ON THE VARIANTS OF NEWARI VOWELS: A STUDY IN PHONOLOGICAL NON-ALIGNMENT

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0. <u>Introduction</u>

     Newari vowels display marked individualistic tendencies.[1] There is a
prominent asymmetry in the relation between long and short vowels in that
there are six short vowels, /i, e, ā, a, o, u/, but eight long vowels,
/ii, ee, ae, āe, aa, āā, oo, uu/. More interesting for this study, however,
is the fact that no two of these vowels respond to exactly the same set of
low level phonetic rules, or are influenced in manifesting one phonetic
exponent or another by the same set of phonological environments. In this
paper we explore these phonetic differences in the attempt to show that
underlying all the idiosyncratic behavior there is a system that accounts
for it, a system that we are tempted to refer to as the politics of phonetic
non-alignment. Non-alignment in the phonetics of Newari vowels, however,
does not lead to egalitarian independence. Rather, it leads to salient
inequalities in the degree to which various vowels are forced to modify their
phonetic manifestations in the face of pressures from the phonological context.

     Newari vowels differ from one another in regard to how vulnerable they
are to various phonological environments. There are vowels that resist or
ignore nearly all contextual phonetic influences, such as /i/, /ii/, and
/āe/. For each of these only one consistently discriminable vowel-quality
exponent was found. By contrast, vowels such as /a/ and /u/ were found to
have several such exponents spanning a considerable portion of the Cardinal
Vowel chart.

Different sets of vowels are vulnerable to different phonological environments. There is one environment, however, to which all vowels appear to be equally vulnerable, namely, that in which the vowel is preceded by a breathy consonant. In all such cases vowels manifest breathy variants.[2]

/mhyāe/ [m̥jæ:] daughter

/dhenii/ [d̥jeᵀn-ᴜ:] will cut

Even here, however, vowels differ as to whether breathiness also entails a modification of vowel quality. All such modifications noted are mentioned in the descriptions of the individual vowels which follow.

In general, nasal vowels manifest the same qualities as their oral counterparts in the various phonological enfironments, Exceptions to this are also mentioned in the descriptions of the individual vowels, Thus, even though nasalization is a phonologically contrastive paramete, nasal vowels are not treated separately except where they differ in vowel quality from their oral counterparts in a given phonological enfironment.

There are some potent environments responsible for the occurrence of certain qoesl quality exponents which are in part morphologically defined. Some rules operate only in word-final position, others word-initially, and still others apply to what we refer to as strong syllables. Strong syllables are morphologically defined as stem-initial syllables, Thus, in a disyllabic word without affixes or complex internal morphology, the first syllable is strong and the second syllable is weak (/cikaa/ 'oil', /aapu/ 'easy', /yākna/ 'soon'). The negative prefix is not a stem, thus in verbs with negative prefixes the second syllable is strong (/ma-byuu/ 'does not give', /ma-cuu/ 'did not sell well'). In words having suffixes but no prefixes, the first syllable is strong (/yāta/ 'he did it', /bila/ 'he gave', /lakhaa/ 'from the water'). In numeral classifier constructions, both the numeral and the classifier behave as stems, and both are strong (/pe-kaa/ 'four times').

Long vowels are in general less vulnerable to vowel quality modification in the face of environmental pressures than short vowels. Figure 1 presents the set of variants that could be consistently discriminated and Figure 2 does the same for short vowels. Both charts present the position of variants relative to the vardinal vowels, and the size of the area enclosed for each variant represents the impressionistically determined area over which that variant ranged. From Figure 1 it can be see that most of the long vowels cover relatively small areas of the chart, and that they are all situated around the edges of the chart in reasonable proximity to the primary cardinal vowels. Diphthongization of simple vowel qualities is observed only in the lower back region of the chart. By contrast, the short vowels, phonemically fewer in number, have a larger number of variants per vowel on the average, the average, and range over a larger a ea of the chart. We will consider first the long vowels and their variants, grouping the
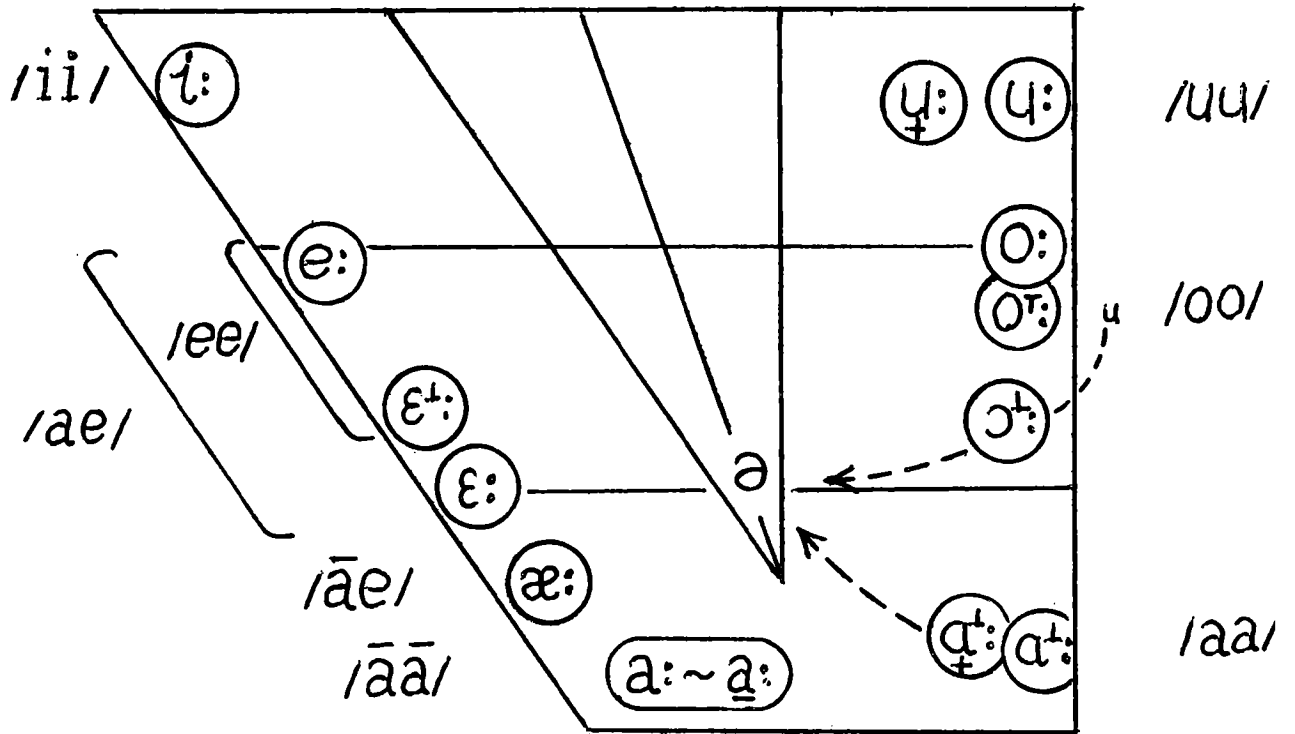
/ii/ 　　　　　　　　　　　　　　　　　　　　 /uu/

/ee/

/ae/

/āe/

/āā/

Figure 1. Variants of Newari long vowels

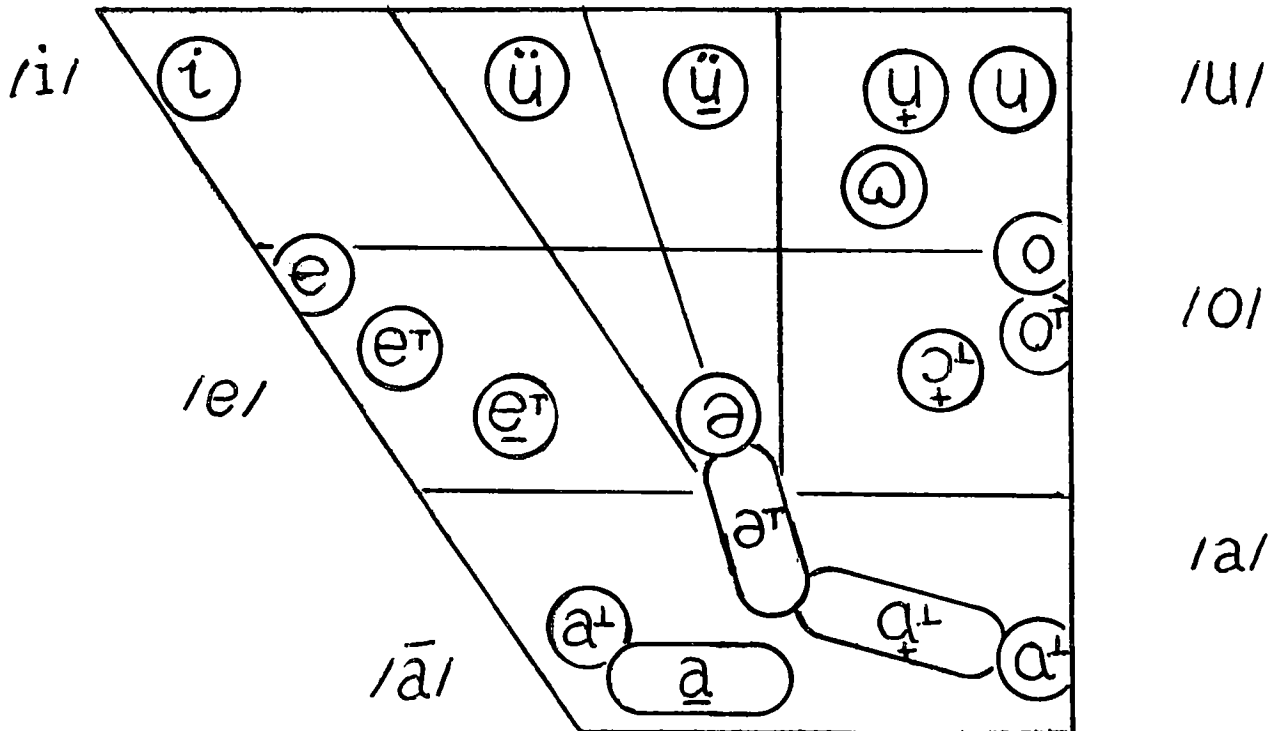/i/ 　　　　　　　　　　　　　　　　　　　　 /u/

/oo/

/aa/

/o/

/e/

/a/

/ā/

Figure 2. Variants of Newari short vowels

vowels into sets according to the environments to which the various vowels are
primarily vulnerable as far as the modification of vowel quality is concerned.

1. Vowel Quality Variants for Long Vowels

There are four sets of long vowels: 1. Invariant vowels which show no
consistently discriminable quality variants other than their norms, 2. Vowels
vulnerable to the phonological influence of preceding consonants, 3. Vowels
vulnerable to syllable and word final influences, and 4. Vowels vulnerable to
various influences within a wider context.

1.1 Invariant long vowels. The long vowels /ii/ and /āe/ are exceptionally
stable. They seem invulnerable to the environments that produce clearly
discriminable vowel quality variants in other long vowels. We were able to
discriminate only a single phonetic exponent for each of these vowels.

/ii/ is consistently realized as [i:], a quality slightly lower than
Cardinal Vowel Number 1, and its nasal counterpart /ịị/ is of the
same quality, though it occasionally has a velar off-glide.[3]

/ii/	[i:]	time
/abiir/	[$a̧bi:ɣ^$]	a red powder
/dǫ cịị/	[ɟʰõᵀtɕ ĩ:]	piled up in a heap
/kacịị dāla/	[k̠əᵀtɕi:ŋ da̠lə ᵀ]	(he) came down with smallpox

/āe/ and its nasal counterpart, /ą̄ę/, are consistently realized as [æ:]
and [æ̃:] respectively, a completely front vowel between Cardinal
Vowel 3 and Cardinal Vowel 4.

/bhāe/	[b̥ æ:]	language
/kāe/	[k æ:]	son
/mhyāe/	[m̥j æ:]	daughter

1.2 <u>Long</u> <u>vowels</u> <u>vulnerable</u> <u>to</u> <u>preceding</u> <u>consonants</u>. Also relatively stable are the high back vowel /uu/, the low vowel /āā/ and their nasal counterparts, /ʯʯ/ and /ą̄ą̄/.

/uu/ is realized as [u:], a quality slightly lower than Cardinal Vowel Number 8, following peripheral articulations (labials and velars). Since this variant also occurs in word-initial position this variant can be viewed as the norm or default variant, minimally influenced by its environment.[4] The nasal counterpart follows suit.

/ʯʯn/	[ʔũ:n]	carded wool
/dabuu/	[dəᵀbu:]	platform
/anguu/	[ą̇ᴧŋɡu:]	finger ring
/barmʯʯ/	[bəɾmũ:]	a Brahmin

/uu/ is realized as [ʉ:], a quality slightly lower and further forward than Cardinal Vowel Number 8, following central articulations (palatals and alveolars).

| /gajuu/ | [ɡəᵀẕʉ: ~ ɡəᵀd̠ẕu:] | pinnacle of a temple |
| /panyuu/ | [pą̇ᴧɲʉ:] | ladle, flat spoon |

/āā/ is realized as [a:] in strong syllables following palatal consonants and in this respect /āā/ is not parallel to /uu/, since the fronted variant of /uu/ responds to central articulations in general and not just to palatal consonants. [a:] has the quality of Cardinal Vowel Number 4.

| /jhāā/ | [d̠ẕa̤:] | comes, goes (honorific) |
| /jhyāā/ | [d̠ẕ̇ja̤:] | window |

/āā/ is otherwise realized as [a̠:], a more central quality than [a:], retracted from Cardinal Vowel Number 4. The nasalized counterpart of this variant often has a very short velar nasal off-glide following the vowel. We take this variant to be the least influenced, or default variant of this vowel.

| /pepāā/ | [pjepa̠:] | four flat objects |

/teelāā/ [tje:la̰:]   sharp sighted

/hengwāā/ [je̤ᵀŋwa̰:]   charcoal

1.3 Long vowels sensitive to open versus closed syllable structure.

Vowels in this class (/ee/ and /oo/ and their nasal counterparts) have a tendency toward lower vowel qualities in open syllables. Again, the two vowels in this class are not entirely parallel in their response to phonological environments.

/ee/ is realized somewhere within the range of free fluctuation, [e:~ɛˠ:], in word-final open syllables. [e:] represents the vowel quality of Cardinal Vowel Number 2, and [ɛˠ:] represents a vowel quality somewhat above that of Cardinal Vowel Number 3. The one example we have of the nasalized counterpart of this variant was heard rather consistently as [ɛ̃ˠ:].

/mee/ [me: ~ mɛˠ:]   buffalo

/dee/ [de: ~ dɛˠ:]   country

/khẹẹ/ [kxɛ̃ˠ:]   egg

/ee/ is realized elsewhere as [e:] and its nasal counterpart as [ẽ:]. We take this to be the default variant for this vowel.

/deemā/ [dje:ma̰]   plate

/teelāā/ [tje:la̰:]   sharp sighted

/oo/ is realized as [ɔˠ:] in free fluctuation with the diphthongal variants [ɔ·ᵊ] and [ᵘɔ] in open syllables. [ɔ] represents the vowel quality of Cardinal Vowel Number 6 and [ɔˠ] is somewhat higher. The potent environment here is again not entirely parallel to that which triggers sporadic lowering of /ee/, since /ee/ is lowered word-finally while /oo/ is not only lowered but often diphthongized as well and the potent environment is not restricted to word-final position.

/boobyuu/ [bβɔˠ:bju: ~ bβɔ·ᵊbju: ~ bβᵘɔˠ:bju:]

scolds (habitually)

/joogu/ [d̰zɔˠ:gu ~ d̰zɔ·ᵊgu ~ d̰zᵘɔˠ:gu]

that which leaks

The nasalized counterpart of this variant is slightly closer and fluctuates freely between [õᵀː] and [õᵻᵃ]. [Oᵀ] represents a vowel quality slightly lower than Cardinal Vowel Number 7.

/kǫǫcā/ [k̬õᵀːt̬s̬a ~ k̬õᵻᵃt̬s̬a] a clay pot

/doonąą/ [d̬õᵀːną̃ᴸː ~ d̬õᵻᵃną̃ᴸː] by the ox[5]

/oo/ is realized as [Oː] in closed syllables (and hence primarily in loan words). The preceding consonant is rounded but rarely is there a perceptible [ꭣ] on-glide. [O] represents the vowel quality of Cardinal Vowel Number 7.

/bhoog/ [b̬ꞵǫːg̬] a sacrifice

/khoor/ [k̬ꞷOːɹ̥ˆ] a cage

The vowel /oo/, apart from its manifestation as [Oː] in closed syllables could be described as having a general movement of articulation. This starts with a high back tongue position with closely rounded lips and moves to a half-open back tongue position with open lip rounding and then to a central non-rounded articulation. One would be tempted to say that the norm for /oo/ is at least diphthongal, whereas the norm for /ee/ appears to be monophthongal.

1.4 Long vowels sensitive to preceding consonant, following consonant, and syllable structure.

Long vowels in this class are vulnerable to a wider range of potent environments than are long vowels of other classes. As usual the two vowels included here are not entirely parallel, and certainly neither is parallel to any other vowel in the system.

/ae/ is realized as [ɛᴸː] (and its nasal counterpart, /ąę/ as [ɛ̃ᴸː]) when following /w/ in strong syllables. This variant is in partial overlap with one free variant of /ee/ in word-final position as listed in section 1.3 above. The phoneme /ee/, however, never occurs following /w/, so there is no danger of total overlap on this analysis as the system now stands.

/mwąędyāā/ [m̥ɛ̃ᴸːdjaː] twisted

/pwaelā/ [p̪͜ɸɛ˺ːla̠]   a winter month

/wąę/ [ωɛ̃˺ː]   madman

/ae/ is otherwise realized in stressed syllables as [ɛːˑ] (and its nasal counterpart as [ɛ̃ː]), the vowel quality of Cardinal Vowel Number 3.

/phae/ [phɛː]   wind

/dhąę/ [d̪ɛ̃ː]   bed bug

/khąę/ [k̠χɛ̃ː]   a Khas person[6]

/khae/ [k̠χɛː]   a wart

/chae/ [t̠s̠hɛː]   grandson

/ae/ is also realized as [ɛː] in weak syllables except when followed by /y/ or /j/. [ɛː] is thus taken to be the default variant of /ae/.

/katae majuu/ [kɑ̠˺tɛː mɘʳdʐuː]   (his) evil days have not passed

/thakae mayāā/ [thɘʳkɛː mɘʳjaː]   (he) did not cheat

/ae/ is realized as [eː] in weak syllables before /y/, and /ae/ is vulnerable to this influence even across word boundaries.

/katae yāye/ [kɑ̠˺teː ja˺jeʳ]   to survive one's evil days

/thakae yāye/ [thɘʳkeːja˺ʲeʳ]   to cheat

/ae/ is realized as [ɛ˺ː] in weak syllables before /j/, and this influence also extends across word boundaries

/katae juye/ [kɑ̠˺tɛ˺ː dʐüe]   for one's evil days to have passed

/thakae juye/ [thɘʳkɛ˺ː dʐüe]   for cheating to take place

From these examples it can be seen that /ae/ is vulnerable to raising influences from preceding consonants in strong syllables, and from following consonants in weak syllables.

/aa/ is realized as [ɑ̟˺ː] following central (palatal or alveolar) consonants in word-final position. [ɑ̟˺ː] represents a vowel quality slightly higher and more fronted than Cardinal Vowel Number 5.

/kosaa/ [k̠os̠ɑ̟˺ː]   gift given to the bride

/saa/ [s̠ɑ̟˺ː]   voice

/sataa/ [ʂɑ̩⁺tɑ̩⁺:] shelter, shed

/baraa/ [bɑ̩⁺rɑ̩⁺:] mortgage

/dǫǫnąą/ [d̪õᵀ:nã̩⁺:] by the ox[7]

/chyąą/ [t̠ɕɕã̩⁺:] head

/aa/ is also realized as [ɑ̩⁺:] following central consonants in non-word-final position, provided that the following syllable has a non-back vowel.[8]

/taabaą/ [tɑ̩⁺:ba̱:] father's elder brother

/saati/ [ʂɑ̩⁺:ti] call!

/saate/ [ʂɑ̩⁺:te] (I) will call

/saatā/ [ʂɑ̩⁺:ta̱] (I) called

/aa/ is realized as [ɑ⁺:] following peripheral consonants (labials and velars) in strong syllables and following central consonants in non-word-final position where the following syllable has a back vowel.

/thaagu/ [thɑ⁺:g̩u] one's own

/paakā/ [pɑ⁺:ka̱] millet

/aapu/ [ɑ⁺:pu] easy

/baakā/ [bɑ⁺:ka̱] lean on it!

The same variant occurs in word-final strong syllables such as one finds in numeral-classifier constructions, where the classifier, though word-final, is still stem-initial, hence strong.

/pekaa/ [pjeᵀkɑ⁺:] four times
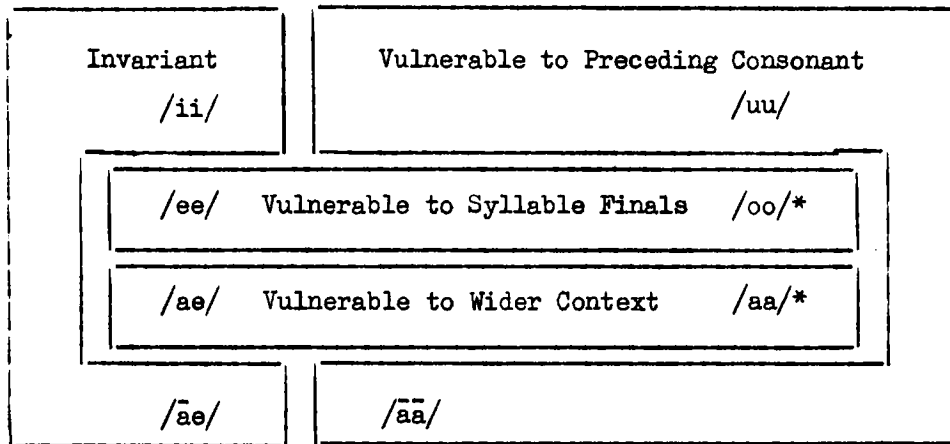
/aa/ is realized following velars in weak final syllables by two variants in free fluctuation: [ɑ⁺:~ɑ⁺ᵊ]. Nasalized weak finals also manifest two freely fluctuating variants: [ɑ̃⁺ᵊ~ɑ̃⁺:ⁿ].

/agaa/ [ɑ⁺g̩ɑ⁺: ~ ɑ⁺gɑ⁺ᵊ] brick kiln

/cikąą/ [t̠ɕikã̩⁺ᵊ ~ t̠ɕikã̩⁺ⁿ] oil

/aakhaa/ [ɑ⁺:k̩χɑ⁺:~ɑ⁺:k̩χɑ⁺ᵊ] inside out

1.5 <u>Newari</u> <u>Long</u> <u>Vowels</u>: <u>Vulnerability</u> <u>to</u> <u>Environment</u> <u>and</u> <u>Response</u>. The evidence regarding vulnerability which has been presented in this section is summarized in Figure 3. The evidence relating to the response made by long vowels to their potent environments presented above is summarized in Figure 4. What can be said about these patterns? If our identification of the default variants for each of the long vowels is correct, and these variants represent the neutral qualities of these vowels (that is, the quality accounted for simply by virtue of the fact that the vowel is not especially vulnerable to change in the environments in which these default qualities occur) then we see that back vowels are fronted in response to pressure from palatal or central (including both palatal and alveolar) articulations, but that front vowels are not retracted in response to pressure from peripheral articulations. There is, of course, the case in which /ae/ is raised in strong syllables following /w/, but the attraction is strictly that of raising and does not result in centralization or retraction of the vowel.
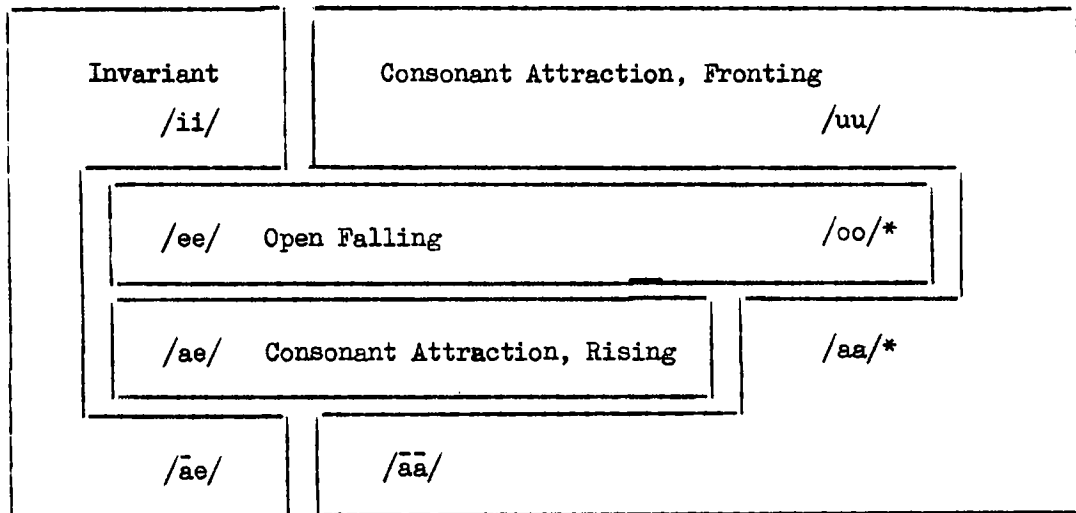
A second observation is that the only invariant long vowels are front vowels. Furthermore, for each of the remaining pairs of vowels established on the basis of vulnerability to environment as pictured in Figure 3, one member is further toward the front of the cardinal vowel chart and the other is further toward the back (compare Figures 1 and 3). In each case the front member is vulnerable to a narrower range of environments than its back counterpart. Thus /uu/ is attracted to the front by both palatals and alveolars, whereas /a͞a/ responds only to palatals. Similarly, /ee/ fluctuates freely with a lower quality in word-final position, whereas /oo/ fluctuates not only with a lower quality but with a diphthongized variant, and does so not only word-finally, but in non-word-final open syllables as well. /ae/ has a higher variant following /w/ in strong syllables, and before /y/ and /j/ in word-final weak syllables. /aa/ on the other hand is vulnerable not only to preceding consonants, strong versus weak syllables, word-final position, but to combinations of these and manifests diphthongized as well as steady vowel qualities.

We would conclude that front vowels are less vulnerable to modification by their phonological environments than their back counterparts in Newari, and that in long vowels most of the observed variation involves attraction of a vowel to a higher or more fronted position. /ee/ and /oo/ are, of course, the exceptions to this, unless we take the less stable variants to be the norms, a view that could quite well be argued for.[9]

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┌─────────────────────────────────────────────────────────────────┐
│             ║                                                     │
│  Invariant  ║      Vulnerable to Preceding Consonant             │
│    /ii/     ║                      /uu/                           │
│        ┌────╨─────────────────────────────────────────────┐      │
│        │ ┌───────────────────────────────────────────────┐│      │
│        │ │ /ee/    Vulnerable to Syllable Finals    /oo/* ││      │
│        │ ├───────────────────────────────────────────────┤│      │
│        │ │ /ae/    Vulnerable to Wider Context      /aa/* ││      │
│        │ └───────────────────────────────────────────────┘│      │
│  ┌─────╨────┐ ┌──────────────────────────────────────────┐│      │
│  │   /āe/   │ │   /āā/                                    ││      │
└──┴──────────┴─┴──────────────────────────────────────────┴┴──────┘
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*Diphthongization in Open Syllables

Figure 3. Newari long vowels: vulnerability to environment

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┌─────────────────────────────────────────────────────────────────┐
│            ║                                                      │
│  Invariant ║        Consonant Attraction, Fronting               │
│    /ii/    ║                              /uu/                    │
│       ┌────╨───────────────────────────────────────────┐         │
│       │ ┌─────────────────────────────────────────────┐│         │
│       │ │ /ee/    Open Falling                   /oo/* ││         │
│       │ └─────────────────────────────────────────────┘│         │
│       │ ┌───────────────────────────────┐   ┌──────────┘         │
│       │ │ /ae/   Consonant Attraction,   │   │ /aa/*             │
│       │ │        Rising                  │   │                   │
│       │ └───────────────────────────────┘   └──────────┐         │
│  ┌────╨─────┐ ┌──────────────────────────────────────┐ │         │
│  │   /āe/   │ │   /āā/                                │ │         │
└──┴──────────┴─┴──────────────────────────────────────┴─┴─────────┘
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*Centralizing Diphthongization

Figure 4. Newari long vowels: response to environment

2. Vowel Quality Variants for Short Vowels

Though the number of short vowels is smaller than the number of long vowels, short vowels are considerably less stable than long vowels, have a larger number of discriminable variants per vowel, and tend to be even more idiosyncratic in their phonetic manifestations. The set of variants with which we are concerned has been given in Figure 2.

If we consider short vowels in terms of the types of environments in which they are vulnerable to vowel quality modification, there are three sets: 1. Invariant short vowels, 2. Short vowels vulnerable primarily to preceding consonants, and 3. Short vowels vulnerable both to preceding consonants and to following vowels.

2.1 The invariant short vowels. Only the short vowel /i/ qualifies as having such a small range of phonetic manifestations as to defy our attempts to discriminate variants.[10]

/i/ is consistently realized as [ɪ], a quality slightly lower than Cardinal
Vowel Number 1, and its nasal counterpart, /ɨ/, has the same quality, [ɪ̃].

/anti/	[ɑ⁺ntɪ]	metal decanter
/phike/	[pçikeᵀ]	to dress someone
/imuu/	[ɪmuː]	ant

2.2 Short vowels vulnerable primarily to preceding consonants. A clear case of vulnerability to preceding consonants, and one that is relatively stable is the low vowel, /ā/. The vowels, /u/ and /o/, are also discussed under this heading even though there is some evidence that these vowels respond to other kinds of environmental pressures as well.

/ā/ is realized as [aˣ], a vowel quality slightly above Cardinal Vowel
Number 4, in strong, non-word-final syllables following /y/.

/yākna/	[ja⁺knəᵀ]	soon
/cyāta/	[tɕja⁺təᵀ]	(it) was lit
/tyāta/	[tja⁺təᵀ]	(he) won
/dhyācaa/	[ḍja⁺t̠ʂɑ⁺ː]	muddy

/ā/ is realized as [a], a vowel quality retracted from Cardinal Vowel Number 4. The degree of retraction varies from very slight following palatals and central affricates and preceding syllables consisting of palatals plus /i/ to a somewhat greater degree of retraction following peripheral articulations. We mention this as an observable tendency even though [a] and [a] were not discriminable with sufficient consistency to posit them as discrete variants of /ā/. Retraction tended to be relatively greater in examples such as the following,

/kakā/	[kɑ˦ka ~ kəˀka]	father's younger brother
/tą̄/	[tã]	weaving loom
/khatą̄/	[khɑ˦tã]	tool for clod-breaking
/pāke juye/	[pake dʑüe]	to be ripe

and relatively less in examples such as the following.

/cā/	[tsa]	night, clay,
/cyā/	[tɕja]	tea, be lit!
/jā/	[dza]	cooked rice
/jyā/	[dʑja]	work
/kāji/	[kadʑi ~ kaʑi]	an administrative rank
/kacā/	[kɑ˦tsa ~ kəˀtsa]	branch

/u/ is realized as [u], a quality slightly lower than Cardinal Vowel Number 8, following peripheral consonants (labials and velars). Since /u/ is closely allied with labials and velars we take this to be the default quality for this vowel. The nasalized counterpart follows suit.

/kakku/	[kɑ˦k̠ːu]	neck
/tappu/	[təˀpːɸu]	large solid object
/abu/	[ɑ˦bu]	father
/kų̄/	[kũ]	smoke
/gų̄/	[ɡũ]	forest
/bų̄/	[bũ]	field

/kurkala/ [kuᵤkɑ̟˩lɑ̟˩] (it) dropped, fell down

/kanhae khunhu/ [kɑ̟˩n̪ɛ̤: kɤun̪ṳ] tomorrow

/u/ is realized as [u] fluctuating freely with [u̟], a slightly fronted
variant, following central consonants.

/khasu/ [kɤɑ̟˩s̠u ~ kɤɑ̟˩s̠u̟] fog, mist

/yecu/ [je⁺t̠s̠u ~ je⁺t̠s̠u̟] neat and clean

/kathu/ [kɑ̟˩thu ~ kɑ̟˩thu̟] throat

This fluctuation is also found in one exceptional word following a
peripheral consonant in J. Tuladhar's pronunciation:

/thaku/ [thə⁺ku ~ thə⁺ku̟] bamboo brush

/u/ is realized as [ü] in one example, the intransitive verbalizer, /juye/
'to become'.

/juye/ [dʑüe] to become

/u/ is realized as [ü̠] in one example, the noun, /juju/ 'king'.

/juju/ [dʑü̠dʑü̠] king

Both vowels in /juju/ are [ü̠]. The first is fronted by the surrounding
palatals and the second would appear to be an echo of the first. This is
one instance in which /u/ appears to respond to the influence of a
following consonant.

/u/ is realized as [⍵] in weak closed syllables. [⍵] is an unrounded
vowel, lower and further advanced than Cardinal Vowel Number 8.

/ankus/ [ɑ̟̃⁺ŋk⍵s̠] an iron hook

/iskul/ [is̠k⍵l] school

/ikhuncā/ [ik⍵n̪t̠s̠a̠] a swallow

/kanjus/ [kɑ̟⁺nd̠z̠⍵s̠] miser

/o/ is realized as [ɔ⁺] following labial consonants. [ɔ⁺] is a vowel
quality advanced and raised from Cardinal Vowel Number 6. The nasal
counterpart follows suit.

/polā/ [p̤ɸ̃ɔ̃⁺la̠] (I) pealed

/phǫna/ [pɸɔ̃˔nɑ̠˔] (it) became empty

/bhojae/ [b̤β̞ɔ˔zɛː] at the feast

/phogḷị/ [pɸɔ̠˔gĩ̯ŋ] beggar

/o/ is realized as [ǫ̞ᵀ] following /c/, /ch/, and /j/. [ǫ̞ᵀ] is a
vowel quality advanced and lowered from Cardinal Vowel Number 7.

/colaecā/ [tsǫᵀlɛːtsa̠] nanny goat

/cokā/ [tsǫ̠ᵀka̠] peak, tip, end

/chottā/ [tsw̥ǫᵀtːa̠] a dishonest person

/jorā/ [dzǫᵀɾa̠] an identical pair

There is one irregular example in which Kansakar has [o] instead
of [ǫ̞ᵀ] following /j/.

/jona/ [dzonɑ̠˔] (he) seized

/o/ is realized as [ǫᵀ] following non-labial breathy consonants.

/dhobyā/ [dǫᵀbja̠] a washerman

/jholā/ [dzǫᵀla̠] shoulder bag

/ghori/ [gw̥ǫᵀɾi] marks from cuts and bruises

/lhone/ [l̥ǫᵀneᵀ] to lift

/hotae/ [w̥ǫᵀtɛː] in the hole

/o/ is realized as [o] elsewhere. [o] is a vowel quality equivalent to
Cardinal Vowel Number 7, and we take this to be the default quality of
this vowel.

/tǫ dāā/ [tõ da̠ː] has dandruff

/dolcā/ [doltsa̠] a cup made of leaves

/kosaa/ [kosɑ̠˔ː] a gift to the bride

/losā/ [losa̠] a snack

/solā/ [sola̠] three months

2.3 <u>Short vowels vulnerable both to preceding consonants and following vowels</u>.
The vowels /e/ and /a/ are both influenced by the vowel of the following syllable
as well as by the preceding consonant, and /a/ spans a considerable range of
phonetic vowel qualities in doing so. The vowels /e/ and /a/ are quite different
in other respects as will be noted below.

The vowel /e/ is somewhat complex in its phonetic realization. There are
three basic phonetic variants: [e], [eᵀ], and [e̤ᵀ] (where [e] is in
the immediate vicinity of Cardinal Vowel Number 2, [eᵀ] is lowered from Cardinal
Vowel Number 2, and [e̤ᵀ] is both lowered and retracted). These variants fluctuate
not only between speakers but even within the speech of a single speaker, as was
made clear to us by comparing recordings made at various stages in the project.
The tongue always starts from a palatal position, whether or not a [j] glide is
heard, and moves downward to stop at one of these three positions.

/e/ is unstable and is realized as [e] in free fluctuation with [eᵀ] in
three kinds of environments: 1) in weak syllables:

/athe/   [a̤ᵗtheᵀ   ~ a̤ᵗthe]   like that

/pule/   [p̰ɸuleᵀ   ~ p̰ɸule]   (I) will pay

/lhone/   [l̥oneᵀ   ~ l̥one]   to lift

2) in strong aspirated syllables:

/phetwii/   [pç̥eᵀtwiː   ~pç̥etwiː]   (he) will sit

/thekdar/   [theᵀkda̰ɟ^   ~thekda̰ɟ^]   contractor

/chelii/   [tç̥heᵀliː   ~tç̥heliː]   (he) will put to use

and 3) in breathy syllables:

/helā/   [je̤ᵀla̤   ~je̤la̤]   despised

/lheyā/   [l̥e̤ᵀja̤   ~l̥e̤ja̤]   (I) carried, crawled

/dhenii/   [d̤je̤ᵀniː   ~d̤je̤niː]   (he) will cut

The phonetic exponent of unstable /e/ is a quality falling anywhere
from [e] to [eᵀ]. The tongue appears to be falling from a
palatal position and the variant heard depends on the position of

the tongue's trajectory which is made prominent during the brief peak
of phonation that occurs in such syllables.

/e/ is relatively stable and is realized as [ē̞ᵀ] in two environments:
1) when it occurs in the strong syllable of past disjunct verb forms
with /la/ or /na/ in the following syllable:

/nena/	[ɲē̞ᵀnɑ̤⁺]	(he) asked, listened, heard
/kena/	[kjē̞ᵀnɑ̤⁺]	(he) showed
/bena/	[bjē̞ᵀnɑ̤⁺]	(it) came loose
/tela/	[tjē̞ᵀlɑ̤⁺]	(it) was time
/lela/	[ljē̞ᵀlɑ̤⁺]	(he) harvested

and 2) in strong syllables preceded by /y/:

/yecu/	[jē̞ᵀt̤s̤u]	neat and clean
/yela/	[jē̞ᵀlɑ̤⁺]	Patan
/yemi/	[jē̞ᵀmi]	a Kathmandu-ite

When both conditioning factors coincide in a single form such as the
following, the lowering effect appears to be cumulative:

/yela/	[jəlɑ̤⁺]	(he) became fond of

/e/ is elsewhere realized as [e], which we take to be the default variant.

/pepāā/	[pjepa̱:]	four flat objects
/bekār/	[beka̱ɾ]	worthless
/benii/	[beni: ~ bjeni:]	will come loose
/delāsā/	[dela̱s̤a̱]	bed sheet
/nekuu/	[ɲeku:]	horns of an animal

In addition to the major conditioning factors given above, there appear
to be certain minor factors also at work. One example of this is the
influence that a vowel in a following syllable can exert upon an /e/ in
a strong syllable. This influence can be illustrated by a paradigm
like the following:

/nenii/ [ɲeni:]   (he) will ask

/nene/ [ɲeᵀne ~ ɲeᵀneᵀ] (I) will ask

/nena/ [ɲe̱ᵀnɑ̞⁺]   (he) asked

That this is a secondary conditioning factor is seen from the fact that
an /i/ in a following syllable does not over-ride the centralizing and
lowering effect of initial /y/ in words such as /yemi/ 'a Kathmandu-ite'
nor does it stabilize /e/ in words such as /phetwii/ '(he) will sit'.

/a/ is the vowel with the widest range of phonetic variants, ranging from
[ɑ⁺], a quality slightly above Cardinal Vowel Number 5, through [ɒ⁺]
and [ə̞ᵀ] to [ə], a mid central vowel quality. This range of variants
is controlled both by the preceding consonant and the following vowel in
strong syllables of bisyllabic words. In general, central consonants
precede the variants [ə] and [əᵀ], though a following strong
syllable with /a/ (as in the case of /cha-mha/ 'one animate being') or
a following long /aa/ or /a̰a̰/ (as in the cases of /sataa/ 'shelter' and
/lakha̰a̰/ 'from the water') will move such a vowel still further back, as
can be seen in Figure 5. Likewise, peripheral consonants precede the
variants [ɒ⁺] and [ɑ⁺]. The following vowel tends to determine
which of the variants is favored within the range determined by the
preceding consonant: a following front vowel favors the fronted or
raised variants, whereas a following back vowel favors the retracted
or lowered variants. Individual vowels differ in the degree to which they
influence the phonetic realization of /a/, with the low vowels, /ā/,
/āā/ and /aa/ having the greatest influence.[11] Figure 5 presents a
mapping of examples against the variants of /a/ that occur in them.

This description of /a/ and its variants, while accurate for the great majority
of cases as a statement of general tendencies, does not allow us to give a precise
rule to predict all variants observed. The stability of /a/ as [əᵀ] following
central consonants and preceding /u/ or /uu/ in the next syllable is worthy of
comment. This variant was quite reliable for words in our corpus. One might
attempt to explain the stability of the [əᵀ] variant in this context as a
result of the tension imposed upon the vowel by conflicting   phonological
forces: fronting by the preceding central consonant and retraction by /u/ or /uu/.

/a/ <u>Following</u> <u>central</u> <u>consonants</u>

	[ə]	[əᵀ]	[ɑ̞⁺]	[ɑ⁺]	
/tatā/	[təta̲]				elder sister
/dasā/	[dəṣa̲]				misfortune
/tapes/	[təpeṣ]				metal cooking pot
/thakae yāye/		[thəᵀke: ja⁺jeᵀ]			to cheat
/nhaku/		[n̥ə̈ᵀku̜₍₊₎]			temple (body part)
/saphuu/		[ṣ̲əᵀɸu:]			book
/cha-mha/			[t̠ṣhɑ̞⁺m̥ɑ̞⁺]		one animate being
/sataa/			[ṣ̲ɑ̞⁺tɑ̞⁺:]		shelter
/lakhạạ/				[lɑ⁺kχɑ̃⁺ə̃]	from the water

/a/ <u>Following</u> <u>peripheral</u> <u>consonants</u>

	[ə]	[əᵀ]	[ɑ̞⁺]	[ɑ⁺]	
/bajə̄ə̄/	[bəᵀd̠z̠ə̃:⁽ᵑ⁾]				tobacco
/kacā/	[kəᵀt̠ṣa̲ ~ kɑ̞⁺t̠ṣa̲]				a branch
/kaci/	[kəᵀtɕi]				raw
/kasi/			[kɑ̞⁺ɕi]		clay storage pot
/haye/	[h̥ə̈ᵀjɛ⁺]				to bring
/khane/			[kχɑ̞⁺ne⁽ᵀ⁾]		to open
/kataa/				[kɑ⁺tɑ⁺ə]	an outsider
/kakaacā/				[kɑ⁺kɑ⁺ət̠ṣa̲]	a vegetable

/a/ <u>Word-initial</u>

	[ə]	[əᵀ]	[ɑ̞⁺]	[ɑ⁺]	
/appā/			[ɑ̞⁺p:a̲]		brick
/anguu/			[ɑ̞⁺ŋgu:]		ring
/agaa/				[ɑ⁺gɑ⁺ə]	brick kiln

Figure 5. Variants of /a/ in response to the influence of preceding
consonants and following vowels.

Not unexpectedly in the opposite case (that in which /a/ follows peripheral consonants and precedes front vowels), /a/ is quite unreliable, fluctuating from word to word (and sometimes within the same word) between [∂^r] and [α^+_+]. We even have some instances of /kacā/ with the [α^+] variant! Here the interplay between the influence of back consonants, which from Figure 5 can be seen to be similar to that of word-initial position (that is, analogous to the absence of an initial consonant altogether), and that of front vowels, which is a secondary fronting influence, leads to a highly unstable situation, given the relative weakness of the two influences. In general this is the least stable and most problematic of the Newari vowels. Its phonological position within the system of vowels is perhaps analogous to its graphological position in the devanagari writing system as a kind of 'default' vowel that is unwritten except in syllable-initial position.

2.4 **Newari Short Vowels: Vulnerability to Environment and Response.** The evidence regarding vulnerability and response that has been presented in this section is summarized in Figure 6. The picture we get of short vowels is somewhat analogous to that presented in Figure 4 for long vowels. Again /i/, the vowel in the vicinity of Cardinal Vowel Number 1, is quite stable, and sufficiently invulnerable to environmental influences as to make it impossible for us to discriminate discrete variants with any degree of consistency so far as vowel quality is concerned. There are no analogues for /āe/ and /ae/ among the short vowels. /ā/ and /u/ both respond to fronting influences from preceding consonants, though the environment in which /ā/ is influenced sufficiently to allow us to identify a discrete variant with consistency is quite restricted (following /y/ in strong non-final syllables) whereas the environments in which /u/ is clearly influenced are both more numerous and more general. Again the short vowels are analogous to the long vowels at this point, though hardly identical in their response to potent environments.

The mid vowels /e/ and /o/ run counter to the rest of the system in being repelled by preceding consonants in strong syllables in a kind of dissimilatory modification. We get the lowest variants for /e/ following /y/, which is other-wise the strongest force in the system for fronting and raising a following vowel. Similarly, heavy labialization precedes the lowest variants of /o/, a reaction

Invariant /i/	Attraction to Preceding Consonant /u/

Repulsion by Preceding Consonant
/e/* /o/

| /ā/ | /a/* |

*Attraction to a following vowel

Figure 6. Newari short vowels: vulnerability and response

quite in contrast to the raising effect that /w/ exerts upon /ae/ in the long vowels, for example. Long and short vowels are parallel to the extent, however, that in both systems it is the mid vowels that run counter to the pattern of attraction that influences most of the rest of the variable vowels.

In the long vowels it was /oo/ and /aa/ that shared a feature which cut across the systems to which they belonged as far as their vulnerability to environment is concerned. In the short vowels it is /e/ and /a/ that share the cross-cutting feature. In the long vowels the cross-cutting feature was a kind of centralizing diphthongization in open syllables. In the short vowels the cross-cutting feature is responsiveness to the influence of the vowel in the following syllable. In both cases the cross-cutting feature involves an influence from a position following the affected vowel.

Short and long vowel systems also show parallelism in the fact that the back vowels are less stable than their front counterparts within each vulnerability classification. Thus /a/ is less stable than /e/, and both /u/ and /o/ show a much wider variety of variants than does /ā/. In both long and short vowels, forward attraction of back vowels by palatals and central consonants is well attested, while backward attraction of front vowels by velars or peripherals is not. The vowel quality most closely allied with the palatals, /i/, just below Cardinal Vowel Number 1, is invariant in both systems.

3. <u>Some Phonological Concomitants of Phonetic Asymmetry</u>[12]

Asymmetry in Newari vowels is not strictly a phonetic state of affairs. The phonological system itself reflects certain parallel asymmetries. We will be concerned with two of these: asymmetries in the relationship between short and long vowels, and asymmetries in the distribution of glides.

3.1 <u>Asymmetry between long and short vowels</u>. We began this paper by observing that the relationship between long and short vowels in Newari is asymmetric, in as much as there are six short vowels but eight long ones. In many cases the sources of length are synchronically irrecoverable, and with these we will not be concerned. In some cases, however, we do have some fairly clear evidence as to the sources of asymmetry between long and short vowels. One such case is that of stem-final alternation in Newari nouns.[13]

Stem-finals that have been lost in word-final position have often been preserved in non-word-final position before oblique case endings.[14] This has led to a pattern of alternation between a nominative form in which the stem final has been lost and the resultant final vowel lengthened compensatorily (sometimes with a shift in vowel quality), and an oblique form (found in animate agentive forms and in inanimate locatives and ablatives) in which the stem-final has been retained. Thus we have the nominative form, /gāā/ 'ditch', a locative form, /gālae/ 'in the ditch', and an ablative form, /gālạạ/ 'from the ditch' in which the stem-final /la/ is retained in oblique forms, but lost in the nominative where we find a compensatorily lengthened /āā/.

In connection with this alternation, the non-high vowels /e/, /o/, /a/, and /ā/ have undergone a split conditioned by differences in the lost stem-finals. With the loss of stem finals beginning with /c/, /j/, /s/, or /y/, a final /e/ vowel becomes /ee/, a final /o/ becomes /wae/, a final /a/ becomes /ae/, and a final /ā/ becomes /āe/.[15] An example of each of these can be found in Figure 7.

Certain things are worthy of special mention here. First, only the affricates /c/ and /j/, the fricative /s/, and the palatal glide /y/ are responsible for the palatally attracted members of the split. None of the other finals (and our corpus includes /ma/, /na/, /nha/, /di/, /li/, /ti/, /thi/, /la/, /ta/, /tha/, /da/, /ra/, /ka/, /kha/, /ha/, /wa/, and /pa/ as examples of lost finals for nouns at this writing) produce this effect. We have no examples of either of the two high vowels /i/ or /u/ before lost finals in /c/, /j/, /s/, or /y/.

Oblique form retaining stem final	Nominative form with lost final and compensatory lengthening			
	lost finals in /c/, /j/, /s/, /y/	other lost finals		
/i/ kilaa		/ii/	kii	insect
/e/ desaa	/ee/ dee			country
dewaa		/yaa/	dyaa	deity
/ā/ thāsaa	/āe/ thāe			place
gālaa		/āā/	gāā	ditch
/a/ phasaa	/ae/ phae			wind
lakhaa		/aa/	laa	water
/o/ bhojaa	/wae/ bhwae			feast
kholaa		/oo/	khoo	hoof
/u/ saphulii		/uu/	saphuu	book

Figure 7. Sources of asymmetry as seen in stem-final alternation in Newari Nouns: The non-high-vowel split, conditioned by palatal attraction.

Secondly, the phonetic effect is to produce two additional long <u>front</u> vowels. The split applies to four vowels, and if /e/ is represented as /ya/ and /o/ as /wa/ as in Hale and Hale, 1969, the effect of palatal attraction can be seen as a parallel shift for the vowels concerned, as in Figure 8.

Oblique forms	Lost finals in /c, j, s, y/	Other lost finals
/i/		/ii/
/ya/	/yae/	/yaa/
/ā/	/āe/	/āā/
/a/	/ae/	/aa/
/wa/	/wae/	/waa/
/u/		/uu/

Figure 8. Representation of the non-high vowel split in an alternate transcription.

It is probably worth underlining the observation that it is palatal attraction that is likely to have been responsible for the asymmetry between long and short vowel systems in Newari. If velar or peripheral attraction had been the prime mover we might very well have had quite a different system.

Thirdly, in the forms which retain stem finals, only two vowels survive, /a/, the weakest or most vulnerable in the whole system, and the invulnerable vowel, /i/. The invulnerable vowel survives primarily following /u/, or in an alternation involving /au/.[16]

Another morphological source for the asymmetric long vowels can be found in Newari verbs. The vowels /ae/ and /āe/ can be found in the future conjuncts of Class II verbs with the stem vowels /a/ and /o/, in the future conjuncts of Class III verbs, and in the causative stems of Class III and Class IV verbs. These forms have been discussed in some detail in Hale, 1971b, 1973, Sresthacharya, 1976, 1981, Kölver and Kölver, 1978, Kansakar, 1979, 1982, and Malla, 1981.

3.2 **Asymmetry in the distribution of glides.** The glides /y/ and /w/ have contrasting patterns of asymmetric distribution. There seems to be no restriction on the sequences of consonants followed by glides in Newari. The restrictions that lead to asymmetric distribution arise, rather, from the fact that certain vowels are quite selective about the glides that can precede them.

There are sequences which are not found, and are apparently not possible: /w/ does not precede /u/ or /uu/ and /y/ does not precede /i/ or /ii/.

At the other extreme there are sequences that are freely allowed, in which the presence of a glide is clearly contrastive with its absence, and the choice as to whether a glide will occur or not is entirely lexical. Thus /w/ is found to precede /i/, /ii/, /ā/, /āā/, /ae/ and /āe/ in an entirely straightforward manner and /y/ is found to precede /u/, /uu/, /ā/, /āā/, and /āe/ in the same way. Examples are easily found (/wįį/ 'mad woman', /lwiike/ 'to discover', /mwike/ 'to cremate', /mwāā/ 'alive', /lwake/ 'cause to fight', /swāā/ 'flower' /lwae/ 'disease', /mwāe/ 'banana'; /lyune/ 'behind', /lyuu waye/ 'to chase', /syāla/ 'marrow', /lyāā/ 'account, computation', /lyāe-mha/ 'young man').

Between these two extremes the remaining glide-vowel sequences constitute marginal cases, either restricted to unassimilated loans or to specific morphological forms, or to cases of doubtful contrastive status, and these sequences are among

the most problematic in all of Newari phonology. The vowels are the
three short vowels /e/, /o/, and /a/, and the four long vowels /ee/,
/ae/, /aa/, and /oo/. Figures 9 and 10 summarize the situation.

Figure 9. Phonological status of /w/ before vowels.

Figure 10. Phonological status of /y/ before vowels.

The major problem with sequences consisting of a glide followed by a mid
vowel is that evidence for contrast is weak. Within non-loan vocabulary there
is no really convincing evidence of contrast between /ya/ and /e/ or between
/wa/ and /o/. For this reason /e/ and /o/ were not included as phonemes in
Hale and Hale, 1969. Similarly, there is little evidence of contrast between
/yae/ and /ee/, and /oe/ and /wae/ appear to be nothing more than two possible

representations of the same sound sequence. If one were to limit /e/ to the second position in digraph representations of unit phonemes and if one were to eliminate /o/ altogether, it would be possible to eliminate the marginal areas as in Figures 11 and 12.

```
┌──────────────────────┐  ┌──────────────────────┐
│    /i, ii/           │  │    /u, uu/           │
│ W  UNRESTRICTED      │  │  W  NOT  POSSIBLE    │
│    /ae/              │  └──────────────────────┤
│                         │                      │
│    /āe/      /ā, āā/  │       /a, aa/          │
└─────────────────────────────────────────────────┘
```

Figure 11. Phonological status of /w/ if /e/ and /o/ are replaced by /ya/ and /wa/ respectively.

```
┌──────────────────────┐  ┌──────────────────────┐
│  Y  NOT  POSSIBLE    │  │  Y  UNRESTRICTED     │
│     /i, ii/          │  │     /u, uu/          │
└──────────────────────┤  │                      │
│     /ae/             │                         │
│                      │                         │
│     /āe/     /ā, āā/ │       /a, aa/           │
└─────────────────────────────────────────────────┘
```

Figure 12. Phonological status of /y/ if /e/ and /o/ are replaced by /ya/ and /wa/ respectively.

Once /e/ and /o/ are excluded from the system as independent unit phonemes, however, certain further consequences follow so far as the distribution of glides is concerned. If we also exclude the possibility of having a sequence of two glides within a syllable (/yy/, /ww/, /yw/, /wy/) then the sequences of Figure 13 are taken to be phonologically impossible. The evidence for retaining /e/ and /o/ as unit phonemes in the system is thus intricately intertwined with the status of glide-vowel sequences. In evaluating the relative merits of the system pictured in Figures 11 and 12 in comparison with that of Figures 9 and 10, the status of the sequences listed in Figure 13 is rather crucial, as is the contrastive status of the pairs /ya/ and /e/, /wa/ and /o/, /yae/ and /ee/, and /wae/ and /oe/. If

these pairs must be distinguished in a phonological transcription, or if certain of the sequences in Figure 13 must be represented, then these facts constitute good reasons for retaining /e/ or /o/ or both as unit phonemes.

Transcription with /e/ and /o/ excluded			Transcription with /e/ and /o/ retained
yya	equivalent to		ye
yyae	equivalent to		yee
ywa	equivalent to		yo
ywaa	equivalent to		yoo
wya	equivalent to		we
wyae	equivalent to		wee
wwa	equivalent to		wo
wwaa	equivalent to		woo

Figure 13. Sequences taken to be phonologically impossible once /e/ and /o/ have been excluded from the system.

We consider now the evidence for crucial contrasts within the system.

/e/ vs. /ya/. Here one finds words such as /yela/ 'was fond of', in which the cumulative effect of palatal repulsion in strong syllables and the lowering pressure of the past disjunct ending, /a/, produces a phonetic form, [jəlɑ⁺], which could be interpreted as /yala/ if one chose not to recognize the cumulative effect. This, then, could be cited as a minimal pair with /yela/ 'Patan', the only such pair we have found.

One also finds such Sanskrit loans as /sate/ 'truth' which have a more learned pronunciation, phonologically representable as /satya/. The contrast between /e/ and /ya/ is certainly of sociolinguistic relevance in such forms, and may even need some kind of representation in a dictionary, but does not yet constitute lexical contrast.

/e/ vs. /ye/. The glide /y/ appears to be marginally contrastive before /e/. In word-initial position there is a set of words consistently pronounced with initial palatal glides: /yeko/ 'much, many', /yẹ/ 'Kathmandu', /yemi/ 'a

Kathmandu-ite', /yela/ 'Patan', /yei/ 'will like', /yene/ 'to carry away'.

There is a second set of words in which the initial palatal glide /y/ fluctuates with its absence[17]: /yek/∿/ek/ 'one', /yẹdyaa/∿/ẹdyaa/ 'Indra Jatra', /yekkā/∿/ekkā/ 'most beloved', /yecu/∿/ecu/ 'spotless, clean', /ye cāye/∿ /e cāye/ 'to be in heat'.

In a third set we found one word in which the palatal on-glide is consistently absent: /e/ [ʔe] 'Oh!', a word used both as vocative particle and as an exclamation of surprise. There is also a word, pronounced by Kansakar as /imi/ but by Tuladhar as /eme/ [ʔeme] 'their'.

These three sets constitute the thread of evidence by which the contrastive status of /y/ before /e/ in word-initial position is supported, thus far in our research. If the words in these three sets are to be distinguished phonemically, the system will need to be able to distinguish /e/ from /ye/, in word-initial position.

Word-medially the glide /y/ occurs initially in weak syllables in slow-speech citation forms of Class II and III verbs: /yāye/ 'to do', /haye/ 'to bring', /juye/ 'to become'. In this position /y/ contrasts with other consonants, though not with its own absence in any simple way[18].

Whether /y/ occurs contrastively following a syllable-initial consonant and preceding /e/ is questionable. We have no minimal pairs to show contrast for /y/ in this position. What we have are patterns more like a continuum than like discrete sets of variants. Though illustrations can be given for three general areas of the continuum, we have not come up with a satisfactory phonological characterization of the environments that condition the occurrence of a given example at a given point along the continuum.

At one end of the continuum strong initial syllables are reliably realized with palatal on-glides before /e/: /nene/ 'to ask', /nelii/ 'will be tired'.

Further along the continuum the occurrence of palatal on-glide fluctuates freely with its own absence from utterance to utterance without the speaker being aware of any variation in his pronunciation: /pepāā/ 'four flat objects', /benii/ 'will come loose', /beli/ 'dinner', /kepuu/ 'Kirtipur', /gesu/ 'weighty', /dhenii/ 'will cut'.

At the other end of the continuum /e/ is quite reliably realized without any perceptible palatal on-glide. This occurred in strong syllables of words such as

/bekār/ 'worthless', /dhecuu/ 'bent sideways', /delāsā/ 'bed sheet', /bessyā/
'prostitute', /thekdār/ 'contractor', /terae yāye/ 'to give heed to', and quite
generally in weak syllables: /nene/ 'to ask', /athe/ 'like that', /pāke/ 'ripe',
/pule/ '(I) will pay'. It is our impression that /y/ does not yet occur contrastively
in this environment.

/ee/, /ae/, /yee/, /yae/. The contrast between /ae/ and /ee/ is fairly solid,
though not supported by a large number of pairs: /dae/ 'yes, it will be', /dee/
'country', /khạẹ/ 'a Khas person', /khẹẹ/ 'egg', /bae/ 'bamboo flute', /bee/
'classifier for /gwāā/ "betel"'. The sequence /yee/ exists word-initially in free
variation with /ee/: /eeke/~/yeeke/ 'to make attractive', /ee cāye/~/yee cāye/
'to be in heat'. The sequence /yae/ is not found in contrast with /ee/ or with /yee/.
If /ee/ is allowed, the sequence /yae/ is apparently never needed.

/yo/, /yoo/, /yaa/. In native words and in well-assimilated loans we have
/yaa/: /yaamari/ 'a kind of pastry', /yaa mạ̄ạ̄/ 'dear mother', /khyaa/ 'open field',
/dyaa/ 'deity'. There are a few unassimilated loans for which /yo/ is appropriate:
/yogi/ 'yogi', and there are some speakers who have /yoomari/ 'a kind of pastry'.[19]
The constrastive status of the sequences /yo/ and /yoo/ are thus still quite marginal.

/o/, /wa/, /wo/. No contrast has been observed between /wa/ and /wo/ and the
evidence for contrast between these and /o/ is quite marginal. There is one word
[ʔohoː] 'Oh!' in which /o/ occurs in syllable-initial position without a labial
approximant on-glide. This one word is the evidence we have for contrast between
initial /o/ without labial on-glide and the initial /o/ with an on-glide which we
represent here as /wo/: /wohaa/ 'silver', /wo/ 'that', /wola/ '(he) came', /wona/
'(he) went'. No contrast at all has been observed among the long counterparts /oo/,
/waa/, and /woo/.

The labial glide does not appear to contrast with its absence following
syllable-initial consonants. There are consonants such as /r/ and /y/ which, though
labialized before /o/, seem to preclude any audible labial on-glide: /roog/ 'disease'
/yogi/ 'a yogi'. The labial stops have a labial fricative release before /o/: /polā/
'(I) pealed', /phosi/ 'a copper cooking pot', /bosā/ 'item on display', /bhojae/
'at the feast'. Following most other consonants the labial on-glide fluctuates in
salience, fluctuating at times with its own absence.

/we/, /wee/, /wae/. We have no examples of /wee/ and only one of /we/, in the
loan word, /dwes/ 'hatred'. There are, by contrast, many examples of /wae/:
/bhwae/ 'feast', /lwae/ 'disease', /chwaelā/ 'boiled meat', /mwạẹ dyāā/ 'twisted',
/pwaelā/ 'name of a winter month', /wạẹ/ 'madman'.

In interpreting these data we see two alternatives, a profligate solution which includes /e/ and /o/, and a parsimonious solution which excludes them. The cost of accepting the parsimonious solution includes the following: 1. The difference between learned and non-learned pronunciations of Sanskrit words such as /satya/ 'truth' cannot be represented. 2. The absence of palatal on-glide in the exclamation /e/ 'Oh!' cannot be represented. 3. The fluctuation of the initial palatal glide with its absence in words like /ek/~/yek/ 'one' cannot be contrasted with the absence of such fluctuation in words like /yeko/ 'many, much', /yene/ 'to carry away'. 4. The pronunciation of a few unassimilated loans such as /yogi/ 'a yogi' cannot be accurately represented, and the variant pronunciation /yoomari/ 'a kind of pastry' will not be represented in contrast to the more usual /yaamari/. 5. The lack of a labial on-glide in the exclamation /ohoo/ will not be represented. 6. The pronunciation of the loan word /dwes/ 'hatred' will not be represented. The cost of accepting the profligate solution is the large number of unused glide-vowel sequences, and the marginal status of glides in the areas shown in Figures 9 and 10.

If what we can observe here on the basis of synchronic evidence is part of a diachronic shift from a system of four short and six long vowels to a system of six short and eight long vowels, then we would expect to find more and more of the currently non-attested glide-vowel sequences made use of as time goes by. The shift from /yaamari/ to /yoomari/ 'a kind of pastry' could be one example of a move to make greater use of the full range of contrasts available within the profligate system.

Asymmetry of the type we have examined synchronically for Newari may be symptomatic of a phonological system on the verge of (or just over the verge of) major restructuring. Should such restructuring proceed, completely justifying the more profligate solution, it would be possible to view the development as one in which the glides /y/ and /w/ played a leading 'political' role in winning phonological independence from the mid vowels /e/ and /o/ respectively. At this point in time /y/ has moved further than /w/ in attaining this coveted distributional status, a fact that once again underlines the significance of the palatal position as a position of power in Newari phonology.

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<u>Footnotes</u>

[1] Work on this paper was initiated late in 1975 by L. C. Friedman, T. R. Kansakar, and E. A. Hale. Shortly thereafter, J. Tuladhar also joined the project. During the first few months, regular working sessions were conducted in which very careful attention was devoted to the narrow transcription of some 250 strategically chosen examples out of a corpus of some 12,000 words in a draft of a dictionary being compiled at the time by Hale and Thakurlal Manandhar. An effort was made to achieve the finest phonetic discrimination of vowel properties that could be consistently maintained and agreed upon by Friedman and Hale for each of the Newari vowels. This involved a fair amount of sorting and re-elicitation of examples from working session to working session. Friedman's training and competence in the British tradition of Cardinal Vowels was of utmost benefit to the project during this stage, as was the active participation of Kansakar and Tuladhar as native speakers of Newari and participating linguists.

In July of 1976 Hale completed a draft summarizing the findings of the project, a draft which left many questions unanswered. Friedman then completely reworked the materials and came out with a second draft in December, 1976, which was an improvement over Hale's first attempt, yet one with which she was still not entirely satisfied. This draft was given to Hale for further polishing. At this stage the materials still seemed messy and intractable. Newari, we felt, should be a beautiful example of something, but we still lacked the integrating insight that would make sense of the massive asymmetry we had been looking at for so long.

During 1980 Hale, working on discourse, was finding the notion of 'pecking order' useful in explaining departures from norms in discourse. 'Higher' systems were seen to influence the manifested structure of 'lower' systems in a hierarchy of discourse systems. It was not until November 1982 that Hale realized the usefulness of this

Footnotes (Continued)

view of power, influence, and vulnerability in making sense of the asymmetries of the Newari vowel system. The phonetic data are those of the earlier drafts. The interpretations made in terms of vulnerability, potent environments and the like are Hale's. This paper is a slightly expanded version of a paper presented by Hale and Kansakar to the Third Annual Conference of the Linguistic Society of Nepal, November 27, 1982 on the Kirtipur Campus of Tribhuvan University.

[2]Examples given between slant lines are in the 'profligate' phonemic transcription, having six short and eight long vowels. Examples cited within square brackets are phonetic. Phonemically, Kathmandu Newari has four series of consonants, a voiceless series /p, t, c, k, s/, an aspirated series /ph, th, ch, kh/, a voiced series /b, d, j, g, m, n, l, r/, and a breathy series /bh, dh, jh, gh, h, mh, nh, lh, rh/. To the voiced series could be added a velar nasal symbolized as /nġ/ as a marginal phoneme in words such as /ranġ/ 'color'. In addition there are two glides /w/ and /y/. Vowels contrast for length (long vs. short) and for nasality (nasal vs. oral). On the 'parsimonious' solution to the vowel system there are four short vowels /i, ā, a, u/ and six long vowels /ii, ae, āe, āā, aa, uu/. The 'profligate' solution adds to this the short vowels /e, o/ and the long vowels /ee, oo/. There are six diphthongs or complex syllabic nuclei /ei, ai, āi, eu, au, āu/.

Phonetically, the symbols used for vowels are those of the Cardinal Vowel System together with the following diacritics: [⊤] tongue position lowered from that of the Cardinal Vowel symbol which precedes the diacritic, [⊥] tongue position raised, [_] tongue position retracted, [₊] tongue position advanced (fronted), [..] breathy voice quality, [~] nasalization. Certain 'floating' symbols have been used: [ə] to represent a mid central quality, [æ] to represent a low front quality between Cardinal Vowel Number 3 and Cardinal Vowel Number 4, and [ɷ], a quality lower, more advanced, and less rounded than Cardinal Vowel Number 8. The use of [ɑ⊥] and [ɒ⊥₊] to represent low back vowels with labial involvement is perhaps questionable. But the labial involvement is slight, sometimes only a pursing of the lower lip, and in the case of [ɒ⊥₊] at times totally absent. The alternative symbol [ɒ] , being a little more clumsy was avoided for that reason.

The symbols used to represent consonants are based on the International
Phonetic Alphabet. A detailed study of Kathmandu Newari consonants would
require a separate paper. The detail recorded for consonants is considerably
less than recorded here for vowels. We are aware, for instance, that there is
a fronted [ꝁ] , a backed [ꝁ] , and a non-front, non-back [k] variant of /k/,
but since we have not always managed to record the precise articulation of /k/
in every instance, [ꝁ] is not necessarily to be read as the non-front, non-back
variant. [o] is used to mark voicelessness, [..] breathiness, [=] post-
alveolar (apical) articulation, [ω] labialization, [j] palatalization.
Breathy stops are characterized by a delayed onset of breathy voicing, and
appear to have a voiceless onset. There are also consonants that are unstable
in intervocalic position. Thus intervocalic /b/ is sometimes [b] and
sometimes [β]. In spite of the fact that there is a phonetic difference
between word-initial /p/ and /ph/ before /o/ and /u/, we have not succeeded
in representing this difference adequately in the phonetic transcription.
This paper does not pretend to solve the many problems that remain in the
Newari consonants. A further study is urgently needed.

[3]In the early sessions a larger number of variants were distinguished than
could be consistently maintained in the later sessions. Thus in early sessions
a slightly more open variant of /ii/ was noted in words such as /phogįį/
'beggar', and /nhį nhįį/ 'day by day'. In later sessions the lower variant
could not be consistently distinguished and was excluded as a recognizable variant.

[4]The close relation that exists between /u/ and /w/ in Newari would also
support the view that in the absence of a preceding peripheral consonant, /uu/
would get treated as itself a 'peripheral' articulation as opposed to /y/ and
/i/ which would be 'central' articulations in this sense.

[5]According to Kashinath Tamot, the historically motivated agentive form
of /doonąą/ would be /dohąą/.

Footnotes (Continued)

[6]The difference between /khẹẹ/ 'egg' (cited in Section 1.3) and /khạẹ/ 'a Khas person' has its primary phonetic realization in the consonants, since the vowel qualities are quite close, especially when the two words are not uttered in sequence. In the pronunciation of many speakers, consonants preceding /ae/ are quite strongly velarized. In the speech of Kansakar, however, the consonants are not strongly velarized and the vowel quality shows instability in going close in syllables other than those with a /w/.

[7]See footnote 5.

[8]The vowels /i, e, ā/ and their long partners /ii, ee, āe, and āā/ are considered non-back.

[9]It would be awkward to posit the realization of /oo/ within closed syllables as the norm, since this is almost exclusively a loan pattern. The 'open falling' pattern of Figure 4 would then be the best candidate for 'default quality', and the explained variant would be the higher quality in these cases as well.

[10]In the first phase of the work a slightly more open variant was noted in words such as /pire yāye/ 'to nag', /ajimā/ 'grandmother goddess', /kadam-sị/ 'a kind of wood', /nhị nhịị/ 'day by day'. In the second phase, however, this lower variant could not be consistently distinguished and has been excluded as a recognizable variant.

[11]Interestingly enough, /ae/ acts like a back vowel in this respect, a fact that is not really surprising in view of what /ae/ does to preceding consonants in strong syllables as illustrated by the pair, /khạẹ/ 'a Khas person', /khẹẹ/ 'egg'. (See footnote 6.)

[12]This section was written by Hale, drawing on materials in a dictionary of some 12,000 entries compiled by Hale and Thakurlal Manandhar.

[13]This phenomenon has been noted elsewhere. See for example, Hale, 1971a; Kölver and Kölver, 1975; K. P. Malla 1981: 34-36.

Footnotes (Continued)

[14]The view that loss is what we are dealing with and not arbitrary addition is reinforced by evidence from conservative dialects such as those of Tauthali and Dolakha, which retain old finals in the nominative forms.

[15]The process is morphologically more transparent if /o/ is represented as /wa/ and /e/ as /ye/. See Figure 8 below.

[16]We have only three examples in which final /i/ survives after some vowel other than /u/: /lhāā, lhāti-/ 'hand'; /nhyaakhaa,nhyaakali-/ 'obverse side (of coin)'; /lewoo, lewoti-/ 'male paramour'.

[17]Thakurlal Manandhar maintains that the presence of an initial palatal glide in these words is characteristic of learned pronunciation, and the absence of such marks non-learned pronunciation.

[18]The coalescence of /yāye/ 'to do' to /yāe/ in rapid speech is not an example of this. In the first place the two pronunciations represent the same lexical item and thus do not establish lexical contrast. Secondly, /yāye/ is bisyllabic and contains two vowels, whereas /yāe/ is monosyllabic with /āe/ representing a unit phoneme. As it stands, the phonemic system of transcription has no way of representing a disyllabic sequence in which /ā/ ends one syllable and /e/ begins the next, and thus far there has been no need to represent such a sequence.

[19]Hale has observed this, for example, in the speech of Kashinath Tamot.