CHAPTER THREE

TAXONOMIC PHONEMICS OF SAMBALPURI
CHAPTER THREE

Taxonomic phonemics of Sambalpuri

3.1 Taxonomic Phonemics and Systematic Phonemics

We may begin with by pointing out the differences between Taxonomic Phonemics and Systematic Phonemics before attempting a taxonomic phonemic description of Sambalpuri proper. It is also labelled ‘Autonomous Phonemics’ by the Generativists. In this type of analysis the phonemes contrast on the surface. In Yawelmani, for instance, there would be three phonemic long vowels - /e:/, /a:/ and /o:/.

On the surface, these are the only long vowels which contrast with one another. On the other hand, the underlying vowel system contains long high vowels which are needed to explain such phenomena as suffix harmony or the occurrence of identical vowels differing in length in disyllabic verb stems. Because of the different inventories of abstract underlying segments and of those segments which can contrast on the surface, a taxonomic phonemic representation cannot usually be equated with an underlying one. This underlying representation is normally referred to by generative phonologists as a systematic phonemic representation (Schane 1973: 97).
Generative Phonologists claim that the taxonomic phonemes of structural linguistics are not relevant entities within a total phonological description. They recognize also systematic phonemes. It is argued that the complete set of phonological rules converts underlying abstract (systematic phonemic) representations into derived surface (systematic phonetic) representations (Ibid).

The most general set of rules directly relates the above two levels, and in the course of a derivation there is no intermediate representation unequivocally correlated with the taxonomic phonemic. Therefore, a taxonomic phonemic representation is not considered useful. However, there is a relationship between derived and taxonomic phonemic representations which has been overlooked in generative phonology (Ibid: 97-8).
3.2 The Need for a Phonetic Description of Sambalpuri

The phonology of a language is primarily concerned with the structure and function of the phonetic segments in conveying meaning in that language. It means that without a clear understanding of the nature and physical properties, i.e., the phonetic features of the speech sounds, it is not possible to make a proper study of a language at the phonological level. We will, therefore, present a phonetic description of Sambalpuri 'speech sounds' or 'phones' before attempting a phonological analysis of the language.

Another important consideration for the phonetic description is that SPB, from which we shall be borrowing the tools for our study, relies heavily on the distinctive features of the phonemes, which in turn are based on the phonetic features of the phonemes. Again, in this chapter, we shall also try to present an inventory of the phonemes of Sambalpuri basing our discovery of such phonemes on the 'minimal pair' technique. Such an inventory is crucial for our analysis as a phoneme is the minimal unit in a phonological analysis.

Before doing so we would like to clarify the likely confusion between speech sounds or phones and phonemes.
3.3 Phones Vs. Phonemes

A phone is the smallest perceptible discrete segment of speech sound in any language whereas a phoneme is the smallest contrastive unit in the sound system of a language. That is, we can talk of phones of human languages in general but phonemes of only a particular language.

3.4 Previous Study

There have not been many attempts at studying Sambalpuri at the phonological level. However, a beginning was made in Sahu (1982) along traditional lines. Sahu's study is concerned primarily with classification and description of speech sounds. It shows the phonological patterns of the language at a very elementary level without going into any kind of theoretical intricacies. His study seems to suffer from factual inaccuracies and observational inadequacies. Some of the examples below will support our observations mentioned above.

Sahu, for example, posits thirty five Sambalpuri consonants, out of which three are aspirated nasals, and one each is aspirated lateral, aspirated trill and aspirated approximant (P.74). These so called segments, namely, /mh, nh, nh, lh, rh, yh/ are, we feel "resonants + /h/", which
ought to be treated as clusters rather than as independent segmental units.

Sahu further posits /s/ as an "unaspirated voiceless dental fricative" (p.95) which, in fact, is a voiceless alveolar fricative. Aspiration is not compatible with any fricative phoneme, rather it is an attribute of a plosive sound. So to assign the feature of aspiration to a fricative amounts to either over generalization or over looking the phonological constraints in a language.

The study made by Tripathy (1991) is primarily based on the structural framework. As far as the phonological treatment of Sambalpuri is concerned, Tripathy's study is quite similar to that of Sahu's. For instance, regarding /w/ (which sound, in our view, is not found in the speech of a native Sambalpuri speaker) Tripathy agrees verbatim with Sahu:

This sound is a voiced bilabial frictionless continuant. This is neither the English semi-vowel /w/ nor /b/. This phoneme is unique to the Sambalpuri language and is not found in Oriya, Assamese and Bengali.

(Sahu 1982: 106/Tripathy 1991:55)
Sometimes their observations on the phonological facts of the language seem to be over-generalized. Tripathy, like Sahu, feels that some of the Sambalpuri aspirates like /pʰ, bʰ, cʰ, jʰ, kʰ, gʰ/ do not occur in the final position of a word. Contrary to this observation, we feel that there is no such positional constraint of these phonemes in Sambalpuri. It may, however, be mentioned that the study made by Tripathy (1991) throws some light in the areas relating to morphology and syntax of Sambalpuri.

The study made by Dash (1993) shows that Sambalpuri has more morphological similarities with Chhattisgarhi and Awadhi than with Oriya. As far as the phonological study is concerned, he only makes a superficial attempt since his thrust is more on the morphological than on the phonological aspect.

The studies made by Sahu (1982), Tripathy (1991) and Dash (1993) have not been adequate enough to fully capture the phonological processes involved in the analysis of Sambalpuri. In order to fill this inadequacy of these studies, we have made an attempt to analyze the language at the taxonomic phonemic level also. We have chosen to do so because such a study seeks to fulfil the conditions of linearity, invariance, biuniqueness and local determinacy (Chomsky 1964: 78).

3.5.0 Sambalpuri Segmental Units

Sambalpuri segmental units may be categorised into two groups: Consonants and Vowels.
3.5.1. Consonants

Consonants are sounds made by a closure in the vocal tract, or by a narrowing which is so marked that air cannot escape without making audible friction. The way in which the passage of air is restricted by the various speech organs is referred to as 'stricture'.

It is customary to consider the following parameters in the description of consonant sounds:

i) the air-stream mechanism,
ii) the phonation process (voiceless/voiced),
iii) the kind of velic closure (oral/nasal),
iv) the active articulator,
v) the passive articulator,
vi) the kind of stricture involved.

At the taxonomic phonemic level, the inventory of Sambalpuri consonants consists of twenty-nine phonemes, viz:

\[ / p, p^h, b, b^h, t, t^h, d, d^h, \tilde{t}, \tilde{t}^h, d, d^h, c, c^h, j, j^h, k, k^h, g, g^h, s, h, m, n, \tilde{n}, \tilde{g}, l, r, j / \]

We present below a brief description of the consonant phonemes of Sambalpuri in terms of place and manner of articulation.

3.5.1.1. Place of Articulation

One of the major descriptive parameters, to make phonetic distinctions of consonants and vowels in a language, is the place of articulation. Out of the various articulators such as the lips, the teeth, the alveolar ridge, the tongue, the roof of the mouth and the nose, at least two of them contact each other for the production of any consonant. In the actual production of a speech sound, the active articulators move towards the passive ones. The
lower lip and the tongue are usually the active articulators, and upper lip and the roof of the mouth are the passive articulators.

Bilabial : Both the lips are the articulators: /p, pʰ, b, bʰ, m/

Dental : The tip and blade of the tongue are the active articulators whereas the upper teeth are the passive articulators: /t, tʰ, d, dʰ /

Alveolar : The tip or blade of the tongue is the active articulator and the teeth-ridge is the passive articulator: /s, n, l, r/

Retroflex : The curled back tip of the tongue is the active articulator whereas the post-alveolar ridge or the hard palate is the passive one: /t, d, tʰ, dʰ, n/

Palatal : The front of the tongue is the active articulator and the hard palate is the passive articulator: /c, cʰ, ʃ, ʃʰ, j /

Velar : The back of the tongue is the active articulator whereas the soft palate is the passive one: /k , kʰ, g, gʰ, ɳ /

Glottal : It is produced at the glottis and the two vocal cords are the articulators: /h/

3.5.1.2. Manner of Articulation

Another major descriptive parameter for different speech sounds in a language is the manner of articulation. Here the reference is made to the type of constriction or movement that takes place at any place of articulation such as a marked degree of narrowing, a closure with sudden release, or a closure with slow release.
3.5.1.2.1 Plosives

The consonants produced with a stricture of complete closure and sudden release, followed with a little explosive noise, are called plosives. During the production of these sounds, the soft palate is raised for velic closure, thereby shutting off the nasal passage so that the pulmomic compressed air is blocked in the oral cavity. These consonants are also otherwise called, stops.

There are twenty plosive consonants in Sambalpuri, consisting of voiceless and voiced counterparts of aspirated and unaspirated phonemes. They are classified as:

- **Voiceless unaspirated**: /p, t, c, k/
- **Voiceless aspirated**: /pʰ, tʰ, cʰ, kʰ/
- **Voiced unaspirated**: /b, d, j, g/
- **Voiced aspirated**: /bʰ, dʰ, jʰ, gʰ/  

/ /p, b; t, d; c, j k, g/ are pairs of unaspirated stops that are distinguished from each other by the absence of voice in the former and presence of voice in the latter in each of the pairs.

Likewise, /pʰ, bʰ; tʰ, dʰ; cʰ, jʰ; kʰ, gʰ/, the aspirated counterparts of the unaspirated pairs of stops mentioned above, are distinguished by the absence or presence of voice respectively.

We present below a brief discussion of Sambalpuri stops:

/ /p/ and /b/  

During the articulation of Sambalpuri /p/ and /b/ both the lips are closed tightly and the soft palate is raised to
block the nasal cavity. When the lips are opened suddenly the air escapes with a slight explosion. The phoneme /p/ is voiceless whereas /b/ is its voiced counterpart, the intensity of the burst for the latter being distinctly weaker than the former. Both the bilabial stops occur initially, medially and finally.

<table>
<thead>
<tr>
<th>Pali</th>
<th>‘term’</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bōla]</td>
<td>‘wrist ring’</td>
</tr>
<tr>
<td>supari</td>
<td>‘betel nut’</td>
</tr>
<tr>
<td>[jubōk]</td>
<td>‘young man’</td>
</tr>
<tr>
<td>gulap</td>
<td>‘rose’</td>
</tr>
<tr>
<td>[ōbōab]</td>
<td>‘want’</td>
</tr>
</tbody>
</table>

/ϕh/ and /bh/

The plosives /pʰ/ and /bʰ/ are the aspirated counterparts of /p/ and /b/ respectively. The phoneme /pʰ/ is voiceless whereas /bʰ/ is its voiced counterpart. Both the bilabial aspirated plosives occur initially, medially and finally.

<table>
<thead>
<tr>
<th>Phita</th>
<th>‘ribbon’</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bʰikari]</td>
<td>‘beggar’</td>
</tr>
<tr>
<td>bipbōl</td>
<td>‘failure’</td>
</tr>
<tr>
<td>[gōbʰir]</td>
<td>‘deep’</td>
</tr>
<tr>
<td>bōpʰ</td>
<td>‘ice’</td>
</tr>
<tr>
<td>[labʰ]</td>
<td>‘profit’</td>
</tr>
</tbody>
</table>

/t/ and /d/

During the articulation of /t/ and /d/, the tip and blade of the tongue make a firm contact with the upper teeth. The soft palate is raised to close the nasal cavity, when the tongue is removed suddenly from the teeth, the compressed air is released with an explosion. /t/ is voiceless and /d/ is its voiced counterpart, the intensity of the burst for the latter is distinctly weaker than the former. Both the dental plosives occur initially, medially and finally.

<table>
<thead>
<tr>
<th>tōra</th>
<th>‘side’ ‘star’</th>
</tr>
</thead>
<tbody>
<tr>
<td>[damur]</td>
<td>‘calf’</td>
</tr>
<tr>
<td>pōtra</td>
<td>‘thin forest’</td>
</tr>
<tr>
<td>[dōda]</td>
<td>‘elder brother’</td>
</tr>
</tbody>
</table>
The plosive /tʰ/ and /dʰ/ are the aspirated counterparts of /t/ and /d/ respectively. Whereas /tʰ/ is voiceless, /dʰ/ is the voiced counterpart. Both the retroflex aspirated plosives occur initially, medially and finally.

/tʰ/ and /dʰ/

The plosives /tʰ/ and /dʰ/ are the aspirated counterparts of /t/, and /d/ respectively. Whereas /t/ is voiceless /d/ is the voiced counterpart. Both the retroflex aspirated plosives occur initially, medially and finally.
During the articulation of /c/ and /ʃ/ the front of the tongue is firmly in contact with the palato-alveolar region or hard palate while the soft palate is raised to close the nasal cavity. As the tongue is suddenly removed from the hard palate, the air stream escape from the mouth with an explosion. /c/ is voiceless and /ʃ/ is its voiced counterpart, the intensity of the burst for the latter is distinctly weaker than. Both palatal plosives occur initially, medially and finally.

The plosives /ch/ and /ʃh/ are the aspirated counterparts of /c/ and /ʃ/ respectively. The phoneme /ch/ is voiceless whereas /ʃh/ is the voiced one. Both the palatal aspirated stops occur initially, medially and finally.

It may be noted here that some scholars categorize Sambalpuri /c, ʃ, ch, ʃh/ as affricates. But researchers like Sahu (1982) and Tripathy (1991) treat them as plosives as we have done. We may posit here that Sambalpuri does not have affricates.
/\k/ and /\g/

While /\k/ and /\g/ are articulated, the back of the tongue is firmly in contact with the soft palate, and the soft palate is raised so that the air is trapped for a short time. As the tongue is lowered suddenly from the soft palate, the air escapes from the mouth with a slight explosion. The intensity of energy is stronger for /\k/, the voiceless plosive, than for its voiced counterpart /\g/. Both the velar plosives occur initially, medially and finally.

[kʰbi] 'poet' [gilas] 'glass'
[baŋs] 'box' [məgə] 'brain'
[sədək] 'road' [lag] 'loan'

/kʰ/ and /gʰ/

The stop consonants /kʰ/ and /gʰ/ are the aspirated counterparts of /k/ and /g/ respectively. The phoneme /kʰ/ is voiceless whereas /gʰ/ is voiced. Both the velar aspirated plosives occur initially, medially and finally.

[kʰtʃ] 'cot' [gʰx] 'home'
[likʰt] 'written' [riɡʰa] 'short-tempered'
[gərakhʰ] 'customer' [megʰ] 'cloud'

3.5.1.2.2. Fricatives

For the articulation of the Samablapuri fricatives, the active articulator comes so close to the passive articulator that there is a very narrow gap between them. The soft palate is raised for the velic closure, and the lung-air escapes through the narrow space between the active and passive articulators, producing audible friction. The
stricture is that of a close approximation. Sambalpuri has two fricative phonemes: /s, h/.

/s/

During the articulation of /s/, the soft palate is raised to shut off the nasal passage of air stream. The tip and blade of the tongue are brought so close to the teeth-ridge that the space between them is very narrow. While the lung-air escapes through this narrow gap, the friction is audible. The vocal cords are kept wide apart. Hence, /s/ is a voiceless alveolar fricative. It occurs initially, medially and finally.

[sima] 'limit' [b0rsa] 'rainfall' [bhes] 'dress'
[suta] 'thread' [risa] 'angry' [r0s] 'juice'

/h/

During the articulation of /h/, the glottis is considerably narrowed. The air from the lungs escapes through the narrowed glottis with audible friction. The vocal cords are kept wide apart. /h/ is thus a voiceless glottal fricative. It occurs initially and medially but does not occur finally.

[hira] 'diamond' [m0siha] 'year'
[hela] 'careless' [sahukar] 'owner'

3.5.1.2.3. Nasals

During the production of the nasals, the soft palate is lowered so that there is velic opening, causing the escape of the air stream through the nasal cavity. At the same time the articulators remain in firm contact with each other, thereby blocking off the oral passage completely. So these sounds are articulated with a stricture of complete oral
closure. Sambalpuri contains four distinct nasal consonants: /m, n, n, nj/.

/m/

For the articulation of /m/ the two lips make a firm contact with each other in order to shut off the oral passage of air. The soft palate is lowered so that the lung-air escapes freely through the nostrils. The vocal cords vibrate, producing voice. Thus, /m/ is a voiced bilabial nasal. It occurs initially, medially and finally.

[mor] 'my' [amɔr] 'our' [rɔkɔm] 'variety'
[makɔd] 'monkey' [kɔmal] 'wonderful' [sɔrɔm] 'shame'

/n/

During the articulation of /n/, the tip or blade of the tongue makes a firm contact with the alveolar ridge. The soft palate is lowered so that the lung-air escapes freely through the nose. The vocal cords vibrate, producing voice. /n/ is thus described as a voiced alveolar nasal. It occurs initially, medially and finally.

[nigɔr] 'own' [benami] 'nameless' [biman] 'aeroplane'
[r0lia] 'drain' [jɔnɔm] 'birth' [san] 'little'

/n/

During the production of /n/ the tip of the tongue curls back and makes a firm contact with the hard palate. The soft palate is lowered so that the lung-air escapes through nasal cavity. The vocal cords vibrate, producing voice. /n/ is thus described as a voiced retroflex nasal. In Sambalpuri, /n/ occurs medially and sometimes finally but never initially.
During the production of /ŋ/ the oral closure is effected by the back of the tongue that makes a firm contact with the soft palate. The soft palate itself is lowered so that the air stream passes freely through the nose. The vocal cords vibrate, producing voice. Sambalpuri /ŋ/ is thus a voiced velar nasal. It is normally produced medially and finally but never initially.

[bʰɡa] 'broken' [rɔɡ] 'colour'
[nɔɡla] 'naked' [sɑɲ] 'friend'

3.5.1.2.4 Lateral

A lateral consonant is produced with a stricture of complete closure in the centre of the vocal tract. During its production, the soft palate is raised, shutting off the nasal passage. The tip or blade of the tongue makes a firm contact with the alveolar ridge to block the oral passage. The sides of the tongue are lowered and the air escapes along the sides of the tongue without any friction. The vocal cords vibrate, producing voice. We find only one lateral consonant in Sambalpuri which is symbolized as /l/. Sambalpuri /l/ is thus a voiced alveolar lateral phoneme. It occurs initially, medially and finally.

[labʰ] 'profit' [gilas] 'glass' [sɔrɔl] 'simple'
[luha] 'iron' [pila] 'boy' [ɡɔrɔl] 'poison'

3.5.1.2.5 Trill

A trill sound is articulated when the active articulator strikes against the passive one several times as
a result of which the air-stream escapes between them intermittently. The air escapes through the mouth cavity due to the velic closure, that is, blocking off the nasal cavity. Sambalpuri has got one trill symbolized as /r/. During its articulation, the tip of the tongue taps against the teeth-ridge several times so that air escapes through the mouth intermittently. The vocal cords vibrate, producing voice. Thus, Sambalpuri /r/ is a voiced alveolar trill. It occurs in all the three positions: Initially, medially and finally.

[rati] 'at night'  [k̂ɾət] 'saw'  [b̂iɾət] 'inside'
[ɾ̩k̂t̂ə] 'blood'  [ĝɾ̩m] 'hot'  [k̂b̂ar] 'work'

3.5.1.2.6 Approximant

An approximant is also known as a frictionless continuant. In its production, the active articulator is brought so close to the passive one that the gap between them is wide enough to allow the air escape without causing any friction. During the articulation of this sound, the stricture is that of an open approximation. Therefore, Peter Ladefoged (1975: 86) prefers to call it an "approximant". Sambalpuri contains only one approximant symbolized as /j/.

During the articulation of Sambalpuri /j/ the front of the tongue takes up a position necessary for the production of a vowel between front-close and front-half close. The soft palate is raised to shut off the nasal passage. The vocal cords vibrate, producing voice. The tongue moves immediately to the position of the following sounds. The lips are spread. However, there is anticipatory lip-rounding if /j/ is followed by a rounded vowel. Sambalpuri /j/ is thus a voiced palatal approximant.
It is pertinent to note here that Sahu (1982:106) and Tripathy (1991:55) include /w/ under the category of Sambalpuri frictionless continuants (cf. SS 3.4). Indeed, this sound is not found in the speech of a native Sambalpuri speaker, except when he speaks borrowed Hindi words like /d5wa/ 'medicine' /hawa/ 'wind' /b5wa/ 'father's elder brother', /dh^wa/ 'storeroom' etc.

Sambalpuri /j/ occurs only medially, and finally.

[kaja] ‘body’ [s^m3j] ‘time’
[£ ^j]$] ‘fear’ [laj] ‘concentration’

3.5.2 Vowels

During the production of vowels, the air-stream escapes through the mouth cavity without any friction, that is, there is no obstruction in the mouth. In fact, vowels are articulated with a stricture of open approximation. While vowel sounds are produced, the tongue plays an active role, whereas the palate becomes the passive articulator. Vowels may be frontal, central or dorsal. Front vowels are those during the articulation of which the front of the tongue is raised towards the hard palate. Central vowels are those during the articulation of which the center of the tongue is raised in the direction of that part of the roof of the mouth where the hard palate and the soft palate coincide. Dorsal vowels or back vowels are those during the articulation of which the back of the tongue is raised towards the soft palate in such a way that there is sufficient gap between them for the smooth escape of the air-stream without any friction.

During the articulation of vowels, the positions of the lips may be spread, neutral or rounded. Thus, articulatorily
vowels may be described in terms of the following four factors:

i) the part of the tongue raised (the front, the central or the back part),

ii) the height to which it is raised (close, half-close, half-open or open),

iii) the position of the lips (spread, neutral or rounded),

iv) the position of the soft palate (velic closure or velic opening)

At the taxonomic phonemic level, Sambalpuri has six pure vowels, viz.;

/i, e, ə, a, o, u/

Out of these vowels, /i/ and /e/ are frontal, /ə/ is central, and /a/, /o/ and /u/ are dorsal or back vowels. A brief description regarding their articulation is given below:

3.5.2.1 Sambalpuri Front Vowels: /i, e/

/i/

During the articulation of Sambalpuri /i/, the rear part of the front of the tongue is raised towards the hard palate, above the half-close position. The tongue is relatively lax and the lips are loosely spread, whereas, like all oral vowels, the soft palate is in raised position. This vowel may be described as a front unrounded vowel. It occurs initially, medially and finally.

[ihade] 'now' [git] 'song' [bʰai] 'brother'

/e/

While Sambalpuri /e/ is articulated, the front of the tongue is raised towards the hard palate to a height between the
half-close and half-open. The lips are loosely spread and the soft palate is in a raised position. This vowel sound may be termed as a mid-front unrounded vowel. It occurs initially, medially and finally.

[esur] 'this year' [peŋ] 'belly' [gʰre] 'in the house'

3.5.2.2 Sambalpuri Central Vowel : /ə/

Sambalpuri has only one central vowel in the form of /ə/. However, it is longer than its counterpart in R.P. During the articulation of Sambalpuri /ə/, it is not exactly the central but a little back part of the tongue is raised in the direction of that part of the roof of the mouth that is close to the soft palate to a position above the open. The lips are rounded. Sambalpuri /ə/ is thus a centrally located rounded vowel above the open position. It occurs initially, medially and finally.

[əsi] 'eighty' [bʊrɔʔ] 'year' [ʒaθ] 'go' (imperative)

3.5.2.3 Sambalpuri Back Vowels : /a, o, u/

/a/

During the articulation of Sambalpuri /a/, the back part of the tongue is raised in the direction of the soft palate to a height just above the open position. The jaws are wide whereas, the lips are wide open. Thus, Sambalpuri /a/ may be described as a low back open unrounded vowel. It occurs initially, medially and finally.

[alu] 'potato' [mas] 'month' [biha] 'marriage'

/o/

During the articulation of Sambalpuri /o/, the mid-part of the back of the tongue is raised towards the rear part of
the soft palate to a position between the half-close and the half-open. The lips are rounded. This vowel may be described as a mid-back rounded vowel. It occurs initially, medially and finally.

[ot] 'camel' [cor] 'thief' [uso] 'medicine'

/u/

Sambalpuri /u/ is articulated by raising the back of the tongue towards the soft palate to a height above the half-close position. The lips are rounded and the tongue is somewhat lax. Thus, Sambalpuri /u/ may be described as a high back rounded vowel above the half-close position. It occurs initially, medially and finally.

[uso] 'medicine'  [pʰul] 'flower'  [alu] 'potato'

3.5.2.4 Contrast among Sambalpuri Vowels

Given below are four sets (sets A, B, C, and D comprising sub-sets) of examples to contrast the Sambalpuri front, central and back vowels:

Set 'A'

Contrast between Front Vowels /i/ and /e/

| Initial | [ita]    | 'brick' |
|         | [eta]    | 'this'  |
| Medial  | [piː]    | 'back'  |
|         | [peː]    | 'belly' |
| Final   | [tupi]   | 'cap'   |
|         | [tupe]   | 'a basket full of' |
### Set 'B'

**Contrast among Back Vowels**

1. **Between /a/ and /o/**

   - **Initial**  
     - [ari] 'ridge'  
     - [ori] 'little plot'
   
   - **Medial**  
     - [kan] 'ear'  
     - [kon] 'angle'
   
   - **Final**  
     - [pɔːta] 'plank'  
     - [pɔːto] 'absolute'

2. **Between /o/ and /u/**

   - **Initial**  
     - [oli] 'half a day'  
     - [uli] 'little onion'
   
   - **Medial**  
     - [kʰol] 'cover'  
     - [kʰul] 'open' (impérative)
   
   - **Final**  
     - [pɔ́to] 'absolute'  
     - [pɔ́tu] 'fertile', 'expert'

3. **Between /a/ and /u/**

   - **Initial**  
     - [alu] 'potato'  
     - [ulu] 'fool', 'owl'
<table>
<thead>
<tr>
<th>Set 'C'</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Vowel /ə/</strong></td>
</tr>
<tr>
<td><strong>Contrasted with Front Vowels:</strong></td>
</tr>
<tr>
<td>i)  <strong>Contrast between /ə/ and /i/</strong></td>
</tr>
<tr>
<td><strong>Initial</strong></td>
</tr>
<tr>
<td>[ʔtʰə]</td>
</tr>
<tr>
<td>[iɾə]</td>
</tr>
<tr>
<td>ii) <strong>Contrast between /ə/ and /e/</strong></td>
</tr>
<tr>
<td><strong>Initial</strong></td>
</tr>
<tr>
<td>[ʔʃur]</td>
</tr>
<tr>
<td>[esur]</td>
</tr>
</tbody>
</table>
Set 'D':

Central Vowel /ə/ Contrasted with Back Vowels:

i) Contrast between /ə/ and /a/
   Initial [əmɔər] 'immortal'
   [amɔər] 'ours'
   Medial [sɔn] 'jute'
   [san] 'small'
   Final [sarə] 'finish' (imp)
   [səra] 'whole'

ii) Contrast between /ə/ and /o/
   Initial [oda] 'ginger'
   [oda] 'wet'
   Medial [ɡərə] 'egg'
   [gora] 'white-complexioned'
   Final [kuðə] 'run' (imp.)
   [kudo] 'a kind of cereal'

iii) Contrast between /ə/ and /u/
   Initial [ura] 'spöke of a cart-wheel'
   [ura] 'beam'
   Medial [kɔli] 'quarrel'
   [kuli] 'coolie', 'a kind of caste'
3.5.3 Sambalpuri Vowels Compared with Cardinal Vowels

Cardinal Vowels are eight idealised vowels which do not exist in any particular language. These are only reference points which may be used as a yardstick to describe the actual vowel system of a language. As a convenient descriptive measure, the tongue positions where vowels are articulated are divided into eight specific points. The area joining these eight points are called 'the vowel area' or 'the Vowel Trapezium'. Vowels are produced when the tongue touches somewhere the vowel area. The vowels produced with these cardinal points are called 'Cardinal Vowels'.

The origin of Cardinal Vowels is attributed to Daniel Jones. Out of eight, cardinal vowels 1 to 5 are articulated with various degrees of lip-spreading, and cardinal vowels 6 to 8 are articulated with various degrees of lip-rounding (cf. Fig.IIIa).

In compared to eight cardinal vowels, Sambalpuri has six vowels. Below is given a sketch of the cardinal vowel trapezium indicating the Sambalpuri vowels in relation to the cardinal vowels.
3.5.4 Polar co-ordinate Vowel System

Most of the phoneticians refer to the Cardinal Vowel System as a classic model for the description of vowels of different languages. However, J.C. Catford envisages an alternative classificatory vowel system which appears to be 'nearer articulatory reality' (Catford 1977: 184-7) with the further advantages of using the same terminology for vowels and consonant. It is referred to as 'the Polar Co-ordinate Vowel System' (cf. Fig. IIIb) which is supposed to be better elucidating than the Cardinal Vowel System of Jones. Below is given the aerodynamical polar co-ordinate diagram indicating the Sambalpuri vowel system.
3.5.5 Non-existence of Sambalpuri Dipthongs

Vowels of changing qualities are called dipthongs. During the production of a dipthong, the tongue takes the initial position required for the articulation of a certain vowel sound, however, it glides towards the position required for the articulation of a different vowel. A vowel glide occupies a single syllable.
Sahu (1982:53) gives examples of words like /en/, /sgun/, /dho sla/, /hor/, /bhr>s/ and /spe/ to show the existence of so-called diphthongs. Dash (1993:71), on the other hand, posits the diphthong as /e/ instead of /e/ though he gives examples of the same words as done by Sahu.

We would like to reiterate here that (cf. SS 1.5) Sambalpuri has no script of its own. The Sambalpuri speakers normally use Oriya script as they are more conversant with Oriya because Oriya is the medium of instruction in schools after the Sambalpuri-speaking areas merged with Orissa in 1905. But there are still a number of people who prefer to use the Devnagari script as Sambalpuri is spoken more in the Hindi way than in the Oriya way. But our point here is that the so-called diphthong /s/ or /e/ has no corresponding letter either in Oriya or in Hindi. Moreover, words beginning with consonants tend to take the /a/ of the so-called /e/ or /e/ diphthong leaving out the vowels /e/ or /e/. What is more, the researcher as a native speaker, has found that the Sambalpuri speakers in pronouncing words like /s/ and /s/ take equal time in pronouncing each of the phonemes /s/ or /s/ and /e/ respectively. It is never that the time taken in pronouncing /s/ or /e/, or /b/ and /e/ is never the same. Hence, we cannot accept the views of Sahu (1982) and Dash (1993) in treating /e/ or /e/ as diphthongs.

Similarly the other diphthong posited by them, i.e; /ou/, cannot be accepted as a diphthong. It seems, they have;
been influenced by Oriya and Hindi Languages as they both have /ʒu/ in their alphabets. But both the researchers seem to have ignored living speech. Both have given examples of words like /coul/, /dou1/, /lou/, /b'uu/, /h'uu/ (Sahu 1982: 54) (Dash 1993: 72).

The same argument put forth by us in refuting their claim to treat /ɔe/ and /œe/ as diphthongs also apply here. We are quite sure that a phonetically trained ear will not accept them as diphthongs.

3.5.6 Other Features Causing Change in Meaning

Features like 'aspiration' and 'nasalisation' bring about change in meaning in Sambalpuri as discussed below:

3.5.6.1 Aspiration

Unlike English and like most of the Indo-Aryan languages, aspiration is phonemic in Sambalpuri. The feature 'aspiration' is associated mostly with plosives. As has been pointed out earlier, (cf. SS 3.5.1.2.1) out of twenty plosive consonants in Sambalpuri, ten of them are distinctly aspirated phonemes, both 'voiceless' and 'voiced'. At the taxonomic phonemic level, we find the following ten aspirated stops in Sambalpuri:

/ pʰ, bʰ, tʰ, dʰ, ʈʰ, cʰ, ṭʰ, ʂʰ, kʰ, ɡʰ/
These aspirates are tabulated below:

<table>
<thead>
<tr>
<th>Bilabial</th>
<th>Dental</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Aspirated</td>
<td>$p^h$</td>
<td>$t^h$</td>
<td>$th$</td>
<td>$ch$</td>
</tr>
<tr>
<td>Voiced Aspirated</td>
<td>$bh$</td>
<td>$dh$</td>
<td>$dh$</td>
<td>$jh$</td>
</tr>
</tbody>
</table>

Table: III.1 Sambalpuri Aspirates

The following sets of words illustrate that aspiration is phonemic in Sambalpuri. The aspirates are here contrasted to their unaspirated counterparts along with their voiceless and voiced pairs.

- [p] [pʰ] [pʰʰ] [b] [bʰ] [t] [tʰ] [d] [dʰ] [tʰ] [tʰʰ]
  - [pʰʰ] 'wooden plank', 'lease'
  - [pʰʰ] 'crack'
  - [bʰʰ] 'churning'
  - [bʰʰ] 'open space'
  - [tʰʰ] 'limit'
  - [tʰʰ] 'frequency'
  - [dʰʰ] 'rate'
  - [dʰʰ] 'hold' (imperative)
  - [tʰʰ] 'forehead mark'
  - [tʰʰ] 'contract'
\[\text{\texttt{\textbar{}d\texttt{\textbar{}}} [d\texttt{\textbar{}ba}] \quad \text{'small box'}\]
\[\text{\texttt{\textbar{}d\texttt{\textbar{}}} [d\texttt{\textbar{}ba}] \quad \text{'storeyed-house'}\]
\[\text{\texttt{\textbar{}c\texttt{\textbar{}}} [c\texttt{\textbar{}na}] \quad \text{'fried nut'}\]
\[\text{\texttt{\textbar{}c\texttt{\textbar{}}} [c\texttt{\textbar{}na}] \quad \text{'fried' (adj.)}\]
\[\text{\texttt{\textbar{}j\texttt{\textbar{}}} [j\texttt{\textbar{}na}] \quad \text{'known'}\]
\[\text{\texttt{\textbar{}j\texttt{\textbar{}}} [j\texttt{\textbar{}na}] \quad \text{'dried' (adj.)}\]
\[\text{\texttt{\textbar{}k\texttt{\textbar{}}} [k\texttt{\textbar{}ra}] \quad \text{'hailstone'}\]
\[\text{\texttt{\textbar{}k\texttt{\textbar{}}} [k\texttt{\textbar{}ra}] \quad \text{'sun shine'}\]
\[\text{\texttt{\textbar{}g\texttt{\textbar{}}} [g\texttt{\textbar{}ra}] \quad \text{'egg'}\]
\[\text{\texttt{\textbar{}g\texttt{\textbar{}}} [g\texttt{\textbar{}ra}] \quad \text{'nest', 'udder'}\]
3.5.6.2 Nasalisation

We observed in SS3.5.1.2.3 that Sambalpuri contains four pure nasals, viz. / m, n, ƞ, ƞ/. These sounds are articulated as a result of the velic opening, causing the escape of air through the nasal cavity.

But in Sambalpuri, there is also nasalisation of sounds. When such 'nasalized' sounds are contrasted with their 'non-nasalised' counterparts, they bring about a change in meaning. Though Sambalpuri allows nasalisation of vowels, it does not allow any nasalisation of consonants. But the way the symbol of nasalisation in the form of [Ø] is always marked on the consonant phoneme.

[ʃi]  [kõta]  ‘nail’
[maĩ]  ‘aunt’ (maternal)

To show the consequent change in meaning owing to nasalisation of vowels we may cite the following examples:

[i]  [daĩ]  ‘daughter’ ‘responsible’
[i]  [daĩ]  ‘halter’
[e]  [jue]  ‘fire’
[e]  [juẽ]  ‘son-in-law’
[a]  [dua]  ‘cutting’ (crop)
[ãa]  [duãn]  ‘halter’
[o]  [oţ]  ‘camel’
3.5.7 Nasals contrasted with Other Consonants

Nasality is phonemic in Sambalpuri. The following examples contrast the four Sambalpuri nasal phonemes to other consonants some of which are articulated in the same place.

<table>
<thead>
<tr>
<th>Nasal</th>
<th>Consonant</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>[m]</td>
<td>[məجا]</td>
<td>'fun'</td>
</tr>
<tr>
<td>[b]</td>
<td>[باجا]</td>
<td>'band', 'music'</td>
</tr>
<tr>
<td>[p]</td>
<td>[پاجا]</td>
<td>'sharpen' (imperative)</td>
</tr>
<tr>
<td>[bʰ]</td>
<td>[ب٠جا]</td>
<td>'fry'</td>
</tr>
<tr>
<td>[n]</td>
<td>[نا لا]</td>
<td>'blow pipe', 'channel'</td>
</tr>
<tr>
<td>[s]</td>
<td>[س٠لا]</td>
<td>'brother-in-law'</td>
</tr>
<tr>
<td>[n̪]</td>
<td>[کانی]</td>
<td>'blind' (feminine)</td>
</tr>
<tr>
<td>[t̪]</td>
<td>[کاشی]</td>
<td>'cut'</td>
</tr>
<tr>
<td>[t̪ʰ]</td>
<td>[کاُٰشی]</td>
<td>'stick', 'brush-stick'</td>
</tr>
<tr>
<td>[d̪ʰ]</td>
<td>[کادٰشی]</td>
<td>'take out'</td>
</tr>
<tr>
<td>[t̪]</td>
<td>[کاٰشی]</td>
<td>'scale', 'slough'</td>
</tr>
</tbody>
</table>
### Mutual Contrast among Nasals

The following minimal sets exhibit surface contrasts among the Sambalpuri nasals.

| [p]  | [nəpa³]  | 'plough' |
| [k]  | [nəkəl]  | 'copy', 'imitation' |

#### 3.5.7.1 Mutual Contrast among Nasals

The following minimal sets exhibit surface contrasts among the Sambalpuri nasals.

| [m]  | [kam]    | 'work' |
| [n]  | [kan]    | 'ear'  |
| [n]  | [kan]    | 'arrow' |
| [m]  | [kömal]  | 'feat', 'wonder' |
| [ŋ]  | [køŋal]  | 'pauper' |
| [n]  | [dena]   | 'arm', 'wings' |
| [ŋ]  | [dẽna]   | 'tall' |
| [n]  | [rəna]   | 'one kind of caste' |
| [n]  | [rəŋa]   | 'printed snake' |
| [n]  | [ŋəŋ]    | 'individual', 'number' |
| [ŋ]  | [ŋəŋ]    | 'thigh' |
Sambalpuri has only two fricative consonants, and they vary from each other in relation to their place of articulation — /s/ is alveolar whereas /h/ is glottal. The following sets of examples exhibit their surface contrasts with regard to other phonemes.

- [s] [sɔl] 'sprain'
- [h] [hɔl] 'a pair of oxen'
- [n] [nɔl] 'pipe'
- [s] [sat] 'seven'
- [h] [hat] 'hand'
- [l] [lat] 'kick'
- [s] [bɔsa] 'sit' (imperative)
- [h] [bɔhɔ] 'in-law'
- [d] [bɔdɔ] 'elder of the twin'
- [s] [sanba] 'to mix up'
- [h] [hanba] 'to kill'
- [m] [manba] 'to obey'
3.5.5 Contrast of Sambalpuri Lateral and Trill with Other Sambalpuri Alveolars

In the Sambalpuri consonant inventory, we find only one lateral phoneme, viz; /l/ and one trill, viz; /r/. Below are given a set of examples to show surface contrasts between /l/ and /r/, on the one hand, and other Sambalpuri alveolars like /s/ and /n/, on the other,

- **Initial**  
  - [l]  
  - [r]  

- **Medial**  
  - [l]  
  - [r]  

- **Final**  
  - [l]  
  - [r]  

---

<table>
<thead>
<tr>
<th>Consonant</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>[s]</td>
<td>[MRI:]a</td>
<td>'spices'</td>
</tr>
<tr>
<td>[h]</td>
<td>[MRI:]a</td>
<td>'storey'</td>
</tr>
<tr>
<td>[r]</td>
<td>[MRI:]a</td>
<td>'rim of a bamboo basket'</td>
</tr>
<tr>
<td>[s]</td>
<td>[bo:]rs</td>
<td>'rainfall'</td>
</tr>
<tr>
<td>[h]</td>
<td>[bo:]r</td>
<td>'boar'</td>
</tr>
<tr>
<td>[d]</td>
<td>[bo:]rd</td>
<td>'branch of a palm-like tree'</td>
</tr>
<tr>
<td>[l]</td>
<td>[la:]d</td>
<td>'shyness'</td>
</tr>
<tr>
<td>[r]</td>
<td>[ra:]d</td>
<td>'reign'</td>
</tr>
<tr>
<td>[l]</td>
<td>[kɔ:lɔ]</td>
<td>'liver'</td>
</tr>
<tr>
<td>[r]</td>
<td>[kɔ:ɾɔ]</td>
<td>'debt'</td>
</tr>
<tr>
<td>[l]</td>
<td>[ʃa:]l</td>
<td>'net', 'cheat'</td>
</tr>
<tr>
<td>[r]</td>
<td>[ʃa:]r</td>
<td>'jar'</td>
</tr>
<tr>
<td>[l]</td>
<td>[la:]g</td>
<td>'loan'</td>
</tr>
<tr>
<td>[s]</td>
<td>[sa:]g</td>
<td>'greens'</td>
</tr>
<tr>
<td>Medial</td>
<td>[l]</td>
<td>[kαlα]</td>
</tr>
<tr>
<td>--------</td>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>[s]</td>
<td>[kɔsa]</td>
</tr>
<tr>
<td>Initial</td>
<td>[l]</td>
<td>[lalı]</td>
</tr>
<tr>
<td></td>
<td>[n]</td>
<td>[nali]</td>
</tr>
<tr>
<td>Medial</td>
<td>[l]</td>
<td>[bɔlα]</td>
</tr>
<tr>
<td></td>
<td>[n]</td>
<td>[bɔna]</td>
</tr>
<tr>
<td>Final</td>
<td>[l]</td>
<td>[kal]</td>
</tr>
<tr>
<td></td>
<td>[n]</td>
<td>[kan]</td>
</tr>
<tr>
<td>Initial</td>
<td>[r]</td>
<td>[rua]</td>
</tr>
<tr>
<td></td>
<td>[s]</td>
<td>[sua]</td>
</tr>
<tr>
<td>Final</td>
<td>[r]</td>
<td>[par]</td>
</tr>
<tr>
<td></td>
<td>[s]</td>
<td>[pas]</td>
</tr>
<tr>
<td>Initial</td>
<td>[r]</td>
<td>[rigʰa]</td>
</tr>
<tr>
<td></td>
<td>[n]</td>
<td>[nigʰa]</td>
</tr>
<tr>
<td>Final</td>
<td>[r]</td>
<td>[sar]</td>
</tr>
<tr>
<td></td>
<td>[n]</td>
<td>[san]</td>
</tr>
</tbody>
</table>
3.5.10. Contrast of Sambalpuri Approximant /j/ with Other Sambalpuri Palatals

The Sambalpuri consonant inventory contains only one approximant or frictionless continuant in the form of /j/. It is palatal in articulation.

Sahu (1982) and Tripathy (1991) include /w/ as another frictionless continuant in the Sambalpuri consonant inventory (cf. SS 3.5.1.2.6). We, however, have our own reservations regarding the existence of such a phoneme in Sambalpuri. Tripathy (1987) supports our view, too.

The following sets of examples show surface contrasts between /j/, on the one hand, and other Sambalpuri Palatals, viz; /c, ch, j, jh/, on the other. It may be noted here that Sambalpuri /j/ does not occur initially.

[j] [Jāja] 'a kind of paddy'
[c] [Jāca] 'offer'
[j] [kaja] 'body'
[ch] [kach'a] 'small loin cloth'
[j] [bhēj] 'fear'
[j] [bhēj] 'sing a hymn'
[j] [səmōj] 'time'
[jh] [səmōjh] 'understanding'
3.6 **Positing Sambalpuri Consonants at the Taxonomic Phonemic Level**

Keeping the brief analysis of Sambalpuri consonants at the taxonomic phonemic level in the preceding sections, we find the following surface contrasts existing between them (cf. Table III.2).

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Bilabial</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Unaspirated</td>
<td>p</td>
<td>t</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Aspirated</td>
<td>pʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>cʰ</td>
<td>kʰ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced Unaspirated</td>
<td>b</td>
<td>d</td>
<td>d</td>
<td>f</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced Aspirated</td>
<td>bʰ</td>
<td>dʰ</td>
<td>dʰ</td>
<td>fʰ</td>
<td>gʰ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td></td>
<td>s</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td>n</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trill</td>
<td></td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximant</td>
<td></td>
<td></td>
<td></td>
<td>j</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table : III . 2 Sambalpuri Consonants**