CHAPTER XI

CONCLUSION

11.0 PREAMBLE

As proposed at the very outset the present thesis aims at a synchronic comparison between the phonological systems of Bengali and Oriya.

With this view we have proceeded on to the analysis of phonological entities and a comparison is made between the two languages. The present study gives an insight into the phonological systems of both the languages separately on the basis of which comparison is made. Thus, the whole study is distributed in eleven chapters; these are: I - Introduction, II - Phonetics: Speech Sounds of Bengali and Oriya, III - Phonemics: Bengali Vowels, IV - Phonemics: Oriya Vowels.
V - Comparison: Vowel Phonemes of Bengali and Oriya.
VI - Phonemics: Bengali Consonants; VII - Phonemics: Oriya Consonants; VIII - Comparison: Consonant Phonemes of Bengali and Oriya; IX - Comparison: Syllabic Structure of Bengali and Oriya; X - Comparison: Supra-Segmentals of Bengali and Oriya. This, the eleventh chapter presents a summary of all these chapters excluding Chapter I: Introduction. This chapter also yields suggestions for preparing remedial lessons at the end.

11.1 A SUMMARY OF CHAPTER II - PHONETICS: SPEECH SOUNDS OF BENGALI AND ORIYA

In this chapter speech sounds of both the languages are discussed on the basis of the mechanism involved in their production. Thus, we find that both Bengali and Oriya contain vowel and consonant sounds. The vowel sounds of both the languages are described and classified from the articulation point of view. Their positions of occurrences in the words are also shown. Further, the primary vowel sounds are placed in the scale of cardinal vowels, in order to make a comparison between the vowel sounds of both the languages.

It is evident from the analysis that Bengali possesses twenty-five vowel sounds whereas Oriya possesses only twenty. In both the languages twenty vowel sounds, are realized.
phonetically as 'similar' despite their marginal differences. The term 'similar' is used to indicate that the substitution of Bengali vowel sounds by Bengali speakers in speaking Oriya or the substitution of Oriya vowels by Oriya speakers while speaking Bengali creates no confusion. There are five vowel sounds for which Bengali is characterized. These vowel sounds are not found in Oriya.

Consonant sounds of both the languages are also described and classified from the production point of view. Their positions of occurrences in the words are also shown. The analysis presents that Bengali has thirty-five consonant sounds whereas Oriya has thirty-seven. But the similar consonant sounds in both the languages are numbered to thirty-four. Among the different consonant sounds, one is specific to Bengali that is the palato-alveolar fricative and three are specific to Oriya which are the flapped nasal, the bilabial semi-vowel and the palatal semi-vowel.

11.2 A SUMMARY OF CHAPTER III - PHONEMICS: THE VOWELS OF BENGALI

Phonetic analysis of vowel sounds shows that a number of vowel sounds is produced and used in a particular language. All the vowels are different from the articulatory point of view. A phonetic study does not tell us which of the vowel sounds are relevant in a given language and thus which are
not. But a phonemic analysis treats each language differently. It distinguishes vowel sounds from one another. The method of analysis is relevant contrast which shows differences in vowel sounds correlated with differences in meanings. Thus, we find that there are only seven qualitatively different vowel phonemes in Bengali. All these oral vowel phonemes have their nasalized counterparts. In order to establish their phonemic status all the oral and nasalized vowels are placed in minimal pairs and phonemic contrasts to each other are shown. The distributions of allophones and their relations with vowel phonemes are also shown in this chapter. Vowel length in Bengali is not treated as phonemic. It is also found that in Bengali there are four non-syllabic variants of respective full vowels which form diphthongs. Only nineteen diphthongs are preferred for Bengali. Besides these diphthongs, there are nine two-vowel combinations and several three-vowel and four-vowel combinations each of which has clearly two syllables.

11.3 A SUMMARY OF CHAPTER IV - PHONEMICS: THE VOWELS OF ORIYA

The phonemic analysis of Oriya vowels shows that there are only six distinct vowel phonemes. All these oral vowel phonemes have their nasalized counterparts. Phonemic contrasts between oral vowels as well as oral and nasalized vowels
have been shown by minimal pairs to establish their phonemic status. The distribution of allophones and their relations with vowel phonemes are also shown. Vowel length, in Oriya, is not considered as phonemic. It is evident from the analysis that in Oriya only two non-syllabic variants \( \text{i} \) and \( \text{u} \) form diphthongs. In Oriya only ten diphthongs are preferred. Besides these diphthongs in Oriya, several disyllabic vowel combinations, consisting of two and three vowels, are analysed.

11.4 A SUMMARY OF CHAPTER V: COMPARISON: BENGALI AND ORIYA VOWEL PHONEMES

This chapter presents a comparison between the phonemic systems of vowels of Bengali and Oriya. It is clear from the analysis that Bengali has seven oral vowel phonemes with their nasalized counterparts whereas Oriya has only six oral vowels with nasalized counterparts. Thus, in phonemic level, Bengali differs from Oriya for having two vowel phonemes /æ/ and /œ/. In allophonic level, Bengali is characterised by the presence of /e/, /o/, /œ/, /æ:/ and /œ:/ which are not found in Oriya. All other allophones are similar in both the languages. In the distribution level all the six similar oral vowel phonemes occur in all the positions in similar environments. Due to the presence of /æ/ in Bengali and absence of it in Oriya, we find that /æ/ of Bengali has a correspon-
ence with /e/ in Oriya. Again the vowel phoneme /ɔ/ word finally in Bengali is very rare whereas the same is very frequent in Oriya. Therefore, we find that word final /ɔ/ of Oriya has three correspondences in Bengali, such as,

(i) word final /ɔ/ of Oriya is retained in Bengali, (ii) it is omitted in Bengali and (iii) it is changed to /o/ in Bengali. Similarly, word final /o/ in Oriya is very rare whereas the same is very frequent in Bengali. Therefore, we find that word final /o/ of Bengali has two correspondences in Oriya. Such as, (i) word final /o/ of Bengali is retained in Oriya and (ii) it is changed to /ɔ/ in Oriya. As regards nasalized vowels in the distribution level, there are sharp contrasts between Bengali and Oriya at least at two points, such as,

(i) a nasalized vowel can occur in Oriya after a nasal consonant whereas the same is never possible in Bengali and (ii) in a vowel combination a nasalized vowel generally occurs as a first member in Bengali whereas in Oriya it generally occurs as a second member.

As regards vowel combinations, geminate vowels in Oriya are more frequent than in Bengali. In Bengali, geminate vowels from diphthongs whereas in Oriya, geminate vowels form disyllabic vowel combinations. The number of diphthongs in Bengali is nineteen whereas in Oriya it is ten. Thus, we find some correspondences between the two languages, such as,

(i) Bengali /ɔɛ/ corresponds to Oriya /ɔi/ and /ɔi/.
(ii) Bengali /ɔi/ corresponds to Oriya /ɔi/ and (iii) Bengali /ou/ corresponds to Oriya /ou/ and /ɔu/. The disyllabic two vowel combinations also have some correspondences, such as, (i) Bengali /io/ corresponds to Oriya /io/ and in loan words /io/, (ii) Oriya /ia/ corresponds to Bengali /ia/ and /ea/ and (iii) Oriya /ua/ corresponds to Bengali /ua/ and /oa/.

Besides these two-vowel combinations, Bengali has a number of three-vowel and four-vowel combinations whereas Oriya has only a limited number of three-vowel combinations.

11.5 A SUMMARY OF CHAPTER VI - PHONEMICS: THE CONSONANTS OF BENGALI

A phonemic study is generally done by differentiating between those phonetic features in a language which are distinctive and those which are not. Following the method of contrast, relevant non-distinctive phones are grouped together and considered as allophones of a single phoneme. In Bengali, there are twenty-seven distinct consonant phonemes. They are again classified on the basis of their points of articulation and manners of articulation. Thus, we find that Bengali has sixteen stops distributing four each to bi-labial, dental, retroflex and velar. Four affricates are palato-alveolar. Bengali possesses three nasal sounds of which one is bi-labial one is alveolar and the other is velar. One alveolar trill and one alveolar lateral are also there in Bengali. Bengali
has two fricatives: One is palato-alveolar and the other is glottal. Contrasts between corresponding phonemes are presented. The distribution of allophones and their relations with the corresponding consonant phonemes are also shown in this chapter. All the consonant phonemes occur in all the three positions except /ŋ/ which does not occur word initially and /bh/ which does not occur word finally. It is found that Bengali aspirated consonants and their non-aspirated counterparts are neutralized word finally in certain cases. Consonants, in Bengali, when they occur in sequence are considered either as geminate consonants or consonant clusters. There are fifteen geminate consonants in Bengali. Consonant clusters are of two types: bi-consonant and tri-consonant. Bi-consonant clusters are thirty-nine in number of which three of them occur syllable finally and others occur syllable initially. There are three tri-consonant clusters in Bengali which occur always syllable initially and never syllable finally.

11.6 A SUMMARY OF CHAPTER VII - PHONEMICS: THE CONSONANTS OF ORIYA

The phonemic analysis of Oriya consonants shows that there are thirty distinct consonant phonemes. They are again classified as stops, affricates, nasals, trill, laterals, fricatives and semi-vowels according to manners of
articulation. These consonant phonemes are further classified as bi-labial, dental, alveolar, retroflex, palato-alveolar, palatal, velar and glottal on the basis of points of articulation. Oriya possesses sixteen stops of which four are bi-labial, four are dental, four are retroflex and four are velar. All the four affricates are palato-alveolar. There are three nasals in Oriya of which one is bi-labial, one is alveolar and the other is retroflex. There is only one trill which is alveolar. Laterals are two in number: one is alveolar and the other is retroflex. Fricatives are two: one is dental and the other is glottal. Semi-vowels are also two in number of which one is bi-labial and the other is palatal. Phonemic contrasts between the same class of consonant phonemes are presented by minimal pairs. The distribution of allophones and their relations with respective consonant phonemes are also shown. In Oriya, consonant phonemes /l/ and /n/ do not occur word initially. The occurrences of /w/ and /y/ word initially are very rare. All other consonant phonemes occur frequently in the initial position. All the consonants also occur frequently in the medial position. In the word final position the consonant phonemes /bh, th, gh, w/ and /y/ do not occur at all. All other consonants occur word finally. Oriya also possesses geminate consonants as well as consonant clusters. Geminate consonants are marginal in Oriya and they are numbered to six. There are sixty-seven bi-consonant clusters in Oriya of which sixty-four occur
syllable initially and the remaining three occur syllable finally. In Oriya there are four tri-consonant clusters all of which occur syllable initially.

11.7 A SUMMARY OF CHAPTER VIII - COMPARISON: BENGALI AND ORIYA CONSONANT PHONEMES

This chapter presents a comparison between the phonemic systems of Bengali and Oriya consonants. It shows that Bengali possesses twenty-seven consonant phonemes whereas Oriya possesses thirty. But the similar consonant phonemes in both the languages are twenty five in number. The remaining consonant phonemes which are different in Bengali are two and in Oriya, are five. The two consonant phonemes which are specific to Bengali are the velar nasal /ŋ/ and the palato-alveolar fricative /ʃ/. On the other hand the specific Oriya consonant phonemes are five: the retroflex nasal /N/, the retroflex lateral /L/, the dental fricative /s/ and the semi-vowels /y/ and /w/. In the allophonic level, Oriya is characterised by the presence of /s, ŋ, y, J, w/. All the allophones are similar in both the languages. While comparing the consonant allophones of both Bengali and Oriya it is observed that the allophones of both the languages have three dimensional relationship: (a) allophones which are phonetically similar in both the languages belong to similar phonemes of both the languages; (b) allophones
which are phonetically similar in Bengali and Oriya belong to different phonemes of both the languages; and (c) allophones which are phonetically different in both the languages belong to similar phonemes of both the languages. In the distribution level, among the similar consonant phonemes only four of them do not have similar distribution. In Bengali /Dh/ does not occur word finally. On the other hand, /bh, th/ and /gh/ in Oriya do not occur word finally. All other similar consonants in both the languages have similar distribution though the occurrence of consonant phonemes word finally in Oriya is very rare. The consonant phonemes of both the languages show some correspondences such as: (i) Bengali /n/ corresponds to Oriya /n/ and /N/. (ii) Bengali /l/ corresponds to Oriya /l/ and /L/. (iii) Bengali /s/ corresponds to Oriya /s/; and (iv) Bengali /g/ corresponds to Oriya /ng/.

As regards consonants in combination, both Bengali and Oriya have two types of it; geminate consonants and consonant clusters. In Bengali geminate consonants are fifteen whereas in Oriya they are six. Both in Bengali and Oriya consonant clusters are of two types: bi-consonant and tri-consonant clusters. Bengali has thirty-nine bi-consonant clusters whereas Oriya has sixty-seven. The similar bi-consonant clusters are thirty-five in number. In addition,
Bengali has four different bi-consonant clusters whereas Oriya has thirty-two different bi-consonant clusters. The number of tri-consonant clusters is three in Bengali but four in Oriya.

11.8 A SUMMARY OF CHAPTER IX - COMPARISON: THE SYLLABIC STRUCTURES OF BENGALI AND ORIYA

In this chapter syllable structures of both Bengali and Oriya are discussed separately and a comparison of both is made at the end. The discussion on syllable structures is made at three levels - (a) the patterns of syllable formation, (b) clusters of vowels and consonants, and (c) the constraints in the inner structure of syllable patterns occurring in sequence.

In both Bengali and Oriya, words are formed by one or more syllables. Therefore, syllable boundaries are not considered as word boundaries in these two languages. Both the languages have open and close syllables. It is also observed that there are onset and coda restrictions in these languages. The maximum number of consonants both in Bengali and Oriya that can occur syllable initially is three and syllable finally two. The vowel nucleus may be preceded or followed by no consonant at all. Both the languages permit vowel cluster to form a single syllable. All these possibi-
11 ties can be merged into a single syllabic structure complex which will look like: (c) (c) (c) V (V) (c) (c).

In both the languages bi-consonant clusters are not permitted if vowel clusters are preceded.

As regards vowel clusters, Bengali has nineteen such clusters whereas Oriya has only ten. The similar vowel clusters in both the languages are eight in number. Among the different vowel clusters Bengali has eleven such specific clusters whereas Oriya has only two such specific clusters. Among the consonant clusters, the similar bi-consonant clusters in both the languages are thirty-five in number.

In addition, Bengali has four specific bi-consonant clusters whereas Oriya has thirty-two specific bi-consonant clusters. The number of tri-consonant clusters is three in Bengali but four in Oriya.

The similar syllabic sequential constraints are two in both Bengali and Oriya, such as, (i) both the languages do not permit a CV syllable structure in which C is an aspirated stop to be preceded by another CV syllable structure in which C is a glottal fricative, (ii) two consecutive syllables cannot begin with an aspirated stop except in repetitive words.

*An apparent exception is found in the word /bhikhari/ 'beggar' which in standard colloquial Bengali is pronounced as /bhikiri/. /bhikhari/ is a hyper-sanskritized form indicative of affected pronunciation.
The different syllabic sequential constraints which have correspondences, are as follows: (i) In Bengali (C) oc i/u is very frequent but the same in Oriya is rarely found. Again, in Oriya (C) oc i/u is very frequent but the same in Bengali is found only in tatsama words. (ii) In Bengali (C) a C a is permissible but the same in Oriya is not, except in a few words. Thus, Bengali (C) a C a corresponds to (C) oc C a in Oriya. (iii) In Oriya C oc C (C) is very frequent whereas the same in Bengali is not permissible. Again, in Bengali C oc C (C) is very frequent but the same in Oriya is rarely permissible. (iv) Two consecutive syllables, in Bengali, can begin with a retroflex stop which is not permissible in Oriya. (v) If a syllable ends with /t/ the next syllable, in Bengali can begin with /s/ which is not permissible in Oriya.

11.9 A SUMMARY OF CHAPTER X - COMPARISON: SUPRA-SEGMENTALS OF BENGALI AND ORIYA

This chapter dealt with the major suprasegmental features like stress, intonation, juncture, nasalization and length or duration of sounds of both the languages.

The types of stress are found in these two languages: word-stress and sentence-stress. Word stress is not phonemic in Bengali and Oriya. A different picture of word-stress in Bengali and Oriya is found for the words consisting of
more than one syllable. As a general rule in Bengali, the stress falls on the first syllable of the word irrespective of the syllabic structure of the word whereas in Oriya the word stress is conditioned by the syllabic structure of the word. Sentence-stress on the other hand, in both the languages is phonemically significant and there is no significant difference between them.

Intonation, both in Bengali and Oriya, is phonemic which involves pitch levels and terminal contours. Both the languages have four pitch levels and three terminal contours. These two languages have four intonation patterns for (i) statement sentence, (ii) interrogative sentence for yes-no answer, (iii) interrogative sentence for specific answer and (iv) sentence expressing exclamation, hesitation and suspicion.

Juncture, in both the languages, is phonemic. There are two junctures: open and close. They are also in contrasts. Juncture marks word-boundary in both the languages.

Nasalization is phonemic in Bengali and Oriya. The major differences are - (i) In Oriya, a contrast of nasal and oral vowels is found even after a nasal consonant which is not found in Bengali. (ii) In a vowel combination nasalization takes place with the first component in Bengali whereas in Oriya it takes place with the second component.

Duration or length of a sound is not phonemic in both the languages.
Learning a second language involves two major difficulties: 
(i) learning new uses for similar or old items, and 
(ii) learning different or new items. Since the present treatise deals with phonology, it shows how the similar and different sounds function differently in both the languages. Learning different or new sounds is always difficult. But at the same time, learning in the area of similarities is also no less difficult. As said earlier, similar does not mean identical. Similarity obviously admits the existence of a certain degree of difference—it may be in terms of environments, in terms of occurrences, in terms of frequency or in terms of semantic realizations. An instance of phonological evidence in support of similarity acting as disturbing interference is such. \( \tilde{\eta} \tilde{\eta} \) is similar to both Bengali and Oriya. But the environments in which it occurs in both the languages are not identical. In Bengali \( \tilde{\eta} \tilde{\eta} \) occurs intervocally as well as word finally whereas it does not enjoy the same privilege of occurrence in Oriya. That is why, Bengali \( \tilde{\eta} \tilde{\eta} \) 'a paper packet' is substituted by Oriya \( \tilde{\eta} \tilde{\eta} \) 'a paper packet', and Bengali \( \tilde{\eta} \tilde{\eta} \) 'rather' is substituted by Oriya \( \tilde{\eta} \tilde{\eta} \) 'rather'. Therefore, an equal importance should be attached to the learning of the areas of similarities as well as dissimilarities. The learner has to approach both the aspects—similarities and differences.
These difficulties can be stated as the difficulties in pronunciation as well as perception. The difficulty of learning the pronunciation of the target language reflects the degree of difference in the ways the mother tongue and the target language organise their sound systems. On the other hand, while preparing materials for teaching a second language, it is all the more necessary to have a contrastive study of both the languages. Such a contrastive study predicts the learners' problem on the basis of which remedial lessons are prepared. So, before we suggest steps for preparing remedial lessons, let us classify linguistically some of the learners' problems at the phonological level.

(a) Phonetic Problem: A learner faces problem to produce a sound which is either completely new to him or found in the target language occurring in a different environment. For instance - an Oriya speaker learning Bengali faces problem to produce the vowel $<I>$ as it is completely new to him. Again, a Bengali speaker learning Oriya faces problem to produce the lateral $<L>$ intervocally or finally, though the same is found to occur, in Bengali, as a first member in the combination with $<T>$ and $<D>$. 

(b) Phonemic Problem: This problem is such that two phonemes of a language correspond to a single phoneme in another language. For instance - Oriya has two nasal phonemes /n/ and /N/ which corresponds to a single phoneme /n/ in Bengali. By carrying over Oriya phonemic habits into Bengali
the Oriya speakers learning Bengali may commit a mistake by using /N/ for Bengali /n/.

(c) Allophonic Problem: This problem is caused by the presence of a phoneme in one language which have some allophones identical with those of a corresponding phoneme in the other language, but other allophones of the same phoneme are quite different. For instance - /n/ has some identical allophones (like /NY/, /NH/ etc.) in both Bengali and Oriya. In addition, Bengali has another allophone, i.e., /N/ and Oriya also has another allophone, i.e., /NY/. By carrying over the allophonic habits of one language into another the learner may commit a mistake.

(d) Distributional Problem: The problem deals with the use of familiar sounds in unfamiliar ways. For instance, in Oriya the vowel /o/ can be used in a syllable even if the preceding syllable has /o/. But in Bengali the use of /o/ in the consecutive syllable sequence is unfamiliar. Therefore, a Bengali speaker learning Oriya may commit a mistake while using a word in o: o sequence. This problem is also referred to as a phonotactic problem.

To overcome all these linguistically classified problems three steps are suggested for preparing remedial lessons: (1) Teaching the phonetic nature of a sound; (2) Drills for control over a sound; and (3) contrast drills for avoiding substitution.
11.10.1 TEACHING THE PHONETIC NATURE OF A SOUND

This will help a learner to pronounce and perceive new sounds of the target language. Bengali is characterised by the presence of /æ/ which is new to an Oriya speaker. Quite naturally it becomes very difficult for an Oriya speaker to produce the same. If a teacher explains the phonetic nature of /æ/ to an Oriya speaker, it then becomes easier for him to perceive and pronounce this new sound.

The phonetic nature of Bengali /æ/: This vowel is produced by raising the front of the tongue slightly. The tongue should not be raised to the level necessary for the production of the sound /e/. The degree of raising is a little above the lowest position and the tongue normally occupies the mouth. Lips are not rounded. The soft palate is raised to block the entry of air into the nasal passage. Vocal cords are vibrated during the production of this sound. This sound is described as an unrounded mid-low, front vowel.

11.10.2 DRILLS FOR CONTROL OVER A SOUND

When a learner has got the idea of the phonetic nature of a new sound he needs practice in consciously pronouncing the same. For this reason a teacher can prepare sets of words with the new sound occurring in different positions and give
them to the learners for practice. This will also help a learner to pronounce the sound in different distributions. Following are the sets of words with /æ/:

/æk/ 'one' /phael/ '(you) throw', /chee/ 'tie'
/ætə/ 'so much', /kæno/ 'why', /je/ 'bow string'.

11.10.3 CONTRAST DRILLS FOR AVOIDING SUBSTITUTION

It is a well known fact that the tendency of a learner is to substitute a new sound of the target language by his nearest native sound while learning a language. Thus, the Oriya speakers substitute Bengali /æ/ by Oriya /e/ which is nearest to /æ/. This is done systematically in cognate words. However, a contrast between /æ/ and /e/ is found as both are present in Bengali. Therefore, a teacher can prepare sets of words showing contrast between the two and ask the learners to produce the same. Following are the sets of words in Bengali, showing contrast between /e/ and /æ/:

/ækar/ 'secondary symbol of the vowel e'
/kæno/ '(you) buy' /je/ 'that'
/kæno/ 'why' /je/ 'bow-string'

This kind of drills will help the learner to perceive the difference between the sounds he substitutes and the sound by which he substitutes.

So far another learning problem at the phonological level could not be discussed because of the limitation of
the present treatise. The present treatise, as said earlier, aims at a synchronic comparison between the phonological systems of the two languages. But the problem presented here is related to the pronunciation of the skt. sound ō, which in Bengali is pronounced as /ṛi/ whereas in Oriya it is pronounced as /ru/. As a result, the cognate words containing the skt. ō are pronounced differently in Bengali and Oriya. A few examples are presented below:

<table>
<thead>
<tr>
<th>Sanskrit</th>
<th>Bengali</th>
<th>Oriya</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ṛN̥a/</td>
<td>/rin/</td>
<td>/ruN̥a/'debt'</td>
</tr>
<tr>
<td>/ṛtu/</td>
<td>/ritu/</td>
<td>/rutu/'season'</td>
</tr>
<tr>
<td>/ṛgved/</td>
<td>/rigved/</td>
<td>/rugvedo/'Rgveda'</td>
</tr>
<tr>
<td>/ṛṣi/</td>
<td>/ṛṣi/</td>
<td>/ṛṣi/'agriculture'</td>
</tr>
<tr>
<td>/ṛtō/</td>
<td>/ṛtō/</td>
<td>/ṛtō/'dead'</td>
</tr>
</tbody>
</table>

Thus, in learning one of these two languages the native speaker of one language substitutes the pronunciation of the skt. ō of the target language by the pronunciation of his own language. To overcome this problem too, we suggest both drills for control and contrast drills.

Finally, it may be said that the contrastive study of Bengali and Oriya at the phonological level, does not of course claim to be the last and final. But the points that have been discussed here would serve the purpose to a reasonable extent. We hope that the materials supplied here for both the languages will serve the basis for future research works in these two languages.