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# **A COMPARATIVE STUDY OF ENGLISH AND GUJARATI PHONOLOGICAL SYSTEMS**

DISSERTATION SUBMITTED TO  
SAURASHTRA UNIVERSITY  
RAJKOT  
FOR THE AWARD OF

## **DOCTOR OF PHILOSOPHY**

IN  
ENGLISH

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## **CERTIFICATE**

This is to certify that this dissertation on **A COMPARATIVE STUDY OF ENGLISH AND GUJARATI PHONOLOGICAL SYSTEMS** is submitted by Mr. Ketan B. Vyas for the degree of Doctor of Philosophy, in the faculty of Arts of Saurashtra University, Rajkot. No part of this dissertation has been submitted for any other Degree or Diploma.

Porbandar

Date: / / 2010

Supervisor

(Anupam R. Nagar)

## **DECLARATION**

I hereby declare that the research work in this thesis is prepared by me after studying various references related to the thesis. The analysis and the critical interpretations found in this thesis are entirely original. Hence, I state that I am responsible for the critical opinions and other details found in this thesis. I further declare that this thesis is my original work and has not been submitted to any other university or institution for the award of any degree.

Date:

Place: Jetpur

Ketan B. Vyas

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# Chapter-1

## **INTRODUCTION**



# Chapter - 1

## INTRODUCTION

### **1.1 The Background:**

Language acquisition is one of the indications of development that human-species have journeyed through since ages. Generally, linguistics study encompasses topics analyzing structures and sounds but such a motive may lead to the measurement of the development graph of a particular race or nation. On the other hand a comparative study of two phonological systems: English and Gujarati - means to find out striking similarities and distinctions contained in both the systems. Again, such a study would be, topically most appropriate as English and Gujarati belong to a common language family of the world i. e. the Indo-European language family.

In the first decade of the twenty-first century, English language is itself taking new forms. This, of course, has always been true; English has changed substantially in the five hundred years or so of its use, reflecting patterns of contact with other languages and the changing communication needs of people. Again, in many parts of the world, as English has been taken in the fabric of the social life, it has acquired a momentum and vitality of its own, developing in ways which reflect local culture and languages.

English is also used for more purposes than ever before. Everywhere it is at the leading edge of technological and scientific development, new thinking in economics and management, new literatures and entertainment genres. Nowhere is the effect of this expansion of English into new domains

seen more clearly than in communication. These give rise to new vocabularies, grammatical forms and ways of speaking and writing. Alan Cruttenden writes that a written form of English, based in the Latin alphabet, has existed for more than 1000 years and, though the pronunciation of English has been constantly changing during these times, few basic changes of spelling have been made since the fifteenth century. The result is that written English is often inadequate and misleading.<sup>1</sup>

Presently, the language is at the moment in its global career. The number of people who speak English as a second language will exceed the number of native speakers. The implications of this are likely to be far reaching; the centre of authority regarding the language will shift from native speakers as they become minority stakeholders in global resources. Their literature and television may no longer provide the focal point of a global English language culture.

In this scenario, linguistics studies are getting more and more significant these days. Particularly the study of various aspects of communication is more prominent in linguistic studies. The craze for learning English for communicative purposes is also increasing. In addition, the degree of willingness on the part of learners to be effective and impressive in oral communication is very high.

Second language learning is always affected by the first language of the learners; particularly it is more affected in oral communication because the learner even when s/he communicates in the second language, s/he speaks through the phonology of the first language. Naturally the comparative study

of phonology of the first language, here Gujarati phonology, with English (British R. P.) phonology will provide a lot of insight for the fundamental aspect of oral communication.

## 1.2 Common Features of the Languages of the World:

B. A. Serebrennikov writes that it has been estimated that at present there are approximately 3500 different languages in the world. The phonetic make-up, grammatical structure and lexicon of these languages are extremely diverse. Nevertheless, certain common features can be discerned in all this immense diversity underlying the endless and fascinating idiosyncrasies of the world's Languages.<sup>2</sup>

Sound types would appear to differ markedly from people to people, but they too can be represented as a combination of a small number of distinguishing features, which can be identified in all the world's languages and, consequently, may be taken as universals. According to B. A. Serebrennikov the full complement of these features comprises certain dual oppositions : 1, Vowel-non-vowel 2, consonant - non-consonant 3, interrupted - non-interrupted 4, gluttonized - non-gluttonized 5, strident - non-strident 6, voiced- unvoiced 7, compact – diffuse, and so forth.<sup>3</sup>

Language studies in India since vedic times have a very sound tradition. Bhagwan Panini, the father of Indian linguistics, writes in the Astadhyayi about the fourteen *sutras* (equations) which are [produced out of vedic deity Rudra's Damaru (musical instrument)] the basic sounds of all the languages.<sup>4</sup>

## fourteen sutras

- |             |                       |
|-------------|-----------------------|
| 1. अ इ ऊ ष  | 8. झभञ्               |
| 2. ऋ लृ क   | 9. घ ढ ध ष            |
| 3. ए ओ ङ    | 10. ज ब ग ड द श       |
| 4. ए औ च    | 11. ख फ छ ठ थ व त ट व |
| 5. ह्यवरत   | 12. क प य             |
| 6. लण       | 13. श ष स र्          |
| 7. ञमङ्गणम् | 14. हल्               |

The Astadhyayi of Panini is the culmination of all the previous studies, most of which are now lost. S. K. Belvekar speaks of “nearly a dozen different schools of Sanskrit grammar, at least 300 known from quotations and more than a thousand separate treatise, original as well as explanatory”<sup>5</sup> W. S. Allen also supports the statement by saying “Besides such a concourse, the thousand manuscripts of Priscian’s Latin grammar, the pride of our western tradition are but a drop in the grammatical system”<sup>6</sup>

The Indian linguistic systems influence many other linguistic systems of the world. Buddhist monks carried the Indian linguistic scholarship to China. Even the eighth century Persian grammar by Sibawaih entitled as Al Kitab is said to be influenced by the Paninian system of classifying the speech sounds.

Heinrich Roth - a German missionary, who was the first European to compose a Sanskrit grammar, but owing to his untimely death in 1668 at Agra, his work could not be published. The first European grammar of Sanskrit by Panlinus a Sancto Barholomaeo was written in Latin and

published at Rome in 1970. In the field of Sanskrit learning, Germany remained a mediator between India and rest of Europe and America. Like the fruits of Renaissance and Humanism, the Sanskrit learning spread out westward to stimulate interest in linguistic investigations.

Similarly, around the same time comparative studies in linguistics were also taking place. A French missionary, Courdourc, made a comparative study of Sanskrit verbal forms with those in Greek, Latin and other related European languages. But his work could be published only after Sir William Jones' Phonetics in Ancient India. The most important year serving as a landmark for the Indo – European family is 1786, when Sir William, addressed the Royal Asiatic Society thus:

“The Sanskrit language, whatever may be its antiquity, is of a wonderful structure, more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar than could have been produced by accident; so strong that no philologer could examine the Sanskrit, Greek and Latin, without believing them to have sprung from some common source, which perhaps, no longer exists. There is a similar reason, though not quite so forcible, for supposing that both the Gothic and the Celtic had the same origin with Sanskrit.”<sup>7</sup>

As in the classification of language family, Indo – European is the leading one. Amarnath Jha quotes J. R. Firth acknowledging the impact of Sir William Jones' contribution: “Without the Indian grammarians and

phoneticians whom he introduced and recommended to us, it is difficult to imagine our nineteenth – century school of phonetics.”<sup>8</sup>

Many of the nineteenth – century philologists were well-versed in Sanskrit. Max Muller has very correctly stated that a comparative philologist without knowledge of Sanskrit is like an astronomer without knowledge of mathematics.<sup>9</sup> Max Muller himself wrote Lectures on the Science of Language (1873), besides his other foremost works on Indological studies.

The historically oriented comparison in the 19<sup>th</sup> century led to the classification of language – both genealogical and typological. Adolf Von Schlegel initiated the typological classification in 1818. Inflexional languages were supposed to be superior to the analytical languages. The interest in genealogical classification also grew side by side. Robins rightly observes as these studies were partly as a result of the stimulus derived from the study of Sanskrit.... by western scholars and the demonstrator at the end of the eighteenth century of the indispensable connection of this language with Latin Greek and German.<sup>10</sup>

Language studies continued in Europe up to the eighteenth century before there was any definite impact of Sanskrit studies on them. W. S. Allen indicates this as follows:

“In phonetics, we all too rarely look back beyond the great names of the nineteenth century – Henry Sweet, A. J. Ellis, Alexander Melville Bell – except occasionally to honor a few lonely and half forgotten figures of the immediately preceding centuries.”<sup>11</sup>

So meager had been the contribution of the ancient and mediaeval European phoneticians that W. S. Allen continues to state:

“Generally speaking the expressions of ancient phonetic thought in the west have little to repay our attention or deserve our respect, whereas Indian sources as ancient or ever more ancient are infinitely more rewarding.”<sup>12</sup>

Among the twentieth century linguists Ferdinand de Saussure, Leonard Bloomfield, J. R. Firth, Roman Jakobson and Rulon Wells also refer to some of the ancient Indian linguistic concepts. The affinity between Sanskrit and English languages is a matter of heritage. In fact, the Gujarati language has emerged out of Sanskrit. It would also be quite relevant and interesting to have some brief historical details of English and Gujarati languages and their phonologies.

### **1.3 History of Phonology:**

In ancient India, the Sanskrit grammarian Panini (c. 520–460 BC) in his text of Sanskrit phonology, the ‘Shiva Sutras’, discusses something like the concepts of the phoneme, the morpheme and the root. The ‘Shiva Sutras’ describe a phonemic notational system in the fourteen initial lines of the Astadhyayi. The notational system introduces different clusters of phonemes that serve special roles in the morphology of Sanskrit, and are referred to throughout the text. Panini's grammar of Sanskrit had a significant influence on Ferdinand de Saussure, the father of modern structuralism, who was a Professor of Sanskrit.

The Polish scholar Jan Baudouin de Courtenay, (together with his former student Mikołaj Kruszewski) coined the word 'phoneme' in 1876, and his work, though often unacknowledged, is considered to be the starting point of modern phonology. He worked not only on the theory of the phoneme but also on phonetic alternations (i.e., what is now called allophony and morphophonology). His influence on Ferdinand de Saussure was also significant.

Prince Nikolai Trubetzkoy's posthumously published work, the Principles of Phonology (1939), is considered the foundation of the Prague School of phonology. Directly influenced by Baudouin de Courtenay, Trubetzkoy is considered the founder of morphophonology, though morphophonology was first recognized by Baudouin de Courtenay. Trubetzkoy split phonology into phonemics and archiphonemics; the former has had more influence than the latter. Another important figure in the Prague School was Roman Jakobson, who was one of the most prominent linguists of the twentieth century.

In 1968 Noam Chomsky and Morris Halle published The Sound Pattern of English, the basis for Generative Phonology. In this view, phonological representations are sequences of segments made up of distinctive features. These features were an expansion of earlier work by Roman Jakobson, Gunnar Fant, and Morris Halle. The features describe aspects of articulation and perception, are from a universally fixed set, and have the binary values + or -. There are at least two levels of representation: underlying representation and surface phonetic representation. Ordered phonological rules govern how



underlying representation is transformed into the actual pronunciation (the so called surface form). An important consequence of the influence The Sound Pattern of English had on phonological theory was the downplaying of the syllable and the emphasis on segments. Furthermore, the Generativists folded morphophonology into phonology, which both solved and created problems.

Natural Phonology was a theory based on the publications of its proponent David Stampe in 1969. In this view, phonology is based on a set of universal phonological processes which interact with one another; the ones that are active and the ones that are suppressed are language-specific. Rather than acting on segments, phonological processes act on distinctive features within prosodic groups. Prosodic groups can be as small as a part of a syllable or as large as an entire utterance. Phonological processes are unordered with respect to each other and apply simultaneously (though the output of one process may be the input to another). The second-most prominent Natural Phonologist is Stampe's wife, Patricia Donegan; there are many Natural Phonologists in Europe, though also a few others in the U.S., such as Geoffrey Pullum. The principles of Natural Phonology were extended to morphology by Wolfgang U. Dressler, who founded Natural Morphology.

In 1976 John Goldsmith introduced autosegmental phonology. Phonological phenomena are no longer seen as operating on one linear sequence of segments, called phonemes or feature combinations, but rather as involving *some parallel sequences* of features which reside on multiple tiers. Autosegmental phonology later evolved into Feature Geometry, which

became the standard theory of representation for the theories of the organization of phonology as different as Lexical Phonology and Optimality Theory.

Government Phonology, which originated in the early 1980s as an attempt to unify theoretical notions of syntactic and phonological structures, is based on the notion that all languages necessarily follow a small set of principles and vary according to their selection of certain binary parameters. That is, all languages' phonological structures are essentially the same, but there is restricted variation that accounts for differences in surface realizations. Principles are held to be inviolable, though parameters may sometimes come into conflict. Prominent figures include Jonathan Kaye, Jean Lowenstamm, Jean-Roger Vergnaud, Monik Charette, John Harris, and many others.

In a course at the LSA summer institute in 1991, Alan Prince and Paul Smolensky developed Optimality Theory — an overall architecture for phonology according to which languages choose a pronunciation of a word that best satisfies a list of constraints which is ordered by importance: a lower-ranked constraint can be violated when the violation is necessary in order to obey a higher-ranked constraint. The approach was soon extended to morphology by John McCarthy and Alan Prince, and has become the dominant trend in phonology. Though this usually goes unacknowledged, Optimality Theory was strongly influenced by Natural Phonology; both view phonology in terms of constraints on speakers and their production, though these constraints are formalized in very different ways.

Broadly speaking Government Phonology (or its descendant, strict-CV phonology) has a greater following in the United Kingdom, whereas Optimality Theory is predominant in North America.

#### **1.4 Historical Background of Gujarati Phonology:**

Gujarati is an official national and regional language of India. It is spoken by approximately 46 million people, making it the twenty-third most widely spoken language in the world today. In India, some 45.5 million people speak the language. Outside India, Gujarati is spoken by a quarter of a million people in Tanzania, 150,000 in Uganda, 100,000 in Pakistan, 50,000 in Kenya, and roughly 12,000 in Zambia. Smaller groups of Gujarati speakers are found in Australia, Bangladesh, Canada, Fiji, Malawi, Mauritius, Oman, Singapore, South Africa, the United Kingdom, the United States, and Zimbabwe. Gujarati was the native language of Mohandas K. Gandhi.<sup>13</sup>

Gujarati Language has initially been derived from 'Apbhransh' (Corrupt words) noted by Hemchandracharya. In Bhalan's 'Nalakhyan' and 'Dashmskandh', Gujarati as a language was for the first time referred to as 'Gurjar Bhasha'. But the reference of Gujarat as a region has been found from very ancient times. In many old literary works like Aaburas (1289) by Palhan, Prabhavakcharika (1334) by Prabhachandsuru, 'Tribhuvandipakprabandh' (second half of 15<sup>th</sup> century) by Jayshekharsuri, 'Kanhadeprabandh' (1512) by Padmanabh and many others have referred to 'Gujarat' frequently. The famous Italian traveler Mareo Pollo (1254 – 1324) also noted 'Gujarat' in his

work.<sup>14</sup> In short, it can be said that this region has been known as Gujarat since the time of King Mularajdev Solanki's rein.

On the basis of Hemchandracharya's 'Apbhransh', the language that has been developed after two to three hundred years, is known as 'old western Rajasthani' or known as 'Old Gujarati Bhasha (language). This period is measured in between 1200 to 1500. According to Dr. Tessitori, old Gujarati and old Marawadi languages were so identical that they can be entitled as 'old western Rajasthani'.<sup>15</sup>

From 'Apbhransh' to the present modern Gujarati language the development has been categorized in different phases by different scholars. Given below is the development chart of Narsinhrav Divetiya.<sup>16</sup>

<b>Phase</b>	<b>Entitled</b>	<b>Time</b>
First	Apbhransh	Up to 11 <sup>th</sup> century
Second	Middle Apbhransh	Up to 13 <sup>th</sup> century
Third	Old Western Rajasthani	From 1300 to 1550
Forth	Old Gujarati	1550 to 1650
Fifth	Medieval Gujarati	1650 to 1750
Sixth	Modern Gujarati	1750 onwards

As Gujarati has been derived from Sanskrit, some similar features can easily be traced out. In fact, this periodic featuristic change in Gujarati has been nicely summarized by Narsinhrav Divetiya. Here, only the phonologically distinguished characteristics of each phase are mentioned briefly:<sup>17</sup>

- Main characteristics of 'Apbhransh' are: ever presence of / r / in consonant clusters and rarely remains absent. Sometimes / k / is shifted to / g /.
- Middle 'Apbhransh' is the phase of flaccid position between Hemchandracharya's 'Apbhransh' and the emergence of old Gujarati. Bilhan describes this state of language as censurable.
- In the old western Rajasthani phase, it is noticed that the second vowel of a diphthong remains silent and helps the first vowel to get more length. Nasalized sounds become slow and make the former vowel long one.
- Diphthongs / əl / and / əu / remain unchanged during this phase. They got changed in the next phase.
- During the period of old Gujarati, / əɪ / and / əu / diphthongs were shifted to monophthongs / e / and / ɔ: / . / ɪ / turned to / u / or / ə / at the initial and middle position of a word while with palatals, vowels / ɪ /, / e /, and / j /, / s / was shifted to / ʃ /.

Mediaeval Gujarati that begins with the gigantic literary personality of Premanand, remains quite near to modern Gujarati except for certain typical characteristics in syntactic area.

Gujarati is one of the important western Indian languages. Gujarati people have been transacting and trading with foreigners for the last 1700 years. Gujarati has the huge process of convergence with other languages, society and culture. No region can have all its indigenous cultural distinctions.

It should have been the result of convergence. Substratum and superstratum of language would be related vividly from region to region. Due to such factors, the last phase of modern Gujarati has its own individual features to its sister languages. Gujarati is a Central Zone Indo-Aryan language of the Indo-European language family. It is most closely related to Punjabi and Hindi.

Gujarati has many dialects i.e. Kathiyawadi, Sorathi, Surti, Charotari etc. but when the Gujarati phonological system is to be studied comparatively with the English phonological system then only standard systems have to be studied. In the present scenario of multilingual culture, it becomes necessary to study the continuous development mechanism of language. Dr. Bharati Modi firmly insists on thinking and working sincerely on the standardization of Gujarati. She criticizes that Gujarati people do not have 'language Guard' centers such as in France to protect and cultivate the language. She further says that very few states in India like Bengal, Kerala, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu are conscious and careful about their languages. She believes that very few people in Gujarat use Gujarati with standardization. However, in her opinion Ahemadabad, Mumbai, Rajkot and Bhavanagar are the centers where Gujarati is spoken very close to the standard educated dialect.<sup>18</sup>

Having discussed the various phases of Gujarati language, now certain important researches in the latest phase of Gujarati phonology can be systematically mentioned.

In 1914, Tessitori wrote an article “Notes on the Grammar of old western Rajasthani with special Reference to Apbhramsa and to Gujarati and Marwadi.” This important comparative study reveals three features of Gujarati phonology:<sup>19</sup>

- (i) / əI / and / əu / are shifted to pure vowels / e / and / ɔ: /.
- (ii) In open syllable / I / and / u / are articulated as / ə /.
- (iii) Elision of / h / sound occurs between two vowels or after nasalized sound. Normally / h / is not mentioned in the written script but can be heard.

In Narmad’s ‘Narmkosh’ (1873) the description of such [h] is also accepted. Even Dr. Dhruv mentioned [h] in his work Vagvyapar (1905). He considered [h] as a breath sound which is separated from its former and afterward vowels.<sup>20</sup>

R. Turner immensely contributed to this school through his work Gujarati Phonology (1913). He made some very valuable judgments. They are:<sup>21</sup>

- (i) / f / is heard as a bilabial fricative.
- (ii) Bilabial semi–vowel / w / is sometimes produced as labiodental fricative / u /.
- (iii) Before Palatal consonants / e / and / ɔ: / get changed to / æ / and / ɒ /; / æ / and / ɒ / are always produced with length.

These are scientific and minute observations that have been given for the first time on Gujarati phonology.

Narsinhrao Divetiya delivered lectures on 'Gujarati language and literature' under the series of Wilson Philological lecture in 1915 – 16. The prestigious lecture series was published in a book-form in 1921. The chief features of the book have already been mentioned earlier in this chapter.

After a fissure of some years, Dr. Dave's qualitative research work entitled as The Language of Gujarati was published in the journal of Gujarat Research society in 1947. His study was on articulatory phonetics.

In the second half of the twentieth century, the most reliable work done in this field is of Dr. Bhayani. In 1954, his work 'Vagvyapar' showed some fresh views which may remain controversial to the works of Divetiya. These observations can briefly be summarized as follows: <sup>22</sup>

- (i) / ə / is the weakest vowel of Gujarati
- (ii) Making phoneme separate is not the reason of short or long vowel in Gujarati.
- (iii) After nasal consonants sometimes Gujarati speakers use their own class voiced consonants

Bloomfield's structural linguistic theory had a strong impact during the period of 1930 – 60. Prabodh Pandit studied Gujarati phonology through this aspect. But very soon Noam Chomsky arrived with the new concept of acoustic study of phonology. He launched generative grammar which proved



revolutionary in the linguistic world. It seems Pandit's work was published during the transition period that created a fear to obsolete certain matter.<sup>23</sup>

He contributed two very valuable works entitled as Nasalization, Aspiration and Murmur in Gujarati (1957) and another Gujarati Bhasanu Dhwaniswarup and Dhvani Parivartan. His book Current Issues in Linguistics is also notable. Pandit remained a point of reference for the next generation. Pandit's chief findings can briefly be mentioned as follows:<sup>24</sup>

- / f /, / tʃʰ /, / θ /, / tʰ /, / kʰ /, / bʰ /, / ɖ /, / z /, / g /- are not phonemes (1957).

In the next book he accepted all these as phonemes.

- When a vowel is produced with the sound / h /, it becomes murmur vowel; and if a consonant is produced with / h /, it becomes voiced affricate consonant.

So / h / has two allophones: one [-] = murmur and second [ɲʰ] =voiced.

- / e /, / æ /, and / ɒ /, / ɔː /, vowels are middle phonemes.
- / ə /, / ɑː / are the sounds which can be nasalized and murmur.
- / m /, / n /, / nʰ / and nasal are four nasalized phonemes:.

The nasal has four allophones: / ŋ /, / ɲ /, / ɐ /, / ~ /.

Dr. Dave's Ph.D. dissertation studies in '*Gujarati Phonology and Phonetics*' from Cornell University in 1967 is mostly in the fashion of Dr. Pandit. His Master Jorgensen Eli Fischer presented a very scientific study in 1967 entitled as Phonetic Analysis of Breathy Vowels in Gujarati. He studied for the first time the frequency, the intensity and the duration of Gujarati vowels. Dr. Modi says:

“Though he (Jorgensen) was not a Gujarati speaker, still he noted that all the Gujarati speakers do not produce murmur (Breathy Vowels) similarly.”<sup>25</sup>

Dr. Vyas’s research came to light in 1978. He worked further in the prosodic phonology method of Firth, and treated murmurs as h-prosody. After Pandit’s indication towards murmur, even some more foreign philologists have been attracted in this direction. In 1982 Bickley published a remarkable work, entitled as Acoustic Analysis and Perception of Breathy vowels. From Munich, a research organization of phonology, three Scientists (Langniser, Loders and Schiefer) presented their work entitled as the Acoustic study of Murmured and Tight Phonation in Gujarati Dialects.

In the last decade of the 20<sup>th</sup> century, the research works of Bharati Modi, P. J. Mistry and Babu Suthar should be considered as the most authentic and scientific. Modi’s Ph.D. dissertation titled as Some Problems of Gujarati Phonology contributed significantly to Gujarati phonology. Her articles on “Laryngeal Dimensions in Gujarati phonology” (1989), “Voice Quality and Moulding of Phonologies: Substantial Evidence” (1991), “The Phonetics and Phonology of Mid-vowels” (1994) etc. are very important. Her book Standardization of Gujarati (1995) throws much light in the field. Similarly Mistry’s works on Gujarati Phonology can be seen on the website of International Phonetics Association. His articles ‘Gujarati’ and ‘Gujarati Phonology’ have been published in the volumes like International Encyclopedia of Linguistics and An Encyclopedia of the World’s Major Languages, Past and Present. Babu Suthar’s works are also noticeable. His

online Gujarati English Dictionary (second draft) with the pages on phonology and grammar and his article 'Gujarati' in George Cardona's The Indo- Aryan Languages are outstanding contributions to Gujarati phonology.

## **1.5 Historical Background of English Phonology:**

### **1.5.1 Phonological Studies in Britain:**

Although linguistic science has been making rapid and spectacular progress in the 21st century, it is to be noted that speech and language have always been the subject of serious study. Extensive accounts of the pronunciation of Greek and Latin were written two thousand years ago, and in India, at about the same time, there appeared detailed phonological analysis of Sanskrit, which reveal remarkable affinity with the modern ways of thought. W.S. Allen writes in 'Phonetics in Ancient India: "These early Phoneticians speak in fact to the twentieth century rather than to the middle Ages or even to the mid-nineteenth century..."<sup>26</sup>

In Britain, too, printed works containing information of a phonetic kind extend back to at least four hundred years, Cruttenden mentions in Gimson's pronunciation of English:

"It is true that the very earliest writers in England rarely had as their main interest a purely phonetic investigation; and the descriptive accounts which they provided are less rigorous and satisfactory by modern standards than those of the Indian grammarians. But by the seventeenth century, we find a considerable body of published work

which is already entirely phonetic in character and which contains observations and theories still adhered to today.”<sup>27</sup>

Thus, the real work in the field of phonetics in English began in the seventeenth century.

### **1.5.2 Palsgrave and Salesbury:**

The works on the sounds of English and those of another language were very rare in the initial stage. Among some of the first writers whose works were concerned with the subject are John Palsgrave and William Salesbury. John Palsgrave's French grammar 'Lesclarissement de la langue Françoise' (1530) includes a section which deals with the pronunciation of French, like any book of modern grammar. In order to explain the values of the French sounds, Palsgrave compares them with English.

Another important writer of the same age concerned with pronunciation is William Salesbury, a Welshman. His book 'Dictionary in English and Welshe' (1547) contains comments on the sounds of English. Sound values are indicated by means of the method of Transliteration in Welsh or English.

### **1.5.3 Spelling Reformers: Smith, Hart, Gil**

Even four hundred years before the activities of Bernard Shaw and the Simplified Spelling Society, men were aware of the need to bring some order in English spelling. During the four centuries that have elapsed since these early efforts, pronunciation has continued to evolve without any radical changes of spelling, with the result that today discrepancies between sound

and spelling are greater than they have ever been. It can, however, be said that for more than two hundred years our spelling forms, inconsistent though they may be as far as sound symbolization is concerned, have been standardized.

Among the early spelling reformers related to the investigation of sound, three names deserve mention in particular -Thomas Smith, John Hart and Alexander Gil. Thomas Smith has made many pertinent phonetic comments on such matters as the aspiration of English plosives and the syllabic nature of / n / and / l / as well as providing correct descriptions of the articulation of consonants in his De Recta et Emendata Linguae Anglicae scriptione (1568). Just then John Hart's orthographic was published in 1569. Hart has reported and proposed a revised spelling system. He also describes the organs of speech; defines vowels and consonants (distinguishing between front and back vowels and between voiced and voiceless consonants) and notes the aspiration of voiceless plosives. Out of the numerous seventeenth-century orthopedists, only Alexander Gill's Logonomia Angelica (1619, 1621) can be compared with Hart on the Phonetic level though his observations lack the objectivity of Hart's work.<sup>28</sup>

#### **1.5.4 The Seventeenth century:**

Wallis, Wilkins and Cooper – a group of writers interested in speech and language are the true precursors of modern scientific phoneticians, because of their preoccupation with the detailed analysis of speech activity, the comparative study of the sounds of various languages, the classification of

sound types, and the establishments of systematic relationship between the English sounds.

John Wallis and Bishop Wilkins were among the founder members of the 'Royal Society', and, indeed, Isaac Newton, the greatest of the early members of the society, was interested in phonetic analysis and has left notes of his own linguistic observations. Newton considered language as a proper object of attention for the new scientific age. The new seventeenth century phonetic view of speech and pronunciation was thus being set against a framework of the universal nature and characteristics of language.

John Wallis, primarily a mathematician earned fame as a phonetician after the publication of his work Grammatical Language Anglicanae; first published in 1653. Wallis intended his book to help foreigners to learn English more easily. He admits in his preface that he is not the first to undertake such a task but claims that he does not seek to fit English into a Latin mould, as most of his predecessors had done, but rather to examine the sounds of English as constituting a system in its own right.

In 1668 Wilkins published Essay towards a Real Character and a Philosophical Language. This work of 454 pages with a dictionary appended is of much wider scope than that of Wallis. The work aims at no less than the creation of universal language, expressed by means of 'marks', which should signify things, and not words. Acknowledging his debt to his contemporary Wallis, he says that it seems to me, with greatest accurateness and subtlety to have considered the philosophy of articulated sounds. He claims that the

thirty four letters which he proposes for his alphabets are sufficient to express all those articulate sounds which are commonly known and used in these parts of the world.

Christopher Cooper is considered by many to be the greatest English phonetician of the century. His work on English pronunciation Grammatical Linguae Anglicanae was first published in 1685. An English edition of the same work titled The English Teacher, or the Discovery of the Art of Teaching and Learning the English Tongue appeared in 1687. Christopher Cooper's aim was to describe and give rules for the pronunciation of English for gentlemen, ladies, merchants, tradesmen, school and strangers, rather than to devise a logical system into which the sounds of English and other languages might be fitted. The books contain two parts: the first deals with description of speech sounds and the second part gives rules for the relation of spelling and pronunciation in different contexts.

#### **1.5.5 The Eighteenth Century:**

The main achievement of the century is to attempt successfully to fix the spelling and pronunciation of the language. Dictionaries had been published in the seventeenth century, but the works having the main stabilizing and standardizing influence on the language were to be the dictionaries of Samuel Johnson (1775), Thomas Sheridan (1780), and John Walker (1791). Sheridan and Walker were particularly focused on the standardization of pronunciation.

John Walker, whose dictionary is called by the Dictionary of National Biography as ‘the statute book of English Orthoepy’, exerted a great influence on the teaching of English not only in Britain but also in America. In addition, he paid considerable attention in his work to the analysis of intonation, treated perfunctorily by earlier writers.

About the same time Joshua Steele published his Prosodia Rationalis (1775-9). He described a system of notation capable of expressing pitch changes, stress and rate of delivery.

### **1.5.6 The Nineteenth Century:**

In the nineteenth century the traditional British preoccupation with phonetic notation and the simplification of English spelling continued. Isaac Pitman (1813 – 97) gave a system of shorthand which is so widely used even today. Alexander J. Ellis (1814 - 90) described the difficulties of spelling particularly focusing on English children and foreigners. They were supported by the phonographic society and published a journal named ‘*Fonetic Journal.*’ In 1867, Alexander Melville Bell, the father of Alexander Graham Bell (the inventor of the telephone) published his book titled as Visible Speech.

Although, in referring to these writers, emphasis has been laid on their contribution to the development of phonetic transcription; their published work covers every aspect of speech activity. Bell’s works focuses mainly on elocution and the descriptions of articulatory processes. But Ellis and Sweet applied the techniques of phonetics analysis both to the description of contemporary pronunciation and also to the whole field of historical



phonological investigation. Ellis's – chief contribution is his massive work on Early English Pronunciation, published in five volumes between 1869 and 1889. In these volumes Ellis traces the history of English pronunciation and at the same time analyses the descriptive phonetic studies of contemporary dialects.

Henry Sweet, another great philologist applied stringent phonetic techniques to all his work, so that, whether it is a question of phonetic theory or the history of English or the description of a language such as Welsh or Danish, his basic approach and the majority of his conclusions remain valid today. He belongs as much to the twentieth century as to the nineteenth, and his influence is clearly to be seen in the works of Daniel Jones, who dominated British phonetics in the first half of the twentieth century.

#### **1.6 Role of International Phonetics Association (IPA):**

The International Phonetic Alphabet (IPA) is a system of phonetic notation based on the Latin alphabet, devised by the International Phonetic Association as a standardized representation of the sounds of spoken language. The IPA is used by linguists, speech pathologists and therapists, foreign language teachers and students, singers, actors, lexicographers, and translators.

The IPA is designed to represent only those qualities of speech that are distinctive in spoken language: phonemes, intonation, and the separation of words and syllables. To represent additional qualities of speech such as

tooth-gnashing, lisping, and sounds made with a cleft palate, an extended set of symbols called the Extensions to the IPA is used.

Occasionally symbols are added, removed, or modified by the International Phonetic Association. As of 2008, there are 107 distinct letters, 52 diacritics, and 4 prosody marks in the IPA proper.

In 1886, a group of French and British language teachers, led by the French linguist Paul Passy, formed what would come to be known (from 1897 onwards) as the International Phonetic Association (in French, *l'Association phonétique internationale*). The original alphabet was based on a spelling reform for English known as the Romic alphabet, but in order to make it usable for other languages, the values of the symbols were allowed to vary from language to language. For example, the sound [ʃ] (*sh* in *shoe*) was originally represented with the letter <c> in English, but with the letter <x> in French. However, in 1888, the alphabet was revised so as to be uniform across languages, thus providing the base for all future revisions. Since its creation, the IPA has undergone a number of revisions. After major revisions and expansions in 1900 and 1932, the IPA remained unchanged until the IPA Kiel Convention in 1989. A minor revision took place in 1993, with the addition of four mid-central vowels and the removal of symbols for voiceless implosives. The alphabet was last revised in May 2005, with the addition of a symbol for the labiodental flap. Apart from the addition and removal of symbols, changes to the IPA have consisted largely in renaming symbols and categories, and modifying typefaces.

Extensions of the alphabet are relatively recent; "Extensions to the IPA" was created in 1990 and officially adopted by the International Clinical Phonetics and Linguistics Association in 1994.

### **1.7 Received Pronunciation:**

Received Pronunciation (RP) is a form of pronunciation of the English language (specifically British English) which has long been perceived as uniquely prestigious amongst British accents. About two percent of Britons speak with the RP accent in its pure form.

The reference of the term-RP can also be found in H. C. Wyld's A Short History of English (1914) and in Daniel Jones's An Outline of English Phonetics, although the latter stated that he only used the term "for want of a better" term. According to Fowler's Modern English Usage (1965), the term is "the Received Pronunciation". The word *received* conveys its original meaning of *accepted* or *approved* – as in "received wisdom".

Received Pronunciation may be referred to as the Queen's (or King's) English, on the grounds that it is spoken by the monarch; however, that term is more often used to refer to correctly *written* Standard British English, as in the Queen's English Society. It is also sometimes referred to as BBC English, because it was traditionally used by the BBC, yet nowadays these notions are slightly misleading. Queen Elizabeth II uses one specific form of English, while BBC presenters and staff are no longer bound by one type of accent. There have also long been certain words that have had more than one RP pronunciation, such as *again*, *either*, and *moor*. It is sometimes also referred

to as Oxford English, because it was the common speech of Oxford University. Secondly the production of dictionaries gave Oxford University prestige in matters of language.

RP is an accent (a form of pronunciation), not a dialect (a form of vocabulary and grammar). It may show a great deal about the social and educational background of a person who uses English. A person using the RP will typically speak Standard English although the reverse is not necessarily true (e.g. the standard language may be spoken by one in a regional accent, such as a Yorkshire accent; but it is very unlikely that one speaking in RP would use it to speak Scots or Geordie).

In recent decades, many people have asserted the value of other regional and class accents. Many members (particularly the younger) of the groups that traditionally used Received Pronunciation have, to varying degrees, begun to use it less. Many regional accents are now heard on the BBC.

RP is often believed to be based on Southern accents, but in fact it has much in common with the dialects of the south-east Midlands: Northamptonshire, Bedfordshire and Huntingdonshire. Migration to London in the 14th and 15th centuries was mostly from the counties directly north of London rather than those directly south. There are differences both within and among the three counties mentioned, but a conglomeration emerged in London, and also mixed with some elements of Essex and Middlesex speech.

By the end of the 15th century, "Standard English" was established in the City of London.

Researchers generally distinguish between three different forms of RP: Conservative, General, and Advanced. Conservative RP refers to a traditional accent associated with older speakers with certain social backgrounds; General RP is often considered neutral regarding age, occupation, or lifestyle of the speaker; and Advanced RP refers to speech of a younger generation of British speakers.

The modern style of RP is the usual accent taught to non-native speakers learning British English. Non-RP Britons abroad may modify their pronunciation to something closer to Received Pronunciation in order to be understood better by people who themselves learned RP in school. They may also modify their vocabulary and grammar to be closer to Standard English, for the same reason. RP is used as the standard for English in most books on general phonology and phonetics and is represented in the pronunciation schemes of most dictionaries.

### **1.8 Internationalization of English:**

The concept of 'global village and globalization' cheers up the common man of the new defined world. Even the new world order has to redefine itself taking into cognizance mass consumerism, mass communication, mass tourism etc. in multicultural setting. There is thus, as Pramod Talgeri remarks a need for viewing things in wider perspective:

“This internationalization of culture is reflected today in the English language. No other language dominates world policies, world science, world trade, and world media and world literature like English does today. It is a language spoken across boundaries, across culture and across religions. It is spoken with élan among the cognoscenti as well as used by the lay persons. It is this characteristic of English language that lends it to change and variations. The question is not whether we in India need the English language – it is no longer relevant but to what degree we should acquire and master it.”<sup>29</sup>

English has been over these decades recontextualised in the Indian public culture, which shows a distinct process of attitudinal change and thereby a paradigm shift in the perception of English. Interestingly though, one fails to realize that during the last twenty years the linguistic centre of English has moved away from England. Its hegemony has now spread. That means, its uses and spread is in the hands of its users. This has given rise to several varieties of English in the world. In this sense, the renowned scholar Braj Kachru rightly speaks of ‘*World Englishes*’.<sup>30</sup>

Talgeri says that pluricentricity of English has led to pluralistic incorporations of other cultural and literary traditions: Africans, South – East, Asian, and South Asian etc. He further quotes Kacharu to support this matter as: “ ...And the result is that English, as we have seen, is no more an exponent of only the Judeo – Christian traditions and western concepts of literary creativity”.<sup>31</sup> The usage of English is varied and there is a hierarchy of users. The phenomenal spread of the language makes it an extremely

indispensable tool. Dr.Gokhale in his article “Indian English as a vehicle of Indian literature in English” writes about accepting English as one language of India. He asserts:

“We in India have a colonial legacy of the language. It has undeniably strong roots and we can safely call it one of the Indian languages. Like the other non native varieties of English, Indian English, too, has its intrinsic lexical, syntactic, semantic and phonological features that mark it out as a distinct variety of English. The cultural ethos of India is also distinctly blended in the language and is seen in various hues in the fairly successful and internationally recognized Indian writing in English.”<sup>32</sup>

It seems that in the present scenario, English is no longer a geographically restricted language and it is increasingly difficult to map areas where English is not used as a link language at least to some extent. Dr. Gokhale firmly believes that we should accept and validate the variety of English as he says that English is no longer a homogeneous language. We need to reckon the different manifestations and incarnations of English in different sociocultural contexts.<sup>33</sup> He quotes Sinclair saying that “English is no longer the exclusive province of the native speaker” and finally Kacharu in a similar way remarks that in the international context it is more realistic to consider a spectrum of English which varies widely, ranging from standard native varieties to standard non native varieties.<sup>34</sup> Furthermore, as there exists Australian English, Canadian English, Scottish English etc., similarly the concept of Indian English is now

accepted all over the world. R. K. Bansal, the philologist studied and gave the expression “Indian English” from the phonological aspect. Dr. Gokhole refers to this term (Indian English) thus:

“Indian English is a cover – term used to designate a large number of closely related regional, social and occupational varieties of English. Indian English is usually considered to be a variety of English shaped according to interference. That is Indian English is characterized by a transfer of linguistic patterns from different Indian languages which are the first languages of different Indians. These sub – varieties are usually referred to as Bengali English, Panjabi English, Tamil English, Marathi English etc.”<sup>35</sup>

Briefly speaking, the present study aims at comparing English phonology with Gujarati phonology to categorize and modify Gujarati English as a better variety. It can be firmly assumed that Gujarati phonology has quite a fertile range of sounds that make their speakers internationally intelligible.

### **1.9 Chapterization:**

Phonology, as described on the [website of International Phonetics Alphabets](#), (from the Greek: φωνή, *phōnē*, "voice, sound" and λόγος, *lógos*, "word, speech, subject of discussion") is the systematic use of sound to encode meaning in any spoken human language, or the field of linguistics studying this use. Just as a language has syntax and vocabulary, it also has phonology in the sense of a sound system. When describing the formal area of study, the term typically describes linguistic analysis either beneath the word (e.g., syllable, onset and rime, phoneme, articulatory gesture,



articulatory feature, etc.) or to units at all levels of language that are thought to structure sound for conveying linguistic meaning. It is viewed as the subfield of linguistics that deals with the sound systems of languages. Whereas phonetics is about the physical production, acoustic transmission and perception of the sounds of speech while phonology describes the way sounds function within a given language or across languages to encode meaning. The term 'phonology' was used in the linguistics of a greater part of the 20th century as a cover term uniting phonemics and phonetics. Current phonology can interface with disciplines such as psycholinguistics and speech perception, resulting in specific areas like articulatory or laboratory phonology.<sup>36</sup>

In the first chapter, a diachronic and synchronic study of Gujarati and English phonological systems will be elaborately described. The root and role of phonology and its various theories will also be mentioned briefly. Important works of eminent philologists of both the languages will also be examined. Internalization of English and the concept of 'Indian English' in the present scenario will be discussed quoting contemporary experts. Finally, the major objectives and hypothesis are mentioned.

In the second chapter, the vowel systems of English and Gujarati will be studied comparatively. Phonological study is generally categorized in two divisions: segment and suprasegment. In the segment, vowel and consonant systems are incorporated. To study the articulation of vowels is itself a very minute and challenging task because the articulation of a vowel means that the air passes through without any friction or obstacles. So, here the tongue

does not touch any part of the mouth, the lips remain separate and teeth are the passive articulators in the production of vowels. Pure vowels and diphthongs will be studied one by one. It can be said, English phonology has more number of pure vowels and diphthongs in comparison to Gujarati phonology. Some pure vowels are produced with a considerable difference while some pure vowels and some diphthongs are not at all produced in each other phonological systems. It will be studied that instead of pronouncing diphthong meaning two monophthongs in a single syllable, the second monophthong of a diphthong gets shifted to a semi-vowel / v / or / j / in Gujarati phonology. This will also be verified during this study.

In the third chapter, a comparative study of English and Gujarati consonant systems will be discussed. Here every consonant will be studied and compared by categorizing them in different ways; articulation of manner, articulation of place and whether they are voiced or voiceless. All the possible variations like consonant clusters, aspiration of some consonants, their initial, middle and final positions will also be compared and studied in this chapter. It seems that Gujarati phonology has more number of consonants than English phonology. There are some consonants in both the phonological systems that can be articulated quite similarly while there are some consonants in English, which cannot be articulated in Gujarati phonology, vice a versa some sounds of Gujarati phonology cannot be produced in English phonology.

In the fourth chapter, the suprasegmental aspects of both the phonological systems will be studied comparatively. Syllable structure and syllable division and stress patterns of English and Gujarati phonology

systems will be specifically selected for the comparative study. Syllable is defined as a minimal unit of sounds or phonemes. It means each syllable contains at least two sounds. Here the orthographies of both the languages play an important role. That is why some striking features have been found out. It is said that the beauty of English lies in the usage of stress- unstressed pattern. To put stress on a particular syllable of a word and to put stresses on particular words of a sentence makes the speaker effective and understandable in the usage of English language. In the standard English dictionaries like Oxford and Cambridge, the words are given with proper pronunciation with primary and secondary stresses. It means English phonology has determined set-patterns of stress. In Gujarati phonology, normally the first syllable takes the stress; it is shifted according to the importance of the words. Gujarati phonology may not have, as it seems, that much well studied and set-patterns of stress. All these variations will be studied in this chapter.

In the last concluding chapter, the hypothesis will be elaborately justified on the basis of the comparative study done through out the thesis. Here the hypotheses of the present study are mentioned in brief.

- English and Gujarati phonology have noticeable similarities which could assist in attaining intelligible standards in English communication.
- English and Gujarati phonology have clear distinctive features which create hindrances in articulating intelligible standards in English communication.

- English communication is generally done through Gujarati phonology by the native speakers of Gujarat. They do not use English phonology while communicating in English.
- If remedial guidance is provided for the improvement of English communication, the standards of intelligible English are possible to locate in native speakers in Gujarat.

### **1.10 Methodology:**

The present study adopts the comparative methodology for research purpose. The phonological systems of English (British R. P.) and Gujarati will be studied on the basis of findings and works of eminent scholars. David Odden also accepts the pattern in his book Introducing Phonology. He writes saying that if we look into the central question of phonology in greater depth, we will find that the boundaries between the disciplines of phonetics and phonology are not entirely clear-cut. As research in both these fields has progressed, it has become apparent that a better understanding of many issues in phonology requires that you bring phonetics into consideration, just as a phonological analysis is a prerequisite for any phonetic study of language.<sup>37</sup>

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# Chapter-2

## **Comparative Study of Vowel Systems**



## Chapter - 2

### Comparative Study of Vowel Systems

#### **2.1 Description of Vowel:**

In the previous chapter, an effort was made to outline the core features involved in the study of English and Gujarati phonological systems. Having suggested that both English and Gujarati phonological systems have their own significant characteristics, it would be most appropriate now to study the English and Gujarati vowel systems from the comparative point of view. Generally speaking, no phonological inventory can claim to be more than a statement regarding a point in the temporal continuum of the history of the language where only at that point the dynamicity is made static. Yet every research linguist tends to make ambitious claims. The description of vowel sounds, especially by means of the written letters, has always been considerably difficult. Vowel was defined earlier by a Gujarati phonologist as the sound that can be produced without taking the help of any other sounds.<sup>1</sup>

R.K.Bansal defines the vowel thus:

“In the production of vowels the air from the lungs comes out in a continuous stream through the mouth, and the vocal cords vibrate to produce ‘voice’. There is no closure of the air passage and no narrowing that would cause friction”<sup>2</sup>

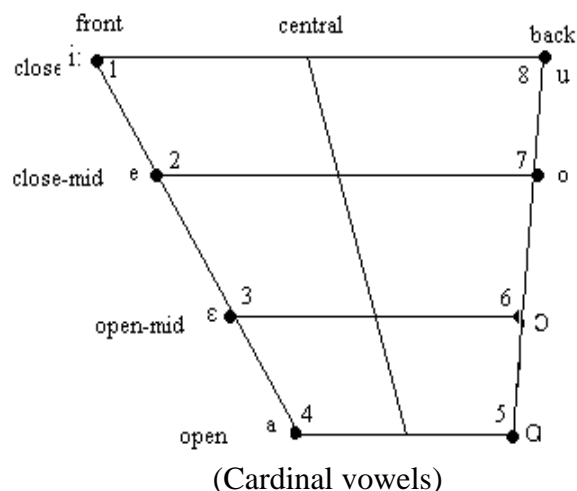
Cruttenden elaborates saying that certain position and gross movements of the tongue can be felt, if the vowel is pronounced with awareness. For instance, when most of the vowel sounds are pronounced,

the tip of the tongue lies behind the lower teeth. In comparing two such vowels / i: / (key) and / ɑ: / (car), it is felt that, the front of the tongue is the part which is mainly raised, whereas in the case of the latter, such raising is accomplished by the back part of the tongue. Therefore, it can be stated in articulatory terms that some vowel sounds require the raising of the front of the tongue, while others are articulated with a typical 'hump' at the back; and these statements can be confirmed by means of x-ray photography. But the actual point and degree of rising is more difficult to judge.<sup>3</sup>

The best-known discussion of the vowel – consonant distinction is by Pike (1943: 66-79). He suggests that we should use new terms: sounds that do not obstruct the airflow (traditionally called 'vowels') should be called 'vocoid', and sounds that do obstruct the airflow (traditionally called 'consonants') should be called 'contoids'.<sup>4</sup> This leaves the terms "vowel" and "consonant" for use in labeling phonological elements according to their distribution and their role in syllable structure. It suggests vowels are usually vocoid and consonants are usually contoid. This is not always the case: for example, **j** in 'yet' and **w** in 'wet' are (phonetically) vocoid but function (phonologically) as consonants. O'Connor and Trim (1953) minutely describe the distributional differences between vowels and consonants while a brief discussion is found in Cruttenden (1994) in English. On the other hand, in Gujarati, Pandit, Dave, Modi, Babu Suthar and Mistry outlined the vowels and consonants with different shades. The classification of vowels has a large literature: Ladefoged, Jones and Abercrombie in English and Dr. Kantilal Vyas, Bharati Modi, Yogendra Vyas in Gujarati did good work. The Handbook

of the International Phonetic Association (1999: Section 2.6) explains the IPA's principles of vowel classification.<sup>5</sup> For the accurate way of classifying vowels, 'cardinal vowels' system has been adopted by philologists. These cardinal vowels are a standard reference system, and people being trained in phonetics at an advanced level have to learn them accurately and recognize them correctly. If you learn the cardinal vowels, you are not learning to make English sounds, but you are learning about the range of vowels that the human vocal apparatus can make, and also learning a useful way of describing, classifying and comparing vowels.

The cardinal vowel system was invented and developed by Daniel Jones who was Professor of Phonetics at University College London from 1921 to 1947. The system was first used in print in the first edition of Jones's English Pronouncing Dictionary. The following figure helps to understand the place and the manner of the articulation of the cardinal vowels explicitly.



The philologists have therefore described three ways to arrive at accuracy during the articulation of vowel sounds:

- 1) The position of the soft palate is raised for oral vowels and lowered for nasalized vowels
- 2) The kind of aperture formed by lips - degrees of spreading or rounding
- 3) The part of tongue which is raised and the degree of its rising

## **2.2 British R. P.:**

British Received Pronunciation (British R. P.) has in all 20 vowels; 12- distinctive pure vowels or monophthongs and 8 diphthongs or gliding vowels.

They are:

### **2.2.1 Pure Vowels:**

- 1) / i: / as in reach
- 2) / ɪ / as in win
- 3) / e / as in pen
- 4) / æ / as in bat
- 5) / ʌ / as in luck
- 6) / ɑ: / as in last
- 7) / ɒ / as in box
- 8) / ɜ: / as in purse
- 9) / ə / as in banana
- 10) / ɔ: / as in all
- 11) / u / as in book
- 12) / u: / as in zoo

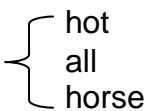
## Diphthongs:

- 1) / eɪ / as in late
- 2) / aɪ / as in white
- 3) / ɔɪ / as in boy
- 4) / əʊ / as in close
- 5) / aʊ / as in now
- 6) / ɪə / as in really
- 7) / eə / as in hair
- 8) / uə / as in poor

### 2.3 General Indian English:

Corresponding to the twenty-vowel system of British R.P., General Indian English stated by R. K. Bansal has a system of 11 pure vowels and 6 vowel glides (diphthongs).<sup>6</sup> They are:

#### 2.3.1 Pure Vowels

- 1) / i: / as in these
- 2) / ɪ / as in bit
- 3) / e: / as in gate
- 4) / ɛ / as in bed
- 5) / æ / as in bad
- 6) / a: / as in card
- 7) / ɒ / as in 

- 8) / o: / as in { home  
force
- 9) / u / as in book
- 10) / u:/ as in { rule  
tube
- 11) / ə / as in { bird  
bus  
account

### **Vowel Glides:**

- 1) / aɪ / as in bite
- 2) / ɔɪ / as in boil
- 3) / aʊ / as in house
- 4) / ɪə / as in cheer
- 5) / eə / as in air
- 6) / uə / as in poor

### **2.3.2 Major differences between the vowel systems of British R. P. and**

#### **Indian English:**

The major differences between the vowel systems of British R. P. and Indian English are stated by Dr. R. K. Bansal as follows: <sup>7</sup>

- i. Indian English has only one phoneme / ə / corresponding to British R.P. / ʌ /, / ɜ: / and / ə /.

- ii. Indian English has one phoneme / ɒ / corresponding to British R.P. / ɒ / and / ɔ: /.
- iii. Indian English has monophthongs / e: / and / o: / in place of British R.P. diphthongs / eɪ / and / əu /.
- iv. The qualities of some of the Indian English vowels are different from those in British R.P..
- v. The distribution of vowels in Indian English sometimes differs from that in British R.P. For example, in British R.P generally a weak vowel / ə /, / ɪ / or / u / is used in an unaccented syllable. This is not the case in Indian English, where the tendency is to see the vowel indicated by the spelling.

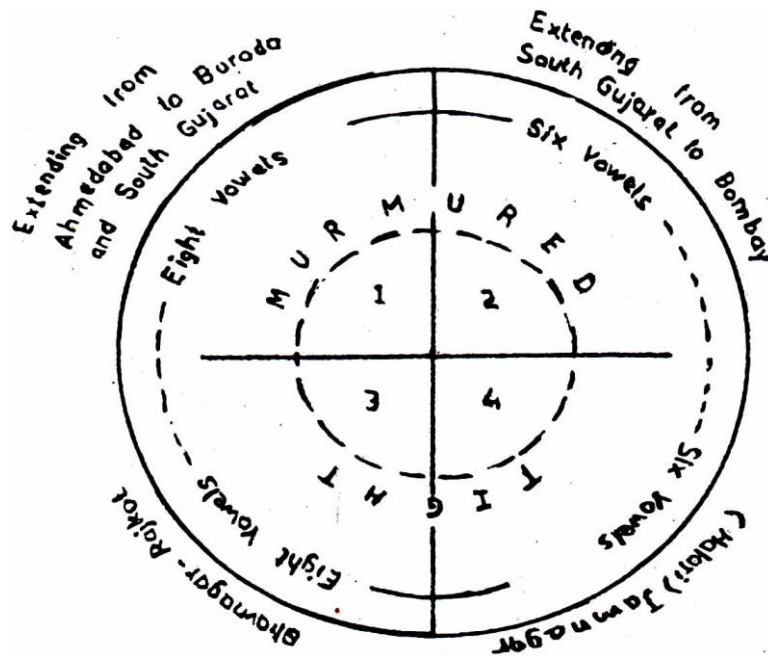
#### **2.4 Gujarati Vowel System:**

The preceding paragraphs state the distinctions between the vowel systems of British R.P. and General Indian English. Keeping these features in mind the vowel system of Gujarati phonology is stated here. Gujarati phonology as such does not have any serious and thorough consideration on standardization. In fact, every philologist has given different views on this issue. However, it has been commonly accepted that Gujarati phonology has eight (8) pure vowels and six (6) diphthongs. The eight pure vowels are as follows: /ə/, /ɑ/, /ɪ/, /u/, /e/, /æ/, /ɒ/, /o:/. The six diphthongs are as follows: /aɪ/, /oɪ/, /au/, /uɪ/, /əɪ/, /əu/.

The table given below shows the description of vowels in Gujarati phonology that has been given by Jayant Kothari: (note that the table contains only six vowels) <sup>8</sup>

	Front	Central	Back
Upper	i		u
Middle		ə	
Lower	æ	a	ɔ

Dr. Bharati Modi specifically mentions that there are two belts or say dialects in Gujarat: tight phonation dialect area and another of murmured dialect area. The area of Bhavnagar and Rajkot and from Ahmedabad to Baroda and upto South Gujarat produces eight vowels while area of south Gujarat nearing to Mumbai and of Jamnagar(Halar) produces six vowels.<sup>9</sup>



(Figure of approximate divisions of six/eight vowel areas)

Similarly, Babu Suthar has clearly identified eight vowels in his latest Gujarati-English Learner's Dictionary as follows:<sup>10</sup>



	Front	Central	Back
Close	i		u
Close-mid	e	ə	o
Open-mid	ɛ		ɔ
Open	a		

## 2.5 Front Vowels of English and Gujarati:

The preceding discussion of English and Gujarati vowel systems indicate certain clear distinctions at the very first glance. British R. P. contains four front vowels: / i:, ɪ, e, æ / while Gujarati phonology accepts, most commonly, four vowels: / i, e, ɛ, a /. Some philologists accept only two front vowels: / i, e /. / ɛ / is not accepted by these scholars while / a / is articulated at the back position. Such controversies will be discussed in detail at a later stage. An attempt shall now be made to study and describe each vowel from a comparative perspective:

### 2.5.1 / i /

British R.P. consists of two varieties of the cardinal vowel: / i: / and / ɪ /.

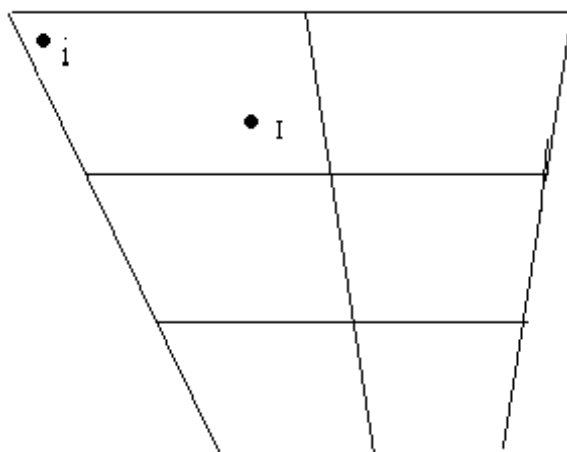
They have been described as:

/ i: /:

“The front of the tongue is raised to a height slightly below and behind the front close position; the lips are spread; the tongue is tense, with the side rims making a firm contact with the upper molars.”<sup>11</sup>

/ɪ/:

“The short R.P. vowel /ɪ/ is pronounced with a part of the tongue nearer to center than to front, raised just above the close-mid position; the lips are loosely spread; the tongue is lax (compared with the tension for /i:/), with the side rims making a light contact with the upper molars.”<sup>12</sup>



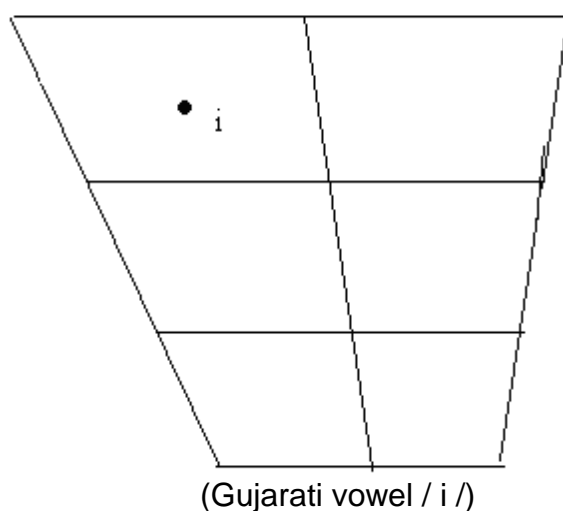
The following figure shows the exact articulation of both the vowels:

Gujarati phonology has only one phoneme /i/ against British R. P. /i:/ and /ɪ/. It is also observed in the dissertation of M. Phil (by the researcher) from the studying the recorded speeches of the representative speakers of the five different cities of Saurashtra that people of Saurashtra tend to produce the vowel /i/ instead of British R.P vowel /i:/ and /ɪ/. i.e. they do not distinguish between long /i:/ and short /ɪ/ even in their speeches. For example,

The Word	Pronounced According to British R.P.	Pronounced by people of Saurashtra
Reach	/ri:tʃ/	/ritʃ/
Win	/wɪn/	/vɪn/

In Gujarati phonology, / i / is produced with the back part of the tongue raised towards the upper molars. The lips are loosely (slightly) spread; without having more movement that is found in pronouncing British R.P. / i: /.

Moreover, this / i / is not in the close and front position like the British R.P. / i: / and not even near the center like the short British R.P. / ɪ / but it is in between; front and center (slightly near to front) and close and half close position.



This, of course does not mean that the people of Gujarat cannot produce / i: /. They do articulate it but only when they speak specifically and intentionally. In their habits, vowel / i: / remains absent and only / i / as described above, is pronounced in most cases.

### 2.5.2 [ e ] and [ ε ]:

These are the most discussed vowels in the area of phonology. British R.P. possesses two varieties of the second and third vowels: / e / and / æ /. Cruttenden describes them in Gimson's Pronunciations of English as follows:

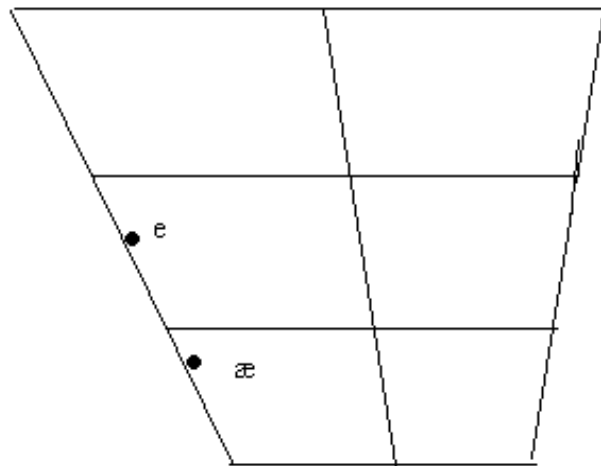
/ e /:

“For the short R.P. / e /, the front of the tongue is raised between the close-mid and open-mid positions; the lips are loosely spread and are slightly wider apart than for / ɪ /; the tongue may have more tension than in the case of / ɪ /, the side rims making a light contact with the upper molars”<sup>13</sup>

/ æ /:

“The mouth is slightly more open than for / e /; the front of the tongue is raised to a position midway between open and mid-open, with the side rims making a contact with back upper molars; the lips are neutrally open.”<sup>14</sup>

The following figure shows the articulation of both the vowels explicitly.



(British R.P. / e / and / æ /)

According to Bansal General Indian English contains three variations of the second cardinal vowel i. e. vowels like / e: /, / æ / and / ε /. They differ from British R.P. / e / and / æ /. Indian English / e: /, / æ / and / ε / are described respectively as follows:

/ e: /:

“In Indian English this vowel is a monophthong / e: / - a centralized front, nearly half-close vowel. In British R.P. it is a diphthong / eɪ /, beginning slightly below the half-close position and moving towards R.P. The lips are spread.”<sup>15</sup>

/ æ /:

“The quality of this vowel in Indian English is more open than in British R.P. In either case, the front of the tongue is raised to a position between half-close and half-open. The lips are loosely spread.”<sup>16</sup>

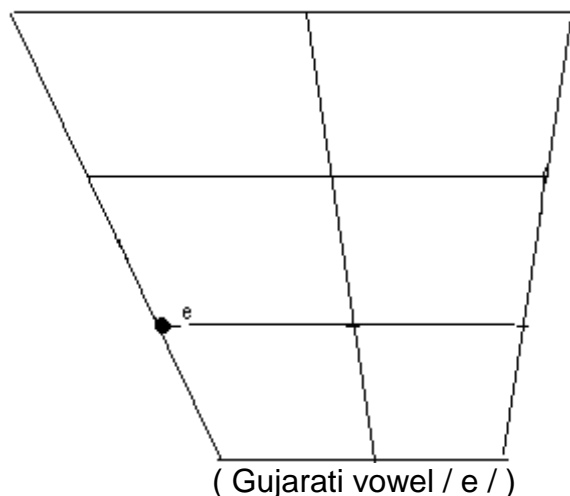
/ ɛ /:

“For this vowel the front of the tongue is slight below the half open position and lips are in the neutral position”<sup>17</sup>

In this context, Gujarati phonology also describes / e / and / ɛ /. Only / e / is produced and used, while the vowel / ɛ / is mostly avoided in pronunciation.

In Gujarati phonology, Jayant Kothari accepts vowels like / e / and / æ / as the lower front vowels. They are described as similar as in British R.P., even though the people of Gujarat tend to pronounce only one vowel / e / in their daily English as well as Gujarati speech habits. R. Turner observes that before palatal consonants / e / is normally shifted to / æ /. Prabodh Pandit has described / e / and / æ / as middle phonemes.<sup>18</sup> Babu Sutar and Bharati Modi prefer / e / as close- mid vowel and / ɛ / as the open- mid vowel.

For this vowel / e /, the front of tongue is raised towards the upper molars and takes position between half close and half open position, though comparatively near to half close position. Lips are loosely spread.



The back vowel / æ / or say / ε /, though accepted and found in Gujarati phonological books, mostly remains absent in speech. In the study, it is observed that in daily Gujarati speeches of people of Saurashtra / æ / is not normally heard. Only in conferences and workshops of scholars, / æ / may sometimes be used with proper consciousness.<sup>19</sup> For example in the following recorded words Saurashtrians do not pronounce / e / and / æ / with distinction.

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Pen	/ pen /	/ pen /
Bat	/ bæet /	/ bet /

## 2.6 Central Vowels:

Here British R. P. gives three distinctive phonemes in comparison to the one phoneme in Gujarati phonology (upholding the centre position). In British R.P. / ə /, / ɜ: / and / ʌ / are separate phonemes while Indian English has only one phoneme / ə /, realized as [ ə ] and [ ʌ ], the two being used indiscriminately. They are described respectively as:

/ ʌ /:

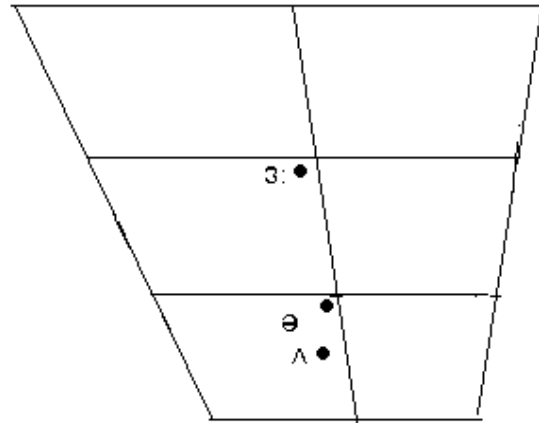
“The short R.P. / ʌ / is articulated with a considerable separation of the jaws and with the lips neutrally open; the center of the tongue (or a part slightly in advance of center) is raised just above the fully open position, no contact being made between the tongue and the upper molars.”<sup>20</sup>

/ ɜ: /:

“R.P. / ɜ: / is articulated with the center of the tongue raised between close mid and open-mid, no firm contact being made between the tongue and upper molars: the lips are neutrally spread.”<sup>21</sup>

/ ə /:

“/ ə / has a very high frequency of occurrence in unaccented syllables. Its quality is that of a central vowel with neutral lip position, having in non-final positions a tongue-raising between open-mid and close- mid.”<sup>22</sup>

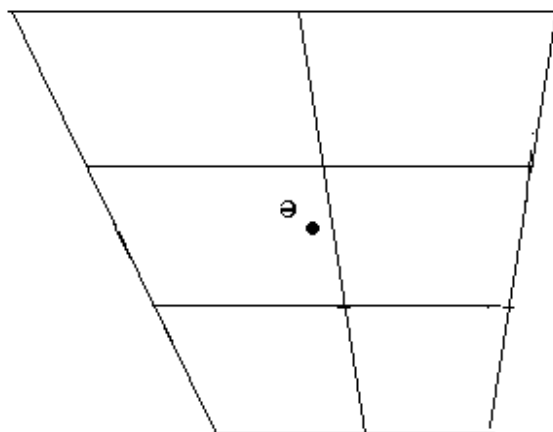


British centre vowels

Similarly, it has been observed that Gujarati phonology accepts only one phoneme / ə / instead of / ə /, / ʌ / and / ɜ: /. The vowel / ʌ / is mostly pronounced in accented syllables, while Gujaratis are not habituated to give that much accent on any syllable.

British R.P. / ɜ: / is shifted to / ər / by them as it also happens in General Indian English. Dr. Bhayani has considered / ə / as the weakest vowel of Gujarati phonology. It is studied that Saurashtrians do not have this habit of making the pronunciation of / r / silent, if it is not followed by a vowel. They do pronounce / r / and the length of / ɜ: / is naturally shortened. Therefore, the production of the phoneme / ɜ: / is mostly not heard. / ə / is articulated in Gujarati phonology as in the following figure.





Gujarati centre vowel

For example in the following recorded words, Saurashtrians do not pronounce /ʌ/, /ɜ:/ and /ə/ with distinction.

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Luck	/lʌk/	/lək/
Purse	/pɜ:s/	/pərs/
About	/əbaut/	/əbaut/

/ə/ is a central vowel with neutral lip position in Gujarati phonology.

## 2.7 Back Vowels:

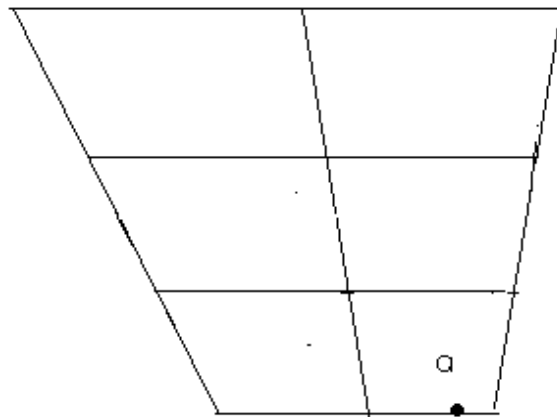
In comparison to four cardinal vowels in the back position: [ɑ, ɔ, o, u], British R. P. has five back-vowels /ɑ:, ɒ, ɔ:, u, u:/ while Gujarati phonology contains three back vowels /ɑ, ɔ, u/. A detailed discussion of every vowel is described as follows:

### 2.7.1 [ɑ]:

The phoneme /ɑ/ is described in British R.P. as a long vowel:

/ɑ/:

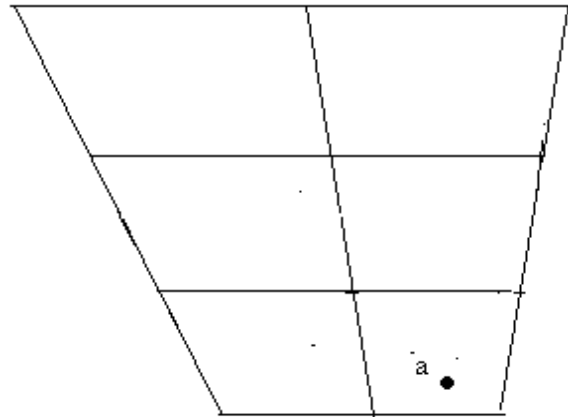
“/ɑ/ articulated with a considerable separation of the jaws and the lips neutrally open; a part of the tongue between the center and the back is in the fully open position, no contact being made between the rims of the tongue and the upper molars.”<sup>23</sup>



(British R. P. vowel /ɑ/)

Corresponding to this one, the quality of the vowel in Indian English is somewhat centralized compared to the R.P. vowel, which is back and fully open. It is symbolized as /a:/.<sup>24</sup>

The phoneme /a:/ is not produced as long as in Gujarati phonology. The jaws do not open so wide as in British R.P. i. e., Gujarati /a/ is comparatively a shorter vowel than British R.P.. In British R.P., it is a long vowel and centralized as it is in Indian English and the lips are neutrally open.



(Gujarati phonology vowel / a /)

Jayant Kothari places / a / as the center lower-vowel, while Babu Suthar has articulated this vowel as a front- open. For example in the following recorded words Saurashtrians do not pronounce / ɑ: / and / a: / but / a / with a distinctive clarity.

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Last	/ lɑ:st /	/ last /

### 2.7.2 [ɔ] and [ɒ]:

In comparison to the cardinal vowels six and seven, British R.P produces / ɒ / and / ɔ:/ distinctively. / ɒ / and / ɔ: / are separately described in British R.P. as :

/ ɒ /:

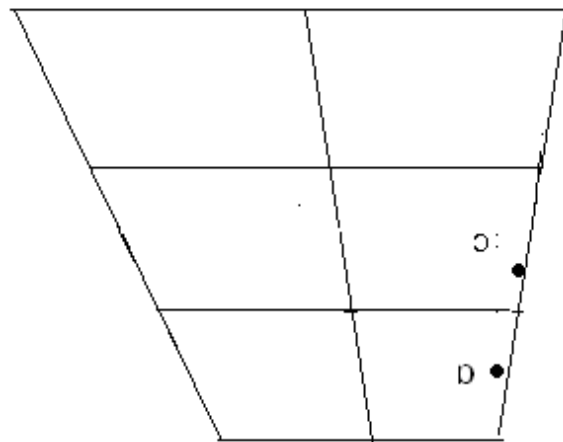
“This vowel is articulated with wide open jaws and slight, open lip-rounding; the back of the tongue is in the fully

open position, no contact being made between the tongue and the upper molars.”<sup>25</sup>

/ɔ:/ :

“This relatively long RP vowel is articulated with medium lip-rounding; the back of the tongue is raised between the open mid and close-mid positions, no contact being made between the tongue and the upper molars.”<sup>26</sup>

The difference of their articulation is depicted in the following figure:

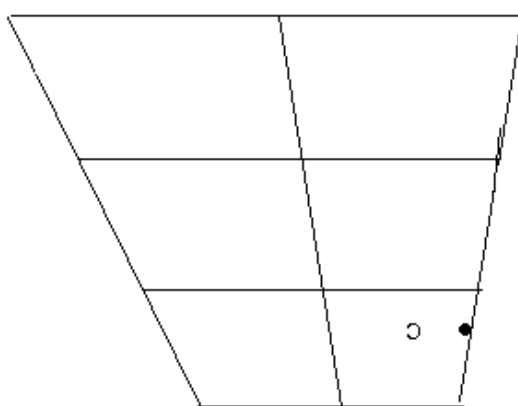


( British R. P. vowel / ɒ / and / ɔ: / )

They are also separately accepted in Gujarati phonology as / ɔ / and / o / by Babu Suthar (see table on page no.10), while Jayant Kothari accepts only one phoneme as / ɔ / (see table on page no. 09). Suthar articulates / ɔ / as the back- open mid vowel. Kothari describes this vowel as the back- lower. It would also be wrong to say that there is no distinction at all between / ɒ / and / ɔ: / in the English speech habits of the people of Saurashtra. Nevertheless, it is observed that differences have been noticed in a few cases. Without being conscious, they do not produce both the vowels

distinctly. In routine course they produce / ɔ: / with / ɔ / or with / ɔr /. Again, the distinction between / ɒ / and / ɔ: / is not observed in Indian English; [ ɒ: ], / ɒr / or / ɔ:r / is often being used in place of / ɔ: /.<sup>27</sup>

Thus, for Gujarati phonology / ɔ / is a back vowel, slightly raised as in Indian English and the lips are rounded. The length is short corresponding to the vowel / ɔ: /. It is articulated as in the following figure:



(Gujarati phonology vowel / ɔ /)

For example in the following recorded words Saurashtrians do not pronounce / ɑ / and / ɔ: / with distinction.

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Box	/ bɒks /	/ bɒks /
All	/ ɔ:l /	/ ɒl /

### 2.7.3 / u /

/ u / and / u: / are articulated separately in British R.P. and also in Indian English. Nevertheless, such distinctions cannot be found in Gujarati phonology. They produce only / u / and even replace / u: / by / u /.

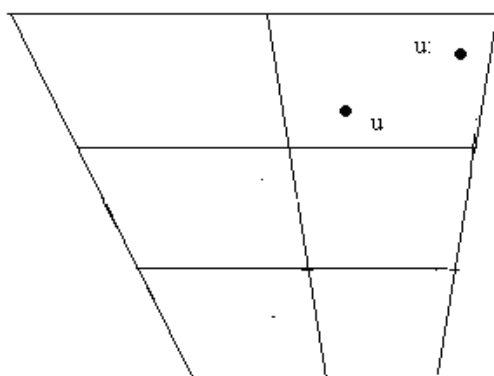
British R.P. describes / u / and / u: / as follows:

/ u: /:

“The short R.P. vowel / u / is pronounced with a part of the tongue nearer to center than to back raised just above the close-mid position; it has, therefore, a symmetrical back relationship with the front vowel / ɪ /; the tongue is laxly held (compared with the tenser / u: /), no firm contact being made between the tongue and the upper molars. The lips are closely but loosely rounded.”<sup>28</sup>

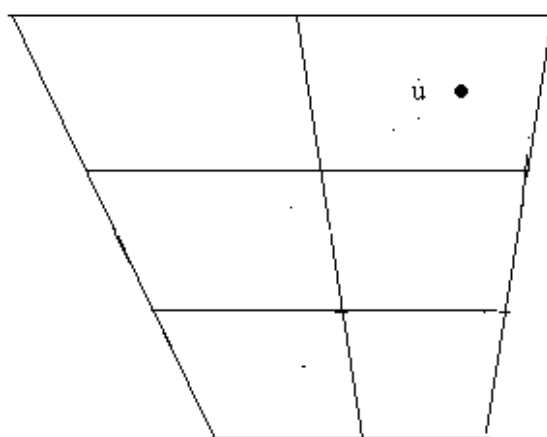
/ u: /:

“RP long / u: / is a close back vowel, but the tongue-raising is relaxed from the closest position and is somewhat centralized from true back; its relationship with / u / is similar to that between / i: / and / ɪ /, the articulation of / u: / being tense compared with that of / u / though no firm contact is made between the tongue and the upper molars. The lips tend to be closely rounded.”<sup>29</sup>



(British R.P. vowel / u / and / u: /)

Gujarati phonology produces only one phoneme / u / that is articulated nearer to the close position but not like British R. P. / u: /. It is placed as the back vowel as / ɪ / is placed at the front. It is produced at the back part. No firm contact is made between the tongue and the upper molars. The lips are closely but loosely rounded and not tense as it is in British R.P. / u: /. The following figure shows its clear placement.



(Gujarati Vowel / u /)

For example in the following recorded words the people of Saurashtra do not pronounce / u / and / u: / with distinction.

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Book	/ buk /	/ buk /
Zoo	/ zu: /	/ zu /

## 2.8 Diphthongs

Diphthongs are vowel glides within a syllable. In the British R.P. during articulation of the diphthongs, much of the length and stress is given to the first element. One of the most common pronunciation mistakes that result in a learner of English having a “foreign” accent is the production of pure vowels where a diphthong should be pronounced. British R.P has eight diphthongs. R. K. Bansal accepts six diphthongs in his book Spoken English in India. Kantilal Vyas accepts six diphthongs in Gujarati phonology. Though six diphthongs are mentioned in Gujarati phonology, they are not habituated to pronounce most of them in their speech. They do produce the first vowel clearly but when they glide from the first to the second one, the tongue slips from these vowels to semi-vowels like / j / or / w / or change the diphthongs to the monophthongs .

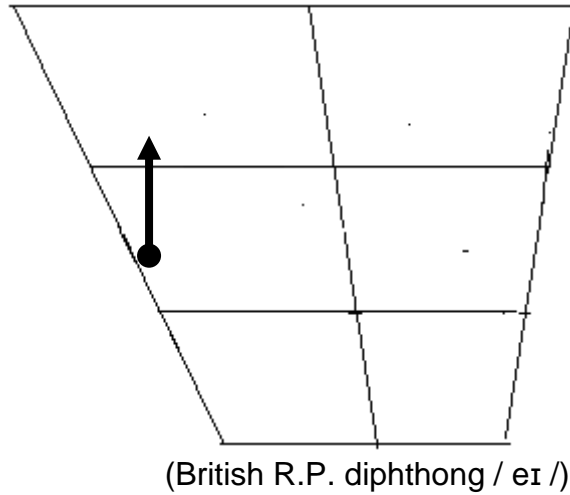
### 2.8.1 / ɪ / Ended Diphthongs:

There are three / ɪ / ended diphthongs - / eɪ /, / aɪ /, and / ɔɪ / in British R.P. They are described respectively as follows:

/ eɪ / :

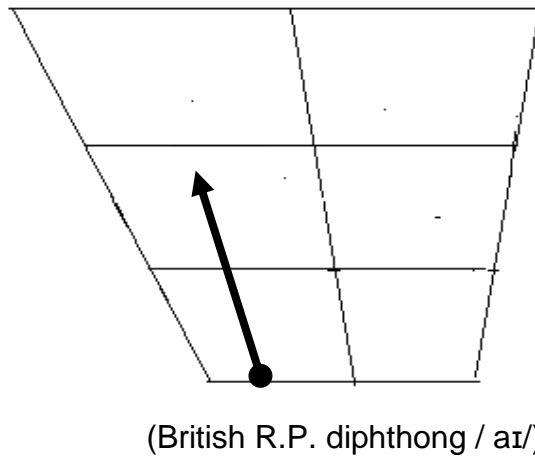
“The glide begins from slightly below the close-mid front position and moves in the direction of R.P. / ɪ /, there being a slight closing movement of the lower jaw; the lips are spread.”<sup>30</sup>





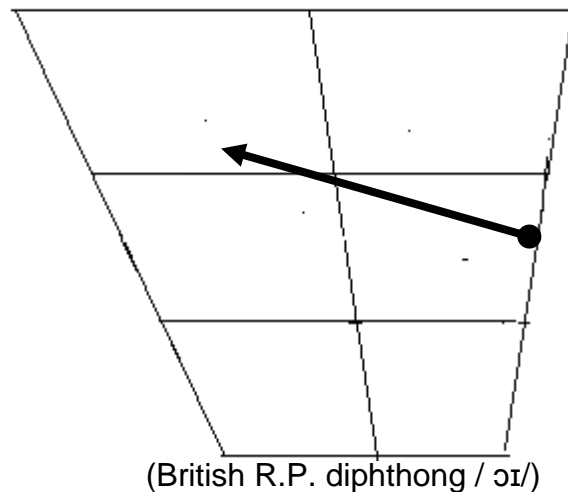
/ aɪ / :

“The glide of RP / aɪ / begins at a point slightly behind the front open position, i.e.[ a ], and moves in the direction of the position associated with RP / ɪ /, although the tongue is not usually raised to a level closer than [ e ] the glide is much more extensive than that of / eɪ /, the closing movement of the lower jaw being obvious. ... The lips change from a neutral to a loosely spread position.”<sup>31</sup>



/ɔɪ/ :

“For R.P. /ɔɪ/, the tongue glide begins at a point between the open-mid and open back position and moves in the direction of /ɪ/. ...the tongue movement extends from back to centralized front, but the range of closing in the glide is not as great as for /aɪ/; the jaw movement, though considerable, may not, therefore, be as marked as in the case of /aɪ/. The lips are open rounded for the first element, changing to neutral for the second.”<sup>32</sup>



These three /ɪ/ ended British R.P. diphthongs are not properly produced in Gujarati phonology. Instead of /eɪ/, /aɪ/ and /ɔɪ/, they are pronounced as /ej/, /aj/ and /ɔj/. This happens because they are not habituated to pronounce diphthongs [/eɪ/, /aɪ/ and /ɔɪ/] mostly even when they speak colloquial Gujarati. In Gujarati speech, they also replace the second vowel with a semi-vowel. The second vowel of the diphthongs /ɪ/ cannot be produced properly by them. Again as in the diphthong the first vowel is always a longer one and the second one is shorter, the shorter vowel /ɪ/ is here shifted to the semi vowel /j/. This shift is observed in almost all the

recorded speeches of the people of Saurashtra. For instance, in the table given below the words 'Late', 'White' and 'boy' demonstrate the difference:

The Word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Late	/ leɪt /	/ lejt /
White	/ waɪt /	/ wajt /
Boy	/ bɔɪ /	/ bɔj /

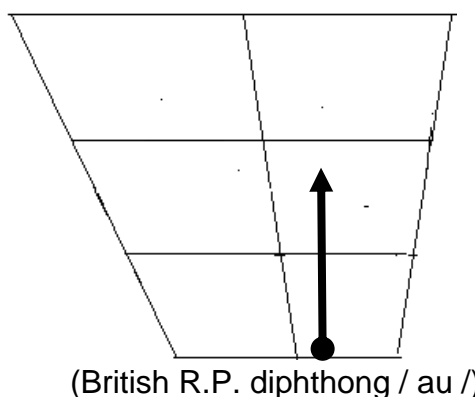
### 2.8.2 / u / Ended Diphthongs:

There are two / u / ended diphthongs in British R.P. / au / and / əu /; while in Indian English, monophthong / o: / is used in the place of the diphthong / əu /.<sup>33</sup>

These two diphthongs have been described as follows:

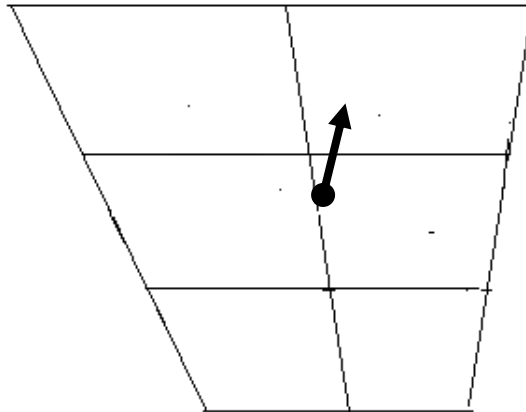
/ au /:

“The glide of R. P. / au / begins at a point between the back and front open positions, slightly more fronted than the position for R.P. / a: / and moves in the direction of / u / and the lips change from a neutrally open to a weakly rounded position.”<sup>34</sup>



/ əu /:

“Close-mid and open-mid, and moves in the direction of R.P. / u /, there being a slight closing movement of the lower jaw; the lips are neutral for the glide of R.P. / əu / begins at a central position, between the first element, but has a tendency to round on the second element.”<sup>35</sup>



(British R.P. diphthong / əu /)

In Gujarati phonology, the diphthong / əu / is not pronounced properly. Instead of / əu /, they pronounce / ɔ / but not / o: / as it is mentioned in Indian English. As for instance, the word ‘close’ should be pronounced / kləuz / according to British R.P. It is pronounced as / klɔz / or may be in certain cases as / klo:z /.

Another diphthong / au / is clearly mentioned and pronounced in Gujarati phonology, when it occurs in the middle of the word. If it occurs at the final position, the second vowel / u / is shifted to semi-vowel / v /. Therefore, instead of / au /, they pronounce / av /, when it occurs in the final position. In the following table, the recorded words of the people of Saurashtra make it clear:

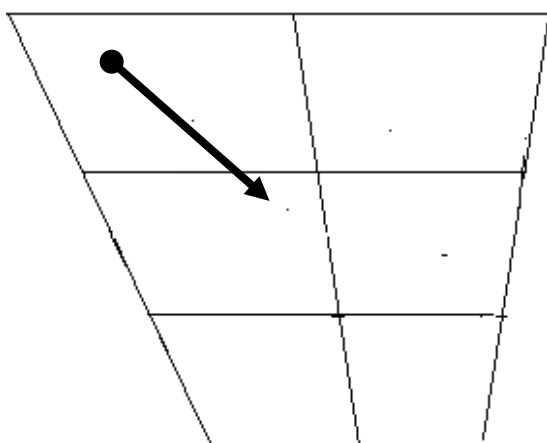
The word	Pronounced According to British R.P.	Pronounced by Saurashtrians
Now	/ nau /	/ nau /
about	/ əbaut /	/ əbaut /

### 2.8.3 / ə / ending diphthongs:

/ ə / ending diphthongs / ɪə /, / ɛə / and / uə / are in British R.P. and also in Indian English with one change in diphthongs where / Eə / is articulated as / eə /. They are described as follows:

/ ɪə /:

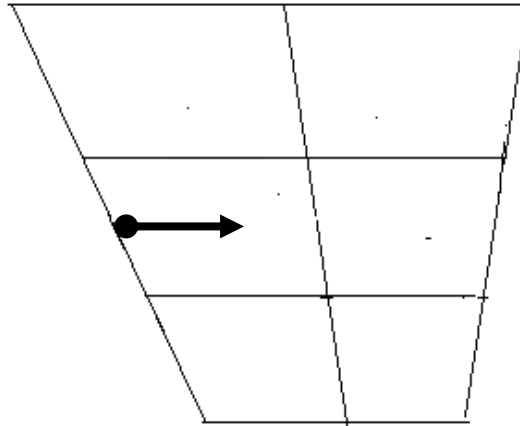
“The glide of RP / ɪə / begins with a tongue position approximately the same as that used for / ɪ /, i.e. close-mid and centralized from front, and moves in the direction of the more open variety of / ə /... the lips are neutral throughout, with a slight movement from spread to open.”<sup>36</sup>



(British R.P. diphthong / ɪə /)

/ ɛə /:

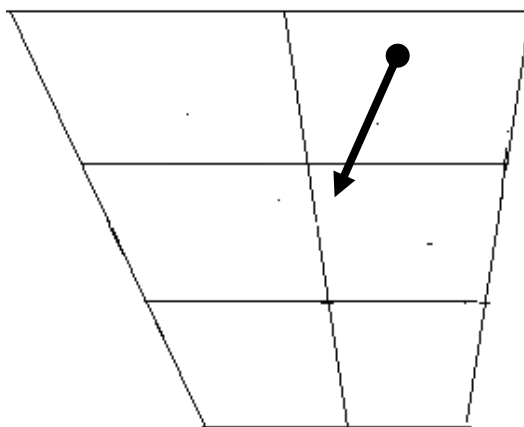
“The glide of RP / ɛə / begins in the open-mid front position and moves in the direction of the more open variety of / ə / ...The lips are neutrally open throughout.”<sup>37</sup>



(British R.P. diphthong / ɛə /)

/ uə /:

“RP / uə / glides from a tongue position similar to that used for / u / towards the more open type of / ə / ... The lips are weakly rounded at the beginning of the glide, becoming neutrally spread as the glide progresses.”<sup>38</sup>



(British R.P. diphthong / uə /)

These three diphthongs / iə /, / ɛə / and / uə / are shortened and turned into monophthongs in Gujarati phonology. Furthermore, the / iə / diphthong is in most cases shifted to / ij /; the second vowel / ə / of the diphthongs is replaced by the semi-vowel / j /. Therefore, the diphthong / iə / is not produced (pronounced) properly by them.

It is observed that in the most of the cases the diphthong / ɛə / is made short and turned into a monophthong. The second vowel / ə / of the diphthong is not at all pronounced, so there remains only the vowel / ɛ /.

Further with regard to the British R.P. diphthong / uə /, it is observed that in a number of speeches, the diphthong can be heard properly. But in very few cases it is also seen that some speakers of Saurashtra make it shorter and pronounce only the monophthong / u /.

It is also observed earlier in this dissertation that the vowel / ə / known as schwa is the shortest and the weakest vowel in Gujarati phonology (Harivallabh Bhayani). That is why as a second vowel / ə / of the diphthong may not be produced or it can also be assumed that this weak vowel is neglected during daily speech habits in these three / ə / ended diphthongs.

The following table clarifies the matter:

The Word	Pronounced According to British R.P.	Pronounced by people of Saurashtra
Really	/ rɪəlɪ /	/ rɪjlɪ /
Hair	/ h ɛə /	/ her /
Rarely	/ reəlɪ /	/ rerlɪ /
Poor	/ puə /	/ puər /

## 2.9 Triphthongs:

The most complex sounds of the vowel type are the triphthongs. They are found and produced in English frequently. No doubt they can be rather difficult to pronounce, and even difficult to recognize. A triphthong is a glide from one vowel to another and then to a third, all produced rapidly and without interruption. For example, a careful pronunciation of the word 'hour' begins with a vowel quality similar to / ɑ: / that goes on to a glide towards the back close rounded area ( for which the special symbol is used / ɔ / ), and then ends with a mid-central vowel (schwa, / ə /). / aɔə / is the symbol to represent the way 'hour' is pronounced, but Peter Roach says that this is not always an accurate representation of the pronunciation.<sup>39</sup>

The triphthongs can be looked on as being composed of the five closing diphthongs described in the last section, with / ə / added on the end. They are as follows:<sup>40</sup>



1. / eɪ / + / ə / = / eɪə /
2. / aɪ / + / ə / = / aɪə /
3. / ɔɪ / + / ə / = / ɔɪə /
4. / əʊ / + / ə / = / əʊə /
5. / aʊ / + / ə / = / aʊə /

No philologist up to now in Gujarati phonology has noted the production of the triphthong. The people of Gujarat are not habituated to produce long vowels. That is to say, there is no system of triphthongs in Gujarati phonology. This is the case not only in Gujarati phonology but also in even all other foreign speakers find the same problem. Peter Roach notes here:

“The principal cause of difficulty for the foreign learner is that in present-day English the extent of the vowel movement is very small, except in very careful pronunciation. Because of this, the middle of the three vowel qualities of the triphthong (that is, the / ɪ / or / u /) part can hardly be heard and the resulting sound is difficult to distinguish from some of the diphthongs and long vowels. To add to the difficulty, there is also the problem of whether a triphthong is felt to contain one or two syllables.”<sup>41</sup>

Words such as ‘fire’ / faɪə / or ‘hour’ / aʊə / are probably felt by most English speakers to consist of only one syllable, whereas ‘player’ / pleɪə / or ‘slower’ / sləʊ / are more likely to be heard as two syllables. In this context,

the people of Gujarat are also not habituated to make / r / silent if not followed by vowel. That is why the triphthong is not produced in Gujarati phonology.

Briefly speaking, Gujarati phonology produces six monophthongs, two diphthongs and no triphthongs in comparison to twelve monophthongs, eight diphthongs and five triphthongs of British R.P. As a whole, it can be said that the people of Gujarat are not habituated to produce the long vowels.

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**Chapter-3**

**Comparative**

**Study of Consonant Systems**

## **Chapter - 3**

### **Comparative Study of Consonant Systems**

Phonologically, the present study can be categorized mainly in two parts: (i) Segmental (ii) supra segmental. During a segmental study, vowels and consonants are normally focused upon for detailed study and therefore in this chapter an effort would be made to understand the consonant systems of English and Gujarati from a comparative point of view.

In the previous chapter, vowels have been studied comparatively. Certain similarities and distinctions emerged very clearly during the study. This comparison of sounds indicates that resemblances herald the common root of both the races [Indo-European]. On the other hand, distinctions, of course, suggest the voyage of development of both the races during the centuries, through the medium of language. Emergence, utterance and articulation of a phoneme is a continuous minute changing process, very similar to the existence of the world that is unreal, futile and changing at every moment. Shankaracharya also remarks similarly, 'brahmastya jaganmithyaa'.

The same thought can be applied to the study of 'sound'. It may differ from person to person. That is why certain common features have been identified for this present study.

#### **3.1 Defining Consonant:**

Consonant is generally defined as the sound during the production of which friction is heard. However all consonants, Cruttenden mentions, are not

produced with friction.<sup>1</sup> In another definition, Michael Ashby and John Maidment writes, “Sounds made with a relatively close constriction or complete closure in vocal tract and that occur singly or in clusters at the edges of syllables are consonants.”<sup>2</sup>

In Gujarati also, consonants are described as those segments, which in a particular language, occur at the edges of syllables, while vowels are those, which occur at the centers of syllables, for instance, in words like ‘red , bed, lead, said ’, the sound represented by / r, w, d, l, ʒ / are consonants. Such a reference to the functioning of the sounds in syllables in a particular language has some limitation and complexity as in words like, ‘agree, eye, image’ etc. as they would be excluded from the above definition. Cruttenden also opines:

“This type of definition might define consonants as median [air must escape over the middle of the tongue, thus excluding lateral [l]], oral [air must escape through the mouth, thus excluding nasals like [n]] frictionless [thus excluding fricatives like [s]], and consonants [thus excluding plosive like [p]]; all sounds excluded from this definition would be consonants. But difficulties arise in English with definition (and with other of this sort) because English / j, w, r /, which are consonants phonologically (functioning at the edges of syllables) are vowels phonetically. Because of this, these sounds are often called semi-vowels. The reverse type of difficulty is encountered in words like ‘sudden’ and ‘little’, where the final consonant / n / and / l / form syllables on their own and hence must be the centers of such syllables even though they are phonetically consonants, and even though / n / and / l / more frequently occur at the edges of syllables, as in ‘net’ and ‘let’. When



occurring in words like 'sudden and little', nasals and laterals are called syllabic consonants.”<sup>3</sup>

Peter Roach discusses consonants with almost the same argument. He focuses on the distribution of the sounds:

“Study of the sounds found at the beginning and end of English words has shown that two groups of sounds with quite different patterns of distribution can be identified, and these two groups are those of vowels and consonants. If we look at the vowel-consonant distinction in this way, we must say that the most important difference between vowel and consonant is not the way that they are made, but their different distribution. Of course, the distribution of vowel and consonant is different for each language.”<sup>4</sup>

There are many theoretical problems connected with the vowel consonant distinction. Nevertheless, the latest research of two physicians has made this problem a bit easy. Because of studying stroke patients who cannot vocally produce certain letters, Alfonso Caramazza and Doriana Chialant have found that the brain perceives and processes vowels and consonants as two distinct types of objects. Differences between vowels and consonants are real. The Harvard University Gazette recognizes this with the following headline:

“Researchers solve one of the grand mysteries of language.

February 17, 2000

While working with colleagues in Rome, two Harvard researchers serendipitously met two women with intriguing

speech deficits. As the result of a stroke, one patient could not reproduce the sounds of vowels properly. Another patient experienced the same trouble with consonants. After studying the two women, the Harvard team concluded that the difference between vowels and consonants must be real, not arbitrary. "It's a happy ending to many years of work," said researcher Dorian Chialant. "We're excited about answering a question that has been around for such a long time, excited about reaching a definite conclusion that people possess separate mechanisms to process vowels and consonants. Such mechanisms must be in the brain. Where else could they be?"<sup>5</sup>

However, for describing consonants phonologically, the philologists generalize the phenomenon in the following manners:

- (i) The nature of air stream
  - a. Whether it is pulmonic or not
  - b. Whether it is egressive or ingressive.
- (ii) Whether the sound is voiced or voiceless
- (iii) Whether the soft palate is raised or lower i.e.,  
Whether the air stream passes
  - a. through the mouth only (oral sounds)
  - b. through the nose only (nasal sounds)
  - c. through the mouth and the nose (nasalized sound)
- (iv) The place of articulation, i. e., where exactly the closure or narrowing takes place
- (v) The manner of articulation, i. e., the kind of closure or narrowing

### **3.2 Consonants in Tabular – Form: A General View**

International phonetics Association has given the charts of pulmonic international consonants and consonants of British Received Pronunciation (BRP) and in the portion of languages of the world, consonants of Gujarati Phonology have been mentioned. All the three charts in the form of tables are stated as follows for general comparative study respectively:

- (1) Chart of International consonants (pulmonic)
- (2) Chart of British R. P. consonants
- (3) Chart of Gujarati consonants

(These charts are given at the end of the chapter)

53 distinctive phonemes are articulated as international consonants, British R. P. consists of 24 distinctive phonemes while Gujarati Phonology has 31 distinctive phonemes as consonants.

After the over view of the consonants, English and Gujarati consonants are compared in detail. They are discussed in order of their manner of articulation.

### **3.3 Production of Plosives:**

A plosive is a consonant articulation with the following characteristics. One articulator is moved against another, or two articulators are moved against each other, to form a stricture that allows no air to escape from the vocal tract. The stricture is, than, total.

- After this stricture has been formed and air has been compressed behind it, it is released; i. e., air is allowed to escape.
- If the air behind the stricture is still under pressure when the plosive is released. It is probable that the escape of air will produce noise loud enough to be heard. This noise is called plosion.
- There may be voicing during parts or all of the plosive articulation.

To give a complete description of a plosive consonant it is necessary to describe what happens at each of the following four phases in its production:

- i) The first phase is when the articulator or articulators move to form the stricture for the plosive. It is called the closing phase.
- ii) The second phase is when the compressed air is stopped from escaping. It is called the compression phase.
- iii) The third phase is when the articulators used to form the stricture are moved so as to allow air to escape. This is the release phase.
- iv) The fourth phase is what happens immediately after (iii), so it will be called the post-release phase.

### **3.3.1 English Plosives:**

English has six plosive consonants / p, t, k, b, d, g /. The glottal plosive / ʔ / occurs frequently but it is of less importance, since it is usually just an alternative pronunciation of / p /, / t / or / k / in certain contexts. The plosives have different places of articulation. The plosive /p / and / b / are bilabial since the lips are pressed together.

/ t / and / d / are alveolar since the tongue blade is pressed against the alveolar ridge. Normally the tongue does not touch the front teeth as it does in the dental plosives found in many languages. The plosives / k / and / g / are velar; the back of the tongue is pressed against the area where the hard palate ends and the soft palate begins.

The plosives / p /, / t /, and / k / are always voiceless; / b /, / d / and / g / are sometimes fully voiced, sometimes partly voiced and sometimes voiceless.

All six plosives can occur at the beginning of a word (initial position), between other sounds (medial position) and at the end of a word (final position). The detailed discussion of the plosives at all the three positions is given as follows:

- To begin with plosive - preceding vowel: CV
- Between vowels: VCV
- Following the vowel: VC

(Here 'C' stands for a consonant and 'V' stands for a vowel.)

**Initial position (CV):** The closing phase for / p /, / t /, / k / and / b /, / d /, / g / takes place silently. During the compression phase there is no voicing in / p /, / t /, / k /; in / b /, / d /, / g / there is normally very little voicing – it begins only just before the release. If the speaker pronounces an initial / b /, / d /, or / g / very slowly and carefully there may be voicing during the entire compression phase (the plosive is then fully voiced), while in rapid speech there may be no voicing at all.

The release of / p /, / t /, / k / is followed by audible plosion, that is, a burst of noise. There is then, in the post – release phase, a period during which air escapes through the vocal folds, making a sound like / h /. This is called aspiration. Then the vocal folds come together and voicing begins. The release of / b /, / d /, / g / is followed by weak plosion, and this happens at about the same time as, or shortly after, the beginning of voicing. The most noticeable and important difference, then, between initial / p /, / t /, / k / and / b /, / d /, / g / is the aspiration of the voiceless plosives / p /, / t /, / k /. The different phases of the plosive all happen very rapidly, of course, but the ear distinguishes clearly between / p /, / t /, / k / and / b /, / d /, / g /. Peter Roach notices that if English speakers hear a fully voiced initial plosive, they will hear it as one of / b /, / d /, / g / but will notice that it does not sound quite natural. If they hear a voiceless nonaspirated plosive they will also hear that as one of / b /, / d /, / g /, because it is aspiration, not voicing which distinguishes initial / p /, / t /, / k / from / b /, / d /, / g /. Only when they hear a voiceless aspirated plosive, they hear it as one of / p /, / t /, / k /.<sup>6</sup>

In the initial position / b /, / d /, / g / cannot be preceded by any consonant, but / p /, / t /, / k / may be preceded by / s /. When one of / p /, / t /, / k / is preceded by / s / it is nonaspirated. From what was said above it should be clear that the nonaspirated / p /, / t /, / k / of the initial combination / sp /, / st /, / sk / have the sound quality that makes English speakers perceive a plosive as one of / b /, / d /, / g /; and if a recording of a word beginning with one of / sp /, / st /, / sk / is heard with the / s / removed, an initial / b /, / d / or / g / is heard by English speakers.

**Medial position (VCV):** The pronunciation of / p /, / t /, / k / and / b /, / d /, / g / in medial position depends to some extent on whether the syllables preceding and following the plosive are stressed. In general, it can be said that a medial plosive may have the characteristics either of final or of initial plosives.

**Final position (VC):** Final / b /, / d /, / g / normally have little voicing; if there is voicing, it is at the beginning of the compression phase; of / p /, / t /, / k / and / b /, / d /, / g / is very weak and often not audible. The difference between / p /, / t /, / k / and / b /, / d /, / g / is primarily the fact that vowels preceding / p, t, k / are much shorter. The shortening effect of / p, t, k / is most noticeable when the vowel is one of the long vowels or diphthongs.

### 3.3.2 Fortis and lenis :

“Are / b, d, g / voiced plosive?” Roach raises the question and discusses the issue that the above description makes it clear that it is not very accurate to call them “voiced”; in initial and final position, they are scarcely voiced at all, and any voicing they may have seems to have no perceptual importance. Some phoneticians say that / p, t, k / are produced with more force than / b, d, g / and that it would therefore be better to give the two sets of plosives (and some other consonants) names that indicate that fact; so the voiceless plosives / p, t, k / are sometimes called fortis (meaning ‘strong’) and / b, d, g / are then called lenis (meaning ‘weak’). It is probably true that / p, t, k / are produced with more force (though nobody has really proved it – force of articulation is very difficult to define and measure).<sup>7</sup>

The plosive phonemes of English can be presented in the form of a table as shown here:

Place of Articulation			
	Bilabial	Alveolar	Velar
Fortis ("voiceless")	p	t	k
Lenis ("voiced")	b	d	g

Tables like this can be produced for all the different consonants. Each major type of consonant (such as plosives like / p /, / t /, and / k / fricatives like / s / and / z / and nasals like / m / and / n /) obstructs the airflow in a different way, and these are classified as different manners of articulation.

### 3.3.3 Comparison to Gujarati Plosives:

Gujarati Phonology also produces the plumonic egressive plosive or stop. It also contains three stages:

- (i) Closing stage
- (ii) Compression stage
- (iii) Release stage

In comparison to British R. P., the first stage of closing is smoother and shorter in Gujarati plosive. The second stage is of a bit long duration. In the final stage of release burst is also not having that much force as it is found in British R. P.



Gujarati Phonology comprises of eight (8) pairs (16 consonants) of plosive manners. These are discussed in the group of four phonemes.

The first four plosives are articulated at the place of bilabial. They are / p, p<sup>h</sup>, b, b<sup>h</sup> /. / p, b / are also described as bilabial plosive in British R. P, but two more phonemes / p<sup>h</sup>, b<sup>h</sup> / are produced in Gujarati Phonology. Bharati Modi quotes Prabodh Pandit's remarks of his works of 1955 that / p<sup>h</sup> / and / b<sup>h</sup> / are not separate phonemes but in 1966, he accepted / p<sup>h</sup>, b<sup>h</sup> / as separate phonemes.<sup>8</sup> Bharati Modi also has a complaint for the undecided position of / p<sup>h</sup> /. She says which / p<sup>h</sup> / should be recognized as the standard one - / f / the bilabial plosive that is aspirated, or / p<sup>h</sup> / the identical bilabial plosive.<sup>9</sup>

/ p<sup>h</sup> / is articulated as an aspirated bilabial plosive but it is not similar to the /p<sup>h</sup>/ the aspirated phoneme of / p / of British R. P. Aspirated / p / as / p<sup>h</sup> / in British R. P. is not treated as a separate phoneme. On the other side, / p<sup>h</sup> / of Gujarati is also different from / f / of British R. P. In Gujarati / p / phoneme remains non-aspirated in all the three positions of its occurrence: initial, medial and final. / p / is a voiced bilabial plosive in Gujarati Phonology. / p<sup>h</sup> / is also a voiced bilabial plosive. Babu Suthar mentions / p / and / p<sup>h</sup> / as aspirated and non aspirated consonants<sup>10</sup> but in the chart of IPA – Gujarati Phonology and even in P. K. Pandey's chart this category is not mentioned.<sup>11</sup> It seems / p<sup>h</sup> / or / b<sup>h</sup> / should be treated as separate phonemes even besides the category of aspiration – non-aspiration.

In British R. P / p, t, k / do occur aspiratedly in initial position as / p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup> /, but in Gujarati they do not have such practice. Thus, / p, p<sup>h</sup>, b, b<sup>h</sup> / are separate phonemes, the following examples of the words may help to make the point clearer:

Gujarati word	Phonological Transcription	English Meaning
Paadi	/ pa:dI /	A female calf of Buffalo
Faadi	/ p <sup>h</sup> a:dI /	Tear
Saap	/ sa:p /	Snake
Saaf	/ sa:p <sup>h</sup> /	Clean
Baal	/ ba:l /	Child
Bhaal	/ b <sup>h</sup> a:l /	News / Information
Daab	/ da:b /	Pressure
Dabh	/ da:b <sup>h</sup> /	Grass

Why should / f / of British R. P., phoneme be symbolized like aspirated /p<sup>h</sup> / in Gujarati phonology when the phoneme is deliberately accepted as an identical one? However for better clarity; throughout this dissertation / f / will be symbolized as / p<sup>h</sup> / for Gujarati phonology. In IPA portion of Gujarati Phonology, Cardona & Suthar in 'Gujarati' mentions that ' / p<sup>h</sup> / is usually realized as / f / in the standard dialect'<sup>12</sup>

Another pair of four plosive consonants is / t̪, t̪<sup>h</sup> d̪, d̪<sup>h</sup> /. / t̪, d̪ / are articulated at alveolar position while in Gujarati phonology / t̪, d̪ / are at dental position and they should be treated as the allophones of British R. P./ t, d / phonemes. Babu Suthar mentions / t̪ / as non-aspirated voiceless dental and

/ ɖ / as non- aspirated dental while / t̪<sup>h</sup>, ɖ<sup>h</sup>/ are articulated as aspirated voiceless dental plosive. On the contrary, IPA chart of Gujarati phonology articulates them at alveolar without the distinction of aspirated and non-aspirated.

/ ɖ<sup>h</sup> / phoneme resembles British R. P. phoneme / ð /. As mentioned above, it is produced with less friction, so it is categorized as plosive in Gujarati Phonology instead of fricative. Peter Roach notices one important emerging variation for the phoneme / ð / of British R. P. as follows:

“The dental fricative / ð / is something of a problem: although there are not many English words in which this sound appears, those words are ones which occur very frequently – words like ‘the’, ‘this’, ‘there’, ‘that’ and so on. This consonant often shows so little friction noise that on purely phonetic grounds it seems incorrect to class it as a fricative. It is more like a weak (lenis) dental plosive.”<sup>13</sup>

As it is said earlier these four phonemes / t̪, t̪<sup>h</sup>, ɖ, ɖ<sup>h</sup> / are separate and / t̪<sup>h</sup> / is not an aspirated phoneme of / t̪ /, moreover / ɖ<sup>h</sup> / is not an aspirated phoneme of / ɖ /, as it is in British R. P.. / t̪<sup>h</sup> / is aspirated when / t / occurs in initial position. For instance the word ‘table’ is pronounced as / t̪<sup>h</sup>ebl /. The following example will help to identify the above four phonemes as separate ones.

Gujarati word	Phonological Transcription	English Meaning
Tali	/ ta:li /	clapping
Thali	/ t̪ <sup>h</sup> a:li /	Plate
Saat	/ sa:t /	Seven

Saath	/ sa: t <sup>h</sup> /	To accompany
Paatar	/ pa:ṭər /	Plate
Paathar	/ pa:ṭ <sup>h</sup> ər /	Lay Off
Dam	/ ḍa:m /	Money
Dham	/ ḍ <sup>h</sup> a:m /	pilgrimage

[Babu Suthar also differs here in using symbols for these phonemes, he has not put diacritical marks as / ṭ, ṭ<sup>h</sup> ḍ, ḍ<sup>h</sup> / and therefore I propose to follow the IPA symbols]

Retroflex plosive phonemes, the third pair of four plosives, are / ṭ, ṭ<sup>h</sup> ḍ, ḍ<sup>h</sup> /. They are similarly symbolized and articulated by most Gujarati philologists. / ṭ, ṭ<sup>h</sup> / are voiceless retroflex plosive aspirated and non-aspirated consonants respectively. / ḍ, ḍ<sup>h</sup> / are voiced retroflex plosive aspirated and non aspirated consonants respectively. Coline Masica's observations says that / ḍ, ḍ<sup>h</sup> / are realized as such initially, geminated and post nasally; as flapped / ṭ, ṭ<sup>h</sup> / intervocalic, finally, and before or after other consonants.<sup>14</sup>

The last four velar plosive phonemes are / k, k<sup>h</sup>, g, g<sup>h</sup> /. British R. P. contains two phonemes / k, g / and / k / is produced as an aspirated when it occurs in the initial position. In Gujarati Phonology, all these four phonemes are separate and identical. / k, g / are articulated as non-aspirated velar plosive-voiceless and voiced respectively. While / k<sup>h</sup>, g<sup>h</sup> / as an aspirated velar plosive-voiceless and voiced respectively. / g<sup>h</sup> / and / k<sup>h</sup> / are separate phonemes and not in aspirated form only. / g<sup>h</sup> / is found in Gujarati Phonology regularly with its unique use. It is not at all found in British R. P. anywhere, not in aspirated form also. All these four phonemes occur at all the three

positions: initial, medial and final. The following minimal – pair of words help to make it clear how these phonemes are articulated separately and identically in Gujarati Phonology.

Gujarati word	Phonological Transcription	English Meaning
Kanu	/ ka:ɳu /	Hole
Khanu	/ k <sup>h</sup> a:ɳu /	Meal
Shak	/ ja:k /	Vegetable
Shakh	/ ja:k <sup>h</sup> /	Prestige
Gam	/ ga:m /	Village
Gham	/ g <sup>h</sup> a:m /	Suffocation
Mag	/ ma:g /	Demand
Magh	/ ma:g <sup>h</sup> /	A name of a month of Gujarati calendar

### 3.4 Affricates of English:

Affricates are produced by a complete closure of the air passage and a slow release causing friction. In the production of the British R. P. sounds / tʃ / and / dʒ / the air passage in the mouth is completely closed due to a contact between the tip and the blade of the tongue and the teeth ridge, the rims of the tongue making a contact with upper teeth. The front of the tongue is also raised towards the hard palate. The soft palate is raised to shut off the nasal passage.

When the air is released slowly, it escapes with friction from between the front of the tongue and the hard palate and between the blade of the

tongue and the teeth ridge. The vocal cords are wide apart for / tʃ / but they vibrate for / dʒ /.

Peter Roach remarks that affricates are rather complex consonants. They begin as plosives and end as fricatives. He argues further,

“However the definition of an affricate must be a little more restricted than what has been said so far. We would not class all sequences of plosive plus fricative as affricate.”<sup>15</sup>

He gives the example as in the middle of the word ‘breakfast’ the plosive / k / followed by the fricative / t /. English speakers would generally not accept that / kf / forms a consonantal unit in the way that / tʃ / seems to. It is usually said that the plosive and the following fricative must be made with the same articulators – to use a technical term, the plosive and fricative must be homorganic. The sounds / k / and / f / are not homorganic, but / t / and / ʃ /, both being made with the tongue blade against the alveolar ridge are homorganic.<sup>16</sup>

### **3.4.1 Comparison to Gujarati Affricates:**

Gujarati Phonology produces four affricates as compared to two phonemes of British R. P. They are / tʃ, tʃ<sup>h</sup>, dʒ, dʒ<sup>h</sup> /. Babu Suthar places them as palatal plosive phonemes, while in IPA they are shown as post-alveolar/palatal affricate phonemes. / tʃ, dʒ / are articulated as palato - alveolar voiceless and voiced respectively very similar to British R. P.. Two more phonemes / tʃ<sup>h</sup>, dʒ<sup>h</sup> / are shown as aspirated to / tʃ, dʒ /. However, all these four are separate phonemes. / tʃ<sup>h</sup>, dʒ<sup>h</sup> / are articulated at palatal position as

voiceless and voiced respectively. Roach also observes for / tʃ, dʒ / of British R. P. that / tʃ, dʒ / are the only two affricate phonemes in English. As with the plosives and most of the fricatives, we have a fortis/lenis pair, and the voicing characteristics are the same as for these other consonants. / tʃ / is slightly aspirated in the positions where / p, t, k / are aspirated, but not strongly enough for it to be necessary for foreign learners to give much attention to it. The place of articulation is the same as for / ʃ, ʒ /; that is, it is post-alveolar. This means that the 't' component of / tʃ / has a place of articulation rather further back in the mouth than the / t / plosive usually has. When / tʃ / is final in the syllable it has the effect of shortening a preceding vowel, as do other fortis consonants. / tʃ / and / dʒ / often have rounded lips.<sup>17</sup>

It is also observed that / tʃ<sup>h</sup> / requires more force and frication than / tʃ /. It seems / tʃ<sup>h</sup> / is very near to fricative phoneme. British R. P. does not produce / tʃ<sup>h</sup> / phoneme at all. No doubt, / tʃ<sup>h</sup> / is produced as an aspirant in comparison to / tʃ / in Gujarati Phonology, but / tʃ<sup>h</sup> / is also an individual phoneme which occurs at all the three positions initial, medial and at the final position.

/ dʒ<sup>h</sup> / is produced as an aspirated voiced palatal affricate phoneme that is identical with the / z / phoneme of British R. P.. In British R. P. / z / is produced as voiced alveolar fricative. Modi & Yogendra Vyas also write about the variation of / dʒ<sup>h</sup> /, as observed in daily speech of the people of Gujarat who very frequently misuse and replace / dʒ / and / dʒ<sup>h</sup> /.<sup>18&19</sup> P. K. Pandey observes this variation as, / z / ~ / dʒ / or / dʒ<sup>h</sup> /, which is found in the speech of some speakers.<sup>20</sup>

These observations are very near to generalization because in script also the confusion can be seen as in the word ‘ / səmɔʒəŋ / or / səmɔʒ<sup>h</sup>ŋ /’ (understanding). This word is mentioned in both the ways in many standard Gujarati Journals. I noticed this variation in my recording of speeches at different places that people, generally, are not conscious in using / ɔʒ / and / ɔʒ<sup>h</sup> / at proper places but it should also be taken into consideration that this is mostly found in the people of town places and not at district places. Of course, they get more inaccurate when they have to pronounce / ʒ / phoneme of British R. P., but this will be discussed after a while.<sup>21</sup>The following words substantiate the point:

Gujarati word	Phonological Transcription	English Meaning
Chal	/ tʃa:l /	Gait
Chhal	/ tʃ <sup>h</sup> a:l /	growl
Jada	/ ɔʒa:da: /	Fat
Zada	/ ɔʒ <sup>h</sup> a:da: /	Loose-motion
Maji	/ ma:ɔʒI /	Old woman
Mazi	/ ma:ɔʒ <sup>h</sup> I /	Sailor

### 3.5 Fricatives:

Fricative consonants are produced by bringing two organs of speech nearer to each other in such a way that the air stream passes out through a narrow passage with audible friction. One can hear clear hissing sounds. Most languages have fricatives; the most commonly found is something like / s /. Fricatives are also described as continuant consonants, which mean that one



could continue making them without interruption as long as one has enough air in the lungs. Peter Roach mentions two important features of fricatives:<sup>22</sup>

- i) Make a long, hissing / s / sound and gradually lower your tongue so that it is no longer close to the roof of the mouth. The hissing sound will stop, as the air passage gets larger.
- ii) Make a long / f / sound and, while you are producing this sound, use your fingers to pull the lower lip away from the upper teeth. Notice how the hissing sound of the air escaping between teeth and lip suddenly stops.

### 3.5.1 The fricatives of English:

British R. P. has nine fricative phonemes. They can be tabularized as follows:

Place of Articulation					
	Labiodental	Dental	Alveolar	Post-alveolar	Glottal
Fortis ("voiceless")	f	θ	s	ʃ	h
Lenis ("voiced")	v	ð	z	ʒ	

It can be seen that the fricatives are articulated from almost all the places from labio-dental to glottal and with the exception of glottal, each place of articulation has a pair of phonemes, one fortis (voiceless) and one lenis (voiced). Some common characteristics can be summarized as follows.

- The fortis fricatives are produced with greater force than the lenis and their frication noise is louder.
- The lenis fricatives have very little or no voicing in initial and final positions, but may be voiced when they occur between voiced sounds.
- The fortis fricatives have the effect of shortening a preceding vowel, as do fortis plosives.
- All the fricatives described so far can be found in initial, medial and final positions. In case of / ʒ /, however, the distribution is much more limited. Very few English words begin with / ʒ / (most of them have come into the language comparatively recently from French) and not many end with this consonant.

### 3.5.2 Comparison to Gujarati Fricatives:

Gujarati Phonology has only three fricatives / s, ʃ, h / in comparison to British R. P. only because compression or hissing is not found strong enough in Gujarati speakers. It is due to habit that Gujarati speakers produce the same consonants, which are produced in British R. P. as fricatives, as plosives or affricates.

British R. P. fricative / f /, / θ /, / ð /, are produced as plosives in Gujarati Phonology. They are symbolized as / p<sup>h</sup> /, / t<sup>h</sup> /, / d<sup>h</sup> /. English fricative / z / is produced as an affricate in Gujarati Phonology symbolized as / dʒ<sup>h</sup> /. Babu Suthar shows the phoneme / v / as a voiced labio-dental fricative that may be true for the speakers of Gujarat who have acquired education in English medium schools. Here in Gujarat also, the new generation coming out from

English medium schools produces / f, v / as labio-dental but not with the same compression of British R. P. They might be made habituated to produce / f, v / in such a manner but the inner force for which Laver uses the terms 'grooved' and 'flat' cannot be found appropriately.<sup>23</sup>

/ z / fricative phoneme of British R. P. is produced as an affricate in Gujarati Phonology but P.K. Pandey places (z) –as an allophone of / dʒ<sup>h</sup> / - a voiced alveolar fricative. He further remarks that / z / occurs only in the borrowed vocabulary of some speakers. As mentioned earlier, P. K. Pandey also refers to the same / dʒ / or / dʒ<sup>h</sup> / variation found in the speech of some speakers. But in IPA it is not mentioned at all.

/ s, ʃ / phonemes are produced as fricatives in Gujarati Phonology also. / s / as voiceless alveolar fricative and / ʃ / as voiceless post-alveolar fricative. In Rajkot, a center region of Saurashtra, / ʃ / is mostly articulated at the place of / s /.<sup>24</sup> P. K. Pandey has also noticed the same variation (/ s / ~ / ʃ /) in his forthcoming book Sounds and their patterns in Indian languages.<sup>25</sup>

Retroflex / ʂ /- the phoneme produced in Sanskrit is not regularly produced in Gujarati but still it is found during the occurrence of clusters. Mistry observes, 'The three sibilants of Sanskrit are now two in standard Gujarati: / s / and / ʃ /. Retroflex / ʂ / still appear in clusters in which it precedes another retroflex: [spəʂt] (clear).<sup>26</sup> It is further argued by Cardona and Suthar as:

“The distribution of sibilants varies over dialects and registers. The standard set is [s] and [ʃ], while some speakers maintain [ʂ] as well for the appropriate

borrowings. Some dialects only have [s], other prefer [ʃ], while another system has them non-contrasting, with [ʃ] occurring contiguous to palatal segments. Lastly, a colloquial register has [s] or both [s] and [ʃ] replaced by [h]. This replacement does not extend to Sanskrit borrowing used by educated speakers speaking this register.”<sup>27</sup>

P.K. Pandey also notices / s / ~ / h / variation that occurs in some dialects of Gujarati phonology.<sup>28</sup>

/ ʒ / - voiced post alveolar fricative consonant of British R.P. does not at all occur in Gujarati Phonology. Peter Roach remarks that / ʃ / is a common and widely distributed phoneme, but / ʒ / is not.<sup>29</sup> It means, / ʒ / is not produced in many languages of the world. All the fricatives described so far (f, v, ð, θ, s, z, ʃ) can be found in initial, medial and final positions but in case of / ʒ /, in English too, the distribution is much more limited. Very few English words begin with / ʒ / (most of them have come with language comparatively recently from French) and not many end with this consonant; only medially, in words such as ‘measure’, ‘usual’ (meʒə, ju:ʒuəl), / ʒ / is found commonly.

The last glottal fricative / h / of British R.P. is also articulated in Gujarati Phonology as glottal fricative with a slight difference. / h / does not occur finally in British R.P, but it occurs frequently at all the three positions in Gujarati Phonology. The throbbing of glottis is heard more during the occurrence of / h / in Gujarati Phonology.

### 3.6 Production of Nasals:

For the production of nasal consonant, a complete closure is made in the mouth, but the soft palate is lowered and the air comes out through the nose.

#### 3.6.1 Nasals of English:

British R.P contains three nasal phonemes / m,n,ŋ /. They are articulated at bilabial, alveolar and velar position.

Peter Roach argues strongly for considering / ŋ / as an allophone of / n / and not as a separate phoneme. There are brief discussions of the phonemic status of / ŋ / in Chomsky and Halle (1968: 85), Hyman (1975:74) and Ladefoged (1993: 64); Wells (1982: 60) and Geigerich (1992: 297-301) can be referred for a fuller treatment.<sup>30</sup> English has at least two contrasting nasal phonemes / m / and / n /. However, there is disagreement about whether there is a third nasal phoneme.

Peter Roach puts forward three arguments against accepting /ŋ/ as a phoneme:<sup>31</sup>

- i) In some English accents, it can easily be shown that / ŋ / is an allophone of / n /, which suggests that something similar might be true of BBC Pronunciation.
- ii) If / ŋ / is a phoneme, its distribution is very different from that of / m / and / n /, being restricted to syllable-final position (phonologically) and to morpheme-final position (morphologically) unless it is followed by / k / or / g /.

- iii) English speakers with no phonetic training are said to feel that / ŋ / is not a 'single sound' like / m / and / n /. Sapir (1925) said "no native speaker of English could be made to feel in his bones" that / ŋ / formed part of a series with / m / and / n /. This is, of course, very hard to establish, although that does not mean that Sapir was wrong.

On this base of argument, he gives two rules to deal with / ŋ /:

1. / n / is realized as / ŋ / when it occurs in an environment in which it precedes either / k / or / g /.
2. Finally, it is necessary to remember the exception, we have seen in the case of comparative and superlative.

### 3.6.2 Comparison to Gujarati Nasals:

In Gujarati phonology, usually three nasal phonemes / m, n, ŋ / have been mentioned. The production process of nasals is almost identical. Even / m / is articulated at the bilabial position as similar to British R. P. but / n / is shown articulated at two different positions by Gujarati philologists. Babu Suthar<sup>32</sup>, Kantilal Vyas<sup>33</sup>, and Jayant Kothari<sup>34</sup> have mentioned / n / articulated at the dental position while in the charts of P. K. Pandey and IPA-Gujarati Phonology, / n / is articulated at alveolar position<sup>35</sup>.

Babu Suthar gives five nasal phonemes in his chart of consonants: / m, n, ŋ, ɳ, ɳ̄ /. It means, he adds / ŋ / as a phoneme of Gujarati Phonology and also gives two variations / ŋ, ɳ̄ /.<sup>36</sup> Here P. K. Pandey is with Suthar for he too gives the same five nasal phonemes. Prabodh Pandit also mentions four

nasal phonemes viz., / m /, / n /, / ŋ / and nasalisation. This nasalization contains four allophones / ŋ, ɲ, ə̃, ~ /.<sup>37</sup>

As it is mentioned earlier that / ŋ / should not be treated as a separate phoneme even in British R. P., similarly in Gujarati Phonology though / ŋ / is mentioned by some philologists as a separate phoneme. It is observed in my earlier work that / ŋ / is produced as / ŋg / and not separately. It is better to treat this phoneme / ŋ / as an allophone of / n / or / m /.<sup>38</sup>

/ ŋ / is a separate phoneme in Gujarati Phonology. It is not produced in British R. P. If / n / is used at the place of / ŋ /, the meaning will be changed. / ŋ / is frequently produced by Gujarati speakers even in day-to-day speech. / m, n / occur at all the three positions, but / ŋ / does not occur at the initial position. About / ɲ, ŋ /, Mistry writes, “a fourth nasal phoneme is postulate for the phones / ɲ, ŋ / and the nasalization of a preceding vowel / ẽ /. / ŋ / is unflapped before retroflex stops, and in final position varies freely between flapped - unflapped.”<sup>39</sup>

### **3.7 Production of Lateral:**

There is a complete closure in the middle and air comes out through the sides in the production of lateral sounds. There is one handy experiment to feel the complete closure along the center and the only way for the air to escape. It is along the sides of the tongue to make a long / l / sound you may be able to feel that the sides of your tongue are pulled in and down while the center is raised.

### 3.7.1 English Lateral:

British R. P has /l/ as a lateral consonant. It is articulated at alveolar in British R. P. /l/ is has two allophones clear /l/ and dark /ɫ/. Peter Roach exemplifies the differences between /l/ and /ɫ/:

“The realization of /l/ found before vowels sounds is quite different from that found in other contexts for example, the realization of /l/ in the word ‘lea’ /li:/ is quite different from that in ‘eel’ /i:l/. The sound in /i:l/ is what we call a ‘dark /l/’ it has a quality rather similar to a /u/ vowel, with the back of the tongue raised. The sound in /li:/ is what is called a ‘clear /l/’; it resembles an [i] vowel, with the front of the tongue raised.”<sup>40</sup>

Therefore it can be predicated that clear /l/ will never occur before consonants or before a pause, but only before vowels; dark /ɫ/ never occurs before vowels. In complementary distribution, it is to say that clear /l/ and dark /ɫ/ are allophones of the phoneme /l/.<sup>41</sup>

### 3.7.2 Comparison to Gujarati Lateral:

/l, ɭ/ are two lateral approximants in Gujarati Phonology. They both are separate phonemes regarded by all philologists in Gujarati. They are articulated at alveolar and retroflex position respectively. /l/ occurs at all the three positions while /ɭ/ does not occur at the initial position. British R. P does not have /ɭ/ phoneme at all. Moreover, Gujarati Phonology does not distinguish between clear /l/ and dark /ɫ/. Thus, Gujarati Phonology does not have an allophone of /l/ but it contains two phonemes /l/ and /ɭ/.



Gujarati word	Phonological Transaction	English Meaning
mal	/ ma:l /	things
mal	/ ma:l̩ /	floor

### 3.8 Consonant / r /:

Many philologists in different accents of English and Gujarati describe this consonant differently. In British R. P., it is called a post alveolar approximant. R. K. Bansal says that the commonest variety of R.P / r / is produced by raising the tip of the tongue towards the back of the teeth ridge, a slight retroflexion, so to say, the air comes out through the mouth without any friction. The soft palate is raised to shut off the nasal passage.<sup>42</sup> In short; / r / is articulated at post-alveolar / retroflex trill / approximant consonants.

The distributional peculiarity of / r / in British R. P. is that the phoneme / r / is pronounced only before vowels and if it is not followed by vowel, it is remained silent and the preceding vowel is lengthen in its pronunciation. The following examples clarify both the situations:

- Words in which / r / is followed by a vowel:

Red - / r̩ed /

Arrive - / ər̩aɪv /

Hearing - / hɪər̩ɪŋ /

- Words in which / r / is not followed by a vowel:

Car - / ka: /

Hard - / ha:d /

Ever - / evɜ: /

Verse - / vɜ:s /

Here - / hɪɜ: /

Cars - / keəz /

### 3.8.1 Comparison to Gujarati consonant / r /;

Gujarati philologists describe / r / with a slight variation. In the IPA consonant chart / r / is articulated as an alveolar tap or flap consonant while Babu Suthar places / r / as an alveolar trill phoneme. Jayant Kothari<sup>43</sup> and Kantilal Vyas<sup>44</sup> articulate / r / at dental but it does not seem to be an accurate point of articulation. Even to use the term ‘trill’ for the manner of articulation of / r /, does not sound appropriate. Gujarati / r / should be articulated as tap/flap. It is also articulated similarly by P.K. Pandey in his esteemed forthcoming book Sounds and their patterns in Indian languages.<sup>45</sup>

In Gujarati Phonology / r / occurs at all positions whether it is followed by vowel or not, it occurs properly that is another important feature, that differentiates it from British R. P. The function of / r / in cluster will be described in the portion on consonant clusters.

### 3.9 Approximants:

An approximant is rather difficult to describe. Informally it can be said that it is an articulation in which the articulators approach each other but do not get sufficiently close to each other to produce a “complete” consonant such as a plosive, nasal or fricative. The difficulty with this is that articulators are always in some positional relationship with each other, and any vowel articulation could also be classed as an approximant but the term ‘approximant’ is usually used only for consonants.

### 3.9.1 Approximants in English:

/ j / and / w / are articulated as bilabial and palatal approximant consonants in British R. P. Peter Roach comments on / j / and / w / as, “The most important thing to remember about these phonemes is that they are phonetically like vowels but phonologically like consonants (in earlier works on phonology they were known as ‘semivowels’).”<sup>46</sup>

The articulation of / j / is practically the same as that of a front close vowel such as / i: /, but it is very short. In the same way the manner of articulation of / w / is very similar to / u /. For example, if the initial sounds of ‘wet’ or ‘yet’ are produced ‘very long’ i.e., in an elongated manner, one would be able to note this similarity.

### 3.9.2 Comparison with Gujarati Approximants:

Here also Gujarati Philologists have different opinions regarding the approximant phonemes / j, w /. In the IPA chart of Gujarati Phonology / w / is shown as /ʋ/ as labio-dental and / j / as palatal. Babu Suthar articulates only / j / as a palatal approximant and / w / of British R. P as / v / as labio-dental fricative. Both the observations regarding the phoneme / v / or / ʋ / are to be tested again. On the other side, P.K. Pandey mentions / w /, accurately as a bilabial and / j / as a palatal approximant.<sup>47</sup>The symbol given by IPA as / ʋ / should be taken forward in this discussion. In the place of articulation, Pandey is quite accurate.

Thus, Gujarati Phonology does not have two phonemes like British R. P.: / v / - labio dental fricative and / w / - bilabial approximant. Gujarati Phonology produces only one phoneme / ʋ / - bilabial approximant while the

other is / j /. / u / has [v] and [w] as allophones.<sup>48</sup> Both occur at all the three positions: initial, medial and final.

### **3.10 Consonant clusters:**

Consonant cluster means a sequence of two or more consonants at the beginning or end of a syllable. For instance, 'blue' – / bl / can be treated as an initial cluster while the word 'asks', has the final cluster of three consonants / s, k, s / because all the three consonants belong to the same syllable. On the other hand T. Balasubramanian comments, "the consonants / ŋ / and / k / in the word 'uncle' do not form a consonant cluster because in the speech of most English speakers / ŋ / arrests the first syllable and / k / releases the next. In other words, the / ŋ / and the / k / belong to two different syllables. Such sequences of consonants that do not form a consonant cluster are called 'abutting consonants".<sup>49</sup>

#### **3.10.1 Consonant cluster in English:**

In English, as many as three consonants can begin a syllable and as many as four consonants can end a syllable. Thus the English canonical syllable structure is - (c) (c) (c) v (c) (c) (c) (c). The following are the consonant cluster sounds that usually observed in English:

##### **Initial two consonants cluster:**

/ p, b / as first element / l, r, j /

/ t, d / as first element / r, j, w /

/ k / as first element / l, r, j, w /

/ g /        as first element   / l, r /  
 / f /        as first element   / l, r, j /  
 / v /        as first element   / j /  
 / ə /        as first element   / r /  
 / s /        as first element   / p, t, k, m, n, l, w /  
 / m, n, h / as first element   / j /

**Three consonants cluster:**

In English if three consonants form an initial consonants cluster, the first element is always /s/ and the second element of the three voiceless plosives:

/ spl /, / spr /, / str /, / stj /, / skr /, / skw /

**Final consonants cluster:**

/ p /	as the final element	/ -sp, -lp, mp /
/ b /	as the final element	/ -lb /
/ t /	as the final element	/ -pt, kt, tʃt, ft, st, ʃt, nt, lt /
/ d /	as the final element	/ -bd, -gd, dʒd, vd, -ðd, zd, md, nd, ŋd, ld /
/ k /	as the final element	/ sk, ŋk, lk /
/ tʃ /, / dʒ /	as the final element	/ lf /, / lv /
/ ə /	as the final element	/ pə, tə, də, fə, mə, nə, ŋə /
/ s /	as the final element	/ ps, ts, ks, fs, es, ns, ls /
/ z /	as the final element	/ bz, dz, gz, vz, ðz, mz, nz, ŋz, lz /

### Three consonants cluster:

/ t /	as the final element	/ dst, kst, skt, mpt, nɪft, nst, lpt, lkt, lst /
/ d /	as the final element	/ ndʒd, lvd /
/ ɒ /	as the final element	/ ksə, lfə /
/ s /	as the final element	/ pts, pəs, təs, kts, fts, fəs, sps, sts, sks, mps, nts, nəs, ŋks, lps, lts, lks /
/ z /	as the final element	/ ndz, ldz, lvz /

### Final consonants cluster: four consonants:

/ s / as the final element / -ksts, ksəs, mpts, lfəs /

### 3.10.2 Comparison to Gujarati consonant cluster:

In Gujarati and English, a syllable can begin having three consonants but Gujarati can have only two consonants against four consonants in English at the end of a syllable. Thus, the Gujarati canonical syllable structure is - (c) (c) (c) v (c) (c).<sup>50</sup>

Consonant clusters in Gujarati occur initially, medially and finally, while 'Geminates' occur only medially.<sup>51</sup> Geminates were previously treated as long consonants, but they are now better analyzed as cluster of two identical segments. Mistry gives an illustration in his work 'Gujarati Phonology' as follows:<sup>52</sup>

- The /u/ in geminated 'uccār' (Pronunciation) sounds more like the one in 'clustered udgar (utterance) than the one in 'shortened ucāṭ ('anxiety)

- Geminates behave towards (that is, disallow) [ə] - deletion like cluster do.

He comments further, “Germination can serve as intensification. In some adjectives and adverbs, a singular consonant before the agreement vowel can be doubled for intensification. VCū → VCCū”<sup>3</sup>

big	[moṭū]	[moṭṭū]	big
Straight	[sid <sup>h</sup> ū]	[sid <sup>h</sup> d <sup>h</sup> ū]	straight
considerably	[k <sup>h</sup> asū]	[k <sup>h</sup> assū]	considerably

#### **Initial – two consonants clusters:**

In Gujarati, initial two consonants clusters are having many pairs as in English. Biconsonantal initial cluster beginning with plosives have / r /, / j /, / v / and / l / as second member. / s / biconsonantally clusters with / r /, / j /, / v /, / n /, / m /, and with non – palatal voiceless plosives. P. K. Pandey gives the list of some pairs as follows: <sup>54</sup>

/ sp- /, / st- /, / sk- /, / sp<sup>h</sup> /, / st<sup>h</sup> /, / sk<sup>h</sup> /

/ sm /, / sn /, / sw /, / sr /

C+ / w /, / j /, / l /, / r /

### **Initial – Three consonants cluster:**

Initially, / s / triconsonantly clusters with / t̪r, pr, mr / - most of which occur in borrowing.<sup>55</sup> Cluster of two and three consonants is found at medial position in most cases but because of inadequate availability of data, it is not possible to illustrate further.

### **Final – two consonants cluster:**

In Gujarati, only two consonants can occur at the final position in a syllable against four consonants in English. P. K. Panday distributes them in following three parts:

1. / s / + stop : / -sp, -st, -sk, -sb, -sd, -sg /  
/ sp<sup>h</sup>, sk<sup>h</sup>, sb<sup>h</sup>, sd<sup>h</sup>, st̪, sg<sup>h</sup> /
2. r + / s, ʃ /
3. stop + homorganic stop

It is noticed on IPA-Gujarati Phonology, that the occurrence of / r / as a second member in consonants cluster is one of Gujarati's conservative features as a modern indo-Aryan language. For example, languages used in 'Asokan inscriptions' (3rd Century BC) display contemporary regional variations, with words found in Gujarat's Girnar inscriptions containing cluster with / r / as the second member not having / r / in their occurrence in inscriptions elsewhere. This is maintained even today, with Gujarati / t̪r / corresponding to Hindi / t̪ / and / tt̪ /.<sup>56</sup>



Thus, summarizing the discussion, the major views can be capsulated as both the systems English and Gujarati have almost similar types and numbers of places and manners of articulation. On the other hand, aspiration in Gujarati consonantal phonemes and consonant cluster occurring at the middle position in Gujarati are some of the distinctive features of the comparative study of English and Gujarati consonant systems.

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## Chapter-4

# **Comparative Study of Suprasegmentals**

## **Chapter - 4**

### **Comparative Study of Suprasegmentals**

In the last two chapters, the main segments of both English and Gujarati phonological systems have been studied comparatively. It has been observed that the vowel system of English has a larger number of phonemes as well as variety of length and depth as compared to the Gujarati vowel system. On the other hand, the consonant system of Gujarati has a larger number of phonemes as compared to English. Again aspirated, non-aspirated consonants are a special category in Gujarati Phonology. These distinctions make the study essential and interesting. In the present chapter, 'syllable' and 'stress' elements of suprasegmentals of English and Gujarati will be studied comparatively. In phonology, suprasegmental is an equally imperative phonological portion and therefore it needs to be discussed in the thesis.

In this chapter, the word 'stress' is being used instead of the word 'accent' because it is widely found in the literature on stress and it creates the complexity of the description without contributing much to its value. Moreover, Peter Roach and many other writers do not agree with each other about the way the term should be used. One more reason is that the word 'accent' is used elsewhere to refer to different varieties of pronunciation (e.g. "a foreign accent"); it is confusing to use it for a quite different purpose – to a lesser extent we also have this problem with the word 'stress', which can be used to refer to psychological tension. In fact, Clark and Yallop have explained in detail about the confusing nature of the terms 'stress' and 'accent'.<sup>1</sup>



The elegance of English language lies in its utterance of stress-timed rhythm. T. Balasubramaniam describes stress thus; "In an English word of more than one syllable, one of the syllables is pronounced with greater prominence than the other(s). The syllable that is pronounced more prominently than the other(s) in the same word is said to be accented or to receive the accent."<sup>2</sup> Peter Roach does not attempt to define 'stress' but he directly discusses the characteristics of stressed syllable. He approaches this matter in two various ways: (i) to consider what the speaker does in producing stressed syllable, (ii) to consider what characteristics of sound make a syllable stressed to a listener. It means 'stress' should be studied from the point of view of production and of perception; the two are obviously closely related, but are not identical.<sup>3</sup>

Many experiments have been carried out on the perception of stress, and it is clear that many different sound characteristics are important in making a syllable recognizably stressed. Roach writes that from the perceptual point of view, all stressed syllables have one characteristic in common and that is prominence. He describes four factors important for stress syllable:<sup>4</sup>

- I. Most people seem to feel that stressed syllables are louder than unstressed; in other words, loudness is a component of prominence. In a sequence of identical syllables (e.g. ba:ba:ba:ba:), if one syllable is made louder than the others, it will be heard as stressed. However, it is important to realise that it is very difficult for a speaker to make a syllable

such as those explained below (ii-iv); if one literally changes only the loudness, the perceptual effect is not very strong.

- II. The length of syllables has an important part to play in prominence. If one of the syllables in our “nonsense word” ba:ba:ba:ba: is made longer than the others, there is quite a strong tendency for that syllable to be heard as stressed.
- III. Every voiced syllable is said on some pitch; pitch in speech is closely related to the frequency of vibration of the vocal folds and to the musical notion of low – and high – pitched notes. It is essentially a perceptual characteristic of speech. If one syllable of our “nonsense word” is said with a pitch that is noticeably different from that of the others, this will have a strong tendency to produce the effect of prominence. For example, if all syllables are said with low pitch except for one (said with high pitch), then the high-pitched syllable will be heard as stressed and the others as unstressed. To place some movement of pitch (e.g. rising or falling) on a syllable is even more effective.
- IV. A syllable will tend to be prominent if it contains a vowel that is different in quality from neighbouring vowels. If we change one of the vowels in our “nonsense word” (e.g. ba:ba:ba:ba:) the “odd” syllable / bi/ will tend to be heard as stressed. This effect is not very powerful nor very important, but there is one particular way in which it is relevant in English... We can look on stressed syllables as occurring against a “background” of these weak syllables, so that their prominence is increased by contrast with these background qualities.

Prominence, then, is produced by four main factors (i) loudness (ii) length (iii) pitch and (iv) quality. Generally these four factors work together in combination, although syllables may sometimes be made prominent by means of only one or two of them. Experimental work has shown that these factors are not equally important; the strongest effect is produced by pitch, and length is also a powerful factor. Loudness and quality have much less effect.

Stress pattern is a challenging task for every speaker and for a lexicographer also. It is honestly mentioned in the introduction of “English Pronouncing Dictionary” of Daniel Jones (15<sup>th</sup> edition), that stress patterns present one of the most difficult problems in a pronouncing dictionary. One reason for this is that many polysyllabic words have more than one possible stress pattern, and one must consider carefully which should be recommended. Secondly, the stress of many words gets changed in different contexts, and it is necessary to indicate how this happens. Thirdly, there is no straightforward way to decide on how many different levels of stress are recognizable.<sup>5</sup>

#### **4.1 Levels of ‘Stress’:**

After discussing the distinction between stress and unstress, an important matter to deliberate is upon the levels of stress that can be recognized. Such a treatment would be a two level analysis of stress. The present discussion is on stress ‘within the word’. This means only words are focused in isolation, which is a somewhat artificial situation because, normally

a word is very rarely spoken in isolation except answering in 'yes', 'no', 'please', 'sorry' etc. However, looking at a word in isolation does help us to see stress-placement and stress-level more clearly than studying them in the context of continuous speech.

For instance, looking at the word 'around'- / əraʊnd /, where the stress always falls clearly on the last syllable and the first syllable is weak (looking from the point of view of stress), the most important fact about the way this word is pronounced is that on the second syllable the pitch of the voice does not remain level, but usually falls from a higher to a lower pitch. The pitch movement is diagrammed as shown below, where the two parallel lines represent the speaker's high and low pitch level.



The prominence that results from this pitch movement, or tone, gives the strongest type of stress; this is called 'primary stress' that is marked with ( ˈ ).<sup>6</sup>

One more type of stress is also observed that is weaker than primary stress but stronger than other syllables, as in (the first syllables of) the words 'photographic' - / fəʊtəgræfɪk / 'anthropology' - / ænθrəpɒlədʒɪ /. The stress in these words is called 'secondary stress'. It is sometimes represented in transcription with a low mark ( ˌ ) so that the examples could be transcribed as 'photographic' / ˌfəʊtə'græfɪk / 'anthropology'- / ˌænθrə'pɒlədʒɪ /.

Peter Roach also notices a third level besides the above mentioned two levels of stress which is called 'unstressed'. It is regarded as being the absence of any recognizable amount of prominence.<sup>7</sup> These are the three levels that will be normally used for describing English stress. Roach also adds that unstressed syllables containing / ə, ɪ or u / or a syllabic constant will sound less prominent than an unstressed syllabic containing some other vowel.

Some phonologists also mention a fourth level, as 'tertiary' in some polysyllabic words, but its introduction seems to add an unnecessary degree of complexity. This is also supported by some phonologists.

#### **4.2 Stress within the Word:**

English is not one of those languages where word stress can be decided simply in relation to the syllable of the word, as can be done in French (where the last syllable is usually stressed), Polish (where the syllable before the last-the penultimate syllable – is usually stressed) or Zech (where the first syllable is usually stressed ). It is accepted even by the experts that English word stress is so difficult to predict that it is best to treat stress placement as a property of the individual word to be learned when the word itself is learned. However, it must also be recognised that though it is highly complex in most cases, when English speakers come across an unfamiliar word, they can pronounce it with the correct stress.

In order to decide on stress placement, the following information is necessary to use. This is summarized by Peter Roach as follows:<sup>8</sup>

- i. Whether the word is morphologically simple, or whether it is complex as a result – either containing one or more affixes (that is prefixes or suffixes) or of being a compound word.
- ii. What is the grammatical category of the word? (noun, verb, adjective, etc.)
- iii. How many numbers of syllables are in a word?
- iv. What is the phonological structure of those syllables?

It is possible to divide syllables into two basic categories: strong and weak. One component of a syllable is the rhyme, which contains the syllable 'peak' and 'coda'. A strong syllable has a rhyme which either has a syllable peak which is a long vowel or diphthong, or a vowel followed by a coda. Weak syllables have a syllable peak which is a short vowel and no coda unless the syllable peak is the schwa vowel / ə / or / ɪ /.

### **4.3 General Rules for Placing Stress in a Word:**

English philologists have worked immensely to generalize the matter. They do state certain rules for placing stress in a word but these rules are not free of exceptions. Nevertheless, here only rules are mentioned in a general sense so that they can be compared with the Gujarati phonological system.

#### **4.3.1 Two syllable words:**

Looking first at verbs, the basic rule is that if the second syllable of the verb is a strong syllable, then that second syllable is stressed. For example,

'apply' - / ə'plai /

'assist' - / ə'sist /

If the final syllable is weak, then the first syllable is stressed. For example,

'enter' - / 'entə /

'open' - / 'əʊpən /

A final syllable is also unstressed if it contains / əu /

'follow' - / 'fɒləu /

'borrow' - / 'bɒrəu /

Simple adjectives having two syllables are stressed according to the same rule. For example,

'lovely' - / 'lʌvli /

'correct' - / kə'rekt /

As with most stress rules, there are exceptions; for example, 'honest' - / 'ɒnest /, 'perfect' - / 'pɜ:fɪkt / all of which end with strong syllables but are stressed on the first syllable.

Nouns require a different rule; if the second syllable contains a short vowel, then the stress will usually come on the first syllable, otherwise it will be on the second syllable. For example:

'estate' - / ɪ'steɪt /

'money' - / 'mʌni /

'balloon' - / bə'lʊ:n /

'larunx' - / 'lærɪŋks /

Other two syllable words such as adverbs and prepositions seem to behave like verbs and adjectives.

#### 4.3.2 Three syllables word:

Here the matter is more complicated. In verbs, if the final syllable is strong, then it will be stressed, for instance 'entertain' - / entə'teɪn / or 'resurrect' - / rezə'rekt /. If the last syllable is weak, then it will be unstressed, and stress will be placed on the penultimate syllable if that syllable is strong. Thus;

'encounter' - / ɪŋ'kaʊntə /  
'determine' - / dɪ'tɜ:mɪn /

If both the second and third syllable is weak, then the stress falls on the initial syllable:

e.g. 'parody' - / 'pærədi /

Nouns require a slightly different rule. Here, if the final syllable is weak, or ends with / əu /, then it is unstressed, if the syllable preceding this final syllable is strong, then that middle syllable will be stressed. Thus:

'synopsis' - / sɪ'nɒpsɪs /  
'potato' - / pə'tetəʊ /

If the second and third syllables are both weak, then the first syllable is stressed



'quantity' - / 'kwɒntəti /

'cinema' - / 'sɪnəmə /

Most of the above rules show stress tending to go on strong syllables. However, three - syllable simple nouns are different. Even if the final syllable is strong, the stress will usually be placed on the first syllable. The last syllable is usually quite prominent, so that in some cases it could be said to have secondary stress. For example,

'intellect' - / 'ɪntələkt /

'marigold' - / 'mæɪɪgəʊld /

Adjectives seem to need the same rule, to produce stress patterns such as:

'opportune' - / 'ɒpətju:n /

'insolent' - / 'ɪnsələnt /

There is another approach to English stress rule which is radically different. This is based on 'generative' phonology - an analysis which was first presented in Chomsky and Halle (1968) and has been followed by a large number of works exploring the same field. The main characteristics of basic generative phonology summarised by Peter Roach as an old-fashioned view of speech communication would be that what the speaker intends to say is coded - or represented - as a string of phonemes just like a phonemic transcription, what a listener hears is also converted by the brain from sound waves into a similar string of phonemes. A generative phonology, however, would say that this phonemic representation is not accurate; the

representation in the brain of the speaker or listener is much more abstract and is often quite different from the 'real' sounds recognizable in the sound wave. You may hear the word 'football' pronounced as / fʊtbɔ:l /, your brain recognizes the word as made up of 'foot' and 'ball' and interprets it phonologically as / futbɔ:l /. You may hear / ə / in the first syllable of 'photography', in the second syllable of 'photograph' and in the third syllable of 'photographer', but the brain recognizes links between these / ə / vowels and / əu, ɒ and æ / respectively, and supplies the *underlying* vowels. In speaking, underlying segments may be realized as different sounds as the stress-pattern changes. These vowel changes are brought about by rules-not the sort of rules that one might teach to language learners, but more like the instructions one might build in to a machine or write into a computer programme. According to Chomsky and Halle, at the abstract phonological level, words do not possess stress; stress (of many different levels) is the result of the application of phonological rules, which are simple enough in theory but highly complex in practice.<sup>9</sup>

#### **4.4 Stress in Complex Word:**

As such, it is difficult to distinguish between 'simple' and 'complex' words but in order to elaborate this issue we would directly focus upon the two major types of complex words;

- i) Words made from a basic word form (also called as 'stem'), with the addition of an affix; and

- ii) Compound words, which are made of two (or occasionally more) independent English words (e.g. 'ice-cream', 'armchair').

Affixes are of two sorts in English: Prefixes and Suffixes. Affixes have one of three possible effects on word stress. The affix itself receives the primary stress, for e.g.

'semicircle'	/ 'semisɜ:kɪ /
'personality'	/ pɜ:sn'æləti /

- i) The word is stressed just as if the affix were not there, e.g.

'pleasant'	/ 'pleznt /	'unpleasant'	/ ʌn'pleznt /
'market'	/ 'mɑ:kɪt /	'marketing'	/ 'mɑ:kɪtɪŋ /

- ii) The stress remains on the stem, not the affix, but is shifted to a different syllable, e.g.

'magnet'	/ 'mægnət /
'magnetic'	/ mæg'nɛtɪk /

There are many prefixes and suffixes that affect on the placement of stress and some of them do not affect on the placement of stress but it is generalised as above. Moreover these details are also available in every course book of Phonetics.

#### 4.5 Stress in Compound Words:

A compound word is normally analyzed into any two words, both of which can exist independently as English Words. There is no clear dividing

line between two words: compounds and pairs of words simply happen to occur together quite frequently.

As far as stress is concerned, the question is quite simple. A few rules are specified; although these are not completely reliable. Words, which normally do not receive primary stress, have secondary stress, although for the sake of clarity this is not marked here. Perhaps the most familiar type of compound is the one which combines two nouns and which normally has the stress on the first element, as in;

'typewriter'	/ 'tʌpraɪtə /
'car- ferry'	/ 'kɑ:fəri /

It is probably the most common way to assume that stress will normally fall in this way on the other compounds; however, a variety of compounds receive stress instead on the second element. For example, compounds with an adjectival first element and the – 'ed' morpheme at the end have this pattern, e.g. bad-'tempered, half-'timbered. Compounds in which the first element is a number in some forms also tend to have final stress: e.g. three-'wheeler, second-'class. Compounds functioning as adverbs are usually final-stressed: e.g. North-'East, down-'stream. Finally, compounds which function as verbs and have an adverbial first element take final stress; e.g. ill-'treat, back-'pedal.

#### 4.6 Word Class Pairs:

There are several dozen pairs of two syllable words with identical spelling which differ from each other in stress placement, apparently according to word class (noun, verb, or adjective). All appear to consist of prefix + stem. It is treated as a separate type by Peter Roach and he gives them the following rule;

“If a pair of prefix-plus-stem words exist, both members of which are spelt identically, one of which is a verb and the other of which is either a noun or an adjective, then the stress is placed not on the second syllable of the verb but on the first syllable of the noun or adjective.”<sup>10</sup>

Some common examples are given below;

abstract	/ 'æbstrækt / (A) /æb'strækt / (V)
'conduct	/ 'kɒndʌkt / (N) /kən'dʌkt / (V)
'desert	/ 'dezət / (N) / dɪ'zɜː / (V)
'object	/ 'ɒbdʒɪkt / (N) /əb'dʒekt / (V)
'subject	/ 'sʌbdʒɪkt / (N) / 'səb'dʒekt / (V)

(V = verb, A = adjective, N = noun)

#### 4.7 Weak Forms:

English has well known strong forms and weak forms of syllables. For example 'that' can be pronounced as / ðæt / (Strong form) or / ðət / (weak form). There are approximately forty such words in English. They play an important role in understanding native English and therefore it is equally important to make the English understand a foreigner's English.

Almost all the words which have both a strong and weak form belong to a category that may be called function words – words that do not have a dictionary meaning in the way that is normally expected – nouns, verbs, adjectives and adverbs. These function words are words such as auxiliary verbs, prepositions, conjunctions, etc., all of which are in certain circumstances pronounced in their strong forms but which are more frequently pronounced in their weak forms. In most cases they have weak forms that are quite common and therefore here only those rules are being mentioned where these function words are pronounced in their strong form.

- I. For many weak form words, when they occur at the end of a sentence; for example, the word 'of' has the weak form / əv / in the following sentence:

'I'm fond of chips.'

However, when it comes at the end of the sentence, as in the following example, it has the strong form / ɒv /:

'Chips are what I'm fond of.'

II. When a weak-form word is being contrasted with another word; for example;

‘The letter’s from him, not to him.

A similar case is what might be called a ‘co-ordinated use of prepositions;

‘I travel to and from London a lot.’

‘A work of and about literature.’

III. When a weak-form word is given stress for the purpose of emphasis; for example;

‘You must give me more money.’

IV. When a weak form word is being “cited” or “quoted” for example;

‘You should not put “and” at the end of a sentence.’

#### **4.8 Stress in Gujarati:**

“The matter of stress is not quite clear.”<sup>11</sup> is stated as the very first line on Gujarati Phonology website linked with International Phonetics Association pages last modified on May 25, 2009. It appears that these suprasegmental features have not been studied with proper focus or perhaps the language itself contains varieties such as ‘fixed stress’ or ‘variable stress’. Michael Ashby and John Maidment mention about these varieties of stress thus:

“Some languages have fixed stress in the sense that most words in the language bear stress on the same syllable. Favoured places for stress in fixed stress languages are the first syllable of the word, the last syllable of the word and the penultimate syllable of the word”<sup>12</sup>

They give examples of Welsh, Czech and Turkish languages as the fixed stress language. They also mention one more type of language of variable stress. They describe variable stress as;

“Many languages have variable stress (sometimes called free stress). This does not mean that a particular word sometimes has one stress pattern and sometimes a different one. It means that one cannot make a simple, general statement as to which syllable of all (or most) words will be stressed.”<sup>13</sup>

Here, they give example of Catalan language and not of any Indian language. However, in a study J.D.O'Connor mentions 'Hindi' as one of the languages not having some length of a syllable to maintain rhythm;

“In many languages the rhythm-unit is the syllable; each syllable has the same length as every syllable and there are no constant changes of syllable length which occur in English word groups. Some such languages are French, Spanish, Hindi, Yoruba. Speakers of these languages and others in which all the syllables have the same length will find English rhythm rather difficult.”<sup>14</sup>

This is not the case only with Hindi, but in most of the languages of India, this variation in stress placement has been observed. That is why R.K.Bansal and J.B.Harrison remark;

“The patterns of word accent in English are not well organised. In some cases, a pattern different from that in British RP, is used. For example, the feature of change in



accent according to the function of the word is not always found in Indian English.”<sup>15</sup>

#### 4.9 General Rules for Placing Stress in Gujarati Word:

Campbell remarks that stress in Gujarati is barely perceptible.<sup>16</sup> However, Bharati Modi and P. J. Mistry have researched in this area and tried to set some general rules regarding stress placement.

Bharati Modi gives her observations to place stress as follows;<sup>17</sup>

- i. Every one-syllable word takes stress and the words spoken with particular meaning and specified intention do take stress.
- ii. In a disyllabic word, if the second syllable is a weak one, then the first syllable takes the stress. But if the first syllable is having a schwa[ə] vowel, then the second syllable takes the stress, for example;

'Kalo'	/ 'ka:lɔ /	black
'Taro'	/ 'ta:ɾɔ /	a star
'Ravi'	/ rə'vɪ /	a personal name
'mane'	/ mə'ne /	me

Here Mistry also adds that stress generally falls on the first syllable, except when it does not have the / a / vowel and the second syllable does have the / a / vowel .<sup>18</sup>

Further, Modi says that even if the second syllable of the two-syllable word is not free, it becomes a strong syllable and then takes the stress, for example;

/ məˈnən /	ˈmanan	to think deeply
/ vaˈhən /	ˈvahan	vehicle

iii. In a three-syllables word, the second syllable takes stress if not open, and thus becomes a strong syllable and takes the stress, for example;

ˈmanushy	/ məˈnuʃja /	human being
ˈmusalman	/ muˈsəlman /	muslim

iv. In the words having more than three syllables, mostly the second syllable takes the stress, for example;

ˈdafan	/ ˈdɛfən /
ˈdafanav	/ dɛfˈnav /
ˈdafnavnar	/ dɛfˈnav,nar /
ˈdafanavnara	/ dɛfˈnav'nara /

In this way, stress shifts from the first to the second syllable. In a similar way, it is also noticed in one study that, “stress typically falls on the penultimate syllable of a word, however, if the penultimate vowel in a word with more than two syllables is schwa, stress falls on the preceding syllable.”<sup>19</sup>

#### 4.10 Comparative Study of Stress Patterns:

English language is naturally produced in a stress-rhythmic manner. Most of the native speakers speak in such a way. Rules govern language at a

later stage. Again, these rules are set after very keen observations. British R. P. has a thorough study of stress pattern with enough data.

On the other hand, Gujarati is spoken placing stress mostly on the first syllable. In fact, Gujarati does not have such a pattern of speaking in stressed-rhythmic pattern. Another serious matter is that, till now standardization has only worked up to a certain level in Gujarati. Of course, scholars like Modi, Mistry and Suthar have contributed convincingly in these directions. However, they are not satisfied. That is why; Babu Suthar does not use stress-patterns anywhere in his "Gujarati English Dictionary". Other dictionaries of Gujarati have not mentioned stress until now.

Bharati Modi arrived at some conclusions after doing research on pitch. Even then, she humbly says that a detailed research with large samples should be taken. According to her, the observations were tentative, but stress is a coordinating phenomenon.

A common feature in stress patterns of both the systems is to place stress on the strong syllable of the word in most cases, irrespective whether it is on the first, second or third syllable. Another common rule is that a syllable having schwa / ə / vowel does not take stress in almost all cases. Thirdly, affixes sometimes affect on the placement of stress. Primary and secondary stresses are also noted in both the systems.

Besides certain similarities, the differences (distinctions) are as follows:

In English, stress changes according to function. There are a number of disyllabic words in which the stress pattern depends on whether the word is

used as a noun, adjective, or a verb. The stress is on the first syllable when the word is a noun or an adjective and on the second syllable when it is a verb. This type of stress-shift according to the function of word is not found in Gujarati.

To conclude the study of stress-pattern, it can be said that though a thorough study has not been taken up in Gujarati Phonology, certain features can interestingly be compared with English stress-patterns. An effort is therefore made to discuss the 'syllabic structure' from various points of view.

#### **4.11 Syllable:**

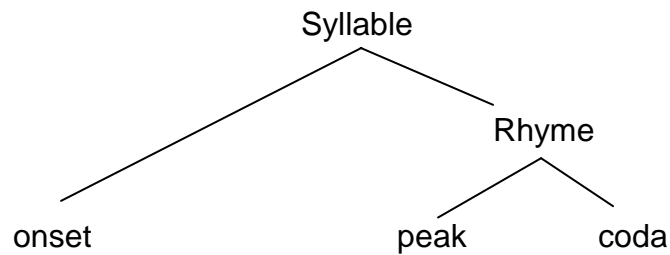
The study of syllable structure has remained a subject of considerable interest to phonologists. Generally, people believe that, even if syllable is not defined, they can count how many syllables are there in a given word or a sentence. If they are asked to do this, they often tap their fingers as they count, which illustrates the importance of syllables in speech. A word is made up of one or more syllables. The unit that is next in hierarchy to the speech sound is the syllable.<sup>20</sup>

Peter Roach describes that phonetically (that is in relation to the way we produce them and the way they sound) syllables are usually described as consisting of a centre which has little or no obstruction to airflow and which sounds comparatively loud; before and after this center (that is, at the beginning and end of syllable), there will be greater obstruction to airflow and/or less loud sound. Some examples are given below by Peter Roach:<sup>21</sup>

- i. What we might call a minimum syllable would be a single vowel in isolation, e.g. the words 'are' /ɑ: /, 'or' /ɔ: / 'err' /ɜ: /. These are preceded and followed by silence. Isolated sounds such as [m], which we sometimes produce to indicate agreement, or [ʃ] to ask for silence, must also be regarded as syllables.
- ii. Some syllables have an onset:
  - 'bar' - / bɑ: /,
  - 'key' - / ki: /
  - 'more' - / mɔ: /
- iii. Syllables may have no onset but have a coda:
  - 'am' - / æm /
  - 'ought' - / ɔ:t /
  - 'ease' - / i:z /
- iv. Some syllables have onset and coda:
  - 'run' - / rʌn /
  - 'sat' - / sæt /
  - 'fill' - / f /

Recent work in phonology makes use of a rather more refined analysis of the syllable in which the vowel and the coda are known as the 'rhyme'. In fact, both Daniel Jones' English Pronouncing Dictionary (15<sup>th</sup> edition) and Peter Roach's English Phonetics and Phonology adopt this term 'rhyme'. Roach illustrates that if you think of rhyming English verse, you will see that this works by matching just that part of the last syllable of a line. The rhyme is divided into the 'peak' (normally the vowel) and the 'coda' (but note that this is

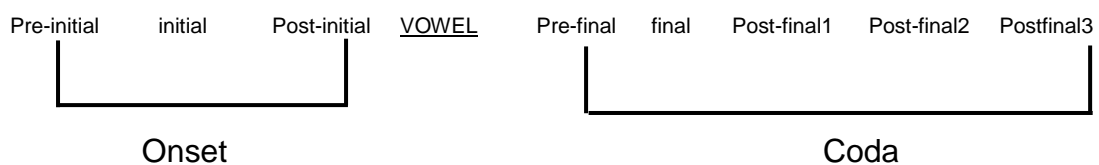
optional; the rhyme may have no coda, as in a word like 'me'). As it has been seen, the syllable may also have an onset, but this is not obligatory. The structure is thus the following:<sup>22</sup>



#### 4.12 Structure of English syllable:

There are many ways of studying 'syllable'. However studying them from the phonological point of view is quite different. What this involves is looking at the possible combinations of English phonemes; the study of the possible phoneme combinations of a language is called phonotactics.' It is also discussed earlier (in chapter -3, topic- 'consonant cluster') that the word begins normally with a vowel, or with one, two or three consonants. No word begins with more than three consonants. In the same way, a word ends when it is the last word spoken before a pause; it can end with a vowel or with one, two, three or four consonants (in a small number of cases). No word ends with more than four consonants.

In short, the English syllable can be summarized as having the following maximum phonological structure:



It will be noticed that there must be a vowel in the center of the syllable. There is also a special case, that of 'syllabic consonants'. For instance, let us analyze the word 'students' / stju:dnts / as consisting of one syllable with a three consonant cluster / stj / for its onset and ending with a four consonant cluster / dnts /. The word contains two syllables, with the consonant / d / dividing them and the second syllable ending with the cluster / nts /; in other words, the word is treated as though there was a vowel between / d / and / n /, although a vowel only occurs when pronounced in a slow and careful manner.

#### **4.13 English Syllable-division:**

There are many different ways of deciding how to divide syllables. One of the most widely accepted guidelines is what is known as the maximum onsets principle. It is mentioned in the *English Pronouncing Dictionary* of Daniel Jones. He says, "No completely satisfactory scheme of syllable division can be produced – all sets of rules will throw up some cases which cannot be dealt with properly." The principles used in this dictionary are located below:<sup>23</sup>

- a) As far as possible, syllables should not be divided in a way that violates the English syllable structure. The 'Maximum Onset Principle' which is widely recognized in contemporary phonology, is followed as far as possible. This means that, wherever possible syllable(s) should be divided in such a way that as many consonants as possible are assigned to the beginning of the syllable to the right (if one thinks in terms of how they are written in transcription), rather than to the end of the syllable to

the left. However, when this would result in a syllable ending with a stressed / ɪ /, / e /, / æ /, / ʌ /, / ɒ / or / u /, it is considered that this would constitute a violation of English phonotactics and the first (or only) intervocalic consonant is assigned to the preceding syllable; thus the word 'better' is divided / bet.ə<sup>r</sup> / where as 'beater' is divided / bi:.tə<sup>r</sup> / (a dot (.) is used to divide syllables, in accordance with the current recommendations of the International Phonetic Association. However, this is not used where a stress mark occurs, as these are effectively also syllable division markers.). In case of unstressed short vowels / e /, / æ /, / ʌ / and / ɒ / are also prevented from appearing in syllable – final position; however, unstressed / ɪ / and / u / are allowed the same “privilege” of occurrence as / ə / when a consonant begins following a syllable and may therefore occur in final position in unstressed syllables except pre-pausally. Thus in a word such as 'develop', the syllable division is / dɪ'vel.əp /

- b)** Notwithstanding the above, words in compounds should not be re-divided syllabically in a way that does not agree with perceived word boundaries. For example 'hardware' could in theory be divided / 'ha:.dweər / but most readers would find this counter – intuitive and would prefer / 'ha:d.weə<sup>r</sup> /. This principle applies to open, closed and hyphenated compounds.

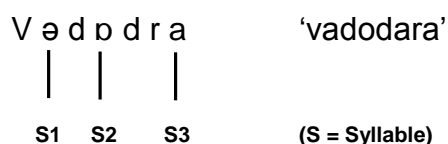


#### 4.14 Gujarati Syllable Structure:

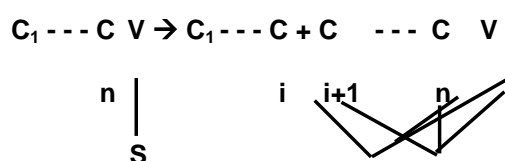
In Gujarati Phonology system, syllable is not studied thoroughly by phonologists. Most of them have given ‘exterior’ statements on syllabication and on syllable division, as it is also found in stress-pattern. It can be said that suprasegmental has not been studied with proper focus by Gujarati phonologists till now. However, previously Praboth Pandit had framed different consonant sequences. In recent times, Bharati Modi has set out some rules for syllabication as well as for syllable division. Babu Suthar and Cardona have also applied syllable division in Gujarati words in their Online Gujarati English Dictionary (Second Draft).

Gujarati is written in its own distinct ‘abugida’ script (i.e. a system where each consonant has an inherent vowel).<sup>24</sup> Considering this basic speciality, Bharati Modi has given rules of syllable – division. They are as follows:<sup>25</sup>

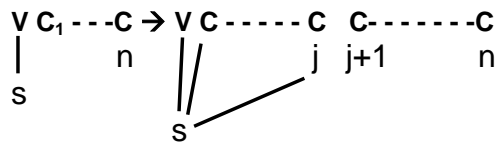
1. Every letter should be given the status of a syllable. For example,



2. (a)

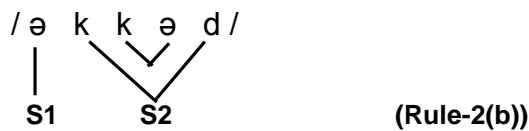
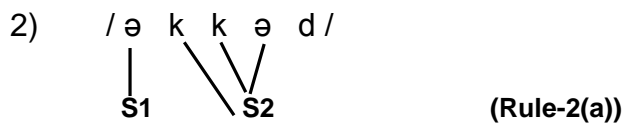
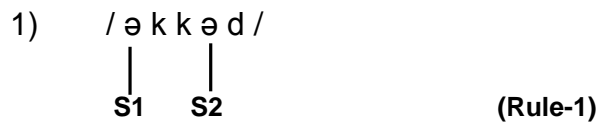


2. (b)



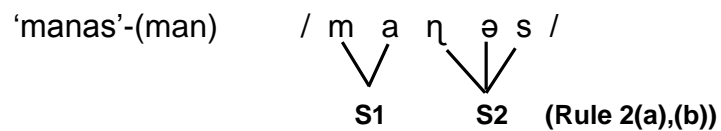
(v = vowel, c= consonant, s=syllable)

A word 'Akkad' (arrogant) is here selected that will be considered for syllable division according to above mentioned rules:

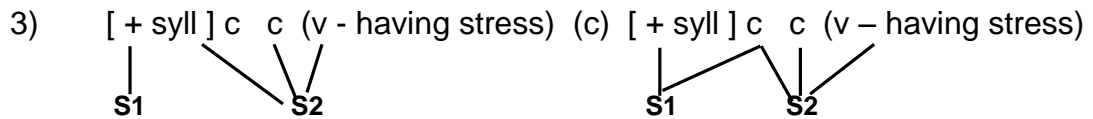


Modi remarks here that there is a possibility of incorrect syllable-division according to the rule 2(b).

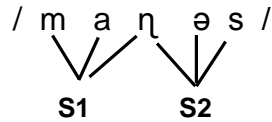
For Example,



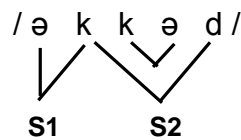
Therefore, here she finds the requirement of one more rule, which is given as follows:



So now,



Or



Nevertheless, according to the Rule-3 / kk / the consonants occur at the medial position, which have to be put at the initial position of the second syllable. However, here one more controversy arises. If the medial consonants are not of accepted consonant clusters of Gujarati Phonology, then they should not be put at the initial position of the second syllable:

For example;



According to this, syllable division / [g] / is an unacceptable consonant cluster that is not suitable to Gujarati Phonology. No Gujarati speaker initiates syllable with a / [g] / consonant cluster. That is why a condition is to be added to set the rule-3 comprehensibly.

Condition: CC<sub>2</sub> (consonant cluster) should not be an unacceptable one. It should not universally prohibit and should even be suitable to Gujarati Phonology.

After implementing the above condition, many consonant clusters will be excluded from the rule of syllable-division for example;

'vadaki'	Cup	/ v a d k ɪ /	/ dk /
'vamanu'	Lightless	/ v a m ŋ u /	/ mŋ /
'sukhdi'	type of sweet	/ s u k <sup>h</sup> d ɪ /	/ k <sup>h</sup> d /

Such kind of consonant clusters are a composition of morphological formation and morphological extension. However, these types of consonant clusters should not be considered as phonological clusters of Gujarati. They may only be treated as consonant sequence. Bharati Modi mentions Prabodh Pandit's observation regarding framing new consonant clusters by approaching words like,<sup>26</sup>

'ramato'	games	/ r ə <u>m t</u> ɒ /	/ mt /
'bhamto'	a corrupt word for a Brahmin	/ b <sup>h</sup> a <u>m t</u> ɒ /	/ mt /

Nevertheless, according to Modi, such consonant clusters are not scientific and they should not be considered as 'consonant clusters' of the Gujarati phonological system. Moreover they are a part of the consonant sequence that occurred because of morphological formation and morphological extension. It seems such kind of consonant sequences should

be treated for syllable division according to the rule-3 only keeping in mind the condition mentioned above.

#### **4.15 Comparison between English and Gujarati Syllabication and Syllable-division:**

The fundamental concept of syllable is quite different in both the systems due to their orthography patterns. The alphabets of English language do not contain inherent vowel with consonant while the alphabets of Gujarati language contains an inherent vowel with a consonant. As it is mentioned earlier, Gujarati orthography is written in abugida script. Thus, English syllable is the unit that is next in hierarchy to the speech sound while in Gujarati every letter can have the status of a syllable.

English and Gujarati syllable-structure also have certain similarities and distinctions. As in both the systems, a syllable can consist up to three consonants but in Gujarati, only up to two consonants can end a syllable against up to four consonants in English. Thus, Gujarati canonical syllable structure is (c) (c) (c) v (c) (c).<sup>27</sup>

Another important feature is: consonant clusters do not occur medially in English phonology while in Gujarati, consonant clusters occur initially, medially and finally, and 'Geminates' occur only medially. Geminates were previously treated as long consonants, but they are now better analyzed as cluster of two identical segments. Two proofs for this is mentioned by Mistry in his work 'Gujarati Phonology':<sup>28</sup>

The / u / in geminated ‘uccār’ (pronunciation) sounds more like the one in clustered ‘udgar’ (utterance) than the one in shortened ‘ucāṭ’ (anxiety). Geminates behave towards (that is disallowed) [ə] – deletion like cluster do. He comments further, “Germination can serve as intensification. In some adjectives and adverbs, a singular consonant before the agreement vowel can be doubled for intensification - VCū → VCCū.”<sup>29</sup>

big	[moṭū]	[moṭṭū]	big
Straight	[sidhū]	[sidhdhū]	straight
considerably	[khasū]	[khassū]	considerably

In Gujarati, there are some consonant sequences, which are not accepted according to Gujarati phonology, that occur at medial position and create some complexity in syllable-division. In English, such unaccepted consonant sequences are not observed. Moreover medially, English does not produce consonant sequences. Thus, such complexity is not found in English syllable-division.

Thus, the study of syllable can be concluded with the remarks that to clear certain confusion and establish a sound syllable pattern - a thorough study with full data is required in Gujarati phonology. Hence, the present work tries to provide some light to compare the imperative features of syllable and syllable-division.

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# Chapter - 5

## **Conclusion**

## Chapter - 5

### Conclusion

One of the major objectives of life besides other objectives is to realise and understand the Almighty's blessedness on human-spices, which has been gifted with speech (vani), in the form of language. During the study of sound, an important question that must strike the human-intellect is how does the whole process of sound occur? Does it happen automatically or does somebody consciously enable the mechanism? Panini explains this complex process of the emergence of every sound in Ashthadhyayi. For instance, only the process of one sound /t/ is taken: <sup>1</sup>

*आत्मा बुद्ध्या समेत्यार्थान् मनो युङ्क्ते विवक्षया ।*

*मनः कायाग्निमाहन्ति स प्रेरयति मारुतम् ॥*

*मारुतस्तूरसि चरन् मन्द्रं जनयति स्वरम्...*

(My intellect and soul decides to pronounce / t /. They send message to the mind. The mind attacks on the 'kayagni' (a type of fire). One peculiar type of air produces because of this attack. This air comes out as the sound / t /.)

The holy scriptures of western and eastern also herald 'speech' as the special attribute to humanity from God. The Bible says that it is not you that speak but the spirit of thy father that speaks in you.<sup>2</sup> Furthermore, in the Bhagwad Geeta, God himself approves, sound / ə / as his own 'vibhuti' (means God's own image) by asserting 'aksharnamkarosmi'.<sup>3</sup> In Sanskrit and Gujarati languages, letter is named as 'akshar' that also means the element which can never be destroyed. The Bhagawad Geeta proclaims 'aksharam

brahm param' means, I (God) myself is akshar.<sup>4</sup> Thus, a touch of almighty has been experienced throughout this phonological study.

In this concluding chapter, the findings are mentioned categorically in keeping with the hypotheses mentioned in the first chapter.

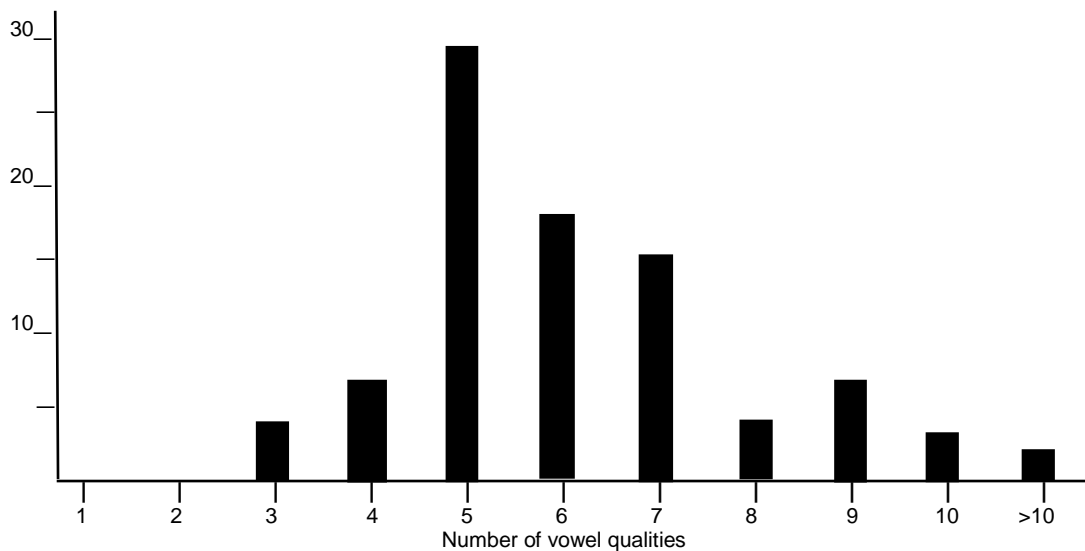
### **5.1 English and Gujarati phonological systems have noticeable similarities, which could assist in attaining intelligible standards in English communication.**

At first, the striking identical features of both the phonological systems have been summarised here:

- Both the systems have pulmonic egressive air-stream mechanism. Manners of articulation (plosive, affricate, fricative, nasal, lateral and approximants) are almost identical in both the systems. Both the systems have common places of articulation like bilabial dental, alveolar, palato- alveolar, palatal, glottal etc..
- A diachronical study of both the systems indicates the impact of Sanskrit phonology on many philologists of English and Gujarati. They are indebted to Sanskrit language.

Some imperative features also emerged during the study of vowel systems in both English and Gujarati phonology. Michael Ashby and John Maidment have given the graph of vowel systems of the world languages. The information used to compile this figure was taken from a database of 317 phonological systems known as UPSID (UCLA phonological segment inventory).<sup>5</sup>

Percentage of language



- The survey indicates that the simplest system contains only three vowels – [i, a, u]. Many languages of Australia, such as Aranda and Nunggubuya have a vowel system of this type, but it is also found in other parts of the world.
- From the above graph, it can also be said that the most frequently occurring vowel system has five vowels [i, e – ε, a, o – evif emoS .[u ,ɔ- vowel system languages use close –mid vowels and some use open-mid vowels. There are five vowel languages in all parts of the world.
- Accordingly, English contains twelve pure vowels against eight in Gujarati. But both systems contain five short vowels / ɪ, e, ə, ɒ, u /. They may have little variation in their position of articulations. These five short vowels are the most frequently produced vowels in both the languages.
- Another noticeable feature is that both the vowels systems have front, central and back types of vowels. They vary in their numbers. As in English, Gujarati too contains four front vowels / i:, ɪ, e, æ /. However,

they are different phonemes as / i, e, ε, a /. In the center position English has three vowels / ʌ, ɜ:, ə / against one in Gujarati / ə /. At the back position English comprises five vowels / ɑ:, ɒ, ɔ:, u, u:/ against two vowels / ɒ,u / but in some cases three / ɒ, ɔ:, u / in Gujarati. Details and reasons of this variation have already been discussed in the second chapter.

## **5.2 English and Gujarati phonological systems have clear distinctive features, which need to be recognized and articulated for achieving intelligible standards in English communication for Indian (Gujarati) students.**

Certain striking distinctions in both the vowel systems have also been studied.

- Long vowels are one of the major distinctions between both the systems. As English produces five long vowels / i:, æ, ɑ:, ɔ:, u: / against two long vowels in Gujarati / ε, ɔ: /. English comprises eight diphthongs against two in Gujarati / uə, au /. It is observed that / ɪ / ended diphthongs get shifted to monophthongs. As people of Gujarat pronounce / j / instead of producing / ɪ /. Similarly / u / ended diphthongs are also shifted to monophthongs as people of Gujarat pronounce / ʊ / instead of / u /. In case of triphthongs, only English phonology produces them.
- English contains six plosives as against sixteen in Gujarati phonology. On the contrary, English produces nine fricatives against three in Gujarati. Two affricates are in English against four in Gujarati. English

produces three nasals while Gujarati has four nasals. English has / l / as lateral and / ɫ / (dark) as an allophone while Gujarati contains two separate phonemes / l / and / ɭ /. / ɭ / is not an allophone of / l /. / r / is articulated as retroflexed and remains silent if it is not followed by vowel in English phonology. In Gujarati, / r / is produced as a tap/flap and does occur in every condition. In the manner of approximants, English articulates three consonants / v, w, j / as against two / υ, j / in Gujarati. Again Gujarati does not articulate phonemes / v / and / w / separately.

- ‘Aspiration of phoneme’ is also one more remarkable distinction that has been studied here. English plosive / p, t, k / are aspirated when they occur in the initial position of a word as / p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup> /. They are not treated as separate phonemes but as allophones. In Gujarati, eight pairs of plosives and two pairs of affricates are categorized by some phonologists as aspirated and non-aspirated but these pairs are not allophones to their respective phonemes but each one is a separate phoneme, which has been approved by concerned references and analysis in the third chapter. That is to say, the term ‘aspiration’ applies and is used for English phonemes and it should not similarly be applicable to Gujarati.
- Similarly, affricates can also be treated in Gujarati phonology. / tʃ<sup>h</sup> / is not found in English phonology. In Gujarati Phonology / dʒ<sup>h</sup> / is affricate, while English has fricative / z /. Gujarati people do not produce sounds with fortition as it is found in English spirantization. Due to lack of fortisness, Gujarati has three fricatives / s, ʃ, h / against nine in English. / ʒ / is not produced in Gujarati while / f, θ, ð / phonemes are produced as plosives:

/ p<sup>h</sup>, t<sup>h</sup>, d<sup>h</sup> /. Roach is also of the opinion that / ð / is mostly produced in the manner of a plosive rather than of a fricative in English.<sup>6</sup>

In short, the vowel system in English relatively contains a larger number of phonemes with greater variety as in length: short and long or say diphthongs and triphthongs. On the other hand, the consonant system in Gujarati phonology has a larger number of phonemes with greater variety of manner, place, aspiration and murmurs as compared to English.

In the study of suprasegmentals, two elements: syllable and stress, had been selected for comparative study from both English and Gujarati. Actually in Gujarati, the suprasegmental portion has not been studied thoroughly by many philologists. However, these two topics have been focused up to a certain level by Pandit and Mistry. In the present study, a few major comparative features of syllable structure and syllable division are mentioned in brief:

- The fundamental concept of a syllable is quite different in both the systems due to their orthography patterns. The alphabets of English language do not contain an inherent vowel with a consonant while the alphabets of Gujarati language carry an inherent vowel with a consonant. As such, Gujarati orthography is written in abugida script. Thus, English syllable is the unit that is next in hierarchy to the speech sound while in Gujarati every letter can have the status of a syllable.
- English syllable structure is CCCVCCCC while Gujarati syllable structure is CCCVCC. In English, consonant clusters occur at the initial and at the



ending position as against the initial, medial and ending position in Gujarati.

- Considering syllable division, Gujarati records the complexity of certain consonant sequences, which are not accepted in Gujarati as phonological clusters. That is why one special condition was set out by Modi. In fact, the third rule given by her for syllable division; “[+syll] c c (v - having stress) (c) [+syll] c c (v-having stress)” is almost similar to the maximum onset principle which is widely accepted for syllable division.

The second element of the suprasegmental is stress pattern, which has also been studied comparatively. Identical features are summarized here and the findings are listed as follows:

- Both the systems place stress on the strong syllable of the word in most cases, whether the strong syllable is at the place of the first, second or third.
- In both the systems, a syllable containing schwa (ə) vowel does not take stress.
- In both the systems, affixes affect the placement of stress partially.
- In both the systems, the two types of stresses i. e. primary and secondary are noticed.

Now the features that indicate the contradiction are listed as follows:

- English has well established stress patterns as against the less studied stress patterns of Gujarati.

- Stress changes its placement according to the function of the word, i.e., stress on a word, which is a noun, will change if the same word is used as a verb. Such shifting of stress has not been found in Gujarati.

**5.3 The native speakers of Gujarat generally do communicate in English through Gujarati phonology. They do not use English phonology while communicating in English; if remedial guidance is provided for the improvement of English communication, the standards of intelligible English are possible to locate among the native speakers of Gujarat.**

The comparative study of segment and suprasegment of both the phonological systems facilitate to prepare a portrait that Gujarati Phonology contains enough variety to enunciate English up to the international standards easily. Gujarati consonant system comprises of almost all the phonemes of the English consonant system. In addition, Gujarati articulates a larger number of plosive, nasal, and affricate consonants. Gujarati Phonology produces eight vowels as against twelve in English. All the short vowels are properly produced in Gujarati. The problem is only at producing long vowels & diphthongs. Gujarati as a language does contain the variety of the long vowels but this is observed only in orthography. During speech production, long vowels are not produced as a matter of habit. Babu Suthar dedicated his fiction 'Nindraviyog' to the vowels and consonants, which are used in orthography but not produced in speech. He mentions, "You are the victims of our mouth - the first metaphysical machine evolved by itself."<sup>7</sup> However, According to Michael Ashby and John Madiment, vowels carry less

information than consonants. It is perhaps because of this that vowels tend to be more variable and unstable than consonants. One consequence is that vowels change over time more rapidly than consonants do. They proved it by stating an example: take one short English sentence and transcribe it, but replace every vowel symbol with [ɜ:] if you were to do this with the sentence “Mary had a little lamb”, the transcription would be [mɜ: rɜ: hɜ:d lɜ:tɪ lɜ:m]. Now, practice saying this sentence until you are sure, you have uttered it right and see if your friends can understand the sentence when you say it to them. You will very probably find that most of them can. If you do a similar thing with the consonants, replacing them all with [d] say, but keeping the correct vowel qualities, the sentence will be unintelligible.<sup>8</sup>

Thus, it seems producing less number of vowels may not prove much of a hindrance in speaking internationally intelligible English by the people of Gujarat. However, the following suggestions are placed at the disposal of those learners who wish to speak internationally intelligible English.

- Pronunciation is a matter of habit and as it is said ‘habit hardens the hearts’. One must pass through proper guidance in a form of a remedial course for better quality of ‘intelligible pronunciation of English’ (Bansal’s Spoken English for India).
- Such a kind of course, or say the basic knowledge of phonetics should be a part of high school syllabus. On the contrary, phonetics in Gujarat is taught only at the graduate and the postgraduate levels. It often happens that by the time they come to know how to pronounce English accurately, they are already habituated to pronounce it differently

because of what they have learnt at their secondary and under-graduate levels. On account of that it is very difficult for them to apply the knowledge of phonetics for practical purposes. That is why an elementary course regarding better pronunciation should be introduced in the syllabus from high-school level onwards, so that the learners acquire the habit of accurate pronunciation.

- The students are always impressed by the speech of their teachers. Hence, they tend to follow their teacher. The reality is that the teachers at high school and colleges have not been trained with the proper method of pronouncing English intelligibly. Naturally, they would speak English through their first language. That is to say, an orientation should also be offered to the teachers at high-school and college level to get better results.
- It is also observed that English medium schools in Gujarat where teachers are from other states like South or North states of India may speak English through their first languages to the students. In such cases, the Gujarati students may acquire wrong pronunciation.
- Up to now the focus of learning and teaching English has been only on vocabulary and syntax but now this formal trend should be recontextualised. A portion of pronouncing vowels with adequate length and accuracy; stress patterns in a word and in connect-speech and proper syllable-division should be included in this process. For accurate pronunciation of English word, the best way is to refer to standard dictionaries.

#### **5.4 Further Areas of Study:**

Further areas of comparative study in phonological systems of different languages with Gujarati need to be explored. Such a type of research would help to transmit certain unique features of the Gujarati phonological system to the world languages. At the level of phonetics, one may focus on the areas of articulatory phonetics considering both the systems of English and Gujarati as the base. The most essential matter is now to take an initiative for the further study in Gujarati Phonology, particularly focusing upon the suprasegmental portion. Many aspects of the suprasegmental as stress, intonation, elision, rhythms, assimilation, linking etc. have not been studied with proper data-material up to now.

If the present study can prove to be even a little needful to any research scholar to study further in this area, it would be a matter of satisfaction. A pinch has also been felt during the study that certain minute impacts of nasalization as well as of murmur could not be discussed in full detail. Nevertheless, they have been referred to whenever their references have been required. Even then, a separate thorough study with the collection of full data material should be planned for further research. Similarly, intonation-patterns in suprasegmental portion had been considered for the study but during the study of Gujarati phonology, no such sufficient explanatory and authentic work could be found. That is why the topic could not be incorporated and 'syllable' had been selected in its place.

In Gujarat, the present study (in the area of phonology), has remained untouched until now. Generally, scholars prefer the studies based on literary pieces and genres or critical theories and even if one selects a linguistic area, the topics are mostly related to the syntactic field. In fact, phonology has not been sufficiently studied in Gujarat. Specifically speaking, a comparative study on phonological systems has never been handled in Gujarat. Therefore, it can be expected that the present study may throw some light to motivate the scholars to research in this unpoughed area. The work can finally be summed with quote from Vagbhushanam:<sup>9</sup>

*यदक्षरपदभ्रष्टं मात्राहीनं च यद्भवेत् ।  
तत्सर्वं क्षम्यतां देव ! प्रसीद परमेश्वरा ॥*

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