} \right\} + ch + \text{concord}$$

Consider the sentences 20 through 23:

20. keta:haru bhakundo khel–dai–ch–a–n

    boys   football   playing   are

    Boys are playing football.

21. kata: keti: haru uphr̃a–dai–ch—a—n

    children   jumping   are

    Children are jumping.

22. batti: bal–dai–ch–a

    lamp burning is

    The lamp is burning.

23. tyo ma:nis mar–dai–ch–a

    that man dying is

    That man is dying.

The verbs in the sentences above refer to actions that are in progress at the time of speech. [11] The progressive forms of the verb indicate that whatever is meant by the verb is thought of as spreading over a period of time and is referred to when the action has not yet reached its end. This means that verbs denoting actions that cannot be spread over a period of time cannot usually be used in the progressive forms. When such verbs are used in the progressive they indicate transitional phase, as expressed in S. 23.

Two Nepali grammarians, Pandey (1913) and Bhattarai (1976), discuss 'progressive' and 'perfective' tenses under kriya:ka: vishes avastha: 'special states of action. This is illustrated below:

24. ra:mko choro   bha:t kh̃a:daicha (kh̃a: – d–ai–ch–a)

    Ram–genitive son   rice eating is

    Ram's son is eating rice.

In this sentence kh̃a:dai denotes the state of the action and –ch–a denotes the present time. The past tense of this sentence will be

[22]

25 ra:mko choro bha:t khã:dai thiyo   (khã:–d–ai–thi–y–o)
     Ram's son was eating rice:
where only the –ch–a has been changed to **thi–y–o**.

7.   In this section we deal with the forms provided in the marix as **Nos. 3 and 4** and repeated here for convenience :

$$\text{stem} + \text{ek} + \left\{ \begin{array}{c} o \\ i: \\ a: \end{array} \right\} + \text{ch} + \text{concord}$$

$$\text{stem} + \left\{ \begin{array}{c} e \\ i \end{array} \right\} + \text{ch} + \text{concord}$$

7.1 Both of these forms refer to actions which have already been completed, but which are somehow or other related to the present—particularly in terms of their effect, experience, memory, or awareness. Examples:

26. u: bas–ek–o   cha
     he sat (p.p.)   is
     He is seated / sitting; or he has sat.

27. gilã:s phut–ek–o ch–a
     glass   broken   is
     The glass is broken.

28. usko ta:uko phut–ek–o ch–a
     his   head   broken   is
     His head is broken.

29. ma kalkatta: ga–ek–o ch–u
     I   calcutta   gone   am
     I have been to Calcutta.

Depending on the reading assigned to it, S. 26 may mean either (a) he is still sitting, or (b) he has the experience of sitting. As a human being every person is supposed to have the experince of sitting and therefore the meaning (b) seems to be somewhat extended unless it means something like

30. ma pani sopha:ma: basek–o ch–u
     I   also   sofa–on   sat   am
     I also have sat on the sofa. (i. e. I also have the experience of sitting on a sofa).

In S. 27 **gilãs** 'a glass' being an inanimate object may not be said to have any experience (unless it is able to tell its own story like Addison's shilling in 'The Adventures of a Shilling'); and therefore this sentence may be said to denote a state only.

Depending on the situations S. 28 may have either of the two meanings: 'his head is still bleeding' or 'he has a scar in the head indicating that it was once broken'.

S. 29 may mean only one thing, because of the use of **ma:** and **gaeko**. These two words in sentences like this cannot temporally and spatially go together. For example, if

[23]

the speaker is at Calcutta at the moment of utterance, he cannot use **gaeko** 'gone' (because it denotes away form and spatiallly it is not possible) and if he is somewhere else, he is not at Calcutta. This means that this sentence can have only one meaning, that is. 'he has been to calcutta'.

7.2 Now let us consider some sentences which contain verbal forms that denote past action but present awareness. Examples:

    31.   usle   mala:i dha:te–ch–a

          he–**agentive** me   lied–**nonpast** marker

          He told me a lie, I find.

    32.   ma nida:e–ch–u

          I fell asleep (I know).

    33.   usko gharma: hijo   ra:ti cor pas–e–ch–a

          his house–in yesterday night thief entered–**nonpast marker**

          A thief broke into his house last night, I hear.

    34.   tini:haru: sut–e–ch–a–n

          they   slept–**nonpast marker**

          They have slept, I see.

The verbs in these sentences (S. 31–34) denote that the events had taken place earlier in the past, but the speaker came to know about them only later.

Pandey (1913) and Bhattarai (1976: 298) consider that this form is a variation of the verbal form: **stem + ek–GN + ch–P**, but the present writer considers it a combination of past and non–past markers [12] : –y– indicating the past, and –**ch**– the nonpast.

8.   This section discusses mainly the form

          stem + ne + ch + concord

and compares its use with the uses of the other forms (Nos. 1 and 2) to denote future evevents.

All the traditional grammarians, without exception, describe the form **stem + ne + ch + concord** under the future tense and put the form with –1– marker under mood. They justify their classification on the basis of 'definiteness'. They rightly say that the form with –ne–ch– [13] denotes more definiteness than the form with –1– does. But the present writer contends that only definitenesss cannot be the criteria for the classification of tenses. He would like to suggest that the –**ne** of the verbal form under discussion is the 'prospective' marker as the –**ek**– and–**t/d**– are the perfective and the progressive markers, respectively. Now consider the following examples :

    35.   a:ja ra:ti pa:ni: par–ne–ch–a

          today night rain   fall–**prospective+nonpast**

          It may rain in the night today.

    36.   u: bholi   pa:c baje a:ipug–ne–ch–a

          he tomorrow five o'clock arrive–**prospective–nonpast**

          He will arrive at 5 o' clock tomorrow.

[24]

37. yas pa:li ba:li: ra:mro hu–ne–ch–a
   this term harvest good be–**prospective**+**nonpast**
   The harvest will be good this year.

The sentences indicate that whatever is meant by the verb is visualized as taking place in future if everything between now and then goes as is expected at present. Thus it denotes a kind of plan or prediction based on the present knowledge of the speaker and on the existing factors.

A more definite idea is expressed by the form **stem+ch+concord** when it is used with reference to future events. For example:

38. yas pa:li dasai asojma: par–ch–a   (par–ch–a)
   this term dasai asoj–in falls
   Dasain falls in the month of Asoj this year.

39. ma timi:la:i bholi pa:c baje bhetchu   (bhet–ch–u)
   I you–**accusatvie** tomorrow five o'clock meet
   I will see you at five o'clock tomorrow.

These sentences indicate that the speaker has no doubt that the events will take place.

It may be argued that where future incident can be predicted with mathematical precision and where there is no doubt on the part of the speaker about its taking place, the future is taken to be as true as if it were present, and therefore the use of these verbal forms in such cases. The same argument may apply to 'promise' as well; for example:

40. ma timro rin ti:n mahi:na:ma tirchu   (tir–ch–u)
   I your debt three month–in pay
   I will pay your debt in three months' time.

9, Conclusion

On the basis of what has been discussed so far, it may be concluded that the element––ch–in Nepali verbs always refers to the present, i.e., the time of speech. This fact may be summarized in the following manner:

(1) Forms: stem+ch+concord, and

$$\text{stem} + \left\{ \begin{matrix} t \\ d \end{matrix} \right\} + \left\{ \begin{matrix} o \\ i: \\ a: \\ ai \end{matrix} \right\} + \text{ch} + \text{concord}$$

include the time of speech in the time they refer to.

(2) Forms

$$\text{stem} + \text{ek} + \left\{ \begin{matrix} o \\ i: \\ a: \end{matrix} \right\} + \text{ch} + \text{concord, and}$$

$$\text{stem} + \left\{ \begin{matrix} e \\ i \end{matrix} \right\} + \text{ch} + \text{concord}$$

denote past actions with their effect (or result), experience, or awarenese at the present time.

(3) Form: stem+ne+ch+concord visualizes future actions in tesms of the present situation, arrangement, or planning.

[25]

Notes

[1] Whether the –ch–'s in, say, **bas–ch–u, bas–d–ai–ch–u, bas–ek–o–ch–u**, & c. are the same or different elements is another question that does not fall within the scope of the present paper. Whatever they are, even when **ch**–is used as a main verb, this element always denotes 'non-past'.

[2] The discussion of the various compound verbs (i. e. verbs with modal auxiliaries, etc. denoting obligation, permission, volunteering, honour, etc.) is out of the scope of this paper and is not included here.

[3] Stem alternations are not discussed here.

[4] Abdulky (1974:14) recognizes four aspects in Nepali, viz.

    /–ne/ 'imperfective'

    –eko/ 'pefective'

    /e/ 'perceptive'

    /dɔi/ 'progressive'

[5] GN:G=Gender, N= Number

[6] The form with GN marker is not in common use in the Kathmandu dialect.

[7] It is usually marked in the 2nd and 3rd person singular.

[8] P=Person

[9] The negative particle /na/ may also be transferred to the beginning or middle of the verb. Its place is restricted by the structure of the verbal form.

[10] $y+e=e$

    $y+i=i$

[11] The different meanings which the 'progressive' can lend to various verbs are not discussed here.

[12] The presence of the nasalized sound in the first person singular and that of the feminine marker /–i–/ in the second and third person singular forms should conform to the writer's view. Still a detailed study may reveal something more or something new.

[13] The traditional grammarians consider–**necha** as one morph used to mark 'future' whereas –**ne** and **cha** should be treated as two separate morphs, the former to be attached to the preceding verb and the latter as an auxiliary. Bhattarai (1976) recognizes that –**necha** consists of two elements **ne** and **cha** but tries to justify the use of single **necha** as a single element used to denote future.

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RELATIVE CLAUSE FORMATION IN MAITHILI*

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0. INTRODUCTION

0. 1.   In this paper, I wish to discuss a few aspects of Relative Clause Formation (henceforth, RCF) in Maithili. Maithili is an Eastern New Indo–Aryan language currently spoken by over 10.73 % population of the total inhabitants in Bihar (Census, 1961) in the districts of Darbhanga, Madhubani, Muzaffarpur, Bhagalpur, Saharsa, Purnea and in some parts of Champaran and Santhal Parganas. It is also spoken in the Tarai region in Nepal, and in a few pockets of Malda and West Dinajpur of West Bengal. Maithili being a Central Magadhan language is very closely related to Assamese, Bengali, Magahi and Oriya. The normal word order in Maithili is Subject–Object–Verb. This order is changed only under special kinds of emphases. Modern Maithili has 13 vowels and 31 consonants[1], two numbers (sab and lokan[i] being the common pluralizers), traces of the Old Indo–Aryan gender system, especially of the feminine gender in a few constructions (where indefinitive adjective and verbs derived out of participial bases mark gender agreement), three persons, three tenses, four aspects (imperfect, perfect, progressive and habitual), a special set of markers for the optative (see Singh, 1979), a very complicated pattern of verb agreement, especially in respect of honorific marking,[2] and an order of elements within the verbal complex such as follows :

(1) V_b [Vs + (Participle + Auxiliary) Tense–Asp + Agr] V_b

0. 2.   In the following paragraphs, I shall first discuss the different relative clause markers as used in different stages of Maithili language[3] and give a list of relative and correlative adverbs. The similarities between relative, interrogative and complement clause markers will also be discussed and differeut uses of **j**–words will be enlisted The nature of modifiers originating from a relative clause structure will then be touched upon. Finally, different RCF strategies (Keenan and Comri, 1977; Givon, 1975) such as participialization/ nominalization, equi–case, anaphora, gap. non–reduction, verb–coding and word order will be discussed with reference to RCF in Maithili. Familiarity wlth the literature discussing the notion of RCF–strategies is assumed here. It is important to understand here that human languages can and do use a 'mixture' of different strategies at times (Givon, 1975:61), and that since WH–strategy is not used in all languages (e. g., Tankhul Naga, as reported in Sachdeva, 1977), no attempt is made here to formulate Relativization tranformation(s) on the basis of the Maithili data presented here.

1. RELATIVE MARKERS AND A BIT OF HISTORY

1. 1.   In Maithili, **j**–forms mark, among other things, Relative Clauses (henceforth, RCs). The same **j**–form assumes different shapes depending upon the case-marking it takes. Some other factors such as animateness, possessiveness and honorificity also come into   play in determining the exact shape of an RC–marker. The paradigm for Modern Maithili RC–markers is as follows;

(2)   ANIMATE   INANIMATE
                              HONORIFIC   NON–HONORIFIC

DIRECT	: je	je	je
OBLIQUE	: ja (k^araa)	jan^i(kaa)	jaah^i
POSS	: ja (kar)	jani (k^a)	jaah^i ($-NP+ak^a$)
		jani (kar^a)	jaah ^{i} (ker^a)

1.2.1.   In the earliest stage of Maithili, however, there were more forms than these. For instance, in the **Caryaapada** 9th–11th century A.D.), one finds the following shapes of RC–markers:

(3) NOMINATIVE   : je; je je; ja; jo
      ACCUSATIVE   : jaa
      INSTRUMENTAL : je (na)
      LOCATIVE   jahi; jasu
      GENITIVE   jaa (hera)

1.2.2.   The following sentences from the **Caryaapada** will illustrate this point:
     (4) a **jo** managoara[4]   so   uaasa   (KaahNu, 7.2 2)
            REL+cognizable, CORREL unattached
            "What is cognizable, that is unattached".
      b **je   je**   aalla   te te gelaa (KaahNu, 7.4.1.)
            "Whoever come+pst+agr they go+pst+agr
            Whoever came all went".
      c **ja**   ehu[5]   jaati[6]..   (Santi, 26.5.1)
            REL it win+pres+agr
            "(He) who wins it. ."
      d **jaa**   lai[7]   acchama   taahera[8]   uha[9]   Na dis[10] (Lui29.2.5
            REL take+pte be+pres+agr CORREL+gen direction   NEG purpose
            "Whom taking I be, of him (is) neither a direction, (nor) a purpose".
      e **jahi**   maNa india–(pa) bana[11] ho[12]   NaThaa   (Aajadeva, 31.1.1.)
            REL+loc mind senses breath be+pres+agr destroyed
            "where mind, senses and breath are destroyed".

[28]

kaa–baak–cia[14]   **jasu**   Na   samaaya [15] (KaahNu, 40.2.2.)
body spedch heart REL+loc NEF fathom+press+agr
"Where body, speech and heart fathom not".

g **jaahera**   baana–cihna[16]   ruuba[17]   Na   jaaNii . .   (Lui, 29.3.1.)
REL+gen colou form   appearance NEG know+press+agr
"Whose colour, form (and) appearance NEG know, .. I do not known,..".

1.2.3.   A few centuries later, especially in the beginning of the Middle Maithili period (14th
century A.D.), the shapes of these markers changed considerably. Thus, coming to the days
of Vidyapati's lyrics, Jyotiriiswara's **VarNaratnaakara** (a socio–cultural discourse) and **Umaa-**
pati's PaarijaataharaNa (a play), the RC–markers assumed the following shape:

(5)   ANIMATE   INANIMATE[18]
    NOMINATIIVE   :   je (ha)   jaa
    ACCUSATIVE   :   jaahi; jehe; janhi   —
    INSTRUMENTAL :   jeni   —
    LOCATIVE   :   —   ja
    GENITIVE   :   jaaka; jaake; jaaheri;   jasu
                              janikari; janhik (a)

1,3.1.   Wherever a pronominal RCF–strategy is used, reiative pronoun is normally followed
by a correlative pronoun which in Maithili has a **s–/t–** base like in many other Indo–Aryan
languages. The correlative pronoun can also be classified in terms of animateness, case, posse-
ssiveness and honorificity, and it is as follows:

(6)   ANIMATE   INANIMATE
                        HON   NON–HON
    DIRECT :   se   se   se
    OBLIQUE :   ta (n^1 kaa)   ta (k^a raa)   taah^i
    POSS   :   ti (nak^a)   ta (kar^a)   taah^i (–NP+ak^a)
                                                          taah^i (ker^a)

1.3.2.   Apart from these relative pronouns, there are a number of relative and correlative
adverbs such as the following: **jenaa... tenaa** "as...so", **jataE...tataE** "where...there", **jat^a baa** ...
tat^a baa .. also, **jatek^a** ... **tatek^a** , bot meaning) "as much...so much", **jakhan** .. **takhan**
"when...then", **jahiaa . . tahiaa** "which day. .that day", **jaa jaa . .taa taa** (also, **jaa...taa**, both
meaning) "by the time...by then", and many others. One can construct these relative linkers by
drawing parallels from a long list of open or K–question words in Maithili as given in Singh
and Bandyopadhay (1978), and hence 1 shall not go into the details of various types of
relative markers.

1.3.3   It must be mentioned here that like in Bengali, **je**–word in Maithili marks a number
of constructions other toan RCs. These include at least the following: (i) **je** as a finite compl-
ementizer (as in 7a that follows), (ii) **je** as a marker for conditional and other adverbial

[29]

clauses (7b), (iii) **je** showing a purpose–interpretation (7c), and (iv) **je** used as a pronoun in constructions like **je kyeo** "anyone/anybody" and **je kich**[u] "anything". The following are the example of **je** as described in (i) to (iii) above:

(7) a o kah^a laah ^{a} S$_2^*$[je o nah^i aotaah ^{a}]S$_2$
  he say+pst + agr that he NEG come+fut+agr
  "He said that he would not come".

b [[o **je** otae gel^a chalaah^a]S$_2$] takar^a kii bhel^a ?

              ADVP

  he ADV there go+ptc have+pst+agr that+gen what happen+pst+agr
  "What happened to that–to his going there ?"

c ham hun^a kaa otae paThaolianh^i [**je** o hamar^a
  I he+opj there send+pst+agr so that he I +gen

  baalak-kE^n khoj^i aanath^i]S$_2$
  son+obj search+abs bring+opt+agr

  "I sent him there so that he finds out my son (and) brings (him) back".

  To these, one can add another use of **je** in certain constructions where it marks direct speech. The following is an example of the quotative **je**:

(8) o ham^{a}raa rokal^a thiinh^a **je** nah^i jaau
  he I+obj stop+pst+agr QUOTATIVE NEG go+imp+agr
  "He stopped me (saying) 'Don't go'."

1.3.4. It may be mentioned here that unlike in English where Relative and Interrogative markers are strikingl similar (both WH), in Indo–Aryan languages the first normally starts with **j**–and the second with **k**–. English is not an isolated example in this respect. It is the same in case of Hittite (Berman, 1972) Georgian (Aronson, 1972), Albanian (Morgan, 1972). However, if we view Relative Clause, Complement Clause, Open Question and Yes/No Question forming some sort of quadrangle-morphologically as well as syntactically[19] (cf. Dasgupta, 1979), then one might expect that there would be languages where markers for any other pair of categories would be similar. This is true of most of the Eastern NIA languages where Relative and Complement Clauses have the same markers :**j**–, and the two question markers start with **k**–. In this respect, these languages show similarities with Sanskrit (**yat** for RC and Comp-both), French (**que/que**), Russian (**chto/chto**), and many other languages. Hindi and some other IA languages show a totally different type of marker similarity in that here Complement clause and two Question constructions start with **k**–, whereas RC-marker iis always **j**–. Thus here similarity is found at three points in a quadrangle which has bee called a Q-Clause quadrangle (cf. Dasgupat, 1979). Though it would be interesting to see if these different types of similarities in marking reflect syntactic differences, it ts not attempted to investigate here. The Q-Clause quadrangle in Maithili would look as follows:

(9) **Q CLAUSE QUADRANGLE IN MAITHILI** (Cf. Singh, 1979:180)

A   A   X   I   S$_1$
X   DET–OPEN   COMP–OPEN
   NON–QUESTION: j–   (Rc)   j–   (Compl)
I
  QUESTION   :   k–   (WH)   k–   (Yes/No)
S$_2$

2.   MODIFIERS AND THE PS-RULE FOR THE NP

2.1.1.   For one who believes that the debate on the order of elements within a phrasal category is meaningful, it would be interesting to note that like the full RCs modifiers originated from an RC-structure too do not provide any strong evidence in favour of a particular order of elements in NP. Thus, it neither favours N– (S) order, nor does it support (S)– N structure. In a number of examples, the 'Noun+Modifier' construction is tolerated unlike in many other sister I A laguages, and even more frequently used than 'Modifier+Noun' order. Consiner the sentences given below :

(10) a **barait**[a] **diyaa**   baR[a]   sundar lagait[a]   ach[i]
     burning   lamp   very   nice   seem+pres. ptc.   be+pres+agr
     "The burning lamp looks very nice".

b **bhiim**[a] **sen duudhbaalaa**   aael[a]   chal[a]
   Bhimsen   milkman   come+pst. ptc.   be+pst+agr
   "Bhimsen, the milkman, had come".

c **git**[a] **haar**[i]   **maugii–lokan**[i] kataE   geliih[a] ?
   singer   woman+pl   where   go+pst+agr
   "where did the singer–women go ?"

d **raamak**[a] **baalak** hamraa   ta   niike   laagal[a]
   Ram+gen son   me   EMPH   good+EMPH   seem+pst+agr
   "Ram's son ssemed (quite) good to me".

e **tohar**[a]   **dimaag**[a]   (ta)   unTe chOh[a]
   you+gen brain   EMPH opposite be+pres+agr
   "Your brain is (really) dull".

f **kunaalak**[a] **kavitaa**   niike   chalanhi[i]
   Kunal+gen poem   good+EMPH   be+pst+agr
   "Kunal's poem was nice, indeed".

2.1.2.   Now, the order of elements as in (10) could be reversed and still the following acceptable constructions could be found :

(11) a **diyaa barait**[a] baR[a] sundar lagait[a] ach[i]

b **duudhbaalaa bhiim**[a] **sen** aael[a]   chal[a]

c *maugii–lokan^i giit^a haar^i kataE geliih^a ?

d **baalak raamak**^{a} hamraa ta niike laagal^a

e **dimaag**^{a} **tohar**^{a} (ta) unTe chOha^a

f **kavitaa kunaalak** niike chalanh^i

2.1.3. The un–grammaticality of (11) c seems to stem from the fact that here the head–noun is in plural. If one pluralizes the other head–nouns in (11) a through f either by adding **sab**– the post–positive word, or by prefixing a quantitative numeral such as **paa^{n}c** "five", most of these constructions will become unacceptable. I am not sure if this could be taken as a supporting evidence– though a weak one, in favour of (S)–N order. At this point of research I do not know why plural nominals tend to favour a 'Modifier–Noun' order such as in the following :

(12) a $^?$ paa^n c–go diyaa barait^a baR^a sundar lagait^a ach^i

b *duudhbaalaasab bhiim^a sen aa sah^a deb aael^a chal^a

c *maugii–paa^n coTaa giit ^{a}haar^i kataE geliih^a ?

d $^?$ baalak–sabTaa raamak^a hamraa ta niike laagal^a

3. POSITIONAL OR WORD ORDER STRATEGIES OF RCF

3.1.1. If one considers the relative position of head nominal vis-a-vis the restricting clause, there appear to be at least four strategies in which these elements could be arranged in a RCF structure. These included the following : (i) Postnominal RCF, where the order is **head NP+S$_2$** , (ii) prenominal RCF, where the order is **S$_2$ + head NP** , (iii) Internal RCF, where the head occurs within the restricting clause[20], and (iv) Displaced RCF, where the head NP and the restricting clause are intervened by different kinds of sentential elements. Maithili uses all the four strategies. The b–sentences in (13) through (16) will demonstrate this fact clearly. The NPs being relativized are underscord in a–sentences. Consider the following sentences :

(13) a ham **panc–sab–kE**^{n} niik jakaa^n janait^a chalianh^i
I 'Panch' + pl + obj good way know+ptc be+pst+agr
"I knew all the Panch very well".

b **panc–sab** jan^{i}kaa–sab–KE^n ham niik jakaa^n ...
"All the Panch whom I knew very well.."

(14) a o **mukhiaa** hamraa khuub Daa^{n}Tal^{a}thiinh^a
DEM village–chief me much scold+pst+agr
"That village–chief scolded me a lot".

   b je hamraa khuub Daa[n] Tal[a] thiinh[a]   o mukhiaa...

   "That village–chief who scolded me a lot..."

(15) a o ekTaa **baRad** kiinal[a] thiinh[a]

   he one+det ox   buy+pst+agr

   "He bought an ox".

   b o ekTaa je **baRad** kiinal[a] thiinh[a] hamraa   pasiin[a]

                              me   like

   nah[i] paRal[a]

   not fall+pst+agr

   "The ox that he bought was not likable to me".

(16) a **o baalak** kaalh[i] etaE khasal[a] chal[a]

   DEM boy yesterday here fall+pst.ptc. be+pst+agr

   "That boy fell off here yesterday".

   b je kaalh[i] etaE khasal[a] chal[a] ham **oh[i] baalakak[a]**

                                       I   that   boy+gen

   bhaai thiikahu[n]

   brother be+pres+agr

   "I am the brother of that boy who fell off here yesterday".

3.1.2.   There is no doubt that (13) b, (14) b and (16) b are typical examples of postnominal, prenominal and displacement strategies of RCF, respectively. But one may have doubts whether (15) b really shows an internal RCF in the sence of Keenan and Comrie (1977) as Bambara or Diegueño would show. It is important to note that in (15) b the matrix sentence does not have a head noun. One may, therefore, argue that this sentence has undergone some sort of deletion–strategy, and that is not relevant for a discussion of internal RCF here. Now, alternatively one can use a correlative se or a full NP **se baRad** in the matrix sentence while retaining **je baRad** in the RC unchanged. This would result in (17) a. What makes it interesting is the fact that one can alternate the positions of **je baRad** and **se baRad** and can come up with a construction such as in (17) b which can surely be considered as an instance of internal RCF in Maithili. Consider the following sentences :

(17) a o ekTaa **je baRad** kiinal[a] thiinh[a] **se (baRad)**

   hamraa pasiin[a] nah[i] paRal[a]

   b o ekTaa **se baRad** kiinal[a] thiinh[a] **je** (?? **baRad**)

   hamraa pasiin[a] nah[i] paRal[a]

4. OTHER STRATEGIES

4.1. The presence of 'positional' strategies of RCF as discussed above does not indicate that it does not involve any of the other ssrategies. Rather, the two go hand-in-hand. In this and the subsequent paragraphs, I shall look into various other strategies employed by Maithili. The first among these is the "non - reduction' stratgy. Consider the following sentences:

(18) a [jaah^i panc–sab–kE^n ham niik jakaan^n janait^a chalianh^i] o panc–sab
  "All the Panch whom I knew very well, the (same) Panch..."

  b [je mukhiaa hamraa khuub Daa^{n}Tal^a thiinh] o mukhiaa
  "The village–chief who scolded me a lot, the (same) village–chief.."

In all these examples, the relativized nominal occurring twice. The typical examples of non-reduction strategy as given by Givon (1975: 62) show that the nominal concerned is present at least in the restricting clause, although it may or may not be present in the matrix clause. In the sentences as given above, however, both the nominals are present. It must also be mentioned that normally non–reduction is accompanied with a subsequent shift of the restricting clause to a 'topic'–position (which is sentence–initial in Maithili and in Hittite and sentence–final as in Bambara). In case of (18)a, for instance, if this was not done, the resultant construction would have been cumbersome, though acceptable:[21]

(19) [(o) panc–sab [jaah^i panc–sab–kE^n ham niik jakaan^n janait^a

  chalianh^i] .] ...
  S N?

4.2. Japanese shows typical examples of 'Gap'–strategy where the nominal being relativized is gapped in the restricting clause and even the pronoun which one would expect in its place would be missing. In a restricted number of cases, Maithili does show this RCF–strategy. For instance, consider the following sentences:

(20) a [ham { jaah^i muruut–kE^n } ciTThii likhnE chalianh^i]
         { jan^i kaa }

  I which guy+obj/whom letter write+ptc be+pst+agr

  { o } muruut kyeo dos^a re rahath^i
  { se }

  DEM/CORREL guy someone else+EMPH be+pst+agr
  "The guy I wrote the letter to was a different man".

  b [ham ϕ ciTThii likhnE chalianh^i] { $^?$ o } muruut kyeo dos^a re rahath^i
                                                { se }

A close look at (20) a and b would reveal that not only the nominal, but also the j–pronoun attached to it can be gapped. Here, ϕ indicates the place of gapping. se seems to give a better sentence as in (20) b, probably beeause it is associated with relativization–process, and, therefore. makes the recoverability easier in gapped RCs.

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4.3. Obviously, 'Relative Pronoun' (WH in English) strategy is the commonest of all in IE family of languages. Examples of this strategy have been given in earlier paragraphs (cf. 13–16). In Maithili, this strategy involves the following steps:

(i) replacement of the relativized nominal in the restricting clause by a j–pronoun, and optionally (ii) attachment of a corresponding correlative s–/t– or demonstrative o–pronoun to the head nominal in the matrix clause. These pronouns (j–;s–/t–;o–) show the grammatical relation of the nominal which they replace or are attached to, irrespective of ₐwhethere the original nominal (s) show (s) up in the surface. These pronouns also copy the [± honorific] feature of the nominals. jan^{i}kaa in (13) b and (20) a prove this point, because a [–honorific] nominal would have attracted a [–honorific] relative pronoun jak^a raa.

4.4. 'Anaphoric Pronoun'–strategy is very common in Arabic and Hebrew where in case of object+position RC, the restricting clause shows an anaphoric pronoun in place of the deleted nominal apart from a relative marker attached to the embedded clause. If one tries to apply this strategy in English, one would generate constructions such as in (21) c. consider the following:

(21) a Ramesh gave a kiss to Rakhi

 b The kiss that Ramesh gave φ to Rakhi…

 c $^{?*}$ The kiss that Ramesh gave it to Rakhi…

Maithili employs this strategy in a limited number of cases, mainly for the purpose of disambiguation or deletion–recall. In the following set of sentences, (22) b is a simple relative equivalent of (22) a. Now, if (22) a is itself embedded in a sentence such as in (23) a, the resultant RCF operation may give rise to an anaphoric pronoun placement such as in (23) b. At present, I do not know of any other situation in Maithili than the one below where this strategy could be used. Consider the following examples :

(22) a ham oh^i laRkaa–kE^n janait^a chaliaik^a

  I that+obl boy+obj know+ptc. be+pst+agr

  "I knew that boy".

 b $\left\{ \begin{array}{l} \text{jaah}^{n,i}\ \text{laRkaa–kE}^n \\ \text{jak}^{a}\ \text{raa} \end{array} \right\}$ ham janait^a chaliaik^a , $\left\{ \begin{array}{l} \text{o} \\ \text{o laRkaa} \end{array} \right\}$

  "The boy whom I knew, he…"/ "*Whom I knew, that boy"

(23) a ahaa^n socait^a chalahu^n je ham oh^i laRkaa–kE^n …

  You think+ptc. be+pst+agr that

  "You thought that I knew the boy".

 b jaah^i laRkaa–kE^n ahaa^n socait^a chalahu^n

  je ham $\left\{ \begin{array}{l} \phi \\ \text{ok}^{a}\ \text{raa} \end{array} \right\}$ janait^a chaliaik^a , …

  "The boy whom you thought that I knew him. . ."

[35]

4.5. The 'participialization' or 'Nominalization'-strategy is a very common method of RCF in Indian languages, and especially in the Tibeto-Burman languages, this is either the only or the commonest strategy available. Here the verb in the restricting clause appears in a non-finite nominalized shape, and 'normally' the subject nominal receives a genitive case-marking. We can take up (13) a here to show how it works :

(13) a ham panc-sab-kE^n niik jakaa^n janait^a chalianh^i
      "I knew all the Panch very well".

(24) a [hamar panc-sab-kE^n niik jakaa^n jaanab]...
    I+gen   know+inf. non-pst.
    "My knowing all the Panch very well..."

    b [hamar niik jakaa^n jaanala^a] panc-sab...
    I+gen   know+inf. pst.
    "*My very well known all the Panch..."

In the above examples, (24) a is an instance of non-finite complementizer-placement (which is 'ar...ab' here) and it must be differentiated from (24)b where participialization-strategy has been applied. The points of difference are as follows : (i) first, in the latter case, the participial form shows even the tense of the original verbal as in (13) a, whereas in (24) a addition of infinitizer –ab has neutralized the tense-marking; (ii) secondly, (24) b shows gapping of the relativized nominal while (24) a retains it; and (iii) finally, (24) b functions like an adjective where the head-nominal stands apart and while (24) a can be used as a complement clause in a larger sentence with [+Complement] verbs or adjectives, (24) b cannot function in that way.

4.6.1. 'Verb-Coding'– strategy is found in Philippino and a few other Malayo-Polynesian languages and in some Bantu languages. The nearest approximation as to what happens in these languages when this strategy is employed could be guessed (with a caution that it is still far from being parallel to the use of 'verb-coding' in these languages) from the following :

    (25) a **I worked with the boy.**
         b The boy I **worked with**

At present, I do not know of any other Indian languge which employs this as a productive strategy.

4.6.2. Another strategy which is inoperative in Maithili is what is known as the 'Equi-Case'-Strategy. Modern Hebrew and Tamil are languages where this is known to be productive. If the syntactic role of the relativized nominal is the same in the matrix as well as in the embedded sentence, some languages show the case-marking twice, whereas in some other languages, 'Equi-Case'-stratcgy would require one of these markers to be dropped. The following example[22] from English shows that here both the markers (underscored) are retained:

    (26) John is sitting **on** the table **on** which there is a vase.

[36]

It must be noted that this strategy is only abbreviatory in nature and that even if it is found to be productive in a particular language, it is always matched with other strategies.

5. CONCLUSION

5.1.   In conclusion, in this paper we have discussed the nature of relative clause formation in Maithili with– an emphasis on a few aspects only. First, we discussed the nature of relative clause markers in different stages of the Maithili language, multiple use of j–forms, and the Q–Clause quadrangle for Maithili in the first section. In the next section, we touched upon the modifiers resulting from RC–structures to discuss the order of elements within the nominal phrase in Maithili. In the thlrd section, 'Positional' or 'Word Order'– Strategies of RCF have been discussed which was followed by another section where all the other strategies were looked into with reference to Maithili. It was shown that except a few rare types, Maithili employed all the other strategies which included four positional and non–reduction, gap, relative pronoun and anaphoric pronoun strategies.

Notes

* I am grateful to a number of persons who very kindly helped me in various ways in writing this paper. I am particularly thankful to K. V. Subbarao, Probal Das gupta, Peter Hook, Bernard Comrie and S. K. Bandyopadhyay from all of whom I have learnt a lot in the last few years. I also thank Mimi Klaiman for giving detailed comment on an earlier work in the same line and David Johnson for a number of insightful papers on Relational Grammar that he kindly sent to me.

[1] The vowels included the following : i, ii, ^{i} , e, E, a, aa, ^{a}, o, O, u, uu and ^{u} . The raised vowels are half–short and the double vowels are long. The nasalization mark is shown by a raised, i. e., superscript n. The consonants lnclude 16 oral and 3 nasal stops, 4 affricates, 2 sibilant and 1 glottal fricative, 2 flaps and a lateral and 2 semi–vowels.

[2] See Singh (1980) for the details. In Maithili, non–terms of varions types can trlgger and control verb agreement in the same way as terms can do.

[3] Historically, Maithili can be divlded into three stages : (i) Early Maithili : 9 th– 13 th century (the language of the **Caryaapada, Sarvaananda, Praakrtapaingala** up to Vidya- pati's **Kiirtilataa** and **Kiirtipataakaa**), (ii) Middle Maithili : 14 th–18 th century (the language of Jyotiriiswara's **VarNaratnaakara** down to **KrSNajanma** written in the 18 th century), and (iii) Modren Maithili (the language and literature from 18 th century onwards).

[4] Nilratan Sen (1973): **jo–maNa go–ara.**

[5] Shastri (1916) : **jaehu.**

[6] Shastri (1916) : **jaati**; Sen (1948) : **juti**; Bagchi and Shastri (1956) : **jugati**; Mukherji (1963) : **juati.**

[7] Shastri (1916) : **jaalai.**

[37]

[8]Shastri (1916) : **acchamataa hera** ; Sen (1948), Bagchi and Shastri (1956) : **acchama taahera** ; Mukherji (1963) : **accha ma taahera.**

[9]Sen (1948) : **uha(i).**

[10]Shastri (1916) : **dis** ; Sen (1948), Bagchi and Shastri (1956) : **disa** ; Mukherji (1963) : **diisa**; Nilratan Sen (1973) : **diisa.**

[11]Shastri (1916) ; **india(pa)baNa**, because the commentary had **pavanendriyakam** ; Shahidullah (1940) had the same reading; Mukherji (1963) : **indiabaNa**; Bagchi and Shastri (1956): **india pavaNa.**

[12]Bagchi (1938) : **hoi.**

[13]Shastri (1916) : **Na Thaa**; others had : **NaThaa.**

[14]Shastri (1916) : **kaabaakcia**; Sen (1948) : **kaa baak cia**; Brgchi and Shastri (1956) : **kaa vaak cia**; Nilratan Sen (1972) : **kaa-a baak-a cia.**

[15]Original, Bagchi and Shastri (1956), Nilratan Sen (1973) : **samaa-a**; Shastri (1916) : **samaaya.**

[16]Sen (1948) : **baaNa-cihna-ruuba**; Mukherji (1963) adopts the same reading but drops the hyphen-marks; the latter also has **baana** with a dental nasal which could be a typographical error; Bagchi and Shastri (1956) : **vaaNa-cihna**; Shastri (1916) : **baanacihna ruuba.**

[17]Bagchi and Shastri (1956) **ruuva.**

[18]See Singh (1979) for details.

[19]It would be interesting to try and find out syntactic evidences that would support postulation of a quadrangle. See Dasgupta (1979) for an attempt of this type. Notice that (9) is typical of Maithili and Bengali. In Hindi, except in RCs, the markers in all other cases start with k-words. In that respect, Marathi would come closer to Hindi with Comp-Open non-question **kii** (I am excluding the quotative **mhaNun** which is parallel to **boli** an Oriya and **bole** in Bengali : Hook, Personal communication), and its question counterpart **kaa** as well as Open question markers such as **kon, kaay,** etc.

[20]See Keenan and Comrie (1977:64-5) for the first three.

[21]Although this is an ideal example of non-reduction, it may sound bookish to some.

[22]Bernard Comrie : Personal communication.

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AMRITA:NANDA'S GRAMMAR A.D. 1831

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1. Introduction

1.1 The purpose of this paper is to draw the attention of scholars, particularly the Nepalese scholars interested in the work of native grammarians, to an early nineteenth-century word-and-paradigm grammar. The work is entitled "Grammar of the Newari language, Composed for Mr. Hodgson, by Amrita Nanda Bandya." It may be of interest and some significance for Newari and Nepali scholars alike. This is so because word-paradigms and verb patterns are given in three languages–Sanskrit, Nepali, and Newari in three separate columns. In the colophon the author describes his work in the following words:

devabha:sa: pa:rvatiya:

bha:sa: nepa:lika thatha://

shabda linga bibhaktya:di

kartri karma kriya:byam// Folio 36a

1.2 There are Newari words in roman transcription with English glosses all over the manuscript. Some notes on significant points of Newari grammar are given at the end of the work. There are no such notes, glosses, and transcriptions for the Sanskrit or Nepali columns. Obviously, Hodgson had it composed for learning the Newari language. Sanskrit and Nepali columns seemed to be presented as reference materials.

2. The Manuscript

2.1 The manuscript is deposited in the India Office Library, London, among the Hodgson papers (Hodgson Collection, Volume 82, Group 28, No. 2). Written in devanagari script on Nepalese yellow paper measuring 12.5 cm x 20 cm, it consists of 38 folios. Folios 1b, 2, 3, 31b, 33b, 37a, and 38b are blank. Most folios have marginal notes and English gloss for Newari words and sentences in Hodgons's hand. Folios 37b and 38a have crammed notes on significant points of Newari.

2.2 The manuscript is dated. The date of composition is given at three separate places: folio 1a, folio 36a, and folio 36b in Sanskrit, Newari, and Nepali. It is also given in three eras: Nepal Samvat, Vikram Samvat, and Shaka Samvat

nepa:la samvat 951
shaka samvat 1753
vikram samvat 1888
jesth shudi pratipada: folio 1a

The manuscript was thus composed some time in June 1831. Both Sanskrit and Newari colophons contain additional information that the work was composed for Hodgson: nepa:ladeshe sa:heba ha:dsanam choka:tala   Folio 36a

3. The Author

3.1 Amrita:nanda Bandya was a Newar Buddhist scholar from Patan on the service of British Residency in Kathmandu in the early nineteenth century. The British authorities came to know of his erudition in 1815 during Amrita:nanda Bandya's visit to Bodha Gaya where he confronted the panda:s in a scholastic dispute over the identity of the Buddha's footprints (Shakya, 1978:294–295). He was Hodgson' chief source of information on Nepalese Buddhism and its literature. Hodgson acknowledges this debt to the Nepalese scholar in the following words, "Amritananda Bandya (was the) most learned Buddhist then, or now, living in that country" (Hodgson, 1874:65). William Wilson Hunter, Hodgson's biographer, elaborates on this point:

Hodgson arrivted at his materials for this part of his work by a prolonged process of inquiry from learned Brahmans and Buddhist priests. He had the good fortune to attract the friendship of the greatest pundit in Nepal—a friendship which grew into a reverential affection on both sides. This erudite Buddhist, Amrita Nanda by name, was himself the author of several treatises in Sanskrit and one in the Nepalese dialect. He presented the highest type of the ancient native scholar, courteous, dignified, a well of learning, and with a memory so capacious and perfectly trained as almost to do away with the need of manus- cripts. The questions which Hodgson put to him and Hodgson's commentaries on his replies, opened up unknown regions of research to the Western World.

(Hunter, 1896:273-274)

3.2 Amrita:nanda is the author of a number of works in Sanskrit and Newari. He won for himself a reputation as "the Redactor of Asvaghosa's **Buddhacarita**" (Bendall, 1893: 620). In 1828/29 Amrita:nanda added four lost cantos (Cantos XIV-XVII) to Asvaghosa's poem (Vogel, 1972:210-217). When Cowell translated the poem into English and published it in the Sacred Books of the East Series Vol XLIX he included Amrita:nanda's cantos as "an intere- sting literary curiosity" (Cowell 1894:Preface). Hodgson translated two of his works: "A sketch of Buddhism, derived from the Baudha Scriptures of Nepal," (Hodgson, 1828b:222–237), and Nepa:liya devata: kalya:na pancavimsatika: (Hodgson, 1843/1857). More recently, Brough translated and published "Nepalese Buddhist Rituals,"- a short work by Amrita:nanda (Brough, 1948: 668–678). Amrita:nanda's **Dharam Kosa Sangraha** --a kind of guide to Nepal's holy

shrines composed for Hodgson in Nepal Samvat 946 (A.D. 1825) has come out in print from Delhi (Shakya,1978:295–296). The following are works of Amrita:nanda traced so far:

1. Chandomrtalata: a work on Sanskrit metrics
   (Hodgson, 1874: 14; Bendall, 1883:76 and Mitra, 1882: 79)
2. Sanskrit–Newari Lexicon   (Raghavan, 1949:264)
3. A History of Nepal in Sanskrit, Parbatiya, and Newari (Raghavan, 1949:264)
4. Virakusa:vada: na and Divya:va:da:na Newari translation dated N. S. 947 (Mitra, 1882:274)
5. Carapati's Avalokiteswara Stotra, Newari translation (Cabaton, 1905:159)
6. Description of Bodha Gaya: (Raghavan, 1949:264)
7. Names of Caityas, Buddhist Temples and Buddhist Divinities (Raghavan, 1949:264)
8. Divinities in Tibetan Mandalas (Raghavan, 1949:264)

    3.3 Amrita:nanda was born in the family of Abhaya Ra:j Sha:kya– the founder of Patan's famous Mahaboudha Temple. The family seemed to have made significant contribution to the nineteenth–century literature of Nepal by writing in Sanskrit, and Newari and Nepali alike. Amrita:nanda was the first son of Rama:nanda and Jaya Laxmi. Rama:nanda was the ha:kim (chief) of the Durba:r Library till 1852. Amrita:nanda's younger brother, Sundara:nanda, was the author of Triratna–saundarya Ga:tha: and the Nepali translation of Adhya:tma Ra:ma:yana. Possibly, he was also the Nepali translator of Ra:ja Dharma (Acharya, 1970:82–92). Viswa:nanda, Amrita:nanda's son, wrote poems in Newari. Guna:nanda, Amrita:nanda's grandson, was the co–author of History of Nepal edited by Wright (1877). Guna:nanda also compiled a Newari–Sanskrit lexicon for the Russian Buddhist scholar Ivan P. Minayeff in 1875. It was later published by Conrady (1893). As Residency pundits the descendants of the family, Indra:nanda and Mitra:nanda, had assisted Bendall and Levi in their literary, historical and archaeological researches. Until 1947, the family descendants held the office of Residency pundit. In recognition of their learning, a scion of the family held special privileges in the service of the Durbar Library.

4. The Sponsor
    4.1 Brian Houghton Hodgson (1800–1894) studied Bengali at the East–India College in Haileybury in 1816–1817. While at college Hodgson showed a remarkable disposition to learn oriental languages (Hunter, 1896:22). In 1818, during his first appointment in India, Hodgson had studied Sanskrit and Persian at the newly established (1800) College of

Fort William, where he left "a reputation for proficiency in Persian" (Hunter, 1896: 32). J. A. Ayton, who published **Grammar of Nepalese Language** (Calcutta: 1820), was the Assistant Professor of the Arabic and Persian languages at Fort William. With his passion for languages, it is impossible that Hodgson could have missed Ayton's book.

4.2 Hodgson was only 31 when he sponsored Amrita:nanda's grammar. Three years earlier he had published a paper in which the Tibetan affinity of Newari was established for the first time in the history of linguistic studies. In the same paper he lamented the fact that

> The Newari tongue has no dictionary nor grammar: nor is its cultivation ever thought of by those, numerous as they are, who devote their lives to the sacred literature of Buddhism.
>
> (Hodgson, 1828 a: 409)

Hodgson's youthful observation is perceptive, but only partially true. As for dictionary in Newari, there exist several different versions of **Amarakosha**, bilingual Sanskrit–Newari lexicon spaced between Nepal Samvat 501 (A. D. 1382) and the nineteenth century. There are also different kinds of lexicon, such as medical glossaries (**Bhesajna:ma:vali** NS 697 AD 1577/78, **Dhananjaya Kosa** NS 795 AD 1675). However, nothing resembling a grammar of the Newari language written prior to Amrita:nanda's has so far been traced. Hodgson's observation on this ground stands undisputable. Possibly, it was very much to redress this lacuna that Hodgson seemed to have inspired Amrita:nanda to compose the work.

5. contents of the work

5.1 Amrita:nand's work is hardly a grammar in the usual sense of the word. It does not even resemble a "traditional" grammar. For example, there are not rules (**su:tra**), nor any meta-rules (**paribha:sa:**), nor any definitions of grammatical terms. Terms fer gender and number are merely listed, but not defined (folio 8a). On folio 27 the role of prefixes (**upasarga**), particularly in changing the meaning of verb-roots, is briefly mentioned. The rest of the work are only lists of words belonging to different parts of speech, word-paradigms for nouns, pronouns, verbs and a few adjectives. The core content of the work consists of verb patterns. The entire work can, therefore, be characterized as "Newari in/through Tables".

5.2 In order to have a broad idea of the contents of the work, an outline summary of the topics covered is given below:

1. Invocation and colophon (folio 1)
2. Vowels and letters (f6); script—Nagari and Newari (f7–18)
3. Number, gender, and case–endings (f8)
4. Vocabulary: animate, inanimate, adjectives (f9)
5. Comparison (f10)
6. Personal pronouns, demonstratives, relative pronouns, singular/plural; simple/ respect forms (f10b-13a)

7. Verb Patterns: Indicative, present, past, future; imperative; subjunctive; conditional; potential; (f13-18b)
8. Verb Patterns: Causative; verb+gerund. verb+participle; participles alone; negative construction with stative and copulative verbs (f19a-22b)
9. Future (f23a)
10. Verbs: seek, write, say, search, weigh, am, pass, over, divide (f22b-25a)
11. Adverbs and postpositions (25b-26b)
12. Prefixss (f27)
13. Sentence Modifiers (f28)
14. Interjections (f28b)
15. Adverbs of manner (f29a)
16. Postpositions and adverbs in use (f29b)
17. Particles (f30a)
18. Texts: Story A in Sanskrit (f30b); in Nepali (f31a); in Newari (f31b)
    Story B in Sanskrit (f32a); in Nepali (f32b); in Newari (33a)
    Story C in Sanskrit (f34b); in Nepali (f34a); in Newari (35a)
19. Colophon in Sanskrit and Newari (f36a)
                in Nepali (f38a)
20. Hodgson's notes (f38b and unnumbered folio)

6. Some Tentative Observations

6.1   Amrita:nanda's grammar presents several points of interest. The three-language approach to the Newari language was adopted presumably at Hodgson's request rather than on the author's own initiative. Since both Sanskrit and Nepali were familar to Hodgson, he was trying to learn a third language by applying the commonsense principle of learning, i.e., from the known to the unknown. However, one immediate consequence of this approach is sheer wastage. The display of Newari data in terms of Sanskrit language--in terms of its inflections or morphology --entailed a number of· wasteful and repetitive paradigms. Newari words and verb patterns are merely listed against their approximate Sanskrit equivalents. Since no two languages correspond exactly in terms of all the systems and structures, another negative consequence of this approach was the failure of the paradigms to bring into relief those features of the Newari inflection, morphology, and syntax which are not shared by Sanskrit, e.g., the role of classifiers, the distinction (basically hierarchic) between animate and inanimate, betwee human and non-human, and between respect and non-respect nouns in Newari.

6.2   The presentation of Newari grammatical information in terms of paradigms and patterns, with no rules or generalizations whatsoever, leaves the data entirely to induction or to insight of the analyst. Grammar is neither all induction nor all insight. This is obvious from Hodgson's notes at the end of the manuscript, where he labours through it only to bump into some interesting generalizations as well as false generalizations. For example, on the basis

[45]

of the data presented in Amrita:nanda's grammar, Hodgson concludes:

Adjectives before nouns asba **:nla: misa:** a fine woman
No change of them (adjectives--kpm) [f]or gender or number
as **swamo ba:nla: misa:** 3 fine women, or case generally,
but as in 3rd (case--kpm) as **ba:nla: misa:ng**
Degrees of comparison as
Special forms imply addition of word
No definite article

(ma) ba:nla: mocha: ba:nla: misa: ya:to da:lo tapu kathing
    ugly   boy   pretty girl   struck   great stick with
                                suggesting only any

This is just as the structure really runs save that by it a verb comes at the end
of all.   folio 38

Hodgson's false generalization is painfully evident in his placement of the negative particle **ma** before **ba:nla:**, rather than between the two morphemes **ba:n** and **la:**, producing the unacceptable form* **ma-ba:nla.**

6.3 Given the state of the art of "field linguistics" in the early nineteenth century, Amrita:nanda's work does not look indefensible. Apparently, there was no methodology of systematic presentation of the data or the regularities of an undescribed language before the twentieth century even in the West. Approaching one language in terms of another has been a persistent tradition in the writing of grammars. Amrita:nanda, too, uses the basic frame- work of primary grammatical categories and psesents their inflection and morphology in terms of. secondary grammatical categories (gender, number and case for noun; comparison for adjectives; tense, mood and aspect for verb). One positive feature of the work is the conjuga- tion of verbs in sentences so that the interaction of the different categories can be generalized. Equally interesting feature of the work is the presentation of three narrative texts-- enabling the analyst to examine forms and functions of word in intratextual relations such as anaphoric relations and sentential modification–all carefully glossed over and marked in Hodgson's hand.

6.4 Brough (1948:668–669) was unsparing in his remarks on the grammatical compe- tence of Amrita:nanda. Of course, there are reasons to be critical if one measured the rampant scribal vagaries in Nepal (where printing was introduced in the 1870s only) against the rigour of modern western textual scholarship. However, it is equally useful to remember that 150 years after Amrita:nand's grammar or 50 years after Shukra Raj Shastri's first printed grammar of the Newari language 1928, there is as yet no reliable reference grammar of the language. Nor are the present Newari orthographic practices in devanagari anything less chaotic than the scribal inconsistencies of the manuscript age (Tamot, 1979). Therefore, there is not much point in being harsh in our response to the orthography of Amrita:nanda. In fact, his work is unusually good for Nepalese writing. Though not free from errors and carelessness (for

[46]

example, on folio 11a the Sanskrit singular accusative for "he" is given as **te** instead of **tam**; the nominative for "they" is given as **tye** instead of **te**), the Sanskrit tables and paradigms are fairly consistent in writing.

In the Nepali portions too the writing is on the whole consistent (for example, in the use of **sa** for **kha** all through). The indecisions are there (for example, between **i** and **i:**, between **dh** and **dh**). In the Newari portions, whereas **o** and **wa**, **na** and **ṅa** are used as inter-changeables, **ra** and **la** are not. The data evidently represents Patan dialect (**jimisen** for **jimisan** in Kathmandu). The text retains the medial and final consonant (s) or consonant–initial syllable--some of which are lost in modern Newari.

7. Conclusion

7.1 It is difficult to guess how the Nepali portions of Amrita:nanda's grammar will be received by the Nepali–language scholars and historians of the language--assuming that it is published in the future. The earliest printed grammar of Nepali written by a Nepalese is Jaya Prithwi Bahadur Singh's **Pra:krit Vya:karana**, Published in 1912. Pant (1961:23) repo-rted the existence of a grammar of Nepali written by Birendra Keshari Arya:l, vaguely dated between 1888 and 1905. Acharya (1977) has recently located a manuscript which is unsigned and undated but assumed to be Birendra Keshari's grammar. With due verification it deserves to bs published. In the meantime, on the basis of the available materials it seems that Amrita:nanda's grammar is, not only the earliest attempt at the grammar of the Newari language, but also the first known grammar of the Nepali language attempted by a Nepalese scholar.

7.2 The mannscript is also an int$_e$rsting deposit of Nepal's cultural history. The signing of the Treaty of Sugauli in December 1815 brought in an active presence of the West in the heart of an otherwise pristine Kathmandu. The manuscript presents a glimpse of the the interaction of two traditions of learning: the Eastern and the Western. Here is an erudite Nepalese scholar trying his best to present the data of his hitherto unstudied language as systematically as possible for the scrutiny of an inquisitive Western scholar. Fully commi-tted to empirical tradition, the young scholar, on his part, is visibly groping to unravel the mysteries of the language by inductive reason^{i}ng--mainly by identifying the observable surface regularities. It is pointless to be too harsh to either. For neither was a Pa:nini.

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