Tribhuwan University

English and Nepali Fricative Sounds: A Comparative Study

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of Master of Arts in English

By

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Letter of Recommendation

This is to certify that Mrs. Harimaya Tiwari (Acharya) with class roll no. 56/060, exam roll no. 1083 and T.U. regd. No. 9399-93 has prepared this thesis entitled "English and Nepali Fricative Sounds: A Comparative Study" under my supervision following the format as specified by the research committee, Department of English, Prithvi Narayan Campus, Pokhara. I, therefore, forward it to the Research committee for final evaluation

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TRIBHUWAN UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

Approval Letter

This thesis entitled “English and Nepali Fricative Sounds: A Comparative Study”
submitted to the Department of English, Prithvi Narayan Campus
by Mrs. Harimaya Tiwari (Acharya)
has been approved by the undersigned members of the research committee.

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Harimaya Tiwari (Acharya)

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Chapter – One

Introduction

1.1 General Background

Language is a means of communication through which, information, ideas, etc. are shared. It is systematically formed with different sounds, words, phrases, clauses and sentences. The speech sound is the minimal part of the word. The formation of any word is impossible without speech sound. Sounds are combined to form a word, words to form phrases and phrases get combined to form clauses. The clauses in turn are combined to form sentences that make a whole discourse. Speech sounds, therefore, form the foundation of language system. According to speech sound system, sounds are classified into vowels sounds and consonant sounds. This study is based on the comparison between English and Nepali fricative consonant sounds. To find out the similarities and as well as differences between them, is the main focus of the study.

The World Encyclopedia Vol. 12 defines language as:

> Language is human speech, either spoken or written. It is the most common system of communication. It allows people to talk to each other and to write their thoughts and ideas. The word language may be loosely used to mean any system of communication, such as traffic lights or Indian smoke signals. But the origin of the word shows its basic use. It comes from the Latin word *lingua*, meaning tongue. And a language still is often called a tongue. Wherever there is human society, there is language. Most forms of human activity depend on the co-operation of two or more persons. A common language enables human beings to work together in an infinite variety of ways.

> Language has made the development of advanced technological civilization possible. Without language for communication, there would be little or no science, religion, commerce, government, art literature and philosophy. Scholars have determined that there are about 3,000 languages spoken in the world today. This number does not include dialects (local forms of a language). (49)

Language is an essential aspect of human life. The above text emphasizes the importance of language in human life and human society.

Thousands of languages that come from different families are spoken in the world. Nepali and English languages belong to the same, Indo- European family. Nepali language is derived from Sanskrit language, one of the branches of Indo-European languages. Vedic Sanskrit is supposed to be the first Aryan language. Four Vedas are also written in Sanskrit language.

Sanskrit and Germanic languages are Indo- European family. Nepali is a descent from Sanskrit and English from Germanic. *The World Encyclopedia Vol.12* states that both these languages are from the same family- Indo European (52). So, comparative study is significant.

Language conveys thoughts, feelings, ideas, etc. It is expressed through speech or writing. It consists of three levels: Phonological level, grammatical level and semantic level. The phonological level deals with how the sounds are produced, how they function and how the words are pronounced. The phonological level is the primary step of language. English has different sound system than Nepali. Most of the alphabets in Nepali are sounds. But English alphabets are pronounced differently. For example ‘th’ alphabets becomes /θ/ in ‘thin’ and /ð/ in ‘this’ or the alphabet ‘c’ becomes /k/ in ‘cough’, /s/ in ‘pencil’ and it has /t_s/ sound in ‘pitch’.

Nepali is the official language and the mother tongue of more than half of the total population of Nepal and it is the main lingua franca of the Nepali people. Different dialects of Nepali are spoken in different places of Nepal and abroad. The dialects differ in syntactic and phonetic levels according to different geographical or social variations. The Nepali dialects spoken in Gurung society differs from the dialects spoken in Magar society. Likewise, the dialects spoken in Newar society of the western region is different from the dialects spoken in Newar society in eastern region so, to avoid confusion the standard Nepali language has been selected for this study. By standard Nepali language, it is taken as a pure Nepali found in the written form by the educated people, in mass media, legislation and universities.

English is an international language which has encircled all the people in the world. It is also used as contact language among the people who are not even native speakers.

Speech sounds of all languages are classified into two categories which are defined as a 'vowel' if there is no obstruction and no narrowing of a degree that would cause audible friction while producing the sound. But consonants are those sounds that are produced with the obstruction of air-stream somewhere in the speech organs. Regarding English sounds, J.D.O' Connor has defined 24 consonants and 20 vowels (24-89). In Nepali Ramnath Ojha has described 29 consonants and 12 vowels sounds.

David Crystal defines consonants as:

> Consonants can be defined in terms of both PHONETICS and PHONOLOGY. Phonetically, they are sounds made by a CLOSURE or narrowing in the VOCAL TRACT so that the airflow is either completely blocked, or so restricted that audible FRICTION is

> produced. Consonant ARTICULATIONS are relatively easy to fill, and as a result are most conveniently described in terms of place and manner of articulation. In addition, a routine phonetic description of consonants would involve information about the mode of vibration of the VOCAL CORDES, and it is often necessary to specify the DURATION of , the AIRSTREM MECANISM involved and the direction of airflow (EGRESSIVE or INGRESSIVE) . From a phonological point of view, consonants are those UNITS which function at the MARGINS of SYALLBLES, either single or in CLUSTER. (98)

Similar types of definitions are given in Nepali as well. Hemangaraj Adhikari defines consonants as, "व्यञ्जन वर्णहरु उच्चारण गर्दा फोक्सावाट निस्केको सास निर्वाध गतिमा बाहिर आउँदैन । कुनै न कुनै ठाउँमा सास ठोक्कीएर उच्चारण हुन्छन ।" 'In the production of consonant sounds the air does not come out freely from the lungs. Sounds are produced by the contact of the air stream with different parts in the vocal tract. There is friction somewhere and sounds are produced' (7). The main focus of the study is to deal with the fricative sounds in Nepali and English, so the discussion will be centered on them.

The fricative sounds are those consonant sounds which are produced by forcing the breath through a narrow opening formed especially by holding the articulators very close to each other. There are nine consonant phonemes in English which are made with friction as their most important feature. They are /f/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/. But there are only four fricative consonant sounds in Nepali. They are [श्] , [ष्] , [स्] and [ह्]. [श] is palatal sibilant sound in Sanskrit and it is used in written and spoken form in the particular word and sound situation. Some of the words are given below:

Words	Transcription	Meaning in English
Shala	/ʃa:la/	house
Shyam	/ʃæm/	cloud coloured
Nishchaya	/niʃtsjð/	sure
Prayash	/præʃ/	attempt

Though there is grammatical tradition and special use of similar words in Nepali alphabet, [श] has no free allophonic existence in standard spoken Nepali. It is pronounced as [स]. Even Sanskrit sibilant [ष] has been collapsed from the Nepali. Like [श] it does not have Nepali pronunciation. So it is not Nepali sound, in fact the sound [स] works in all pronunciation (Bhattarai and Neupane 58).

In the past, Nepali linguists included [श] , [ष] and [स] as fricatives but modern linguists like Neupane and Bhattrai state that the two sounds [श] and [ष] have been collapsed into [स]. It is in spoken form though they are still in use in orthographic writing. In this study only the two Nepali fricatives [स] and [ह] dealt with. "Nepali tongue does not pronounce [श] and [ष]"(Narendra Chapagai 16).

J.C. Catford states the following points about the fricatives.

> Articulations involve turbulent air flow through a narrow channel, resulting in a hissing noise. This type of articulation is called fricative. The sounds representative by /f/ and /s/ are both fricatives, but they are articulated at different places. As we shall see later, articulations can be described and classified in terms of there manner of articulations, or 'type of stricture' (in this case fricative), and there places of articulation within the vocal tract. (17)

Elizabeth Closs Trougott and Mary Louise Pratt define fricatives as follows: "If the air stream passes through a narrow passage without being totally stopped, fricative results. Sounds articulated in this way ([f, v,.  , ð, s, z, ʃ,  , h]) are called fricatives. Another term for these is "spirant" from Latin **Spirare**, "to blow" (52)."

Ramnath Ojha defines fricative sounds as, "दुई उच्चारण अवयवहरु एक अर्का का नजिक पुगेर श्वास मार्गलाई साँघुरो बनाएको अवस्थामा श्वास सङघर्ष गर्दै बाहिर निस्कदा उच्चारित हुने ध्वनिलाई संघर्षी ध्वनि भनिन्छ। नेपालीमा [स्] र [ह्] सङ्घर्षी व्यञ्जन ध्वनि हुन् ।" 'The sounds which are produced when the two articulators come close to each other causing the air way to become narrow for the air to pass out with friction are called fricative sounds. In Nepali [स्] \s\ and [ह्] \h\ are fricative consonant sounds.' (75)

English and Nepali languages have certain number of fricative sounds. This study attempts to show the similarities and differences of fricatives in the two languages in various aspects, which will ease language learners. The aim of this comparative study will be to facilitate not only Nepali learning English but also those foreigners who want to learn Nepali. This study mainly focuses on the spoken aspect of language. While doing so, the fricative sounds of both languages will be taken into discussion.

Nepali speakers can mispronounce the English fricatives and English speakers also can pronounce the Nepali fricatives differently. So the objectives of the study are:

1. To find out the similarities and differences between fricative sounds of English and Nepali languages.
2. To find out whether the fricative sounds are quite exchangeable for each other or not.

It has been hypothesized that in spite of some similarities between Nepali and English fricative consonant sounds there are a lot of differences and they are not completely exchangeable for each other.

This study will mainly concern the production, classification, comparison and contrast of English and Nepali fricative sounds on the ground of their production. This study aims at finding out the solutions to the following queries.

- What are the similarities and differences between Nepali and English fricative sounds?
- Are fricatives of Nepali and English quite exchangeable for each other or not?

Though Nepali language is the official language and the mother tongue of Nepal, Nepalese have to use English as a contact language to communicate with the people who do not understand Nepali. So, English language is as important as Nepali in Nepal. In such context, the comparative study of the basic systems (fricative sounds) of these languages seems to be significant. It will be helpful for Nepali people to learn English fricative sounds and others to learn Nepali fricative sounds.

The readers will get information about the differences and similarities of fricative sounds of both languages. This comparative study will be fruitful for both English and Nepali languages learners. Reader who wants to know more about fricative sounds will get easy access to the solution because this research will be simple and easily understandable which is the significance of the study.

This study is only concerned with comparison of the fricative sounds in English and Nepali languages regarding their production, classification and analysis to the possible extend.

1.2 Literature Review

Different linguists and grammarians have attempted to study and analyze the sound and structure of both languages but separately. Though some linguists and grammarians have attempted they have left many aspects untouched such as, production, comparison and classification. So, in this study, I have attempted to make the comparative study of both Nepali and English fricative sounds regarding production, classification and analysis to the possible extent.

Many linguists and grammarians have done detailed study on fricative sounds in English. Some of them are: J.D.O'Connor (1980), Peter Roach(2006), Laver. John(2000), J.C. Catford (1992), Elizabeth Closs. Traugott and Mary Louise Pratt (1980).

J.D.O' Connor states the following points about the fricatives.

> There are nine consonants phonemes whose main sounds all have friction as their most important features. They are / f, v, θ, ð , s, z, ʃ, ʒ, h / For all of them the lungs push air through a narrow opening where it causes friction of various kinds. Fricatives are also described according to the place of articulation, according to the manner of articulation and according to the voicing. This description is called three term description. (24)

Regarding fricatives Peter Roach adds the following points.

> With the exception of glottal, each place of articulation has a pair of phonemes, one fortis (voice less) and one lenis (voiced). This is similar to what was seen with the plosives. The fortis fricatives are said to be articulated with greater 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. (244)

Another linguist John Laver defines the following features about fricatives.

> In a fricative a variation of one millimeter in the position of the target for the crucial part of the vocal track makes a great deal of difference. There has to be a very precisely shaped channel for the turbulent air-stream to be produced. [In] a stop closure the strength of the closure does not have to be constant throughout the gesture. But in many fricatives an exactly defined shape of the vocal tract has to be held for a noticeable period of time.

English linguist J.C. Catford defines fricatives as:

> Articulations involve turbulent air flow through a narrow channel, resulting in a hissing noise. This type of articulation is called fricative. The sounds represented by the symbols /f/ and /s/ are both fricatives, but they are articulated at different places. As we shall see later, articulations can be described and classified in terms of their manner of articulation, or, 'type of stricture' (in this case fricative); and their place of articulation within the vocal tract. (17).

In Nepali, many attempts have been made to describe the fricatives by many linguists and grammarians like Tanka Prasad Neupane and Govinda Raj Bhattarai (2062), Narendra Chapagai (2055B.S.) , Shanti Prasad Dhakal (2064), Mohan Raj Sharma (2063B.S.) , Ramnath Ojha (2065) and Hemanga Raj Adhikari (2058 B.S.).

Hemanga Raj defines fricatives as "जिब्रोले उच्चारण स्थानमा नछुदैको स्थितीमा सासको घर्षणद्वारा उत्पन्न हुने [स्] र [ह्] वर्णहरु संघर्षी हुन् ।" 'The sounds which are produced by the

friction of air before the togue touching the place of articulation are called fricatives. They are [स्] and [ह्]'. (7)

Shanti Prasad Dhakal regarding Nepali fricatives says, " जिब्राको टुप्पो वर्त्स्य नजिकै भएर घर्षणका साथ हावा बाहिरिदा उच्चारित हुने ध्वनि वर्त्स्य सङ्घर्षी हुन्छ । नेपाली भाषाको 'स' यस्तै ध्वनि हो । स्वर चिम्टी साँघुरिएका अवस्थामा घर्षणका साथ सास बाहिर निस्कदा उच्चरित हुने ध्वनिलाई स्वरयन्त्र मुखी/अतिकण्ठ्य सङ्घर्षी भनिन्छ । नेपालीमा 'ह' यस्तै ध्वनि हो ।" The sound for which the tip of the tongue goes near the alveolar ridge and air passes with friction is called alveolar fricative.[स्]\s\ is like this sound in Nepali. The sound for which the vocal cords becomes narrow and air passes out through the glottis is called glottal fricative sound. [ह्] \h\ is like this sound in Nepali.' (80)

Neupane and Bhattarai say "संघर्षी व्यञ्जनको उच्चारणमा घर्षीत सासमा पेट देखिको तातो हावा निक्लन्छ भन्ने अर्थ लगाएर "ऊस्म" भनिएको थियो । अंग्रेजीमा नौ वटा स्वनिम संघर्षी छन् भने नेपालीमा [स्] र [ह्] दुई वटा मात्र संघर्षी हुन् ।" 'Regarding the production of fricatives, they were called sibilants on the bases of the fact that the hot air from the stomach comes out with the friction. There are nine fricatives in English but Nepali has only two [स] and [ह्] fricatives' (54).

They have categorized the fricatives on the basis of the place of articulation as follows:

- **i.** Alveolar fricative: [स्] \s\ alveolar fricative is articulated by the tip or blade of the tongue against the teeth ridge.
- **ii.** Glottal fricative: ह् /h/ glottal fricative is articulated by the uvula against the vocal cords.

They have also analyzed the fricatives on the basis of the voicing as follow:

Voiced: ह् /h/

Voiceless: स् /s/

In another way, they have described them on the basis of aspiration. Both fricative consonants in Nepali are unaspirated. (62)

Unaspirated : स् /s/ , ह् /h/

Basanta Kumar Sharma has also defined the fricatives as sibiliants. He says, "बोल्दा बढि सास खर्च गर्नु पर्ने वर्ण [श् , ष् , स् , ह्] चार अक्षरको समुह ऊष्म वर्ण हुन् ।" 'The group of four sounds for which lots of air has to be spent while speaking [श् , ष् , स् , ह्] are called sibiliants' (186).

The literature review shows that the study of fricative sounds have been done in detail in both languages, but no comparative study has been carried out yet. Therefore, this study is intended to fill that gap.

1.3 Methodology

1.3.1 A Comparative Study

A comparison is a way to dig out both similarities and differences between two objects. It also shows proximity. It studies and analyses the things deeply to pick out both qualities. Comparative study of language not only traces the evolution of concerned languages but also established relationship between the languages, which are genetically related.

Regarding the comparative method, the English linguist John Lyons says:

> The standard way of demonstrating genetic relatedness of language is by means of so-called comparative method. He exemplifies the principle of systematic correspondence from the romance languages. He mentions two advantages of his principle. Firstly, it shows the relatedness and secondly, it is direct evidence of the proto-languages from which they are derived, Latin. He studies about how the Romance

> Language- French, Italian and Spanish- are constructed, what is their relatedness. (192)

Lyons has also given some examples to prove his statement. He has given some examples as follows:

English	Latin (L)	French (Fr)	Italian (It)	Spanish (Sp)
Sing	Cantare	Chanter	Cantare	Cantar
Dog	Canis	Chien	Cane	-
Goat	Capra	Chevre	Capra	Cabra
Eight	Octo	Huit	Otto	Ocho
Fact	Factum	Fait	Fatto	Hecho

Table no. 1

Considering the above examples, we can say that even the Proto-romance languages have both similarities and differences. If we take an example of *cantare* a Latin word, it is *chanter* in French, *cantar* in Spanish but Latin and Italian have same word i.e. *cantare*. All these words denote same meaning. Lyons adds the following points regarding comparative study:

> The comparative method operates on the assumption that each member of a family of related languages is in a direct line of descent from the proto-language and has been unaffected, throughout this time, by contact with other related languages and dialects. This is, to say the least, an unrealistic assumption. All languages are, to a greater or less degree, dialectically differentiated. There is no reason to believe that Proto-Indo-European, Proto-Germanic, Proto-Slavonic and the other proto-languages that we hypothesize as the source of families and subfamilies of attested language were dialectically undifferentiated.

> Wherever possible, the comparative method will reconstruct a single proto-form for all the attested forms. It follows that the reconstructed language-system is likely to be, not only morphologically more regular, but also dialectically more uniform than any actual language-system. Furthermore, we have no way of knowing whether all the sounds that occur in a stared form did in fact co-occur at the same time and in the same dialect of the proto-language. (200)

The present study is the comparative study of two languages English and Nepali, which are the descendents from the same root language. Therefore, the study tries to pick out both similarities and differences between the fricatives (consonants) sounds of these languages.

Shanti Prasad Dhakal defines comparative method as, "दुई वा दुई भन्दा बढि भाषाहरुका विचमा नमिल्दा गुण वा विशेषतालाई आधार बनाएर गरिने विश्लेषणलाई व्यतिरेकी भाषा विज्ञान भनिन्छ। यस्तो अध्ययन भाषाका आन्तरिक तथा बाह्य संमरचनामा पर्ने विविध कुराका आधारमा बनाएर गर्न सकिन्छ। भिन्ताका आधारमा दुई वा सो भन्दा बढि भाषाको अध्ययन विश्लेषण गर्ने भाषा विज्ञानको एउटा शाखा व्यतिरेकी भाषा विज्ञान हुन्छ।" 'The analysis of two or more than two languages on the basis of their dissimilarity of their quality and characteristics is known as distinctive linguistics. Such type of study can be done on the basis of various internal and external structure of language. Distinctive linguistics is a branch of linguistics which studies and analyses two or more than two languages on the basis of their differences.' (29)

Chapter – Two

Organs of Speech Involved to Produce Fricative Sounds and the Mechanism of Speech

2.1 General Background

Human speech is based on the air-stream that is expelled from the lungs and finds passage through mouth and nose. The lungs, vocal cords, tongue, lips, are considered to be the major organs of speech. Different organs have different jobs of their own. When we want to understand the speech process from the speech production point of view, it is necessary to know a lot about the functioning of these organs. The brief description of vocal organs will be useful information to describe articulator system. The organs of speech are shown in the following figure:

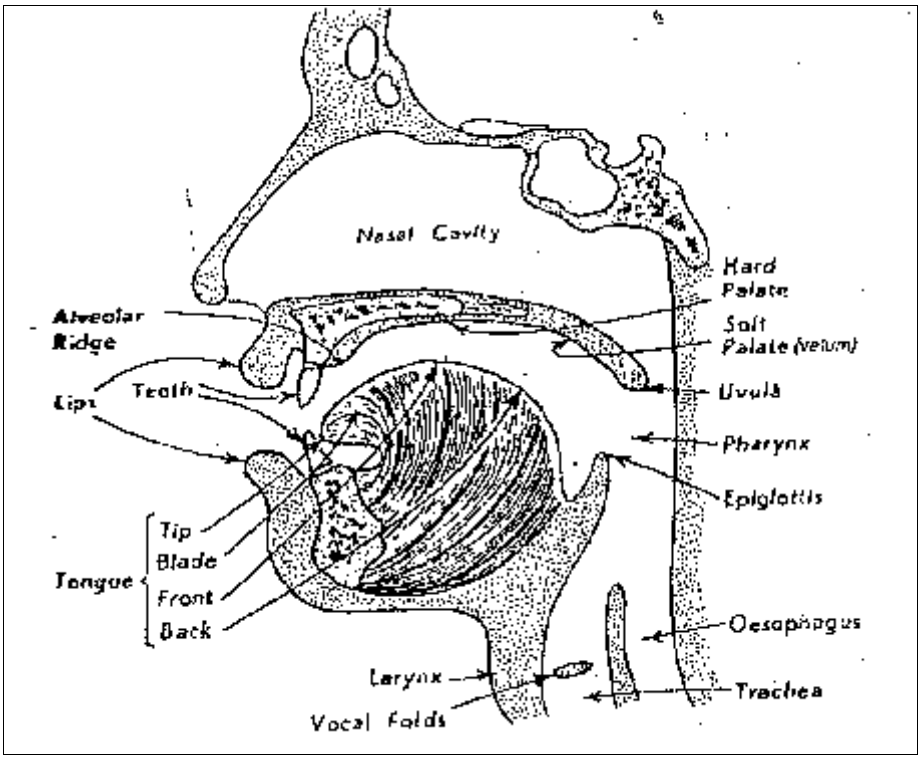

Figure number 1 (Gimson 10)

2.2 The Lungs

Lungs play an active part in generating breath energy. Most sounds of all languages are produced with outgoing breath from the lungs. By the action of ribs and the diaphragm air is caused to flow into and out of the lungs. The ribs are capable of a certain amount of movement which are connected to the spine and to the breath bone. The upward and out ward movement of the ribs can be clearly felt by placing the hands on the lower ribs on both sides and breathing deeply.

Lungs are the seed shaped organs located in the thoracic cavity. They play the most important role in our respiratory system. They take the air in and push it out by means of expansion and contraction. The lungs play the vital role not only in respiration but also in making main contribution to sound production.

We need a type of energy to produce speech sounds. The energy is the air stream sent out by our lungs. The air released from the lungs changes into sound when it arrives at the larynx that contains the vocal cords. Thus the lungs are the energy supplier and initiator of the speech sounds.

2.3 The Vocal Cords

The air released from the lungs passes up through the wind-pipe and arrives first at the larynx. The larynx contains two small bands of elastic tissue, which are like two flat strips of rubber, lying opposite each other across the air passage. These are the vocal cords. They are placed horizontally from front but can be separated at the back. The opening of the vocal cords is called glottis. David Crystal defines the vocal cords as:

> Two muscular folds running from a single point inside the front of the thyroid (Adam's apple), backwards to the front ends of the arytenoids cartilages. The vocal cords are very flexible, being shaped by the combined activities of the

associated cartilages and muscles. The space between them is known as the glottis. (373)

The four states of the glottis can be seen in the following figures.

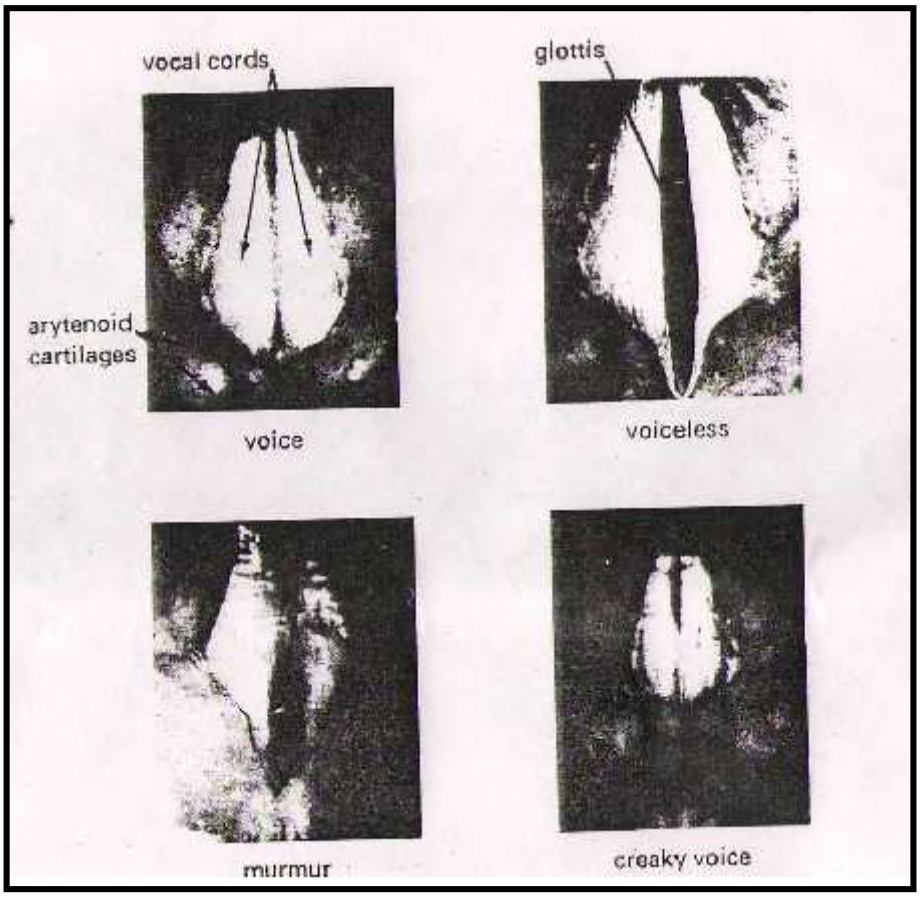

Figure number 2. (Peter Ladefoged 123)

2.4 Three positions of the Glottis

In articulation, vocal cords may hold three different positions.

a) Open Position

In this position, the cords are held wide apart as in normal breathing. The sounds which are produced with this position of the vocal cords are voiceless sounds. There is no vibration for such sounds. e.g. /f/, /θ/ , /s/ .

b) Vibrating Position

In this position the vocal cords are brought loosely together so that they vibrate when the air stream from the lungs pushes them. The sounds which are

produced with this position of the vocal cords are voiced sounds. The fricatives /v/,/ð/, /z/, /ʒ/ and /h/ are produced with this position of the vocal cords.

c) Closed Position

In such position the glottis is closed and vocal cords completely stop the air flow but the compressed air from the lungs pushes it forcefully due to which the vocal cords open suddenly and the compressed air bursts out with an audible friction as a result the glottal stops are produced.

2.5 The Palate

The palate is the roof of the mouth. It can be divided into three parts – soft palate at the back, the hard palate in the middle and the alveolar ridge just behind the upper front teeth. The palate is supposed as the wall of oral cavity and nasal cavity. The parts of the palate are shown in the following figure.

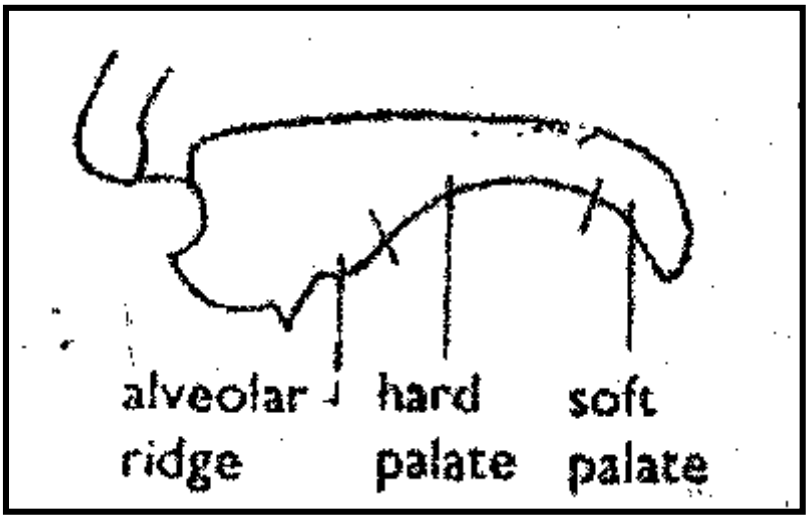

Figure number 3 (O'Connor 17)

2.5.1 Alveolar Ridge

It is the part of the gums immediately behind the upper front teeth. It is also called teeth ridge. It has an important role to produce many consonant sounds in English and Nepali. The sounds /s/ and /z/ are alveolar fricative.

2.5.2 Hard Palate

It is the highest part of the palate between the alveolar ridge and the soft palate. *Oxford Conscience Dictionary o f Linguistics* defines hard palate as, "The roof of the mouth between the back of the ridge behind the teeth and the fleshy part called soft palate. Palatal consonants are articulated in this area"(157). The dental fricatives and other fricatives are produced with the help of hard palate.

2.5.3 Soft Palate

It is the back part of the palate. It is the flexible or moveable part. It is also called velum. It can be raised or lowered. When it is raised, the nasal passage is blocked. This position is called the velic closure. When the velum is lowered, the oral passage is closed and the air goes out through the nose. This position is called the oral oval closure. *Oxford Conscience Dictionary o f Linguistics* defines soft palate as, "The back part of the roof of the mouth, which is soft or fleshy in the comparison with the bony or hard palate to the front also called velum" (345).

2.6 The Teeth

The teeth also play an important role for the production of speech sounds. There are upper and lower teeth. The sounds which are articulated by the tip of the tongue against the upper teeth and lower teeth are dental sound. Some sounds are articulated with the tongue near the teeth or against the teeth. In English /θ/ and /ð/ are dental fricatives but in Nepali dental fricatives are not found.

2.7 The Tongue

The tongue is the most important and most movable organ of speech. It is the main articulating organ. Changing the shape and position of the tongue produces different sounds. It can be divided into four parts as given below.

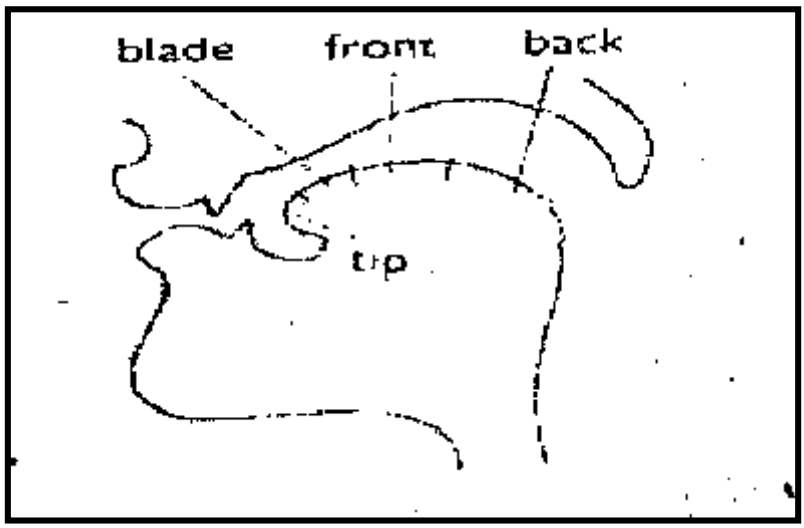

Figure number 4 (O ‘Connor 18)

a) The tip of the tongue :

It is the front most part of the tongue, which lies under the alveolar ridge when the tongue is at rest. It is also called apex. When the tip of the tongue touches the alveolar ridge /s/ and /z/ sounds are produced with friction.

b) The blade of the tongue:

It is the part of the tongue between the tip and the front of the tongue. It lies under the alveolar ridge when the tongue is at rest. It is mobile because it can touch the lips, the teeth, the alveolar ridge and the hard palate. It is also called lamina. When the blade of the tongue touches the soft palate /s/ and /z/ sounds are produced.

c) The front of the tongue :

It is the part behind the blade, which lies under the hard palate.

d) The back of the tongue :

It is the back part of the tongue behind the front, which lies under the soft palate. It is also called dorsum.

2.8 The Lips

The lips are the doors of the oral cavity. They are the articulatory organs for the production of bilabial and labio-dental sounds. The lips change their various positions in the production of the different sounds. The lower lip touches the upper teeth and air passes out with friction and /f, v / sounds are produced.

2.9 Air-stream Mechanism

In this air stream mechanism the lungs become the initiator of air flow for the production of speech. Lungs are the inner ends of the airways. So the initiated air from the lungs comes out only through the air passage. The sounds which are produced in this way are called pulmonic egressive. It is found that most of the human speech is produced by this mechanism. The fricatives, which are produced with pulmonic egressive air stream mechanism are /f/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/ and \ʒ \.

Although air is not speech organ, it plays a great role in the production of speech sounds. In absence of it sound can not be articulated. Air stream means the mass of moving air.

Air stream mechanism is known as a mechanism with which the air moves. Different oranges of speech play different role, some organs play the role of initiators and some others as passage. E.g. the diaphragm rib cases play the role of initiator and they send the air out. The organ like trachea, velum, mouth and nose etc. play the role of passages.

Similarly Nepali linguists Sharma and Luitel say: 'सास भित्र पस्ने र बाहिर निस्कने कामलाई स्वास प्रवाह (air stream mechanism) भनिन्छ ।' 'The process of the air going in and out is called air stream mechanism, aggressive and ingressive. In the ingressive air stream mechanism the air comes out from the lungs and in aggressive air stream mechanism the air is pulled in through the mouth' (55).

Human speech sound can be produced according to initiation or termination of the air by the following three ways:

a) Pulmonic Air Stream Mechanism

b) Glottalic Air Stream Mechanism

c) Velaric Air Stream Mechanism

2.9.1 Pulmonic Air Stream Mechanism

In this airstream mechanism the lungs become the initiator of airflow for the production of speech. Lungs are the inner ends of the airways. So the initiated air from the lungs comes out through the air passes the sounds which are produced in this way are called pulmonic egressive. It is found that most of the human speech is produced by this mechanism.

Oxford Conscience Dictionary o f Linguistics defines Pulmonic air streams mechanism as: “Pulmonic (air stream mechanism) in which a flow is initiated by a change in the volume of the lungs. Most normal speech is produced by such as air stream, specially by a pulmonic egressive air stream, in which air flows out wards as the volume of the lungs is reduced” (303).

2.9.2 Glottalic Airstream Mechanism

Glottis becomes the point of air initiation. Glottalic air stream mechanism may be both aggressive and egressive. In ingressive glottlic air stream mechanism the compressed air goes from the glottis, the point of initiation, and voiced fricatives like /v/, /ð/, /z/ and \ʒ\ are produced. The down ward moving larynx is not completely closed and the lungs are still pushing out air, so the sounds are voiced.

2.9.3 Velaric Airstream Mechanism

In this mechanism the back of the tongue comes close to the velum or soft palate. Then air stream begins. In such situation the air rushes inward and click

sounds are produced. Such mechanism is called ingressive velaric airsteam mechanism.

Sharma and Luitel say, "जिब्राको पछिल्लो भाग कण्ठका छेउमा पुग्दा श्वास प्रभावित हुने प्रकृयालाई कण्ठे श्वास प्रवाह भनिन्छ । यस श्वास प्रवाहबाट नेपाली भाषामा ध्वनीको उच्चारण गरिदैन ।" 'The back of the tongue touches velar while articulating such sounds. Nepali sounds are not articulated in this way' (56).

Chapter - Three

Classification of fricatives in English and Nepali

3.1 Background

English fricative sounds are classified on the basis of place of articulation, manner of articulation and voicing.

3.2 Fricatives on the Basis of Place of Articulation

Place of articulation refers to the area in the oral or nasal tract where the sounds are articulated. Some organs are moveable and some are constant. All the articulators do not have equal participation in course of speech articulation. The moveable organs are active articulators and constant organs are passive articulators. Tongue, lower lip, uvula, etc. are active articulators whereas upper teeth, upper lip, the palate, etc. are passive articulators. On the basis of place of articulation, English fricatives can be categorized as labio-dental, alveolar, palato alveolar, dental and glottal fricatives.

3.2.1 Labio-dental Fricatives

The sounds /f/ and /v/ are labio-dental fricatives in English language because they are articulated with the active participation of lower lip and upper teeth. The lower lip functions as the active articulator and upper teeth passive. The air from the lungs comes out by making the air passage narrow from the upper teeth and lower lip. There is velic closure so that the air can’t escape from the nasal passage. When the lower lip is very close to the upper teeth the air comes out with friction and these sounds are produced. The position of organs of speech is shown in the following figure.

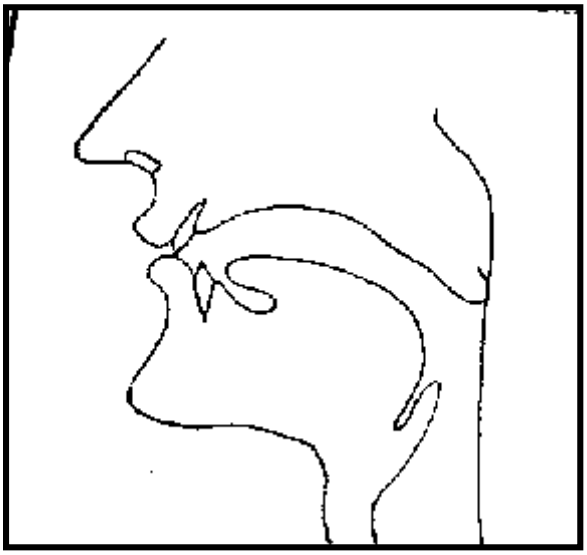

Figure number 5 (Peter Roach 50)

In the above figure the air comes out with friction when the lower lip goes near the upper teeth. We can see velic closure, which blocks the air from escaping through the nasal passage. The friction comes when the lower lip is very close to the upper teeth.

3.2.2 Dental Fricatives

The sounds \ θ\ and \ ð \ are dental fricatives in English and are articulated with the active participation of the tip of the tongue and the upper front teeth. The soft palate is raised so that all the breath is forced to go through the mouth. The tip of the tongue is very close to the upper front teeth and there is narrowing of the passage for the air stream to escape and thus causing friction. After that the sounds \ θ\ and \ ð \ are produced. For the production of the dental sounds the tip of the tongue works as an active articulator and the upper front teeth as in active articulators.

The position of the organs of speech for the production of \ θ\ and \ ð \ is shown in the following diagram.

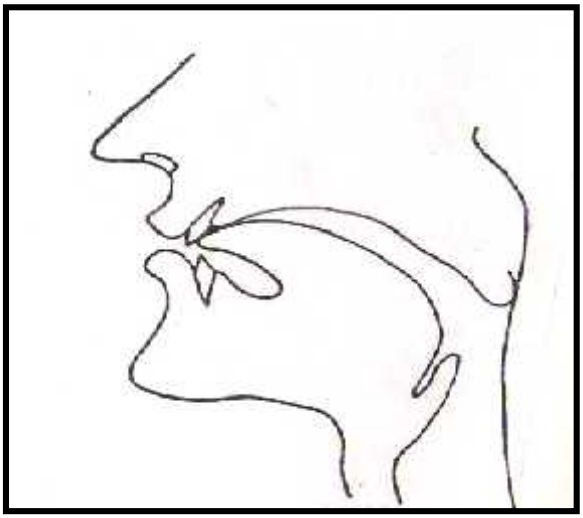

Figure number 6 (Peter Roach 50)

The tongue has blocked the air by touching the upper front teeth. There is velic closure so the air can not escape through the nasal cavity. The air goes out with friction when the tip of the tongue is close to the upper front teeth.

3.2.3 Alveolar Fricatives

Alveolar fricatives \ s\ and \z\ are articulated by the active participation of the tip of the tongue and the alveolar ridge. For the production of these sounds the tip of the tongue works as an active articulator and the alveolar ridge remains passive. The soft palate is raised so that all the breath is forced to go through the mouth. The tip and the blade of the tongue are closed to the alveolar ridge. There is very considerable narrowing at this point, not near the teeth and near the hard palate. The teeth are very close together and the sounds \s\ and \z \ are produced with friction.

The position of the organs of speech for \ s\ and \z \ is shown in the following diagram.

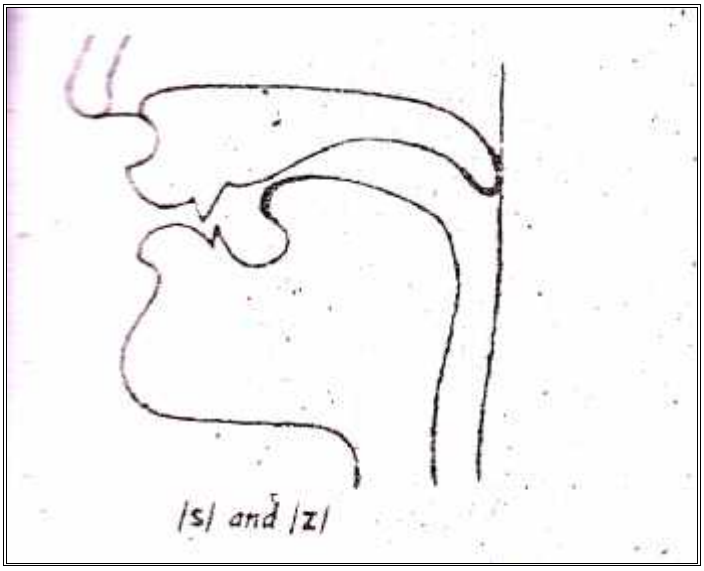

Figure number: 7 (O'Connor 31)

In the above diagram all the air is forced to go through the mouth because of the raising of the soft palate. There is friction when the tip and blade of the tongue goes near the alveolar ridge.

3.2.4 Palato-Alveolar Fricatives

The sounds \ ʃ\ and \ʒ \ are palato-alveolar fricatives in English and are articulated with the participation of the tip of the tongue the back of the alveolar ridge and the soft palate. For the production of these sounds, the tip of the tongue works as an active articulator and soft palate and back of the alveolar ridge as inactive articulators. In the production of \ ʃ\ and \ʒ \ sounds the soft palate is raised so that all the breath is forced to go through the mouth. There is narrowing between the tip of the tongue and the back of the alveolar ridge. The front of the tongue is higher than \s\ and \z\ . The lips are very rounded.

The following figure illustrates one pronunciation of the palato- alveolar fricative consonant in "shy". Note the narrowing of the vocal tract between the blade of the tongue and the back part of the alveolar ridge.

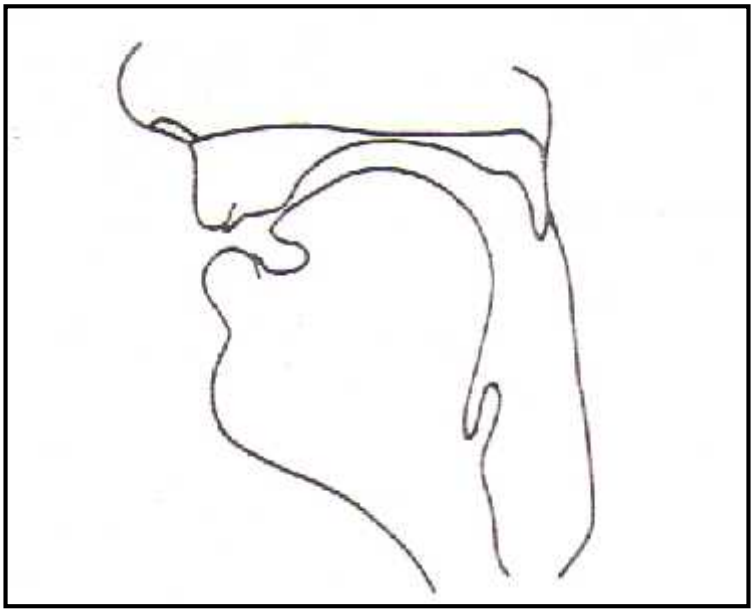

Figure number 8 (Peter Ladefoged 10)

3.2.5 Glottal Fricative

Glottal fricative \h\ is articulated by the active participation of the vocal cords. There is the narrowing that produces the friction noise in between the vocal folds. If we breathe out silently, \h\ is produced, when we move our vocal folds wide apart to close together. However this is not producing speech. When we produce \h\ in speaking English, many different things happen in different contexts. Such as, in the word 'hat', the \h\ is followed by an æ vowel. The tongue, jaw and lip positions for the vowel are all produced. This glottal fricative occurs as vowel.

In the production of \h\ sound, the sound of breath passes between the open cords and out of the mouth. The mouth is held ready for the vowel and a short gasp of breath is pushed up by the lungs. Regarding /h/ sound Peter Roach states the following points:

> When we produce **h** in speaking English, many different things happen in different contests. In the word 'hat', the **h** is followed by an æ quality. The same is found for all vowels following **h**. It always has the quality of the vowel it precedes, so that in theory if you could listen to

a tape-recording of **h** sounds cut off from the beginnings of different vowels in words like ‘hit’, ‘hat’, ‘hot’, ‘hut’, etc., you should be able to identify which vowel would have followed the **h** . One way of stating the above facts is to say that **phonetically h** is a voiceless vowel with the quality of the voiced vowel that follows it. (52)

3.3 Fricatives on the Basis of Voicing (voiced and voiceless)

The vibration of the vocal cords also plays an important role on the auditory result. This feature of the vocal cords determines the voicing quality of a sound. Voicing denotes the auditory result of the vocal cords. Sounds are also categorized on the basis of the way how the vocal cords are held either they are brought together. So that the air from the lungs causes them to vibrate or they are held wide apart so that air from the lungs escapes freely with out any vibration in the cords. On the basis of voicing, fricatives can be classified into two types: voiceless and voiced

3.3.1 Voiceless Fricatives

The fricatives, which are produced without vibration of the vocal cords are called voiceless fricatives. While producing such sounds the vocal cords are held wide apart and they allow free passage of air for voiceless sound. The waveform of the word “sty” is given in the following figure:

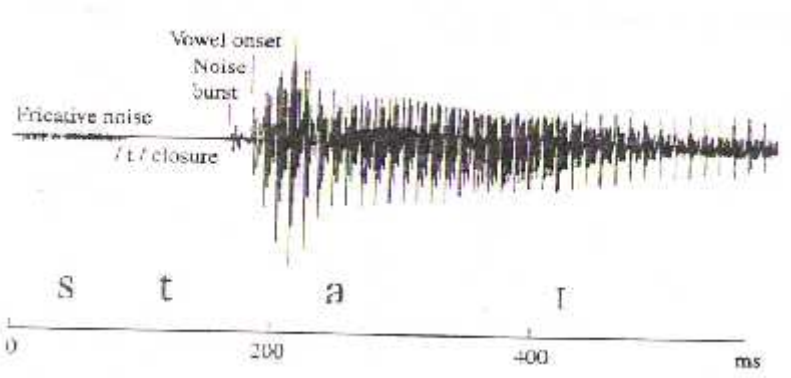

Figure number 9 (Peter Ladefoged 45)

The glottis is opened through which the compressed air form the lung passes freely without any obstacle. English fricatives /f/, /θ/, /s/, /ʃ/ are articulated in this way. So these sounds are called voiceless fricatives. The above figure diagrammatically, shows the voiceless ness of fricatives. The lower wavy line symbolizes airflow and upper lines indicate the articulating organs in the diagram. The lower wavy line indicates Vibration of the vocal cords. In the middle there is not curved line instead only dots are there representing the voicelessness of the sound. The figure shows the production of the word “sty” And it also represents the articulatory process of voiceless fricatives /f/, /θ/, as well as \ ʃ\.

3.3.2 Voiced Fricatives

The fricatives, which are produced with the vibration of the vocal cords, are called voiced fricatives. In the production of such sounds the vocal cords are loosely held together and air from the lungs vibrates vocal cords and the audible sounds come as a result. The fricatives /v/, /z/,/ʒ / and /h/ are articulated in this way. The vibration of the vocal cords for the production of voiced fricatives is shown in the following figure.

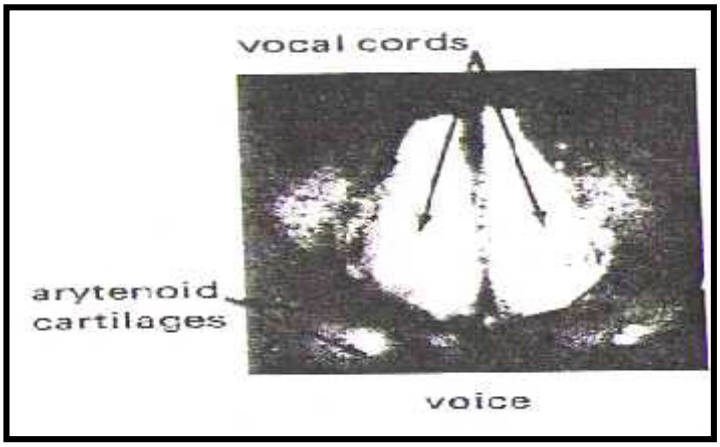

Figure number 10 (Peter Ladefoged 123)

In a voiced sound, the vocal folds are closed together and vibrating as in the figure. The figure shows the voiced characteristics. It shows the airflow and indicates the articulating organs.

These voiced fricatives are not voiced every where. They are sometimes fully voiced, sometimes partly voiced and sometimes even voiceless when they are partially devoiced.

The duration of articulation affects the voiceness of the sounds. When they are articulated slowly and carefully they may be voiced but in rapid speech there is no voicing at all. In the medial position such fricatives have contextual characteristics either close to final or to initial fricatives.

3.4 Fricatives on the Basis of Strength of Production. (Fortis and Lenis)

The speech sounds can be described on the basis of force of articulation. On the basis of these criteria sounds can be classified as fortis and Lenis.

Fortis are the sounds, which are produced with more force. They are also called strong sounds /f/, /s/, /ʃ/ are fortis fricatives in English. Defining fortis Crystal says:

> A term used in the phonetic classification of consonant sounds on the basis of their manner of articulation: it refers to a sound made with a relatively strong degree of muscular effort and breath, force, compared with some other sound (known as Lenis). The distinction between tense and lax is used similarly. The labels ‘strong’ and ‘weak’ are sometimes used for the contrast involved, but these are more prone to ambiguity. In English, it is the voiceless consonants (/f/, /θ/, /s/, /ʃ/) which tend to be produced with fortis articulation (their voiced counter parts being relatively weak) , and often , when the voicing distinction is reduced, it is only the degree of articulatory strength which

> maintains a contrast between sounds. The term 'Fortis' is sometimes used loosely to refer to strong vowel articulation also, but this is not a standard practice. (187)

So it is clear that the aspirated sounds are fortis which need a strong puff of air for their production.

Lenis are the sounds, which are produced with relatively less force. They are also called weak sounds. Regarding fricatives, /v/, /z/, /ʒ/ and /h/ are lenis. English has a quite complex system of fricative phoneme. Regarding fortis and lenis Peter Roach states:

> With the exception of glottal, each place of articulation has a pair of phonemes, one fortis and one lenis. This is similar to what was seen with the plosives. The Fortis fricatives are said to be articulated with greater force than the lenis and their friction noise is louder. The lenis fricatives have very little of no voicing in initial and final positions, but may be voiced when they occur between voiced sounds. The Fortis fricatives have effect of shortening a preceding vowel, as do fortis plosives. Thus in a pair of words like 'ice' **ais** and eyes **aiz,** the **ai** dipthong in the first word is considerably shorter than in the second. Since there is only one fricative with glottal place of articulation, it would be rather misleading to call it fortis or lenis. (49-50)

From the above definition, it is clear that the voiced fricatives are lenis. The strong puff of air is not needed for their production so these sounds are unaspirated sounds and the voiceless fricatives are fortis. The strong puff of air is needed for their production.

3.5 Allophonic Variants of English Fricatives

A phoneme can be realized differently although it has same meaning, such variants are called allophonic variants. Regarding it, Crystal describes: “Allophony is the term used for cases where a feature does not occur in an inventory, but a context-specific condition. Over rides the general prohibition”

J .D. O’Connor has given such examples in page no. 103 regarding fricatives: Before /j/ sound /ʃ/ replaces /s/ and /ʒ/ replaces /z/.

/ʃ/ replaces /s/: nice shoes naiʃ ʃu:z

This year ðiʃ jiə

/ʒ/ replaces /z/: those shops ðəuʒ ʃɔps

Where is your’s weəʒ jɔ:z

All the fricatives described so far (/f/, /v/,/θ/, /ð/, /s/, /z/, /ʃ/) can be found in initial, medial and final positions. In case of /ʒ/ and however, the distribution is much move limited. Very few English words begins with /ʒ/ and not many end with this consonant. Only medially, in words such as ‘measure’ ‘usual’ (meʒə, ju:ʒuəl) is found at all commonly. (Peter Roach, 52)

3.6 Nepali Fricatives

Nepali language has only two fricatives they are also classified on the basis of the place of articulation, the voicing and the aspiration.

3.6.1 Nepali Fricatives on the Basis of Articulation

All the sounds are heard different although the same articulators articulate them. The sounds which are articulated from different organs are vastly different. Due to this diversity among the sounds, they are classified in different groups on the basis of place of articulation. Nepali fricatives are also classified in different groups.

3.6.2 Alveolar Fricative

In Nepali, like in English, alveolar fricatives are supposed as articulating with the active participation of the tip of the tongue and the alveolar ridge. Defining the alveolar fricatives Ojha says: "जिब्राको अभिल्लो भागले दाँतको फेदमा छोएर उच्चारित हुने ध्वनी वर्त्स्य ध्वनी हुन ।" 'The sound which are produced by touching the alveolar ridge with front of the tongue are alveolar sounds' (73). The sound [स] is alveolar fricatives in Nepali.

Sound in Nepali	English Equivalent
[स] /s/	/s/
[सात]/sa:t/	seven
[साथी]/sa:ɵi/	friend

3.6.3 Glottal Fricative

Nepali and English has the same glottal sound [ह] /h/. Nepali glottal [ह] is voiced but English /h/ is voiceless. Regarding glottal sound Ojha adds: "जिब्राको फेद र स्वर यन्त्रको मुख सक्रिय भएर उच्चरित हुने ध्वनीलाई स्वरयन्त्रमुखी ध्वनी भनिन्छ। नेपालीको [ह] स्वर यन्त्र मुखी ध्वनी हो ।" 'The sound which is produced with the active participation of root of the tongue and front of the vocal cord is called glottal sound. In Nepali [ह] is glottal sound'(74).

Sound in Nepali	English Equivalent
[ह] /h/	/h/
[हामी] /ha:mi/	we

3.7 Nepali Fricatives on the Basis of Vibration of Vocal Cords

The vibration of the vocal cords affects the production of the sounds. Differences can be realized due to its vibration. Some of the sounds are articulated with vibration and some without vibration of the vocal cords. On this ground, Nepali has two types of fricatives: Voiced and Voiceless.

3.7.1 Voiced Fricatives

In the production of some sounds the air from the lungs does go out easily due to this the vocal cords are shaked and the sounds which are produced at this moment are voiced sounds. Defining the voiced sounds Gautam and Luitel says, "स्वर चिम्टी आ-आफ्नो ठाउँ छोडी परस्पर नजिकिंदा वायु मार्ग सागुरिन्छ र फोक्सोबाट आएको सासले स्वर चिम्टीलाई दवाब दिन्छ । यस दवावका कारणबाट स्वर चिम्टीमा प्रकम्पन पैदा हुन्छ । यस अवस्थामा घोष ध्वनी उच्चरित हुन्छन् । " 'When the vocal cords are loosely held together the glottis becomes narrower and vibration of the vocal cords occurs then the air from the lungs passes through them. In such condition, the voiced sounds are articulated' (38). In Nepali [ह] is voiced fricative sound.

Sound in Nepali	Transcription	Meaning in English	English Equivalent
[ह] hardam	/hardam/	always	/h/

The sound /h/ is common in English and Nepali in many respects.

3.7.2 Voiceless Fricatives

The sounds that are articulated with vibration of the vocal cords are called voiceless fricatives in Nepali also. Regarding voiceless sounds Neupane and Bhattarai say: " स्वर चिम्टी विस्फारित भएर स्वर यन्त्रको मुख खुला भयो भने फोक्साबाट उकालिएको सास र्निवाध गतिमा वाहिरिन पाउँछ। यस अवस्थामा उच्चरित ध्वनीहरु अघोष हुन्छन।" 'When the vocal cords are wide apart in their own places the glottis becomes wide open and the force air from the lungs passes freely which causes no vibration of vocal cords, in such situation the voiceless sounds are articulated' (38). Nepali has only one voiceless [स] fricative.

Sound in Nepali	Transcription	Meaning in English	English Equivalent
[स] sagar	/sa:gðrð/	ocean	/s/

3.8 Nepali Fricatives on the Basis of Aspiration

Nepali fricatives have been classified on the basis of aspiration. The quantity of air from the lungs plays important role in the production of the sounds. Regarding aspiration Neupane and Bhattarai say,

> "प्राणत्वले सासको मात्रा भन्ने बुझाउँछ। सबै ध्वनि उच्चारण गर्दा प्राणत्व त आवश्यक पर्छ नै तर सबै ध्वनि उच्चारणमा सासको मात्रा समान हुदैन । [क] ध्वनि उच्चारण गर्दा जति सास चाहिन्छ [ख] ध्वनि उच्चारणमा त्यस भन्दा बढ्ता चाहिन्छ । [क] र [ख] को बीचमा अरु केही अन्तर छैन । उच्चारण स्थान र विधि दुवैमा एकै हुन्छ तर पनि यीनीहरुमा व्यतिरेकी भिन्नता छ । त्यो स्पष्ट अर्थ भेदक तत्व हो प्राणत्व ।" 'Aspiration is the quantity of air. Air is needed in the production of all sounds but all the sounds do not produce with equal quantity of air. How much air is needed in the production of /k/, /kh/ sound needs more than /k/.There is no any other difference between /k/ and /kh/, they have same place of articulation and way of production but there is distinctive feature between them which brings phonemic difference. Aspiration is clearly an element that changes meanings'. (55)

When they are aspirated they become distinct sounds in Nepali. For instance, when [क] /k/ is aspirated as /kh/ it becomes the distinct sound [ख] /kh/ distinct phoneme, for example 'kag' (crow) and 'khag' (the horn of rhino). So the aspirtated and unaspirated series of Nepali sounds are quite different. Nepali has no aspirated fricative sound.

3.8.1 Unaspritated Fricatives

The sounds which need more quantity of air from the lungs for their production are called unaspirated sounds. Aspiration in Nepali is phonemic but it is only allophonic in English. Neaupane and Bhattarai say: "अल्प प्राणका तुलनामा उच्चारण गर्दा

बढी सास खर्च हुने व्यतिरेकी ध्वनिहरु छन, जसलाई महाप्राण भन्नु पर्दछ ।" 'In comparison with aspirated sounds, there are sounds that need more quantity of air for their production. They are called unaspirated sounds'(56).

Both fricatives [स] and [ह] of Nepali are unaspirated. They need more quantity of air than other sounds.

Sound in Nepali	English Equivalent
[स] /s/	/s/
[ह]/h/	/ h/

3.9 Allophonic Variants of Nepali Fricatives

Like in English a lot of allophonic are found in Nepali. But most of the variants are not only phonetic but also phonemic. Some Nepali sounds in comparison with English sounds are articulated as if they are allophonic variants but they change the meaning of the word. So they are not allophonic. English /p/ and /ph/ sounds are allophonic but in Nepali [प] and [फ] are different phoneme, as they change the meaning. But the fricatives [स] and [ह] do not have allophonic variant like [प] and [फ]. Because of that, Nepali sounds are also realized differently as they occur in different phonemes.

The sounds in Nepali are also affected by the neighboring sounds. Regarding it Pokharel says: " एउटा वर्ण भित्र ध्वनि वैज्ञानिक (phonetic) रुपले फरक फरक प्रकृति भएका विभिन्न ध्वनिहरु समेटिएका हुन्छन् । मातृ भाषाका वक्ताले अर्थमा परिवर्तन हुने गरी भएको ध्वनि परिवर्तनको मात्रा वास्ता गर्छन, लघुतम युगमा राख्दा अर्थमा परिवर्तन गर्न नसक्ने ध्वनि परिवर्तनको वास्ता पनि गर्दैनन्, थाहा पाउँदैनन्"
'Phonetically a phoneme contains difference phones. The native speakers feel the difference when there is change in meaning of the sounds and they don't care for the minute change in the sounds, which does not change the meaning and they don't even know about it' (2).

He futher says: "कुनै पनि भाषाका वक्ताले वास्ता नगर्ने र थाहा नपाउने ध्वनि परिवर्तबाट उच्चारण गरिने ध्वनिहरुलाई एउटै वर्णका वेग्लावेग्लै संवर्ण (Allophone) भनिन्छ।" 'Allophones are the sounds

which are articulated differently but the difference is ignored or unknown by the native speaker' (2).

Similarly Gautam and Luitel add : "एउटै परिवेशमा घटिट नहुने र ध्वन्यात्मक विशेषताका रुपमा मिल्दा जुल्दा देखिने वर्णलाई संवर्ण भनिन्छ।" 'The sounds which do not fall in the same contextual occurance and phonetically they have similar characteristics are called allophones' (112).

The above mentioned definitions make it clear that the allophones are the minute change in the articulation of the phoneme, which is hardly noticed by the listener. The listener feels sameness in their articulation. Pokharel says: "The voiceless aspirated plosive sound [ख] /kh/ and [फ] /ph/ will be fricatives when they occur after vowel sounds e.g. 'बाफ' /ba:f/ , 'साफ' /sa:f /, 'आफु' /a:fu/"

Chapter – Four

English and Nepali Fricatives: A Comparison

4.1 English and Nepali Fricatives

Fricative sounds are produced with friction in both English and Nepali languages. English has mainly 9 fricative sounds. Nepali, on the other hand, has two fricative sounds. Though [श] and [ष] are written letter of Nepali language and fricative sounds of Sanskriti language, they are pronounced as [स] in Nepali language. It means [स] is the collapsed form of [श] and [ष] in Nepali. They are not sounds with distinctive features.

The list of English and Nepali fricatives is as follows:

	English	Nepali
1.	\ f \	[स]
2.	\ v \	[ह]
3.	\ θ\	
4.	\ ð \	
5.	\ s \	
6.	\ z \	
7.	\ ʃ\	
8.	\ ʒ \	
9.	\ h\	

The fricatives can be classified on the basis of the place of articulation, the voicing and the aspiration.

4.2 Fricatives on the Basis of Place of Articulation

All the sounds are heard differently although the same articulators articulate them. However, we find a lot of similarities among such sounds. The sounds, which are articulated from different organs, are vastly different. Due to this diversity among the sounds, they are classified in different groups on the basis of place of articulation. And Nepali fricatives are also classified in different groups on the basis of place of articulation.

4.2.1 Labio-dental Fricatives

Labio-dental fricatives are articulated with active participation of the lower lip and upper teeth. Regarding labio-dental fricatives, English linguist Peter Ladefoged says, “(Lower lip and upper front teeth.) Most People, when saying words such as “fie,vie,” raise the lower lip until it nearly touches the upper front teeth (6).” But Nepali language does not have any labio-dental fricative sounds.

The sounds [f] and [v] are labio-dental fricatives in English . These sounds have no counterparts in Nepali. Though the sounds [फ] and [भ] are heard similar to [f] and [v] , in fact , Nepali [फ] and [भ] are bilabial plosives which are articulated with the active participation of the upper and lower lips.

The position of the articulators for the production of these sounds is shown in the following figure:

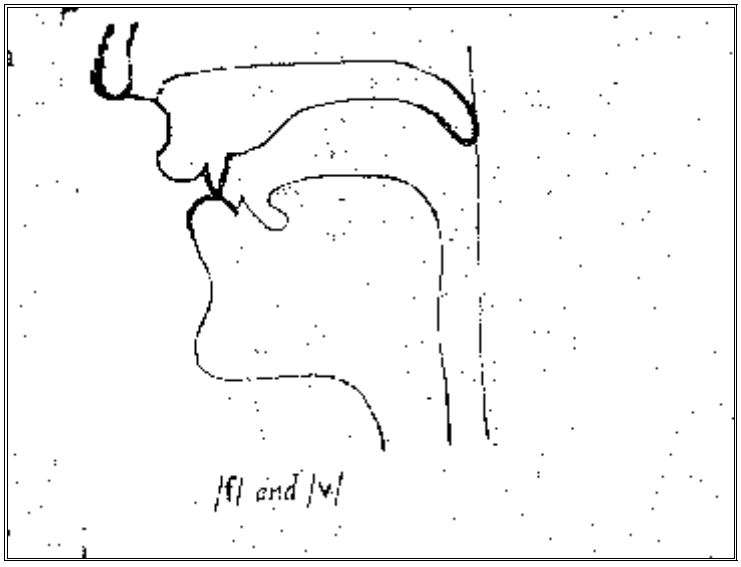

Figure number: 11 (O'Connor 25)

In the above picture the lower lip has touched the upper front teeth. The air from the lungs passes out with friction through the oral cavity and the labio-dental fricatives are produced.

4.2.2 Dental Fricatives

English dental fricatives are articulated with the active participation of the tip of the tongue and the lower and upper front teeth. The tongue is an active articulator. Though some people get confused with Nepali dental /थ/ and /द / they are quite different. In fact /θ/ and /ð/ are inter dentals, as they are made with the tip of the tongue between the upper teeth and lower teeth but Nepali / थ/ and /द / are pure dental, which are produced with the tip of the tongue just behind the upper front teeth. Regarding manner of articulation, they are not similar either. The थ/ and /द / sounds are plosive. The air in the oral passage is stopped when the tongue touches the upper teeth in the production of /थ / and / द /. Ram Nath Ojha says, " जिब्रोको टुप्पो र माथिल्लो दाँतका सहायताले उच्चरित हुने ध्वनि दन्त्य ध्वनि हुन।" 'The sounds which are produced with the help of the tip of the tongue and upper teeth are dental sounds' (74).

The position of organs of speech for the production of dental fricatives is shown in the following figure.

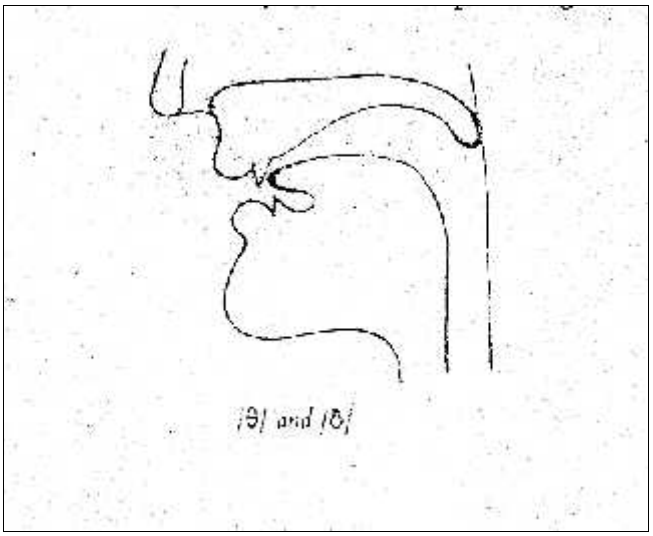

Figure number: 12 (O'Connor 28)

The production of dental fricatives /θ/ and /ð/ is shown in the above figure. For the production of these sounds the air from the lungs passes out with friction.

4.2.3 Alveolar Fricatives

The tip of the tongue touches the alveolar ridge and produces the alveolar fricatives. Regarding alveolar sound Neupane and Bhattarai add, "माथिल्ला दाँतका ठीक पछिको भाग दन्तभुल हो । यहाँबाट उच्चरित ध्वनिलाई दन्तमलिय भनिन्छ", 'The back part just behind the upper front teeth is alveolar ridge. The sounds which are produced from here are alveolar sounds' (49).

English has two alveolar fricatives but Nepali has only one alveolar fricative. The sound [स] /s/ is common sound for both languages. The English alveolar fricative /z/ has no counter part in Nepali. Though the Nepali sound [ज] is heard like /z/ of English sound, it is alveolar affricative sound. In the production of Nepali [ज] the tip of the tongue touches the root of the teeth. So it is dental affricative sound in Nepali. The position of organs of speech for the production of alveolar fricatives is shown in the figure number 7.

In the figure the tongue goes near the alveolar ridge, there is velic closure so, the air cannot escape through the nasal cavity. The air escapes out with friction through the alveolar ridge then /s/ and /z/ are produced.

4.2.4 Palato-alveolar Fricatives

The Palato-alveolar sounds are produced with the tip or the blade of the tongue against the back part of the alveolar ridge, front part of soft palate. In the production of Palato-alveolar fricatives the tongue functions as an active articulator and the soft palate and alveolar ridge are the passive articulator. The soft palate is raised so that, all the breath is forced to go through the mouth. There is a narrow space between the tip of the tongue and back of the alveolar ridge. The front of the tongue occupies a little higher position than it reaches while making /s/ and /z/.

The sounds / ʃ /and /ʒ / are in English. They have no counter parts in Nepali language. The position of articulations for the production of these sounds is shown in the following figure:

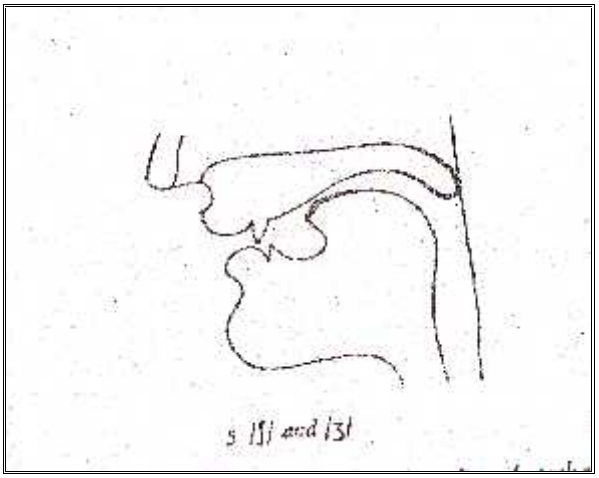

Figure number: 13 (O'Connor 36)

The picture shows the production of palato-alveolar fricatives. For the production of these sounds, the soft palate is raised, the front of the tongue is held

high, the nasal cavity is blocked, and the air passes out with friction through the narrow opening between the tip of the tongue and the back of the alveolar ridge.

4.2.5 Glottal Fricative

In the production of glottal fricatives the vocal cords are open and the air from the lungs passes out between the two vocal cords through the mouth. The sound /h/ [ह्] is common glottal fricative sound for both languages. It is like vowel sound. It is not so noisy when we pronounce like harm /ha:m/ or arm /a:m/ and heat /hi:t/ or eat /i:t/.

Nepali linguist Ramnath Ojha says, " जिब्राको फेद र स्वर यन्त्रको मुख सक्रिय भएर उच्चरित हुने ध्वनीलाई स्वर यन्त्र मुखी ध्वनी भनिन्छ।" 'The sound which is pronounced with active participation of root of the tongue and front of the vocal cord is called glottal sound' (74). The position of articulation for the production of this sound is shown in the following figure.

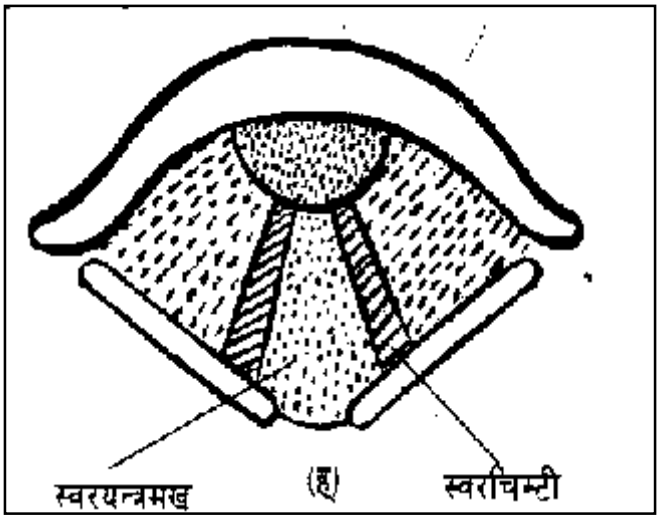

Figure number 14 (Netra Prasad 66)

The picture shows, the air from the lungs comes out with friction by making the vocal cords narrow through the oral cavity.

4.3 Fricatives on the Basis Vibration of the Vocal Cords

The vibration of the vocal cords affects the production of the sounds. In producing speech sounds a great deal of muscular energy is involved.

Differences can be realized because of its vibrations. Some of the sounds are articulated with vibration and some without vibration of the vocal cords. Regarding this, both languages have two types of fricatives: voiced and voiceless.

4.3.1 Voiced Fricatives

The following figure shows the vibration of the vocal cords while articulating voiced sounds. In the figure, the vocal cords are loosely held together. When the air comes from the lungs it vibrates them. Like in English, in Nepali too the fricatives, which are articulated with the vibration of vocal cords, are called voiced fricatives.

Gautam and Luitel say: " स्वरचिम्टी आ-आफ्नो ठाउँ छोडी परस्पर नजिकिदाँ बायु मार्ग साँगुरिन्छ र फोक्सोबाट आएको सासले स्वर चिम्टीलाई दवाब दिन्छ। यस दवाबका कारणबाट स्वर चिम्टीमा प्रकम्पन पैदा हुन्छ। यस अवस्थामा घोष ध्वनी उच्चरित हुन्छन्।" 'When the vocal cords are loosely held together the glottis becomes narrower and vibration of the vocal cords occurs when the air from the lungs presses through. In such condition, the voiced sounds are articulated' (38). Regarding voiced sounds Ramnath Ojha says, "स्वर यन्त्रमा कम्पन पैदा भई उ्च्चरित हुने ध्वनीलाई घोष ध्वनी भनिन्छ।" 'The sounds which are produced with vibration in the vocal cords are called voiced sounds' (78).

The voiced fricatives in English and Nepali are as follows,

Sounds in English		sounds in Nepali
/v/	van	[ह्] हात (hand)
/ð/	this	
/z/	zoo	
/ʒ/	garage	

The sound /ह / is voiced in Nepali language only. Besides this the sounds /v/, /ð/, /z/, /ʒ/ are not found in Nepali language as fricatives.

4.3.2 Voiceless Fricatives

The sounds which are produced with great effort and energy are called voiceless sounds. In English and Nepali both sounds that are articulated without vibration of the vocal cords are voiceless fricatives. Defining the voiceless sounds Ojha says, "स्वर यन्त्रमा कम्पन नभई उच्चरित हुने ध्वनीलाई अघोष ध्वनी भनिन्छ । " 'The sounds which are produced without vibration in the vocal cords are called voiceless sounds' (78). The sounds /f/, /θ/, /s/, /ʃ/ and /h/ are voiceless fricatives.

4.4 Fricatives on the Basis of Aspiration

Fricatives can be studies on the basis of aspiration. The quantity of air from the lungs plays important role in the production of the sounds. On this basis fricatives are divided into aspirated and unaspirated groups. Nepali linguists Gautam and Luitel say:

कतिपय ध्वनीको उच्चारणमा फोक्सो बढी खुम्चिन्छ भने कतिपयमा अपेक्षाकृत कम खुम्चिन्छ । फोक्सो अपेक्षाकृत बढी खुम्चिएको बेला फोक्साबाट निस्कने सासको मात्रा बढी हुन्छ भने कम खुम्चिएको बेला सासको मात्रा पनि कम हुन्छ । यी दुवै अवस्थामा ध्वनिहरु उच्चरित हुन्छन् । सबै ध्वनिको उच्चारणमा सासको मात्रा एकनास हुँदैन । कुनै ध्वनिको उच्चारणमा सासको मात्रा घटी हुन्छ र कुनैमा बढी हुन्छ। (39) The lungs are narrowed and flattened while articulating the sound. The puff of air will be strong when it is narrowed and will be weak\less at the time of flattened. In both narrowed and flattened situations the sounds are articulated. The puff of air is not equal in the production of all the sounds. Some need higher quality and some little.

In Nepali aspiration is an element which brings phonemes when they are aspirated they become distinct sounds in Nepali. For instance when क् /k/ is aspirated as /k^h / it becomes the distinct sound ख् /k^h/ which is distinct phoneme. For example *kam* (work) and *kham* (envelope). So aspirated and unaspirated series of Nepali fricatives are quite different.

4.4.1 Unaspirated Fricatives

The sounds, which need more quantity of air from the lungs for their production, are called aspirated sounds. Unaspiration in Nepali is phonemic but it is only allophonic in English. Ramnath Ojha says, "धेरै मात्रामा सास बाहिर निस्केर उच्चरित हुने वा अल्पप्राणको तुलनामा धेरै सासको प्रयोग भई उच्चरित हुने ध्वनिलाई महाप्राण व्यञ्जन ध्वनि भनिन्छ। नेपाली [स] र [ह] महाप्राण संघर्षी ध्वनि हुन । " 'The sounds which are produced with much breathing out or using more breath in comparison with the unaspirated sounds are called unaspirated consonant sounds. Nepali /s/ and /h/ are unaspirated fricative sounds' (78).

The need of quantity of air for unaspirated sounds is supposed to be more than the unaspirated sounds. Fricatives in Nepali are given below:

Sound in Nepali	English Equivalent
स् /s/	/s/ with aspiration
ह् /h/	/h/ with aspiration

4.4.2 Aspirated Fricatives

The sounds which need comparatively less quantity of air from the lungs for their production are known as aspirated sounds. Defining the aspirated sounds Ramnath Ojha says, "थोरै मात्र सास बाहिर निस्केर उच्चरित हुने वा अपेक्षाकृत थोरै सासको प्रयोग भई उच्चरित हुने ध्वनिलाई अल्पप्राण व्यञ्जन ध्वनि भनिन्छ। " 'The sounds which are produced with less breathing out or with using expected less breath and pronounce are unaspirated or less aspirated sounds' (77). There is no any aspirated fricative sound in both languages.

4.5 Some Alike but Different Features of Both Languages

English language has nine fricatives, Nepali has just two fricatives. Only the common features between two languages are /h/ or [ह्] and /s/ or [स्]. Though there are only two common fricatives between two languages, they have few sounds which are heard alike but have different characteristics.

4.5.1 Regarding Fricatives /f/ and /v/

English fricatives /f/ and Nepali [फ] or English fricative /v/ and Nepali fricative [भ] are heard similar. In the production of [फ] and [भ] the two lips are joined together, air from the lungs stops and passes out through the oral cavity. They are bilabial plosives.

English sounds	Sound in Nepali	Transcription	Meaning in English
fan /fæn/	फ [ph]	phal /fəl/	fruit
van /væn/	भ [bh]	bhat /va:t/	rice

4.5.2 Regarding /θ/ and /ð/ Fricatives

English /θ/ and Nepali [थ] /ð/ and [द] are heard same but Nepali [थ] and [द] are dental plosives. In the production of [थ] and [द] the tip of the tongue touches the root of the teeth, the air from the lungs stops for a short time and air passes through the oral cavity. The air in the oral passage is stopped when the tongue touches the upper teeth. When the tip of the tongue is lowered the sounds [थ] and [द] are articulated. Because of the velic closure the air escape through the mouth. So, they are dental plosives.

Sounds in Nepali	Transcription	Meaning in English
थ् [th] thakai	/θ'əkai/	fatigue
द् [da] dash	/ðəs/	ten

4.5.3 Regarding /s/ and /ʃ/ Fricatives

English language has /s/ and /ʃ/ two fricatives. But Nepali language has only one [स] fricative sound, though it has three [श], [ष] and [स] in its written form. English has alveolar /s/ and palato-alveolar /ʃ/ but Nepali has only alveolar [स].

4.5.4 Regarding /z/ and /ʒ/ Fricatives

Though Nepali [ज] sound and English /ʒ/ sound are heard alike, they are different. Nepali [ज] is palato- alveolar affricative. In the production of [ज] the back of the tongue touches the soft palate and leaves slowly because of that the oral cavity becomes narrow and the air from the lungs passes out through the oral cavity.

Sounds in Nepali	Transcription	Meaning in English
/ज/ [ja] jagat	/d3əgət/	world
[ja] jadu	/d3a:du/	magic

4.5.5 Regarding /h/ Fricative

Both English and Nepali languages have /h/ [ह] glottal fricative. It is common sound for them. The sound /h/ occurs initial and medially but it does not occur finally in English sound. It is voiceless.

/h/ in initial position	/h/ in middle position
House /haus/	behind /bəhaind/
Hand /hænd/	anyhow /enihau/

The sound /h/ is heard like vowel sounds.

Word	Transcription	Word	Transcription
Harm	/ha:m/	Arm	/a:m/
Heat	/hi:t/	Eat	/i:t/

Though glottal fricative [ह] occurs in all the positions; initial, medial and final. The final /h/ is pronounced with /ə/ vowel sound in Nepali language.

Sound in Nepali	Transcription	Meaning in English
[ह] in initial position		
हात /hat/	/ha:t/	hand
[ह] in middle position		

जहाज /jahaj/	/ʤɔ̃ha:ʤ/	plane

[ह] in final position

दह /daha/	/dəhə/	pond
तह /taha/	/təhə/	layer

Chapter – Five

Conclusion

5.1 Summary of the work

This research work is divided into five chapters. The first chapter is introduction. It has encompassed the back ground, review of the literature, objectives of the study, statement of the problem, methodology, significance of the study and limitation of the study. Being a comparative study of English and Nepali fricative consonants, it is necessary to know the relationship between both languages, which belong to the same Indo-European family. So this chapter has tried to show the relationship between these two languages. It has also shortly observed and analyzed related previous works.

The second chapter has tried to identify the organ of speech which are used to produce the fricative consonants. Because speech organs have essential role to produce speech sounds. Lungs vocal cords tongue and lips are considered to be the major organs of speech. Palate, teeth, nasal cavity, oral cavity, larynx, pharynx, etc. also play important role to produce sound. Lungs, tongue and lower lips are the active articulators for the production of speech sounds.

The third chapter is related with the classification of English and Nepali fricatives. English has nine fricatives but Nepali has just two fricatives. They are classified on the basis of place of articulation, manner of articulation and voicing. According to that /f/ and /v/ are labio-dental /θ/ **and /ð/** are dental /s/ and /z/ are alveolar, /ʃ/ and /ʒ/ are palato alvealor and /h/ is glottal fricatives. Likewise /f/, /θ/**,** /s/ , /ʃ/ and /h/ are voiceless and /v/, /ð/, /z/ and /ʒ/ are voiced fricatives. They are classified into fortis (voiceless) and Lenis (voiced) also.

The fourth chapter is the comparative study of English and Nepali fricatives. This chapter has compared the fricatives of both languages. English has nine fricatives and Nepali has only two fricatives. There are only two common fricatives in both languages. They are /s/ [स] and /h/ [ह]. Some Nepali sounds like [फ] , [भ], [थ], [द] or [ज] are heard like English fricatives /f/,/v/, / ɵ /, / **ð** / or /z/ but they are not fricatives which has shown with examples . Nepali language has no labio-dentals sound like in English. In Nepali there is lack of detailed study of all phonemic variants of Nepali fricatives. We can't find detailed description of all phonemic variants of individual sounds in Nepali. This research has tried to present the similarities and differences to possible extend.

The fifth chapter is the conclusion. It has attempted to present the gist of the study.

5.2 Findings

This comparative study between English and Nepali fricatives has found out both similarities and differences. I hope that the study is fruitful for the Nepali learners who want to learn English fricatives but are facing various problems and vice versa.

5.2.1 Similarities

The origin of English and Nepali languages is the same. They both belong to Indo-European family. So we find some similarities between the languages.

I. Fricatives are found in both English and Nepali languages.

II. Both English and Nepali languages have classified the fricatives on the basis of place of articulation, voicing and aspiration. On the basis of place of articulation fricatives are sub- classified as alveolar and glottal fricatives. Similarly, on the basis of voicing these sounds are classified as voiced and

voiceless. And on the basis of aspiration they are classified as aspirated and unaspirated.

III. The sound /s / and /h/ are mostly vocally common in both language.

5.2.2 Differences

Although English and Nepali languages both fall in the same Indo-European family, there are a lot of differences between the languages. From the research, the researcher has concluded the following differences of fricatives between English and Nepali languages.

I. There are only two fricatives in Nepali but English has nine fricatives.

II. There is no any labio dental sound in Nepali.

III. The sound /f/ and /v/ are labio dental fricatives in English but bilabial plosives in Nepali.

IV. The sounds /z/ is alveolar fricatives in English but plato-alveolar affricative in Nepali.

V. The sounds /θ/ and / **ð** /are dental fricatives in English but dental plosives in Nepali.

VI. There are two fricatives /z/ and /ʒ/ in English but only one affricative /z/ in Nepali.

VII. There are two fricatives /s/ and /ʃ/ in English but Nepali has only one fricative /s/.

VIII. English /h/ is voiceless but Nepali /h/ is voiced.

Works Cited

Adhikari, Hemanga Raj. *Samsamayik Nepali Byakaran*. Kathamandu: Vidhyarthdi Pustak Bandar, 2058.

Catford, J.C. *A Practical Introduction to Phonetics.* Oxford: Clarendon Press, 1992.

Chapagai, Narendra. *Bhasha Tattwa*. Kathamandu: Ratan Pustak Bhandar, 2055.

Crystal, David. *ADictionary of Linguistics and Phonetics*. 5th ed. Main Street: Blackwell Publishing Ltd, 2003.

Dhakal, Shanti Prasad. *Samanya Ra Prayogik Bhashavigyan*. Kathamandu: Shubhakamana Prakashan, 2063.

Gautam, Devi Prasad and Khagendra Prasad Luitel. *Dhwanivigyan Ra Barnavigyan*. Kathamandu : Nabin Prakashan, 2053.

Gimson, Ac. *An Introduction to the Pronunciation of English.* Bungay: Richard Clay Ltd., 1989.

Ladefoged, Peter. *A Course in Phonetics*. 4th ed. Heinlie: Thomas learning, 2001.

Laver, John. *Principles of Phonectics*. New York: CUP, 2000.

Lyons, John. *Language and Linguistics: An Introduction*. New York: Cambridge University Press, 2003.

Matthews, P.H. *The Concise Oxford Dictionary of Linguistics*. New York: Oxford University Press, 1997.

Neupane, Tanka Prasad, and Gobinda Raj Bhattarai. *Nepali Dhwanishastra*. Kathamandu: Ratan Prakashan, 2062.

O' Connor, J. D. *Better English Pronunciation*. New York: CUP, 1980.

Ojha, Ramnath. *Samanya Bhashavigyan*. Kathmandu: Bangmaya Prakashan Griha, 2065.

Paudel, Netra Prasad. *Samanya Ra Prayogik Bhasha Bigyan.* 6th ed. Kathamandu: Pairabi Prakashan, 2064.

Roach, Peter. *English Phonetics and Phonology*. New York: Cambridge University Press, 2006.

Sharma, Basanta Kumar. *Nepali Shabdha Sagar*. Kathamandu: Bhabha Pustak Bhandar, 2061.

Sharma, Mohan Raj. *Shabdha Rachana Ra Barnabinayas*. Kathamandu: Nabin Prakashan, 2063.

The World Book Dictionary. Vol.2.London: World Book Inc., 1988.

The World Book Encyclopedia. L Vol.12. London: World Book Inc., 1992.

The World Book Encyclopedia. L Vol.15. London: World Book Inc., 1992.

Traugott, Elizabeth Closs, and Pratt, Mary Louis. *Linguistics.* Washington DC: Harcourt Brace Jovanovich Publishers, 1980.