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Acoustic Analysis of Consonants of Pakistani English

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Abstract- The current study aims at investigating the acoustic properties of consonants of Pakistani English to determine whether they are realised like native-Englishes or differently, and whether they are same in number or different from their native counter-parts. The study was limited to the investigation of plosives. The participants were selected from among the students of MA English and MPhil English enrolled in The University of Lahore. Certain parameters were pre-determined regarding the selection of the participants including age, ethnicity, ability to communicate in English in different situations, and exposure to English, etc. Word-list recordings were made using hi-tech equipment in a noise free atmosphere. For acoustic analysis and formant measurement, Praat was used. To determine whether the differences in formants were significant, statistical analysis was also performed. The results show that there was significant difference in the realisation of the consonants. It was also determined that they were different in number too, as compared to other native varieties of English. On the basis of these results, it was concluded that Pakistani English is a different variety of English with its idiosyncratic features regarding its consonant phonemes.

Key words: Pakistani English, plosives, formants, Praat

I. INTRODUCTION

It is a fact that languages are constantly changing. Language change transpires because of the variation in phonetic, phonology, morphology, semantics, syntax and other features of language. These changes are the result of reciprocal action between two languages. Similar phenomenon happens with English, the lingua franca of the age. English is the language of print media, international communication, sports, science, technology, music, advertisement, and international competitions (Graddol, 1997). Change in the English language is occurring on the levels of grammar, vocabulary, and pronunciation. Change in the English language is because of its interaction with other languages (Trudgill, 2004). The resultant varieties of this type of interaction have accepted as different varieties of English (Bhatt, 2008).

English is living up the status of official language of Pakistan. It is the language of law, advertisement, media, business, science, and technology in Pakistan. Foreign qualified people pronounce words in a different way as compared to the people who graduate from local universities. There is a clear difference between the pronunciation patterns of both, the foreign qualified and the local graduates. There are four distinct verities of Pakistani English, which are acrolect, basilect, mesolect and anglicized Pakistani English (Rehman, 1990). The existent study is an exertion that Pakistani English ought to be considered as an adequate English dialect and to find out the total number of plosives in Pakistani English. The focus of this research is phonological variables in pronunciation. Pakistani English is conjecturing to have different consonants, which results in significant pronunciation variation. The objective of this study is to reconnoitre total number of plosive consonants of Pakistani English and to determine any differences in their realisation.

Research Questions

The foremost questions linked to this research are:

- Are Pakistani English consonants dissimilar from other varieties of English Consonants, with distinctive citation of RP (Received Pronunciation)?
- How many plosive consonants are in Pakistani English?

Research Objectives

The basic objective of this study is to explore the consonants of Pakistani English and establishing it as a different variety of English. The research inscribes two main objectives which are:

- To identify the total number of plosive consonants in Pakistani English
- To find out the influence of L1 (Urdu in this research) on Pakistani English

II. Theoretical Background

English is used as the language of science, world economy, world politics etc. this versatile use of English cause new grammatical form, way of writing, speaking, and new vocabulary. English no more related to any specific culture. Now it is not only the language of America of Britain (Graddol., 1997). English is now a universal language. We cannot specify the origin of English language. Birth of a baby and birth of a language are very different events. Now we know, hear and see Australian English, Singaporean English, Indian English, Irish English and British English (Janson, 2002).

Origin of English is thought to be in Englo-land, which is now England. After decolonisation, national language has become a fascinating concept. Everyone feels the need of emergence of a new language. English borrowed words from Latin, Greek, and French, Celtic and from languages of British colonies. To establish a distinctive national language Noah Webster proposed reforms in American spelling system. Latin speakers were moved to different parts of Europe, as a result language like French, Italian, Spanish, Portuguese were established. English spoken by the British would also be restyled and reshaped in future (Bolton, 2006).

Phonological Background

We can classify a language on the bases of its phonology. Phonology causes the main difference among different dialects. Ladefoged (2001) defined phonology as "...the recital of the system and illustration of sound that occurs in language. Determination of different sounds involves study of language in order to find out which sounds impart a distinct interpretation." (p.23) According to Katamba (1989) "Phonology … is a branch of linguistics. In this branch investigation is based on two levels: words level and utterance level." (p.1) Phonetics has some basic concepts "the study of the sounds and the tabulation of all speech sounds that can be produced by human beings" (Katamba, 1989). Pronunciation difference is caused by phonemic variation. Different speakers pronounce different phonemes differently. There are two distinct phonemes /æ/ and /ɑː/ in Southern British English. For example: cat and half, while there is only one phoneme for these two words is Scottish English (Cruttendon, 2008).

Phonological differences cause different varieties in three modes: First, system of phonology can dissent: like, there are different tabulations of phonemes. Secondly, realization of the same phoneme can be distinctive or vary. It may pronounce differently. Thirdly, based on phoneme distribution, a given word may be pronounced differently by different people (Barber, 2009, Cruttendon, 2008).

PakE: A new emerging variety

The New Englishes are emerging rapidly in this postcolonial era. Hung (2000) works on Hong Kong English and established English of Hong Kong as a different and a new variety of English. Deterding (2005) worked on Singaporean English vowels and confirmed that it is a new variety of English. Pakistani English is in the process of making. A little work is done on Pakistani English. English is serving as official language of Pakistan. It is the third largest country of Asia in using English. Baumgardner (1993a, 1993b) published some research articles on Pakistani English. According to Baumgardner (1993a, 1993b) Pkistani English is not Standard English but it is the process. Urduization is also an important part of Pakistani English (PE). Pakistani English is changing because of its contact with Urdu and other languages. There is a clear influence of Urdu on Pakistani English (Tallat, 2002).

According to Kennedy (1993), particular lexical terms are used in crime reporting of Pakistan. He categorizes words in four separate lists and proves Pakistani newspapers use emotional and sensational words as compared to American newspapers. Words like Chai-pani, sifarish, muk-mukaa, parchi etc have positive and negative meanings. Anwar (2007) explains that Pakistani English is affected by code switching on phrase and clause level. Mahboob (2004) worked on punctuation patterns of Pakistani English. The previous researches on Pakistani English have been performed on the level of grammar, morphology, code-mixing, pronunciation, and syntax etc. There focus was same. All researches have one common point that new language is emerging in Pakistani context. The current research is based on speech analysis of consonants by the use of spectrogram and finding formant values of the consonants.

III. Material and Method

Participants

Participants of this research were chosen from Department of English, The University of Lahore. These participants were students of MA English and MPhil English. There were total 60 participants, 30 were female, and 30 were male. Certain parameters were kept in focus during the selection of the participants: (1) the participants must have the ability to communicate in English in different situations. (2) Participants must have exposure to English for at least 14 years in their educational career.

Material

Selection of Words

This research was limited to the analysis of plosive consonants, i.e. /p/, /b/, /t/, /d/, /k/,/g/. Word list recordings were made for the analysis of the sounds. The study focused on the technical aspect of formant measurement rather than the speaking style. Words list is:

/p/: Phularwan, Phalia, Page, Pain
/b/: Bhalwal, Bhopal, Bhutto, Bleed, Brazil
/t/: Third, Thana bhawana, Thailand, Theory, Thatta, Tale, Taxila
/d/: Dharema, Dhameyal, Done, Delete, Data
/k/: Khanna, Khara, King, Kick, Khadi
/g/: Ghotki, Ghol, Grand, Galaxy

The selection of word list based on following context:
Context 1: CV (Consonant-Vowel)
Context 2: C-h (Consonant-/h/)

Recordings

The words were recorded using hi-tech equipment in a noise free atmosphere. Subjects were endured to pause in order to minimize the effect of the already spoken consonants between forming sounds of every sample consonant. The recordings were transferred to computer for analysis.

Procedure

Total 60 participants (30 male and 30female) were recorded. Each participant was requested to pronounce 14 words with /C-h/ and /CV/ contexts. Total consonants for analysis were (50 x 14) 840 with 120 for each of the six consonants i.e. /p/, /b/, /t/, /d/, /k/, /g/. Acoustic analysis was made using Pratt. First formant value (F1) of the consonants was measured adopting the given procedure. Word with initial (C-h) and (CV) context were selected for measurement.

Statistical Analysis

Statistical analysis of the data was performed through MSTAT-C to see if the differences of formant frequencies are significant.

IV. ANALYSIS

The fraction deals with the analysis of consonants in two contexts individually for female and male voices. Consonant sounds were analysed in two contexts to find out the total number of plosive consonants in Pakistani English.

Male Sound

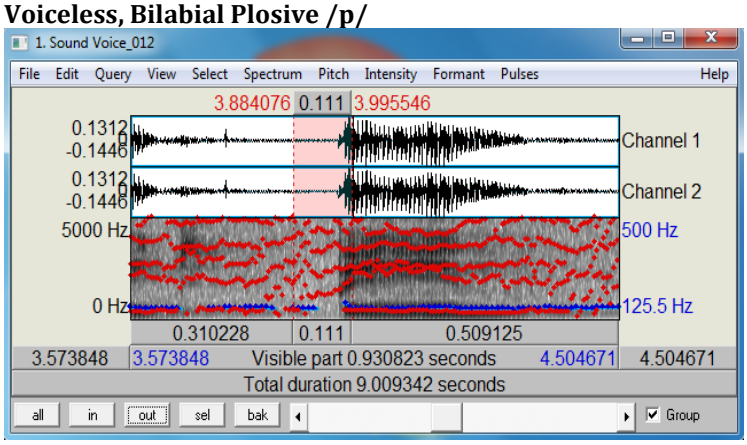
Male speakers have hefty mouth crater and vocal cord ensuing into low formants as compared to female speakers. Analysis of male and female should be conferring exclusively. Therefore, analysis of male speakers in two contexts is as follows:

/CV/ and /C-h/Context

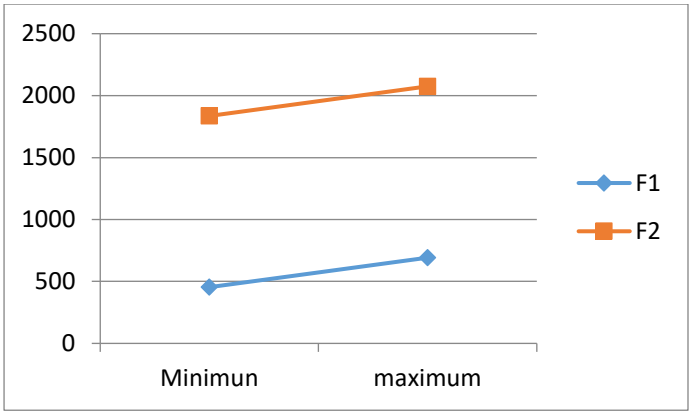
The consonants are conferring individually in /CV/ and /C-h/ context.

In /CV/ (Consonant-Vowel) Context

Voiceless, Bilabial Plosive /p/

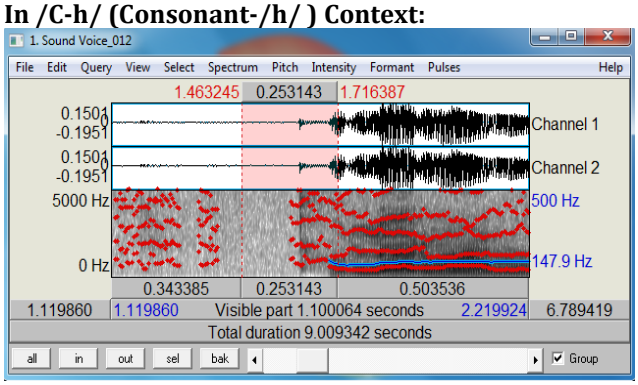


All male speakers actualized this phoneme as voiceless, bilabial plosive consonant. First formant (F1) value deviated from 454 Hz (minimum) to 692 Hz (maximum) and Second formant value deviated from 1836 Hz (minimum) to 2075 Hz (maximum). The mean formant values of First Formant (F1) and Second Formant (F2) were 571Hz and 1956 Hz.

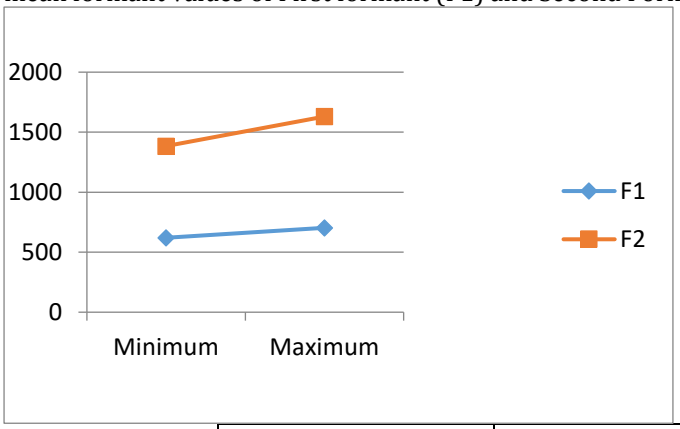


Value	F1	F2
Minimum	454	1836
Maximum	692	2075
Average	571	1956

In /C-h/ (Consonant-/h/) Context:



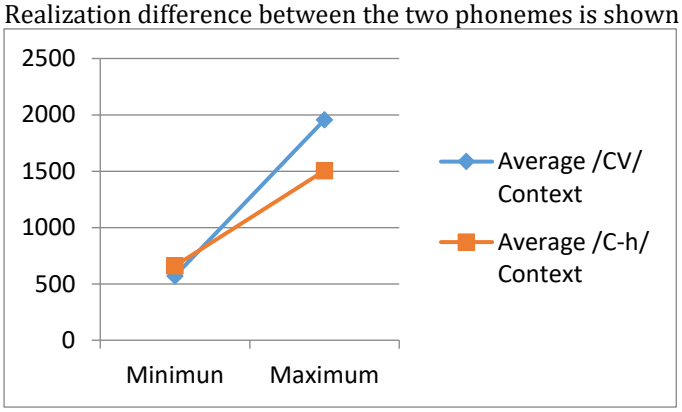
All Pakistani male speakers actualized this /p/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. Difference of realization of /p/ sound was shown in the formant values. First formant (F1) value deviated from 620 Hz (minimum) to 703 Hz (maximum) and second formant value deviated from 1384 Hz (minimum) to 1630 Hz (maximum). The mean formant values of First formant (F1) and Second Formant (F2) were 660 Hz and 1505 Hz.



Value	F1	F2
Minimum	620	1384
Maximum	703	1630
Average	660	1505

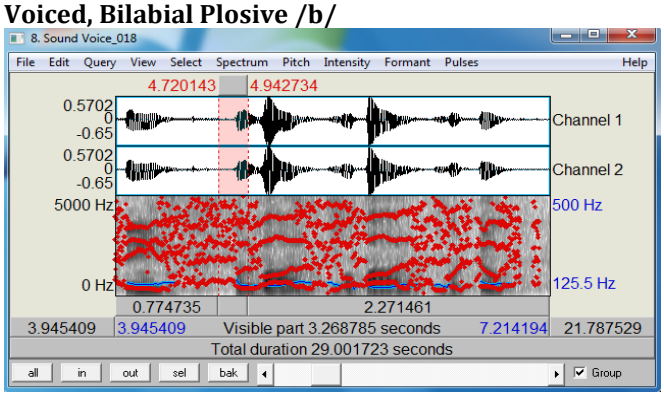
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context

Pakistani speakers actualized these sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have the ability to pronounce them differently. Realization difference between the two phonemes is shown in the graph.

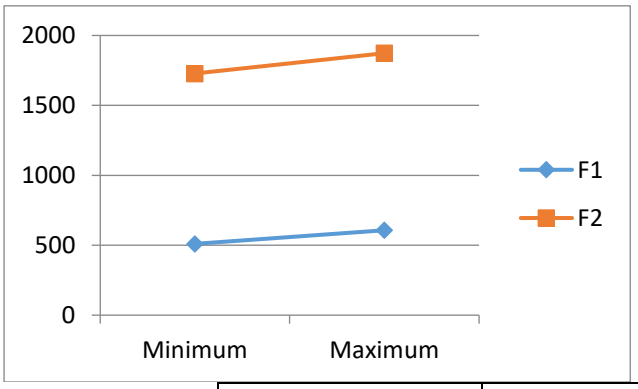


In /CV/ (Consonant-Vowel) Context:

Voiced, Bilabial Plosive /b/

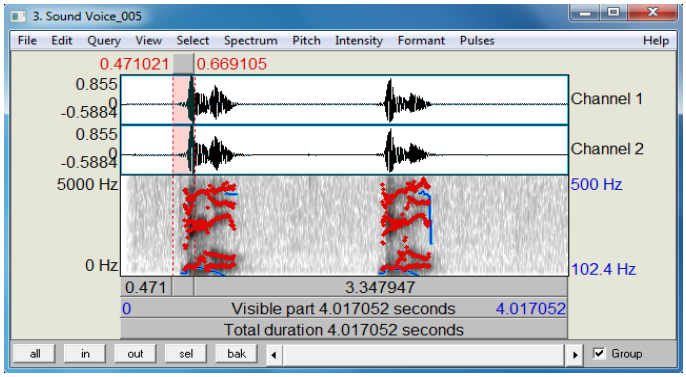


All male speakers actualized this phoneme as voiced, bilabial plosive. First formant (F1) deviated from 510 Hz (minimum) to 607 Hz (maximum) and Second formant deviated from 1728 Hz (minimum) to 1873 Hz (mximum). The mean formant values of First formant (F1) and Second Formant (F2) were 556 Hz and 1801 Hz.

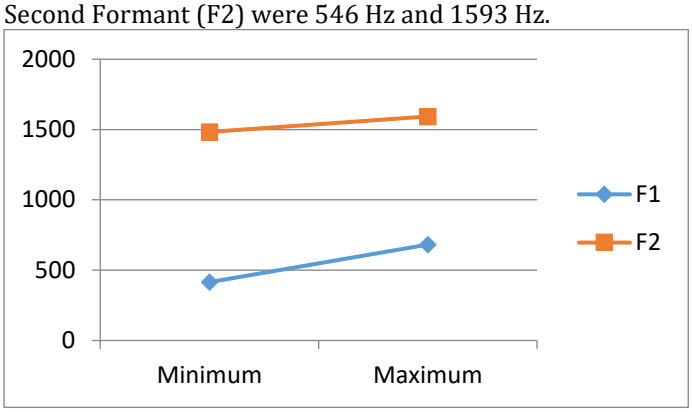


Value	F1	F2
Minimum	510	1728
Maximum	607	1873
Average	556	1801

In /C-h/ (Consonant-/h/) Context:



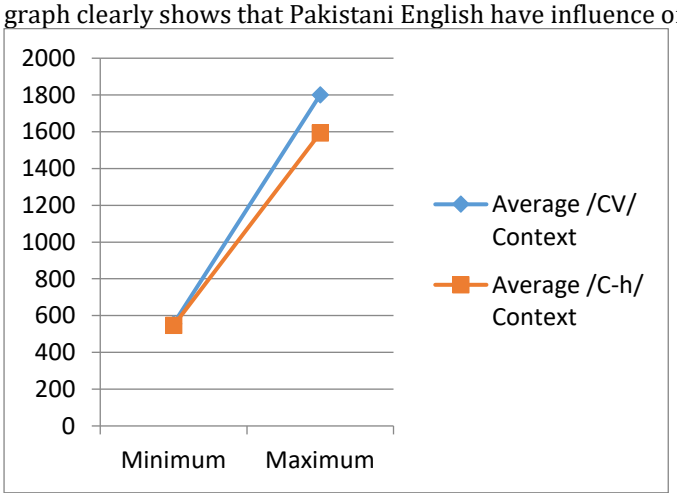
All male speakers actualized /b/ sound in a different way. This difference is because of the instigation on Pakistani English by Urdu language. Difference of realization of /b/ sound was shown in the formant values. First formant (F1) deviated from 415 Hz (minimum) to 682 Hz (maximum) and Second formant deviate from 1483 Hz (minimum) to 1706 Hz (maximum). The mean formant values of First formant (F1) and Second Formant (F2) were 546 Hz and 1593 Hz.



Value	F1	F2
Minimum	415	1483
Maximum	682	1706
Average	546	1593

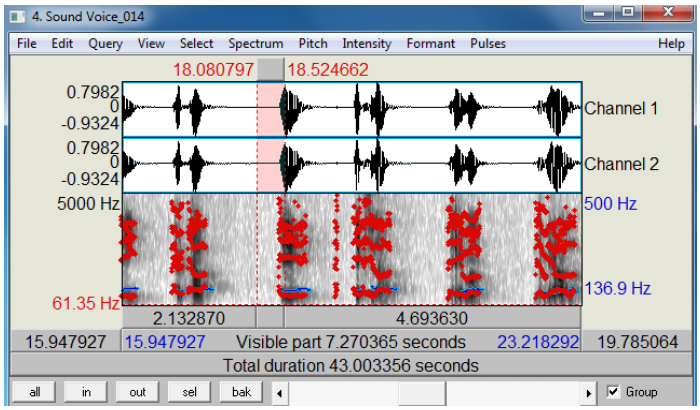
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speakers actualized these two 'context' sounds as two different phonemes. It was mark that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph. This graph provides a complete description of difference between the pronunciations of /b/ sound in two different contexts. This graph clearly shows that Pakistani English have influence of L1 (First language) Urdu Language.

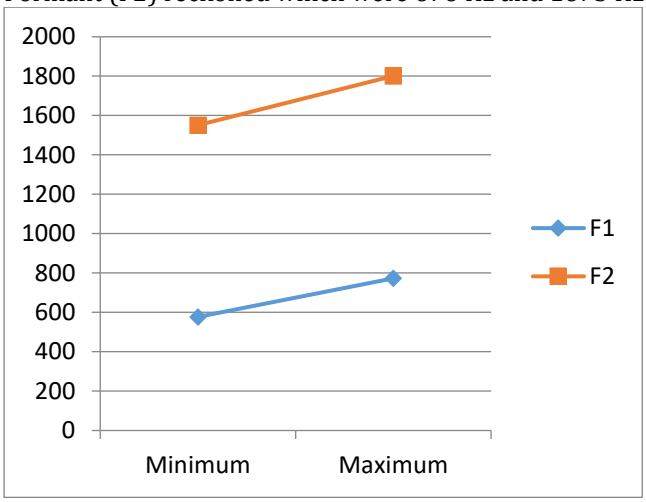


In /CV/ (Consonant-Vowel) Context:

Voiceless, Alveolar Plosive /t/

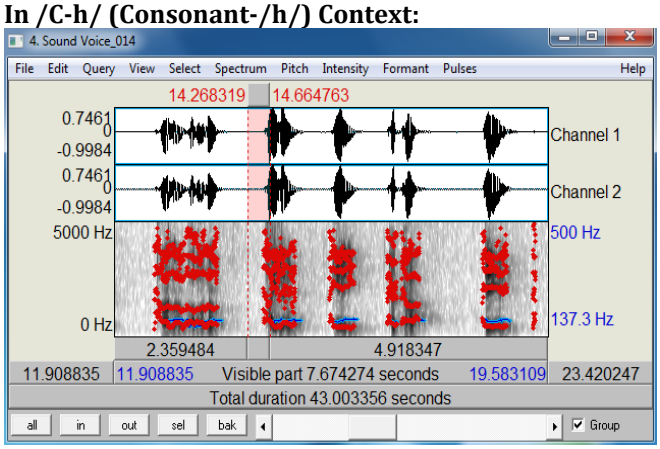


All male speakers actualize this word as voiceless, alveolar plosive consonant. First formant (F1) value deviates from 577 Hz (minimum) to 773 Hz (maximum) and Second formant value deviate from 1551 Hz (minimum) to 1801 Hz (maximum). The mean proportion formant value of First formant (F1) and Second Formant (F2) reckoned which were 676 Hz and 1675 Hz.

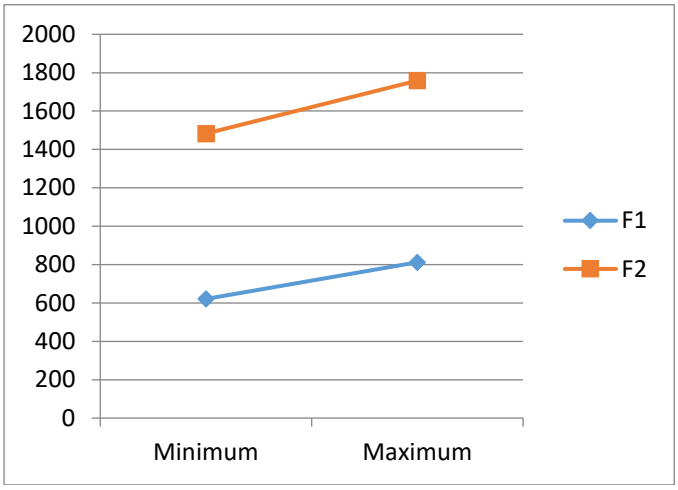


Value	F1	F2
Minimum	577	1551
Maximum	773	1801
Average	676	1675

In /C-h/ (Consonant-/h/) Context:



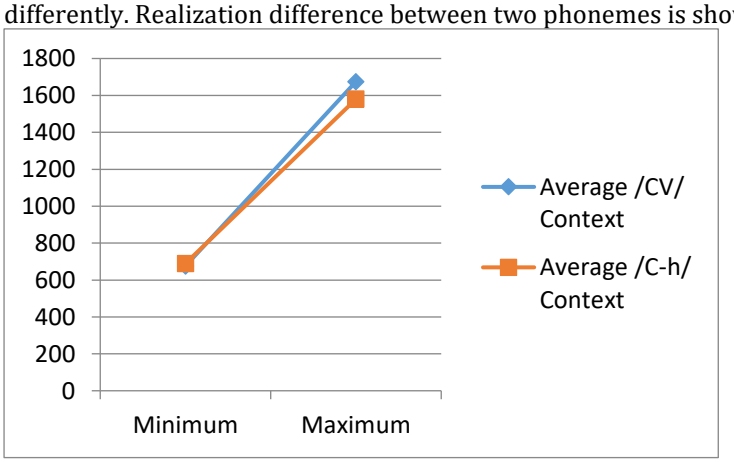
All Pakistani male speakers actualized this /t/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. Differences of realization of /t/ sound were shown in the formant values. First formant (F1) value deviated from 621 Hz (minimum) to 812 Hz (maximum) and Second formant value deviated from 1483 Hz (minimum) to 1759 Hz (maximum). The mean formant values of the First Formant (F1) and the Second Formant (F2) were 690 Hz and 1580 Hz.



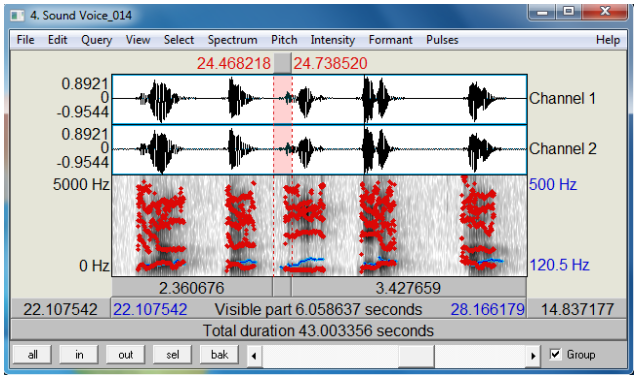
Value	F1	F2
Minimum	621	1483
Maximum	812	1759
Average	690	1580

/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

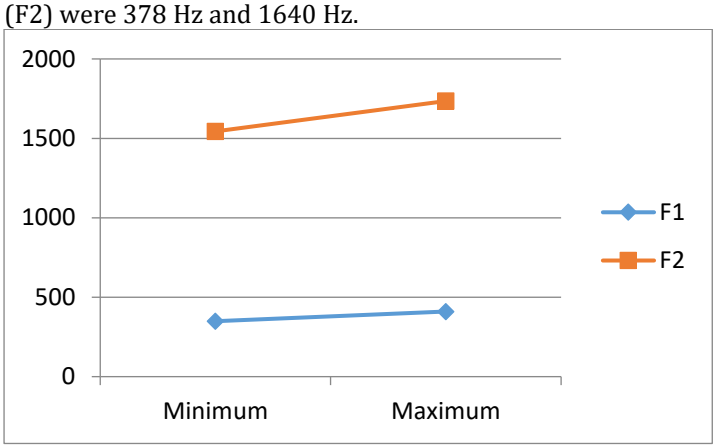
Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.



In /CV/ (Consonant-Vowel) Context:
Voiced, Alveolar Plosive /d/

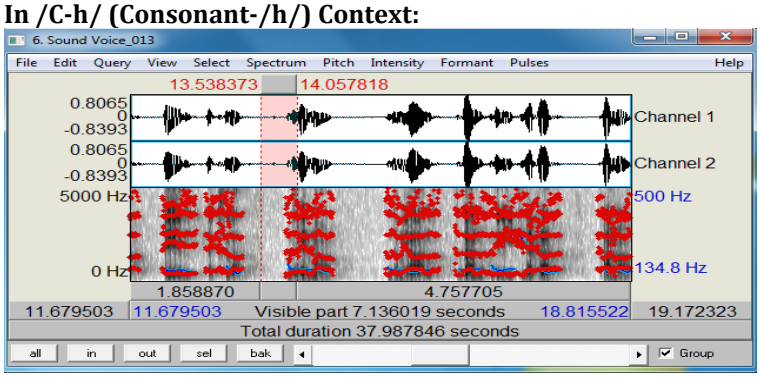


All male speakers actualized this as voiced, alveolar plosive consonant. First formant (F1) value deviated from 349 Hz (minimum) to 410 Hz (maximum) and Second formant value deviated from 1544 Hz (minimum) to 1735 Hz (maximum). The mean formant valued of First Formant (F1) and Second Formant (F2) were 378 Hz and 1640 Hz.

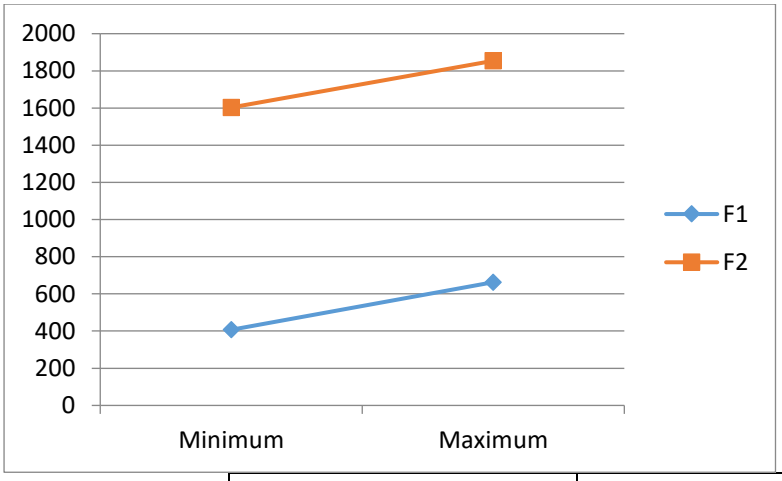


Value	F1	F2
Minimum	349	1544
Maximum	410	1735
Average	378	1640

In /C-h/ (Consonant-/h/) Context:



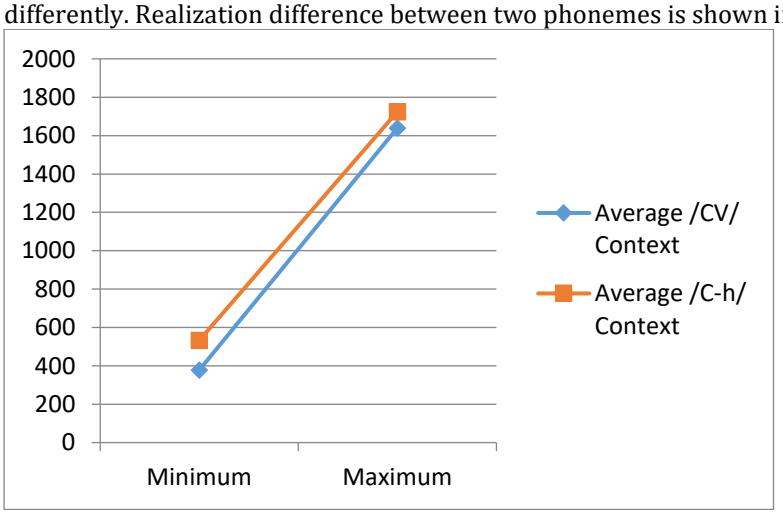
All Pakistani male speakers actualized this /d/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. Difference of realization of /d/ sound were shown in the formant values.



Value	F1	F2
Minimum	407	1603
Maximum	663	1854
Average	533	1725

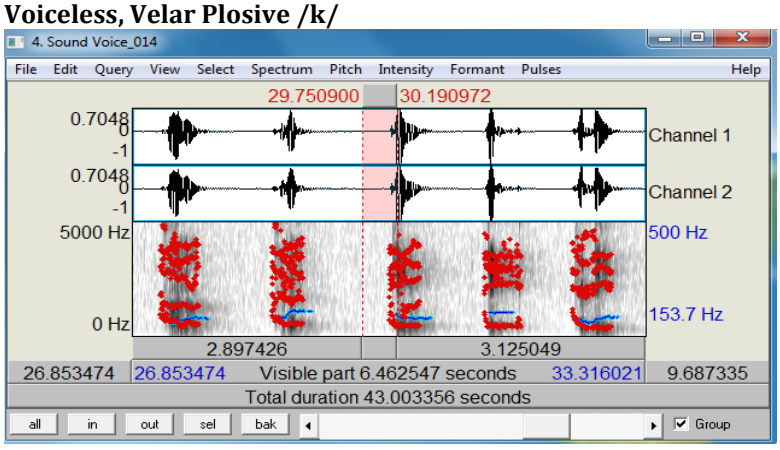
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.

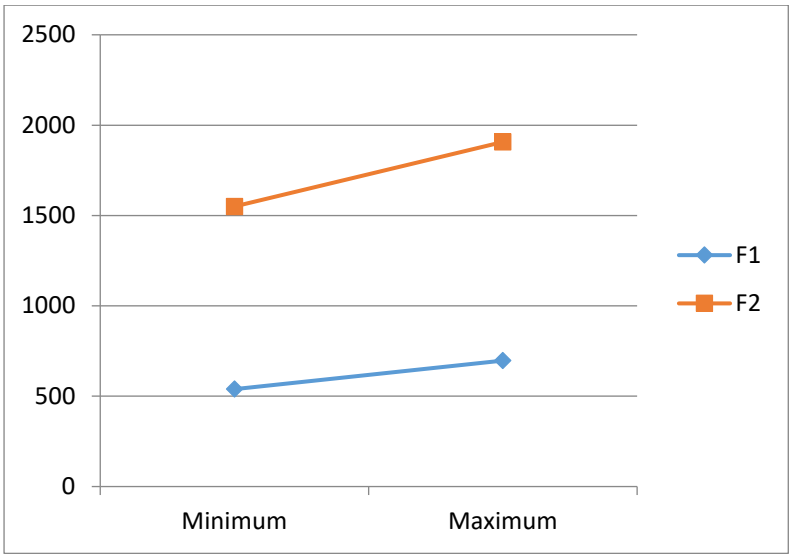


In /CV/ (Consonant-Vowel) Context:

Voiceless, Velar Plosive /k/

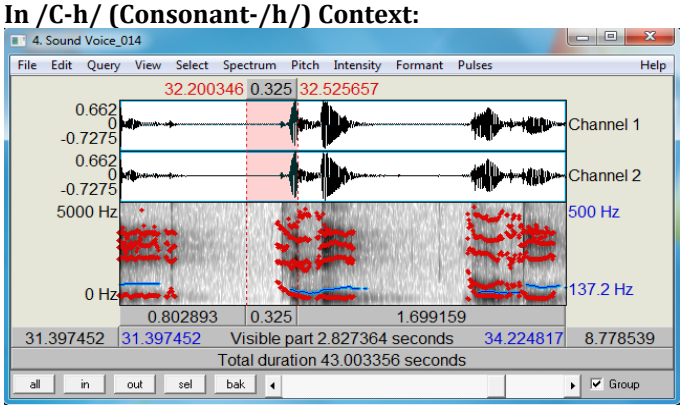


All male speakers actualized this as voiceless, velar plosive consonant. First formant (F1) value deviated from 539 Hz (minimum) to 697 Hz (maximum) and Second formant value deviated from 1550 Hz (minimum) to1907 Hz (maximum).

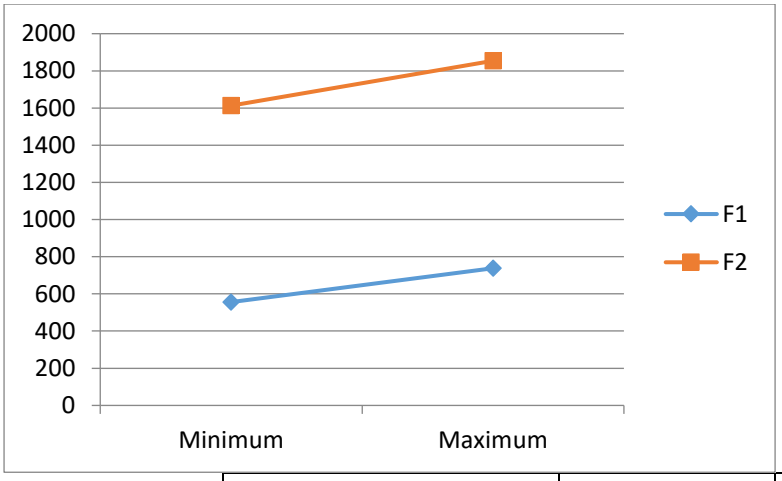


Value	F1	F2
Minimum	539	1550
Maximum	697	1907
Average	616	1729

In /C-h/ (Consonant-/h/) Context:



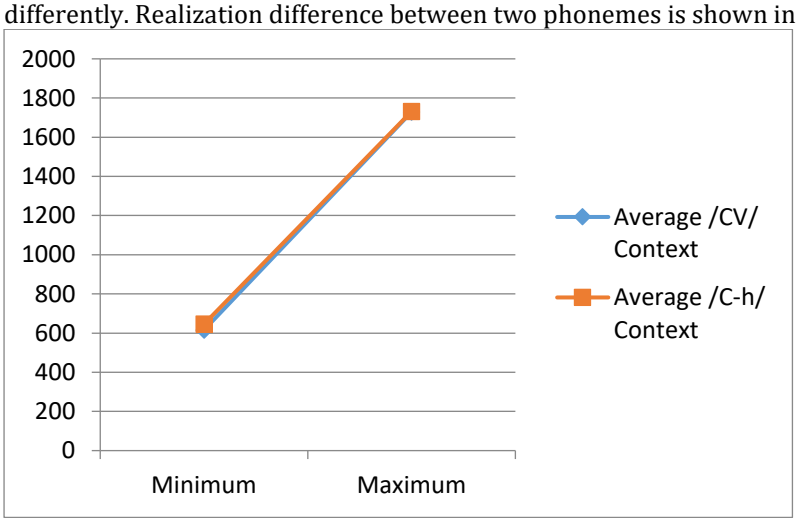
All Pakistani male speakers actualized this /k/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 556 Hz (minimum) to 738 Hz (maximum) and Second formant value deviated from 1613 Hz (minimum) to 1854 Hz (maximum).



Value	F1	F2
Minimum	556	1613
Maximum	738	1854
Average	646	1732

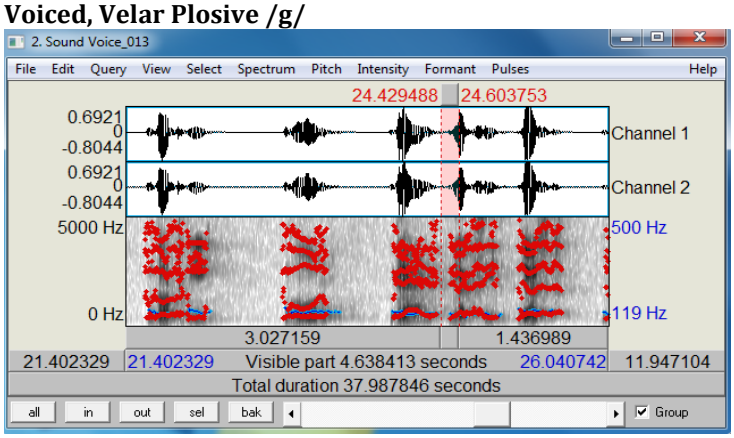
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.

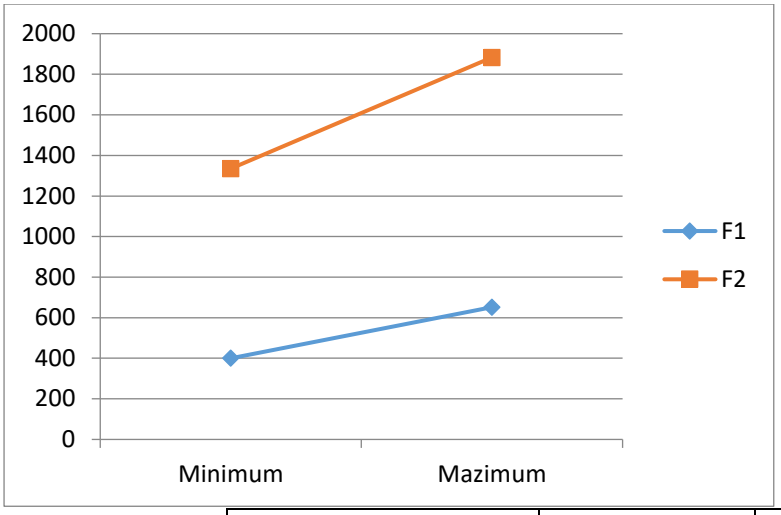


In /CV/ (Consonant-Vowel) Context:

Voiced, Velar Plosive /g/

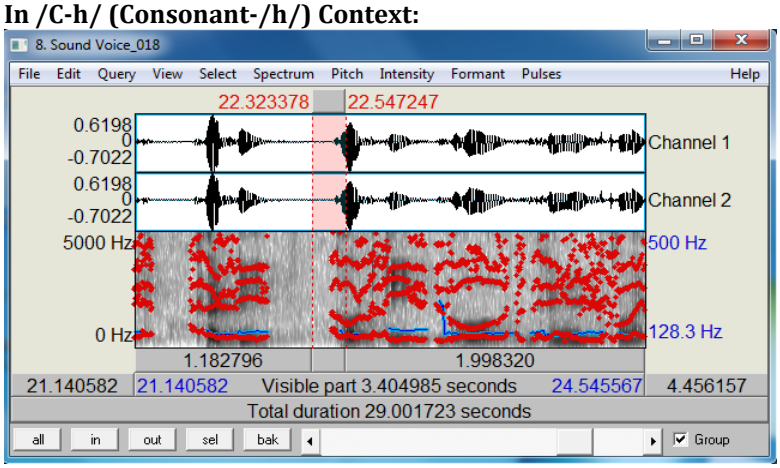


All male speakers actualized this as voiced, velar plosive consonant. First formant (F1) value deviated from 400 Hz (minimum) to 652 Hz (maximum) and Second formant value deviated from 1335 Hz (minimum) to 1883 Hz (maximum).

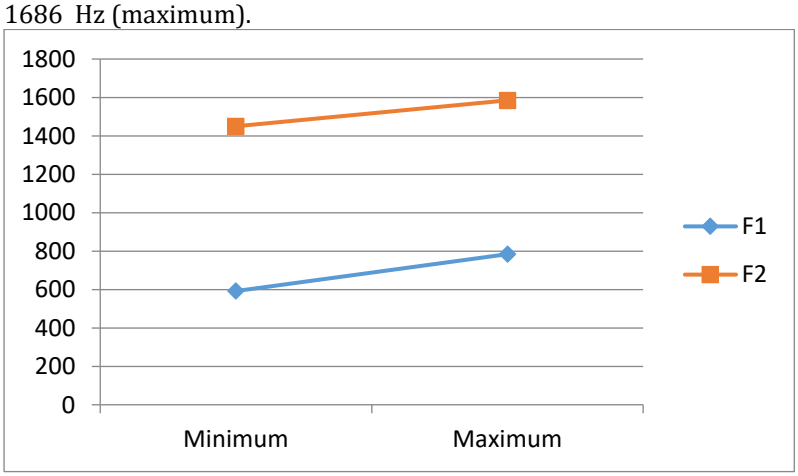


Value	F1	F2
Minimum	400	1335
Maximum	652	1883
Average	524	1607

In /C-h/ (Consonant-/h/) Context:



All Pakistani male speakers actualized this /g/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 592 Hz (minimum) to 784 Hz (maximum) and Second formant value deviated from 1450 Hz (minimum) to 1686 Hz (maximum).

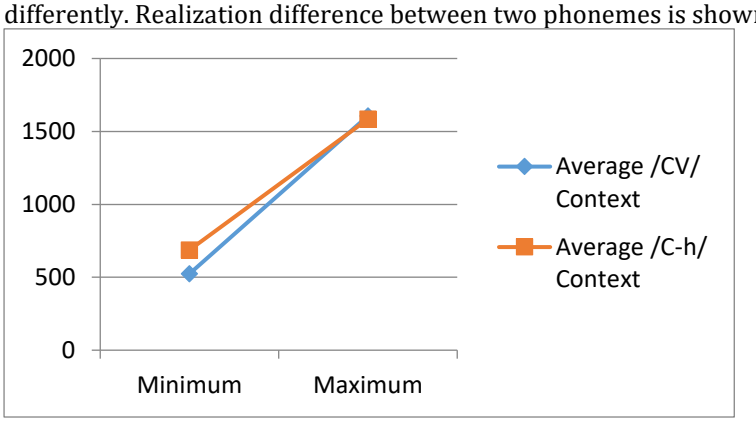


Value	F1	F2
Minimum	592	1450

Maximum	784	1686
Average	687	1585

/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.



Analysis of Female Sounds

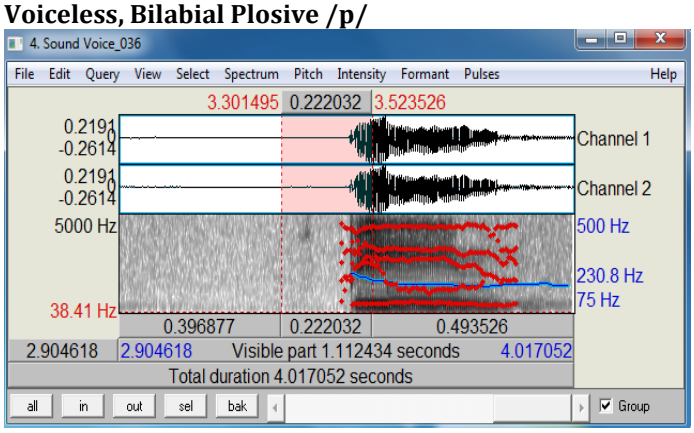
Female speakers have greater formants than male speakers do. Therefore, their sounds were separately analyzed. Process of analysis and investigation of women speakers was same.

/CV/ and /C-h/Context:

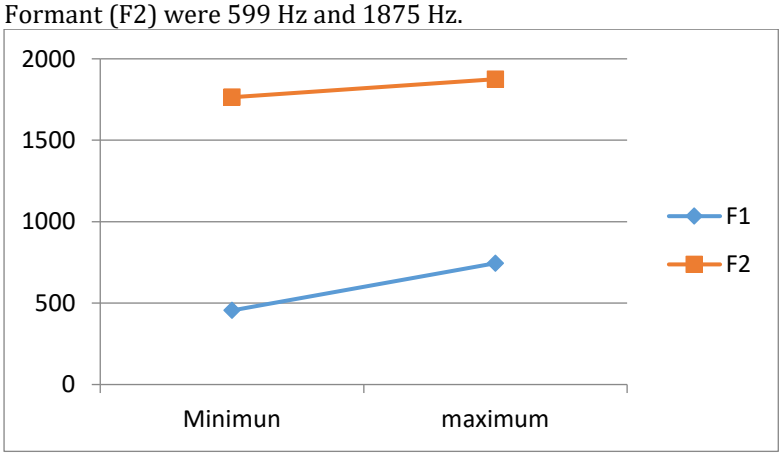
The seven consonants are conferring individually in /CV/ and /CCV/ context.

In /CV/ (Consonant-Vowel) Context:

Voiceless, Bilabial Plosive /p/

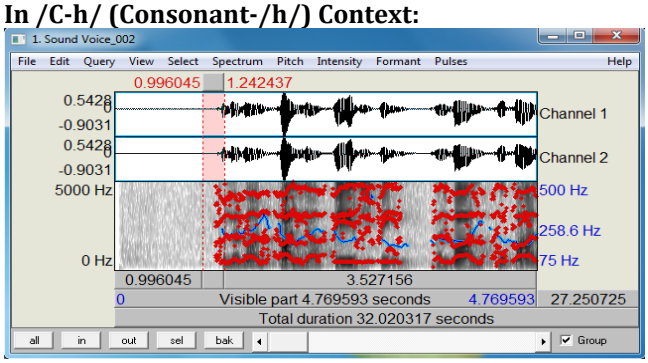


All female speakers actualized this as voiceless, bilabial plosive consonant. First formant (F1) value deviated from 455 Hz (minimum) to 745 Hz (maximum) and Second formant value deviated from 1764 Hz (minimum) to 1989 Hz (maximum). The mean proportion formant value of First Formant (F1) and Second Formant (F2) were 599 Hz and 1875 Hz.

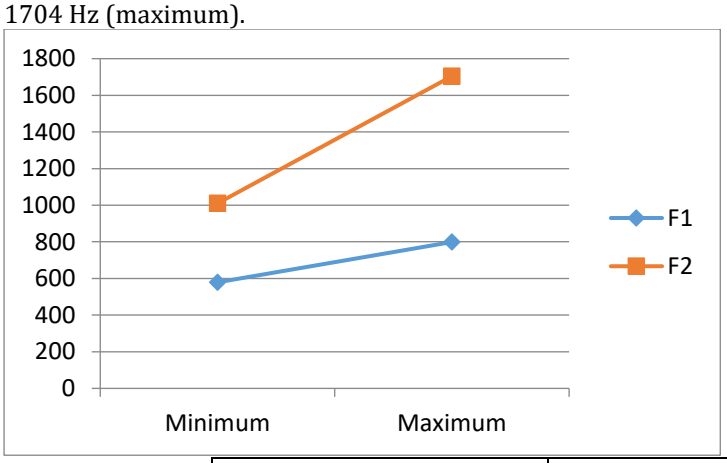


Value	F1	F2
Minimum	455	1764
Maximum	745	1989
Average	599	1875

In /C-h/ (Consonant-/h/) Context:



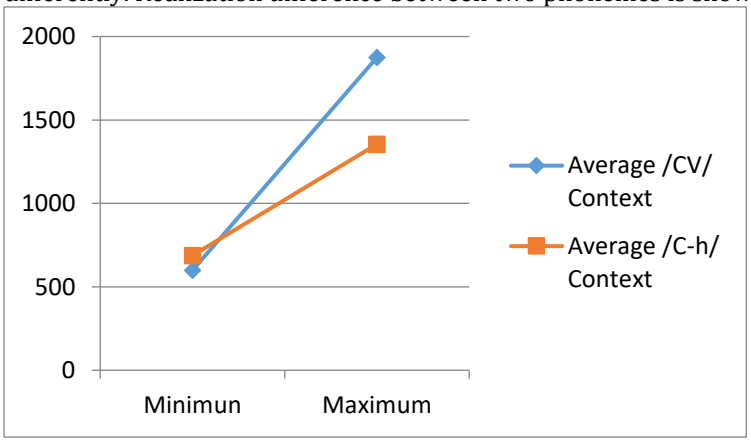
All Pakistani female speakers actualized this /p/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 579 Hz (minimum) to 799 Hz (maximum) and Second formant value deviated from 1010 Hz (minimum) to 1704 Hz (maximum).



Value	F1	F2
Minimum	579	1010
Maximum	799	1704
Average	688	1355

/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

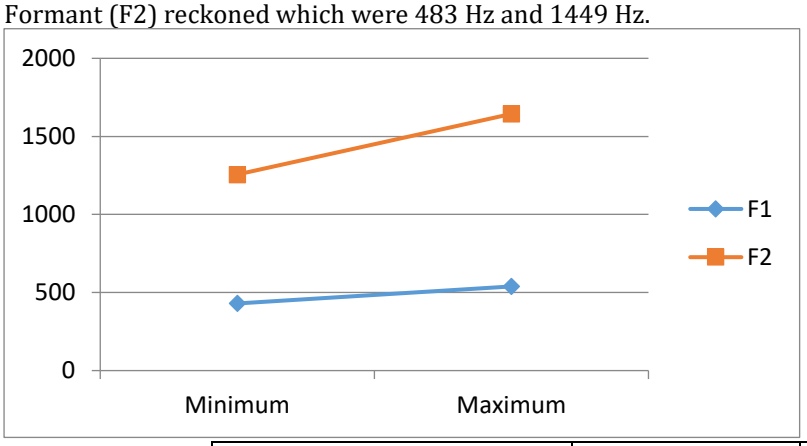
Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.



In /CV/ (Consonant-Vowel) Context:

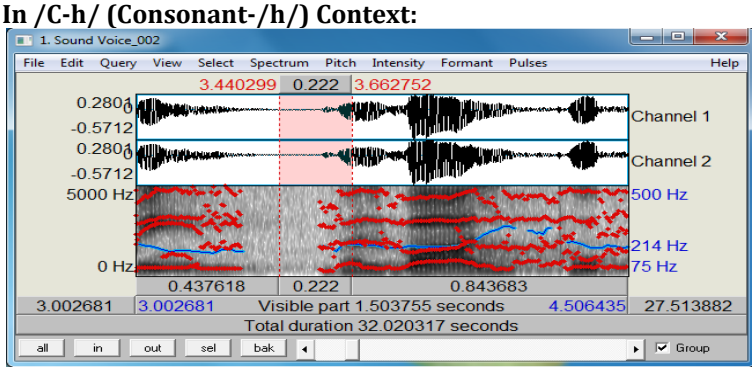
Voiced, Bilabial Plosive /b/

All female speakers actualize this word as voiced, bilabial plosive consonant. First formant (F1) value deviates from 430 Hz (minimum) to 539 Hz (maximum) and Second formant value deviate from 1256 Hz (minimum) to 1644 Hz (mximum). The mean proportion formant value of First formant (F1) and Second Formant (F2) reckoned which were 483 Hz and 1449 Hz.

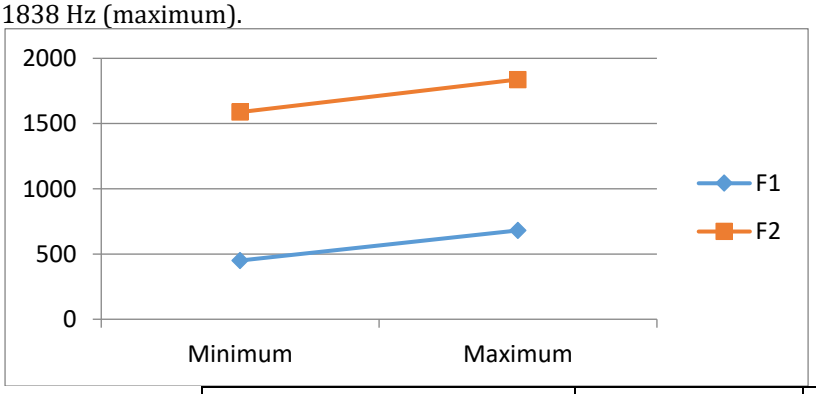


Value	F1	F2
Minimum	430	1256
Maximum	539	1644
Average	483	1449

In /C-h/ (Consonant-/h/) Context:



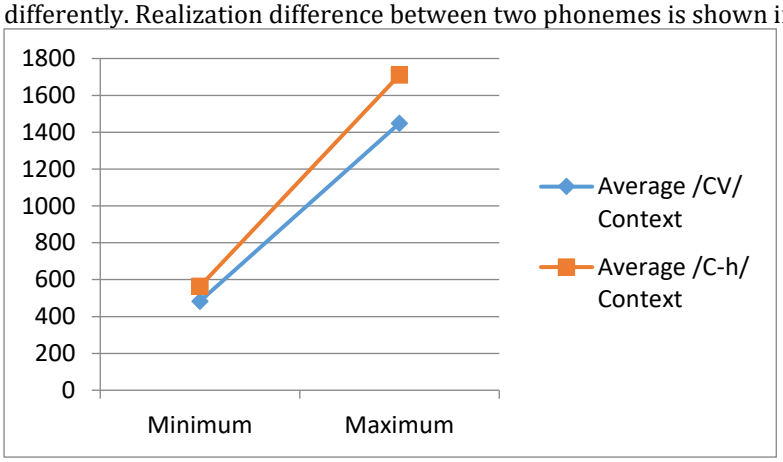
All Pakistani female speakers actualized this /b/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 450 Hz (minimum) to 681 Hz (maximum) and Second formant value deviated from 1588 Hz (minimum) to 1838 Hz (maximum).



Value	F1	F2
Minimum	450	1588
Maximum	681	1838
Average	564	1711

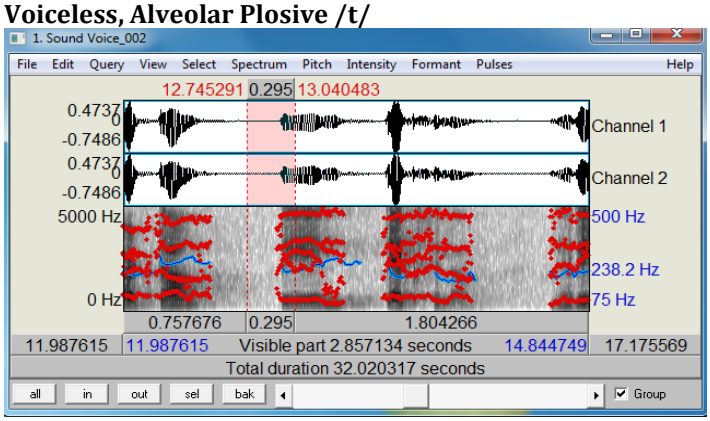
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.

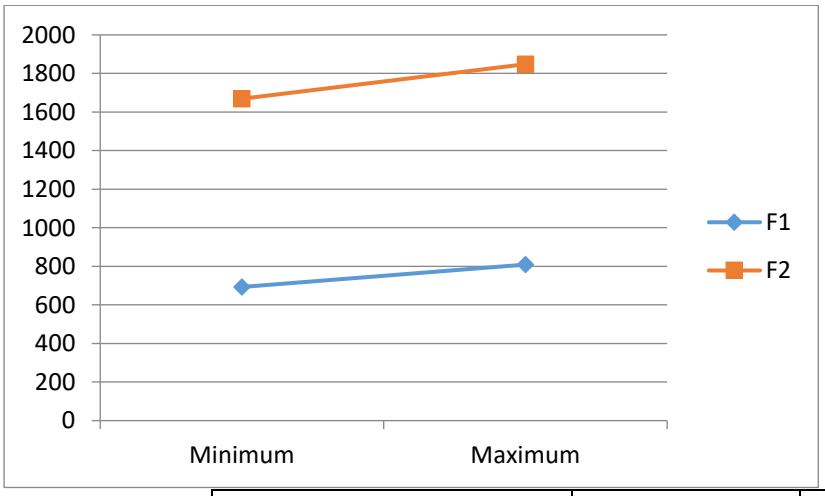


In /CV/ (Consonant-Vowel) Context:

Voiceless, Alveolar Plosive /t/

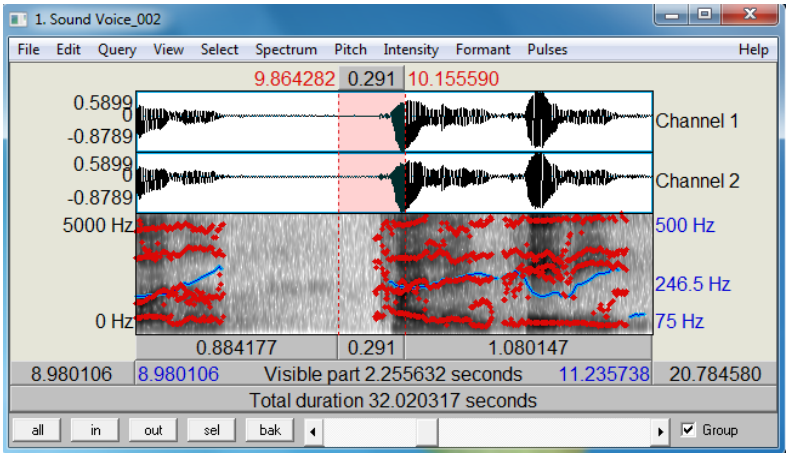


All female speakers actualized this word as voiceless, alveolar plosive consonant. First formant (F1) value deviated from 693 Hz (minimum) to 809 Hz (maximum) and Second formant value deviated from 1669 Hz (minimum) to 1848 Hz (maximum). The mean proportion formant valued of First formant (F1) and Second Formant (F2) were 750 Hz and 1755 Hz.

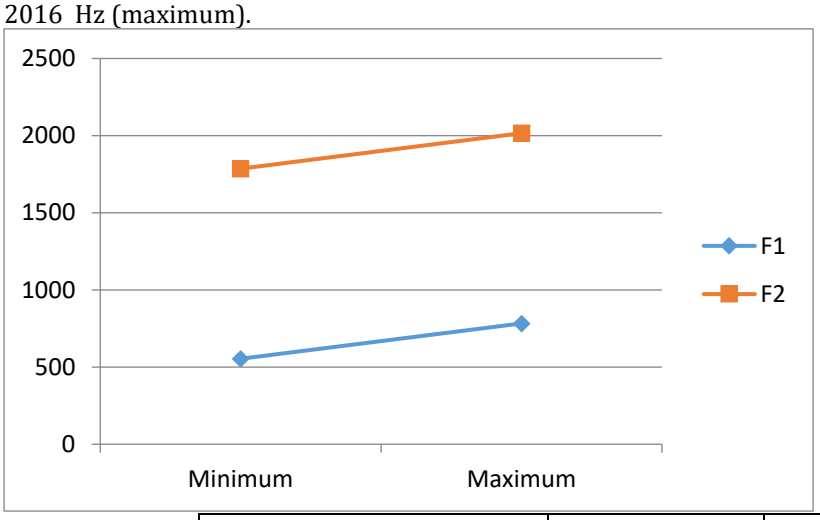


Value	F1	F2
Minimum	693	1669
Maximum	809	1848
Average	750	1755

In /C-h/ (Consonant-/h/) Context:



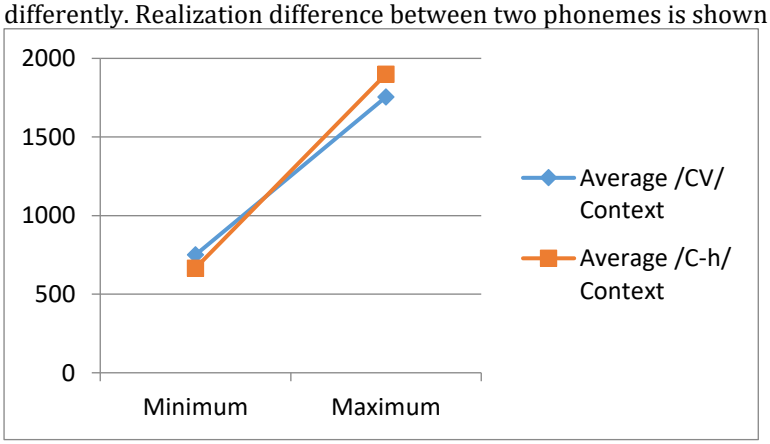
All Pakistani female speakers actualized this /t/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 554 Hz (minimum) to 783 Hz (maximum) and Second formant value deviated from 1786 Hz (minimum) to 2016 Hz (maximum).



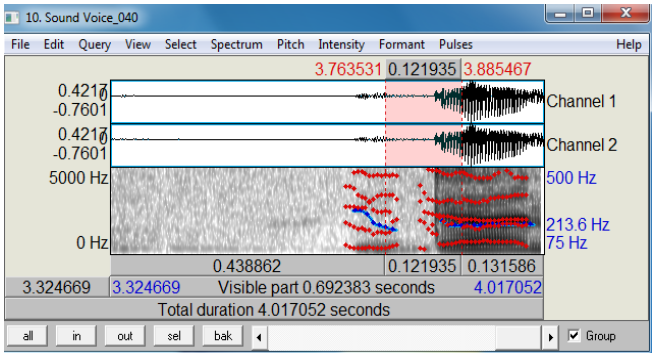
Value	F1	F2
Minimum	554	1786
Maximum	783	2016
Average	666	1900

/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

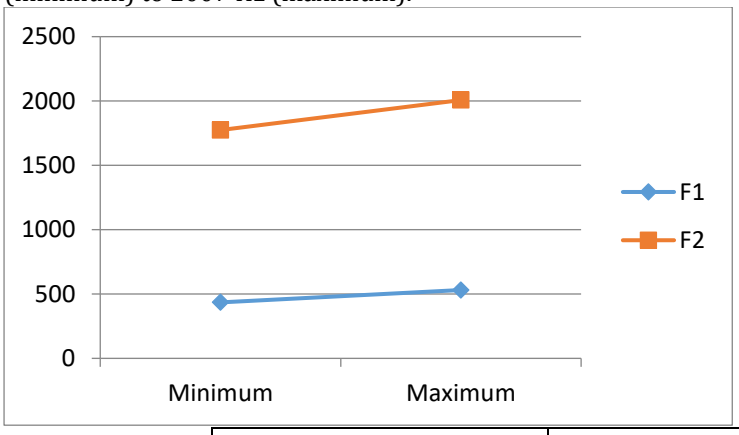
Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.



In /CV/ (Consonant-Vowel) Context: Voiced, Alveolar Plosive /d/

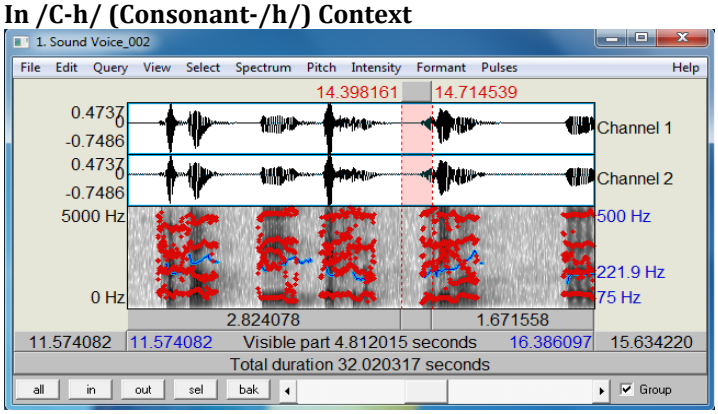


All female speakers actualized this word as voiced, alveolar plosive consonant. First formant (F1) value deviated from 435Hz (minimum) to 531 Hz (maximum) and Second formant value deviated from 1774 Hz (minimum) to 2007 Hz (maximum).

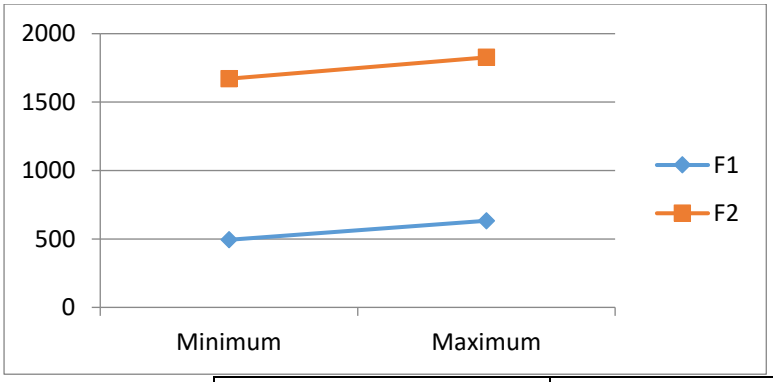


Value	F1	F2
Minimum	435	1774
Maximum	531	2007
Average	481	1888

In /C-h/ (Consonant-/h/) Context



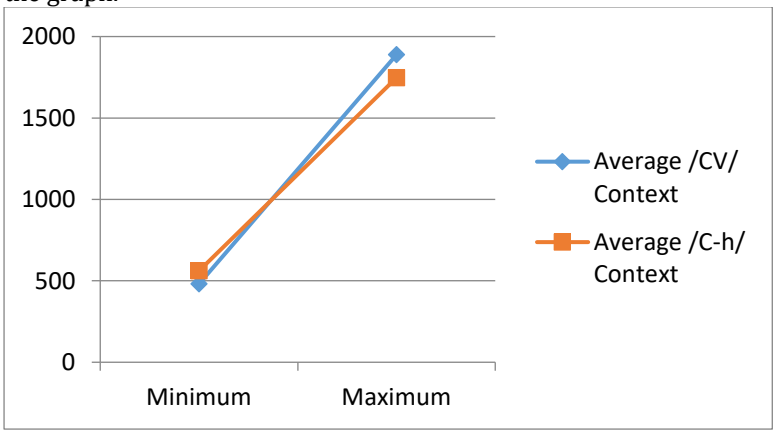
All Pakistani female speakers actualized this /d/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. d First formant (F1) value deviated from 494 Hz (minimum) to 633 Hz (maximum) and Second formant value deviated from 1671 Hz (minimum) to 1827 Hz (maximum).



Value	F1	F2
Minimum	494	1671
Maximum	633	1827
Average	561	1747

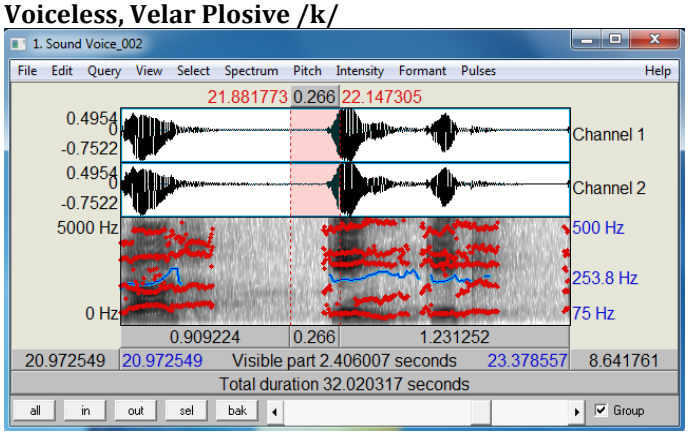
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Realization difference between two phonemes is shown in the graph.

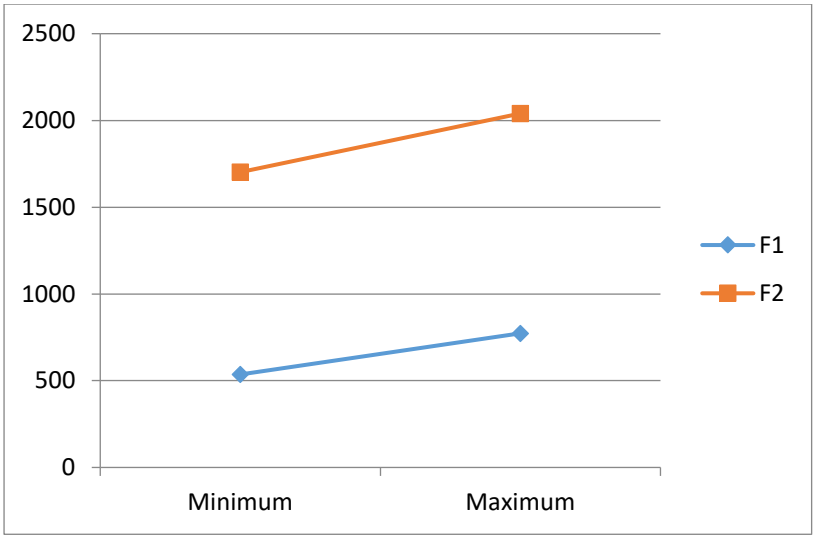


In /CV/ (Consonant-Vowel) Context:

Voiceless, Velar Plosive /k/

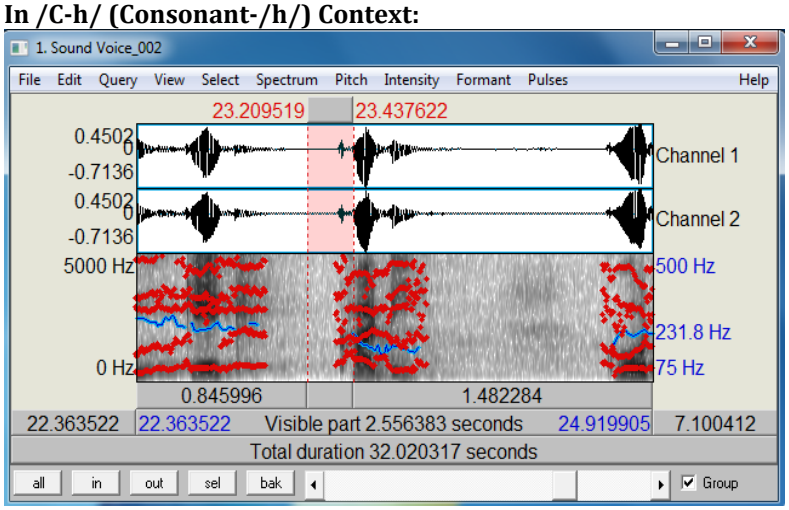


All female speakers actualized this word as voiced, velar plosive consonant. First formant (F1) value deviated from 536 Hz (minimum) to 773 Hz (maximum) and Second formant value deviated from 1702 Hz (minimum) to 2040 Hz (maximum). The mean formant values of First Formant (F1) and Second Formant (F2) were 652 Hz and 1870 Hz.

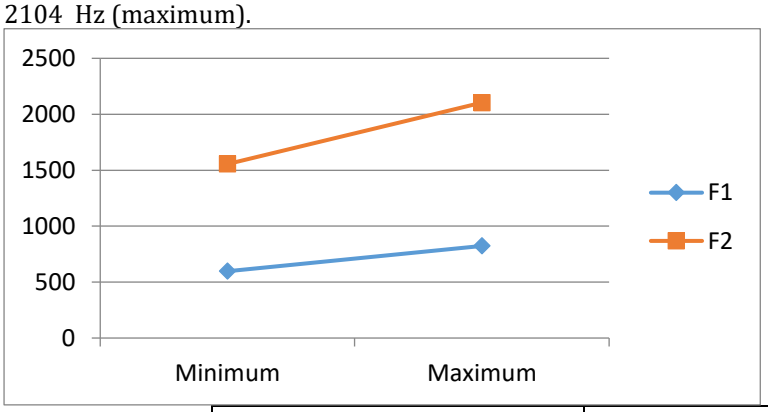


Value	F1	F2
Minimum	536	1702
Maximum	773	2040
Average	652	1870

In /C-h/ (Consonant-/h/) Context:



All Pakistani female speakers actualized this /k/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 597 Hz (minimum) to 823 Hz (maximum) and Second formant value deviated from 1555 Hz (minimum) to 2104 Hz (maximum).

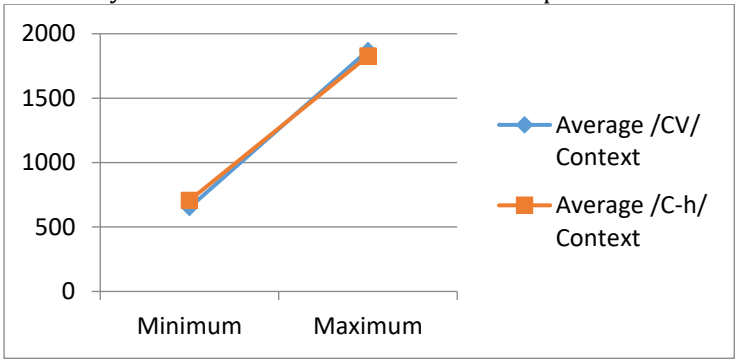


Value	F1	F2
Minimum	597	1555

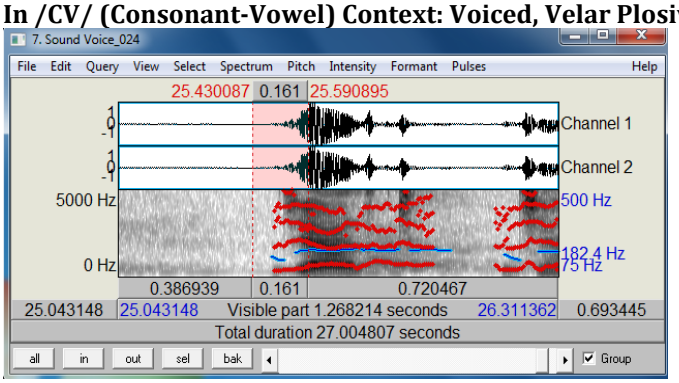
Maximum	823	2104
Average	707	1827

/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

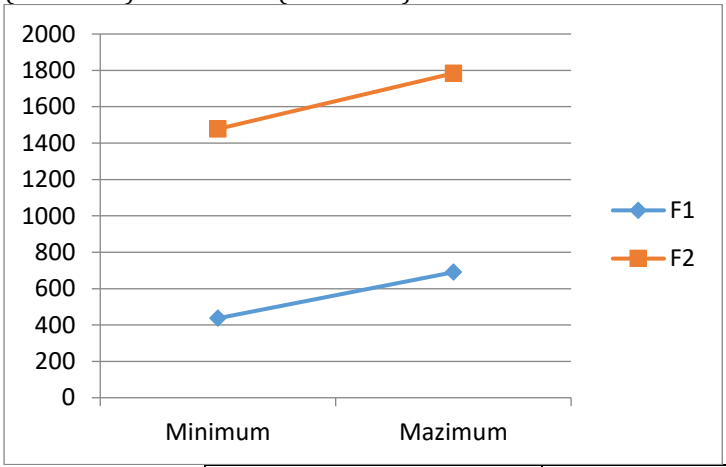
Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph.



In /CV/ (Consonant-Vowel) Context: Voiced, Velar Plosive /g/

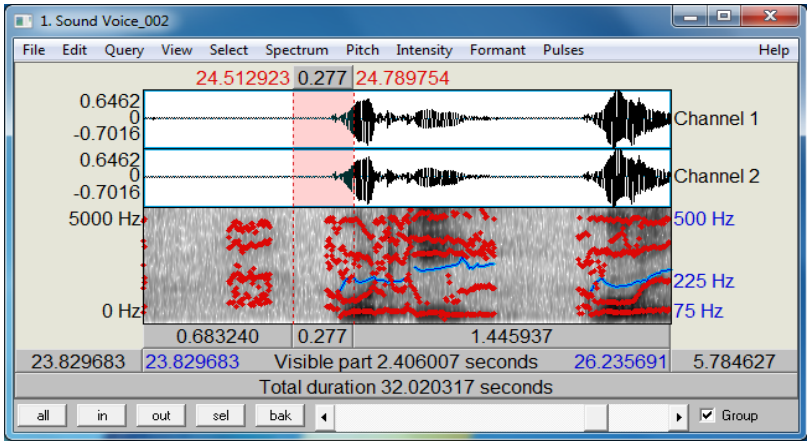


All female speakers actualized this as voiced, velar plosive consonant. First formant (F1) value deviated from 437 Hz (minimum) to 690 Hz (maximum) and Second formant value deviated from 1478 Hz (minimum) to 1784 Hz (maximum).

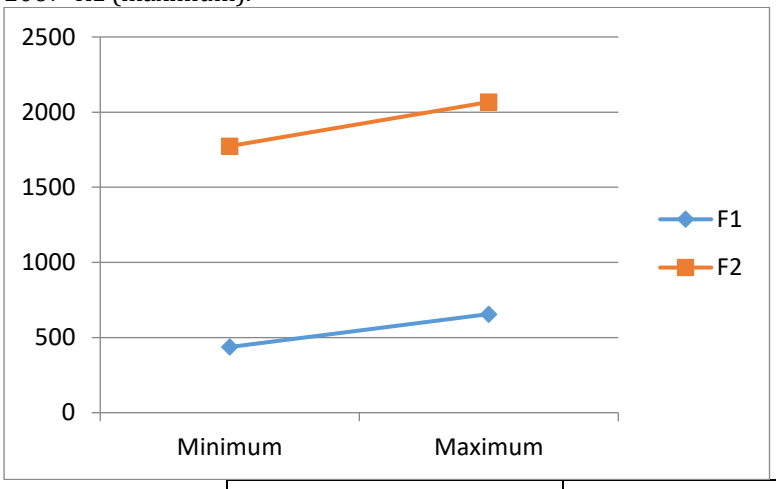


Value	F1	F2
Minimum	437	1478
Maximum	690	1784
Average	563	1629

In /C-h/ (Consonant-/h/) Context:



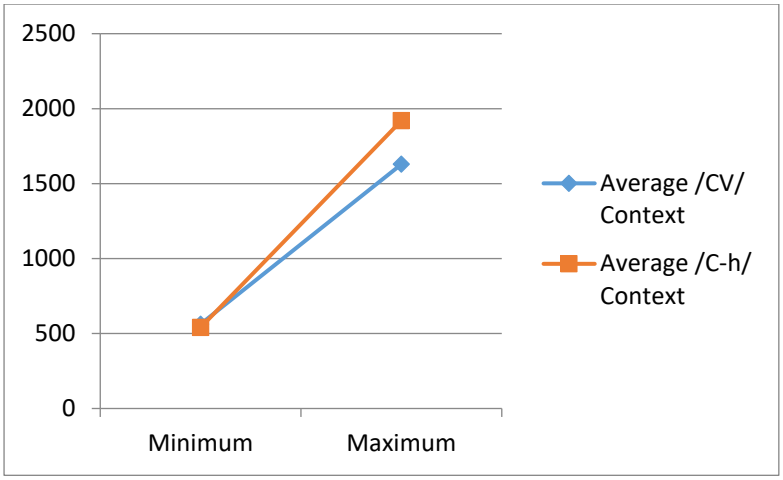
All Pakistani female speakers actualized this /g/ sound in this context in a different way. This difference is because of the instigation on Pakistani English by Urdu language. First formant (F1) value deviated from 437 Hz (minimum) to 656 Hz (maximum) and Second formant value deviated from 1774 Hz (minimum) to 2067 Hz (maximum).



Value	F1	F2
Minimum	437	1774
Maximum	656	2067
Average	541	1920

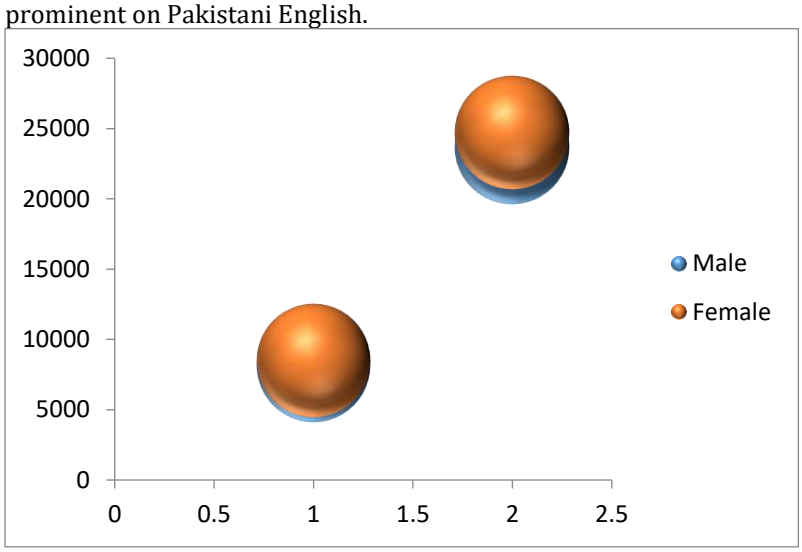
/CV/ (Consonant-Vowel) vs /C-h/ (Consonant-/h/) Context:

Pakistani speaker actualized these two 'context' sounds as two different phonemes. It was marked that Pakistani speakers can set off these two sounds. Pakistani speakers have obvious ability to pronounce them differently. Realization difference between two phonemes is shown in the graph. This graph provides a complete description of difference between the pronunciations of /g/ sound in two different contexts. This graph clearly shows that Pakistani English have influence of L1 (First language) Urdu Language. Pakistani speakers have ability to pronounce this consonant differently in two different contexts.



Male VS Female Speakers

Comparative analysis of speeches of male and female speakers showed similar patterns. Pakistani male and female speakers realized the sounds almost in the same way. Pakistani English speakers pronounced these consonants as plosives. Number of plosives in Pakistani English are twelve. Influence of Urdu language is prominent on Pakistani English.



This graph explains a clear view of Pakistani male and female speakers. There is very slight difference of realization of sounds between them. Difference between the speech of male and female speakers is natural. Data analysis of both male and female shows that they have almost similar realization of consonants sounds. Influence of Urdu language on Pakistani English is almost equally shown by the male and female speakers. All Pakistani speakers, male and female pronounce these seven consonants as plosives. i.e. /p/, /b/, /t/, /d/, /k/, /g/. This quality shows that Pakistani English have twelve plosive sounds realized by Pakistani female speakers and Pakistani male speakers.

V. CONCLUSION

It was beheld that Pakistani male speakers and female speakers did show a specific pattern of realization of all these seven consonants. Influence of Urdu language is observable on Pakistani English. Pakistani speakers realize /p/ sound differently in two different contexts. Realization of /b/, /t/, /d/,/k/, /g/ and /dʒ/ also exhibited the similar pattern. Pakistani speakers pronounced every one of these consonant as two different consonants. Data analysis and graphs clearly showed that difference. So it can be concluded that Pakistani English is a different variety of English on the basis of its consonant phonemes.

Pedagogical Implications

English is acknowledged as a world language. English has innumerable native and non-native speakers. This disperse of English has altered our concepts about English. It also brings a shift in practice of ELT (English language Teaching). Now content of ELT (English language teaching) courses is changed, and is different from the dominated discourse of English as a native language (ENL). University courses in English ought to amplify students' fascination of the verity that there are different verities of English language.

As a teacher and as a researcher we ought to instruct learners, how they can verbalize specific patterns of sound. Teacher ought to direct learners to conceive and observe the means in which sounds produce. Acoustic analysis and phonetic analysis assists the tabulate of pronunciation of speaker beyond limitations of language and can be inspect as a narration of accent of speakers. It also assists to compare genders and comparison of distorted and normal speech. Pronunciation patterns can be highlight through auditory transcription. It is very difficult to point out the pronunciation patterns through listening alone.

A supplementary benefit of the study is that it would be a gild track for future researchers and scholars. Researchers may take on studies on nasal sounds, oral sounds, stops, fricatives, affricatives, liquids and approximants in Pakistani English. They might expand the research to a higher level and make Pakistani English an international recognizable English language variety.

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