



**ANALYSIS OF PHONOLOGICAL INTERFERENCE OF JAVANESE
AND SUNDANESE SPEAKING ENGLISH USING A GENERATIVE
PHONOLOGY APPROACH**

A THESIS

In Partial Fulfillment of the Requirements for
the Sarjana Degree Majoring Linguistics in English Department
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PRONOUNCEMENT

The writer honestly confirms that he writes this thesis by himself and without taking any results from other researchers in S-1, S-2, and S-3 and in diploma degree of any university. In addition, the researcher verifies that he does not quote any material from other publication or someone's work except for the references mentioned.

Semarang, June 21st 2019

Rozan Fahreza

MOTTO AND DEDICATION

*Happiness can be found even in the darkest of time,
if one only remembers to turn on the light*

Albus Percival Wulfric Brian Dumbledore

*This thesis is dedicated to
my beloved family and
to my future love and children.*

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VALIDATION

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Finally, the writer expects that this thesis will be useful to the reader who wishes to learn something related to the topic of this study.

Semarang, June 21st 2019

Rozan Fahreza

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LIST OF ABBREVIATIONS

JL : Javanese Language

SL : Sundanese Language

RP : Received Pronunciation

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ABSTRACT

This thesis deals with the phonological interference of Javanese and Sundanese language in the pronunciation of words in English as a second language. Although English is taught to students from elementary school until university level, they still face many obstacle to utter English words correctly. This research aims to analyse the influence of L1 phonological system towards L2 pronunciation and to describe the pronunciation errors using distinctive features. Data collection methods in this research are observation, interview with recording technique, and note-taking. 10 students whose native language is Javanese and the other 10 students whose native language is Sundanese were asked to speak 200 English words. Then, their pronunciations were recorded and the data were transcribed by using IPA symbols and analysed using theory of Phonological Interference by Weinreich (1979) and Generative Phonology by Schane (1973). The results of this study show that both Javanese and Sundanese speakers create phonological interference when pronouncing English sounds. The research also shows some factors determining the phonological interference to the students. There are several types of interference found from the learners' pronunciation; substitution, under-differentiation, addition, elision, lenition and aspiration. The distinctive features shows the phonological processes and sound changes in place and manner of articulation.

Keywords: Javanese, Sundanese, phonological interference, distinctive features, pronunciation

ABSTRAK

Penelitian ini membahas mengenai interferensi fonologis dari bahasa Jawa dan Sunda dalam pelafalan kata-kata bahasa Inggris sebagai bahasa kedua. Meskipun bahasa Inggris sudah diajarkan pada para murid sejak tingkat sekolah dasar hingga perguruan tinggi, mereka masih menemukan kesulitan dalam mengucapkan kata-kata bahasa Inggris dengan benar. Tujuan dari penelitian ini adalah untuk menganalisis pengaruh sistem fonologis bahasa pertama (L1) kepada pelafalan bahasa kedua (L2) dan untuk menjelaskan kesalahan pelafalan menggunakan ciri-ciri pembeda. Pengumpulan data penelitian dalam penelitian ini adalah observasi, wawancara dengan teknik rekam dan pencatatan. 10 siswa yang bahasa aslinya adalah bahasa Jawa dan 10 siswa lain yang bahasa aslinya adalah bahasa Sunda diminta untuk mengucapkan 200 kata bahasa Inggris. Kemudian, pengucapan mereka direkam dan data tersebut ditranskripsikan menggunakan simbol-simbol IPA dan dianalisis menggunakan teori Interferensi Fonologis oleh Weinreich (1979) dan Fonologi Generatif oleh Schane (1973). Hasil dari studi ini menunjukkan bahwa penutur kedua bahasa Jawa dan Sunda menghasilkan interferensi fonologis ketika melafalkan bunyi-bunyi bahasa Inggris. Penelitian ini juga menunjukkan beberapa faktor yang menentukan interferensi fonologis kepada para siswa. Ada beberapa jenis interferensi yang ditemukan dari pelafalan pelajar; pergantian bunyi, perbedaan fonem yang berkekurangan, penambahan bunyi, pelepasan bunyi, pelemahan bunyi dan aspirasi bunyi. Ciri-ciri pembeda menunjukkan proses-proses fonologis dan pergantian bunyi dalam tempat dan cara pengucapan bunyi.

Kata kunci: Bahasa Jawa, bahasa Sunda, interferensi fonologis, ciri-ciri pembeda, pelafalan

CHAPTER I

INTRODUCTION

This chapter explains background knowledge underlying this thesis. To carry out research, one needs to discover the problems in order to observe something comprehensively. The writer then provides several previous studies to keep a novelty of this thesis from the previous ones. Finally, the writer completes this chapter with an outline or writing organization of this thesis.

1.1 Background of the Research

Language of a society is different from another, especially in Indonesia where hundreds of local languages are spoken across the country. It has been clear that most Indonesians speak at least two different languages, their local language and Indonesian language. Based on the number of speakers there are two most widely spoken local languages in Indonesia which are Javanese Language (JL) and Sundanese Language (SL). The former has 84 million speakers mostly in Central and East Java, while the latter has 34 million speakers who are inhabitants of West Java. Though Indonesian have learned two languages, English is a mandatory subject in schools.

English nowadays has been taught in any level of education from elementary to university. The era of globalization and modernization have increased significant use of English in Indonesia. The students in university find it difficult to learn and speak English words. This problem may be linked to differences of their first language and English. According to Ramelan (1977) the difficulties faced by the

learners are connected to learning new sound systems, new vocabularies, and various ways to arrange words into sentences. The first language spoken by the speakers in daily social interaction has made influences on the other language that they learn. Javanese and Sundanese speakers have used their local languages as the first language, but learning English will be a difficult task as the system of these languages works differently. Since childhood the speakers have been using their mother tongue and this habit has been deeply implanted. The movement and the way they produce sounds are set to follow the rules of their native language. Thus, it is difficult to adapt the changes in producing foreign language sounds. In phonological aspect the difficulties are caused by the differences in phonological system of their language (L1) and English (L2).

Although there are many similarities of sound between JL or SL compared to English, the transfer from L1 into L2 is not always positive. Some sounds in English are inexistent in JL and SL phonological systems. For instance, Sundanese speakers tend to change the labiodental fricative /f, v/ into bilabial stop /p/. This problem, in fact, is the impact of inexistence of the sound in SL so that the speakers are unable to differ fricative and stop sound. Furthermore, even for college students who have learned English for years, this influence is still hard to remove.

Flege (1987:48) divided sound transfer from L1 to L2 in three types. Firstly, when there are no significant differences between L1 and L2 or when the difference is too small to notice. In other word, the sounds in both languages are identical. This type of transfer leads to positive transfer as the learners can easily understand

and produce the target language sounds. Secondly, when there are new sounds in L2 which are completely different compared to L1 phonological system. Thirdly, when there are similar sounds in L2 which have the same IPA symbol representation but are different in phonetics. The first type of transfer is easy for learners to perceive, but the second and final type can lead to pronunciation errors and negative transfer.

This research is limited to the English pronunciation of university students whose first language is Javanese or Sundanese when learning English as a second language. The focus of the research is the phonological and phonetic interferences of student's L1 towards producing English sounds. However, the writer focuses specifically on the plosive and fricative consonants as these types of sound have many pronunciation problems from Javanese and Sundanese speakers. The writer decided to conduct this research because several studies unveiled that the phonological system differences may cause problems for the learners, but the conclusion did not explain how one sound is different from another one. Thus, this research will try to elaborate the discussion on the distinctive feature of the sounds by comparing the correct pronunciation of words to the pronunciation of the learners. In doing so, the writer is able to prove that the learners' pronunciation is incorrect and their first language influence their ability to produce second language sounds.

1.2 Research Problems

This research focuses mainly on the phonological interference of Javanese and Sundanese language in the pronunciation of English language. Two problems arose according to the above explanation.

1. What are the effects of phonological differences between L1 and L2 on the students pronunciation?
2. What kind of errors are made by the students when pronouncing English words?

1.3 Objectives

Through objective of the research, the writer hopes to achieve some accomplishments. Based on the research problem, this study has three objectives:

1. To describe the effect of phonological differences between Javanese and Sundanese on English phonological processes of students.
2. To analyse the errors of pronunciation of JL and SL user when producing English words.
3. To explain the differences of incorrect and correct sound pronunciation using distinctive features.

1.4 Previous Research

In conducting this research, the writer requires previous studies to complete this research so that it can be more relevant. The writer refers to several previous research that tends to discuss phonological interference and pronunciation errors. Most of the previous studies discussed the influence of first language phonological

system difference in learning a second language. The previous studies were taken from international journals, proceedings and theses. The writer specifically reviews the previous research in purpose to search the gap between the previous studies with this research.

Dewi (2009) discussed problems in pronunciation faced by the sixth semester students of English Department of Semarang State University in pronouncing -ed ending. The objectives of the study try to show the level of students' ability in pronouncing -ed ending and to explain common difficulties faced by the students in pronouncing -ed ending. The result shows that students failed in some words containing -ed with special pronunciation such as beloved, aged, ragged and wretched. Only 26% students pronounce correctly. While most of the students could easily pronounce -ed after /t/ and /d/. This research only focuses on -ed rather than the other difficult sound in English.

On the other hand, Andi (2013) conducted an analysis on the seventh semester students in Tadulako University. The objective is to describe the difficulties faced by the students. The research involved 20 English students of the English Department of Tadulako University who already had experiences in learning English but still had problems in pronouncing English words. The result shows that there are three groups of sound in English that are considered difficult for the students. The first group is sounds that do not exist in Indonesian such as / æ, ʌ, ɜ, v, θ, ð /. The second group is the sounds that have different distribution such as / b, d, g, z, s, ʃ, dʒ /. These sounds do not exist in the final positions of the word of

Bahasa Indonesia. The third group is that the spelling of English words. For examples: /s/ is sometimes pronounced as /z/ in English, and /a/ is also sometimes pronounced as /æ, ə, e/. These different causes difficulties for Indonesian students learning English, as result the students fail to produce sounds correctly. Although the research provides detailed analysis on the differences between English and Indonesian, the author does not provide the reason students face difficulties in pronouncing English words.

Widyaningtyas (2014) analysed the phonological errors made by second semester students of Study Program of English at Brawijaya University regarding English consonants. The study focuses on the 24 English consonants. The research revealed two questions: 1) English consonants pronunciation error by the students and 2) possible factors that influence their error. The writer used Kelly's and Ladefoged et al.'s theories to discuss the first question. Meanwhile, in answering the second research problem, the writer used Kenworthy and Piske et al.'s theories. The research explains the errors in pronunciation, but did not describe the feature of each sounds. The data were taken from second semester students who have not mastered English pronunciation. The writer should have examined the advanced students too in order to get different data.

Anjarsari (2015) conducted research on phonological and phonetic interference of first language of Turkish, Malaysian and English speakers when learning Indonesian as a second language. The objectives of the research are to find the correlation between the phonological system differences of L1 and L2 compared

to the degree of phonic interference. The writer used observation and interview with recording technique to collect data. The recorded sounds then analyzed using theory of Distinctive Feature and Phonic Interference. The results show that there are four kind of phonic interferences which are substitution, under-differentiation, over-differentiation and re-interpretation. Secondly, the research prove that the greater number of differences in phonological system affects the greater number of phonic interference that occurred. Thirdly, the writer also suggest that language family plays important role in the interference in production of L2 sounds. After that, the research shows that greater phonological system of a language does not guarantee less interference. And finally, it added that identical allophones and their distribution are a significant factor to determine possible interference.

Habibi (2016) examined the segmental pronunciation problems encountered by the advanced students of Maulana Malik Ibrahim State Islamic University Malang. This study aims to find out English sounds which are problematic to even the advanced students. Habibi described English pronunciation errors made by the students based on the theories of phonetics by George Yule, Peter Roach and Daniel Jones about voicing states, manner and place of articulation. The result revealed that the problems in consonants were the substitution of sound / v z θ ð ʃ ʒ dʒ ʃ / the deletion of sound / k, g, t, s / substitution of pure vowels / i I e ə ɔ ʌ ε ʊ ɜ / and diphthongs.

Kosasih (2017) dealt with the problems faced by the students of private university in west java when learning English pronunciation. These problems are

due to the interference of the native language (Indonesia). The result shows that there are still errors of pronunciation in segmental and suprasegmental. The research emphasized teacher's participation to expose the importance of phonological awareness. This study did not describe the different features in English. For example, to what extent the sound / θ, ð / have different features. The distinctive feature could be used to define the sounds.

Furthermore, Mu'in (2017) studied the phonemic interference of students of Lambung Mangkurat University in learning English. The students' habit in using Banjarese language as L1 is considered strong. As a result, they simply apply the pattern and the phonemic rules of Banjarese language into English. The problems occurred due to different phonemic systems between two languages. Banjarese has 3 vowels, 3 diphthongs and 18 consonants while English has 12 vowels, 9 diphthongs and 24 consonants. The findings show 11 interferences done by the students speaking English. This study is a good example on how traditional language could also hamper students. However, this study did not explain the features that differ the sounds. This study also focuses on the Banjarese language as first language not Indonesian.

1.5 Writing Organization

Research should be constructed with systematical and logical explanation. Structures are made in order to form a good organization of writing. Writing Organization is how ideas are presented as well as how paragraphs and sentences

are written in research. Therefore, the research is constructed with following organization.

Chapter I is Introduction. This chapter deals with describing the background of this research and the related problems to conduct. This chapter explains the background knowledge of the research, the research problems, the objectives, and a review of several previous research. It supports the topic of the research to be more relevant before examining the data to the next step.

Chapter II is Review of Literature. This chapter is the pilot of the research in analysing and examining the data. This chapter provides the relevant theories to support the analysis of this research.

Chapter III is Research Method. This chapter is about ways to collect and analyse data. This chapter gives constraint in collecting the data. It controls the boundaries of collecting data so that the research grasps enough data to analyse.

Chapter IV is Data Analysis. It is a crucial step to discover both general findings and analysis of data. This chapter refers to relevant theories from chapter II. The analysis of the research determines next step of the research.

Chapter V is Conclusion. Chapter V is final step of the research. This chapter is to conclude the whole research from topic to findings. It demonstrates the results and the suggestions of the whole research.

CHAPTER II

REVIEW OF THE LITERATURE

In conducting this research, the writer refers to some relevant theories. This chapter will discuss further theories which are related to the topic of the research that has been presented before. The writer refers to theory of Generative Phonology and Distinctive Features by Sanford Schane and the theory of Phonological Interference by Uriel Weinrich. Furthermore, this chapter will explain the phonological system of language discussed in this research which are English, Javanese and Sundanese to better understand the similarities and differences. Detailed explanation about the this chapter will be presented below.

2.1 Theoretical Framework

This section elaborates the theoretical framework of the research. In order to grab noteworthy theory easily, the writer explains some major issues related to phonological interference: (1) Second Language Learning (2) Generative Phonology (3) Distinctive Features (4) Phonological Interference (5) Phonological System of English, Javanese and Sundanese.

2.1.1 Second Language Learning

A second language learning is different from bilingualism in the way of the learners first language ability. The 'term' bilingualism is used for the people who grow up in a society where more than one language is used. Their ability in L1 and L2 develops in similar circumstances. On the other hand, the term 'second

language' is used when someone has learned the primary of his first language, then learning a new one.

Yule (2010:187) identified that sometimes foreign language and second language learning are considered different. The former is the situation in which L2 is not generally spoken in surrounding community, while the latter is the condition where L2 is learned in community using L2 as their native language. For example, Indonesian learning English in Indonesia is considered learning English as foreign language (EFL), while Indonesian students learning English in England is considered learning English as a second language (ESL). However, Yule suggest that the expression of "second language" could be used to describe both situation as they simply try to learn a new language.

In conclusion to the above explanation, a second language learning is an activity where a new language is used or learned in the community that does not speak it generally, since the first language has been primarily acquired.

2.1.2 Generative Phonology

Generative phonology is a subsystem of study on generative grammar transformation which was introduced firstly by Noam Chomsky back in 1957 through his book "Syntactic Structure". The idea was to assign the correct phonetic representation to utterances in such a way that it can reflect the internalized grammar of a speaker. Chomsky's study of syntax assumed that the surface of syntactic structure formed the input to the phonological component, whose function

is, as mentioned, to assign a phonetic representation to the sentence. In doing so, the input modifies the phonetic information in constituent morphemes.

According to Kenstowich (1979:5) a deep-structure syntactic representations are the input to transformational component of the grammar. The transformational component gives as output to surface structure of sentence. Since knowledge of language involves ability to produce indefinitely many sentences, the syntactic components are supplemented by additional component that will assign pronunciation, or phonetic representation. The component of a grammar is also made up of elements and principles that determine sounds variation and pattern in a language. This theory leads to the concept of allophones and syllables which showed that speech sounds are changed in different context.

Generative phonology focuses on the process of conversion from abstract to concrete and vice versa. It forms a series of universal rules for covering the change of 'phonemic' representations into 'phonetic' representations. In the basic fields of linguistics phonetics is defined as the study of how to produce sounds, while phonology is the study of the sound systems of languages; generative phonology is concerned in the theory of the structure of sound in a language (Schane, 1973: 1)

2.1.3 Distinctive Features

Distinctive feature is related to the phonological aspect. It has the smallest feature of the sound or the basic unit of phonological structure that can be analyzed using phonological theory.

2.1.3.1 Binary Features

Distinctive features are specified by binary values. Schane (1973:25) explained that features indicating opposite traits are employed with a binary system, which means we can put pluses or minuses to show that an attribute is present. A positive value [+] means the attribute is present, while a negative one [-] symbolizes its absence. For instance, we need to identify that /p/ and /b/ are different phonemes. The feature that separates the two sounds is [voiced], so we can specify /p/ as [-voiced] as it is not voiced, and /b/ as [+voiced] as it is voiced or that the voiced feature is present.

Furthermore, distinctive features are classified into some classes based on the feature they describe. Because the focus of this research is consonant sounds, at least there are three or four major class features: manner feature, place feature, and subsidiary feature. These categorizations are used to define the segments and find the similarities and differences.

2.1.3.2 Major Class Features

Schane (1973:26) explains that these types of features are used to divide consonants and vowels by their similarities and differences. This class features have three features which are [syllabic], [consonantal], and [sonorant]. A [syllabic], in short [syll], functions as a syllabic nucleus. It means that [+syll] segments can be a syllabic nucleus of sound, otherwise [-syll] segments not. All vowels are [+syll] since they can function as a syllabic nucleus while all consonants are [-syll].

Segments who have the feature of [consonantal] are defined as having a narrowed constriction in the oral cavity. Thus all consonants are [+consonantal], while vowels are [-consonantal] because it does not have this degree of narrowing. The [+cons] segments are stops, fricatives, affricates, nasals, and liquids. On the other hand, vowels, semivowels, glides and approximants have [-cons] segments.

The last feature is [sonorant]. It is described as segment which do not automatically occur any vibration in the vocal cords. Sonorants are related to resonant quality of sound. The [+son] segments are vowels, nasals, semivowels, and liquids. Conversely, the [-son] are called [obstruent] which has differentiation between voiced and voiceless for example stops, fricatives, and affricates.

2.1.3.3 Manner Features

Manner feature deal with the manner of articulation of sounds. When discussing about sonorant [sonorant], we need to distinguish stops from fricatives because the two manner have the same feature [-sonorant] and [+consonantal]. In doing so, we can differ fricatives from stops in the way of the airflow of the sound. Fricative allows the airflow pass the oral cavity and do not completely close. The production of such sound are called [continuant] as the air flows with continues friction. All fricatives are always [+cont], while stops and affricates are [-cont].

Although stops and affricates have the same attribute of total occlusion in the beginning, they are released differently. Affricate differs from stops in the way they are released. Stops are released immediately or without delay, but affricates are delayed thus it is called delayed release [+delayed release].

Another manner feature is called [strident]. Strident is used to distinguish consonants based on the height of noise frequency. The [+stri] sound has high frequency of noise, but [-stri] has less frequency. Labiodental, alveolar, palate-alveolar, and uvular are strident [+stri], while bilabial, dental, palatal, and velar are [-stri].

2.1.3.4 Place of Articulation Features

So far, we have discussed the feature describing voicing states and manner of articulation, the next is place feature. According to Chomsky and Halle in (Schane, 1973:29), there are four principal places for consonant articulation. Those are labial, dental, palate-alveolar, and velar based on whether the constriction is at the extreme forward region of the oral cavity which named [+anterior] or more retracted backward which named [-anterior].

Secondly, it based on whether the segment is articulated with blade of the tongue [+coronal] or without it [-coronal]. Labials and dentals are the [+ant] consonants, whilst, velar and palate-alveolar are [-ant] consonants. On the other hand, dentals and palate-alveolar are [+cor] consonants, while labials and velars are [-cor] consonants.

2.1.3.5 Subsidiary Features

The subsidiary features consist of tense, voiced, aspirated and glottalized. The feature [tense] is used to distinguish vowels and consonants. It also can distinguish lateral and nonlateral liquid so that trill /r/ is [+tense] and flap is [-tense]. The [voiced] feature is used in obstruent sounds, while sonorants are rarely

have voicing feature. The [aspirated] and [glottalized] features are also linked to consonants or obstruent, especially in differences of /h/ and /ʔ/.

2.1.4 Phonological Interference

Weinreich stated that in research on a second language acquisition and language contact, the term interference can be used to refer to the influence of one language on another in the speech of bilinguals who use both languages¹. Furthermore, Weinreich (1953:14) described that interference can happen when a bilingual identifies a sound from a second language with sound in his first language. Interference can be defined as the influence of a speaker's L1 to the acquisition of L2. Mostly, language interference is associated or used as a term to refer to negative transfer. Phonological interference is a problem, error, or disturbance of a language system that related to phoneme. There are four type of interferences in general that is proposed by Weinreich which are: substitution, under-differentiation, over-differentiation and re-interpretation. In addition, this research found phonological processes which are: substitution, deletion, insertion.

There are few factors that determine a speaker's language interference. According to Weinreich (1953:64) some of them are; (1) bilingualism background – influenc by speaker's bilingual condition, (2) disloyalty to target language – the disobedience to the rules in target language, (3) limited second language vocabularies – lack of resources and understanding of sounds, (4) the needs for

¹ Uriel Weinreich. (1953). *Languages in contact, findings and problems*. New York: Linguistic Circle of New York.

synonym from borrowing new words – some words in L1 do not exist in target language, so the speaker borrow some words, (5) pretige and style – it is considered prestige using unfamiliar words.

2.1.5 Phonological System of English, Javanese and Sundanese

In this part, phonological system of English, Javanese and Sundanese are presented. There are similarity and differences in sounds and distribution amongst each language's sound and phoneme. The similarity will not be any obstacle for the students to master L2 sounds. However, it is their differences who might become an obstacle to utter new sounds correctly. Since the scope of this research focused on the consonant sounds, only explanation of consonants in each language will be discussed.

Ogden (2009:12) describe that consonants are classified by its place and manner and place of articulation. Manner of articulation means the way a sound is produced. To produce a sound, two articulators are used to make changes in the flow of air. Some types of manner of articulation are plosive, fricative, nasal, and approximant. The next classification is place of articulation. Place of articulation means the position where a sound is made, such as bilabial, labiodental, alveolar and velar.

2.1.5.1 Consonant Contrast of English, Javanese and Sundanese

According to Ramelan (1994:49) consonant is different from vowels in two classification; syllable and the way of production. Vowels is sometimes called sonorant because it can be a peak of syllable. It also could form syllable, while

consonant normally could not. Furthermore, consonant is different from vowel in their way of production. Vowels are always considered voiced as its production is always followed by vibration in the vocal cords. Conversely, consonant is mostly can be classified in voiced and voiceless. For example in the production of sound /p/ and /b/, the former is voiceless as there is no vibration, whereas the latter is voiced as it is accompanied by vibration in vocal cords. The classification of consonants is presented below;

Tabel 1. Consonant contrast of English, Javanese and Sundanese

Place	Manner	Stops			Nassals			Trills			Fricatives			Affricates			Lateral			Approximant			
	Lang.	E	J	S	E	J	S	E	J	S	E	J	S	E	J	S	E	J	S	E	J	S	
Bilabial	V-	p	p	p																			
	V+	b	b	b	m	m	m																w
Labio dental	V-										f												
	V+										v								w	w			
Dental	V-		t	t							θ												
	V+		d	d							ð												
Alveolar	V-	t									s	s	s		tʃ	tʃ							
	V+	d			n	n	n		r	r	z				dʒ	dʒ	l	l	l	ɹ			
Palato Alveolar	V-										ʃ				tʃ								
	V+										ʒ				dʒ								
Palatal	V-																						
	V+					ɲ	ɲ														j	y	y
Retroflex	V-		ɻ																				
	V+		ɻ																				
Velar	V-	k	k	k																			
	V+	g	g	g	ŋ	ŋ	ŋ																
Glottal	V-		ʔ																				
	V+										h	h	h										

(2013:19)

Table above shows that English (EL) has more number of consonants with 24, followed by Javanese language (JL) with 21 sounds and Sundanese language

(SL) with 18 sounds. **Plosive** sounds consist of ordinarily bilabial /p, b/ alveolar /t,d/ and velar /k,g/. In JL and SL sound /t, d/ is dental, thus more fronted compared to English alveolar. JL has more type of plosive consonants including retroflex /ʈ, ɖ/ for example in word ‘kanthi’ [kantʰi] means ‘with’ and ‘dhadha’ [dʰaɖa] means ‘chest’. Wedhawati (2006:86) stated that this sound is actually an apical sound produced by creating obstruction with the blade of the tongue just behind the tip. However, in JL this sound is produced with aspiration and more backed tongue compared to JL’s dental form /t, d/. Javanese also has glottal stop phoneme /ʔ/ as in the word ‘soun’ [suʔun] means “white noodles”. In English and Sundanese however, it is not significant nor a phoneme.

Nasal sounds in English, JL and SL have quite similar characteristics, thus it is not a big deal for the students of Javanese and Sundanese to deal with. Distributions of nasal sound in those three languages are alike, except for velar nasal which is never found in the initial position. Unlike English, JL and SL have palatal nasal /ɲ/ does not exist in English phonological system.

English has the biggest number of **fricative** consonants which are /f, v, θ, ð, s, z, ʃ, ʒ, h/, while JL and SL have only two of them /s, h/. It is important to mention, that Javanese and Sundanese speakers are sometimes able to pronounce bilabial fricative /f, v/ and voiced alveolar fricative /z/, but limited only in borrowed words such as ‘fakta’, ‘evaluasi’ and ‘azas’. However, Djajasudarma (2013) define that those sounds are mostly mispronounced with other sounds. Moreover, native Sundanese speakers are mostly unable to pronounce /f/ and change it into /p/ due to

the inexistence of this sound in their phonological system, but Javanese speakers are more able to pronounce the sound. The same problems are found in the pronunciation of /z/ as like in ‘azas’, the speakers tend to substitute this sound into /s/ and becomes [asas].

Affricate sound is a kind of stop, but according to Ramelan (1994:147) the stoppage or obstruction in affricate is suddenly released. It is different from other stop consonants where the obstruction is released gradually. Affricate in English is symbolized with two symbols /tʃ, dʒ/. The other languages, Javanese and Sundanese, use /c/ to represent fricative. English affricate is palatoalveolar plosive, thus it is different from JL and SL whose affricate is alveolar.

There are some differences in **approximant** sounds between English, Javanese and Sundanese language. The lateral approximant /l/ of the three languages are very similar in characteristics and distribution. But the sound /r/ is different in English. In JL and SL, this sound is a rolled consonant or trill, thus it is produced by vibrating speech organ with sequence of opening and closing of the air way (Ramelan, 1994:142). On the other hand, this sound in English is an alveolar approximant which is symbolized with /ɹ/. The other approximant sounds /w, y/ also have the same attribute, but in English /y/ is symbolized with /j/.

2.1.5.2 Distribution and Problematic Contrast

Table 2. Distribution of sounds in English, Javanese and Sundanese

No	Phonemes	Availability			Distribution									
					Initial			Medial			Final			
		E	J	S	E	J	S	E	J	S	E	J	S	
1	p	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
2	b	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes
3	t	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
4	d	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes
5	k	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
6	g	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes
7	t̪	no	yes	no	no	yes	no	no	yes	no	no	no	no	no
8	d̪	no	yes	no	no	yes	no	no	yes	no	no	no	no	no
9	ʔ	no	yes	no	no	no	no	no	yes	no	no	yes	no	no
10	m	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
11	n	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
12	ɲ	no	yes	yes	no	yes	yes	no	yes	yes	no	no	no	no
13	ŋ	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	Yes
14	r	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	Yes	Yes
15	f	yes	rare	no	yes	rare	no	yes	rare	no	yes	rare	no	no
16	v	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
17	θ	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
18	ð	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
19	s	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
20	z	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
21	ʃ	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
22	ʒ	yes	no	no	yes	no	no	yes	no	no	yes	no	no	no
23	h	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes
24	tʃ	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no
25	dʒ	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no
26	l	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
27	w	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	yes
28	j	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	yes

From the table above, we can see that the phonological system of the three languages have some similarities and differences. Some sounds are available in one language, but they are not present in the other languages. Even if a sound exist in all three languages, their distribution is what differs them one another. It is already mentioned that English has the most number of consonants, which means there are some sounds that the speakers of Javanese or Sundanese language are not familiar with. For instance, English dental fricatives /θ, ð,/ are never found anywhere in JL nor SL, thus errors are made in somewhat similar frequencies between two languages. However, distribution of sounds also plays important role in phonological interference as it may lead to different ability to pronounce the sound correctly.

Take the sound /b/ for example, although this sound exists in three languages, the sound is never found in final position in Javanese language. In Sundanese language, this sound is present in final position just like in English. So, presumbaly Sundanese speakers will be able to pronounce /b/ in final position better compared to Javanese as this sound does not distributed in final position. The consequence of different distribution means the Sundanese speaker are more aware of the presence of the sound than Javanese speaker. This arrangement of sound distribution is called phonotactics. Yule (2010:45) descriced that a language has some constraints in its phoneme position. That constraints are so called phonotactics which means a possible sound arrangement in syllable. The position of the phoneme can then be divided into initial, medial and final position.

CHAPTER III

RESEARCH METHOD

In conducting this research, the writer applied some methods and techniques from collecting data until analysing data. The research method discussed the types of research, source of data, methods of collecting data, and methods of analysing data. The sampling techniques of this research was to find and process the data as a purpose based on the phenomena occurred. The writer divided the next step in three parts. The first, the writer collected the data of the research by voice recorder of a smartphone. The second, the writer transcribed the recording into a transcript. The third, the writer analysed the transcribed data.

3.1 Type of Research

This research tries to examine the phonological interference of Javanese or Sundanese speakers when speaking English by describing the errors of pronunciation. This research also tries to deliver the results by presenting the percentage of correct pronunciation of English words from the informants. This research described the phenomena of phonological interference of non-English students. The writer tries to analyse kind of interference occurred in learning English as a second language. The first language of the students is their local languages which are divided in two, Sundanese and Javanese. Several phonological processes are found in the research such as insertion, deletion and substitution. Each of the phonological process has different distribution in the words and in different languages. To found and analyse them the writer compared the phonological

system of L1 and L2. This research is a field research because the writer gather data taken from the informants in a community then analyse them.

According to Creswell (1994:21) a qualitative research should conduct the research in a constant with a structural prejudice. In other words, the research should inductively find the result based on the objective of the research without directly concerning to the research questions proposed by the researcher. To discover the relevant findings based on the objectives, the writer used the qualitative approaches in this research.

3.2 Data, Population, Sample, and Sampling Technique

The data of this research are spoken language. The data of the research are the pronunciations of non-English students speaking English as a second language. At first, the writer focuses on the smallest component of sounds which can distinguish meaning, phonemes. Afterwards, the research will also discuss the environment near the sound, for example how sounds are present in some distribution and not in another. To make the data more reliable, the students who took part in this research are taken from different universities.

There are ten Javanese speakers and ten Sundanese speakers. The students whose language are Sundanese are taken from West Java College Instituion located in Bandung named Indonesian University of Education. On the other hand, students whose first language are Javanese are taken from Gadjah Mada University in Yogyakarta. The reason to pick up informants from mentioned instituion is that the writer wanted to ensure that spoken data are as natural as possible because

inhabitants of Yogyakarta are the perfect representation of standard Javanese language, while the inhabitants of Bandung are the representation of standard Sundanese language. The informants were asked to pronounce 200 hundreds English word. While they are speaking, their pronunciations are recorded using voice recorder from a smartphone. The recordings or their pronunciations are then transcribed into phonetic transcription using PRAAT software. The population of the research is all the utterances from phonetic transcription of non-English students pronunciation.

To catch the sample of the analysis, the writer chose purposive sampling techniques referred on the relevant theories as explained in Chapter II. The technique only caught the specific problematic samples from error pronunciation as the representation of the total utterances in the conversation. The sample of the analysed data referring to the relevant theories is to discover general findings and its functions.

3.3 Method of Collecting Data

In collecting data of the research, the writer used several methods and techniques. The methods are ways to collect the data in a purpose to analyse the data referring to the relevant theories. The technique is to catch the data in accordance with its boundaries.

3.3.1 Observation

To gather the data, the writer used observation method. According to Sudaryanto (2015:203) observation is a method of data collection by listening to or observing the use of language. The observation was conducted by recording pronunciation of list of English words using tape recorder. Samarin in *Field Linguistics* (1967:47) explained the procedures of collecting good data or corpus. Samarin (1967:218) recommended that it will need to list approximately 200 words including several lexical materials such as parts of human body, flora & fauna, colors, tools, food, game, geographical items, clothes and etc. Therefore, the writer made list of 200 English words based on guidance suggested by Samarin. The words were recorded via tape recorder which will be transcribed into phonetic transcription. The writer will focus specifically on the fricative and plosive consonant sound patterns.

3.3.2 Recording Technique

Tape recording is a method of collecting object of the data by using various media. Nowadays there are many type of recordings such as voice recorder tape or voice recorder application in a smartphone. The writer used a smartphone voice recorder feature to save pronunciation data from the informants. Sudaryanto (2015:205) stated that tape-recording method is a way which is necessarily used to gather data. It properly needs to do so that the process of a pronunciation is not disturbed. Practically, a specific objective of the method tends to do without any knowledge of the informants.

Recording technique is used to keep speech utterances data on a high level phonology and prevent lost of important information. A field linguist's equipment is not complete without a tape recorder. It is very important to help a field researcher to better understand his language learning and collect a good corpus. But not all recorded materials are worthy of discussing. A random unprepared recordings are worthless for linguistic analysis. Therefore, before starting to turn on the recorder, one must keep in mind about what they wanted to look for (Samarin, 1967:80).

3.3.3 Note Taking

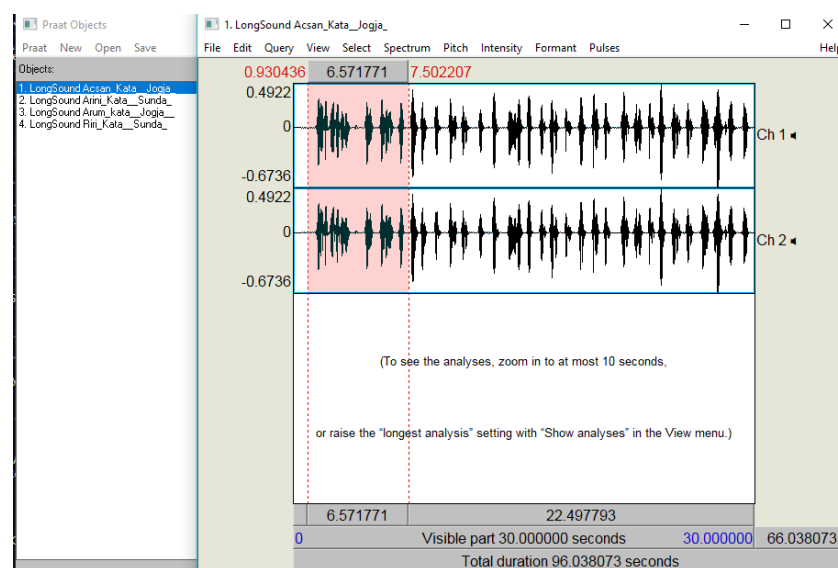
Note taking is a method to catch the supporting points of data based on the context of the pronunciation which is analysed from the voice recorder. The writer used note-taking method to note additional information of the recording so that the data could be more relevant. This method is used to record data for later be classified into several categories based on phonological interference. According to Sudaryanto (2015:205) note taking can be done at the time the researcher or investigator doing the first technique, which is recording technique. The note taking process can also be done after the whole recording processes were done using particular writing tools. In the paper note, the data transcription can be processed into certain form based on the research object whether it is ortographic, phonemic or phonetic transcription.

3.3.4 Phonetic Transcription

The transcription of the data must be accurate to acquire valid analysis. The researcher must listen to the audio recording where all the words list should be

analysed. In this activity, the writer used software called PRAAT. This software is a popular speech analyzer developed by Paul Boersma and David Weenink of the University of Amsterdam. This software is available for free with open source code for all users. It is a very helpful and easy software to use. By using this software, we can listen to speech sounds into milliseconds, slower the speed, segment speech, and other of handfull use. However, the writer will only use it to segment sounds so that speaker's pronunciation could be analysed into smaller piece of sounds.

Picture 1. Speech Analysis in PRAAT



3.4 Method of Analysing Data

After all the data have been gathered, the final step is to analyse the data. Because this research study about the organ that forms language, the method which is used to analyse data is articulatory phonetic. A qualitative research involve description and analysis rather than the counting of features (Wray & Bloomer, 2006:97). The emphasis is to explore type of strategy that people use in particular

context. As mentioned that the differences in phonological systems lead to the inability to produce sounds in different language. The recorded data were transcribed and analyzed by using IPA symbols. All the phonetic transcription of each language, English, Javanese and Sundanese are compared to find the pronunciation errors in native speakers. Next, the writer discovered and classified the consonant sounds made by informants to find out the phonological interference and its degree.

The degree of interference can be found by comparing the correct phonetic transcription of English or Received Pronunciation (RP) based on English Dictionary to the informants phonetic transcription who are Javanese and Sundanese native speakers. The data of phonological interference in the form of sounds are presented based on their manner of articulation starting with plosive, fricative, nasal, affricate, trill, lateral and approximants. The correct phonetic transcription of words in English and the informants transcription as well as its correct percentage are presented in a table. Phonological interference occurrence in words are also compared in table to show how sounds are different. Finally from the table of phonetic transcription, the writer found the phonological process that occurred in problematic sounds in English that are pronounced by informants. The phonological processes are presented by generative phonology theory which is distinctive features.

CHAPTER IV

DATA ANALYSIS

Through this chapter, the writer attempts to discover an analysis of the phenomena occurred in the conversation. First, the writer attempts to obtain generally the phenomena occurred in the conversation listed in a summary table. To analyse phenomena occurred in the conversation, the writer refers to the relevant theories as explained in Chapter II. Second, after grasping the general findings of the phenomena occurred, the writer analyses kinds of phenomena occurred. Then, the writer observes the reasons why the phenomena occurred between the participants of the conversation in order to discover the functions of each phenomenon.

The list of two hundreds English words were given to respondents. The respondents are 20 university students. The students were then divided in 2 groups, 10 students whose first language is Javanese and the other 10 whose first language is Sundanese. The data are presented in table consisting the percentage of correct pronunciation (CP) and the respondent pronunciation with their alternative sound changes. To measure the correct pronunciation of first group and second group the writer use formula as below:

$$\frac{\text{Number of Correct Pronunciation}}{\text{All number of a sound}} \times 100 = \text{CP Percentage \%}$$

All number of a sound

Individuals may be able to utter a word differently at different circumstances. The reason is that speech organs of human cannot always reproduce

sounds with exactly the same qualities. Whereas, when the speaker pronounce a word inexactly, it will change the meaning or do not give the meaning and make misunderstanding to the hearer. According to Ramelan (2003: 2), there are no two people who speak exactly alike.

Differences in pronunciation between one speaker and another are caused by geographical, social and historical factors; or they may also be caused by individual peculiarities such as stuttering, lisping or other factors. Another problem that interrupt is the identification of the foreign language sounds. Before they produce sound they must know about articulatory quality that is the nature characteristic of speech sound.

4.1. Plosive Consonants

Table 3. Plosive consonants performance

Sound	Correct Pronunciation in %		Pronounced As	
	Javanese Students	Sundanese Students	Javanese Students	Sundanese Students
p	88,6	87	p	p
b	84,6	90	b, p	b
t	90	92	t	t
d	80	86	d, t	d
k	92	92	k	k
g	76	84	g, k	g

Plosive or stop consonants between English, Javanese and Sundanese have different characteristics and distribution. English however has six plosive consonants which has three different point of articulation at bilabial /p,b/, alveolar /t, d/ and velar /k,g/. Sundanese also has six plosive consonants while Javanese has nine plosive consonants with addition of glottal stop /ʔ/ and retroflex form /ɖ, ɗ/. So, in comparison to English which consider glottal as non-significant because it is not phoneme, Javanese however consider glottal as phoneme. For example, take a look at the following words;

/k/ /sukon/ ‘bread fruit’

/ʔ/ /suʔon/ ‘white noodles’

The two words are identical except the sound /k/ and /ʔ/, which then differentiate meanings between the two. Thus, glottal is a phoneme as it has meaningful use in Javanese utterances.

Other than the differences between glottal and the other plosive consonants, English voiceless plosive consonants have a various form of sound which we called allophone. The allophones are different from phoneme as it do not differentiate meanings, allophones are just a variation of sound of a language. Voiceless bilabial /p/, alveolar /t/ and velar /k/ are aspirated in stressed syllables in English, whereas Javanese and Sundanese do not have such variation in them. Consider for example the following utterances;

pen /p^hen/

ten /t^hen/

can /k^hæn/

The aspirated form is usually symbolized with small “h” after the aspirated sound. This differences in characteristics of plosive consonants may bring difficulties for students as they are not aware of English phonological system.

4.1.1 Voiceless Bilabial Plosive /p/

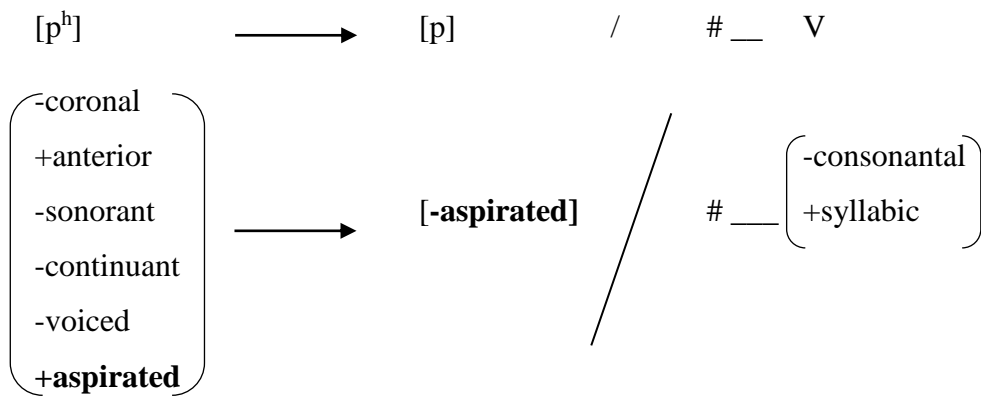
Voiceless bilabial plosive consonants spoken by students are somewhat a bit problematic. As mentioned before that English has aspirated voiceless stop as allophone, so they sometimes failed to pronounce it correctly. There are 15 words consisting sound /p/. From that list of words the JL group has 85,7% correct pronunciation, whilst, Sundanese has 83,4% pronunciation. Most of the incorrect pronunciations deals with the aspirated sounds like “pen”, “peck” and “push”, students tend to pronounce it as unaspirated voiceless.

Table 4. Unaspirated /p/ in initial position

Words	Correct Transcription	JL Transcription	SL Transcription
past	[p ^h a:st]	[pas]	[pas]
put	[p ^h ʊt]	[pʊt]	[pʊt]
push	[p ^h ʊʃ]	[pʊʃ]	[pʊʃ]
peck	[p ^h ek]	[pek]	[pek]
positive	[p ^h ɒzətɪv]	[positif]	[positif]

This problems might be not crucial as they do not differentiate meanings, but the students still ignore the differences. This case is related to their L1

phonological interference. This kind of interference is considered as under-differentiation. Under-differentiation occurred where two sounds in L2 are not distinguished in L1. English /p/ sound is aspirated in initial position and it is an allophone, while in Javanese and Sundanese it is never distinguished whether /p/ sound is aspirated or not. There are three kind of under-differentiation found in this research, all happened in voiceless stop consonants in initial position. From the data we can make distinction between sounds and their distribution as below;



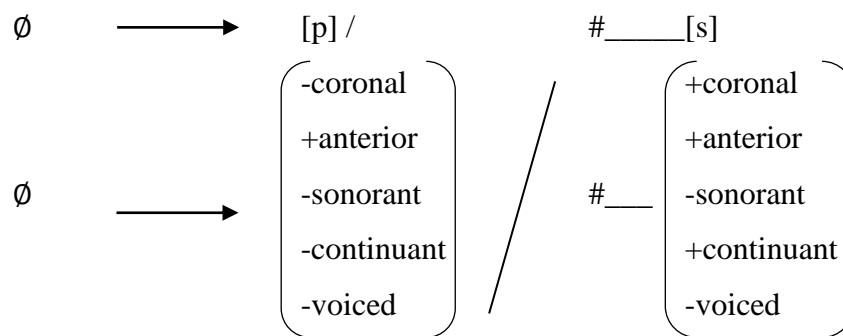
Another case of phonological interference is insertion. Insertion is the addition of one or more sounds into a word. There are two types of insertion which are prothesis (addition of sound in the beginning of word) and epenthesis (addition of sound between sound in a word). Insertion occurred in the following words;

Table 5. Addition of sound /p/

Words	Correct Transcription	JL Transcription	SL Transcription
psychology	[saɪkələdʒɪ]	[psikologi]	[psaikologi]

receipt	[rɪsɪ:t]	[reseipt]	[reseipt]
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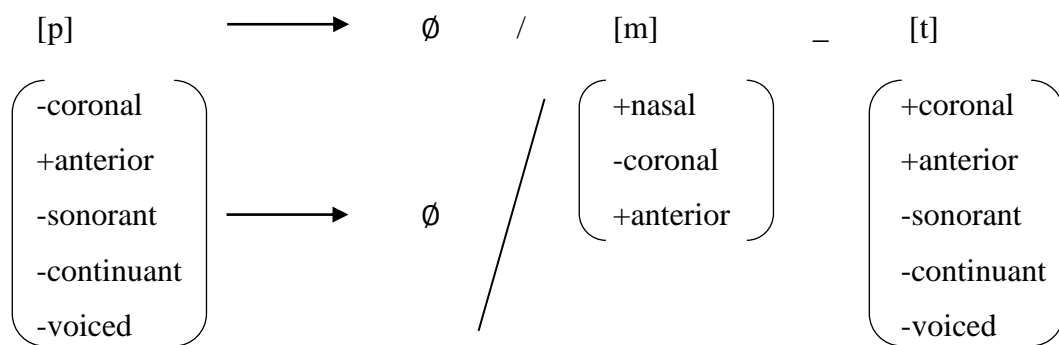
This interference occurred because the informants consider that orthographic letter in word “psychology” remains present in pronunciation. They are not aware that sound /p/ is removed when the word is pronounced. The understanding of letter or spelling in English that represents such sound is important. Sound /p/ is always pronounced by the informants when it is followed by /s/ sound. One should be aware that, for example, the sound /k/ is not always represented by letter “k” as in “key”, but also letter “c” as in “cat” and “ch” as in chemistry.



Another phonological process that occurred is Elision. Elision or deletion is the omission of one or more sounds in a word. This problem can happen because whether in Javanese or Sundanese cluster “mpt” does not exist. So the students tend to simplify the pronunciation by [emti]. The /p/ sound is always removed when it is between sound /m/ and /t/. Again, this interference is also related to the speaker’s understanding of English word spelling. This is found in word;

Table 6. Elision of sound /p/

Words	Correct Transcription	JL Transcription	SL Transcription
empty	[emptI]	[emti]	[emti]



4.1.2 Voiced Bilabial Plosive /b/

The voiced bilabial plosive /b/, on the other hand, also has different characteristics in all three languages. In English, it present in all three position; initial, medial and final position. The same distribution are found in Sundanese. However, in Javanese bilabial plosive is never found in final position. Thus, according to the similarities in distribution of sounds the Sundanese are likely to have better pronunciation in final position compared to Javanese students. It is proven by the results showing Sundanese has got higher correct pronunciation percentage by 90% while Javanese only gets 84,6%.

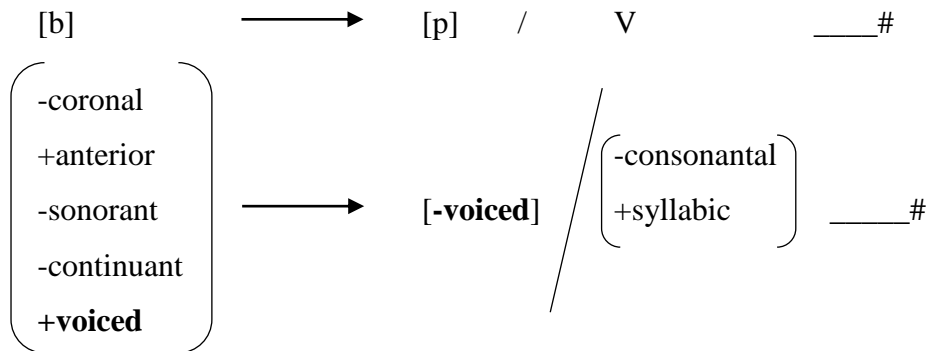
JL has similar distribution of voiced bilabial with Indonesian. Both languages do not have the sound in final position. According to Ramelan

(1994:121) Indonesian /b/ is fortis and sometimes aspirated, while English /b/ is lenis and little bit weaker. The speakers tend to switch the sound into voiceless bilabial stop in final position after vowels. For instances, see the table below;

Table 7. Substitution of /b/ to /p/ in final position in JL

Words	Correct Transcription	JL Transcription	SL Transcription
robe	[rəʊb]	[rɒp]	[rɒb]
cub	[k ^h ʌb]	[kʌp]	[kʌb]
tub	[t ^h ʌb]	[tʌp]	[tʌb]

As we can see the way students substitute sound /b/ into /p/ is a significant problems. Substitution occurred when a sound is similar in L1 and L2, but have different phonetic realization or pronunciation (Weinrich, 1979). In English, both sounds are different phoneme. Therefore, switching those sounds can lead to misunderstanding as it brings different meanings. The word “cub” /cʌb/, for example, that means “young fox/lion” will change its meaning with “container for drinking” if when substituted into voiceless “cup” /cʌp/. The feature that differs both sound is voicing state. The distinctive feature for this case is presented as the following;



4.1.3 Voiceless Alveolar Plosive /t/

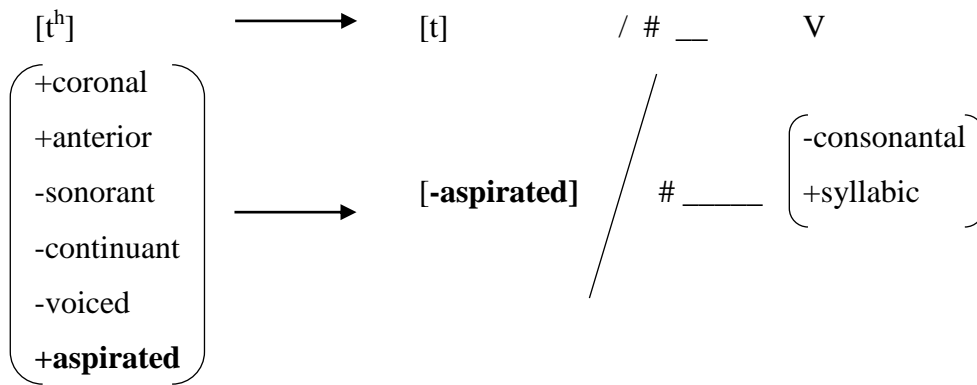
The voiceless alveolar also has aspirated allophone in stressed syllables. In JL or SL there is no allophonic variation. Therefore, the students are unable to pronounce this sound properly in stressed syllables. The difference in pronunciation performance between JL and SL is not significant, JL has percentage of 80,7, while SL 82,5.

Table 8. Unaspirated /t/ in initial position

Words	Correct Transcription	JL Transcription	SL Transcription
tense	[t ^h ens]	[tens]	[tens]
time	[t ^h aɪm]	[taɪm]	[taɪm]
top	[t ^h ɒp]	[top]	[top]
taken	[t ^h eɪkn]	[tekən]	[tekən]

The feature that distinct the two sounds are aspiration. It is an example of under-differentiation where two sounds in L2 are not contrastive in L1. Sound /t/

in initial position in English is aspirated and it is an allophonic variation. On the other hand, in Javanese and Sundanese it is not contrastive as aspiration in sound /t/ is never found anywhere in phonological systems of both languages. Therefore, English /t/ sound has attribute [+aspirated] initial position, whereas Javanese and Sundanese are [-aspirated]. The distinctive feature is presented below;

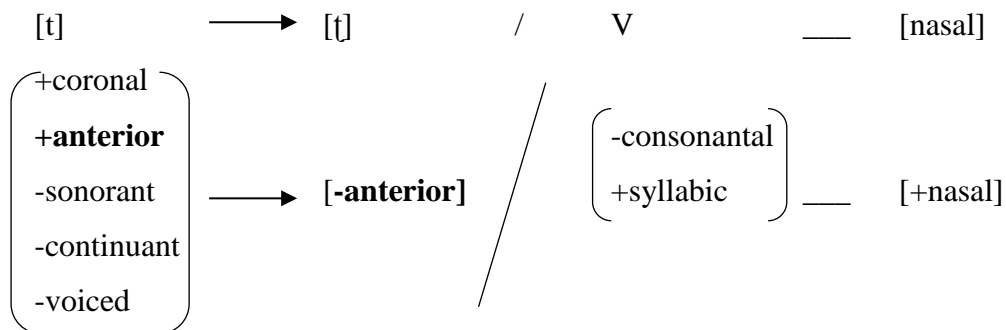


It should be mentioned however that /t/ sound in JL and SL is dental while in English it is alveolar, thus it is more fronted compared to English /t/ sounds. This difference may not be seen with distinctive feature rule, but both kind of sounds are different in quality where the one produced by informants are more fronted. However, the feature of both sounds are similar that is presented as [+coronal] and [+anterior].

Table 9. Substitution of /t/ with retroflex /ɽ/ in JL

Words	Correct Transcription	JL Transcription	SL Transcription
bottom	[bɔtəm]	[boɽəm]	[botəm]
rotten	[rotn]	[roɽən]	[rotən]

On the other hand, Javanese has retroflex type of phoneme /t/ which is quite similar in place feature with previous two sounds, but this sound is rarely pronounced by the Javanese speakers. Retroflex is different from alveolar in place of articulation feature where latter is [+anterior] while the former is [-anterior]. This sound only presents in words with stressed syllable such as “bottom”, but once again this substitution occurred in very small number by Javanese informants.

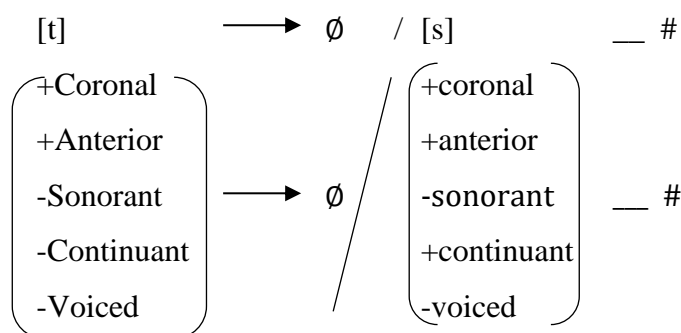


Ramelan (1994:114) argued that in English when /t/ sound is followed directly by nasal sound it becomes nasal plosion where the air is carried out through nose. So, based on Ramelan we can also assume that the changes are still a characteristics of English /t/ sound that aspirated in stressed syllable.

Table 10. Deletion of sound /t/ in final position after consonants

Words	Correct Transcription	JL Transcription	SL Transcription
Breakfast	[brekfəst]	[brekfas]	[brekfes]
Text	[tekst]	[teks]	[teks]

Both Javanese and Sundanese speakers are failed to pronounce /t/ in final position. Although consonant cluster [st] exists in phonological system of both languages such as in word “stasiun”, it is never found in final position as in English word “breakfast”. The informants tend to ignore sound /t/ in this position in order to simplify their pronunciation in speech. The distinctive feature is presented below;



4.1.4 Voiced Alveolar Plosive /d/

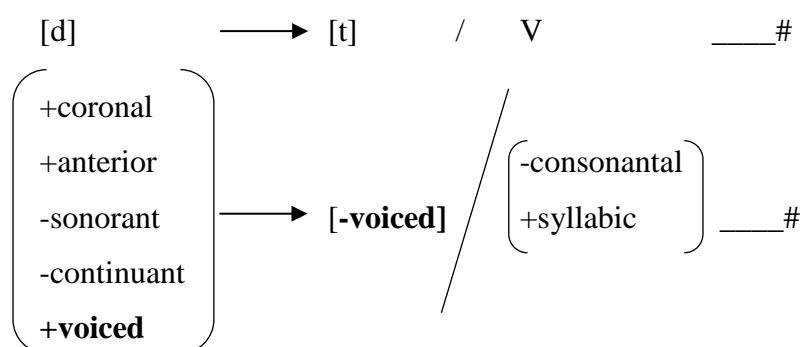
The sound /d/ is present in all three position; initial, middle and final in English and Sundanese. Javanese, on the other hand, has this sound only in initial and middle position. It never occurred in final position in Javanese. The performance percentage of this sound spoken by Sundanese is 86%, while Javanese only 80%. Differences in pronunciation ability between Sundanese and Javanese are influenced by phonological interference where SL has more similar distribution with English in final position.

Table 11. Substitution of sound /d/ to /t/ in final position in JL

Words	Correct Transcription	JL Transcription	SL Transcription
bed	[bed]	[bet]	[bed]

bad	[bæd]	[bæt]	[bæd]
kid	[kɪd]	[kit]	[kɪd]
cad	[kæd]	[kæd]	[kæd]

It is clear that from the three languages, Javanese is the only one who does not have voiced alveolar /d/ in final position. Therefore, Javanese speakers tend to substitute this sound into its nearest replacement that is voiceless /t/. Furthermore, the Sundanese speakers are somewhat more successful to pronounce the sound in final position as it exists in the phonological system. The feature that differs both sound is subsidiary feature. Sound /d/ is [+voiced] and /t/ is [-voiced];



4.1.5 Voiceless Velar Plosive /k/

Voiceless velar plosive /k/ in both Javanese and Sundanese has the same characteristics, and distributions. As we have discussed in two previous voiceless plosive sounds /p, t/, these kind of sounds have aspirated allophone in stressed syllables. The percentage of successful pronunciation are similar between Javanese and Sundanese speakers, it is 92%.

Table 12. Unaspirated /k/ in initial position

Words	Correct Transcription	JL Transcription	SL Transcription
key	[k ^h i:]	[ki]	[ki]
kin	[k ^h ɪn]	[kin]	[kin]
could	[k ^h ʊd]	[kuld]	[kuld]
cad	[k ^h æd]	[kæd]	[kæd]

This phonological interference are under-differentiation. As mentioned, this type of phonological interference occurred in voiceless stop consonants. Voiceless stop consonants in English is always aspirated in initial position, while in Javanese and Sundanese it is never aspirated anywhere in the phonological system. The difference affected the informants ability to produce aspirated /k/ in initial position. Because of the difference in aspiration this kind of interference are distinguished by a subsidiary feature which is aspiration feature. English /k/ in initial position is [+aspirated], while /k/ sound in Javanese and Sundanese is [-aspirated]. The distinctive feature is presented as below;

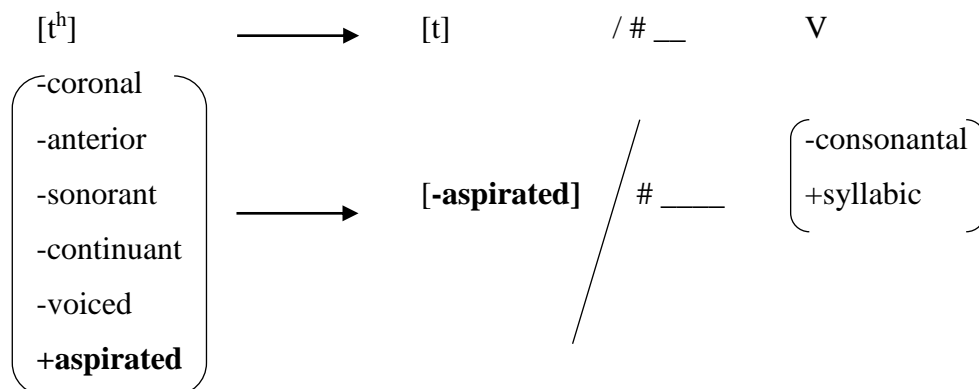
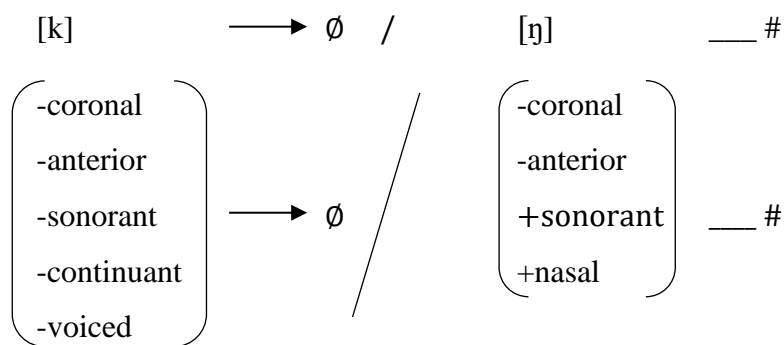


Table 13. Elision of sound /k/

Words	Correct Transcription	JL Transcription	SL Transcription
think	[θiŋk]	[tiŋ]	[tiŋ]

The deletion in this case is produced by speakers of both Javanese and Sundanese. The informants are mostly unable to pronounce it correctly. They tend to ignore the presence of sound /k/ in the word “think”. The result shows that instead of speaking the correct pronunciation [θiŋk], they pronounce it as [tiŋ]. Although they are also failed to pronounce sound /θ/ correctly, it will make confusion as the spoken word are similar to “thing”. Therefore, the speakers should keep in mind that sound /k/ in final position is not removed and should be pronounce as well. The sound /k/ in final position is removed when preceded by sound /ŋ/. Sound /k/ are very similar in characteristics and distribution compared to Javanese and Sundanese. Thus, informants do not have many other obstacle to pronounce this sound. Therefore, the percentage of correct pronunciation is quite high as 92%.



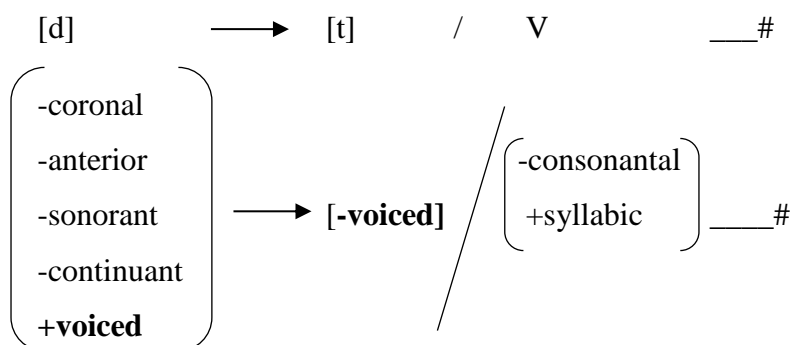
4.1.6 Voiced Velar Plosive /g/

The sound /g/ exists in all three languages and in any distribution except in Javanese. Just as like the other voiced plosive consonants, sound /g/ is never found in final position in Javanese. This case affect correct pronunciation of the informants. Javanese speakers only succesfully pronounce 76% of all sounds from the word list. Sundanese speakers on the other hand succesfully pronounce 84% of sounds from the word list correctly. This result shows that the difference in distribution between Javanese and Sundanese also affect the ability of the people to speak English sounds. Because Sundanese has more similar distribution with English, their speakers are somewhat better to pronounce the sound.

Table 14. Substitution of /g/ to /k/ in final position in JL

Words	Correct Transcription	JL Transcription	SL Transcription
beg	[bed]	[bet]	[bed]
dog	[bæd]	[bæt]	[bæd]
peg	[kId]	[kit]	[kId]

As we can see from the table above that speakers of Javanese substitute the sound /g/ in final position into voiceless /k/. Sundanese speakers do not frequently change the sound into voiceless. However, sundanese speakers sometimes substitute the sound into voiceless, but not in more cases compared to Javanese speakers. The distinctive feature for this phonological interference is as below;



4.2. Fricative Consonants

Table 15. Fricative consonants performance

Sound	Correct Pronunciation in %		Pronounced As	
	Javanese Students	Sundanese Students	Javanese Students	Sundanese Students
f	86	78	f	f, p
v	76	65	f, v	f, v, p
θ	53	56	t	t, s
ð	50	55	d	d
s	97	96,5	s, tʃ	s, tʃ
z	82	80	s	s, dʒ
ʃ	76	72	s	s
ʒ	60	50	dʒ, g, z, s	dʒ, g, z, s
h	100	98	h	h

There are 9 fricative consonants in English, while the number of fricative sound is less in Javanese and Sundanese. Fricative sounds have the greatest number

of interferences in this research because there are many differences in phonological system. Not only because of the availability of phoneme in three languages, but also because its features are different. Javanese and Sundanese language have lesser number of fricative phonemes, so it will influence the speakers and become an obstacle to learn pronouncing English words. The students as the informants of this study had problems to pronounce fricative sounds correctly.

Fricative sound is different from plosive sound. It is already mentioned above that plosive is produced with complete closure along the air passage. Fricative sound is produced with narrow air passage which means that the closure in fricative is partial and accompanied by continuous friction (Ramelan, 1994:126), thus fricative is called a continuant consonant. A continuant is a feature that distinguish a plosive with a fricative sound. Therefore, a fricative is always a [+continuant] and a plosive or stop is always a [-continuant].

4.2.1 Voiceless labiodental fricative /f/

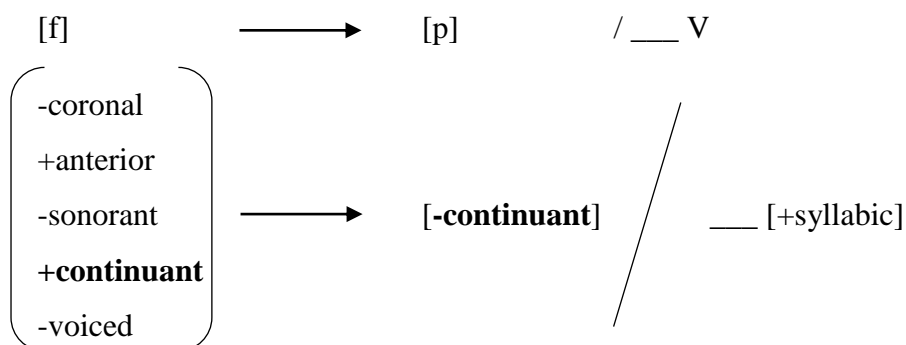
Before beginning to compare fricative sounds between English, Javanese and Sundanese we have to make something clear about Sundanese fricative. From the table of consonant contrast we can see that Sundanese do not have labiodental fricative. Therefore, the Sundanese speakers sometimes, though not always, can not distinguish sound /f, v and p/. For example, Sundanese tend to substitute /f/ in “face” into /p/ in “pace”. This problem is mainly what differs Sundanese with Javanese phonology. Although both languages originally do not have fricative sounds in their bank of phonology and use the sound only in borrowed words such

as “fasilitas” and “validitas”, Javanese speakers can distinguish the use of fricative sounds in their utterances. The percentage of correct utterances in Javanese is 86%, higher than Sundanese which is 78%.

Table 16. Substitution of sound /f/ to /p/ in SL

Words	Correct Transcription	JL Transcription	SL Transcription
confide	[kənfaɪd]	[konfaɪd]	[kenpaɪd]
fair	[fɛr]	[fer]	[per]
face	[feɪs]	[fes]	[pes]
half	[ha:f]	[half]	[halp]

This interference occurred in all positions in Sundanese speaker utterance. It is because there is no sound /f/ in Sundanese phonological system at first, so the interference distributed in all positions. The replacement occurred in sound /f/ into /p/ to utter the letter ‘f’ in all positions. Meanwhile, Sundanese /p/ can be used to pronounce letter ‘f’, ‘v’, and ‘p’ as sound /f, v/ are not part of Sundanese phonological system. For that reason, based on the table above the Sundanese informants tend to substitute the words “confide” as [kenpaɪd] instead of [[kənfaɪd], “fair” as [per] instead of [fɛr]. The change between /f/ into /p/ is in manner feature, /f/ is [+continuant] because it is a fricative sound, while /p/ is [-continuant] because it is a plosive sound. The distinctive feature is presented below;



4.2.2 Voiced labiodental fricative /v/

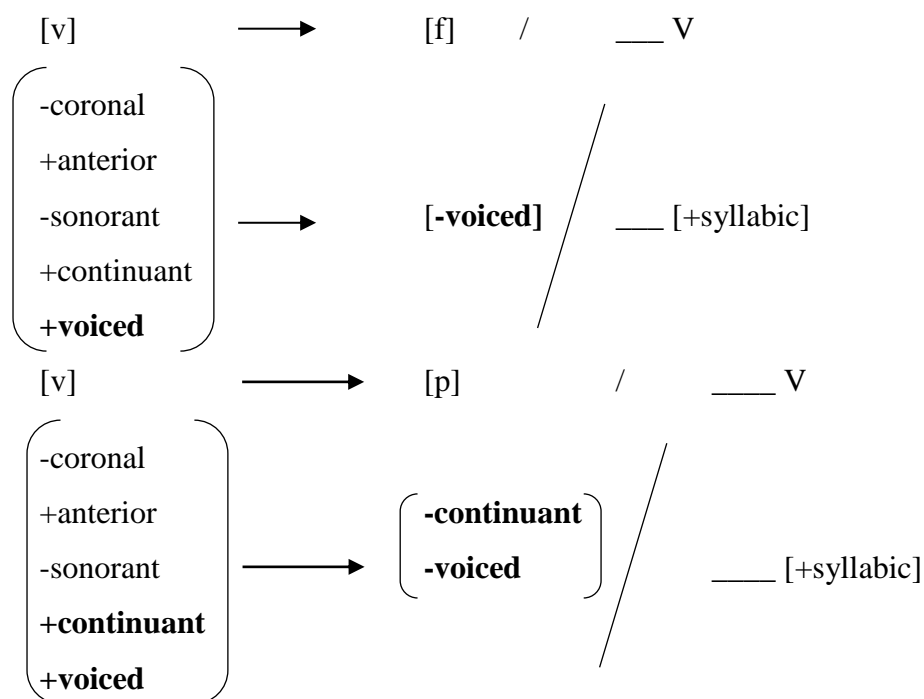
While the voiceless labiodental fricative /f/ is difficult to utter by Sundanese speakers, the voiced labiodental fricative /v/ can be difficult for Javanese too. This sound is never found whether in JL, SL or even Indonesian. Sound /v/ do not exists in the phonological system of those three languages. So, Indonesian students in general and Sundanese and Javanese speaker in particular found it difficult to pronounce the sound. However, Javanese speaker only substitute the /v/ sound with its voiceless pair /f/, while Sundanese speaker substitute it with /f/ and /p/.

Table 17. Substitution of sound /v/

Words	Correct Transcription	JL Transcription	SL Transcription
vest	[vest]	[fes]	[pes]
valid	[vællɪd]	[falɪd]	[palɪd]
solve	[sɒlv]	[sɒlf]	[sɒlf]
verve	[vɜ:v]	[ferf]	[ferp]
reveal	[ri:vɪ:l]	[rifil]	[rifil]

There are only few speakers who can make it to pronounce the sound /v/ correctly. Overall, the Javanese informants tend to substitute the sound with voiceless labiodental /f/. The Sundanese informants on the other hand have two kind of substitution, one which changes sound /v/ with voiceless /f/, the other changes the sound /v/ into plosive /p/.

For those who substitute voiced labiodental fricative /v/ with voiceless, the feature that distinct the sound is at subsidiary feature of voiced. The /v/ sound with [+voiced] is substituted with voiceless /f/ as [-voiced]. The other occurrence which substitute labiodental fricative /v/ into plosive /p/ change the sound by two feature. Firstly in manner feature where [+continuant] /v/ becomes [-continuant] /p/. The changes happen from fricative into plosive. Secondly, in subsidiary feature where [+voiced] fricative /v/ becomes [-voiced] plosive /p/. The substitution is presented as following;



4.2.3 Voiceless dental fricative /θ/

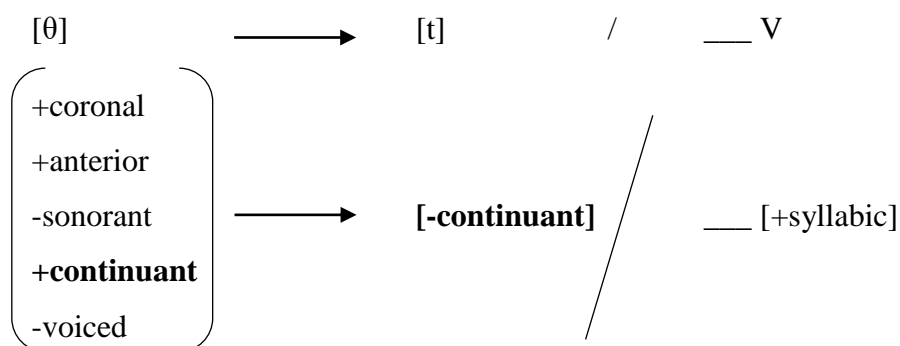
It is clear that dental fricatives do not exist in Sundanese and Javanese phonological system. Therefore, the informants of both languages have similar ability to utter the sound. Because there is no resemblance of dental fricative in JL and SL, the speakers tend to substitute the sound /θ/ into different sound, which is an alveolar plosive /t/. The reason of this substitution is that the informants tend to change the sound into its similar substitution. Because /θ/ sound is dental, so its nearest similar sound is alveolar plosive /t/. This kind of phonological interference occurred in both Javanese and Sundanese. The percentage of correct pronunciation in both languages is quite similar, the former has 53% and the latter has 56%. However, we can not fully justify that Sundanese speakers are better than Javanese in pronouncing the sound as both languages do not have the sound /θ/.

Table 18. Substitution of sound /θ/

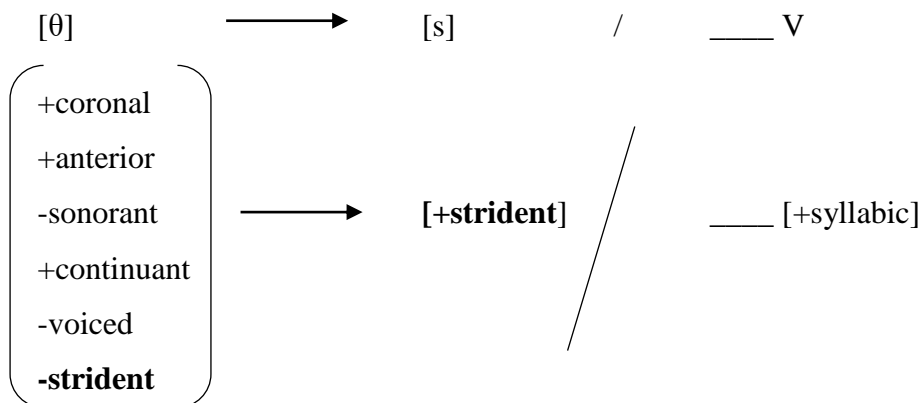
Words	Correct Transcription	JL Transcription	SL Transcription
third	[θɜ:d]	[tərt]	[tərd]
thin	[θIn]	[tin]	[tin]
something	[sʌmθɪŋ]	[samtɪŋ]	[samtɪŋ]
heath	[hi:θ]	[hit]	[hit]

The substitution of sound /θ/ into /t/ is a common mistake done by Sundanese and Javanese speakers. The inexistence of sound made the informants

found it difficult to pronounce words containing such sound. This case means the substitution occurred in manner of articulation mistake because the air passing out the mouth meet complete closure and made plosive sound /t/, rather than partial obstruction in which made fricative kind of sound (Ramelan, 1994: 131). Therefore, sound /θ/ is symbolized as fricative [+continuant] and the /t/ sound is considered as plosive [-continuant].



Though this kind of change is the most common, the informants sometimes substitute /θ/ into alveolar fricative /s/. This case is found in Javanese speaker's pronunciation. Generally, the speaker of Indonesian, Javanese or Sundanese will tend to utter /θ/ as /t/ because the English spelling of /θ/ is "th", thus it is familiar for them to speak. However, in Javanese speakers data several informants speak "thin" as /sin/ and "thought" as /sot/ with alveolar fricative /s/. Therefore, this problem brings a mistake in place of articulation because of too back point of articulation where blade of the tongue is put very close to teethridge. The feature that distinguish between these two sounds are strident where /s/ [+strid] is produced by letting the air hit the teeth while /θ/ [-strid] is not.



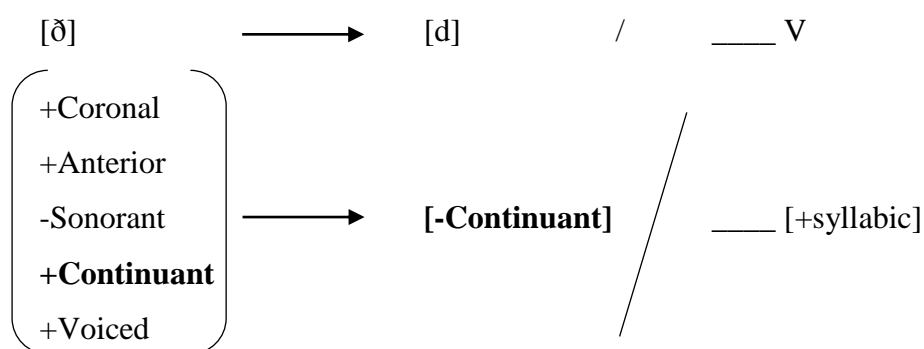
4.2.4 Voiced dental fricative /ð/

The voiced dental fricative /ð/ cause the same problems as its voiceless pair. Both sounds are never found anywhere in Indonesian, Javanese or Sundanese phonological system. As a result, the informants of this study is frequently mistaken in producing the correct pronunciation. Javanese speakers' pronunciations are 50% correct, while the Sundanese are 55% correct. In common occassion, students changed the fricative /ð/ sound to plosive /d/ as like the table below.

Table 19. Substitution of sound /ð/

Words	Correct Transcription	JL Transcription	SL Transcription
this	[ðIs]	[dis]	[dis]
they	[ðei]	[dei]	[dei]
other	[ʌðə]	[odər]	[odər]
breathe	[bri:θ]	[brid]	[brid]

The changes from /ð/ to /d/ occurred in manner of articulation form. Because the informants first language do not own a similar sound as dental fricative in English, they substitute the fricative sound to plosive. Of course we can directly understand that the feature that differentiate both sounds is continuant feature. The fricative /ð/ is referred to as [+continuant] while the plosive /d/ is [-continuant]. Nevertheless, the /d/ sound the informants spoken is not really the same as English which is an alveolar. The informants kind of /d/ sound is dental, following its language type of dental plosive /d/ that is more backed than English. The distinctive feature is presented below.



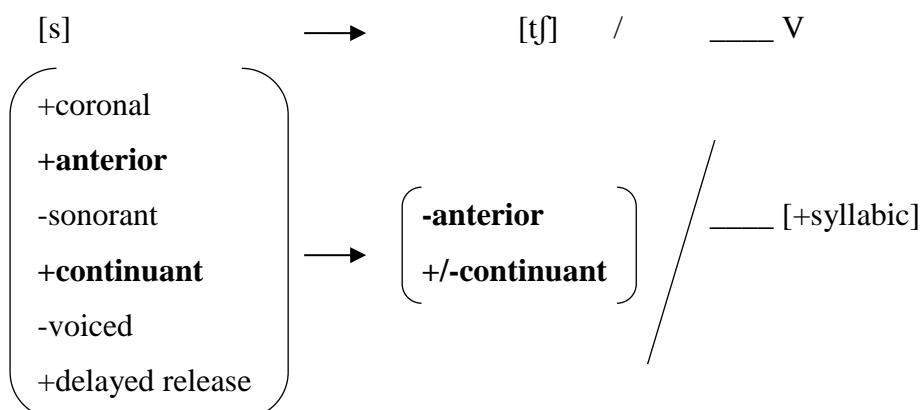
4.2.5 Voiceless alveolar fricative /s/

Compared to the other fricative sound, voiceless alveolar fricative /s/ has the least difficult obstacle to pronounce. The percentage of correct pronunciation of the informants of both languages are quite similar around 97 to 98 percent. This result means their ability to utter the sound is almost perfect. It is not a surprise as the /s/ sound in English share pretty similar characteristics, so it is not a difficult task for the students. However in the words containing letter “c” like cancer, the /s/ sound are sometimes pronounced as affricate /tʃ/.

Table 20. Substitution of sound /s/

Words	Correct Transcription	JL Transcription	SL Transcription
cancer	[kænsə]	[kencər]	[kencər]
city	[sɪtɪ]	[cɪtɪ]	[cɪtɪ]
civil	[sɪvɪl]	[cɪfɪl]	[cɪfɪl]

In this case, the sound /s/ undergo such a strengthening quality which transforms into an affricate /tʃ/. This case occurred in both Javanese and Sundanese speakers. However, this type of error is never happened in final position because as we know there are no affricate in final position in Javanese and Sundanese phonological system. For instance, English has affricate in final position as in words [bætʃ] and [bædʒ]. An affricate is actually [+/-continuant] as it starts with a plosive sound and ends with a fricative sound. It is different from fricative which is certainly [+continuant]. In addition, this substitution is also marked with place of articulation feature. Affricate /tʃ/ is a postalveolar fricative, thus it is [-anterior]. Whereas, /s/ sound is alveolar, so it is [+anterior]. This two sounds are similarly marked with [+delayed release] as the air is released gradually.



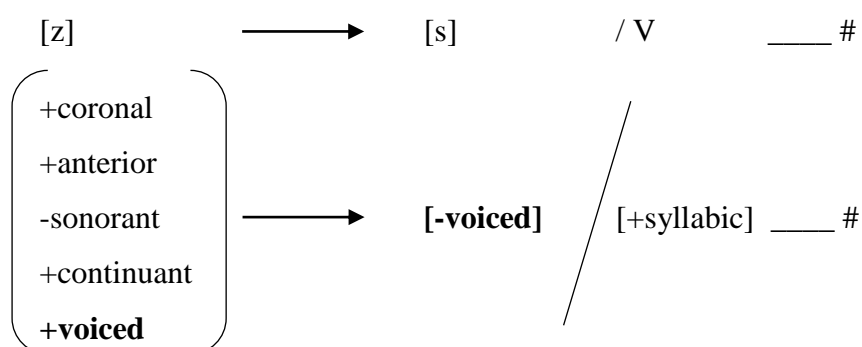
4.2.6 Voiced alveolar fricative /z/

If the voiceless alveolar fricative is not a difficult task for the students in this study, the voiced counterpart will be problem to face. The reason that makes it hard to pronounce is that it does not exist in Javanese or Sundanese phonological systems. The sound /z/ however presents only in borrowing sounds from arabic such as /zaman, zakat/, but the speakers still have difficulty to utter the sound. Other than that, the inconsistency of spelling in English also brings more trouble. The Javanese correct pronunciation is 82%, while the Sundanese is 76%.

Table 21. Lenition of Sound /z/

Words	Correct Transcription	JL Transcription	SL Transcription
has	[hæz]	[hes]	[hes]
as	[æz]	[es]	[es]
houses	[hauziz]	[houses]	[housis]
excuse	[lkskjuz]	[ekskjus]	[ekskjus]

Sound /z/ in English sometimes is symbolized with either “z”, “zz”, “s” or “ss”. When reading a word with “s” letter, the speakers perceived it to be spoken as voiceless alveolar fricative /s/ rather than voiced /z/. However, this case is only found in middle and final position, never in initial position. and The feature that distinguish this two sounds is the voicing state or the subsidiary feature. The voiced alveolar fricative /z/ is weakened and form a voiceless counterpart /s/, thus the former is [+voiced] and the latter is [voiced]. The strong sound of /z/ is weakened or in other word, it undergo lenition process.



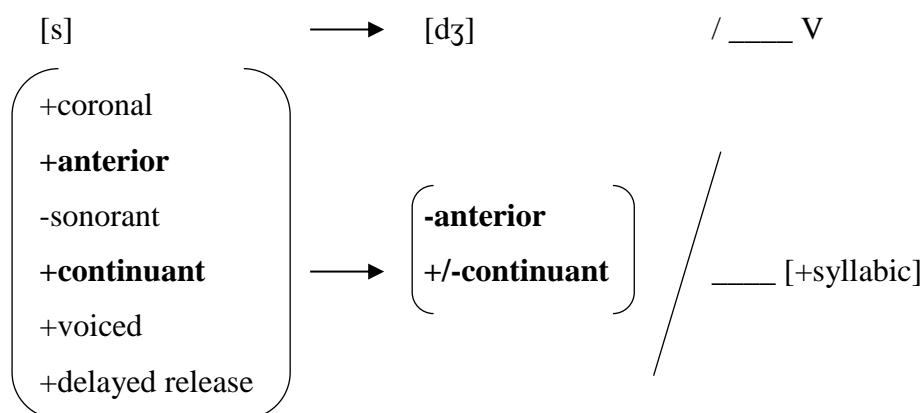
Furthermore, Sundanese informants have different variation in pronouncing the /z/ sound. In recorded data, they also substitute fricative /z/ into an affricate /dʒ/. As already mentioned in Chapter 2, Sundanes speakers could not distinguish /z/ and /dʒ/ sounds. They tend to utter them as one sound such as in /zaman/ or /dʒaman/, /zakat/ or /jakat/.

Table 22. Substitution of sound /z/

Words	Correct Transcription	JL Transcription	SL Transcription
zip	[zɪp]	[zɪp]	[dʒɪp]

zeal	[zi:l]	[zil]	[dʒil]
razor	[reizər]	[rezər]	[redʒər]

This case however only happened in very limited occurrence. Since words containing “z” letter in English is rare, there are only three words that worth discussing. The errors in /redʒər/ is found only in one pronunciation of Sundanese speakers. This kind of substitution is more likely to happened in initial position, but not in final as there’s no /dʒ/ sound in this place in Sundanese phonological system. This circumstance of substitution occurred in manner of articulation. This mistake occurred in both manner and place of articulation. An affricate /dʒ/ is a combination of plosive and fricative sound, so it can be either continuant or non continuant [+/-continuant]. A fricative /z/, on the other hand, is always [+continuant]. The /dʒ/ sound based on its position is a postalveolar, thus it is [-anterior]. Conversely, /z/ is [+anterior] because it is located in alveolar place of articulation. Both sound has the same corresponding feature [+delayed released] in which the air is released steadily.



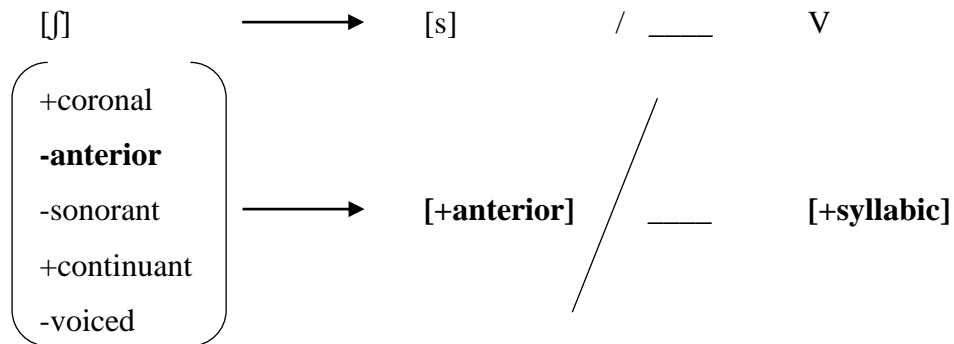
4.2.7 Voiceless postalveolar fricative /ʃ/

Postalveolar sounds either the voiceless or voiced are not found anywhere in Javanese and Sundanese phonological systems. The students who took part in this research faced difficulties to utter these two sounds correctly. These problems lead to mispronunciation of some different words such as the changes of “she” to “sea”. The Javanese speakers pronounce the sounds correctly 76% and the Sundanese speakers correctly pronounce 72% of the sounds.

Table 23. Substitution of sound /ʃ/

Words	Correct Transcription	JL Transcription	SL Transcription
she	[ʃi:]	[si:]	[si:]
machine	[məʃi:n]	[mesin]	[mesin]
mash	[mæʃ]	[mes]	[mes]

This case occurred in all three position; initial, medial and final position. The error distribution is anywhere which means this problem is simply caused by the absence of the sound in Javanese and Sundanese. The informants repeatedly change postalveolar fricative sound /ʃ/ to the alveolar /s/. It is incorrect as the two sounds have different place of articulation, thus they have different features. Sound /ʃ/ is [-anterior] as it is located at the back of oral cavity. On the other hand, a /s/ sound is [+alveolar] because it is located at the front of oral cavity.



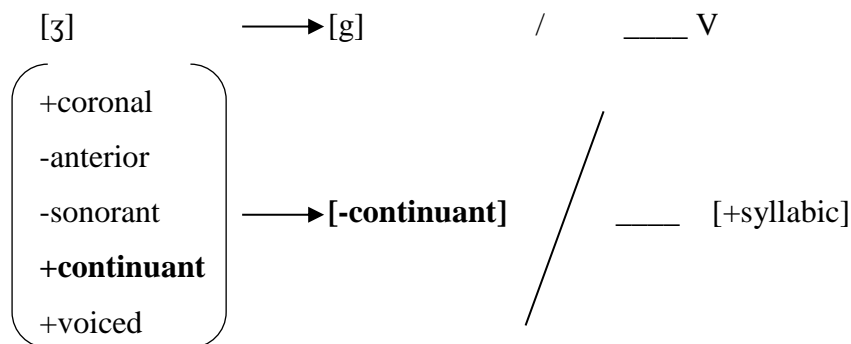
4.2.8 Voiced postalveolar fricative /ʒ/

It is clear that postalveolar fricative sounds are tough to pronounce, but the voiced equivalent is tougher than its voiceless. The reason to this difficulty is that /ʒ/ sound has really complicated spelling representation. This sound is sometimes symbolized with “g”, “s” and even “z”. The Javanese speakers correct pronunciations are 60%, while Sundanese ones are 50%

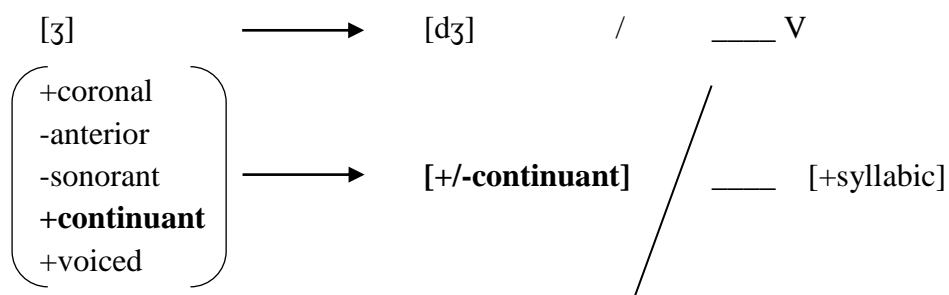
Table 24. Substitution of sound /ʒ/

Words	Correct Transcription	JL Transcription	SL Transcription
genre	[ʒɒnrə]	[genre]/[dʒenre]	[genre]/[dʒenre]
pleasure	[pleʒə]	[plesur]	[pleisur]
seizure	[si:ʒə]	[seizer]	[seizer]
vision	[viʒn]	[fisien]	[fisien]
rouge	[ru:ʒ]	[roudʒ]/[rog]	[roudʒ]/[roug]

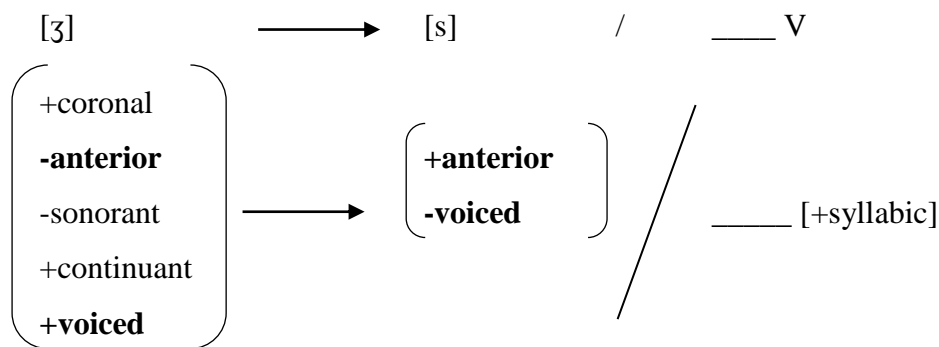
There are various errors or mispronunciations. The first is substitution of /ʒ/ to /g/ sound. Clearly it is a mistake in manner of articulation. The students are unable to speak the sound correctly and find the replacement based on its spelling, which is a plosive sound /g/. Because sound /g/ is a plosive sound it is [-continuant] as there is no continuous friction in producing the sound. The fricative /ʒ/ itself is a [+continuant] because it is produced with friction. The distinctive feature is below;



The second substitution is a voiced affricate /dʒ/. The speaker should keep in mind that the correct pronunciation in word “genre” and “rouge” are different from the one in words “age” and “magic” where the letter “g” is pronounced as affricate /dʒ/. The writer has discussed previously the difference between affricate and fricative sounds. Sound /dʒ/ is [+/-continuant] because it contains plosive and fricative sounds. The /ʒ/ is only [+continuant]. The features other than that are the same. The distinctive feature is presented as follows.



The third kind of substitution is the replacement to alveolar fricative sounds /s/ and /z/. The spelling of the words influence the understanding of the speaker to utter the /ʒ/ sound. Based on Uriel Weinreich ideas about factors determining language interference, it is due to the lack of understanding of second language vocabularies so that the students are unable to find the accurate articulation. The changes of sound from /ʒ/ to alveolar fricatives are mistakes in place of articulation. Sound /ʒ/ is [-anterior] as it is located at the back of oral cavity, while /s/ and /z/ sounds are located at front of it, thus it is [+anterior]. In addition, sound /s/ is different in voicing state as it is [-voiced].



4.2.9 Voiceless glottal fricative /h/

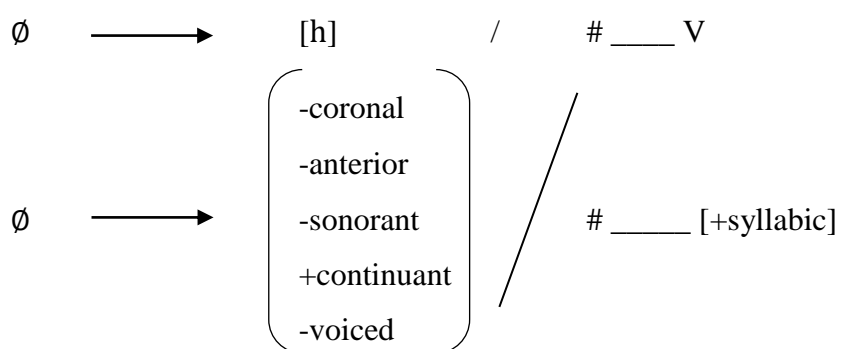
The sound /h/ in English, Javanese and Sundanese posses the same characteristics. Therefore this sound is not a hard task for students to pronounce. The percentage of correct pronunciation of both Javanese and Sundanese is almost 100%. Hence, there are still errors made by students.

Table 25. Addition and deletion of sound /h/

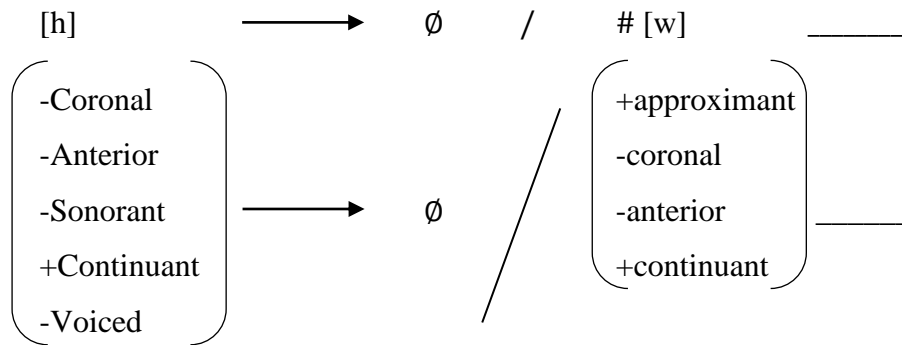
Words	Correct Transcription	JL Transcription	SL Transcription
who	[hu]	[wu]	[wu]
honest	[ɒnist]	[hones]	[honest]
hour	[aʊə]	[hawer]	[howr]

Once again, due to lack of vocabularies understanding, the speakers incorrectly added a sound where it should not be pronounced. According to received pronunciation (RP) there is no sound /h/ in words “honest” and “hour”, yet the students as informants of this research perceived that it should be uttered. On the other hand, sound /h/ is present in English RP for word “who”, but it is omitted by the speakers. The distinctive feature or phonological process can be described as follow.

The addition process resulted in the appearing sound which is actually not pronounced in the words or phrase



Conversely, the deletion or elision is an omission of one or more sounds from words or phrase so that make the words easier for speaker to pronounce.



CHAPTER V

CONCLUSION

This chapter contains the conclusion of the research. The results of the research are to infer from the whole research. It mostly refers to the findings and the analysis of data presented in the previous chapter. To grasp the conclusion, the writer infers from whole chapters above. The writer also divided this chapter into two sub-chapters, conclusion and suggestion. The writer will explain both sub-chapters below.

5.1 Conclusion

In this research, the writer concluded that there are many pronunciation errors found from the informants' pronunciation. The first language has an important role in learning a second language. Javanese and Sundanese has similarity and dissimilarity of phonological features. The speakers tend to following the phonological concept of their native language. The difference in phonological system caused negative transfer between L1 and L2.

There are several types of phonological interference produced by the learners; substitution, under-differentiation, addition, elision and lenition. Substitution is the interference which has the most cases, the other has small number of occurrence. Based on the data, the Javanese are better in producing fricative sounds compared to Sundanese. For example, Javanese speaker are able to speak /f,v/ well, but Sundanese often exchange the sound with /p/ sound.

Some factors cause the language interference. An important factor that resulted in phonological interference is the speaker's stock of vocabularies. In many occasion the speakers are not familiar with the words and the spelling. Their understanding of first language influence their comprehension on the second language.

Finally, some features were used to show and prove that pronunciation errors resulted in different phonemes and sometimes also change meanings of words. The distinctions are found in manner of articulation, place of articulation and in subsidiary features. By using distinctive feature, the phonological processes are explained in table and diagram.

5.2 Suggestion

This research only focuses on the consonants pronunciation, specifically the fricative and plosive consonants. Study on the phonological interference of the other sounds are still need to be done including the vowel sounds. This study also did not discuss the suprasegmental aspect of language such as intonation, rhythm, stress level and etc. Some factors that cause interferene are only related to the speakers understanding of a second language, this study did not investigate other factors outside language such as motivation and learning strategies. Therefore, there is still the need to study more comprehensive investigation about Javanese and Sundanese speakers speaking English as a second language.

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APPENDIX

1. English words list

- | | | |
|---------------|------------------|-----------------|
| 1. past | 42. bag | 83. heath |
| 2. compass | 43. beggar | 84. think |
| 3. map | 44. dog | 85. theme |
| 4. peanut | 45. significance | 86. mother |
| 5. upper | 46. fog | 87. mouth |
| 6. psychology | 47. charm | 88. truth |
| 7. empty | 48. nature | 89. this |
| 8. receipt | 49. teach | 90. other |
| 9. buy | 50. choke | 91. smooth |
| 10. hobby | 51. chip | 92. they |
| 11. robe | 52. match | 93. breathe |
| 12. doubtful | 53. culture | 94. lather |
| 13. tomb | 54. jam | 95. father |
| 14. cub | 55. magic | 96. bathe |
| 15. baby | 56. age | 97. sack |
| 16. tense | 57. gin | 98. positive |
| 17. native | 58. soldier | 99. precise |
| 18. put | 59. badge | 100. leaps |
| 19. little | 60. page | 101. advice |
| 20. bottom | 61. apologize | 102. as |
| 21. butter | 62. fair | 103. has |
| 22. rotten | 63. face | 104. especially |
| 23. time | 64. define | 105. zip |
| 24. date | 65. confide | 106. razor |
| 25. indicate | 66. deaf | 107. buzz |
| 26. bed | 67. half | 108. advise |
| 27. body | 68. suffer | 109. zeal |
| 28. suddenly | 69. leaf | 110. robs |
| 29. cad | 70. with | 111. excuse |
| 30. red | 71. valid | 112. houses |
| 31. food | 72. reveal | 113. ship |
| 32. thousand | 73. save | 114. machine |
| 33. kid | 74. leave | 115. mash |
| 34. market | 75. prove | 116. she |
| 35. pick | 76. verve | 117. shell |
| 36. key | 77. vest | 118. push |
| 37. taken | 78. solve | 119. moustache |
| 38. school | 79. divide | 120. genre |
| 39. convey | 80. level | 121. leisure |
| 40. gain | 81. third | 122. rouge |
| 41. eager | 82. something | 123. composure |

- | | | |
|---------------|-----------------|----------------|
| 124. vision | 150. mark | 176. angry |
| 125. usual | 151. wait | 177. long |
| 126. pleasure | 152. wreck | 178. wrinkle |
| 127. seizure | 153. towel | 179. ankle |
| 128. hand | 154. when | 180. tub |
| 129. cohesion | 155. wheel | 181. city |
| 130. honest | 156. water | 182. civil |
| 131. hoe | 157. wise | 183. bead |
| 132. help | 158. lawyer | 184. he |
| 133. who | 159. value | 185. least |
| 134. cancer | 160. yearn | 186. keen |
| 135. loose | 161. funeral | 187. leave |
| 136. pilot | 162. peg | 188. breakfast |
| 137. pill | 163. hour | 189. bid |
| 138. play | 164. mad | 190. before |
| 139. bottle | 165. drummer | 191. kin |
| 140. filling | 166. game | 192. live |
| 141. folk | 167. small | 193. task |
| 142. filter | 168. confidence | 194. top |
| 143. rate | 169. nail | 195. could |
| 144. arrive | 170. manage | 196. bed |
| 145. keeper | 171. lean | 197. sell |
| 146. borrow | 172. certain | 198. peck |
| 147. wrap | 173. new | 199. percent |
| 148. bride | 174. snail | 200. text |
| 149. pride | 175. knee | |

2. Words transcription in English based on Oxford Dictionary (2019)

1. p ^h ɑ:st	45. sɪg'nɪfɪkəns	89. ðɪs
2. kʌmpəs	46. fʊg	90. ʌðə
3. mæp	47. ʃɑ:m	91. smu:ð
4. pi:nʌt	48. neɪʃə	92. ðeɪ
5. ʌpə	49. ti:ʃ	93. brɪ:ð
6. saɪ'kɒlədʒi	50. ʃəʊk	94. lɑ:ðə
7. ɛmptɪ	51. ʃɪp	95. fɑ:ðə
8. rɪ'si:t	52. mæʃ	96. beɪð
9. baɪ	53. kʌlʃə	97. sæk
10. hʊbi	54. dʒæm	98. pʊzətɪv
11. rəʊb	55. mædʒɪk	99. prɪ'saɪz
12. daʊtfʊl	56. eɪdʒ	100. li:ps
13. t ^h u:m	57. dʒɪn	101. əd'vaɪs
14. k ^h ʌb	58. səʊldʒə	102. æz
15. beɪbi	59. bædʒ	103. hæz
16. t ^h ɛns	60. peɪdʒ	104. ɪs'peɪʃəli
17. neɪtɪv	61. ə'pɒlədʒaɪz	105. zɪp
18. p ^h ʊt	62. feə	106. reɪzə
19. lɪtl	63. feɪs	107. bʌz
20. bʊtəm	64. dɪ'faɪn	108. əd'vaɪz
21. bʌtə	65. kən'faɪd	109. zi:l
22. rʊtn	66. dɛf	110. rʊbz
23. t ^h aɪm	67. hɑ:f	111. ɪks'kju:s
24. deɪt	68. sʌfə	112. haʊzɪz
25. ɪndɪkeɪt	69. li:f	113. ʃɪp
26. beɪd	70. wɪð	114. mə'ʃi:n
27. bʊdi	71. væɪɪd	115. mæʃ
28. sʌdnli	72. rɪ'vi:l	116. ʃi:
29. k ^h æd	73. seɪv	117. ʃeɪl
30. rɛd	74. li:v	118. p ^h ʊʃ
31. fu:d	75. prɪ:v	119. məs'tɑ:ʃ
32. 'θaʊzənd	76. vɜ:v	120. zɑ:ŋrə
33. khɪd	77. vɛst	121. lɛzə
34. mɑ:kɪt	78. sɒlv	122. ru:ʒ
35. pɪk	79. dɪ'vaɪd	123. kəm'pəʊzə
36. k ^h i:	80. levl	124. vɪzən
37. t ^h eɪkən	81. θɜ:d	125. ju:zʊəl
38. sku:l	82. sʌmθɪŋ	126. plezə
39. k ^h ən'veɪ	83. hi:θ	127. si:zə
40. gem	84. θɪŋk	128. hænd
41. i:gə	85. θi:m	129. kəʊ'hi:zən
42. bæg	86. mʌðə	130. ʊnɪst
43. begə	87. mɑʊθ	131. həʊ
44. dʊg	88. tru:θ	132. help

- | | | |
|---------------------------|------------------------|--------------------------|
| 133. hu: | 156. wɔ:tə | 179. æŋkl |
| 134. k ^h ænsə | 157. waɪz | 180. t ^h ʌb |
| 135. lu:s | 158. lɔ:jə | 181. sɪti |
| 136. p ^h aɪlət | 159. vælju: | 182. sɪvl |
| 137. p ^h ɪl | 160. jɜ:n | 183. bi:d |
| 138. plɪr | 161. fju:nərəl | 184. hi: |
| 139. bɒtl | 162. p ^h ɛg | 185. li:st |
| 140. fɪlɪŋ | 163. aʊə | 186. k ^h i:n |
| 141. fəʊk | 164. mæd | 187. li:v |
| 142. fɪltə | 165. drʌmə | 188. brɛkfəst |
| 143. reɪt | 166. geɪm | 189. bɪd |
| 144. ə'raɪv | 167. smɔ:l | 190. bɪ'fə: |
| 145. k ^h i:pə | 168. kɒnfɪdəns | 191. khɪn |
| 146. bɔrəʊ | 169. neɪl | 192. lɪv |
| 147. ræp | 170. mænɪdʒ | 193. t ^h ɑ:sk |
| 148. braɪd | 171. li:n | 194. t ^h ɒp |
| 149. praɪd | 172. sɜ:tn | 195. k ^h ʊd |
| 150. mɑ:k | 173. ŋju: | 196. bɛd |
| 151. weɪt | 174. sneɪl | 197. sɛl |
| 152. rɛk | 175. ni: | 198. p ^h ɛk |
| 153. θaʊəl | 176. æŋgri | 199. pə'sent |
| 154. wɛn | 177. lɒŋ | 200. t ^h ɛkst |
| 155. wi:l | 178. rɪŋkl | |

3. Transcription of Javanese speakers

1. pes	45. sɪgnɪfɪkən	89. dɪs
2. kompəs	46. fɔk	90. ʌdər
3. mep	47. ʃfɑrm	91. smu:d
4. pinat	48. neʃfər	92. deɪ
5. ʌpər	49. ti:ʃ	93. brɪ:d
6. pɪsɪ'kolodʒi	50. ʃfɔk	94. lɑ:dər
7. emti	51. ʃɪp	95. fɑ:dər
8. reseɪp	52. meʃ	96. beɪd
9. baj	53. kʌltər	97. sek
10. hobi	54. dʒem	98. positɪf
11. rop	55. meɔdʒɪk	99. presəɪs
12. doʊbfəl	56. edʒ	100. li:ps
13. tom	57. dʒɪn	101. ədfais
14. kʌp	58. soldər	102. əs
15. beɪbi	59. bedʒ	103. hæʃ
16. tɛns	60. pedʒ	104. espeʃjəli
17. netɪf	61. apolodʒɪz	105. zɪp
18. pʊt	62. fer	106. rezər
19. lɪtel	63. fes	107. bʌs
20. boʊəm	64. defən	108. əd'fais
21. bʌtər	65. konfɪd	109. zi:l
22. rɔʊn	66. def	110. roʊbs
23. tɑɪm	67. hɑ:f	111. ɛkskju:s
24. det	68. sʌfər	112. hɑʊsɪs
25. ɪndɪket	69. li:f	113. sɪp
26. bet	70. wɪt	114. mə'si:n
27. bodi	71. fɑɪd	115. mes
28. sʌdənli	72. rɪ'fi:l	116. ʃi:
29. ket	73. sef	117. sɛl
30. rɛt	74. li:f	118. pʊʃ
31. fu:t	75. pru:f	119. mostɑ:tʃ
32. tɔʊzən	76. fɜ:f	120. dʒe:ŋre
33. kɪt	77. fes	121. lesur
34. mɑrket	78. solf	122. roug
35. pɪk	79. dɪfɑɪd	123. kompʒur
36. ki	80. lefel	124. vɪsɪən
37. tekən	81. tɜrd	125. juʃəʊl
38. skul	82. sʌmtɪŋ	126. pleɪzər
39. konfɪ	83. hi:t	127. seɪzər
40. gen	84. tɪŋk	128. hen
41. i:gər	85. ti:m	129. kɔhe:sən
42. bek	86. mʌðər	130. hɔnes
43. begə	87. mɑʊt	131. hoɛ
44. dog	88. tru:d	132. help

133. whu:	156. wo:tər	179. ɛŋkl
134. kencər	157. wais	180. tʌb
135. lu:s	158. lou:jər	181. sɪti
136. paɪlot	159. felju:	182. ɔvɪl
137. pɪl	160. jɜ:rn	183. bi:d
138. plɛr	161. funərəl	184. hi:
139. botəl	162. pɛk	185. li:st
140. fɪlɪŋ	163. haʊər	186. ki:n
141. fɒlk	164. met	187. li:f
142. fɪltər	165. drʌmər	188. brekfəs
143. ret	166. gem	189. bɪt
144. ərəɪf	167. smɔ:l	190. bɪ'fɔ:r
145. ki:pər	168. kɒnfɪdəns	191. kɪn
146. bɒrɒw	169. neɪl	192. lɪf
147. wrap	170. mɛnɛdʒ	193. tɑ:s
148. brat	171. li:n	194. tɒp
149. praɪt	172. sə:rten	195. kʊd
150. mɑ:k	173. ŋju:	196. bɛt
151. weɪt	174. sneɪl	197. sɛl
152. wrɛk	175. kni:	198. pɛk
153. təwəl	176. ɛŋgri	199. pə'sɛn
154. wɛn	177. lɒŋ	200. tɛks
155. wi:l	178. wrɪŋkəl	

4. Transcription of Sundanese speakers

1. paes	45. sɪgnɪfɪkən	89. dɪs
2. kompes	46. fɔg	90. ʌdər
3. mep	47. ʃfarm	91. smu:d
4. pinat	48. netur	92. dər
5. ʌpər	49. ti:ʃ	93. brɪ:d
6. psar'kolodʒi	50. ʃfok	94. lɑ:dər
7. emti	51. sɪp	95. fɑ:dər
8. reseɪp	52. meɪʃ	96. beɪd
9. baj	53. kʌʃfər	97. sek
10. hobi	54. dʒem	98. positɪf
11. roub	55. meɪdʒɪk	99. presars
12. doʊbfəl	56. eɪdʒ	100. li:ps
13. tom	57. dʒɪn	101. ədfɑɪz
14. kʌb	58. soldɪər	102. æs
15. beɪbi	59. beɪdʒ	103. hæp
16. tɛns	60. pɛg	104. espeʃjəli
17. neɪtɪf	61. epolodʒarɪz	105. dʒɪp
18. pʊt	62. fɛr	106. redʒər
19. lɪtl	63. fɛs	107. bʌs
20. botm	64. depaɪn	108. əd'fɑɪs
21. bʌtər	65. kənpaɪd	109. dʒi:l
22. rotn	66. def	110. robs
23. tɑɪm	67. hɑlp	111. ɛkskjʊ:s
24. det	68. sʌfər	112. haʊsɪs
25. ɪndɪket	69. li:p	113. sɪp
26. bet	70. wɪt	114. mə'si:n
27. bodi	71. pelɪd	115. mes
28. sʌdənli	72. rɪ'pi:l	116. si:
29. ket	73. sep	117. sɛl
30. rɛt	74. li:p	118. pʊʃ
31. fu:t	75. prʊ:p	119. mostɑ:tʃ
32. tʊʊzənt	76. fɜrp	120. ge:ŋre
33. kɪd	77. fɛs	121. lesur
34. mɑrkit	78. solp	122. rouɪdʒ
35. pɪk	79. dɪfɑɪd	123. komposur
36. ki:	80. lefel	124. fɪsɪən
37. tekən	81. tɜrt	125. jusoal
38. skul	82. sʌmtɪŋ	126. pleɪzər
39. konfɪ	83. hi:θ	127. seɪzər
40. geɪn	84. tɪŋ	128. hen
41. i:gər	85. θi:m	129. kohi:sən
42. beg	86. mʌðər	130. honɛs
43. begar	87. mɑʊt	131. hu
44. dog	88. tru:t	132. help

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|----------------|--------------|
| 133. whu: | 179. eŋkəl |
| 134. kensər | 180. tʌb |
| 135. lu:s | 181. ɔti |
| 136. pɪlɒt | 182. sɪvɪl |
| 137. pɪl | 183. bi:d |
| 138. plɛr | 184. hi: |
| 139. bɒtəl | 185. li:st |
| 140. fɪlm | 186. ki:n |
| 141. fɒlk | 187. li:f |
| 142. fɪltər | 188. brɛkfəs |
| 143. rɛt | 189. bɪd |
| 144. əraɪp | 190. br'fɔ:r |
| 145. ki:pər | 191. kɪn |
| 146. bɒrɒw | 192. lɪf |
| 147. wrap | 193. tɑ:s |
| 148. brɑɪt | 194. tɒp |
| 149. praɪt | 195. kʊd |
| 150. mɑ:k | 196. bɛd |
| 151. weɪt | 197. sɛl |
| 152. wrɛk | 198. pɛk |
| 153. təwəl | 199. pə'sɛn |
| 154. wɛn | 200. tɛks |
| 155. wi:l | |
| 156. wɔ:tər | |
| 157. wɛs | |
| 158. lɔ:jər | |
| 159. fɛljʊ: | |
| 160. jɜ:rn | |
| 161. funərəl | |
| 162. pɛk | |
| 163. haʊər | |
| 164. mɛt | |
| 165. drʌmər | |
| 166. gɛm | |
| 167. smɔ:l | |
| 168. kɒnpɪdəns | |
| 169. nɛɪl | |
| 170. mɛnɛdʒ | |
| 171. li:n | |
| 172. sɜ:rtɛn | |
| 173. nju: | |
| 174. snɛɪl | |
| 175. kni: | |
| 176. ɛŋrɪ | |
| 177. lɒŋ | |
| 178. wrɪŋkəl | |

