Kumauni Sound System: An Analysis of Segmental Sounds

SWETA SINHA, PHD
JAWAHARLAL NEHRU UNIVERSITY (JNU), NEW DELHI

Abstract: Kumauni is a lesser known Indian language of the Indo- Aryan language family bearing the language code ISO 639-3. It is spoken mainly in the sub-Himalayan regions of India. Having failed to attract thorough linguistic lime light the language is on the verge of anonymity. The present paper is an attempt to describe the segmental sound system, the pattern of syllabification and some important phonological phenomena of the language. The noteworthy findings of the paper are: there are a total of sixteen vowels (ten oral and six nasal), thirty six phonemic consonants and fifteen diphthongs. Vowel nasalization and consonantal aspiration are phonemic in nature. There are nine monosyllabic patterns: /CVC/ being the most common. The language manifests phonological phenomena like vowel harmony, voicing, replaciveness, apotheosis, assimilation and vowel alternation.

Key words: Indo- Aryan Pahari, ISO 639-3, segmental sounds.

1.0 Introduction

The region of Kumaun roughly comprises of three North-eastern Himalayan districts of Uttarakhand state of India namely, Almora, Pithoragarh and a large portion of Nainital. It lies between 28º 43’ 55” and 30 º 49’ north latitude and 78 44’ 33” and 81 5’ 15” east longitude. Its two boundaries constitute two international boundaries of India. In the north, it has a common boundary with Tibet and in the east with Nepal, separated by R. Kali.

Geographically, the region has two major surface features, i.e., the Himalayas in the north and the foothill belt of Terai and Bhabar to the south, the heights varying from over 5000 mts to 180 mts above sea- level. The Himalayas are roughly divisible into three zones, the sub- Himalayas, the lesser Himalayas and the great Himalayas usually consisting of snow- covered peaks.

The diversity of land feature in Kumaun has exercised a strong influence on the pattern of its population. The mountainous part accounting for more than 80% of the total area has only two-third of the total population. According to the Census by the Govt. of India (2011), the land area and the population of these three districts have been tabled as under:

<table>
<thead>
<tr>
<th>District</th>
<th>Area (in sq. km.)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almora</td>
<td>7,023</td>
<td>621,927</td>
</tr>
<tr>
<td>Nainital</td>
<td>6,729</td>
<td>955,128</td>
</tr>
<tr>
<td>Pithoragarh</td>
<td>7,217</td>
<td>485,993</td>
</tr>
</tbody>
</table>

(Table 1)
2.0 Research Methodology

Since the work pertains to the phonetic and phonological description of the Kumauni language, so, to begin with, I was needed to collect data. The data has been collected from the native speakers of the language. The number of subjects is twenty ranging between the age group of 15 yrs and 65 yrs. Data collection comprised of two sources: primary source (by means of silent observation, participant observation and questionnaire method) and secondary source. They were also asked to provide the Kumauni equivalents of around 500 words comprising the basic word list. (Abbi, 2001)

This was then followed by analysis. The main focus of my work is to find out the phonemic and phonetic sounds of Kumauni, to provide a detailed description of the vowels and the consonants of the language and to investigate the syllable structure of the language and to also account for any possible phonotactic constraints.

3.0 Kumauni Sound System

The main aim of this paper is to describe the sound system of Kumauni. This type of task becomes even more important when the language has failed to get any type of major linguistic lime light with regards to the examination of the phenomena pertaining to its sound system. The paper then progresses with the analysis of consonants both phonetic and phonemic. The section dealing with vowels includes both oral as well as nasal vowels. The last section of the paper summarizes the important findings of the research.

3.1 Phonemes

3.1.1 Consonants

Close analysis of data has yielded in the tabulation of the following consonantal phonemes. The minimal pairs for similar phonemes have been provided to establish the phonemic property of the consonants. For better comprehension the sounds have been presented on a chart keeping with the IPA¹.

<table>
<thead>
<tr>
<th>Bilabial</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
</table>

¹ In the IPA the consonants sounds are classified on the basis of the place and manner of articulation with respect to the human vocal tract.
<table>
<thead>
<tr>
<th>Plosive</th>
<th>(\pi)</th>
<th>(\beta)</th>
<th>(\tau)</th>
<th>(\delta)</th>
<th>(\square)</th>
<th>(\kappa)</th>
<th>(\gamma)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\pi^H)</td>
<td>(\beta^H)</td>
<td>(\tau^H)</td>
<td>(\delta^H)</td>
<td>(\square^H)</td>
<td>(\kappa^H)</td>
<td>(\gamma^H)</td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>(\Sigma)</td>
<td>(\eta)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricate</td>
<td>(\tau\Sigma)</td>
<td>(\delta\Sigma)</td>
<td>(\tau\Sigma^H)</td>
<td>(\delta\Sigma^H)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>(\mu)</td>
<td>(\nu)</td>
<td>(\nu^H)</td>
<td>(\lambda)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trill</td>
<td>(\rho)</td>
<td>(\rho^H)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td>(\lambda)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximant</td>
<td>(\omega)</td>
<td>(\varphi)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The Phonemic chart of Kumauni consonants (Chart 1)*

The minimal and the sub-minimal pairs

- \(\pi/\pi^H\) \(\rightarrow\) (/\(\pi\)-\(\tau\)\)/ (thin) \(\rightarrow\) (/\(\pi\H\)-\(\lambda\)/ (fruit)
- \(\beta/\beta^H\) \(\rightarrow\) (/\(\beta\)-\(\beta\)/ (left) \(\rightarrow\) (/\(\beta\H\)-\(\beta\)/ (eye-brow)
- \(\pi/\beta\) \(\rightarrow\) (/\(\pi\)-\(\pi\)/ (drink) \(\rightarrow\) (/\(\beta\)-\(\beta\)/ (seed)
- \(\piH/\betaH\) \(\rightarrow\) (/\(\piH\H\)-\(\lambdaH\)/ (nose-pin) \(\rightarrow\) (/\(\betaH\H\)/ (younger brother)
- \(\tau/\tau^H\) \(\rightarrow\) (/\(\tau\)-\(\tau\)/ (tooth) \(\rightarrow\) (/\(\mu\tauH\)/ (up)
- \(\delta/\delta^H\) \(\rightarrow\) (/\(\delta\)-\(\delta\)/ (far) \(\rightarrow\) (/\(\delta\H\)/ (dust)
- \(\tau/\delta\) \(\rightarrow\) (/\(\tau\)-\(\delta\)/ (wet) \(\rightarrow\) (/\(\delta\)-\(\delta\)/ (day)
- \(\delta/\delta\) \(\rightarrow\) (/\(\delta\)-\(\delta\)/ (pulses) \(\rightarrow\) (/\(\lambda\)-\(\lambda\)/ (tree)
- \(\square/\square^H\) \(\rightarrow\) (/\(\square\)-\(\square\)/ (to lie down) \(\rightarrow\) (/\(\lambda\H\)/ (stick)
<table>
<thead>
<tr>
<th></th>
<th>(black)</th>
<th>(pond)</th>
</tr>
</thead>
<tbody>
<tr>
<td>γ η</td>
<td>/γ α/</td>
<td>(to sing)</td>
</tr>
<tr>
<td>κ γ</td>
<td>/κ α/</td>
<td>(who)</td>
</tr>
<tr>
<td>κ Η γ</td>
<td>/κ Η ν ν/</td>
<td>(blood)</td>
</tr>
<tr>
<td>τ Σ τ Ω</td>
<td>/π Α Η Τ Σ/</td>
<td>(five)</td>
</tr>
<tr>
<td>μ Δ</td>
<td>/κ α μ/</td>
<td>(work)</td>
</tr>
<tr>
<td>μ / μ Η</td>
<td>/μ α/</td>
<td>(necklace)</td>
</tr>
<tr>
<td>ν</td>
<td>/δ Η ν/</td>
<td>(day)</td>
</tr>
<tr>
<td>ν / Ν</td>
<td>/δ Η Ω ν/</td>
<td>(moon)</td>
</tr>
<tr>
<td></td>
<td>/Σ Ι/</td>
<td>(sew)</td>
</tr>
<tr>
<td>ρ / γ</td>
<td>/δ Η ε → ρ/</td>
<td>(fever)</td>
</tr>
<tr>
<td>γ / Η</td>
<td>/κ Α γ/</td>
<td>(room)</td>
</tr>
<tr>
<td>λ / γ</td>
<td>/υ λ/</td>
<td>(ERG.)</td>
</tr>
<tr>
<td>λ / Ρ</td>
<td>/μ Θ λ/</td>
<td>(dirt)</td>
</tr>
<tr>
<td>Σ / η</td>
<td>/Σ α/</td>
<td>(wife’s brother)</td>
</tr>
<tr>
<td>ϕ / Ω</td>
<td>/δ Φ Ε → π Τ/</td>
<td>(god)</td>
</tr>
<tr>
<td></td>
<td>/Α Η</td>
<td>(shrub)</td>
</tr>
<tr>
<td>δ / Η</td>
<td>/κ Η ε → Χ ε γ/</td>
<td>(sour)</td>
</tr>
<tr>
<td>δ Η / Η</td>
<td>/Η α@ κ Α/</td>
<td>(a type of utensil)</td>
</tr>
<tr>
<td>δ Η / Η</td>
<td>/γ α δ Η/</td>
<td>(lather)</td>
</tr>
<tr>
<td>τ Σ / δ Η</td>
<td>/Σ ε → τ Ω Σ Α/</td>
<td>(honest)</td>
</tr>
<tr>
<td>τ Σ Η / δ Η</td>
<td>/β α τ Σ Η/</td>
<td>(cow’s young one)</td>
</tr>
</tbody>
</table>
Observations

- There are thirty-six consonantal phonemes in Kumauni.
- Aspiration of consonantal sounds is very common and they are phonemic in nature.

<table>
<thead>
<tr>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are thirty-six consonantal phonemes in Kumauni.</td>
</tr>
<tr>
<td>Aspiration of consonantal sounds is very common and they are phonemic in nature.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Phonetic Chart of Kumauni Consonants (Chart 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>Four new sounds have been included in the phonetic chart- [M], [σ], []] and [φ].</td>
</tr>
<tr>
<td>There are a total of forty consonantal sounds in Kumauni.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>/μ/ ⟷ [M]/ ____{+ bilabial}</td>
</tr>
</tbody>
</table>
[σ] and [Σ] are in free variation. However, the occurrence of [Σ] is more than that of [σ].

The instances of free variation are: (a) /σφα®π/; /Σφα®π/ (snake) (b) /με→σαλ/; /με→Σαλ/ (spices) (c) /βΗΘ®σ/; βΗΘΣ/ (buffalo)

At all the positions, that is, initial, medial and final the free variation can be seen.

- /ν/ → [/]/ ___{+ palatal}
- The occurrence of [φ] is not actually environment bound but because of the influence of other languages like English it has found a place in the language and at times is used instead of [πΗ] though the use is very limited. This is also a case of free variation and is used widely among the educated lot.

### 3.1.2 Vowels

<table>
<thead>
<tr>
<th>CENTRAL, UNROUNDED</th>
<th>FRONT, UNROUNDED</th>
<th>BACK +/- ROUNDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>ι</td>
<td>ι,ι®</td>
</tr>
<tr>
<td>LOWER MID</td>
<td>ι</td>
<td>Υ</td>
</tr>
<tr>
<td>HIGHER MID</td>
<td>ε</td>
<td>ο,ο®</td>
</tr>
<tr>
<td>MEAN MID</td>
<td>↔, ↔®</td>
<td>. , ®</td>
</tr>
<tr>
<td>HIGHER LOW</td>
<td>Θ,Θ®</td>
<td></td>
</tr>
<tr>
<td>LOW</td>
<td>α, α®</td>
<td></td>
</tr>
</tbody>
</table>

*The Vowel Chart: including nasalization (Chart 3)*

The vowel minimal pairs are:

| /υ                        | /↔Νγυ/                | (gooseberry)        | /↔Νγυ/                | (finger)                      |
| /ν/                       | /τιν/                 | (three)             | /τιν/                 | (wet)                         |
| /ε/Θ                     | /κε/                  | (question)          | /κΘ/                  | (say)                         |
| /υ/Υ                     | /Συ/                  | (hear)              | /ΣΥ/                  | (gold)                        |
| /ο/                      | /βολ/                 | (say)               | /βΗ λ/                | (good)                        |
| ↔/α                      | /γ↔/δΖα/              | (bald)              | /γα/δΖα/              | (a type of plant)             |

The following minimal and sub-minimal pairs establish the fact that the nasalization of the Kumauni vowels is phonemic.

| /α/α®                    | /κατΗ/                | (moss growth)       | /κατΗ/                | (story)                        |
| /υ/υ®                    | /υλ/                  | (owl)               | /υλ/                  | (wool)                         |
Conclusion

- There are ten oral vowels in Kumauni and they are phonemic in nature.
- There are six nasalized vowels in this language.
- The phenomenon of nasalization is phonemic in Kumauni. The minimal pairs presented above confirm this.

(a) Vowel Aspiration

The vowels of Kumauni show nasalization as well as aspiration. The feature of nasalization is phonemic and it has already been established with the help of minimal pairs. In case of aspiration we have the following data:

- [µoH] (honey)
- [τΣαH] (tea)
- [β Ηt ] (bull)
- [αH] (come)
- [γΘH] (abuse)

For [αH] and [ΘH] we have minimal pairs: /αH/ (come); /α/ (HON + come)

/γΘH/ (abuse); /γΘ/ (to sing)

These two sets of minimal pairs prove that the above mentioned units are phonemic. This can be the case with the aspirated forms of other vowels as well but because of the insufficiency of data it is difficult to generalize it. Also, vowel aspiration is not a very frequent phenomenon in this language so the other case can be that only these two vowels have phonemic aspirated form.
The Diphthong Chart (Chart 4)

The direction of vowel clustering in the formation of diphthongs

| LOWER MID | \( \varepsilon \nu \) | \( \alpha \), \( \alpha \) |
| HIGHER MID | \( \Theta \) | \( \Theta \), \( \Theta \) |
| MEAN MID | \( \leftrightarrow \Theta \), \( \leftrightarrow \Theta \), \( \leftrightarrow \Theta \) |
| HIGHER LOW | \( \Theta \) |
| LOW | \( \alpha\alpha, \alpha\alpha, \alpha\alpha \) |

Observation

- The three vowels /\( \alpha \)/, /\( \leftrightarrow \alpha \)/ and /\( \alpha \)/ are the part of the maximum number of diphthongs.
- /\( \alpha \)/ always occurs as the second one in the diphthong as shown by the arrow heads.
- /\( \Theta \)/ occurs as the first vowel in the diphthong and the combination is very rare.
- /\( \alpha \)/ too occurs as the second one in the diphthong.
- Kumauni shows a lot of vowel combinations or diphthongs.

The minimal and the sub-minimal pairs for the diphthongs are:

- \( \alpha\alpha/\alpha \) /\( \delta\alpha\alpha \) / (shelf made in the wall) /\( \delta\alpha \) / (the net for collecting grass)
- \( \alpha\alpha/\alpha\alpha \) /\( \kappa\alpha\alpha \) / (black) /\( \kappa\alpha\alpha \) / (crow)
- \( \alpha\alpha/\alpha\alpha \) /\( \kappa\alpha\alpha \) / (crow) /\( \kappa\alpha\alpha \) / (pond)
- \( \alpha\alpha/\alpha\varepsilon \) /\( \delta\alpha/\delta\varepsilon \) / (small net) /\( \delta\varepsilon \) / (you go. FUT.)
Conclusion

- There are fifteen diphthongs in Kumauni.
- The diphthongs do not take the word-initial position except in /uik/ and /uil/ which are formed by υ + ικ (3P.SG + GEN.) and υ + ιλ (3P. SG. M +ERG).
- The diphthongs are restricted to the middle and final position.
- The low, back, unrounded vowel /α/ and the mean-mid, central vowel /γ/ have the maximum number of diphthongs.
- The high, front, unrounded vowel /ι/ and the mean-mid, back, rounded vowel /υ/ do not occur as the first vowel of the diphthongal combination.

3.2 Consonant clusters in Kumauni

Various types of clustering are seen in consonants at all the three word positions, initial, medial and final. On a close look a pattern can be seen in this case. Based on the data collected for this purpose the types of clusters and the place of occurrence of the clusters have been tabulated in the following chart.
Consonants in the initial position of the cluster have been tabulated in columns.

Consonants in the final position of the cluster have been tabulated in row.

Position of consonant cluster in word initial, medial and final positions have been depicted as A, B and C respectively.

4.1 The phonological rules of Kumauni

1. Vowel harmony

The kind of dependency between the phonetic properties of an affix vowel and those of root vowel is referred to as vowel harmony.

[+ syll] → [a back]/ [+ syll, a back] C_v + ___

(1) * /νιµ↔ργο/ is not the accepted form for the negation of /μ↔ργο/ (die. PAST) but it is /νιµ ρο/ (did not die).

(2) For the following data we see that the application of the rules is bi-stepped.
   (a) /ρ↔νΗ↔λ/ (PAST. IMP. NEUTER)
       This is actually the underlying form for the neuter gender. With the change of gender we have,
   (b) * /ρ vΗ→λ/ (PAST. IMP. M)
   (c) * /ρΘ vΗ→λ/ (PAST. IMP. F) but because of the phenomenon of vowel harmony, the accepted forms are:
   (d) /ρ vΗ λ/ (PAST. IMP. M)
   (e) /ρΘvHΘλι/ (PAST. IMP. F).

Not just this, the phenomenon of vowel harmony can be explained with the help of the following data also. In case of the affixation of the locative case marking and ergativity marking, the process is very noticeable.

(3) β↔κΣ - ↔κ       (in the box)
    Box      LOC.
(4) γΗ↔ρ - ↔κ       (in the house)
    House    LOC.
(5) κΙταβ - κ       (in the book)
    Book     LOC.

---

<table>
<thead>
<tr>
<th>N</th>
<th>C</th>
<th>C</th>
<th>B</th>
<th>C</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>ρ</td>
<td>C</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>λ</td>
<td>C</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Chart 5)
We can see that in this case, the preceding vowel affects the vowel in the suffix. The nature of the vowel in the stem affects the vowel nature in the suffix. Let us now have a look at the following data. Similar is the case when the marker for ergativity is used as a suffix as in:

(7) ν↔ν - ↔λ (child. ERG.)
(8) υν - υλ (3P.PL.ERG.)
(9) τυμ - υλ (2P.PL.HON.ERG.)

2. Voicing

In Kumauni, it was seen that [κ] gets voiced into [γ] inter-vocally.

[κ]→[γ]/ V__V

(1) μΙκ↔—›μΙγ↔
(2) τεκ↔—›τεγ↔
(3) π↔κ↔}ωα—›π↔γ↔}ωα

3. Replacive consonants

In the process of echo-formation in Kumauni, the word initial consonant gets replaced by the glottal, fricative /η/ in its echo-formation.

(1) βԱ λ - η λ (good and all)
(2) γτ - ητ (song and all)
(3) πα | -ηα | (water and all)
(4) δΗα} - ηα} (sweeping and all)
(5) Σαγ - ηαγ (vegetables)
(6) βΗΘΣ - ηΘΣ (buffalo)
(7) β↔λδ- η↔λδ (oxen)

The phonological rule for this can be written as:

C —› [η]/# ___ (V_Co)

4. Apothesis

When a vowel is added word initially then it is called apotheosis. In the following examples from reduplication, the same process is taking place.

(1) δαν- δανΘ
(2) κκ↔ν- κκ↔ννε
The rule for this can be:

\[ O \rightarrow V / \{n\} [\text{+Redup}] + ___ \]

We see that if \( X_i \) is the root word and then if a vowel is added word finally in its reduplicant then the process shows a rightward movement. This can be explained as:

\[ X_1 \rightarrow X_i + V \text{ and} \]

\[ \text{Redup.} \rightarrow X_iX_1 \]

Here \( X_i \) is the identity word and \( X_1 \) is the reduplicant form which is formed by the addition of vowel word finally. The arrow shows the rightward movement of reduplication.

In the following case we see that exactly reverse happens. The movement of reduplication is leftwards and it can be shown as:

\[ X_1 \rightarrow X_i + V \text{ and} \]

\[ \text{Redup.} \rightarrow X_1X_i \]

This is evident in the following cases:

\[ \begin{align*}
(5) & \quad \mu\alpha\theta\nu - \mu\alpha\theta \nu (\text{slowly}) \\
(6) & \quad \tau\alpha\tau - \tau\alpha\tau (\text{hot- wet}) \\
(7) & \quad \beta \eta \tau - \beta \eta \tau (\text{many})
\end{align*} \]

\[ O \rightarrow V / [\text{retroflex stops + dental stops}] ___ \]

5. Assimilation

When two sounds combine and the resultant sound which is produced is of different nature then the process is called assimilation. One of the sounds has to be word final and the other one has to be initial sound of a word or a suffix.

In Kumauni, assimilation has been observed in vowels.

\[ \begin{align*}
(1) & \quad \sigma\tau\alpha + \leftrightarrow\lambda \rightarrow \sigma\tau\alpha\lambda (\text{Sita + ERG}) \\
(2) & \quad \beta\theta\nu + \leftrightarrow\gamma \rightarrow \beta\theta\nu\gamma (\text{child + ACC}) \\
(3) & \quad \delta\iota\lambda\lambda + \iota\kappa \rightarrow \delta\iota\lambda\lambda\kappa (\text{Delhi + LOC})
\end{align*} \]

i.e. \( V_1 \# + V_2 \# \rightarrow V_3 \)

6. Vowel alternation
In the case of reduplication, vowel alternation is very common.

(1) βυνδ- βΘνδ (drizzle)
(2) µΘνδΖ- µυνδΖ (washing utensils)

/υ/ →  [Θ] / ___ [alveolar nasal unaspirated consonant]
/Θ/ →  [υ] / ___ [alveolar nasal unaspirated consonant]

For other cases the following rule can be used:

/ , υ, υ/ →  [α] / ___ (, #)

(3) ρ — ρα (food etc.)
(4) δΖυ- δΖα (life)

5.0 THE SYLLABLE

In Kumauni, a syllable is a vocalic combination of consonants preceding or following the vocalic unit. The vowel is termed as the nucleus and the consonants are termed as margins. The consonants preceding the nucleus are termed as onset while the ones following are termed as coda. These margins can be simple consisting of two or more sound sequences. However, the complex margin in the initial or onset position is restricted to two consonants only and the same can be said for the coda position. However, such occurrences are not very common.

In the following pages I have tried to highlight the permissible combinations for onset and coda positions and the patterns of syllabic units.

5.1 Permissible Peak Margin Sequences in Monosyllabics

Some of the important observations can be summarized as following:

(i) In case of a /V/ pattern of monosyllable, there can be any oral vowel or even a nasalized vowel as for example /α/ (to come) and /ο/ (yes).

(ii) In case of the /CV/ pattern again there is no restriction in the choice of the consonants as well as vowels and the same goes for the /VC/ pattern as well.

(iii) In the triphonic unit /CVC/ there is no restriction on consonants for the onset and the coda position. The same is true for /VCC/ patterns.

(iv) In case of the /CCV/ pattern the first consonant can be anywhere as the second consonant has to be a continuant /ϕ/, /ω/ or /η/ in very rare cases.

(v) In quadraphonic cases of /CCVC/ and /CVCC/, the choice of /CC/ is the same as in the case of /CCV/ when it is in the coda position the case is not the same. In this case the other consonants also cluster.
(vi) In case of the pentaphonic syllables, the /CC/ pattern in the onset positions takes place according to (iv) where as the coda position gets the explanation from (v) which has been discussed immediately above.

(vii) The choice of consonants for the onset position when two occurs together can be represented as:

\[
\begin{array}{c|c}
\kappa & \varphi \\
\Sigma & \\
\beta \H & \\
\mu & \\
\delta & \\
\pi & \omega \\
\beta & \\
\gamma \H & \\
\tau & \\
\tau \H & \\
\end{array}
\]

(viii) The choices of consonants for the coda position when two occur together can be represented as:

\[
\begin{array}{c|c}
\nu & \pi \H \\
\Sigma & \delta \H \Sigma \\
\j & \square \H \tau \\
\lambda & \\
\mu & \tau \Sigma \\
\rho & \delta \Z \\
\pi & \beta \\
\end{array}
\]

Thus we see that in the onset position when the choice of the second consonant is very restricted, in the coda position the restriction gets nullified and we get instances of ample of consonants being used.

(ix) As far as the formation of word in Kumauni is concerned then the words are monosyllabic, disyllabic, trisyllabic, quadric-syllabic and penta-syllabic. The examples are:

- Monosyllabic  ## CVC ##
- Disyllabic  ## CVCCVC ##
- Trisyllabic  ## CVCCVCV ##
5.2 Patterns of Syllabic Units

If ‘V’ represents a syllable peak including the nasalized vowel form and ‘C’ represents the syllable margins then following are the monosyllabic patterns of the Kumauni language.

(i)  ## V ## /α/ (come)
(ii) ## CV ## /πι/ (drink)
(iii) ## VC ## /↔κΗ/ (eye)
(iv) ## CVC ## /κατΗ/ (story)
(v)  ## VCC ## /↔ν/ (egg)
(vi) ## CCV ## /δϕο/ (rain)
(vii) ## CCVC ## /δωατ/ (ink- pot)
(viii) ## CVCC ## /γ↔νδ/ (dirty)
(ix)  ## CCVCC ## /δϕ↔πτ/ (deity)

Conclusion

- Out of the nine monosyllabic patterns the frequency of the /CVC/ pattern is the maximum and that of /CCVCC/ is the minimum.
- Any of the above mentioned syllabic types may occur independently as a monosyllabic word or may function as a constituent syllable within a word having more than one syllable.

6.0 CONCLUSION

My findings regarding the Phonetics and Phonology of Kumauni can be briefly summarized as:

- There are ten oral vowels in Kumauni.
- There are six nasal vowels in Kumauni.
- Nasalization is phonemic.
- Vowel aspiration is also observed.
- There are fifteen diphthongs in the language.
- Diphthongs are not found word- initially except in /υικ/ (3P. SG. M. GEN.) and /υιλ/ (3P. SG. M. ERG.).
- The high, front, unrounded vowel [i] and the mean- mid, back, rounded vowel [e] do not make the first component of a diphthongal combination.
- There are 36 phonemic consonants.
Aspiration is very common and is phonemic in nature.

The language has several phonological rules like:
- Vowel harmony, Voicing, Replaciveness, Apothesis, Assimilation and Vowel alternation.

There are nine monosyllabic patterns.
- The frequency of /CVC/ is the highest and that of /CCVCC/ is the lowest.
- In case of the /CCV/ pattern, the first consonant can be any but the second consonant has to be a continuant. However, the occurrence of /η/ can also be cited but that can be grouped under aspiration.
- A penta-syllabic word is the longest word in the language.

Abbreviations

- 1 First Person
- 2 Second Person
- 3 Third Person
- ACC Accusative Case
- ADV Adverb
- ABL Ablative Case
- COMP Comparative
- CP Conjunctive Particle
- CONJ Conjunction
- DEMO Demonstrative Pronoun
- DAT Dative subject/Dative case
- ERG Ergative
- EMP Emphatic Particle
- FUT Future
- F Female
- GEN Genitive Case
- HON Honorific
- QUES Interrogative
- IMPER Imperative
- LOC Locative case
- M Masculine
- NEG Negative
- PEFR Perfective
- PL Plural
- PST Past
Appendix A

[THE BASIC WORD LIST A]

1. And  ρ
2. Bad  ν κ
3. Bark  β↔γ↔λ
4. Belly  λ↔δΗ ρ
5. Big  □Ηυλ
6. Claw  κΗυ□Η
7. Cloud  βαδΗο
8. Come  α
9. Count  γΙ |
10. Cut  κκύΗ
11. Day  δ5Ιν
12. Die  μΘρ
13. Dig  κΗοδ5
14. Dirty  μΘλ
15. Dog  κυκυρ
16. Drink  πι
17. Dry σΥκΗ
18. Dust δ5Ηυ©κ↔νι
19. Ear καν
20. Egg ←ν
21. Eye ο)κΗ
22. Fall λ↔πΗαφι
23. Far δ5υρ
24. Fat μ ▷Η
25. Fear | ↔ρ
26. Feather π↔NκΗυ}
27. Few μυ |
28. Fight δΖΗ↔γ }
29. Fire αγ}
30. Fish μαχΗ
31. Five πα)τΣ
32. Float βΘ
33. Flow β↔η↔μ
34. Flower πΗυλ
35. Fly Y}
36. Fog δΗυ©δΗ
37. Foot κΗυ©Η
38. Four τΣαρ
39. Freeze δΖ↔μ
40. Fruit πΗ↔λ
41. Full βΗ↔ρ
42. Give δ5ε
43. Good βΗ λ
44. Grass γΗΑ
45. Green η↔ρΙ
46. Guts ←γνη←}
47. Hair βα
48. Hand  ηα®τςΗ
49. He  νον
50. Head  μονε→Υ
51. Hear  ΣΥ|
52. Heart  κε→λδΖ
53. Heavy  γορυ
54. Here  ΙτΗα©
55. Hit  μαρ
56. Hold  πε→κε→} 
57. Horn  σι|
58. How  κε→Σ
59. Hunt  ΣΙκαρ
60. Husband  αδίμ
61. I  μΘ
62. Ice  βε→ρε→πΗ
63. If  ε→γν→ρ
64. In  -μ, - μ , - ↔μ
65. Kill  μαρ
66. Knee  γΗΥν
67. Lake  τςαλ
68. Laugh  ηΘ® )Σ
69. Leaf  πε→τςελ
70. Leftside  β ®τορνπΗ
71. Leg  κΗνεΗ
72. Lie  λε
73. Live  λιβε→ρ
74. Long  λε→μβ
75. Louse  λικΗ
76. Man  αδδίμ
77. Many  β η τς
78. Meat  ΣΙκαρ
79. Mother ἰδΖα
80. Mountain βΗφ↔υ
81. Mouth γιτΣΗ
82. Name η ☛
83. Narrow π↔τ
84. New ν
85. Night ρατΗ5
86. Nose νακ
87. Not νι©
88. Old πυρα|
89. One εκ
90. Other δ5υΣε↔ρ
91. Play κΗελ
92. Pull κΗΘ)τΣ
93. Push δ5Η↔γ
94. Rain δφο
95. Red λαλ
96. Right βΗ λ
97. Right δΘ |
98. River γα}　
99. Road βαςΗ
100. Root δΞ↔}
101. Rope ρ↔Σ
102. Rotten Σ↔}
103. Round γολ
104. Rub γΗιΣ
105. Salt λο |
106. Sand ρετ
107. Say βολ
108. Scratch κΗυρυ)Σ
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>129. Sea</td>
<td>σ↔μΥνδδ↔ρ</td>
</tr>
<tr>
<td>130. See</td>
<td>δδεκΗ</td>
</tr>
<tr>
<td>131. Seed</td>
<td>βι</td>
</tr>
<tr>
<td>132. Sew</td>
<td>Σι</td>
</tr>
<tr>
<td>133. Short</td>
<td>τΣΗ □Η</td>
</tr>
<tr>
<td>134. Sing</td>
<td>γα</td>
</tr>
<tr>
<td>135. Sit</td>
<td>βΗΘ</td>
</tr>
<tr>
<td>136. Skin</td>
<td>λ τ</td>
</tr>
<tr>
<td>137. Sky</td>
<td>←σμαν</td>
</tr>
<tr>
<td>138. Sleep</td>
<td>ΣΘ</td>
</tr>
<tr>
<td>139. Small</td>
<td>τΣΗ □Η</td>
</tr>
<tr>
<td>140. Smell</td>
<td>συΝ</td>
</tr>
<tr>
<td>141. Smoke</td>
<td>δδΗυ)</td>
</tr>
<tr>
<td>142. Smooth</td>
<td>τΣυπ }</td>
</tr>
<tr>
<td>143. Snake</td>
<td>σασπ</td>
</tr>
<tr>
<td>144. Snow</td>
<td>ηΙφ ©</td>
</tr>
<tr>
<td>145. Some</td>
<td>τΣΗο}α</td>
</tr>
<tr>
<td>146. Spit</td>
<td>τΣΗΥκ</td>
</tr>
<tr>
<td>147. Split</td>
<td>←λ→γ</td>
</tr>
<tr>
<td>148. Squeeze</td>
<td>νιτΣο }</td>
</tr>
<tr>
<td>149. Stab/ pierce</td>
<td>βΗ © κ/ ΧΗδδ</td>
</tr>
<tr>
<td>150. Stand</td>
<td>□Ηαυ »Η</td>
</tr>
<tr>
<td>151. Star</td>
<td>τδαρ</td>
</tr>
<tr>
<td>152. Stick</td>
<td>λ↔Η</td>
</tr>
<tr>
<td>153. Stone</td>
<td>πατΗ ρ</td>
</tr>
<tr>
<td>154. Straight</td>
<td>σΙδδΗα</td>
</tr>
<tr>
<td>155. Suck</td>
<td>τΣυσ</td>
</tr>
<tr>
<td>156. Sun</td>
<td>συρ←δΖ</td>
</tr>
<tr>
<td>157. Swell</td>
<td>πΗΥλ</td>
</tr>
<tr>
<td>158. Swim</td>
<td>β ©κας←μ ©</td>
</tr>
<tr>
<td>159. Tail</td>
<td>πΥτΣΗ }</td>
</tr>
</tbody>
</table>
160. That
161. There
162. They
163. Thick
164. Thin
165. Think
166. This
167. Thou
168. Three
169. Throw
170. Tie
171. Tooth
172. Tree
173. Turn
174. Two
175. Vomit
176. Walk
177. Warm
178. Wash
179. Water
180. We
181. Wet
182. What
183. When
184. Where
185. White
186. Who
187. Wide
188. Wife
189. Wind
190. Wing
191. Wipe  ποτΣΗ
192. With  δεγε
193. Woman  ΣΘίδ
194. Worm  κιτ λ
195. Yes  η@α
196. Year  β↔ρΣ
197. Brother  βΗυλι
198. Clothing  δΗι |α}
199. Cook  π↔κα
200. Dance  νατΣ
201. Eight  αιΗ
202. Hundred  σ
203. Seven  σατ5
204. Sister  βΘ|
205. Spear  βΗα
206. Twenty  βισ
207. Work  καμ

THE BASIC WORD LIST [B]

* Refers to the typical North Indian concepts
1. *Bindi  βινδι
2. *Flour (kneaded)  ολιπισι
3. *Roti  ρ □
4. Banana  κανν
5. Bangles  τΣυμι
6. Book  κΙτ5οβ
7. Brother, elder  δαδι
8. Cat  βιραο
9. Chilli  μ↔ρτΣ
10. Comb  κκα®υλ
11. Copper  τΣ↔m
12. Cough  κΗα®Σ
13. Cow  γορυ
14. Crow  κκωυ
15. Cry  ρο
16. Dog  κΥκυρ
17. Door  μ η↔ν
18. Down  μν® |
19. Drizzle  βυνδ- βΘνδ
20. Ear ring  βαα
21. Elephant  ηΑ)τ5Ηι
22. Eye brow  βΗ )
23. Fever  δΖ↔} 
24. Finger  ↔ΝγΥ®
25. Fish  ματΣΗ
26. Flour (dry)  πισι
27. Food  κΗαηα
28. Garlic  λ↔ΣΥ |
29. God  βΗ↔γωαν/ δ5ϕ↔πτ
30. Goddess  δΣεοιματα
31. Gold  Συ |
32. Grandfather (Father’s father)  βυβυ
33. Grandfather (Mother’s father)  βυβυ
34. Grandmother (Father’s mother)  ↔μμα
35. Grandmother (Mother’s mother)  ↔μμα
36. Green vegetable  η↔ριΣαγ
37. Hot  τατ
38. House  γΗ↔ρ
39. Housefly  μακΗ
| 40. Language | βοιλι |
| 41. Lion | βαγΗ |
| 42. Lips | ομ |
| 43. Liquor | Σ↔ραβ |
| 44. Mango | δ5↔ωα |
| 45. Medicine | δ5υδ5Η |
| 46. Milk | Θ |
| 47. Mirror | । |
| 48. Money | μ↔τΣτΣΗ↔ρ/ |
| 49. Mosquito | μΥσ |
| 50. Mouse | νακΗΥν |
| 51. Nails | μα |
| 52. Necklace | πΗυλι |
| 53. Nose-pin | τδελ |
| 54. Oil | πτ |
| 55. Pain | μορ |
| 56. Peacock | λ←ιΗι |
| 57. Plait | κΗα |
| 58. Pond | αλυ |
| 59. Potato | τΗατΗ5 |
| 60. Rice (cooked) | βΗατΗ5 |
| 61. Rice (raw) | τΣαΝγο |
| 62. Road | σ↔}↔κ |
| 63. Round | γολ |
| 64. Run | δδ } |
| 65. Saree | σα }ι |
| 66. Shawl | Σ λ |
| 67. Shirt | κυρτ |
| 68. Sister, elder | βΗινα |
| 69. Small | τΣΗ } |
| 70. Snake | σαγπ |
### The Basic Word List [C]

- * Refers to the typical North Indian concepts

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bathe (caus.)</td>
<td>νοαμ</td>
</tr>
<tr>
<td>2. Bathe (i)</td>
<td>νΘηΘ</td>
</tr>
<tr>
<td>3. Bathe (vt)</td>
<td>νοηωα</td>
</tr>
<tr>
<td>4. Brass</td>
<td>πιτ↔Υ</td>
</tr>
<tr>
<td>5. Bull</td>
<td>ναδι</td>
</tr>
<tr>
<td>6. Butterfly</td>
<td>πυτ↔ι</td>
</tr>
<tr>
<td>7. Cheap</td>
<td>Σ στυ</td>
</tr>
<tr>
<td>8. Coconut</td>
<td>γν</td>
</tr>
<tr>
<td>9. Corpse</td>
<td>μυρδυ</td>
</tr>
<tr>
<td>10. Costly</td>
<td>κε↔ρ↔</td>
</tr>
<tr>
<td>11. Cry of lion</td>
<td>βΗ ®κυμ↔ρε</td>
</tr>
<tr>
<td>12. Cry of buffalo</td>
<td>↔}αμ↔ρε</td>
</tr>
<tr>
<td>13. Deaf</td>
<td>καλο</td>
</tr>
<tr>
<td>14. Draught</td>
<td>↔κα</td>
</tr>
<tr>
<td>15. Front of</td>
<td>Σαμή</td>
</tr>
</tbody>
</table>
16. Gold Συ
17. Goldsmith Συναρ
18. Her υνικ
19. His υικ
20. Honey μΗ
21. Horn ΣΙΝ
22. King π↔δΗαν
23. Maize γΗω↔γ
24. Memory φαδαΣ
25. Mine μΘρ
26. Priest βαμΗ↔
27. Read π↔)Η
28. Remember πΗαµκ↔ρο
29. Rice (paddy) π↔}αο
30. Rice (puffed) μυρµυρι
31. Sheep δΗιπ "}
32. Sometimes κ↔βΗΘ κ↔βΗΘ
33. Sparrow γΗΙν "}
34. Sugarcane ρικΗν
35. Thirst τι:Σ
36. Upside down Υλ
37. War φυδδΗ
38. Yours τυµ ρ
39. Shop δυκαν
40. Silver τΣΘνδι
REFERENCES