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The Misuse of Speech Rhythm Components by Undergraduate Students

The Case of the Interlanguage of Third Year Students of English at the University of Mentouri, Constantine

Thesis Submitted to the Department of Letters and the English Language in Candidacy for the Degree of LMD Doctorate in Applied Linguistics/ Studies in Applied Languages

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DEDICATION

This work is dedicated to:

My devoted parents

My caring sisters and loving brother

My adorable nephew

My lovely relatives and friends

and

all those who always wish the best for me

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ABSTRACT

The nature of speech rhythm classes has been a matter of much debate as to whether it should be conceived as a discrete stress-timed vs. syllable-timed dichotomy or as a continuum. According to the new account of speech rhythm, the fact that Algerian Arabic and English belong to the same rhythmic class does not necessarily mean that Algerian learners of English as a foreign language will produce the correct rhythmic patterns of English. The production of the latter is rather related to their interlanguage which is affected by the previously known linguistic systems' phonology. The present research sets out to classify the rhythm of the interlanguage produced by third year Algerian EFL students at Mentouri University as well as to investigate the role of interference in the shaping of this interlanguage speech rhythm. Accordingly, we hypothesised that the features of speech rhythm components produced by the informants would be affected by interference from the previously known linguistic systems i.e. Algerian Arabic, Standard Arabic and French. We also hypothesised that the resulting interlanguage speech rhythm would be a hybrid of stress-timed and syllable-timed speech rhythms. An error analysis of the informants' production of vowel reduction, syllable structure and stress is conducted in order to verify the first hypothesis. As for the second hypothesis, a corpus of the informants' recordings is acoustically analysed by means of the universal speech analysis software, Praat, in order to eventually measure the rhythm metrics %V and ΔC. The findings obtained confirm both hypotheses. The informants' rhythmic patterns are mostly affected by their first foreign language, French, and to a great extent by spelling pronunciation. The metrics measured in this study i.e. %V and ΔC, yield that the informants' speech rhythm is rather intermediate, merging a stress-timed ΔC and a syllable-timed %V. Following the findings obtained, a syllabus for teaching the different aspects of speech rhythm at the word and sentence level in both modules, 'Phonetics' and 'Oral Expression and Listening Comprehension', is suggested.

Key words: interlanguage rhythm, rhythm metrics: %V and ΔC, spelling pronunciation

LIST OF ABBREVIATIONS

AA: Algerian Arabic

AE: Algerian English

BA: Bachelor Degree

CA: Contrastive Analysis

CCI: Control Compensation Index

EA: Error Analysis

EFL: English as a Foreign Language

EN: English

FR: French

IL: Interlanguage

IPA: International Phonetics Association/ Alphabet

L1: First Language

L2: Second Language

LMD: Licence, Master, Doctorat

NL: Native Language

OE: Oral Expression and Listening Comprehension

PVI: Pairwise Variability Index (nPVI= normalized PVI/ rPVI= raw PVI)

RP: Received Pronunciation

TL: Target Language

UG: Universal Grammar

%V: The Proportional Duration of Vocalic Intervals

ΔC: The Standard Deviation of the Duration of Intervocalic Intervals

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LIST OF PHONETIC SYMBOLS

For easiness of reference, the phonetic symbols used in the present research work are classified per language/variety[1] in the following tables:

North-East Algerian IPA Symbols[2]

1. Vowels

Vowels		Example	IPA transcription	Meaning
Simple	a	لرض	ll**a**ɹḍ	floor
	a:	بالكو	b**a:**lku	balcony
	u	سيرو	s**i:**ru	syrup
	u:	فول	f**u:**l	broad bean
	i	ستيلو	st**i**lu	pen
	i:	سرير	sɹ**i:**ɹ	bed
	o	دورو	d**o**ru	penny
	ə	حبل	ḥbəl	rope
	æ	هوا	hw**æ**	air
	æ:	باب	b**æ:**b	door
Diphtongs	əʊ	نو	n**əʊ**	rain
	ai	فايرة	f**ai**ɹa	steamed
	ei	فايدة	f**ə**idə	benefit
	aʊ	روعة	ɹ**aʊ**ʕa	awesome
	əi	زيتون	**əi**tu:n	olive

2. Consonants

Consonants		Example	IPA transcription	Meaning
Voiced	b	بلوزة	**b**lu:za	dress
	d	يد	jə**d**	hand
	ḍ	دراهم	**ḍ**ɹahəm	money
	g	قلب	**g**əlb	heart
	m	مايدة	**m**eidə	dinner table
	n	ناموس	**n**æmu:s	mosquito
	ɗ	ضرسة	**ɗ**arʂa	tooth
	z	زربية	**z**aɹbijæ	carpet
	ʒ	جبل	**ʒ**bəl	mountain
	ɹ	رمل	**ɹ**məl	sand
	l	لبن	**l**bən	buttermilk
	j	يد	**j**əd	hand
	w	وردة	**w**aɹḍa	rose

[1] Modern Standard Arabic is not categorised separately as all its vowels and consonants are included in the North-East Algerian dialect, except for the diphthongs /aj/ and /aw/.

[2] As we have not found any comprehensive description of the sounds of the North East Algerian Arabic, we have relied on our own competence in the dialect.

	h	همل	**h**məl	got lost
	ʕ	عدس	**ʕ**dəs	lentil
	ɣ	غرس	**ɣ**əɹs	date paste
Voiceless	t	تسعة	**t**əsʕa	nine
	ţ	طماطم	**ţ**ma:ţam	tomato
	k	كتاب	**k**tæ:b	book
	f	فلّوس	**f**əlu:s	chick
	s	سلّوم	**s**əlu:m	ladder
	ṣ	صبّاط	**ṣ**abba:t	shoe
	ʃ	شجرة	**ʃ**æʒɹa	tree
	x	خزانة	**x**zæ:nə	cupboard
	q	قفل	**q**fæl	close
	ḥ	حمار	**ḥ**ma:ɹ	donkey

Standard French IPA Symbols

1. Vowels

Vowels		Example	IPA transcription	Meaning
Oral	a	atelier	**a**təlje	workshop
	ɑ	hâte	**ɑ**t	haste/hurry
	u	ours	**u**ʁs	bear
	e	chanter	ʃɑ̃.t**e**	to sing
	i	qui	k**i**	who
	y	substitut	s**y**p.sti.ty	substitute/surrogate
	o	beau	b**o**	beautiful
	ɔ	ogre	**ɔ**gʁ(ə)	ogre
	œ	pleurer	plœre	to cry
	ø	jeudi	ʒødi	Thursday
	ə	de	d**ə**	from
	ɛ	presque	pʁ**ɛ**sk	almost
Nasal	ɛ̃	indien	**ɛ̃**djɛ̃	Indian
	ɑ̃	penser	p**ɑ̃**se	to think
	œ̃	brun	bʁ**œ̃**	brown
	ɔ̃	honte	**ɔ̃**t	shame, disgrace
Semi-vowel	ɥ	pluie	/pl**ɥ**i/	rain
	w	trois	/tʁ**w**a/	three

2. Consonants

Consonants		Example	IPA transcription	Meaning
Voiced	b	ballon	**b**alɔ̃	ball
	d	demain	**d**(ə)mɛ̃	tomorrow
	g	gorge	**g**ɔʁʒ	throat
	ʒ	girafe	**ʒ**iʁaf	giraffe
	l	livre	**l**ivʁ	book
	m	maison	**m**ɛzɔ̃	house
	n	nid	**n**i	nest

	ʁ	regard	**ʁ**(ə)ga**ʁ**	look
	v	valise	**v**aliz	suitcase
	z	zone	**z**on	zone
	ɲ	signe	si**ɲ**	sign
	ɳ	briefing	briːfɪ**ŋ**	briefing
	j	famille	fami**j**	family
Voiceless	s	sabot	**s**abo	hoof, wheel clamp
	f	fauteuil	**f**otœj	armchair
	k	classeur	**k**lɑsœʁ	binder, folder
	t	tarte	**t**aʁt	pie
	ʃ	chandellle	**ʃ**ɑ̃dɛl	candle
	p	paradis	**p**aʁadi	paradise, heaven

Standard English IPA Symbols

1. Vowels

Vowels		Example	IPA transcription
Simple	i	limp	l**i**mp
	iː	leader	l**iː**də
	ʌ	oven	**ʌ**vən
	æ	hand	h**æ**nd
	ɑː	carbon	k**ɑː**bən
	ʊ	would	w**ʊ**d
	uː	wound	w**uː**nd
	ɒ	body	b**ɒ**di
	ɔː	mourn	m**ɔː**n
	e	bed	b**e**d
	ə	account	**ə**kaʊnt
	ɜː	bird	bɜ**ː**d
Diphthong	ɪə	here	h**ɪə**
	eɪ	made	m**eɪ**d
	aɪ	I	**aɪ**
	ɔɪ	soil	s**ɔɪ**l
	ʊə	poor	p**ʊə**
	əʊ	loaf	l**əʊ**f
	aʊ	ouch	**aʊ**tʃ
	eə	share	ʃ**eə**
Thriphthong	eɪə	layer	l**eɪə**
	aɪə	higher	h**aɪə**
	aʊə	shower	ʃ**aʊə**
	əʊə	mouer	m**əʊə**
	ɔɪə	lawyer	l**ɔɪə**
Semi-vowel	j	yes	j**e**s
	w	west	w**e**st

2. Consonants

Consonants		Example	IPA transcription
Voiced	b	butter	**b**ʌtə
	d	bed	be**d**
	g	gorgeous	**g**ɔ:dʒəs
	ʒ	measure	me**ʒ**ə
	l	labour	**l**eɪbə
	ɭ	little	lɪt**ɭ**
	m	mine	**m**aɪn
	n	nurse	**n**ɜ:s
	ŋ	building	bɪldɪ**ŋ**
	ð	the	**ð**ə
	r	razor	**r**eɪzə
	v	velour	**v**əlʊə
	z	zone	**z**əʊn
	dʒ	judge	**dʒ**ʌdʒ
Voiceless	s	sea	**s**i:
	f	five	**f**aɪv
	k	balcony	bæl**k**əni
	k^h	keen	**k**^{h}i:n
	t	eastern	i:s**t**ən
	t^h	table	**t**^{h}eɪbl
	ʃ	wash	wɒ**ʃ**
	p	purple	p^hɜ:**p**ɭ
	p^h	please	**p**^{h}li:z
	θ	thin	**θ**ɪn
	h	habit	**h**æbɪt
	tʃ	watch	wɒtʃ

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CHAPTER THREE : SPEECH RHYTHM COMPONENTS OF THE THREE LANGUAGES KNOWN TO THE INFORMANTS: ALGERIAN ARABIC, FRENCH AND ENGLISH

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GENERAL INTRODUCTION

GENERAL INTRODUCTION

1. Statement of the Problem

When lying down on your bed, sleepless, hearing nothing but the clock ticking, you definitely will take heed of the alternations this sound goes through; one tick followed by a period of silence, another one tick followed by another period of silence, and the process goes on the same way until you fall asleep. If you watch someone practicing rope jumping, you will notice that the leaps are performed in a highly coordinated timed-sequence of two movements; back and forth over the rope. The repetition of the clock's tick-tock and the rope's skip-bounce alternations creates a sort of *rhythm***.** Similarly, while listening to speeches, you will soon discover that the words used are arranged in sequences temporally distributed in one way or another. Brown (1908, p. 4) asserted that it is "hardly an act performed by us, either mentally or physically, into which rhythm does not enter as one of the obvious factors".

Rhythmically speaking, languages are divided into two classes: stress-timed languages like Algerian Arabic and English as opposed to syllable-timed languages like French. The former have equal intervals of time regardless of the number of unstressed syllables between them, whereas the latter tend to give each syllable approximately equal duration. Contrary to this isochrony-based classification, Roach (1982) and others suggested some phonological and phonetic factors that are important contributors to perceived speech rhythm. These phonological and phonetic properties are pointed out by Dauer (1983) as being the variety and complexity of syllable structure, the reduction phenomenon, and the salient stress. From this new account of speech rhythm comes the impetus of the present research work. As a matter of fact, belonging to the same rhythmic class does not necessarily mean that Algerian learners of English as a foreign language (EFL) will produce its correct rhythmic patterns. The

production of the latter is rather related to their interlanguage, which is affected by their previously known linguistic systems' phonology, since syllable structure, reduction phenomenon and salient stress are language-dependent phonological factors. Therefore, to better classify the interlanguage speech rhythm of Algerian EFL learners at the Department of English, Mentouri University, it is preliminary to first understand the nature of its phonological properties, especially when French, a typical syllable-timed language, is the informants' first foreign language, even if it is not fully mastered by the majority of them.

2. Aims of the Study

The present study aims at investigating the characteristics of the speech rhythm produced by third year EFL students at the Department of English, University of Mentouri, Constantine, through identifying the role of the previously known linguistic systems Algerian Arabic[1] and Standard French in the shaping of the three speech rhythm components i.e. syllable structure, vowel reduction and stress. Equally important, this research sets to find out the rhythmic category of the informants' interlanguage (according to the rhythm metrics: %V, the proportion of vocalic intervals' duration, and ΔC, the standard deviation of the duration of intervocalic intervals) put forth by Ramus, Nespor, and Mehler (1999). This work also intends to provide some recommendations for developing an equilibrium syllabus for teaching speech rhythm components within both modules; 'Phonetics' and 'Oral Expression and Listening Comprehension'.

[1] Modern Standard Arabic is not considered in the present work as it is not the spoken variety by the informants under investigation. The study rather deals with the north-east Algerian dialects.

3. Research Questions

This research work aims at answering the following questions:

1. What are the features that characterize the speech rhythm components of the undergraduate students at Mentouri University, i.e. syllable structure (past tense suffix 'ed' and syllabic consonants [l̩] and [n̩]), vowel reduction (strong vs. weak forms and reduced vs. full vowels), and stress (stressed vs. unstressed syllables)?

2. To what extent do the undergraduate students under investigation transfer from their previously known linguistic systems, i.e. Algerian Arabic and Standard French in the production of the three pre-mentioned correlates of speech rhythm?

3. To what rhythmic class does the interlanguage of the EFL undergraduate students at the University of Mentouri belong?

4. How can the pronunciation teaching curriculum be improved so that students use segments and suprasegments correctly and thereby produce a native-like speech rhythm?

4. Hypotheses

The present research work stands on two related hypotheses. First, the rhythmic components of the undergraduate students' interlanguage would be different from the ones of the English language norms, even if the mother tongue of the informants i.e. Algerian Arabic and the language being learnt i.e. English share the same rhythmic patterns. Second, the rhythmic class of the informants' interlanguage speech rhythm would be a hybrid of stress-timed and syllable-timed speech rhythms as it would be primarily affected by the syllable-timed language, French.

5. Sampling and Means of Research

The sample of the present study is a total of 123 third year students, derived from a population of 783 third year EFL students reading for a Bachelor degree (BA), during the academic year 2012-2013, at the Department of English, Mentouri University, Constantine 1. The choice of population is based on the fact that the BA degree is obtained after successfully completing three years of study. Therefore, students at that level are presumably supposed to have a good command of English, both in using and understanding it. The overall sample is divided into three sub samples, each to be enrolled in order to verify a given hypothesis.

In order to verify the first hypothesis, the interlanguage of 30 third year students reading for a BA degree is analysed. This analysis is carried out on a corpus of students' discussions recordings. Following this error analysis, a confirmation test is administered to 30 more third year students in order to see whether the previous rendition of learners to the three rhythm components remains systematic.

The second hypothesis is checked by means of an acoustic analysis of 63 third year students' recordings of the international phonetics association's story 'the north wind and the sun'. Praat (Boersma & Weenink, 2012), the international speech analysis software, is used for performing the acoustic analysis of the interlanguage speech rhythm as well as for measuring the difference in duration, pitch, and intensity between stressed and unstressed syllables. Correlatore (Mairano, 2010), software specially designed to measure different rhythm metrics is used to compute the set of rhythm metrics in focus, i.e. %V and ΔC.

Finally, the program assigned for teaching 'Phonetics' and 'Oral Expression and Listening Comprehension' to undergraduate students is assessed. Furthermore, an interview is administered to 13 teachers of 'Oral Expression and Listening Comprehension' (5 first year teachers, 5 second year teachers and 3 third year teachers) to gain insights about the syllabus

they use, in order to draw a comparison between the one used in practice and the one recommended in theory.

6. Structure of the Thesis

Chapter one presents a review of the related literature that is, Contrastive Analysis, Error Analysis and Transfer Theory. The focus is on the area of segmental and suprasegmental phonetics and phonology. The three disciplines provide insights about the acquisition of languages other than the mother tongue, be they second or foreign.

Chapter two reviews the literature on speech rhythm typology. It outlines the different stages through which the stream of speech rhythm goes: isochrony, phonological account, rhythm continuum and the different rhythm metrics. It also discusses the acquisition of speech rhythm in an EFL setting.

Chapter three is divided into two parts. The first part deals with the sociolinguistic profile of Algeria. It provides a review of the varieties mostly used or spoken in the Algerian society, i.e. Algerian Arabic, and Standard French. The second part of this chapter deals with the description of the phonology of the pre-mentioned language varieties along with the one of English. This description is limited mainly to the phonology of syllable structure, the reduction phenomenon and lexical stress placement since they are said to be the features that shape rhythm in speech.

Chapter four identifies the patterns that shape the speech rhythm components (syllable structure i.e., past tense suffix ‘ed’ and syllabic consonants [l̩] and [n̩], reduction phenomenon i.e. weak vs. strong forms and reduced vs. full vowels, and stress i.e. stress placement and acoustic correlates) produced by 30 third year students. To this end, an error analysis of the students’ performance is conducted. A confirmation test, including the main

erroneous aspects highlighted in the first error analysis, is administered to 30 more third year students in order to identify to what extent the previously produced patterns are systematic.

Chapter five describes the interlanguage rhythm of 63 third year students. Accordingly, an acoustic analysis is drawn to pave the way for the measurement of the speech rhythm using the acoustic parameters %V and ΔC. The findings of the interlanguage in question are compared with English, French, and Algerian Arabic, the findings of an earlier study carried out by Hamdi, Barkat-Defradas, Ferragne, and Pellegrino (2004), in order to better identify to which class the interlanguage rhythm of the sample belongs.

Chapter six deals with the pedagogical implications of the study on improving the teaching of pronunciation in an EFL classroom. First, the syllabus designed to teach phonetics as well as oral expression and listening comprehension in the undergraduate phase is assessed. Then, a comparison is drawn between both syllabuses in theory and practice. Finally, a syllabus for teaching the components of speech rhythm both at the word and sentence level is proposed.

CHAPTER ONE

Theoretical Foundations of Interlanguage Studies

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Theoretical Foundations of Interlanguage Studies

Introduction

In the seventies, the notion of interlanguage, an intermediate system that is neither the language known nor the language sought to be known, emerged as a central one in the field of Second Language Acquisition and was part of a main concern which was how to make second/foreign languages easier to acquire. Researchers in the field of applied linguistics adopted several approaches based on some psychological theories of language learning, namely *contrastive analysis*, *error analysis*, and *transfer theory*. There was a flow of information about how people acquire their knowledge of additional languages and on the conditions that promote successful language learning. Second/Foreign language acquisition is vulnerable to interference from the previously known system(s). Therefore, comparing the system being learnt with the one(s) already known in order to find out the part of responsibility in the various types of errors committed by second/foreign language learners is of prime importance for a better understanding of what shapes their interlanguage. The present chapter provides a historical survey of the theoretical foundations of interlanguage studies.

1.1 Contrastive Analysis

This section deals with the literature review of the *contrastive hypothesis*, which is the starting point of *contrastive analysis*.

1.1.1 Historical Background

In the late 1950s, interest in foreign languages grew more than ever before, and several studies were undertaken in an attempt to find the best method that could facilitate their acquisition. At that time, languages were thought to be better understood if they were first described. The notion of description implied a pairwise comparison of the language learnt, be it second or foreign, with the linguistic system (s) already known to the learner. The technical term of such a process was called *contrastive analysis* (henceforth CA).

Generally speaking, CA goes back to the famous work of Lado (1957) "Linguistics across Cultures" in which he compared between English and Spanish. However, the word *contrastive* was first introduced by the American linguist Benjamin Lee Whorf (1956) when he predicted the birth of contrastive linguistics as an extension to comparative philology that focused on comparing languages in order to establish their historical relatedness. He stated that "much progress has been made in classifying the languages of the earth into genetic families […]. The result is called 'comparative linguistics'. Of even greater importance for the future technology of thought is what might be called 'contrastive linguistics" (p. 240).

However, the aim behind describing languages has changed through time and focused on teaching languages effectively rather than trying to classify them into families. The first linguist to adopt this framework was Fries (1945) who referred to CA as *parallel description.* According to him, "the most effective materials are those that are based on a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner" (p. 9). It is worth mentioning, though, that the works of Weinreich (1953) and Haugen (1956) preceded the one of Lado (1957); that is why the latter is sometimes regarded the fruit of the former works with just a shift of interest[1]. Yet, Lado's

[1]Weinreich and Haugen's studies focused on how the native language is affected by the foreign Language, while Lado stressed the influence of the Native language on the foreign language.

book ‘Linguistics across cultures’ is considered, by many, the real statement and the foundation charter of CA, on the basis of which, the whole enterprise of contrastive linguistics was launched. Lado (1957) stated in his introduction:

> The plan of the book rests on the assumption that we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty *by comparing systematically the language and the culture to be learned with the native language and culture of the student.* (p. VII)

The thriving of CA is evidenced in the growth of large-scale research projects and typological studies, most of them were sponsored by the Center for Applied Linguistics in Washington, D.C. The latter collected a series of studies published between 1962 and 1965 and presented the phonological and grammatical contrastive description of English and five European languages commonly taught during the 1960s as foreign languages in America: German, Russian, French, Italian, and Spanish. Besides, many conferences were held all over the world; to name but a few, the nineteenth annual round table conference at Georgetown University in 1968, the second international conference of applied linguistics in Cambridge in 1969, the pacific conference on contrastive linguistics and language universals at the University of Hawaii, Honolulu in 1971, the fourth international congress of applied linguistics in Copenhagen in 1972 and the Yugoslav-Serbo-Croatian-English contrastive project in Zagreb in 1973 (as cited in Alatis, 1968).

The leading theory of learning that dominated in the 1950s was *behaviourism*. It sees learning as a habit formation based on a *stimulus-response-reinforcement* principle. In this respect, Skinner (1957) contended that language learning, as a type of learning, is a form of conditioned behaviour that could be acquired like a habit via a program of stimulus, response, and reinforcement. Accordingly, he (1957) postulated that:

> The basic processes and relations which give verbal behavior its special characteristics are now fairly well understood [...] much of the experimental work responsible for this advance has been carried out on other species but the results have proved to be surprisingly free of species restrictions. Recent work has shown that the methods can be extended to human behavior without serious modification. (p. 3)

Learning a foreign language should not deviate much from the principles of learning a first language. A learner who has learned one language would revert to its habits while learning an extra one, or as Corder (1971) stated, he would be "carrying over the habits of his mother-tongue into the second language" (p. 158). So, it stood to reason at that time that the learning of task A will affect the subsequent learning of task B; similar habits may ease the process of learning through what was called *positive transfer* whereas different ones may raise difficulty and impede learning through *negative transfer* or *interference*. Lado (1957) made this clear when he wrote "in the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning […] those elements that are similar to (the learners') native language will be simple for him, and those elements that are different will be difficult" (pp. 1-2). To identify the habits that may cause interference was the major reason behind the emergence of CA.

CA, by definition, is "a way of comparing languages in order to determine potential errors for the ultimate purpose of isolating what needs to be learned and what does not need to be learned in a second language-learning-situation" (Gass & Selinker,2008, p. 96). Likewise, Lado (1964) defined it as "the comparison of any two languages and cultures to discover and describe the problems that the speakers of one of the languages will have in learning the other" (p. 215).

1.1.2 Two Different Views on Contrastive Analysis

Comparing two languages in order to predict the areas of difficulty caused by the differences that exist between them was called the strong version of CA or the *predictive contrastive analysis*. This strong version attributed all the difficulties encountered while learning an extra language to transfer. Banathy, Trager and Waddle (1966) asserted that "the change that has to take place in the language behaviour of a foreign language student can be equated with the differences between the structure of the student's native language and culture and that of the target language and culture" (p. 37). In supporting this view, Lee (1968) sketched the pillars of what was called *a priori CA*:

> -That the prime cause or even the sole cause of difficulty and error in foreign language learning is interference from the learner's native language;
>
> -That the difficulties are chiefly, or wholly, due to the differences between the two languages;
>
> -That the greater these differences are the more acute the learning difficulties will be;
>
> -That the results of a comparison between the two languages are needed to predict the difficulties and errors which will occur;
>
> -That what there is to teach can best be found by comparing the two languages and then subtracting what is common to them, so that 'what the student has to learn equals the sum of the differences established by the contrastive analysis'. (p. 186)

Confronted with what was revealed on the empirical ground, the strong version of CA started gradually to lose its value as its major underpinnings were questioned by many

researchers and linguists who conducted several studies that brought to light enough flaws to doubt the predictive CA (Wardhaugh, 1970; Selinker, 1972; Catford, 1968; Dulay & Burt, 1973,…etc.). Many predictions did not occur on the practical field while some of the errors committed were not even predicted. This brought about the hypothesis that not all errors are ascribed to interference. Consequently, it was suggested that it is preferable to take the learner's language as the starting point to diagnose the errors on the basis of native language (NL) - target language (TL) differences. The latter notion paved the way to the emergence of the weak version of CA, which is rather explanatory. According to Wardhaugh (1970), *a posteriori CA*, which may be considered a first step to EA "requires of the linguist only that he uses the best linguistic knowledge available to account for observed difficulties in second language learning" (p. 126).

1.1.3 Criticism of Contrastive Analysis

During the 1960s, discontent with the inadequacies of behaviourism led to the birth of another school of thought on language bahaviour named *cognitivism*. According to this theory, language acquisition does not happen because of a mechanical conditioned processing of a stimulus-response association but rather due to a cognitive processing of complex input the learner receives in the course of learning. While reviewing Skinner's "Verbal Behavior", N. Chomsky (1959) forcefully emphasized the existence of a *language acquisition device*, later known as *universal grammar*, which interacts with linguistic experience to generate the target-language dependent properties i.e. the grammar of a given language. He maintained that:

> One would naturally expect that prediction of the behavior of a complex organism (or machine) would require, in addition to information about external stimulation, knowledge of the internal structure of the organism, the

> ways in which it processes input information and organizes its own behavior. These characteristics of the organism are in general a complicated product of inborn structure, the genetically determined course of maturation, and past experience. (p. 49)

The inconsideration of learners' contribution in the learning process brought about a decisive decline of behaviourism, leaving the ground to cognitivism, as it recognized the role of the learner who tests hypotheses and actively processes the information instead of being merely an imitator.

With the demise of behaviourism, CA, promoted wholeheartedly by the theory of transfer as its psychological basis, in turn, fell out of favour. As stated before, some errors that were predicted did not occur in reality, whereas some unpredictable errors did occur. Myriads of studies undertaken (Dulay & Burt, 1974a and 1974b) revealed the misleading role of *a priori* CA; some language patterns that are said to be difficult in learning were proved to be easily learnt and the opposite was also true. Furthermore, the number of transfer-induced errors was deemed insignificant by a number of researchers: 36% (Grauberg, 1971), 33% (George, 1972), 51% (Tran-Chi-Chau, 1975), 23% (Mukkatesh, 1978). In the same vein, the results obtained from Dulay and Burt's study (1974b) proved that the errors made by children learners of TL are similar to those made by native adults. In fact, since children do not have a considerable contact with their NL, it was clear that interference was not the only reason behind committing errors in second language acquisition; the intrinsic difficulty of the system itself can be another factor as well.

In order to cope with the difficulties encountered, learners try to avoid or simplify the difficult forms of the TL as well as to test some hypotheses, something that could have never been predicted by CA. Hence CA seemed to refuse the fact that errors can have other psycholinguistic driven forces along with the NL influence. Sridhar (1976) voiced the

unsatisfactory contribution of CA in its both versions and asserted that: "as the claims of contrastive analysis came to be tested against empirical data, scholars realized that there were many kinds of errors besides those due to interlingual interference that could neither be predicted nor explained by contrastive analysis" (p. 17).

As a result of this criticism, CA lost a good deal of its popularity and started gradually to fade away, leaving the ground for *error analysis* (henceforth EA).

1.1.4 Counterarguments to Contrastive Analysis

CA faced a lot of criticism as its claims did not stand the test of reality. However, Lado himself (1957), the founder of CA, had never claimed that it is an all-encompassing theory that requires no empirical investigation; in fact, he called for further research in order to get a final validation for his ideas. He hinted at the limitations that might arise within the list of problems obtained from the comparison of both languages. According to him, this list:

> Must be considered a list of *hypothetical problems* until final validation is achieved by checking it against the actual speech of students. This final check will show in some instances that a problem was not adequately analyzed and may be *more of a problem than predicted.* (p. 72)

About interference being the sole source of errors, James (1983) referred to Lado's own words in an attempt to exculpate this claim. He maintained that the expression *chief source* in "These differences are the *chief* source of difficulty in learning a second language" (Lado, 1964, p. 21) implies the existence of sources of difficulty other than differences. In the same line, Oller (1971) claimed that CA is "[…] a device for predicting points of difficulty and *some* of the errors that learners will make" (p. 79). The word *some* in this statement makes allowance to the fact that other committed errors are not predicted by CA. Accordingly, CA has never pretended to be a linguistic omniscience.

It is worth mentioning that although condemned as a premature aspiration and expectation of dramatic advancements in pedagogy, the significance of CA for research in the psychology of language teaching and learning can never be denied. It is according to James (1980) "a hybrid drawing on the sciences of linguistics and psychology" (p. 11). In a similar vein, Fisiak (1985) highlighted the necessity of merging the two dimensions in order to provide a useful dichotomy that can be used for practical purposes in the realm of teaching and learning foreign languages. He stated that:

> Since contrastive linguistics is concerned with language learning, there is no doubt that it needs a psychological dimension. On the other hand, the psychology of learning foreign languages needs a linguistic instrument to pinpoint vital research areas. Applied contrastive analysis being a hybrid which draws both linguistics and psychology can be considered such an instrument. (p. 211)

Moreover, earlier contrastive projects and journals in the field of *microlinguistics*, opened up new vistas for related disciplines namely *macrolinguistics,* the main concern of which was to go beyond the sentence level (structures and properties of a given language) and contrast the stylistic use of language (cross-cultural comparison). Some of those fields are: *contrastive sociolinguistics* (Hellinger & Ammon, 1996), *cross-cultural pragmatics* (Wierzbicka, 1985, 1991) and *contrastive rhetoric* (Connor, 1996).

1.2 Error Analysis and Interlanguage

In what follows is a historical overview of EA, the substitute of CA, which moved from prediction to explanation, resulting in the notion of *interlanguage* (henceforth IL).

1.2.1 Historical Background

Errors in foreign language teaching were considered by the early contrastivists as signs of a faulty version of the TL. They were undesirable and regarded as something that impedes the learning process and merely indicates the inadequacy of the teaching syllabus. As a result, an a priori CA was geared towards predicting the errors that would be committed in the future (through interference) and preventing their occurrence by shedding more light on those areas of difficulty. As Corder (1981) pointed out, "errors were predicted to be the result of the persistence of existing mother tongue habits in the new language" (p. 1). However, with the spread of N. Chomsky's ideas in the late fifties, a new paradigm in the psychology of second language studies came to the fore and pivoted around learning rather than teaching. Errors then, following the publication of Corder's seminal article "the Significance of Learner Errors" (1967), were regarded as inevitable features that a learner needs to pass through as s-he develops strategies and tests hypotheses in an attempt to establish her/his version of the TL. Gass and Selinker (2008) referred to them as "red flags that provide windows onto the system being acquired" (p. 102). It means that errors represent a proof that the learning process is actually taking place and the learner is actively constructing a new system of language. In a similar vein, Richards (1974) viewed "the approximative systems of language learners not as pathologies to be eradicated but as necessary stages in the gradual acquisition of the target system" (pp. 17-18).

As a result of this shift of interest, researchers took on a different method in an attempt to account for learners' errors. They considered the *learner's language* as the starting point in contrastive studies as opposed to the native language. Taking into consideration the actual speech of learners through the prism of errors is what gave rise to the new paradigm, EA, which goes hand in hand with IL. Richards (1971) asserted that EA deals with "the

differences between the way people learning a language speak, and the way adult native speakers of the language use the language" (p. 1).

1.2.2 Methodology of Error Analysis

Several models were put to be followed in conducting any error analysis: Corder (1967 and 1973), James (1992), Brown (1994), and Ellis (1995). The three latter ones are considered an elaboration of the former with merely a different terminology. The common procedures are sketched below:

1.2.2.1 Step One: Identification of Errors

This step is about the recognition of any deviant pattern in the learner's language as compared to the norms of the TL. However, not all violations must be viewed as errors. In fact, Corder (1967), inspired by N. Chomsky's distinction between *competence* and *performance*, reserved the term *error* to those breaches due to a "defect in the knowledge of the target language" and the term *mistake* to those "adventitious artifacts of linguistic performance" (pp. 24-25). Accordingly, he excluded the latter from any error analysis since they do not reveal a lack of TL knowledge but some kind of processing failure such as memory lapses, slips of the tongue and so forth.

However, the identification of errors goes beyond the distinction between a mistake and an error. As a matter of fact, N. Chomsky (1965) put two parameters, closely correlated to his competence-performance distinction, for judging the correctness-erroneousness of an utterance: grammaticality (linguistic competence) as opposed to acceptability (communicative competence). While linguistic competence refers to the conformity of what is said to the grammar rules of a given language, communicative competence, a term put by Hymes (1971), adheres to the relationship between language and the particular situation in which it is

appropriate. Hymes generated four criteria adhering to the social context of an utterance, namely *possibility, feasibility, appropriateness and attestedness.*

a. Possibility: It is roughly equivalent to N. Chomsky's *Grammaticality*. Likewise, Fetzer (2004) referred to it as "the conformity of a sentence to the rules defined by the grammar of a particular language" (p. 34). Therefore, an utterance is judged formally possible if it conforms to the rules of grammar and pronunciation of the language in question: phonology, morphology, syntax, and lexis, regardless of the context. Hence, the sentence 'me go sleep now' contravenes grammar rules while 'I'm going to sleep now' does not (Cook, 2003, p. 42).

b. Feasibility: It is synonymous to N. Chomsky's acceptability. It refers to the native speaker's intuition about the language; what is acceptable and what is not acceptable. Unlike possibility, feasibility has nothing to do with the theoretical concepts of grammar; it is, according to Cook (2003), rather related to the "psychological concepts concerned with limitations to what can be processed by the mind" (p. 43). Hymes (1971) expected the decrease of language processing' feasibility whenever the input produced increases. Therefore, his sentence "the cheese the rat the cat the dog the man beat saw chased ate was green" (p. 43) is possible since English grammar allows a sentence to be complex by adding relative clauses, but not acceptable because the information is not easily accessible.

c. Appropriateness: The notion of appropriateness is strictly anchored to the use of language in context, both in terms of the sociolinguistic distance between the speaker and the hearer and in terms of the culture. The notion of grammaticality is not a prerequisite to appropriateness. As a matter of fact, the sentence 'my dad bought me a car', although grammatically correct, would be erroneous if used in academic writing.

d. Attestedness: This notion is, roughly speaking, used interchangeably with the notion of feasibility. It has to do with the acceptance of an utterance by the speech community i.e. what

language forms occur most commonly regardless of their grammaticality. To illustrate this, the expression ‘rancid milk’ although possible (violates no grammar rules), feasible (easy to be processed by the mind), appropriate (violates no social convention), yet would not be probable because ‘sour milk’ is the expression frequently used among native speakers.

Corder (1971), in addition to his error-mistake distinction, put another classification in terms of interpretation of utterances in reference to the context. According to him, an error is *overt* if it is not grammatical and *covert* if it is grammatically possible but contextually inappropriate (or unacceptable in N. Chomsky’s terminology, 1965). The sentence ‘he goed to school’ is overtly ungrammatical since it violates the past tense rule. Likewise, the expression ‘I bought a car’, though grammatical, is covertly an inappropriate answer to ‘is she here?’

1.2.2.2 Step Two: Description of Errors

Similar to the identification of errors, the description of errors has undergone several taxonomies (Ellis, 2008). *The linguistic taxonomy* aims at shedding light on the areas of language where errors persist mostly. It is concerned with the classification of the identified errors under grammatical categories: phonology, syntax, morphology, lexis, and pronunciation. *Surface taxonomy* provides insights about the cognitive processes adopted by a learner in his/her attempt to reconstruct the TL. Corder (1981) outlined those processes as omission (the absence of a required element), addition (the presence of a non-required element), selection or substitution (the correct element is replaced by the wrong one) and ordering (the elements presented are wrongly sequenced). This classification is generally operated in terms of linguistic categories i.e. whether the process chosen is at a phonological/graphological, grammatical, or lexico-semantic level.

However, Corder himself (1981) asserted that “this superficial classification of errors is only a starting point for *systematic analysis*” (p. 36). This statement gave rise to *Corder’s*

systematicity taxonomy in which, errors are classified according to their systematic occurrences: pre-systemic errors are due to the ignorance of the existence of a given rule in the TL, systemic errors are due to the conscious, wrong use of a given rule, and post-systemic errors are due to the unconscious, wrong use of a given rule. He (1973) accounted for the three types of errors in the following quotation:

> In the pre-systematic stage, since he has not yet realized that there is a system or what its function is, he can neither correct his error nor say what his problem is; in the systematic stage he cannot correct his error but he can give some explanation of what he was aiming at or trying to do; in the post-systematic stage he can both correct his error and explain what was wrong, i.e. that he had overlooked something, or simply forgotten to apply a known rule. (p. 272)

1.2.2.3 Step Three: Explanation of Errors

EA, as such, came to existence as an attempt to account for all possible causes behind committing errors. Therefore, this stage is anchored, according to Corder (1974), in the field of psycholinguistics as it points out to how and why the learner's language is what it is. The NL and the TL *per se* are the most common sources that gave rise to interlingual, intralingual and developmental errors respectively.

a. Interlingual Errors: They are those caused by the interference of the learner's mother tongue as it is generally the only linguistic system known to the learner before becoming familiar with the target system. The learner then draws inferences upon its already known linguistic system(s) in order to internalize and investigate the system of the new language. Therefore, EA no longer regards transfer from the mother tongue as a habit formation but a strategy adopted by the learner on his/her way to acquire a TL (Purwati , 2012).

b. Intralingual Errors: When learners get acquainted with the TL system, some parts of the new system are acquired and will be themselves transferred in the acquisition of other parts in the same new system. *Overgeneralization* is when the learner applies a given rule to other similar situations to make the task of learning simpler such as generalizing the *ed* suffix to all verbs conjugated in the past tense: 'he goed' as a reference to 'he watched'. *Ignorance of rule restrictions*, roughly equivalent to *overgeneralization*, is another instance of intralingual transfer. Learners, due to ignorance of the application of some rules, apply a given rule to a physically analogous one in a different context as in 'he said to me' vs. 'he asked to me'. The third instance that falls under the heading of intralingual transfer is the *incomplete application of rules*. It refers to the inability to use the rules needed for transformations or derivations. As an illustration, some foreign learners of English generally add an interrogative and a question mark to a statement in order to ask a question: when you bought a car?

c. Developmental Errors: This kind of errors is mainly attributed to the partial learning (mastery) of the TL and the false hypotheses drawn by the learner due to the limited exposure to the TL rules. A learner may use a verb in the past tense form coupled with the auxiliary 'did' while asking a question: 'did you gave her the book?'

1.2.3 Criticism of Error Analysis

A rigorous criticism cropped up in reference to the methodology underlined by error analysts. As a matter of fact, none of the stages was truly exempted from being criticized.

The identification stage was a vast ground for questionability as it held the lion's share of criticism. There is no clear cut division between an error of competence and an error of performance i.e. error vs. mistake respectively. Error analysts cannot explain, in the absence of the learner, whether such a violation is made due to a lack of learner's competence or rather due to one of the external factors such as fatigue. Hence his/her identification will be

subject to subjectivity and, to a large extent, impressionistic. The expression ‘my three sister are older than me’ cannot be considered a mistake only because the one who said it already produced ‘my sisters are older than me’. It might be attributed as well to a false hypothesis drawn by the learner that says: if a word is preceded by a numeral, it doesn’t take the plural form. Moreover, utterances that are acceptable to someone might be unacceptable to someone else since intuition itself is relative. Thus, the reliance on native learner intuition in deciding acceptability is, again, questionable.

Not all errors are easy to be identified; in fact an utterance can be possible, appropriate, feasible and probable but still can be questionable since it can be attributed to merely imitation of a readymade formula. A learner’s use of the expression ‘time is over’ does not necessarily mean that s/he controls the use of the different grammatical categories of the word *over (adverb, preposition …*).

Furthermore, the task of the error analyst while describing errors is far from being easy given the fact that the learner’s language is constantly changing as Corder (1981) asserted: “that his language is changing all the time, that his rules are constantly undergoing revision is of course, true and merely complicates the problem of description” (p. 56). Therefore, reliable decisions cannot be made on the basis of a constantly changing language. In light of this, Brown (2000) added “systems are in a constant state of flux as new information flows in and causes existing structures to be revised” (p. 220).

Moreover, it is not always easy to attribute an error to a certain grammatical category namely phonology, syntax, morphology, lexis, and pronunciation. According to Brown (2000, p. 223), an error like “ (ʒɛ) suis allé à l’école” might be an error in pronunciation if the learner mispronounces the grammatical correct form ‘je’, or an error in lexis or syntax if he correctly pronounces the wrong form ‘j’ai’.

The last stage in the error analysis process was not exempted from criticism, too. Assigning psycholinguistic causes to errors is by its nature speculative. Sometimes, an error can be "*ambiguous"* (using Dulay & Burt terminology, 1974b, p. 115) if it has both interlingual and intralingual explanations. Ellis (2008, p. 55) provided an example of such an error: the erroneous utterance in "no look my card" can be attributed to interference if said by a Spanish learner as it conforms to the Spanish rule of negation which takes the form 'no + verb'. Another possible interpretation can be attributed to developmental strategies since a learner while learning to produce the negation form in English goes through several steps and 'no + verb' is one of them. In the same line as Ellis, Jain (1974) contended that:

> The division between errors traceable to L1 interference and those that are independent of L1 interference is not invariably clear cut; the phenomenon of errors caused by the cross-association of both L1 and L2 also seems to exist; the identification and establishing of various L1 independent interference factors is far from easy; the learner's psychological processes of second language learning in terms of learning strategies can at best be marginally inferred from his performance data. (p. 190)

In addition to being week in terms of methodology, EA is deemed to be limited considering the results of its analysis. A complete picture of learner's language is strictly needed for the understanding of how a foreign language is acquired. EA, however, runs the risk of not noticing learner's accomplishments and what is correct in his/her performance since it mainly accounts for the erroneous part of his/her IL. Therefore, the term *Performance Analysis* was considered more appropriate than *Error Analysis*. Svartvik (1973) maintained that "although the study of errors is a natural starting-point, the final analysis should include linguistic performance as a whole, not just deviation" (p. 8).

More importantly, the fact that EA accounts for the errors that are committed by learners, it makes no allowance for *avoidance phenomenon*. The absence of errors in a learner's performance does not necessarily mean a native-like competence but a strategy followed by a learner to avoid what is difficult or beyond his/her level of competence. The study of Schachter (1974) revealed that Japanese and Chinese learners of English have a small number of errors in the use of relative clauses, although being *a priori* predicted as difficult, compared with Persian and Arab learners of English. She concluded that the former avoided the use of relative clauses in their performance due to the difficulty they face therewith.

1.2.4 Error Analysis Revisited

Despite the criticism of EA, its substantial contribution in foreign language learning cannot be simply dismissed. In fact, errors, needless to say, are of great benefit to researchers as they tell about the psycholinguistic processes involved in learning a second or a foreign language, and to learners themselves as they represent a device by which they reconstruct the rules of the language they are learning. Errors, therefore, are no longer regarded as a diagnostic tool to help identify the areas of difficulty, but rather as an investigatory tool to help describe and explain the way in which learners learn a second/foreign language. Moreover, EA seeks for more understanding of the psycholinguistic sameness between the acquisition of a mother tongue and the learning of a second/foreign language.

The 1990s witnessed a rebirth of EA thanks to the advent of learner corpora, defined as "systematic computerized collections of texts produced by language learners" (Nesselhauf, 2005, p. 40). This new corpus-based approach of EA, called by Brown (1973) *obligatory occasion analysis*, aims at analyzing the whole performance of a learner by taking into account both correct and incorrect instances. Obligatory occasion analysis determines, through certain procedures, the acquisition of a given feature through calculating the

percentage of its accurate use in accordance to all contexts in which it is required. Errors, then, are not regarded as absolute deviants but were rather quantified in terms of how often the deviant structure or element is produced in reference to its corresponding appropriate one.

EA benefited, to a large extend, from learner corpora as it provides the analyst with authentic performance, not only the artificial one, since not all the attempted language of learners is merely viewed as a selection of what is easy and avoidance of what is difficult.

1.2.5 Error Analysis vs. Contrastive Analysis

It is generally held that the approach of EA came to the fore as a death knell for CA. However, one cannot really make such a conclusion and admit that CA was replaced by EA. In fact, both approaches stand on the same principle i.e. the comparison of two linguistic systems: the NL and the TL for the former and the IL and the TL for the latter.

First, CA cannot be complete without EA in the sense that the results obtained and the predictions made by CA are to be checked up and corrected by the results obtained via EA, since the latter encompasses a wide range of possibilities including interference, the most possible source behind committing errors. Banathy and Madarasz (1969) stated that "contrastive linguistics, no matter how refined, can only point toward a potential learning problem or difficulty. On the other hand, error analysis can tell us the intensity of the difficulty or the size of the problem" (p.92).

Second, error identification without prior CA risks to be faulty and vague. According to James (1980), two problems can spawn from the absence of CA in an EA process. First, committing the same error by learners of different backgrounds cannot always be attributed to the intrinsic nature of the TL itself. An answer like 'yes, he doesn't' made by a Sudanese learner to the question 'doesn't he go to school? can be attributed to the intrinsic nature of the TL itself, English. Although this explanation seems convenient in the absence of a priori CA,

it would be questionable if one considers how negative polarity questions are answered in Arabic. The second problem is the fact that covert errors can go unnoticed without a priori CA in the sense that a grammatically correct expression like 'yes, it is', if taken as an answer to 'it's rainy today!' said by an English to his/her side-to-side passenger, will probably go unnoticed if the error analyst is not aware of the fact that such questions are used as ice-breakers leading to a conversation rather than being a yes/no question.

Therefore, neither EA is seeking a place on the land of applied linguistics by displacing earlier homesteader, nor is CA claiming linguistic omniscience. Both, as acknowledged by James (1980), "should be viewed as complementing each other rather than as competitors for some procedural pride of place" (p. 187).

1.3 Transfer Theory

This section deals with a further step in IL studies, which is *transfer theory*, a focal point of both CA and EA.

1.3.1 Historical Background

As seen earlier in this chapter, language learning, like any other learning, was regarded, at first, a habit formation. It was thought as being, merely, an automatic verbal behaviour based on a stimulus-response theory. Brooks (1960) made this stand very clear when he said that "the single paramount fact about language learning is that it concerns, not problem solving, but the formation and performance of habits" (p. 142). Accordingly, language transfer fell, at first, under the cover term of behaviourism where language learners carry over instances of their L1 while learning a second or foreign language. Similar transferred instances facilitate the learning process while dissimilar transferred instances impede the learning process.

Around the 1970's, however, the notion of language transfer was brought into disrepute as the similarity between second language acquisition and child native language acquisition was brought to light by the morpheme-order studies (Brown, 1973) and Dulay and Burt' studies (1974 a, 1974 b, 1975). They noticed that some L2 strategies are common to all second language learners regardless of their L1 and the language being learnt. Thus, the focus moved away to those universals rather than the influence of the mother tongue. Dulay and Burt's *creative construction hypothesis* (1974b) was "the process in which children gradually reconstruct rules for the speech they hear, guided by universal innate mechanisms which cause them to formulate certain types of hypotheses about the language system being acquired, until the mismatch between what they are exposed to and what they produce is resolved''(p. 73). This is exactly what cognitivism promoted when it considered the learner as an active participant in his way to learn additional languages.

Language transfer was thought of as a communicative strategy (kellerman, 1977 and Tarone, 1976) to which a learner resorts in order to compensate for what is missing in his IL. Newmark and Reibel (as cited in Ellis, 2008) labelled this phenomenon as the *ignorance hypothesis* and stated what follows as an explanation:

> What can he (the learner) do other than use what he already knows to make up for what he does not know? To an observer who knows the target language, the learner will be seen to be stubbornly substituting the native habits for target habits. But from the learner's point of view, all he is doing is the best he can: to fill in his gaps of training he refers for help to what he already knows. (p.314)

As the morpheme-order studies were reviewed in the mid 1970's, Language transfer regained its recognition in second language learning. McLaughlin (1978) was one of those researchers who could no longer underestimate the role of transfer in second language

acquisition. He acknowledged that both the mother tongue and second language go through more or less the same developmental processes, but he did not exclude transfer from being one of them:

> In acquiring a second language, the individual uses the same strategies that are employed in acquiring a first language, although these strategies are now adapted to the second language so that the sequence of development reflects this language more than the first language. [...] This does not mean, incidentally, that interference and transfer errors are unimportant in second-language acquisition. There is some evidence that such errors are more frequent early in the process of second language acquisition and when the particular construction to be mastered proves especially intractable. (p. 202-3)

Transfer, as a learning cognitive strategy, can be exerted in different ways. In her study about the use of relative clauses, Schachter (1974) concluded that Japanese and Chinese learners of English committed fewer errors in the use of relative clauses than Arab and Persian learners. This was mainly due to the fact that their native languages are left-branching (subjects are pre-modified) while Persian, Arabic, and English are right-branching (subjects are post-modified). According to her, Transfer from the NL is what urged Japanese and Chinese learners to avoid the use of relative clauses which resulted in committing fewer errors. As a prerequisite result to avoidance, learners generalize the form of their mother tongue to the language being learnt and thereby, overproduce such structures that are believed to be easier since they match those of their mother tongue. The description of transfer made by Ellis (2008) left no room for others to doubt the cognitive nature of transfer. As a matter of fact, he viewed language transfer as "one strategy operating within a general process of hypothesis construction and testing" (p. 338).

1.3.2 Language Transfer and Universal Grammar

Much has been said about whether or not *universal grammar* (UG) constrains transfer in language acquisition. Different views were held by different researchers on the likelihood involvement of UG in second language acquisition. White (2000) outlined five positions in which she combined the extent of transfer with the accessibility to UG. The first hypothesis stands for the *full access* to UG properties and hence, *no transfer* will be available. According to Epstein, Flynn and Martohardjono (1996), learners do not present violations of formal principles of languages; they make use of UG principles as their starting point or -initial state- in the process of language acquisition regardless of their native language. However, not all researchers agree that whenever there is full access to UG there will be no transfer. As a matter of fact, White (1988) acknowledged that learners transfer from the linguistic repertoire already available to them i.e. NL, but when the latter fails to accommodate properties of the language being learnt, the learner, in order to come to a better explanation of the L2 input, resets parameters on the basis of UG principles and parameter values (novel) other than those instantiated in his native language. Schwartz and Sprouse (1994) were in the same line as white (1988) and labelled this view as the *full transfer/full access* hypothesis. Vainikka and Young Scholten (1994) agreed with the advocates of the full transfer/full access hypothesis in that learners call upon both their NL and UG properties, but disagree about the extent of transfer. They stated that learners start out by transferring just lexical projections which makes transfer limited i.e. *partial,* and they resort to UG properties in order to acquire the functional projections. This is what is known as the *full access/partial transfer* hypothesis. Contrary to this view, Bley-Vroman (1990) claimed that learners are open to full transfer from their native language and that the latter presents the sum of UG values available to the learners i.e. only those instantiated in the NL. Accordingly, the idea of resetting other parameters to account for other L2 structures was out of question. If the UG principle needed

to account for the L2 input is instantiated in the NL, it is referred to as full transfer/partial access and full transfer/no access in the opposite case. Not far from this, Hale (1996) used the terms 'universal grammar' and 'native language' interchangeably, which means that many properties of UG manifest themselves in the NL, and consequently learners have access only to the UG properties that are found in the mother tongue. Following the discrepancies that exist within each model, White (2000) proposed a fairly moderate model and named it the *partial transfer/partial access* model.

1.3.3 New Theoretical Account of Transfer: Transferability

Researchers started to consider the unavoidable existence of transfer, yet from a non-behaviourist perspective. They were more interested in *how* and *when* second language learners resort to their NL i.e. the conditions that promote or inhibit transfer. The interest was no longer in whether transfer really occurs in second or foreign language acquisition, but in what is likely to be transferred. As a matter of fact, the recent studies on language transfer that took place around the 1970's and 1980's (Kellerman, 1977, 1978; R Anderson, 1983) were more concerned with *transferability* (what makes something transferable) rather than *transfer* per se. Different criteria were believed to be responsible for the occurrence of language transfer. In what follows, the common ones will be introduced.

1.3.3.1 Psychotypology

As the name may reveal, *psychotypology* has to do with *psychology* together with *typology*. Both disciplines are combined to refer to the learners' perception of language typology or what is known as *language distance*. Kellerman (1983) asserted that the more similar the NL and the L2, the more likely transfer to happen. At the first glance, what kellerman believes seems to go hand in hand with what contrastive analysis hypothesis claims; namely, the stimulus-response theory. However, psychotypology is concerned with

how learners perceive the typological distance between both the source language and the recipient language, which makes it purely a cognitive process. Learners' judgement on the transferable items of the first language is based on their perception of how the language being learnt is typologically distant from the first language with regard to a particular structure. Congruent forms, likely, trigger transfer either in a positive or a negative way and dissimilar forms are likely to be avoided.

Similarity and dissimilarity between languages do not fall always under the same category. Indeed, there exist two types of similarity/dissimilarity: *objective (assumed) vs. subjective (perceived)*. Researchers like Jarvis and Pavlenko (2008) believed that the second category is what brings about transfer since it is related to "the degree of congruence the L2 user believes or perceives to exist" whereas the first one is related to "the actual degree of congruence between languages" (p. 177). Not far from this, R Anderson (1983) believed that *transfer to somewhere* is another term for psychotypology. According to him, this principle lies on the assumption that transfer is constrained by two conditions:

> A grammatical form or structure will occur consistently and to a significant extent in the interlanguage as a result of transfer if and only if a) natural acquisitional principles are consistent with the L1 structure or b) there already exists within the L2 input the potential for (mis) generalization from the input to produce the same form or structure. (p. 178)

Therefore, in order to consider that a particular L1 structure is indeed transferable, there must be *a place in* the learners' interlanguage that holds the transferred L1 structure, and that the L2 must have something that triggers the resemblance of the transferred item to its counterpart in the L1. The structures in the resulting IL are congruent to L1 and L2, that is to

say, there is something in the L2 that grants learners the green light or the go-ahead to transfer from the L1 into their IL.

By way of example, Zobl (1980) believed that English speakers of French can produce the erroneous expression ‘je vois les’ (the object pronoun is post-verbally placed) instead of the correct one ‘je les vois’ (the object pronoun is pre-verbally placed) because there exists a congruence between both languages when it comes to placing nominal phrases post-verbally. However, French speakers of English cannot produce expressions like ‘I them see’ which conforms to their NL rule ‘preverbal clitics’ because the TL, English, has no similar counterpart and, therefore, nowhere to transfer to.

1.3.3.2 Markedness/Prototypicality

On the face of ‘transfer to somewhere’ principle, it is fair enough logic to think that whenever the languages (source vs. target) are typologically distant, there will be no transfer. However, kellerman (1995) pointed out that “there can be transfer which is not licensed by similarity to the L2 and where the way the L2 works may very largely go unheeded” (p. 137). Besides, he (1983) asserted that “not everything that looks transferrable is transferrable” (p.113). This means that, although congruent, some structures are more transferable than others. Therefore, there must be another constraint, apart from congruency, that leads to transfer. This new constraint namely, the degree of markedness/prototypicality, is not based on learners’ perception to similarity/dissimilarity between the source and target language, but rather on their perception of their L1 principles i.e. the conceptual organization of the L1 independently of the L2. Kellerman (1983) referred to markedness using the term *transferability* as opposed to *psychotypology*, and since it is directly related to learners’ intuition about their L1; he labelled it as *psycholinguistic markedness* as opposed to *typological markedness*. He claimed that:

> Transferability is to be seen as a theoretical notion, which derives from native speakers' own perception of the structure of their language. If a feature is perceived as infrequent, irregular, semantically or structurally opaque, or in any other way exceptional, what we could in other words call '*psycho-linguistically marked*' then its transferability will be inversely proportional to its degree of markedness. Transferability is not itself a predictor of performance but is one of the determinants of whether an L1 structure will be treated as language-specific (not transferable to a given L2) or language-neutral (that is, transferable to a given L2). (p. 117)

Returning to Zobl's example (1980), one can say that L1 French learners of English do not produce 'I them see' because they perceive that subject-object-verb is a marked word order in their NL. Conversely, L1 English learners of French produce 'je vois les' for clitics because they perceive it as unmarked with respect to post-verbal placement of nominal phrases.

The studies of Kellerman (1978, 1979) about the German verb 'breken' (to break) confirmed the existence of markedness as a constraint on transfer and gave it another shape through dealing with meaning instead of structure. Although the verb 'breken' is polysemous in both languages, English and German, adult Dutch learners of English perceived its literal meaning as unmarked and hence, successfully, transferred it in their translation task. However, when tested whether or not the verb 'breken' in *sommige arbeiders hebben de staking gebroken* (some workers have broken the strike) can be translated by 'break', their performance revealed that they perceive this peripheral meaning as marked (language-specific). It means that their perception is based on their L1 regardless of the L1-L2 similarity.

1.3.4 Interlanguage Transfer

Much has been said about the influence of the mother tongue on the acquisition of second language, but the influence of the latter on additional languages went, almost, unheeded. In fact, the term *transfer* has been used interchangeably with the mother tongue or native language influence. It does not need much thinking or a lot of arguing to assume that any language learner is ready to make use of any available linguistic knowledge in the accomplishment of his/her acquisition process. In his definition of transfer, Odlin (1989) did not restrict it to the mother tongue influence; instead, he asserted that "transfer is the influence resulting from similarities and differences between the target language and *any other language that has been previously (and perhaps imperfectly) acquired*[2]" (p.27). Sharwood Smith (1994), as well, followed the same path in his definition of cross linguistic influence. According to him, it is "the influence of the mother tongue on the learner's performance in and/or development of a given target language; by extension, it also *means the influence of any 'other tongue' known to the learner on that target language*" (p.198).

It was not until the late nineties that the role prior L2s play in the acquisition of additional languages was, empirically recognized: Herwig (2001), Williams and Hammarberg (1998), Hammarberg (2001) and Cenoz (2003). Since then, the term *interlanguage transfer* was used. As the name may suggest, interlanguage transfer refers to transfer from one's IL to another IL. De Angelis and Selinker (2001) defined it as "the influence of a non-native language on another non-native language- i.e. the documented transfer from one interlanguage to another-" (p.43). In the same line, Gass and Selinker (2008) considered it as "the influence of one L2 (using the broad sense of this term) over another" (p. 152).

To illustrate, Dewaele (2001) provided an example of a Dutch learner of French with English as a second language. Such an expression 'Les gens sont involvés' was observed in

[2]This is italicised by the author of the present work in order to highlight the point being discussed.

his IL. According to Dewaele, this learner was drawing inferences from the English counterpart 'The people are involved' and transferred the English word 'involved' as a substitute for its French counterpart 'impliqués'.

However, the fact that L2 affects the acquisition of an additional language does not exclude the influence of the mother tongue on the same acquisition process. As a matter of fact, studies like the ones of Williams and Hammarberg (1998), Hammarbeg (2001) and Cenoz (2003), showed that transfer of form mostly originates from the L2. Other studies like the ones of Ringbom's (1987 and 2001), revealed that transfer of meaning originates from the L1. It means that L1 and L2 can both be a source of transfer in the acquisition of additional languages depending on different factors, to name but a few, typological similarity, proficiency, and recent use.

1.3.5 Phonological Transfer

Among the various language subsystems, phonology, at the level of segments and suprasegments, is generally considered the area that took the lion's share as far as transfer is concerned, mainly, due to the fact that foreign language learners are not likely to attain a native-like accent albeit their high level of fluency. Almost all language sounds are perceived by learners as language universals and hence, should be produced exactly in the same way as those in their native languages. It means that learners generalize their native languages' phonological system while acquiring another one: similarities are rendered the same (sound-letter correspondences) and differences are simplified with conformity to universal rules using one of the modification processes such as sound substitution, deletion, epenthesis, etc. This is exactly what Odlin (1989) meant by "the discovery of valid generalizations about transfer depends very much on the discovery of valid generalizations about the nature of language, that is, about language universals" (p.43).

Surface similarity, however, might be more problematic than difference. According to Best and Taylor (as cited in Robinson, 2013, p. 348), it gives the impression that both sounds are "functionally equivalent*"* whereas, in reality, they are not. Hence, this kind of similarity, according to Flege (1995), prevents the possibility of setting up a new category of contrast. He asserted that:

> Category formation for an L2 sound may be blocked by the mechanism of equivalence classification. When this happens, a single phonetic category will be used to process perceptually like L1 and L2 sounds (diaphones). Eventually, the diaphones will resemble one another in production. (p. 239)

Accordingly, the contrastive analysis hypothesis, which was widely investigated in the area of phonology, cannot be trusted to be the basis behind determining the notion of difficulty for similarity does not necessarily mean difficulty nor does difference always mean easiness of learning.

1.3.5.1 Markedness Differential Hypothesis

In order to account for easiness or difficulty of learning, Eckman (1987) tried to combine universals, or what was termed before *typological markedness*, and *crosslinguistic influence*, instead of a merely shallow contrast of the phonological system of both L1 and L2. His *markedness differential hypothesis,* which is said to be the refinement of contrastive analaysis hypothesis, stands on the belief that L2 unmarked elements are easier to be learnt than the marked ones. Eckman (2008) suggested that "those areas of the target language which differ from the native language and are more marked than the native language will be difficult" which entails that "those areas of the target language which are different from the native language, but are not more marked than the native language will not be difficult" (p. 98).

Speaking of what determines the markedness value, Gundel, Houlihan and Sanders (1986) stated that "a structure X is typologically marked relative to another structure, Y, (and Y is typologically unmarked relative to X) if every language that has X also has Y, but every language that has Y does not necessarily have X" (p.108). For instance, according to Eckman's *voice contrast hierarchy* (1987), English permits voice contrast in obstruents in word initial, medial, and final positions, whereas German allows voice contrast only initially and medially i.e. voice contrast in codas is marked between German and English. Therefore, German learners of English experience difficulty when it comes to produce English words with voiced obstruents in final position and English learners of German show no difficulty when producing word-final voiceless obstruents of German words.

In addition to segments, studies like the ones of Benson (1988), Carlisle (1991and 1998), Young- Scholten and Archibald (2000) exhibited the conformity of Markedness Differential Hypothesis to suprasegmentals as well. J Anderson (1987) asserted that L1 syllable structure influences the production of L2 syllable structure. Larger consonantal sequences, either in onsets or codas, (like in English which permits up to 3 consonants in onsets and up to 4 in codas) are marked relative to simple consonantal sequences (as in Chinese which does not allow any clusters). The results of his study revealed that the performance of Chinese learners of English, as opposed to Arab learners (whose language, the standard variety, does not allow clusters in onsets but permits up to two in codas), were less native-like as far as coda clusters are concerned.

However, Tarone (1976) acknowledged that sometimes universal tendencies override transfer in the acquisition of L2 phonology, even in situations where transfer is normally favoured. She thought that Korean learners of English resort to the universal syllable structure CV when producing the English CVC in spite of the existence of the latter in their NL (/sæk**e/** for sack).

As far as L2 phonology is concerned, prosody, perhaps, was the least investigated compared to segments and syllable structure. It was not until the early 2000's that prosody started gaining the interest it deserves. In 2003, a study conducted by Gut considered the structural differences between L1 and L2 the reason behind the non-significant durational difference between full-vowels and reduced syllables in a non-native German production. Prior to Gut's study, Wenk (1985) related the lack of vowel reduction in the English produced by French natives to the lack of reduction phenomenon and the different rhythmic structure in French.

1.3.5.2 Orthographic System

In addition to the phonological transfer that plays a big role in the acquisition of L2 phonology, the role of the orthographic system of previously known languages along with the one of the language being learnt cannot be underestimated. Apparently, the *orthographic depth hypothesis* acknowledges the existence of different orthographic systems based on the degree of transparency between graphemes and phonemes (or morphophonemes: plural *s* and *ed* past suffixes). In light of this hypothesis, Frost (1992) described the variant systems: "an orthography that represents its phonology in an unequivocal manner is considered shallow, while in a deep orthography the relation of orthography to phonology is more opaque" (p. 258). Needless to say then, if the NL belongs to one orthographic system (for example one-to-one correspondence or transparent orthography as in Italian, Spanish, Arabic, etc.) while the TL belongs to a completely different system (for example opaque orthography as in English, French, etc.); the latter will be influenced by the former.

Lado (1957) ascribed errors in pronunciation to two possibly factors: "the same symbol might represent two different sounds in the two languages. In such a case the student tends to transfer the native language symbolization to the foreign language" and "the other

possibility of spelling interference with pronunciation arises with inconsistencies in the spelling of the foreign language. The symbol which in one word represents one sound turns out to represent a different sound in another" (p. 20). Jarvis and Pavlenko (2008) exemplified the first factor based on a personal experience: a Finnish woman kept pronouncing the word *water* as it should be pronounced in Finnish letters i.e. ***v**ater*.

To illustrate the complexity of grapheme-morpheme mapping, which generally results in mispronunciation, Trenite (as cited in Harley, 2006, p. 23) provided the following poem (what is in bold, albeit represented by the same letters per pair, are not pronounced in the same way: /ˈkr**iː**tʃə(r)/ vs. /kri**ei**ʃn/, /**kɔːps**/ vs. /**kɔː**(r)/, /h**ɔː**(r)s/ vs. /w**ɜː**(r)s/, /ˈs**uː**zi/ vs. /ˈb**i**zi/, and /h**e**d/ vs. /h**iː**t/):

*Dearest cr**ea**ture in cr**ea**tion, study English pronunciation.*

*I will teach you, in my verse, sounds like **corpse**, **corps**, h**o**rse and w**o**rse.*

*I will keep you S**u**zy, b**u**sy; make your h**ea**d with h**ea**t grew dizzy.*

Conclusion

Different theories were adopted in order to account for the shaping of learners' interlanguage. However, contrastive analysis, error analysis, and transfer theory are too connected to be taken separately for a better understanding of what really shapes learners' interlanguage. The latter is subordinated to contrastive analysis from the point that it needs to be compared with the correct form of the language being learnt as an attempt to find out what is erroneous as well as the reason behind. Undoubtedly, in their course to learn an additional language, learners cannot escape committing errors, some of which are ascribed to transfer as the influence of the mother tongue is proved to be inescapable. Indeed, developmental and psychological factors must not be ruled out as another potential source (s) of errors.

CHAPTER TWO

Speech Rhythm Typology

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Introduction

How sequences of certain elements of speech are temporally organized is not received in the same way when listening to English on the one hand and French on the other hand. Perhaps what gives this perceptive impression is the recurrence of the same element at regular intervals: stresses in English as opposed to syllables in French. Based on such a temporal organization, languages were pigeonholed as either stress-timed or syllable-timed (Pike, 1945 and Abercrombie, 1967). English, German, Arabic, Russian, Swedish ... etc. belong to the former class while French, Spanish, Italian, Yoruba ... etc. belong to the latter. However, it is worth mentioning that if the first language and second/foreign language are classified under one rhythmic category, the resulting interlanguage would not necessarily follow the same rhythmic classification; it rather depends on the level of proficiency in the L2 performance.

The present chapter sketches the different stages the stream of speech rhythm goes through. It also pivots around the concept of speech rhythm in an EFL setting.

2.1 History of Rhythm Typology

The classification of languages into distinct rhythmic classes has been approached from different perspectives. In what follows, a sketch of the different up to date endeavours in the realm of speech rhythm, namely the isochrony hypothesis, the phonological account, and the rhythm metrics will be presented.

2.1.1 Isochrony Hypothesis

The idea of rhythm projecting onto spoken language dates back to the 18th century, with the publication of "An Essay Towards Establishing the Melody and Measure of Speech to be Expressed and Perpetuated by Peculiar Symbols" by the phonetician, genuinely and so far truly considered the pioneer of the concept of rhythm in speech, Steele (1775). He wrote his famous treatise to refute Lord Burnet's comments that the English language has no change in tone but a merely raise in the voice to allow one syllable to be louder than the other, which is rather softer: "in the music of our language [English], we perceive no difference [between the accented and unaccented syllables] except that of louder or softer" (Steele, 1775, p. 3). However, he (p. 24) was able to falsify Burnet's claims via his prosodic transcription of the first nine lines of Hamlet's soliloquy in which he applied his five prosodic dimensions or *features of rhythmus* in his own terms: *accent* (pitch), *quantity* (duration), *pause* (silence), *emphasis* (cadence or weight), and *force* (quality of sound/loudness).

Two centuries later, Jones (1918) supported Steele's ideas when declaring that, for English, "there is a strong tendency in connected speech to make stressed syllables follow each other as nearly as possible at equal distances" (p. 106). He was then the first to evoke implicitly the notion of isochrony in English. He further accounted for the reason behind this tendency. According to him, long vowels or diphthongs in stressed syllables are to be shortened relative to what follows so that the duration between two successive stressed syllables remains uniform regardless of the number of unstressed syllables in between. By means of illustration, Jones pointed out that the diphthongs /eɪ/ and /aɪ/ in the series 'eighteen, nineteen' /ˈeɪti:n ˈnaɪnti:n/ are shorter than their counterparts in the series 'eight, nine' /ˈeɪt, ˈnaɪn/. Accordingly, shortening long vowels and diphthongs makes inter-stress intervals isochronous.

Decades later, Lloyd (1940) brought in a new concept to the field of 'linguistic rhythm'. He recognized the existence of different types of rhythm, dubbing each type the label of what it resembles: machine-gun[1] for the rhythm of Spanish, French, and Telugu and Morse-code[2] for the rhythm of English, Arabic, and Persian. In 1945, Pike introduced again the notion of isochrony when studying the intonation of American English. He (1945) identified the rhythmic unit as a "part of a sentence spoken with a single rush of syllables uninterrupted by a pause" (p. 34). As for English, he believed that those units "tend to follow one another in such a way that the lapse of time between the beginning of their prominent syllables is somewhat uniform" (p. 34).

Pike (1945), in the same line as Jones (1918), acknowledged the necessity for longer rhythmic units that contain more syllables to be pronounced within more or less the same duration occupied by smaller rhythmic units with fewer syllables in order to give the impression of isochrony. Therefore, he (1945) asserted that "since the rhythm units have different numbers of syllables, but a similar time value, the syllables of the longer ones are crushed together, and pronounced very rapidly, in order to get them pronounced at all, within that time limitation" (p. 34). This same idea was supported later by Allen (1975) who formulated new rhythmic terminology based on the way in which the rhythmic unit of each set of languages occurs. He stated that:

> Unstressed syllables in English [...] are "reduced" in both quality and quantity to the extent that the resulting rhythmic pattern consists of the stressed syllables alternating with all of the intervening unstressed syllables, i.e. a sort of massive off-beat. When the unaccented syllables retain their phonetic shape, however, as in French or Japanese, the resulting rhythmic pattern remains tied as much to syllables as to

[1]A fire arm, usually designed to fire bullets in *quick successions*.
[2]A code designed to transmit information as *a* series of *on-off* tones, lights, or clicks through sequences of *dots and dashes*.

accents. Stress rhythms are thus rhythms of alternation, whereas syllable rhythms are rhythms of succession. (p. 80)

Pike (1945) went a step further than his pre-allies in distinguishing another isochronous rhythmic unit, namely the syllable, that sets languages such as Spanish apart from languages such as English. According to him, "in these particular rhythm units each unstressed syllable is likely to be sharp cut, with a measured beat on each one; this recurrent syllable prominence even though the stressed syllables may be extra strong and extra long, it gives a 'pattering' effect" (p. 35). It is worth mentioning, however, that Pike's book "The Intonation of American English" was designed to teach the American intonation to foreigners, providing no empirical evidence but merely a hint.

For many, the most influential advocate who really paved the way for several studies on speech rhythm was Abercrombie (1967), as he claimed that all languages belong to either type, excluding by doing so, the existence of any other type. He stated that "as far as is known, every language in the world is spoken with one kind of rhythm or with the other, French, Telugu and Yoruba ... are syllable-timed languages, ... English, Russian and Arabic .... are stress-timed languages" (p. 97). His typological distinction is as much the same as Pike's (1945) but considered from a physiological point of view. While producing syllables, the breathing muscles, intercostal muscles of the rib cage, contract and produce what is termed by Abercrombie (1967) a *chest-pulse*. Some chest-pulses are produced with considerable strong contractions creating what is termed *stress-pulses*. According to Abercrombie (p. 96) "it is the way in which the chest pulses and the stress pulses recur, their mode of succession and co-ordination, that determines the rhythm of a language"; it is syllable-timed if the chest pulses are in isochronous sequences while stress pulses are not, and stress-timed if chest pulses are reinforced by stress pulses in isochronous sequences. In this manner, the fact that stressed syllables occur at regular intervals irrespective of the number of

unstressed syllables entails that the syllable of stress-timed languages is longer than the one of syllable-timed languages, which tends to be of equal length. As a result, stresses are unevenly distributed in such languages.

In the realm of rhythm typology, the two pioneers Pike (1945) and Abercrombie (1967) distinguished between only a rhythmic dichotomy; classifying all languages into two rhythmic categories. However, this approach was judged to be oversimplified as it overlooks a third class of rhythm (Beckman, 1982; Hoequist, 1983). As a matter of fact, Jimbo (1925) introduced the mora-timing category of rhythm exclusively related to Japanese and Tamil. Bloch (1950), Han (1962) and Ladefoged (1975) supported Jimbo's new rhythmic class and agreed that isochrony in Japanese displays neither syllables nor inter-stress intervals but morae which "take[s] about the same length of time to say" (Ladefoged, 1975, p. 224). Morae are said to be sub-units of syllables, containing one vowel and one consonant in an onset or a coda position, yet there exists one-single-vowel or one-single-consonant morae.

Following the work of Abercrombie (1967), a substantial number of impressionistic studies was set out either for the sake of classifying other languages into rhythmic classes or verifying, instrumentally, what had been said on the topic (Bolinger, 1965; Bertinetto, 1989; Erickson, 1991; Roach, 1982, and others). Therefore, the 20th century noticed a demise of the old isochrony hypothesis as it was not validated on the empirical ground.

Roach (1982) carried out an instrumental study to test the credibility of Abercrombie's claims and worked on the same languages: English, Russian and Arabic as stress-timed and French, Telugu and Yoruba as syllable-timed. He assumed that the standard deviation of syllable length would be higher in stress-timed languages than in syllable-timed languages if Abercrombie's claim (1967) is to be of any value. The results obtained, represented in Table 1, did not support the hypothesis:

Table 1

Syllable Duration Standard Deviation

Language	Standard deviation	Language	Standard deviation
French	75,5	English	86
Telugu	66	Russian	77
Yoruba	81	Arabic	76

Note. The data provided on this table are taken from Roach, 1982, p. 74[3]

Indeed, all values in the three syllable-timed languages seem to comply with Abercrombie's hypothesis (1967) if compared with the value of English. However, when compared with Russian and Arabic, the syllable-timed language, Yoruba, scored higher values. Likewise, French, Russian and Arabic showed values of nearly equal magnitude contradicting, again, Abercrombie's claim.

As for stress pulses, Abercrombie (1967) claimed that the duration of inter-stress intervals should be more variable in syllable-timed languages and constant in stress-timed languages as the latter exhibits a compression strategy that shortens the duration of larger numbers of syllables within the same foot. Therefore, Roach (1982) assumed that the standard deviation of the duration of inter-stress intervals is higher in syllable-timed languages than in stress-timed languages if Abercrombie's hypothesis is to be correct. Despite the difficulties[4] imposed by the process of measurement envisaged, Roach carefully[5] calculated the variance of the percentage deviation of inter-stress intervals in all the aforementioned six languages. The results obtained are illustrated in Table 2:

[3] Tables and Figures throughout the whole thesis are arranged according to the APA Manual Sixth edition

[4]The identification of stresses and syllabification were highly influenced by the phonetician's intuition and prosodic characteristics of his native and/or other languages. Tempo variations and the identification of tone-unit boundaries were problematic as well.

[5]For details about how those problems were overcome, see Roach (1982).

Table 2

Inter-Stress Intervals Standard Deviation Variance

Language	Variance	Language	Variance
French	617	English	1267
Telugu	870	Russian	917
Yoruba	726	Arabic	874

Note. The data provided in this table are taken from Roach, 1982, p. 76

Contrary to the hypothesis, the figures for stress-timed languages are surprisingly considerably higher than those for syllable-timed languages. Roach (1982) then concluded that there is a credibility gap between what is assumed and what is obtained on the empirical ground. His findings were not meant to totally disprove the classification of languages into stress or syllable-timed languages but to reject the very principle of such classification i.e. isochronous temporal organization of inter-stress intervals or syllables. Indeed, he resorted to perception to account for such classification: "a language is stress-timed if it sounds stress-timed" (p. 76).

Following the comparative study conducted by Roach (1982) (although the same results were revealed long ago by Classé, 1939[6]), the hypothesis of isochrony was undermined and became bleaker as different other studies failed time and again to provide any experimental evidence that inter-stress intervals are more equal in stress-timed than in syllable-timed languages. Inter-stress intervals in stress-timed languages were shown to be proportional to the number of syllables they contain (Shen & Peterson, 1962; Lea, 1974; Uldall, 1971; Bolinger, 1965; Bertinetto, 1989, and Dauer, 1983) and the duration of syllables in syllable-timed languages is as well proportional to the number of segments per each syllable (Pointon, 1980; Wenk & Violand, 1982; Pamies Bertran, 1999). Isochrony in mora-

[6]Classé (1939) revealed that the English stress feet show absolute isochrony just in one condition, if they are phonetically and syntactically homogeneous.

timing was questioned on the basis of acoustic measurements likewise (Oyakawa, 1971; Beckman, 1982, and Hoequist, 1983).

2.1.2 Isochrony as a Perceptive Phenomenon

Although not pertaining to the field of acoustics, isochrony in speech rhythm was not regarded as a pigment of linguists' imagination. Rather, researchers started to reconsider it as a perceptual phenomenon. Laver (1994) and Beckman (1992), for instance, thought of it as being not more than a *tendency* for listeners to impose rhythmic structure on temporally unstructured material, creating *weak/subjective* rather than *absolute/objective* isochrony. In the same vein, Lehiste (1977) conducted an experiment in which listeners were asked to recognize durational differences of inter-stress intervals in both speech and non-speech contexts[7]. She concluded that isochrony fared much better in perception than in production. Listeners were unable to identify the timing difference of inter-stress intervals in speech because it did not exist; inter-stress intervals were equal in duration and hence isochronous. According to her, "if listeners cannot identify the actually longest and shortest measures in spoken English sentences, the measures must seem to them to have equal duration; if you cannot tell them apart they must be alike. Isochrony would then be a perceptual phenomenon" (p. 256). Similarly, Auer and Uhmann' results (1988) tied in with those of Lehiste (1977): inter-stress intervals that were perceived as anosochronous shared 30 to 50 ms (millisecond) difference in their durations; however, in the case where the difference was below the threshold mentioned, intervals were perceived equal in duration and hence isochronous. More recently, Ramus, Dupoux, and Mehler (2003) and Ramus and Mehler (1999) carried out an experiment relying only on rhythmic cues to test naive listeners' ability to discriminate between languages' rhythms. To exclude other cues that might be responsible for

[7]In non-speech analogy, Lehiste (1977) replaced words by noise and stresses by clicks to obtain the same impression of speech inter-stress intervals.

discrimination, they opted for a 'flat sasasa' method in which all the utterances were delexicalized through replacing all vowels with 'a' and all consonants with 's'. Intriguingly, the results bore out the classical rhythmic classification of languages: English and Spanish were recognized as belonging to different classes whereas English and Dutch were grouped in the same rhythmic category. The same thing can be said about Ben Abda's experiment (2004); Tunisian Arabic and English were said to belong to the same rhythmic group while French was set apart from both languages.

Moreover, a series of perceptual experiments (like those conducted by Fraisse, 1974; Allen, 1975; Beckman, 1992, and others) yielded that listeners perceive inter-stress intervals as evenly more regular than they really are in the real produced utterances. This mainly happened, according to Laver (1994) because "listeners discount momentary variations from a truly regular rhythm in the speech, through their knowledge of the perturbations of timing necessitated by the different phonological structures of the utterances involved" (p. 525). Allen (1975), in the same line as Laver, contended that speech is perceived as rhythmic "because it is fairly regular in its sequential sound patterns often enough that we can impose upon it simple rhythmic structures" (p. 78). In other words, listeners are able to predict a rhythmic pattern irrespective to the available speech signals and superimpose a rhythmic structure accordingly. He further acknowledged that:

> When we hear a sequence of pulses that is neither too rapid nor too slow we hear it as rhythmic [...]. As long as the minimum time between pulses is greater than about 0.1 s, so that successiveness and order are perceivable, and the maximum is less than about 3.0 s, beyond which groupings do not form, we will impose some rhythmic structure on the sequence. (p. 76)

This ear ability to perceive isochrony proves the existence of the latter. Listeners are able to modify the rhythmic structure in accordance to syntactic information despite being subject to multiple perturbations resulting from the phonetic, phonological and grammatical characteristics of a language. The use of speech errors like syllable additions or omissions to equalize inter-stress intervals (Cutler, 1981), foot-level compression (Lehiste, 1973), polysyllabic shortening (Lehiste, 1972) etc. are all systematic tendencies to perceptually regularize the distance between rhythmic units and hence, evidence for a weak isochrony.

It is worth mentioning that training plays a considerable role in learning how to perceive different speech rhythms. Indeed, Abercrombie (1967) himself claimed that setting languages apart rhythmically should not, necessarily, be an outcome of an experiment relying on exclusively acoustic phenomena; it might be attributed to perceptual skills instead. He acknowledged the fact that "the phonetician needs empathy with the speaker to apprehend speech rhythm, (...) it is necessary to learn to listen differently in order to be able to analyse speech rhythm, whether of one's mother tongue or another language, and to describe it in general terms" (p. 98).

All in all, the isochrony hypothesis, be it rooted in perception or production, was all together cast aside once being invalidated on the empirical ground. However, the notion of alternation of strong and weak sequences is something that cannot be denied as was stated by Couper-Kuhlen (1986): "whether the tendency for strong and weak syllables to alternate with one another is ultimately physiologically or psychologically conditioned, there is reason to believe that rhythmic alternation is a universal principle governing the rhythms of natural languages" (p. 60).

2.1.3 Phonological Account

Starting from the late 70s, research in the field of rhythm typology took another dimension since the notion of isochrony was abandoned as heuristic for classifying languages into rhythmic categories. As an attempt to find an alternative explanation for the illusion of isochrony in accounting for the existence of different speech rhythms, Bertinetto (1977) conducted an experiment in which he relied on measuring the duration of 15 sentences read by two native Italians. The results revealed that the duration of inter-stress intervals was proportional to the number of syllables included in the foot and the duration of syllables was relative to the number of phonemes included per syllable. Bertinetto (1989), then, set a range of phonological properties that are responsible for the difference existing between stress-timed and syllable-timed rhythms:

> (a) vowel reduction vs. full articulation in unstressed syllables;
>
> (b) relative uncertainty vs. certainty in syllable counting, at least in some cases;
>
> (c) tempo acceleration obtained (mainly) through compression of unstressed syllables vs. proportional compression;
>
> (d) complex syllable structure, with relatively uncertain syllable boundaries, vs. simple structure and well-defined boundaries;
>
> (e) tendency of stress to attract segmental material in order to build up heavy syllables vs. no such tendency;
>
> (f) relative flexibility in stress placement (cf. the "rhythm rule") vs. comparatively stronger rigidity of prominence;
>
> (g) relative density of secondary stresses, with the corresponding tendency towards short ISI (Inter-stress Intervals) and (conversely) towards relative tolerance for large discrepancies in the extent of the ISI. (pp. 108-9)

Although Bertinetto (1977 and 1989) put a number of criteria, he considered vowel reduction and syllable structure to be the best parameters responsible for setting apart languages rhythmically. Stress-timed languages are characterized by displaying reduced vowels that tend to be centralized in unstressed-syllables and full, stressed form of vowels in stressed syllables. This use of different vowel qualities and quantities in both kinds of syllables is, to a large extent, what makes stressed syllables more prominent than the unstressed ones and hence gives the impression of isochrony in both intervals. Conversely, syllable-timed languages do not exhibit a contrast between stressed and unstressed syllables. As a matter of fact, both types of syllables are nearly equal in duration since the vowels included are fully articulated. As for syllable structure, stress-timed languages show complex syllabic inventories, both in onset and coda positions i.e. a preference to close or heavy syllables; whereas, syllable-timed languages, that focus on the syllable as their central prosodic unit, opt for simpler structures with clear discernible boundaries i.e. light or open syllabic combinations.

Dauer (1983) is another sceptic phonetician set to revise the concept of stress vs. syllable timed rhythms. Like Roach (1982) and Bertinetto (1977), she conducted an experiment in which she measured the duration of inter-stress intervals and investigated the recurrence of stress in both kinds of languages: English, Thai, and Greek as stress-timed and Spanish and Italian as syllable-timed. Based on the results obtained, which were no exception compared to the preceding experiments, she (1983) concluded that:

> -the mean duration of interstress intervals is proportional to the number of syllables in the interval for all the languages analysed, and there is no more tendency for interstress intervals to clump together in English than in the other languages (...) and

-stresses recur no more regularly in English than they do in any other language with clearly definable stress. (p. 54)

Therefore, a pure phonetic interpretation of speech rhythm turned out to be vain and misleading. While Pike (1945) and Bolinger (1981) among others thought that speakers try to adjust interstress or intersyllable intervals through adopting compensation strategies such as jamming together or lengthening vowels and/or consonants so to get nearly equal intervals, Dauer (1983) acknowledged that "what goes on is *within* rather than *across* interstress intervals" (p. 55). Accordingly, she suggested that the different phonetic manifestations of the phonological and phonotactic structure of languages, namely syllable structure, vowel reduction and the phonetic realizations of stress and its influence on vowel duration are what differentiate between languages rhythmically, not the way round.

2.1.3.1 Syllable Structure

Dauer (1983) observed that the syllable structure differed among the 5 languages analysed. The fact that the number of interstress syllables in English and Thai (1-5, 1-4, respectively) was less than its counterpart in Spanish, Greek and Italian (1-7 in all of them) coupled with the fact that the mean duration of interstress intervals was approximately equal in both languages (ranges between 0.4 and 0.5 ms) entails that the syllable structure of stress-timed languages undergoes a variety of combinations. Closed syllables in English (56%) were more frequent than the open ones (44%) whereas in Spanish and French, open syllables (70% and 74%, respectively) outnumbered their closed counterparts (30% and 26% respectively). Dauer's results were confirmed by other researchers who agreed that open syllables are more frequent in syllable-timed languages: Fletcher (1991) for French (70% to 85%), Ramus and Mehler (1999) for Italian (60%), Frota and Vigário (2001) for European Portuguese (59%),...etc.

In addition to variation in syllable structure, Dauer's results indicated that English shows a contrast in the structure of both types of syllables; stressed syllables tend to be heavier CVC (35%) than the unstressed ones which are rather light CV (38%). In sharp contrast, the majority of both stressed and unstressed syllables in Spanish belong to CV combination (53% and 61% respectively) as opposed to CVC (24% and 22% respectively). Similarly, Crystal and House (1990) measured the duration of syllables in American English and found that it was lower in open unstressed syllables (120 ms) and higher in closed stressed ones (483 ms to 516 ms).

To account for why the variation between stressed and unstressed syllables is more significant in stress-timed rhythm than it is in syllable-timed rhythm, Dauer (1983) asserted that individual segments within the same syllable differ in their quality. In English, a stress-timed language, the vowels displayed in unstressed syllables are inherently shorter than the ones displayed in stressed syllables. In Spanish, however, vowel quality rather lessens the contrast between stressed and unstressed syllables as the same half open or/and open vowels dominate in both types of syllables.

2.1.3.2 Vowel Reduction

Dauer (1983) among others (Delattre, 1969; Roach, 1982; Hoequist, 1983; den Os, 1988; Beckman, 1992; Ramus & Mehler, 1999; Frota & Vigário, 2001; Grabe & Low, 2002; White & Mattys, 2007; ...) asserted that the second structural trait that maximises the difference between stressed and unstressed syllables in a stress-timed language is the change in the acoustic quality of vowels which tend to be centralized in unstressed syllables, hence shorter in duration. In contradistinction, the unstressed vowels in syllable-timed languages do not undergo such a change in vowel quality giving a less variable pattern of vowel duration between stressed and unstressed syllables. In English by way of example, a mid-central vowel

/ə/ or syllabic consonants [n̩], [l̩], and [m̩] cause the retention of the syllabicity of unstressed syllables as they constitute their nucleus (I saw him /ɑ: sɔː**m̩**/), whereas the elision of vowels in syllable-timed languages such as French causes the deletion of the syllable as a complete unit, contributing in the retention of isochrony between syllables (chez le garçon /ʃel.gar.sɔ̃/). In addition, English gives an enormous importance to weakening function words and morphological endings as they do not carry considerable semantic information in the same way as content words. This considerable reduction in function words fuels the alternation between stressed and unstressed syllables.

2.1.3.3 Stress

The third trait that is said to sort out stress-timed from syllable-timed languages is the different phonetic realizations of lexical stress. Indeed, for a syllable to be stressed, it has to conjoin different parameters that contribute to its distinguishable prominence: pitch, duration, and intensity. Stressed syllables are relatively longer, louder and higher in pitch and hence stand in total contrast to the unstressed ones that are rather shorter, less loud, and lower in pitch. To this end, some prerequisite factors come into play, such as stress shift to avoid stressing two juxtaposed syllables and reduction processes to limit the number of unstressed syllables in interstress intervals, in order to maintain the rhythmic alternation characterizing stress-timed languages like English. Syllable-timed languages, on the other hand, may have fixed stress (such as French), have no pitch contour effect (such as Japanese) or have lexical stress yet with less discernible stress correlates between stressed and unstressed syllables (such as Spanish). In the same vein, Pointon (1980) and Arvaniti (1994) concluded that Spanish and Greek, as it is the way with many other syllable-timed languages that exhibit lexical stress, are never said to be stress-timed although they permit stress shift. This is because they do not allow extra stressing to avoid longer stretches of interstress intervals, as stress-timed languages would do in such a situation.

2.1.4 Rhythm Continuum

The phonological properties that, according to Dauer 1983, 1987, set apart languages rhythmically do not always co-exist in one language. Instead, one property might be dominant over another. As a result, languages should be organized on a *continuum* in which, according to Bertinetto (1989) "various languages differ in terms of scalar deviations from the ideal prototype of pure isochrony" (p. 121). This scalar classification of languages in a rhythm continuum is represented by English as a prototypical stress-timed language on the extreme right of one pole and French as a prototypical syllable-timed language on the extreme left of the other pole. Dauer (1983) and others like Allen (1975), O'Connor (1973), Bertinetto (1989) and Laver (1994) asserted that all languages are in fact *stress-based* and called for not using the old terminology i.e. *stress-timed and syllable-timed* once the notion of isochronous timing has been falsified empirically. Therefore, a language should be more or less stress-based depending on the extent to which the aforementioned criteria tally with the norms. This new concept gave birth to 'intermediate languages' that are neither pure syllable-timed nor pure stress-timed, such as Polish that conjoins complex syllable structure and no vowel reduction and Catalan that conjoins simple syllable structure and vowel reduction (Ramus & Mehler, 1999 and Nespor, 1990).

Children's language acquisition has always been a proof that language structure and its dependent segmental and suprasegmental variations are responsible for the scalar classification of languages' rhythms. As a matter of fact, researchers in the field of first language acquisition like Allen and Hawkins (1980), Dauer (1983), etc. contended that English speaking infants initially start out with a syllable-timed rhythm, perceived through producing a number of heavy syllables with the absence of unstressed syllables and vowel reduction, and end up with a stress-timed rhythm as they acquire, in time, the different

phonological properties responsible for stress-timing such as processes to lengthen and shorten syllables.

In addition to children, adults may occasionally produce syllable-timed English depending on the variety spoken or the setting of speech. Roach (1982), for instance, asserted that "there is no language which is totally syllable-timed or totally stress-timed- all languages display both sorts of timing that will be exhibited by the same speaker on different occasions and in different contexts" (p. 78). This idea harks back to pike (1945) when he noticed that "English also has a rhythmic type which depends to a considerable extent upon the number of its syllables, rather than the presence of a strong stress" (p. 35), referring to the rhythm of 'spoken chants' or as Crystal (1995) provided baby talk, television commercials and some popular music. The English produced by foreign learners also seems to be syllable-timed. As a matter of fact, Crystal (2003) reckoned that English will embody the syllable-timed rhythm class and become the accepted norm in time due to the increasing number of different foreign varieties of English: Singaporean English, Indian English, standard Filipino English, Hawaiian English, South African English, among others. In the same respect, Wells (1982) asserted that:

> Most African languages have a strong preference for syllables of the structure /CoV/ (zero or more consonants plus a vowel, with no final consonant)...For those Africans whose first language is syllable-timed (as many are), the resultant pronunciation of a word such as society /sə.saɪ.jɛ.tɪ/ is very different from what is heard in England or America. (p. 642)

Indeed, foreign learners of English tend to break complex syllable structures by adding an epenthetic vowel or dropping final consonants to obtain short CV syllables in addition to stressing unstressed vowels. This, to a large extent, explains why those varieties distributed in

the outer-circle of Kachru's model of world Englishes (1985) are syllable-based and those varieties included in the inner-circle are stress-based.

Moreover, a number of researchers belied the discrete description of some languages as syllable-timed. Olsen (1972), for instance, asserted that Spanish exhibits sometimes a regular alternation between stressed and unstressed syllables especially in poetry. In the same vein, Borzone de Manrique and Signorini (1983) concluded that syllable duration in Spanish seems to be affected by the position of stress. As for French, Wenck and Wioland (1982) claimed that accent in French defines the rhythmic category to which it belongs. According to them, "to say that French syllables are of relatively equal length is to deny the existence of accented syllables [...] to say that French has no accented syllables is to deny the existence of rhythm" (p.203). Consequently, all the pre-mentioned researchers concluded that even supposedly syllable-timed languages may exhibit a regular recurrence of stress to the extent that Martin (1972) referred to it as 'language universal'.

However, a pure stress-based rhythmic classification of languages might be weak; given the fact that equal interval accent is a gradient feature and does not exist with the same degree in all languages. Thus, it seems safe and unquestionable to classify languages along a continuum based on stress and other phonological factors that best identify the rhythm of any language. Classifying languages rhythmically is a matter of considering the abundant feature of a given language that takes precedence over the other features designated to set apart languages rhythmically as Ploquin (2009) put it "after all, we don't expect to find categories of languages according to their segmental inventories. Trying to find rhythmic categories might be [sic.] the same as calling a language nasal because it includes nasal vowels or fricative because it makes use of more fricatives than any other type of consonants" (p. 49).

2.1.5 Rhythm Metrics

Following the success of the phonological account of speech rhythm, a new wave of studies emerged aiming at putting into practice the concepts brought up by Dauer (1983) and her advocates. The pendulum hence swung back to durational measurements of some acoustic signals. Ramus et al. (1999) set specific durational metrics that best fit syllable structure and vowel reduction: %V and ΔC. In the same vein, a set of indices: PVI (Grabe, Low and Nolan, 2000), Varcos (Dellwo & Wagner, 2003) and CCI (Bertinetto & Bertini, 2008) was introduced to complement Ramus et al. (1999) metrics. Therefore, the last thirteen years noticed a number of works, to name but a few: Ghazali, Hamdi, and Barkat (2002), Barry, Andreeva, Russo, Dimitrova and Kostadinova (2003), Mairano (2011), etc. that were undertaken as an attempt to either test the reliability of the different rhythm metrics, to compare the data obtained by different metrics, or merely to classify languages rhythmically. This section sketches the different metrics that exist in speech rhythm parlance.

2.1.5.1 Ramus et al. Model (1999)

The impetus that gave birth to the first measurements of speech rhythm based on acoustic metrics rests on a hypothesis drawn by Ramus and his colleagues (1999) while conducting a research revolving around how infants fare well in perceiving divergent speech rhythms since birth. Ramus et al. believe that infants are too young to know the phonological properties of their native language let alone to base their rhythm discrimination on phonological differences between rhythmically contrasting languages. They accordingly came to the conclusion that if they are to come up with a reasonable explanation, they should rely on phonetic cues. According to them, infants receive utterances as "a succession of vowels of variable durations and intensities, alternating with periods of unanalysed noise (i.e. consonants)" (p. 270). Therefore, they computed the duration of successive vowels and the

duration of successive consonants via a phonetic segmentation of utterances into vocalic and consonantal sequences, and derived rhythm metrics from both measurements: ΔV, ΔC and %V, standing for the standard deviation of vocalic intervals, the standard deviation of consonantal intervals, and the proportion of vocalic intervals, respectively. Ramus et al. plotted the different metrics' values of eight languages on one chart and concluded that the correlation between ΔC and %V ($r=0.93$, $p<0.01$) is what best goes with the classic rhythmic classification of languages: English and Dutch clustered in a group with high values of ΔC and lower values for %V and Catalan, French, Italian and Spanish, on the other hand, cluster in a group with opposite values. Japanese, however, occupied an isolated position. Polish and Catalan were grouped with stress-timed and syllable-timed respectively, contradicting Dauer's continuum (1983) and Nespor's mixed rhythms (1990). The third metric ΔV was discarded as it was deemed sensitive to other factors (especially speech tempo). Figure 1 illustrates the findings of Ramus et al., 1999:

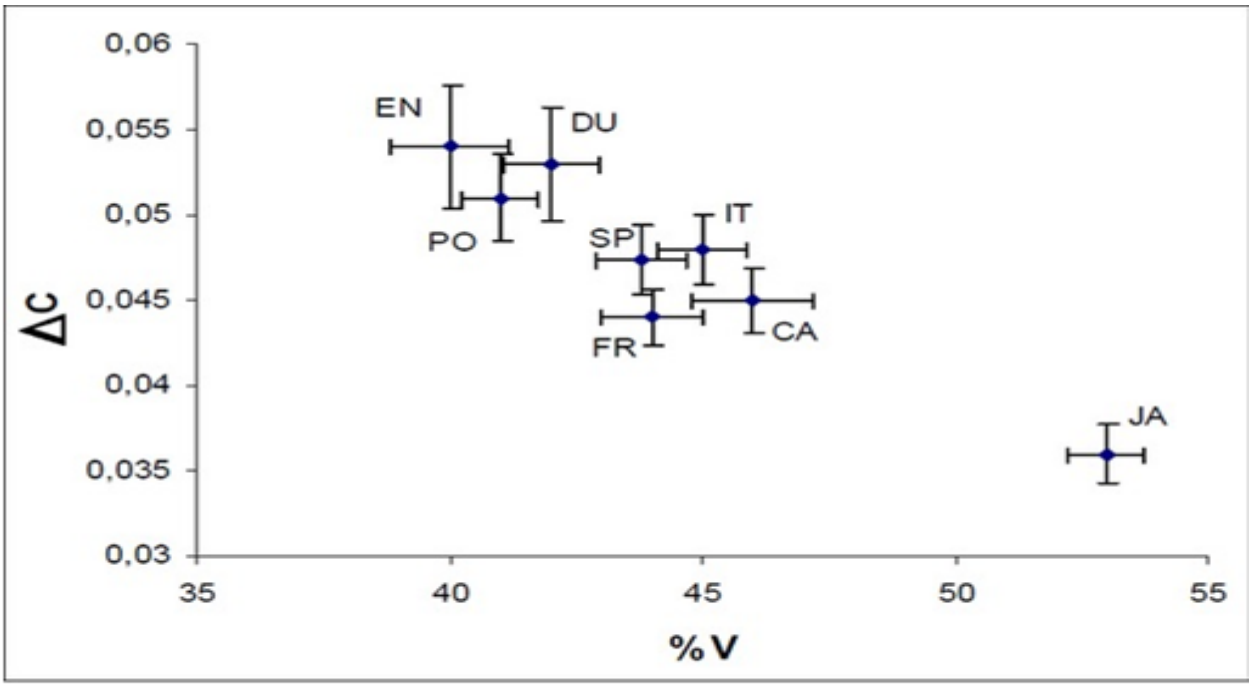


Figure 1. The Classification of 8 languages according to ΔC and %V. It is taken from Ramus et al., 1999, p. 243

Prototypical stress-timed languages show higher values of ΔC, reflecting the complexity of syllable structure which increases the duration of consonants and decreases the duration of vowels, resulting in a lower %V. Put differently, the more the syllable is complex the more consonants it contains and the fewer vowels it displays. Conversely, prototypical syllable-timed languages exhibit a simpler structure of syllables i.e. lower ΔC and higher %V.

However, Ramus et al. (1999) metrics may cast doubt on whether they represent rhythmic differences or merely variability in syllable structure among languages. Patel (2008) suggested that variability in syllable duration, which is in turn highly correlated with variability in syllable structure and vowel reduction, may be a decisive key for perceived rhythmic differences. He segmented the English and French sentences in the corpus used in Ramus et al. (1999), regardless of the difficulties related to assigning syllable boundaries in connected speech, and measured the syllable duration variability index by the coefficient of variation[8]. The results yielded that syllable duration in English (0.53 ms) is more variable than it is in French (0.42 ms) ($p < 0.01$), proving that rhythmic differences can be perceived on such a basis at least as far as English and French are concerned. In the same line, Wagner and Dellwo (2004) proposed another fruitful index called 'Yet Another Rhythm Determination' as a triple desiderata problem-solving index which is, according to them, "robust against moderate articulation rate changes, independent of syllable complexity, and models rhythmic classes along a single dimension" (p. 1).

2.1.5.2 Grabe et al. Model (2000)

In addition to the aforementioned syllable duration variability indices, a rather deviated index was proposed based on the long lasting prediction that vowel reduction contributes to perceiving contrasting rhythms. Grabe et al. (2000) developed the Pairwise

[8] The standard deviation divided by the mean.

Variability Index (PVI) to measure the difference between successive vocalic and intervocalic intervals in an utterance in order to identify the index that best mirrors the rhythmic differences among languages. They opted for the normalized version of PVI (nPVI) that counteracts the influence of speech rate on vowels durations by dividing the difference between pairs of vocalic intervals by the sum of intervals. The formula adopted is as follows (where *m* is the number of intervals and *d* is the duration of *kth* interval):

$$n\,PVI = 100 \times \left[\sum_{k=1}^{m-1} \left| \frac{d_k - d_{k+1}}{(d_k + d_{k+1})/2} \right| / (m-1) \right]$$

The nPVI was applied to British English as a stress-timed and Singapore English as a syllable-timed. The results imply that the former exhibits contrasting successive vowel durations (higher nPVI values) and the latter shows less contrasting successive durations (low nPVI values). Such findings comply with the quality of vowels in each language; vowel duration is more variable in British English than it is in Singapore English because the latter lacks distinction between long and short vowel pairs and displays fewer vowel reductions (Deterding, 1994).

In another study, Grabe and Low (2002) applied the PVI to measure both vocalic and intervocalic differences yet with a different method of calculation for the latter. They sought not to normalize the PVI of consonantal intervals as it could mask variations in syllable structure (onset and coda) that might be relevant to rhythm. Hence, they opted for the following formula of raw PVI (rPVI):

$$r\,PVI = \left[\sum_{k=1}^{m-1} |d_k - d_{k+1}| / (m-1) \right]$$

Eighteen languages that encompass both discrete and intermediate languages and dialects were involved in Grabe and Low study (2002). Contrary to the findings of Ramus et

al. (1999), the values obtained, scattered along a continuum, showed a weak disposition to discrete rhythmic groups and a considerable overlap between them and some unclassified languages. nPVI values were higher in stress-timed languages (65.5, 59.7, and 57.2 in Dutch, German, and British English respectively against 43.5, 29.7, and 27 in French, Spanish, and Mandarin respectively), while rPVI values were not significantly different (57.4, 55.3, 64.1, 50.4, and 57.7 in Dutch, German, British, French, and Spanish respectively). The values of Polish and Catalan confirmed the classic predictions of mixed languages with a 46.6 and 44.6 nPVI and 79.1 and 67.8 rPVI, respectively. The remaining languages were scattered roughly between the two traditional classes as it is shown in Figure 2:

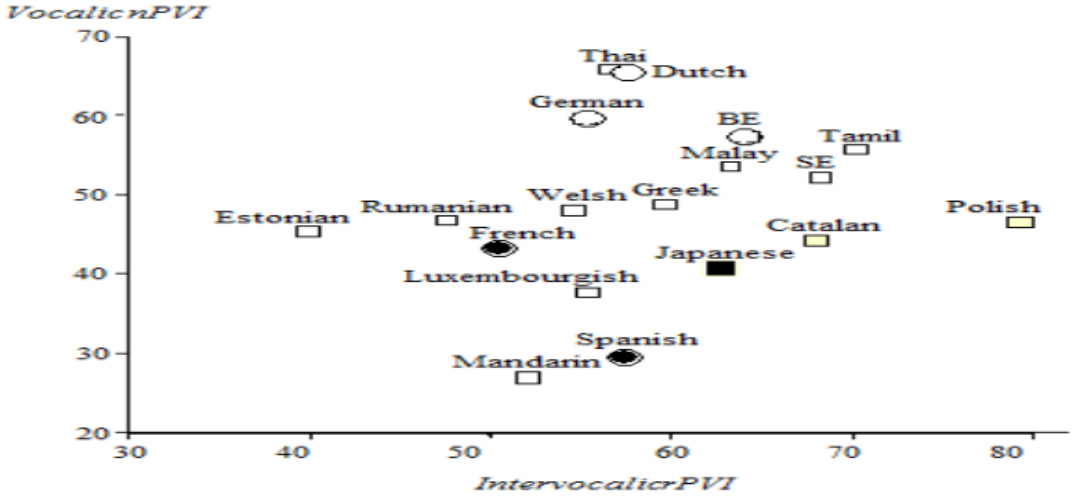


Figure 2. Data PVI profiles from 18 languages. It is taken from Grabe and Low, 2002, p.7
○= stress-timed, ● = syllable-timed, ■= mora-timed, □= mixed or unclassified

2.1.5.3 Comparison between Ramus et al. (1999) and Grabe et al. (2000) Models

The two metrics proposed by Grabe et al. (2000) were initially put as an alteration to the earlier ones proposed by Ramus et al. (1999). Although both set of metrics share the same objective and adopt the same holistic principle of measurement, the overall vowel time and vocalic variability duration or the variance duration of vocalic and intervocalic intervals, Grabe and colleagues claim that nPVI and rPVI are the best indicators to perceived speech rhythm. As a matter of fact, in 2002, they conducted another study and compelled themselves

to apply %V and ΔC on the set of tested languages in their first study (2000). Figure 3 shows how those languages are categorized according to %V/ΔC metrics:

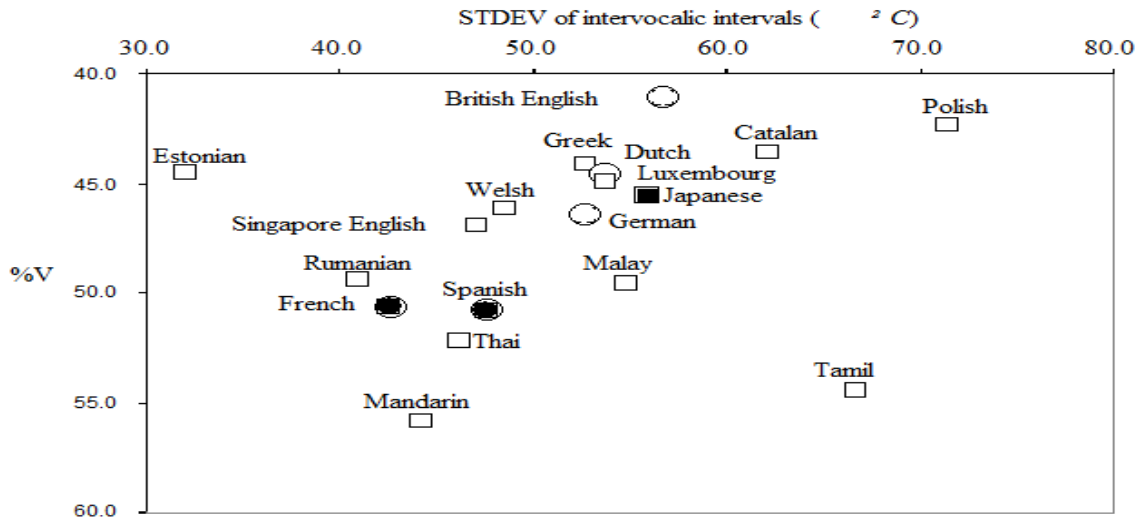


Figure 3. Classification of 18 languages using ΔC and %V. It is taken from Grabe and Low, 2002, p.7.○ = stress-timed, ● = syllable-timed, ■ = mora-timed, □= mixed or unclassified

British English, Dutsh and German together with French and Spanish seem to conform to the traditional rhythmic classification: stress-timed and syllable-timed respectively. The two metrics claimed to be the best indicators follow the asserted norms i.e. the three stress-timed languages exhibit a low %V and a high nPVI whereas Spanish and French show a high %V and a low nPVI (see Table 4). However, some discrepancies existed within the same language depending on the parameter taken into account. Greek, Catalan, Japanese, and Luxemburg are more stress-timed than German according to %V and less stress-timed according to nPVI.

Table 3

Discrepancy in the Classification of Some Languages According to %V and nPVI

Language	%V	nPVI
Catalan	43.6	44.6
Greek	44.1	48.7
Luxembourg	44.7	37.7
Japanese	45.5	40.9
German	**46.4**	**59.7**

Note. High values in both metrics are shown in bold. Data are taken from Grabe & Low, 2002

Perhaps the striking observation when comparing Figures 2 and 3 is the contrasting position of Thai and Tamil; they are placed within stress-timed languages if we consider Grabe and Low (2002) chart and within syllable-timed languages according to Ramus et al. (1999) metrics. To check the validity of this last categorization, Grabe et al. (2000) considered the correlation of nPVI with %V as it fares well with the traditional rhythmic classification of languages. Contrary to what was expected, Tamil and Thai, as shows in Table 4, did not abide by this correlation; they exhibit high values in both metrics, yet Thai was classified as stress-timed since its nPVI was higher than its %V and Tamil remained unclassified as no significant difference was shown between the values obtained from both metrics.

Table 4

%V and nPVI Values as Applied on Grabe and Low Data

Language	%V	nPVI
British English	41.1	**57.2**
Dutch	44.9	**65.5**
German	46.4	**59.7**
French	**50.6**	43.5
Spanish	**50.8**	29.7
Thai	**52.2**	**65.8**
Tamil	**54.4**	**55.8**

Note. High values in both metrics are shown in bold. Data are taken from Grabe and Low, 2002

According to the results stated in Table 4, Grabe and Low (2002) concluded that the metrics of Ramus et al. (1999) are not totally reliable because they may mirror speakers' variable speech rate.

In return, Ramus (2002) asserted that the deltas and %V are better and are considered the best indicators of rhythm if applied on a corpus where the speech rate is fairly controlled. In their study, Grabe and Low (2002) used a normalized formula instead of controlling the speech rate through equalising the number of syllables per sentence across languages and their average duration. Therefore, it stood to reason that the obtained clusters (derived from ΔC and

%V) did not match theirs (derived from nPVI and rPVI). Besides, the data of Grabe and Low consisted of just one speaker per language which might reflect speakers' idiosyncrasies. So, Ramus (2002) concluded that in order to obtain safe conclusions, more speakers must be involved.

Moreover, Ramus (2002) tested the effectiveness of nPVI/rPVI indices on the corpus used in Ramus et al. (1999) along with the non-normalised deltas (ΔC/ΔV)[9]. Surprisingly enough, the results obtained revealed an unequivocal sameness of how the 8 languages were plotted on both charts (see Figure 4). The only slight difference is that nPVI classification is more definable than that of ΔV as the latter is deemed to be extremely sensitive to speech rate. As a result, Ramus (2002) urged the need for both: controlling speech rate, either by using a normalised formula or by confining the corpus, and involving a considerable number of speakers if both sets of variables are to be considered reliable. Figure 4 illustrates the classification of Ramus et al.'s (1999) tested languages according to nPVI/rPVI and %V/ΔC:

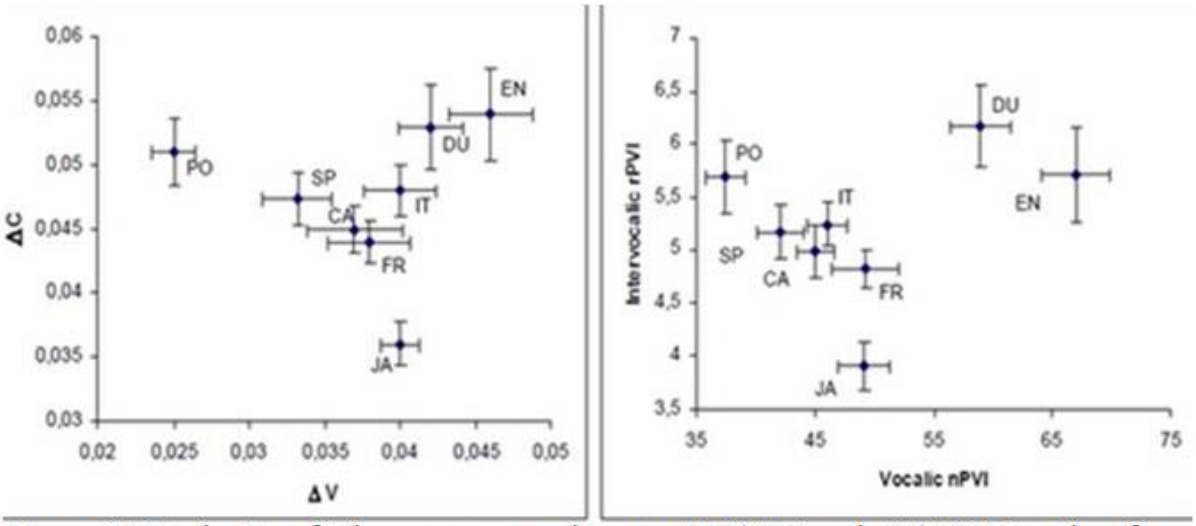


Figure 4. Distribution of 8 languages according to nPVI/rPVI and ΔC/ΔV. It is taken from Ramus, 2002

[9]%V was not applied as it had no equivalent among the indices of Grabe and Low, 2002.

2.1.5.4 Speech Rate Constraint

In the same line as Ramus (2002), Barry, Andreeva, Russo, Dimitrova and Kostadinova (2003) acknowledged the fact that speech rate must be controlled in order to exclude the possibility of capturing spurious rhythmic categories/continuum. Indeed, many studies: Janse, Nooteboom, and Quené, 2003; Fourakis, 1991; Fletcher, 1988, among others, claimed that segments are shortened or lengthened in function of speech tempo; if the speaker slows down, segments (vowels and consonants) tend to be lengthened but if s/he speeds up, they are rather shortened. Accordingly, they all concluded that the faster the tempo is, the lower ΔC and ΔV become. Similarly, Dellwo (2006) came up to the same conclusion. He asserted that:

> Since in fast speech consonantal intervals may likely be shorter than in slow speech this may have a direct effect on the extent to which the durations can vary on an absolute level: shorter intervals cause lower absolute variation, longer intervals cause higher absolute variation. (p. 2)

However, Russo and Barry (2008) noticed that the other metric i.e. %V does not seem to be affected by speech rate and called it "tempo-resistant" (p. 4).

On this ground, subsequent works started to consider how to normalise speech rate. Dellwo and Wagner (2003) were the first to suggest a normalised version of ΔC, called VarcoC, by dividing the standard deviation of consonantal intervals by the mean value of the latter:

$$VarcoC=\Delta C/meanC*100$$

Dellwo (2006) applied VarcoC to English and German as stress-timed languages and French as a syllable-timed language and obtained confirming results. Indeed, both sets of

languages were unequivocally separated, across different speech rates[10], relying on the VarcoC more than the ΔC. Benton (2010), however, when applying VarcoC, ΔC and nPVI on larger corpora found that VarcoC correlates with speech rate. He accounted for this unexpected finding by the fact that the overall mean of consonants was approximately 100 (the same value to multiply by in the VarcoC formula). In this respect, he suggested another method of calculation in which ΔC is divided by the local mean of consonantal intervals per sentence in order to counter any speech tempo effects. By the same token, the author suggested for the nPVI index a rather encompassing normalisation method that takes into account all the previous vocalic intervals of a particular utterance instead of only measuring the difference between a given utterance and the preceding one. He called this new index the 'Reverse-normalised PVI' and put its formula as follows:

$$Rev\_\text{n}PVI_i = 100 \times \left[\sum_{K=1}^{m-1} \frac{|d_k - d_{k+1}|}{\left(\sum_{i=0}^{n} d_{k-i} + d_{k+1}\right)/(2+i)} /(m-1) \right]$$

2.1.5.5 Control/Compensation Index

Inspired by the work of Fowler (2006) on the vocalic and consonantal behaviour intra and/or inter syllabically, Bertinetto and Bertini (2008) came up with a phonologically driven metric called Control/Compensation Index (CCI), based on which the ability to monitor the actual duration of a given utterance goes back to its individual phonemes i.e. each vocalic or consonantal interval is divided by the number of segments included in it[11]. They set the following formula (where *m* refers to the number of intervals, *d* stands for duration and *n* for the number of segments within each interval):

[10]Very slow, slow, normal, fast and the fastest possible rates.
[11] Geminates and long vowels are considered 2 segments (Finnish), hyper long segments count as 3 (Estonian), vowels in hiatus are regarded as monosegmental vocalic intervals.

$$CCI = \frac{100}{m-1} \sum_{k-1}^{m-1} \left| \frac{d_k}{n_k} - \frac{d_{k+1}}{n_{k+1}} \right|$$

Languages that are known to be stress-timed exhibit a much higher segmental overlap in unstressed syllables, as vowels are superimposed by preceding or following consonants, whereas both vowels and consonants are roughly equally assigned the same duration of articulation (i.e. controlled) in a syllable-timed language. Fowler (1981) admitted that a vowel "is measured to be shorter not necessarily because it is shorter in any articulatory sense, but because most of the durational extent over which it is coproduced with a consonant is conventionally assigned only to the consonants" (p. 128). Therefore, languages are differentiated based on the extent of flexibility of segments they allow at all levels (intra and inter syllabic). The CCI is similar to the PVI in principle, but both differ in considering the number of segments of each interval:

> As with PVI, the CCI algorithm measures the local durational fluctuations between adjacent units of the relevant type (Vs or Cs). Due to its very conception, however, the CCI algorithm takes into account not only the speech durational behaviour, but also the degree of phonotactic complexity as reflected in the number of segments composing each V- and C- interval (Bertini, Bertinetto, & Zhi, 2011, p. 1)

The authors predicted that low CCI values are an indication of low levels of compensation that characterises control languages and should be distributed in the proximity of the bisecting line because they do not undergo a considerable durational change between Vs and Cs. High CCI values, on the other hand, highlight the stronger compression of vowels and thus the fluctuation that exists in the duration between Vs and Cs due to the shift of vowel quality in prosodically weak positions (unstressed syllables). Such characteristics correspond

to compensation languages that should be scattered below the bisecting line as it is shown in Figure 5:

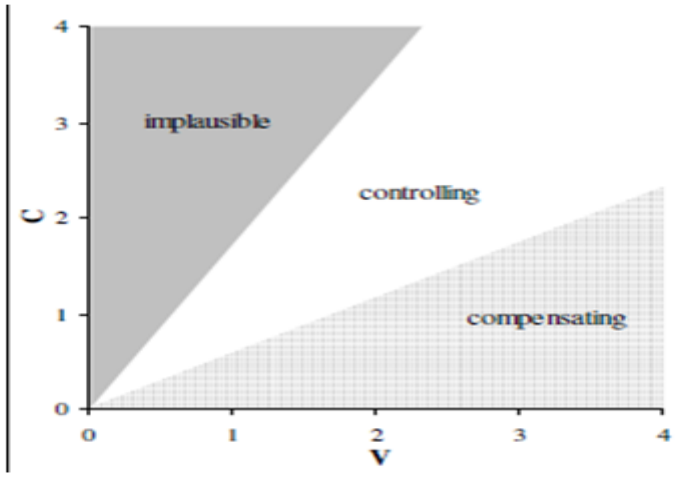


Figure 5. Major rhythmic types schematic representation according to the CCI hypothesis (Bertinetto et al., 2008, p.2)

Mairano and Romano (2008) applied the CCI on a set of stress and syllable timed languages: English, German, Italian, French, Finnish, and Icelandic[12]. The results represented in Figure 6 tally with expectations as Italian, Finnish, Icelandic, and French scattered along the bisecting line while English and German appeared in the vicinity of compensation languages i.e. below the bisecting line.

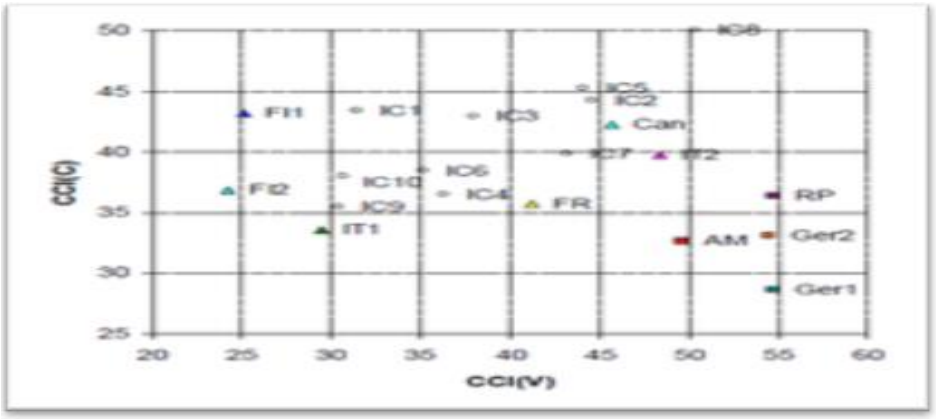


Figure 6. Representation of six languages according to CCI. Taken from Mairano and Romano, 2008

[12] Icelandic, unlike its traditional rhythmic classification, is grouped with control languages since the CCI takes V- reduction as a conducive factor to either rhythmic type (control vs. compensation languages) instead of the richness of phonotactics (according to which Icelandic is very comparable to Germanic languages and thereby generally categorised as stress-timed).

When testing the efficacy of CCI across different speech tempos (Bertinetto & Bertini, 2008), Italian, contrary to what is predicted, turns out not to be a strictly control language in conformity to what is suggested by the control/compensation hypothesis. In slow tempo, vowels and consonants tend to be compressed more or less alike, however, in fast tempo, the compression was sharper with vowels more than consonants as the latter reach the threshold of incompressibility earlier than the former. As a result, a normalisation version of CCI was proposed by Bertini et al., (2011) to delimit the sensitivity of CCI to fast speech tempo. Again, the authors adopted the nPVI principle as the starting point of their normalisation procedure and came up with the following formula:

$$D^{nCCI} = \frac{100}{m-1}\sum_{k=1}^{m-1}\left|\left(\frac{d_k}{n_k}+\frac{d_{k+1}}{n_{k+1}}\right)/\frac{1}{2}\left(\frac{d_k}{n_k}+\frac{d_{k+1}}{n_{k+1}}\right)\right|$$

However, following the fact that the real difference between stressed and unstressed vowels may go unnoticed by normalising unstressed syllables, the authors sought to widen the scope of normalisation and adopted the z-score normalization for individual segments.

$$s^{nCCI} = \frac{100}{m-1}\sum_{k=1}^{m-1}\left|\frac{Z_k}{n_k}-\frac{Z_{k+1}}{n_{k+1}}\right|$$

In short, CCI was not applied to many data except for in the studies of Bertinetto and Bertini, 2008; Mairano and Romano, 2008; Bertini et al., 2011 and Zhi, Bertinetto, & Bertini, 2011. Therefore, expanding its scope of application to larger data is compulsory if it is to compete with the other, widely investigated rhythm metrics (%V/ΔC/ΔV, nPVI/rPVI, VarcoC/VarcoV) or hierarchical models known as 'coupled-oscillator models' proposed by O'Dell and Nieminen (1999) and Barbosa (2000) (both rest on the earlier notion of stress-timing and can identify the rhythmic type through the coupling strength between syllable and stress groups).

2.2 L2 Speech Rhythm

It is common consensus that learners carry over the habits of their first language while learning a second/foreign language in both its linguistic and prosodic facets. This way of thinking entails that if both native and second/foreign languages belong to the same rhythmic class, the interlanguage production would embrace fairly enough the same rhythmic category, and one of them if both languages are typologically different (Arvaniti, Ross, & Ferjan 2008). However, since speech rhythm is said to be a by-product of different language- dependent phonological properties (Dauer, 1983 and 1987), it stands to reason that the interlanguage rhythmic production rests on how learners render such phonological properties. For that matter, a number of researchers set themselves to investigate the non-native speech rhythm (Adams, 1979; Wenk, 1985; Faber, 1986; Wennerstrom, 2001; Setter, 2003; Gut, 2002; Grabe & Low, 2003; White & Mattys, 2007; etc.). In this section, we opted to sketch some of these studies, before and after the emergence of speech rhythm metrics.

2.2.1 Pre Metrics Studies

English, the language mostly used by foreigners all over the world, took the lions share in L2 speech rhythm studies considering its international status and use among speakers of different language backgrounds, (Adams, 1979; Wenk, 1985; Setter, 2003; Gut, 2002; Jian, 2004; etc.). Perhaps, the first study that gave this stream of research its thrust is the work of Adams (1979) on English stress in relation to speech rhythm. He relied on a triple-pronged investigation that aimed at accounting for the inability to produce the native-like rhythm: an auditory perception test to identify the stressed items in an utterance, an electromyographic observation of stress-related respiratory muscles (intercostal muscles), and an acoustic analysis of the three correlates of stress (pitch, intensity, and duration)[13]. The results yielded a

[13]For details about the procedure of each investigation, see Adams (1979).

significant discrepancy in the placement of stress between native and non-native speakers due to the simplification strategies adopted by the foreign learners such as deletion or insertion of phonemes. By the same token, the misplacement of pauses breaks the unity of the rhythm group for non-native speakers who do not consider linking mechanisms such as assimilation while pausing and establishing word and syllable boundaries. In this respect, Adams (1979) linked the deviated speech rhythm of her non-native subjects to "the nature of the subjects' first language, the subjects' method of learning English, and the subjects' lack of experience in speaking English" (p. 133).

The study of Adams (1979) was the impetus for an increasing body of work undertaken to identify the features that distinguish the rhythm of non-native from native speakers. Wenk (1985), as a way of example, applied a descriptive model specially elaborated to investigate the non-native rhythm of French speakers of English and concluded that the rhythmic production of his participants was heavily influenced by the rhythmic patterns of their mother tongue, resulting in producing a rhythmic group "unique to the learner's interlanguage" (1985, Abstract). According to him, the vowel reduction in unstressed syllables performed across different tasks showed an idiosyncratic distribution of articulatory energy that varied in function of the task (40% in imitative reading vs. 61, 4% in story retelling).

On the same matter, Wennerstrom (2001) compared the interlanguage of speakers of English from different backgrounds (Thai, Japanese, Indonesian, Korean, and Greek) with ten native speakers of English. She concluded that pitch, the most important correlate of stress, differed considerably among her informants: unlike native speakers who produce higher pitch to highlight new pieces of information (41Hz), non-native speakers use the same pitch contour to signal informative statements, regardless of their status: new or given. She further compared the pitch contour of function words against content words. Again, the results did

not fail expectations i.e. although both groups showed a raised pitch in content words as they identify the salient information in a sentence, the difference in pitch measurements between the two groups was significant (13 Hz higher in the non-native group vs. 48Hz in the native group).

2.2.2 Post Metrics Studies

Following the domination of the aforementioned metrics (%V/ΔC, nPVI/rPVI, Varcos and CCI) in quantifying different rhythm types, a number of researchers set themselves to investigate to what extent the same metrics would succeed in categorizing L2 speech rhythm and identifying the rhythmic differences between L1 and L2.

In their study of Singapore English, Grabe et al., (2000) compared the characteristics of Singapore English against those of British English using the PVI metrics. The results obtained confirm the syllable-timed nature of Singapore English; less vocalic variability due to the absence of vowel contrast and less centralisation of reduced vowels. Gut and Milde (2002) applied %V to Nigerian English against British English and the Nigerian languages (Hausa, Igbo, and Yoruba) and acknowledged its syllable-timed impression as it exhibits higher values of %V. In the same vein, Mok and Dellwo (2008) applied a large set of metrics to Cantonese English and Mandarian English. Their findings showed a divergent classification across the metrics: VarcoC and %V grouped them with syllable-timed languages while ΔC, nPVIV, and rPVIC plotted them in the stress-timed vicinity. They, however, opted for the VarcoC/%V combination to be the best rhythmic indicator in their study as the remaining metrics might reflect faulty impression due to the effect of 'slow rate' generally adopted by non-native speakers of English. Similarly, Tortel and Hirst (2010) applied the same set of metrics to measure the speech rhythm of French learners of English in order to identify the influence of a prototypical syllable-timed mother tongue on a

rhythmically distinct target language. The obtained scores indicated that VarcoC and %V successfully demonstrated the existence of rhythmic differences between French learners of English and native English speakers. Moreover, their findings not only set native and non-native productions apart but also made possible the discrimination of different levels of proficiency within non-native speakers' productions.

White and Mattys (2007) analysed the non-native production of Spanish speakers of English and English speakers of Spanish and noticed that the scores obtained from consonantal rhythm metrics i.e. ΔC and rPVI were approximately similar for native and non-native performances of both languages (Spanish and English). The authors accounted for such findings, which are belied by the intuitive perception of speakers' abilities, by the sensitivity of consonantal metrics to speech rate (the fact that non-native speakers tend to have a slower speech rate entails that the processes adopted by the speakers are totally different even though they exhibit nearly similar scores). As for the vocalic rhythm metrics i.e. %V, VarcoV, the non-native scores were situated in an intermediate level between L1 and L2, showing, thereby, the influence of the mother tongue rhythmic structure on the target language. It means that Spanish speakers of English did shorten the unstressed vowels in comparison to their native language, yet not to the extent to reflect their counterparts in the target language. Hence, White and Mattys (2007) concluded that vocalic rhythm metrics namely VarcoV and %V can be used to quantify the effect of L1 on L2 speech rhythm. As a matter of fact, rhythm metrics, especially the vocalic ones, permit the identification of phonetic and structural patterns of a given interlanguage that either concur or do not concur with the norms of the target language.

The only similar study in an Arabic setting is Algethami's (2013) that, in the same line as the other studies, highlighted the conformity of non-native speech rhythm to the mother tongue. Algethami attempted to measure the rhythmic performance of Saudi speakers of

English using the well asserted metrics %V and VarcoV. Again, the results obtained revealed that Saudis' English is far less stress-timed than natives' English and nearly as stress-timed as Saudi Arabic.

It is worth mentioning, however, that the English produced in second/foreign language contexts seem to be more or less syllable-timed regardless of the rhythmic category of the L1 (Crystal, 2003). This is due to the fact that English vowel reduction constitutes roughly the major difficulty for second language speakers who, undoubtedly, resort to their L1 properties or L2 processes such as generalization in order to overcome such a difficulty. This virtually results in an altered speech rhythm, intermediate between the native-like production and the mother tongue. As a result, it seems safe to conclude, as already done by many researchers (Adams, 1979; Faber, 1986; Wennerstrom, 2001...) that seeking to acquire the native-like speech rhythm is not an easy task.

Conclusion

In short, the concept of rhythm typology has been approached from different perspectives: isochrony, phonology, and acoustic measurements. The different studies undertaken to verify the notion of isochrony have shown the inadequacy of stress and syllable measurements to sort out languages into distinct rhythmic categories. In contradistinction, the parameters or rhythm metrics derived from phonological properties namely syllable structure, vowel reduction, and salient stress have been proved to be effective as they successfully preserved the classic rhythmic classification of languages. Consequently, the application of those metrics expanded to classify non-native languages and language varieties in an attempt to identify what causes the unequivocal discrepancy against native languages. A number of studies concluded that the fundamental influential constraint is nothing but 'transfer'.

CHAPTER THREE

Speech Rhythm Components of the Three Languages Known to the Informants: Algerian Arabic, French and English

CHAPTER THREE

Speech Rhythm Components of the Three Languages Known to the Informants: Algerian Arabic, French and English

Introduction

As it has been mentioned earlier in this thesis, the notion of speech rhythm took another dimension with the passage of time. Its definition became synonymous to how some phonological properties, namely syllable structure, vowel reduction and salient stress are displayed in a given language. Accordingly and as the main concern of the present study is to identify the rhythmic category of third year EFL students' interlanguage, the present chapter describes the different components of speech rhythm in all the languages/varieties known to the informants in question: Algerian Arabic (AA), French (FR), and English (EN). However, before embarking on such a description, the nature of the present study i.e. error analysis compels us to review the linguistic profile of Algeria. Indeed, it is of prime importance to examine the language contact as well as the order of languages acquired/learned by Algerian learners. By doing so, it becomes easier to form an idea about the possible sources of transfer by Algerian learners in general and the informants of the present study in particular.

3.1 Sociolinguistic Profile of Algeria

Tabory and Tabory (1987) considered the sociolinguistic profile of Algeria to be "Complex, as it is at a crossroad of tensions between French, the colonial language, and Arabic, the new national language; Classical Arabic versus colloquial Algerian Arabic; and the various Berber dialects versus Arabic" (p. 64). Indeed, the linguistic situation of Algeria is quite interesting. Much ink has been spilled on the multiple linguistic systems used by its inhabitants, notably the different publications of Benrabah (2013), Bouhadiba (2002),

Kahlouche (1993), etc. They all distinguished four main languages: Arabic (standard and dialects), Berber (with all its varieties of Tamazight), French and English[1].

In 1963, the Algerian constitution (Algeria. Const. art. 5) declared Arabic to be the only de jure official language to represent its identity and religion, and recognized Berber, in 2002, as a national language. The non-standard variety, Algerian Arabic, is the linguistic system used by Algerians in their everyday life communications. However, due to the hundred and thirty- two years of the French colonization (1830-1962), French has been also an official language in Algeria. Once it was widely used in administration, media, culture, and education, but starting from the seventies, the government made huge efforts to substitute it with Arabic through different policies and programmes of Arabization. Talking about the status of French in Algeria, Sebaa (1999) commented, not without exaggeration, that:

> Without being the official language it carries officialness, without being the language of education it remains a language for the transmission of knowledge, without being the language of identity it continues to shape the collective imagination in various ways and through several channels, and without being the language of universality it remains the language of university. (p. 89)

Indeed, some Algerians resisted Arabization and saw in French the only medium to prestige and modernity, a language of social and economic promotion. However, in the midst of circumscribing the use of French for the benefit of Arabic, there was some sort of competition with another foreign language, the real, up-to-date language of science and technology, English. The latter, being labelled the world's lingua franca, among other political reasons[2], compelled language planners in Algeria to reconsider what language should be set as the first mandatory foreign language. Hence, in 1993, the Ministry of Education

[1] We will not deal with the historical and political status of each language as it is beyond the concern of the present work.
[2]For details, see Benrabah (2013, p. 91).

decided to implement English on the curricula of the fourth year of primary school alongside with French, while parents had to choose what language they want to be the first mandatory foreign language for their children. Souaiaia (1990) claimed that this decision is fuelled by the dominance of the Islamic-conservative forces 'The Islamic Salvation Front', at the time, on the Algerian socio-political scene. He accounted for the preference for English over French in the following quotation:

> The Francophones, having argued for so long that they wanted to maintain French only because of its instrumental value as a language of science, left themselves exposed to the Islamists who argue that any language can be a language of science. Furthermore, argue the Islamists, if there is a need to know a second language to keep in contact with the world of science, that language should be English because it is the language of scientific publishing. (p. 115)

Despite all the efforts to delimit the use of French, the latter did not lose its advantage for the benefit of English. As a matter of fact, the inclusion of English at the primary level faded away in 2003, giving French a free hand to reoccupy the prestigious position of the sole first foreign language in Algeria. This obvious maintenance of French among Algerians seems to take part in the Algerian Dialect as well. Inhabitants of Algeria do not regard French as a foreign language in the same way as they do with Spanish, German, or even English. They rather consider it a second language and code switch back and forth to it. Furthermore, we can distinguish a great number of French loanwords that have been lexicalized through being adapted phonologically, morphologically and syntactically to match their counterpart systems of Algerian Arabic, blanking out, thereby, their French origin. Table 5 illustrates some of the mechanisms (substitution and addition) adopted to adapt French loanwords to meet the norms of dialectal Arabic:

Table 5

Dialectal Arabic Lexicalized French Loanwords

Adapted loanword	French origin	English
/fælɪza/-/fælɪzæ:t/	valise/valises	suitcase/suitcases
/firændæ/-/firændæ:t/	vérande/vérandes	waning/wanings
/bjæsæ/-/bjæsæ:t/	pièce/pièces	part/parts
/sudɪtu/	Je l'ai soudé	I welded it

The adaptation process can be a complete integration into the Arabic norms or a partial integration. Example 2 and 3 illustrate the first type as both words incorporate the phonological norms of the AA: /v/ and /p/ sounds do not exist among the sound inventory of AA and are substituted by their existing counterparts' /f/ and /b/ respectively. The same can be said about the incorporation of the morphological norms; the plural form of both loanwords fit the one of AA regular plural feminine **/æ:t/** /bægra/-/bægræ:t/ (cow/s). Similarly, the French verb 'souder' (to weld) is morphologically adapted through the addition of the AA suffix /tu/ with keeping the same French root /sudɪ**tu**/.

The following dialogue provides an example of what happens in real-life conversations, to illustrate the lexicalization of French words that have become a part of AA (the lexicalized loanwords are shown in bold):

a. Speaker A:هيا **نسوديوالفاليزه**اليوم

/hayya**nsudɪwlfæliza**lyu:m' 'Let' s weld the suitcase today'

b. Speaker B: هيه و الله فكرة

/hihwallahfakræ/ 'ok, it's a good idea'

Again, the French noun 'fælɪzæ' 'suitcase' is morphologically and phonologically adapted to the Algerian dialect through substituting the /v/ sound by its Arabic existing counterpart /f/ and adding the vowel /æ/ to denote the Arabic feminine gender /lfælɪzæ/. The verb 'souder' in 'نسوديو''nous soudons' 'we weld', however, is morphologically adapted to fit

the spoken Algerian dialect inflection: the prefix **/نـ/** reflects the doer ‘we/I’ and the suffix **‘و’** denotes the plurality of the doer ‘we’; yet, it keeps the original pronunciation of individual segments.

Another related, yet different phenomenon that is very widespread among Algerians is the use of French loanwords as a result of a partial or a complete mastery of French. In this case, the user of those words code switch to French in the same conversation while preserving the original phonological, morphological, and syntactic rules. The following dialogue illustrates this phenomenon:

a. Speaker A: معليش نتعاونو **pour placer la véranda**

/mæʕlihʃnətʕawnu: **purplase la verɑ̃da**/

‘Is it possible to place the awning together?’

b. Speaker B: **l’aprés midi** نشاء الله, دركَ **occupé** راني

/**lapre midi**nʃa:llah rani **okype**dorka /

'In the afternoon, God willing, I’m busy right now'

In short, amidst the multi languages that exist in Algeria, the Spoken Algerian Dialect, including all its different regional varieties, is the everyday language of the majority of its inhabitants, unlike its standard variety, Modern Arabic. The latter is known as the formal use of language, be it spoken or written, that is used in formal settings such as administration, mass media, academic writings, etc. Besides, Algerians, though they study modern standard Arabic in schools, their exposure to language is mainly to lexical and morphosyntactic rules with very little training in segmental and suprasegmental features. One of the reasons is that the spelling of standard Arabic is mostly phonetic. Therefore, it seems logic to assume that Algerian learners of English are likely to be hindered by their everyday spoken language instead of its standard variety (though it can be a possible source of transfer if we are to

consider the effects of 'Arabization' on the new generation). It is for that reason that, the author of the present study, opted to describe only the Algerian Arabic system with a reference to the standard norms when necessary.

3.2 Speech Rhythm Components

Given the fact that the main concern of the present study is identifying the rhythmic category of EFL students' interlanguage, the following section will sketch the different components of speech rhythm in all the languages known to the subjects under investigation: AA, FR, and EN.

3.2.1 Algerian Arabic

Siegel (as cited in Robinson, 2013) defined dialects as "varieties that speakers perceive as belonging to the same language. One dialect differs from another in vocabulary, pronunciation and/or morphosyntax, and in its association with a particular geographic region or social group" (p. 569). Algerian dialects make no exception as they vary from one region to another showing some lexical and structural discrepancies. Phonetically speaking, Algerian dialects, indeed, may differ in the pronunciation of individual segments (the segment /q/ is mostly pronounced /g/ in Constantine and Oran, /q/ in Algiers and Skikda, /k/ in Jijel, and /ʔ/ in Tlemcen) but tend to adopt the same phonetic and/or phonological processes in the three salient areas of speech rhythm: syllable structure (words of the form /CVCVC/ in standard Arabic are pronounced without the short vowel, creating consonant clusters /CCVC/), vowel reduction (short vowels in closed syllables tend to centralize /ə/), stress assignment (superheavy syllables tend to attract stress)[3].

[3] For more details, see the major features of the meghrebi dialects in Sayahi (2014, pp. 33-34).

3.2.1.1 Vowel Reduction

Generally speaking, the most striking difference between the phonological profile of modern standard Arabic and its counterpart of Algerian Arabic resides in the vowels inventory of both varieties. In addition to the set of vowels (short and long) attested in the standard variety, Algerian Arabic exhibits additional ones due to some reduction processes. The literature in this field lists the following processes:

1. In open syllables, AA shows an inclination towards short vowels syncope. As a matter of fact, word final and word initial short vowels are not preserved. In this case, the diacritic is replaced by *sukun* to mark that the consonant is not linked to a vowel: /**ki**tab/ 'book' becomes /k|tæ:b/, /yaʔku**lu**/ 'he eats' becomes /yæ:kol| or /yæ:kal|/.

2. In closed syllables, short vowels tend to be pronounced as either allophones of the same short vowel or as innovated centralized ones: the half-open, rounded short vowel /o/ or the half-close, central unrounded schwa /ə/. The short high vowel /u/ in /y**a**kt**u**bu/ (he writes) in standard Arabic becomes more rounded /y**o**kt**o**b|/ in the Algerian Arabic spoken in some regions, Constantine as a way of example. The latter reduction, according to Souag (2005) and Aït Oumeziane (1981), is more favoured in the vicinity of velars, uvulars and bilabials. Likewise, the low vowel /æ/, the high vowel /i/, and the high vowel /u/ in /ʒæb**æ**l/ 'mountain', /sa:h**i**b/ 'a friend' and /ʕ**u**rs/ 'wedding' tend to cluster more around the centre of the vowel space and become /ʒbəl/, /sa:həb/, and /ʕ**ə**rs/ respectively (Ghazali, 1979; Kossmann, 2013).

3. A quite important vocalic reduction in AA is the shortening of long vowels in final positions, like using /rukkbt**i**/ or /rukkubt**i**/ 'my knee' instead of /rukkbat**i:**/, /laʕb**u**/ 'they played' instead of /laʕib**u:**/, or in unstressed syllables having a long vowel as their peak: /mat**a**'ra:t/ 'airports' and /h**a**'nu:t/ 'a shop' instead of /mat**a:**'ra:t/ and /h**a:**'nu:t/, respectively.

4. The diphthongs /əy/ and /əw/ and the glottal stop /ʔ/ are also reduced in AA. Cases in which the diphthongs are reduced to the long vowels /i:/ and /u:/ respectively are found in words like: /z**əy**tu:n/ ‘olives’ becomes /z**i:**tu:n/, /y**əw**m/ ‘day’ becomes /y**u:**m/. However, some natives of particular regions, Constantine as a case in point, use the diphthong and say /z**əy**tu:n/ and /ʕ**əy**n/ ‘eye’. As for the glottal stop, where it occurs in standard Arabic, there is only the lengthening of the vowel that precedes: /fæ**ʔ**s/ ‘axe’ in standard Arabic is /fæ**:**s/ in AA, /ra**ʔ**s/ ‘head’ is /ra**:**s/, /bi**ʔ**r/ ‘well’ is /bi**:**r/.

3.2.1.2 Syllable Structure

The phenomenon of short vowel syncope in AA gave birth to initial consonant clusters as they do not exist in standard Arabic. As a result, a larger number of syllable structures, some of which are rather complex, is attested in AA. Table 6 summarises the most common ones:

Table 6

Syllable Structure in AA

Structure	Example	Transcription	English equivalent
CV	في	/fi/	In
CVC	حب	həb	He liked
CV:C	جاب	/ʒæ:b/	he brought
CVCC	طبت	/ʈobt/	exhausted
CCV	كل	/klæ/	he ate
CCVC	كدب	/kdəb/	he lied/lying
CCV:C	هبال	/ hbæ:l/	insanity
CCVCC	كتبت	/ktæbt/	I wrote

Note. The pronunciation of /a/ in North Africa differs from its pronunciation in the Middle East; it tends to be less open and closer to the longer version of the English /æ/ in the word ‘hand’ as opposed to /æ/ in the word ‘that’.

It is worth mentioning, however, that other syllable structures namely V̂CC, C̄CV̂CC and CCCVCC can be found in both lexical inventories: /æms/ ‘yesterday’, /ard/ ‘land’, and /ʃtrənʒ/ ‘chess game’. Ait Oumeziane (1981) distinguished additional 5 syllable structures that cannot stand alone as monosyllables constituting meaningful units of discourse: V̄, CV̄, V̂C,

CV̂C, and CCV̄. However, the syllabic representations /a:/ ‘yes with a rising tone when answering somebody calling out your name’ and /əʊ/ ‘a surprised really’ are attested to be used on their owns. Similarly, words conforming to the scheme /CV̂C/ are also found: /dəz/ ‘push’, /həz/ ‘pick up’, /kəs/ ‘a sequence of sounds used to make the cat go away’, etc. Besides, the reduction of the passive voice prefix /in/ contributes in creating three other possible syllable structures in the AA, especially in Algiers where people tend to use /CCCV/ or /CCCVC/ for the passive voice of the third person singular pronoun: /**n**kwa/ ‘he was burnt’, /**n**dfæn/ ‘he was buried’, and use /CCCV:C/ /**n**kwæ:w/ ‘they were burnt’ for the third person plural pronoun instead of their counterparts in standard Arabic: /**in**kawæ/, /**in**dæfæn/, and /**in**kawəw/, respectively.

3.2.1.2.1 Algerian Arabic Phonotactics

Consonant clusters are claimed to be governed by the *sonority sequencing principle*. However, in a study conducted by Al Tamimi and AL Sbhoul (2013), the number of reversals (49%), segments with reversed sonority hierarchy, exceeds the number of those conformable (42%). Similarly, the majority of AA codas violate this principle and show some sonority reversals and in a lesser degree sonority plateaus; segments belonging to the same sonority hierarchy (Watson, 2002 ‘San’ani Arabic’). The spoken Algerian Arabic manifests a quite reversed application of the rule in the sense that the clusters taking place in the onset position are the ones undergoing violation to the sonority sequencing principle. In what follows, we will consider the possible clusters of AA in the three positions: initial, medial, and final.

a. Initial Sequences

Biconsonantal Onsets: The three sonority categories can be asserted in biconsonantal onsets: conformity: /**sm**ær/ ‘brown/dark’, /**tm**ær/ ‘dates’, /**tb**ən/ ‘straw’, /**kr**(o-a)m/ ‘broad bean’, reversals: /**lh**əm/ ‘meat’, /**lb**ən/ ‘buttermilk’, and plateaus: /**kt**æ:b/ ‘book’. As far as phonotactic rules are concerned, there is such a tendency against clustering consonants having

more or less the same place of articulation, except for geminates /ddinæ/ ‘we took’, /llaɪɖ/ ‘the floor’ (Greenburg, 1950; McCarthy, 1988 and 1994), though words like /tzən/ ‘it buzzes’ or figuratively ‘gets inside one’s head’ and /tnəddəb/ ‘gets on one’s nerves’ can be encountered as well.

Triconsonantal Onsets: Their occurrence is not tolerated; the first letter should be separated from the two following consonants by a schwa /məɣluːb/ ‘he is defeated’. However, as mentioned earlier, inflectional verbal morphology allows sequences of three consonants /nkwa/ ‘he was burned’ /stra:h/ ‘he took a rest’. Geminates as well can occur in onset position followed by a simple consonant: /ttra:b/ ‘soil’.

b. Medial Sequences

Biconsonantal Sequences: Sequences of two different consonants or geminates can occur in medial position: /yədræb/ ‘he beats’, /dərbæ:t/ ‘strokes’, /wərka/ ‘a sheet of paper’, /məthaffaɗ/ ‘having reserves’, /yətnæzlu/ ‘they give up’, etc.

.Triconsonantal Sequences: three different consonants or a combination of geminate and a simple consonant can take place: /nəktbu/ ‘we write’, /səggmət/ ‘she ordered’. But if the second consonant is a liquid, a vowel is required to separate the first from the two following consonants /bitəlmæ/ ‘toilets’. In addition, the imperative form of some verbs creates triplicated consonants: ḥedddi ‘you iron’. According to Chebchoub (1985), all consonants can triplicate in medial position except for /X, ʕ, ʁ, h/.

c. Final Sequences

Biconsonantal Codas: Different consonants in conformity with the Sonoroty Sequencing Principle as well as geminates can form codas of two consonants: /kəlb/ ‘dog’, /hizb/ ‘party’,/hæ:ll/ ‘open (adjective)’, /jħəll/ ‘he opens’. Aït Oumeziane (1981) stated that the disjoint bound morpheme used for negation /ʃ/ contributes in the creation of biconsonantal

codas if it is preceded by a short vowel /mæktəbʃ/, otherwise both consonants are separated by a schwa /mæʒæ:bəʃ/ (he did not bring), /mæræ:ḥəʃ/ (he did not go), etc. It is worth mentioning, however, that the latter condition tolerates both pronunciations in the Arabic spoken in Constantine i.e. with and without the schwa: /mæʒæ:bəʃ/ and /mæʒæ:bʃ/, /mæræ:ḥəʃ/ and /mæræ:ḥʃ/.

Triconsonantal Codas: Similar to onsets, three consonantal codas are very restricted in occurrence. Their only occurrence is in verbs carrying the negation circumfix /ʃ/ with the first singular pronoun 'I' and the second singular masculine pronoun 'you': /mæ:ʃəftʃ/ 'I/you did not see', /mæ:rkəbtʃ/ 'I/you did not get in the car'. By the same token, Aït Oumeziane (1981) highlighted if the two first consonants are identical, they need to be set apart from the third one by an epenthetic vowel /mæ:ħəbbəʃ/ 'he refused' or 'he did not stop'.

3.2.1.2.2 Rules of Syllabification

Neither the *sonority sequencing principle* (wherein segments are ordered via a sonority scale) nor the *onset maximization principle* (wherein onsets are prioriated over codas) seem to take control over the distribution of intervocalic consonants across syllables in AA. The number of consonants and the position of the syllable within the word are the ones responsible for syllabifying intervocalic consonants in AA.

In a /VCV/ context, the intervocalic consonant combines with the vowel it follows for open syllables do not carry a short vowel; therefore, medial or final short vowels need to be preceded by a consonant. In other words, a word belonging to the following representations /CV**C**V̂C/, /CV̂CCVCV̂CCV/ has to be syllabified as follows: /CV**.**CV̂C/ /xa:**.**təm/ 'a ring' and /CV̂CCV**.**CV̂CCV/ /bərra:**.**nijja/ 'foreigners', respectively.

In a /VCCV/ context, whether the consonants are identical or not, they should not belong to the same syllable i.e. the first consonant belongs to the preceding syllable and the

second to the following one: /CVC**.**CVC/ /bən**.**dər/ ‘play the tambour’, /CVC**.**CVC/ /bək**.**ku:ʃ/ ‘dumb’.

In a /VCCCV/ environment, medial or final syllables tend not to begin with two consonants if the preceding vowel is a short one. Therefore, the two first consonants belong to the preceding syllable and the third one to the following syllable: /CV̂CC**.**CV/ /zəlz**.**læ/ ‘earthquake’, /CV̂CC**.**CVCV̂CCV/ /ʒəlʒ**.**læ:nijja/ ‘sesame’.

3.2.1.3 Stress

The Arabic language, be it the standard variety or the dialectal one, belongs to quantity sensitive languages wherein stress assignment is a function of the syllabic patterning of the word, both in terms of vowel length and syllable shape. It is, therefore, claimed to be very predictable as it has no linguistic function and could not impede intelligibility, except in extremely rare cases. As a way of illustration, Watson (2011) stated the following example to acknowledge the phonemic role of lexical stress in Omani dialect: /‘fihim/ ‘the understanding’ vs. /fi’him/ ‘he understood’. Rajouani (1989) also related the underlying distinctive function of stress to standard Arabic when contrasted the verb /faˁa’la:/ ‘They have done something’ against the proclitic + verb /fa’ˁala:/ ‘it grows high’. As for AA, Holes (2004) considered a certain category of verbal prefixes that might leave room for ambiguity if used with verbs having more or less the same consonantal root as some nouns: /ˈnəhlæ/ ‘the bee’ as opposed to /nəhˈlæ/ ‘we become sweet’. Marçais (1956) as well distinguished other cases in which lexical stress is distinctive in AA: /ˈtəb.ni/ ‘it has the colour of straw’ vs. /təb.ˈni/ ‘she builds’, /ˈjəd.di/ ‘my hand’ vs. /jəd.ˈdi/ ‘he takes’. However, being a native speaker of an Algerian dialect (Constantine) grants me the right to say that rare are the persons, if not none, who semantically distinguish between such homophones via relying on stress assignment rather than context.

A rather fluctuating word stress pattern has been noticed among a number of Arabic dialects (Hulst and Hellmuth, 2010). Holes (2004) believed that this divergent input to stress assignment rules across Arabic regions, in general, and Arabian Peninsula, in particular, is mainly due to different syllable structures that are particular to each dialect (dialects tolerating short vowel syncope have more or less heavy (CVV, CVC) and even superheavy (CVVC, CVCC) syllables whereas eastern dialects are characterised by light syllables). Nevertheless, there seems to be a general consensus about how stress assignment rules are applied. All dialects seem to stress the final superheavy syllable or the heavy penultimate in the absence of the superheavy. AA is not an exception in the sense that it refers to the weight of syllable when assigning lexical stress regardless of the profile of a given accentual unit. According to Aït Oumeziane (1981), if the last syllable is long and closed from both sides (CV̄C, CV̂CC) this syllable takes the lexical stress e.g. /əm.ˈ**ʃi:w**/ '-you- walk', /si:.ni.ˈ**yæ:t**/ 'round trays', /mæ:.kas.sart.ˈ**hæ:ʃ**/ 'I did not break it'. If not, the nearest to the edge, heaviest syllable bares the stress e.g. /ˈ**æ:**.næ/ 'me', /ku:.ˈ**lu:**.həm/ 'you eat them', /məʃ.ʃi:t.ˈ**hæ:l**.kum/ 'I made it work for you', and /səl.lək.ti.ˈ**hu:l**.ha/ 'you paid it for her', /ˈ**hæ:zz**.hæ:.li/ 'he is holding it for me'. However, based on the inventory he compiled to pinpoint the different assignments of stress, Aït Oumeziane highlighted the tendency for Algerians living in Constantine to stress the penultimate syllable even if it does not abide by the aforementioned sound quality and syllable weight scheme. He related this phenomenon to the linguistic intuition of native speakers of Constantine. In the following examples, the stressed syllable is written in bold whereas the heaviest is underlined: /kri:t.ˈ**hu:**.li/ 'you rented it to me'. /ktəbt.ˈ**hu:.**lu/ 'you/I wrote it for him', /mæ:.ʃəft.ˈ**hu:**.ləkʃ/ 'I did not see it for you', /mæ:.səj.jit.ti.ˈ**hu:**.li:ʃ/ 'you did not prepare it for me'.

In the same line, Chebchoub (1985) stressed the fact that vowel quality takes precedence over syllable weight i.e. open vs. closed. She concluded that stress in disyllabic or

trisyllabic words falls on the penultimate syllable if no long vowel is manifested in the word /ˈ**məq**.læ/ ‘frying pan’, otherwise, the long syllable will take the stress /mət.ʕælˈ**mi:n**/ ‘educated’. In words with more than three syllables, the antepenultimate is stressed in the absence of long vowels that would, otherwise, bear the stress themselves /qal.ləq.ˈ**ti:**.hæ/ ‘you annoyed her’.

Though AA belongs to the stress-timed rhythmic category, which perception is based on the recurrence of stressed and unstressed syllables at regular intervals, the distinction between stressed and unstressed syllables is not as neat as it should be if we consider the prototypical stress-timed language, English. This is partly due to the correlates responsible for prominence in both languages. Aït Oumeziane (1981) highlighted the role of duration in setting apart stressed syllables from their unstressed counterparts in the dialectal Arabic spoken in Constantine. He further recognized the distinctive role of pitch and intensity if both syllables share roughly the same duration taking into account the qualitative and quantitative schemes of both syllables. Having two consonants in the first syllable in the word /ʃəf.ˈ**tu**/ ‘I saw him/it’ compensates for the relatively short duration of schwa in comparison with the short vowel and the singleton consonant in the second syllable, equalising thereby the duration of both syllables. Therefore, other stress correlates are considered in this case in order to give prominence to one syllable over another: their measured intensity is 29 db[4], 34db respectively. However, in /ˈ**kli:**/tu/ ‘I/you ate it’ the first syllable contains a long vowel that gives it a clear enough gestalt to bear stress.

3.2.2 Standard French

In what follows, the three components of speech rhythm of standard French will be described. We have chosen the standard variety because it is the variety Algerian students

[4] Decibel: a unit for measuring how loud a sound is.

have been using as a first foreign language since independence. Definitely, the word *use* is not synonymous with a good command of all the phonetic, phonological, syntactic, morphological, pragmatic and lexical rules of that language. Rather, it refers to the knowledge of some of their basics that allow a learner both to understand and to be understood by other users of the same language.

3.2.2.1 Vowel Reduction

The phenomenon of condensing or reducing vowels is also adopted in French. Amidst the very rich vocalic inventory of that language, the schwa /ə/ is the only vowel that is reduced. It is characterized by being a lax vowel as opposed to the remaining ones which are rather tense. Generally speaking, French is a lexical stress-free language and characterised by the presence of phrasal stress that puts a considerable weight (stress) on the end of the accentual phrase i.e. word-final syllable. Hence, being stressed, final word syllables preserve the quality and duration of their vowels whereas the internal syllables undergo some changes in quality and duration. Adda Decker, Gendrot and Nguyen (2008) claimed that the increase or decrease of vowel duration is tightly relevant to the position of a syllable in a prosodic unit. Indeed, the authors noticed that in a trisyllabic word, the vowel in the first syllable is shorter than the one in the second syllable and both vowels are significantly shorter than the one in the last syllable. In addition to stress, word category is another factor that effects the duration of vowels. The vowels in content words are fully articulated; they cannot be shortened since they carry the most important information. In contradistinction, function words, expressing the least important information, require less articulation effort as they are easily predicted from the flow of speech and hence are subject to reduction.

Graphically speaking, the neutral or mute ‘e’ known in French as ‘e caduc’, ‘e instable’ and ‘e féminin’ is represented by one of the following letters: ‘**e**’ in pr**e**mier (first),

‘**ai**’ in f**ai**san (pheasant) and some derived forms f**ai**sander, f**ai**sandeau, etc. some conjugations of the verb f**ai**re (to do) f**ai**sons, f**ai**sais, etc. and the combination ‘**on**’ exclusively found in m**on**sieur (sir). Phonetically speaking, it is realized as a mid-central, more or less rounded vowel; oscillating between its actual position and the mid-front close /ø/ and the mid-front open /œ/. Dauzes (1973, p. 36), indeed, reported that according to one survey, French speakers judged the schwa in ‘ampl**e** rang’/ɑ̃plə rɑ̃/ (a-line wide) and ‘c’est comme j**e** dis’ /sɛkɔmʒə di/ (it is as I say) to be the same sounds pronounced in ‘en pl**eu**rant’ /ɑ̃plœrɑ̃/ (while crying) and ‘c’est comme j**eu**di’/sɛkɔmʒ**ø**di/ (it is like Thursday), respectively. Phonologically speaking, however, S R Anderson (1981) related the difference between the two sounds to the fact that stress is assigned to final syllables carrying /œ/ as their nucleus while it moves to the penultimate syllable if the last one carries a schwa.

For many, the schwa is a problematic sound as it combines a miscellany of behaviours. It is sometimes stable (obligatory schwas), sometimes dropped (elision schwas) and other times unstable (optional schwas) depending on a bundle of phonological, morphological, syntactic, and even stylistic[5] factors. However, despite the fact of having a shifty nature, schwas are consolidated with such bona-fide characteristics that definitely grant them the status of unique vowels: they can never occur initially, can never be stressed (except in imperatives: dis-le /di ˈlə/ (tell him) or exclamations: que c’est beau! /ˈkəsɛbo/ (how beautiful!), and can never be after or before another vowel (except if followed by *mute h*: dehors /dəˈɔr/ (out).

With respect to their multiple behaviours in different environments, schwas in standard French are classified into three categories (word-initial, word-internal, and word-final) and governed by two, yet not absolute, rules (schwas are dropped after one consonant

[5]According to Adda-Decker et al. (1999), the French schwa is twice dropped in spontaneous speech than in read speech.

and retained after two or more). In what follows, the different realizations of French schwa will be sketched according to the place it occupies:

Word-initial schwas follow the same rules stated earlier as to be the normative realizations of schwas. However, Walker (2001) specified a set of consonants after which the French schwa is either deleted or retained: single fricatives namely /f, v, s, z, ʃ, ʒ/ favour its deletion: je t'aime /**ʃ|**tɛm/ (I love you) whereas single stops, nasals, liquids and clusters represent a good ground for its retention: **gr**enouillage /**gʁ**ənujaʒ/ (skulduggery) and **t**e voit-il? /**t**əvwatil/ (Does he see you?). In the same spirit, Delattre (1949, p. 456) asserted that the schwa found in French monosyllabic grammatical words je, te, ce, se, etc. is always dropped in initial positions unless if followed by a second one, which will be dropped instead (je m'envais /j|mɑ̃ve/ (I will go) vs. je ne m'envais pas /jən|mɑ̃vepa/ (I will not go). Yet, the same initial schwa may be retained if the preceding consonant is more or less closed i.e. in **qu**e, **t**e, and **d**e: que pensez-vous*?* /k**ə**pɑ̃sevu/ (What do you think?).

Word-internal schwas obey the same previous rules i.e. they are omitted after one consonant: medicine /me**d|**sin/ 'medicine' and preserved after two or more consonants: diablerie /dja**bl**əʁi/ 'mischief'. Walker (2001), however, restricted the deletion process to schwas not followed by a liquid-glide cluster: bachelier /ba**ʃ**ə**lj**e/ (bachelor) instead of /ba**ʃ|lj**e/. Word-internal schwas undergo other rules as they may be succeeded or preceded by other syllables containing schwas, either word-internally: ens**e**v**e**lir /ɑ̃s|və**l**ir/ 'to bury' or word-initially, mainly in contiguous grammatical words: il t**e** l**e** recommande /il**t**ə**l**|rə**k**omɑ̃d/ 'he recommends it to you'. As for S R Anderson (1981), word-final schwas in a syntactic unit obey the same rules unless if a) followed by certain clusters that impose the retention or re-insertion of the normally deleted schwa: je suis /ʒəsɥi/ (I am) instead of /ʒ|sɥi/, or the insertion of a schwa as an epenthetic vowel to break complex consonant clusters: ours brun /uʁsəbʁœ̃/ (brown bear) instead of /uʁs|bʁœ̃/, or b) followed by words beginning with 'aspirate/mute h'

on the condition that the latter is not preceded by an elided consonant or when liaison is favoured: l**'**homme de la montagne /l|omdəlamõtaɲ/ (the man of mountain) vs. Qui se hâte? /kis**ə**'a:t/ (who is in a hurry?). On the same matter, Delattre (1951) pointed out that schwa deletion/retention in medial positions are dictated by the rhythmic structure and/or syllabicity rules. According to him, the schwa is indeed always dropped after one consonant unless if it is followed by /rj/ or /lj/ combinations: atelier /at**ə**lje/ (workshop) instead of /at|lje/ and nous causerions /nukoz**ə**rjɑ̃/ (we would speak) instead of /nukoz|rjɑ̃/, respectively. As for the second rule, he claimed that if the combination of consonants respects French syllable intensity i.e. the first consonant is more closed than the second one, for example a plosive (p, t, k, p, d) followed by a liquid (l, r), the schwa is maintained in the majority of cases, but if the preceding consonants do not conform to syllabicity rules (especially if the first one is an *r*), in this case, the schwa tends to be dropped. This rule, according to Delattre, holds true in whatsoever position the medial schwa might take within a syntactic unit (though the rule can change depending on the pace of speech adopted):

a/ Word-initially: the first syllable of **pre**nant in 'en prenant*'* /ɑ̃.pr**ə.**nɑ̃/ (taking) vs. the first syllable of **te**nant in 'en tenant' /ɑ̃**t|**nɑ̃/ (taking).

b/ Word-internally: department /depa**ʁt|**mɑ̃/ (department) instead of /depa**ʁtə**mɑ̃/.

c/ Word-finally: the last syllable of march**e** in 'marche vite' /marʃ**ə**vit/ 'walk fast' becomes /ma**rʃ|**vit/).

The schwa in contiguous syllables enjoys a special status according to Delattre (1951). The first schwa dictates the treatment of the following schwas; if it is preceded by one consonant it is dropped, but if it is preceded by two or more consonants, it is retained regardless of the nature of the following consonants that, in other sites mentioned earlier, would impose the deletion of schwa.

Word-final schwas in an abstract[6] environment, according to S R Anderson (1981), are always deleted irrespective of the number of consonants preceding it: petit**e** /pətit**|**/ (small –feminine-), quelle outre**!** /kɛlu**tr|**/ (what a wine skin!). In an attempt to account for this exception, Dell (1980) invoked the tendency to delete final-word consonants in French as being the last underlying element. According to him, such *inserted* final schwas have an underlying role in protecting final-consonants from omission, hence called 'protective schwas'. In other sources, the same protective schwas might also be pigeonholed as 'feminine schwas' as they are responsible for the distinction between the masculine and feminine form of words such as bavard /bavaʁ|/ 'talkative-masculine-' vs. bavarde /bavaʁ**d**/ 'talkative-feminine-'.

Furthermore, stress in the French language is a property of the phonological phrase as it falls on the last syllable of a rhythmic unit. Accordingly, the schwa, as it never bears stress, should never be pronounced in final positions. Delattre (1949), however, specified one case in which final schwas are pronounced: when monosyllables are preceded by a verb in the imperative form dis-le /diˈl**ə**/ (tell him).

All in all, the schwa behaviour is more or less predictable in word-final and word-internal positions (as it abides by distinct rules, though with exceptions) but can be very perplexing word-initially as its probable retention or deletion is rather governed by speakers' intuition. Besides, it is worth mentioning that the schwa can be more or less reduced depending on its retention/deletion in sites where in fact should not be retained/ deleted. Lacheret and Lyche (2008), after conducting an experiment in order to see the influence of prosody on the articulation of the schwa, concluded that syllables maintaining a normally deleted schwa are perceived, as it is the way with stressed syllables, more prominent than other non-variable schwas.

[6]Not realized phonetically.

3.2.2.2 Syllable Structure

It is universally acknowledged that a syllable, most of the time, have an onset-rime construction i.e. one vowel surrounded by one consonant or more, either in an onset or a coda position. However, how those partitions are combined together to form a syllable and what are the mechanisms put to assign a syllabic structure to phonological strings is language-specific. Thus, in what follows, we will deal with the different French syllabification rules within and across syllables.

The distribution of consonants as codas and onsets in a French syllable has long been controversial and deemed unique and distinct from the standards embraced in other languages (Dell, 1995; Noske, 1982; Féry, 2001; etc.). As a matter of fact, the schwa and liaison, inter alia[7], are said to be responsible for the complex syllabification process in French that entails a syllable reconstruction following the merging of a variable number of phonemes. Those features coupled with French favouring open syllables i.e. syllables ending in vowels instead of consonants, account, to a large extent, for the adoption of different theoretical positions in the field. Despite the hazy nature of the syllabification process in French, Walker (2001, p. 25) distinguished a number of structures illustrated in Table 7:

Table 7

Syllable Structure in Standard French

Syllable structure	Example tokenized	Example transcribed	English translation
V	Ou	/u/	Or
CV	Vie	/vi/	Life
CCV	Très	/tʁɛ/	Very
CCCV	Scru (pules)	/skʁy/	Scruples
VC	Honte	/ɔ̃t/	Shame
VCC	Etre	/ɛtʁ/	to be
VCCC	Astre	/astʁ/	Star
CVC	Par	/paʁ/	By
CCVC	Prise	/pʁiz/	Taken
CCCVC	Stress	/stʁɛs/	Stress
CVCC	Porte	/pɔʁt/	Door

[7]Chaining, semivocalization i.e. change of high vowels into glides, etc.

Syllable structure	Example tokenized	Example transcribed	English translation
CVCCC	Mixte	/mikst/	Mixed
CVCCCC	Dextre	/dɛkstʁ/	right side
CCVCC	Presque	/pʁɛsk/	Almost
CCCVCC	Strict	/stʁikt/	Strict

3.2.2.2.1 French Phonotactics

The phonological description of any syllable structure entails the study of phonotactic restrictions and the permitted combinations of individual segments. In standard French, consonants are sequenced into a syllable following an increasing sonority principle in onsets and a rather anomalous order in codas. The former distribution goes from the least sonorant consonant to the most in accordance to the following linear ordering: oral stops, fricatives, nasal stops, liquids, and glides (with *s*-initial onsets as an exception (Lodge, 1987). The latter, however, do not follow one-direction sequencing along the sonority scale; it goes sometimes rising where sonority reaches its peak at the leftmost segment and other times falling where the most sonorous segment is the rightmost one. According to Lyche (1993), the permissible onset and coda clusters in standard French are as follows:

Biconsonantal onsets: They are usually made up of an obstruent + a liquid (except for /dl/, /tl/, /ʃl/, and /ʒl/) **pr**euve (evidence), **br**ebis (sheep), **fl**eur (flower), etc. or the anomalous combination of the fricative /s/ + any consonant except for the /r/: **st**atue (statue), **sph**ere (sphere), **sc**andale (scandal), **sl**ogan (slogan), etc.

Triconsonantal onsets: The first consonant has to be the fricative /s/ followed by an obstruent/liquid combination where the obstruent must be mute i.e. one of the voiceless stops /p, t, k/. Those onsets are further limited with regard to the nature of liquid consonant, if it is /l/, the group /spl/ is the only permissible, but if it is /r/, three combinations can stand as an onset /skr/, /spr/, and /str/: **scr**upule (scruple), **spr**ay (spray), **str**ident (strident), respectively.

In addition to s + obstruent + liquid clusters, stop + liquid + glide onsets are also abundant in French: trois /**tʁw**a/ (three), pluie /**plɥ**i/ (rain), bruit /**bʁɥ**i/ (noise), etc.

Biconsonantal codas: They include the same combinations of biconsonantal onsets (obstruent/liquid) with the same restrictions: li**vr**e (book), soufflé (breath), le**ttr**e (letter) in addition to a multiple range of other reversed possible combinations i.e. liquid/obstruent combinations, where the liquid is either the /l/ followed by an obstruent (except for /z/) go**lf** (golf), bu**lb**e (bulb),volt (volt), or the nasal /m/ fi**lm** (film), ca**lm**e (calm), or the liquid /r/ followed by any other consonant be it an obstruent, a nasal, or even the liquid /l/: ca**rt**e (card), co**rn**e (horn), pe**rl**e (pearl). Other combinations with a very restricted lexis were found: /ks/ fi**x**e (fixed) and /kt/ infe**ct** (foul).

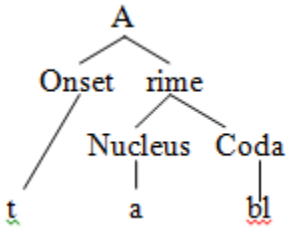
Triconsonantal codas: The first consonant must be either the fricative /s/: mu**s**cle (muscle), the liquid /r/ pou**r**pre (purple) (except in the /C+kr/ or /C+pl/ patterns), or some other consonants that usually combine with /tr/ such as /l, p, ʃ, k/: fi**l**tre (filter), sce**p**tre (sceptre), fi**ch**tre (whew), spe**c**tre (spectrum), respectively. The two last consonants belong generally to an obstruent/liquid combination where the liquid can be the /l/ only in two combinations: /pl/ exe**mpl**e (example) and /kl/ mus**cl**e (muscle), while the /r/ combines with the following set of obstruents /p, b, t, d, k/. In case where the two last consonants exhibit an /s/ + occlusive combination, a case which is very rare, the first consonant has to be a liquid: lo**r**sque (when), ve**r**ste (a Russian measuring unit equals 1.067 Km) (except for the word texte /tɛ**k**st/ (text) in which the obstruent /k/ takes place instead).

3.2.2.2.2 Resyllabification Rules

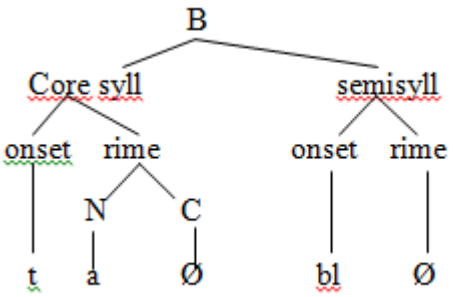
Respecting the sonority hierarchy of the French syllable within the frame of the classical onset-rime bipartition seems to be a will-o'-the-wisp with the existence of anomalous codas. For that reason, it was incumbent on phoneticians to settle this anomaly as

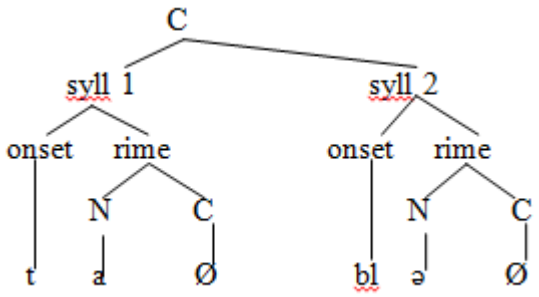
an attempt to maintain the 'sonority sequencing principle'. Charette, 1991; Dell, 1995; Féry, 2003, among others, indeed, resorted to the 'onset maximization principle' in which codas have to be minimized at the expense of more complex onsets, taking into account the phonotactic constraints in both slots. Accordingly, the creation of a sub-syllable that plays the role of an onset of a nucleusless syllable in addition to the core one within the same syllable seemed to be a better choice.

Lodge (1987, p. 142) being an advocate of the onset approach, resyllabified the word 'table' to account for the relegation of coda' segments into the onset position of a peripheral syllable.



Since the coda /bl/ in /ta**bl**/ violates the sonority sequencing principle in (A), Lodge (1987) opted to move the same combination to the onset position of a nucleusless semi syllable (B) as it forms a legitimate onset combination. This also accounts for the addition of the schwa in schwaless words to set apart the anomalous coda combination to a separate syllable having the schwa as its nucleus (C).





The syllabification of onset and coda clusters in monosyllables is relatively simpler compared to their internal counterparts in words having more syllables, where the merging

between codas and onsets is likely to take place. In fact, the internal structure of monosyllabic words sketched earlier (see Table 7) could by no means provide a requisite base for the determination of syllable boundaries in a branching consonant clusters. While this is no doubt true, there exist some alternative rules that might allow the prediction of segments' parsing into onsets and codas. Of course, the break between the onsets and codas is not as arbitrary as it seems. As a matter of fact, it has to abide by both the 'onset maximization principle' and the 'sonority sequencing principle'.

In a VCV pattern, French speakers tend to move the individual intervocalic consonant to the syllable on the right i.e. *forward syllabification*, as an onset for the second syllable instead of a coda for the first one: chanter /ʃɑ̃.**t**e/ (to sing). On the other hand, if the vowels are separated by the following patterns of clusters: VCCV, VCCCV, and VCCCCV, French phonology gives precedence to onsets over codas, provided one or both slots are permissible, and resorts to the sonority hierarchy if the first condition is not fulfilled (Fagyal, Kibbee, & Jenkins, 2006; Glanville, 2005). In the VCCV pattern, both consonants should be relegated to the following syllable if they conform to permissible onsets[8] (V.CCV: e.g. patrie /pa.**tr**i/ (homeland) otherwise they should be split i.e. the first consonant remains in the first syllable and the second moves to the following one (VC.CV: e.g. atlas /a**t.l**as/ (atlas)[9]. As for the other possible patterns, VCCCV and VCCCCV, onsets should always be maximized on the expense of codas where the first consonant belongs to the first syllable and the remaining ones to the second syllable, giving the following syllabification VC.CCV and VC.CCCV: Orchestral /ɔʁ.kɛ**s.tr**al/ (orchestral) and extrait /ɛ**k.stʁ**ɛ/ (extract), respectively. Similarly, the principle of maximizing onsets accounts for the permanent inclusion of /s/ in the onset of the next syllable

[8]Glanville (2005) limited permissible onsets to those made up of a stop or /f, v/ + a liquid /r, l/ and Walker (2001) excluded the permissible onset /s/ + C from being applied in VCCV pattern: espoir /ɛ**s.p**waʁ/ 'hope' vs. Sport /**sp**ɔʁ/ 'sport'.

[9]Glides are not considered consonants. Consequently the syllabification of *nation* (nation) should be /na.sjɔ̃/ instead of /nas.jɔ̃/ reflecting a VCV pattern.

if it is the internal consonant of VC**C**CV or the second consonant of VC**C**CCV e.g. Su**bst**itut /sy**p**.**st**i.ty/ (surrogate) and a**bstr**ait /a**p**.**str**ɛ/ (abstract), respectively.

In the same respect, Dell (1995) set a number of conditions for the syllabification of intervocalic consonant(s). According to him:

A. a prevocalic consonant is tautosyllabic[10] with the following vowel

B. in an OBLI[11] cluster the two consonants are tautosyllabic

C. a postvocalic consonant is tautosyllabic with the preceding vowel, provided no conflict arises with A and B above. (p. 14)

He (1995) then deduced from A and B that intervocalic obstruent/liquid clusters should be merged with the following syllable while condition C encompasses every initial consonant in a non 'obstruent/liquid' intervocalic cluster. Accordingly, the word 'instructeur' (instructor) should be syllabified as /ɛ̃s.tʁy**k**.**t**œʁ/ if we are to apply condition C. In other words, the prevocalic consonant /t/ is syllabified with the following vowel /œ/ and the postvocalic consonant /k/ should be syllabified with the preceding vowel /y/ since the combination in question, /kt/, is not an obstruent/liquid cluster. To be more explicit, Table 8 illustrates the resyllabification of a set of disyllabic words ending with a pronounced schwa:

Table 8

Resyllabification of French Syllable Structure

Structure	Example	Pronunciation	Resyllabification
CCVC	Grade	/gʁa**d**(ə)/	CCV.CV
CCCVC	Strate	/stʁa**t**(ə)/	CCCV.CV
CVCC	Test	/tɛ**st**(ə)/	CVC.CV
CCCVCC	Strict	/stʁi**kt**(ə)/	CCCVC.CV
VCC	Ogre	/ɔ**gʁ**(ə)/	V.CCV
CVCCC	Filter	/fi**ltʁ**(ə)/	CVC.CCV

Note. The data are taken from Adda Decker et al., 2005, p. 120

[10]Syllabify with
[11]OBLI stands for obstruent + liquid clusters.

3.2.2.3 Stress

The general consensus of French lexical stress is that it falls on the last syllable of a word provided it holds a full vowel (not a schwa), otherwise the penultimate syllable will be stressed instead. It is by far a property of the phonological phrase, be it in the shape of single words or even whole statements (see the examples below). The fact that French lexical stress appears only in last position triggered its resemblance to another prosodic feature usually takes the same last position, namely intonation. In this matter, Rossi (1979) stated: "l'accent et l'intonation ne constituent, ni par leur nature, ni par leur fonction, deux unités distinctes" (p. 39) (*stress and intonation do not constitute, neither by nature nor by function, two different units*). Therefore, its assignment is deemed to be predictable and fixed unlike its emphatic counterpart which is rather movable and free, depending on what the speaker wants to emphasize or emotions and feelings he wants to show. The following examples illustrate the difference between both types of stress (The italicized syllables in the first set of examples indicate the usual assignment of stress):

C'est **si** stres*sant* (it is so stressful)

Il l'ai **bru**talement fra*ppé* (he brutally hit him/her)

J'ai dit fontamen***tal***, pas fondamen***taux***[12](I said fundamental**,** not fundamentals)

Vs.

Le **test** || c'était ho**rrible** (the test was horrible)

En**core**! (again!)

However, the existence of lexical stress in French has long been a controversial issue. The different denials issued especially among native experts (Rossi, 1979, as a case in point) have led to questioning whether or not it exists in the first place.

[12]If the emphasis coincides with the usual assignment of stress in the last syllable of the phonological phrase, much prominence (i.e. the physical manifestation of stress: duration, pitch, and intensity) should be produced when uttering it.

From a phonological point of view, Togeby (1965) and Pilch (1973) thought that stress serves as a marker in order to set apart sense groups in addition to distinguishing homophones in function of different morphological properties. However, in deviance with what is customary, Shane (as cited in Walker, 1975) introduced quite a reversed method, believing that stress in French does not always fall on the last syllable as far as single words are concerned. Stress assignment is rather constrained by morphological and phonological structures of words i.e. derivational affixes and tense/lax vowel distinction, respectively. However, given the many irregular cases and exceptions, Shane's morphophonemic stress rule soon left the ground for the phonetically-defined rule since it regularizes stress assignment, no longer resorting to abstract rules.

From a phonetic point of view, Glanville (2005) qualified the French normal stress as to be weak and might not be perceived as loud as it is expected to be. It is produced with a minimal manifestation of its correlates namely duration, pitch, and intensity as compared to the one of stress languages. In contrast, other researchers (Delattre, 1938; Fogany & Léon, 1980; among others) acknowledged the role of stress correlates in giving prominence to the stressed syllable that generally appears in final positions. Delattre (1938), in the same spirit of Parmenter and Blanc (1933), gave absolutely no credit to intensity which he judged 'absent' and by no means responsible for perceiving stress. In addition to intensity, He stripped away the potential marking role of pitch as it may be excluded without affecting the prominence of accent. As for duration, Parmenter and Blanc (1933) invoked that accented syllables are 63 per cent longer in duration than unaccented syllables. They thereby stood at variance with the view of Glanville (2005), believing in duration to be, remarkably, the most preponderant aspect of French lexical stress. In this respect, Astésano (2001) linked the denoting aspect of duration over other indices to the universal pre-pauses lengthening that happens to be the same final syllable in French sense groups.

3.2.3 Standard English

The English variety discussed in the following section is the academic one as it is the only variety EFL students are supposed to acquire at universities.

3.2.3.1 Vowel Reduction

Vowel reduction in English has always been a property of unstressed vowels whose quality tends to gravitate towards the centre of the vowel articulation space. The term vowel reduction is usually illustrated by the contrasting minimal pair **Rosa's vs. roses** (/ɹəʊzəz / vs. /ɹəʊz**ɪ**z/) introducing the most common reduced vowels: the mid central vowel 'ə' and the high back vowel /ɪ/, though other sounds might be found in weak positions as well: the close back rounded /u/ and syllabic consonants /n̩/, /l̩/, and /m̩/. The fact that schwa is a lax vowel, articulated with the minimum energy, accounts for its ubiquitous use in English and thereby its multiple representations in spelling. The different letters that can stand for the English schwa are gathered in Table 9:

Table 9

Different Representations of the Schwa in English

Grapheme	Example	Grapheme	Example
a	**a**sleep	o	Eur**o**pe
e	cheap**e**n	i	poss**i**ble
er	p**er**ceive	re	mit**re**
u	s**u**rrender	ou	fam**ou**s
ar	p**ar**ticular	or	f**or**give
our	hum**our**	ure	fig**ure**
ai	vill**ai**n	r	aess**r**s
oar	cupb**oar**d	aw	**aw**ry
ea	oc**ea**n	eo	pig**eo**n
eu	wher**eu**pon	ia	as**ia**
ie	pat**ie**nt	io	act**io**n
oi	tort**oi**se	ough	thor**ough**
uo	lang**uo**rous	ur	s**ur**prise
eou	gorg**eou**s	eig	for**eig**n
eur	chauff**eur**	ier	sold**ier**
iou	grac**iou**s	au	rest**au**rant

The realisation of reduced vowels themselves, however, is not the same in all their occurrences. Flemming and Johnson (2007), by way of example, believed that reduced vowels in American English be it the schwa or barred /ɨ/ in final positions exhibit lower F2 frequencies unlike reduced vowels in non-final positions. Parallel to this is the realisation of the schwa. Schwas in final positions show more centralisation stability than their reduced counterparts i.e. the schwa or barred /ɨ/ in middle positions. This is in order to maintain the contrast that exists between minimal pairs like roses /ɹəʊz**ɪ**z/ vs. rose's /ɹəʊz**ə**z/ by which the latter preserves some central quality of word-final schwas while the former keeps the same high quality of barred /ɨ/ in non-final positions. Likewise, Browman and Goldstein (1990) acknowledged that word medial schwas might be variable and effected by flanking sounds, though they always tend to gravitate towards the centre of the vowel space no matter how much the influence of environmental sounds can be. Furthermore, the schwa in some cases tend to drop in final positions especially before liquids and nasals, transmitting its syllabic characteristics to the following consonant that becomes syllabic: [n̩] in (/iːt**n̩**/) and [l̩] in (/tʌn**l̩**/). The tongue performs no transitional movement between the articulation of what precedes the syllabic consonant and its ordinary articulation; it rather remains against the alveolar ridge allowing no vocalic airflow. As a matter of fact, syllabic consonants are the outcome of a conditioned fusion of sequences made up of schwa + nasal or lateral consonants.

It is worth mentioning here that schwa disappearance is not arbitrary but rather constrained by the nature of the preceding consonant. If it is a syllabic nasal, the preceding consonant has to be either an alveolar obstruent (plosive, fricative, or affricate) such as pardon /pɑːd**n̩**/, prison /prɪz**n̩**/, bacon /beɪk**n̩**/, etc. or any other consonant except for approximants if the syllabic consonant is lateral (w, j, and r) such as middle /mɪd**l̩**/, pistol /pɪst**l̩**/, panel /pæn**l̩**/, etc. As for in middle position, Lecumberri and Maidment (2013) stated that the schwa also may undergo deletion, yet without making what comes after syllabic. It drops if it is preceded

by any consonant other than approximants and followed by the nasal /n/ or the laterals /l/ and /r/ that have to be followed, in turn, by an unstressed syllable: history /hɪst|ri/, federal /fed|rəl/, travelling /træv|lɪŋ/, interesting /ɪnt|rəstɪŋ/, etc.

Reducing full vowels when unstressed into schwa sound is requisite to mastering the English language prosody as it allows the alternation between stressed and unstressed syllables and thereby creates a native-like rhythm. It is particularly important as well if one considers stress assignment (see 3.2.3.3). In other words, syllables having schwa as their nucleus should never be stressed, otherwise, i.e. in case where they are wrongly fully pronounced and given undue prominence, they slow down the natural speed of English and give the impression of foreign accents.

It is true that words in isolation whether lexical or grammatical have at least one stressed syllable in their citation form, but in connected speech, lexical words tend to maintain the same citation form contrary to grammatical words. The latter exhibits a contracted version of the vowel appearing in strong forms, which is mainly in order to obey the jerky nature that characterises the rhythm of natives' speech. By the same token, monolingual grammatical words (approximately 40 common ones: see Table 10) have two different pronunciation forms, one is weak[13] pronounced frequently and the other is strong used in very specific circumstances: when stressed, in isolation or sentence final (except for he, his, her, him, them, and us which are weakened even in final position). Table 10 illustrates the most prevalent function words in English:

[13]The reduction applied in weak forms is either obscuring the full vowel towards its reduced version or eliding certain vowels and consonants.

Table 10

Common Grammatical Words in Both Weak and Strong Forms

Word category	Word	Strong form	Weak form
Verb	be	bi:	bɪ
	am	æm	əm
	are	ɑ:(r)	ə(r)
	is	iz	əz, s, z
	was	wɒz	wəz
	were	wɜ:(r)	wə(r)
	have	hæv	həv
	has	hæz	həz, əz, z, s
	had	hæd	həd
Modal	do	du:	du/ də
	does	dʌz	dəz
	can	kæn	kən, kn̩
	could/ should	kʊd/ʃʊd	kəd/ʃəd
	will	wɪl	l
	would	wʊd	wəd, əd, d
	shall	ʃæl	ʃəl
	must	mʌst	məst, məs, ms
Conjunctions	and	ænd	ənd, nd, ən, n
	but	bʌt	bət
	than	ðæn	ðən
	that	ðæt	ðət
	or	ɔr	ər
Pronouns	he	hi	hɪ, ɪ, i
	she	ʃi	ʃɪ
	us	ʌs	əs
	them	ðem	ðəm
	him	hɪm	ɪm
	her	hɜ:(r)	hə/ ə
	his	hɪz	ɪz
	you	yu:	yə/ yu
	your	yɔ:(r)	yə(r)
	we	wi:	wi
Prepositions	to	tu:	tʊ, tə
	at	æt	ət
	of	ɒv	əv
	for	fɔ:(r)	fə(r)
	from	frɒm	frəm
	as	æz	əz
Determiners	a	eɪ	ə
	an	æn	ən
	the	ði:	ðə/ði
	some	sʌm	səm
	such	sʌtʃ	sətʃ

3.2.3.2 Syllable Structure

Each syllable by definition must contain a nucleus be it a vowel or a syllabic consonant and the onset and coda as peripheral constituents. Those sounds are not haphazardly strung together; they are instead rule-governed and sometimes intuition-based strands, abiding by their own internal structure which is rather language specific. Similar to the French syllable template discussed earlier in this chapter, the shape of onsets and codas of English syllables is likewise governed by the universal principle of sonority hierarchy (low vowels [ɑ, æ], high vowels [i, u], glides [j, w], liquids [l, ɹ], nasals [m, n, ŋ], voiced fricatives [v, z], voiceless fricatives [f, s], voiced plosives [b, d, g], voiceless plosives [p, t, k] (McMahon, 2002, p. 107). Accordingly, neither combinations like */lp/, */jm/, */rg/ nor combinations like */pm/,* /kl/, */mr/ can form permissible onsets and codas respectively. However, violations to sonority hierarchy are frequently observed in a) onset and coda positions forming what Clements (1990) would call 'plateaus' i.e. segments having the same sonority such as /**sf**ɪə(r)/ and /fæ**ct**/, and in b) sonority-aberrant onsets and codas forming 'reversals' such as /**spr**eɪ/, /**skj**u:/ and /æ**ps**/ /æ**ks**/ respectively.

However, identifying the onset and offset of syllables is not always predictable even if it is in accordance with sonority hierarchy. As a matter of fact, only monosyllabic words can benefit from the 'sonority sequencing principle' as they contain only one syllable. Thus, in order to draw syllable boundaries of disyllabic or multisyllabic words, the 'onset maximization principle' comes into play together with sonority sequencing principle as such. Accordingly, the /d/ in /li:**.d**ə/ belongs to the onset of the second syllable because onsets should be maximized at the expense of codas. Similarly, the combination /lt/ in /fɔ:**lt**ə/ is equally cut into coda of the first syllable and onset of the second syllable; although it represents a permissible coda (/fɔ:**lt**/), the opposite cannot be equally true for the onset position. Therefore, instead of making the onset slot empty, which is in shrill contrast with the

‘onset maximization principle’, phoneticians held the stick from the middle and separated the consonants, neither to violate the sonority hierarchy nor to rule out the precedence of onsets over codas.

In another respect, English is known by allowing a variety of heavy syllables culminated in complex structures. Kreidler (2004, p. 72) provided the following formula to reflect the different possible structures of monosyllables in English:

$$\mathbf{C_0^3VC_0^3.}$$

Kreidler (2004) restricted this utmost structure to non-suffixed settings, where codas behave in the same way as onsets and range between 0 to 3 consonants, not more. As a matter of fact, what makes codas longer than 3 consonants is the addition of inflectional non-syllabic suffixes such as the past tense marker ‘ed’ (canceled /kænsl**d**/) or the plural marker ‘s’ (attempts /ətempt**s**/). Table 11 groups the different structures of monosyllables in English:

Table 11

Syllable Structure in English

Structure	Example	Transcription
V	I	/aɪ/
VC	at	/æt/
VCC	act	/ækt/
VCCC	acts	/ækts/
CV	no	/nəʊ/
CCV	tree	/tri:/
CVC	dog	/dɒg/
CCVC	blame	/bleɪm/
CVCC	bold	/bɔ:ld/
CCVCC	crisp	/krɪsp/
CCCV	spree	/spri:/
CCCVCC	splint	/splɪnt/

Structure	Example	Transcription
CVCCC	lynx	/lɪŋks/
CCVCCC	prompt	/prɒmpt/
CCVCCCC	sculpts	/skʌlpts/
CCCVCCC	scripts	/skrɪpts/
CVCCCC	texts/cancelled	/teksts/, /kænsld/

3.2.3.2.1 English Phonotactics

Not any sequence of consonants obeying the sonority principle can fit as an onset or coda for an English syllable. In fact, some constraints or phonotactics, to which we now turn, do govern the assembling of consonants in one syllable.

In initial position, one consonantal onset can be any consonant but /ŋ/ or /ʒ/ (wild, fat, package, etc.). Two consonantal onsets, however, are not really so open. If the first consonant is an /s/, what follows must be either voiceless, non-sibilant stops /p, t, k/ (**sp**ark, **st**uck, **sc**andal), nasals /m, n/ (**sm**art, **sn**ap), lateral /l/ (**sl**um), or glide /w/ (**sw**allow), but in the opposite case, the second consonant has to be /l, r, or w/ preceded by [p, b, f, k, g, s], [p, b, f, k, g, ʃ, t, d, θ], or [t, d, θ, s, k, g], respectively. As for three consonant onsets, the distribution of consonantal sequences completely tallies with the previous principle: /s/ is the absolute first consonant followed by one of the voiceless stops /p, t, k/ that are followed in turn by /r, l, w/. The same anomalous sequences in two consonantal onsets are preserved with three consonantal onsets i.e. */pw/ and */tl/, thus there is no such combinations */spw/ nor */stl/.

In final positions, the only consonant excluded from being an individual coda is /h/ (do**g**, ho**m**e, etc.). As far as two consonantal codas are concerned, a myriad of combinations can take place: laterals /l, r/ can combine with other consonants to form a coda (wo**rk**, he**lp**), they can even combine together, but in this case the /r/ must precede the /l/ (cu**rl**). Nasals must be followed by /p, f/ if the nasal is /m/ (/læ**mp/**) and any other consonant if it is /n/ (/bæ**nd/**). Codas of two obstruents are somehow conditioned; one of them has to be either /s/

or /t/ with a possible combination of both (/lɪ**st/**): fricative + stop (/rɪ**sk/**), stop + fricative (/læ**ps**/), stop + stop (/æ**kt/**). As for three consonantal codas, three combinations are possible: three obstruents of the form stop + fricative + stop (/mɪ**dst**/), nasal + two obstruents conditioned by the same constraints of biconsonantal codas (/prɒ**mpt/**, /dʒɪ**nks/**, /əmʌ**ŋst**/). If the first consonant is a liquid, it has to be followed by the obstruent combination stop + fricative: /kɔ:**ps**/. The same can be said about four consonantal codas with the only addition of a non-syllabic inflectional suffix: the plural /s/ or the past tense /t, d/ (/prɒ**mpts**/, /kæ**nsld**/).

3.2.3.3 Stress

Undoubtedly, stress plays a major role in the phonetics and phonology of English as it is responsible for the distinction between stressed and unstressed syllables that creates the rhythm of speech in English. Linguists distinguished a number of stresses in English, ranging from two (Ladefoged, 1975) to five (Chomsky and Hall, 1968) stresses in English but the common impressionistic kinds of stress that are accepted by the majority of linguists is by far the primary/secondary bipartition, that is fairly distinguished according to the degree of prominence allotted to each stress. As a matter of fact, syllables carrying primary stress are said to be more prominent than syllables with secondary stress which, in turn, are judged to be more prominent than syllables with no stress. There is a common knowledge among linguists of what makes one syllable more prominent than others. If a syllable is made longer, louder, said in a different pitch contour, or carries a vowel whose quality is different from what surrounds, then this syllable is perceived prominent i.e. stressed. However, not all cues responsible for prominence manifest in the same manner. Many phonologists set themselves to experiment the degree of influence each stress correlate plays on the perception of prominent syllables. Fry (1955 and 1958), Bolinger (1958), Morton and Jassem (1965), among others, all pinpointed the succinct dominance of pitch over duration and to a greater extent over intensity.

As far as the placement of stress is concerned, English, being influenced by a sheer number of borrowed words of both Germanic and Romance descent, inherited a complex stress movement in the sense that there is no such a rule to indicate where stress always falls on a particular syllable of a word per se. Despite the peculiar nature of English stress, linguists sought to settle some regular patterns that help in predicting what syllable should bear the stress. One main general rule is related to the weight of the syllable itself (heavy vs. light) along with the grammatical category of the word (McMahon, 2002). If the word is a noun, stress falls on the penultimate syllable if heavy otherwise on the antepenultimate (/ə'dʒendə/ vs. /'dısəplın/). On the other hand, if the word is a verb, stress falls on the last syllable if heavy otherwise on the penultimate (/dı'saıd/ vs. /'hʌri/). This rule, however, following the huge number of miscellaneous cases turned out to be something of a misnomer and that different factors ought to come into play if an adequate account for the assignment of English stress is to be set: the phonological structure of syllables (vowel quality and codas), the number of syllables in a word, the grammatical category (noun, verb, or adjective), and the morphological structure (simple words vs. complex words, either inflected or compound).

3.2.3.3.1 Simple Words

Roach (1991) claimed that stress in two-syllable verbs and adjectives tends to go on "syllables containing a long vowel or diphthong *and/or*[14] ending with more than one consonant" (p. 90). In the opposite case i.e. if the last syllable has its nucleus a short vowel *and*[15] zero or one consonantal coda, stress falls on the first syllable instead.

/kə're**kt**/ /ə'pl**aı**/ Vs. /'env**i**/ /'ɔ:s**əm**/

[14]They are italicized on purpose by the author of this thesis to highlight the non-conditioned combination between vowel quality and coda formation.

[15]Unlike the former rule, it is obligatory to have either a zero coda or one consonantal coda along with any short vowel if this rule is to be applied.

As for two-syllable nouns, stress behaves in a rather simpler way: the second syllable is usually stressed unless if it contains a short vowel. In this case, stress becomes a property of the first syllable instead.

/'mʌn**i**/ Vs. /Bə'l**u:**n/

The rule of two-syllable verbs applies to three-syllable verbs as well. It adopts the same moving-forward principle; if the last syllable contains a short vowel and zero or one consonantal coda, stress moves to the penultimate syllable. In the opposite case, however, the last syllable is stressed.

/entə't**eɪ**n/ Vs. /ɪn'kaʊntə/

In order to place stress on three-syllable nouns, one should take into account the phonological structure of the two last syllables together. Accordingly, Roach (1991) sorted out three possible stress placements:

-The penultimate syllable is stressed if it contains a long vowel or diphthong and/or zero or one consonantal coda, and must be followed by a syllable containing a short vowel or /əʊ/ (/dɪ'z**ɑ:**stə/, /pə't**eɪ**tə**ʊ**/ respectively).

-Stress moves to the first syllable if the last and penultimate syllables contain short vowels and zero or one consonantal codas (/'kwɒntə**ti**/, /'sinəmə/).

-Stress falls on the first syllable if the last one contains a long vowel or diphthong and/ or more than one consonantal coda, a rather quite opposite rule to what is customary when the syllable fulfils the same requirements /'ɪntəle**kt**/ (the same applies to adjectives).

3.2.3.3.2 Complex Words

Complex words, by definition, are related to such words made longer by the addition of affixes (prefix or suffix) or by the combination of two or occasionally more morphemes in one linguistic entity i.e. compound nouns/adjectives. Given the sheer number of affixes that exist in English, it would be confusing to list all of them; only the general account of stress behaviour put by Roach (1991) will be presented:

1. Some affixes bear stress: /'**semi**sɜ:kl/, /dʒæpə'n**i:z**/.

2. Some affixes are transparent to stress: /'hæpi/ vs. /ʌn'hæpi/, /'kʌmfət/ vs. /'kʌmftəbl/.

3. Some affixes cause stress to shift from its original placement: /'aɪkɒn/ vs. /aɪ'kɒn**ɪk**/,

As for compound words, stress placement depends crucially on the grammatical category of both morphemes. If the compound is made up of two nouns, stress usually falls on the first morpheme (/'sʌn|raɪz/). However, if the first word of the compound is an adjective, meaning will be considered as well. Stress falls on the second syllable if 1) the adjective means exactly what it is supposed to mean e.g. black ‘board, or 2) if the second morpheme ends with ‘ed’ e.g. bad ‘tempered. On the other hand, stress falls on the adjective itself if the latter does not express the original semantic meaning e.g. 'blackbird’.

Despite the effort to settle the issue of stress placement in English, it is far difficult to make generalizations as exceptions to the aforementioned rules do exist (/bɪ'gɪn/, /'ɒnɪst/, /'ekspɜ:t/, etc.). Besides, some two-syllable words in English have a dual role in spite of their identical spelling. As a matter of fact, stress in this case becomes grammatically contrastive and falls on different syllables in order to highlight the category of these words. The word ‘abstract’ for instance takes the stress on the first syllable if it is a noun or adjective /'æbstrækt/ and on the second syllable if it is a verb /æb'strækt/. Polysyllabic words in English

as well have a different stressing system. Generally speaking, long words like /ˌeksplə'neɪʃn/ and /ˌɔ:gənaɪ'zeɪʃn/ take an additional stress, known as secondary stress, in addition to the primary one.

Conclusion

The aim of this chapter was to describe the linguistic systems known to the informants of the present study: dialectal Arabic, standard French along with the language being learnt; English. Foreign learners of English at Mentouri University face a serious challenge in their pursuit of matching the rhythm of their interlanguage to that of natives. Indeed, what makes this process very challenging is the fact that the languages in question do not share the same rules of speech rhythm components i.e. syllable structure, vowel reduction and stress, that are rather deemed to be language dependent properties. Even though Algerian Arabic belongs to the same rhythmic category as English, the interlanguage rhythm of the informants under investigation, as it will be shown in the next chapter, seems to be an inevitable departure from the norm as it is affected, to a large extent, by French, a language that is deeply rooted in the history of the Algerian sociolinguistic profile.

CHAPTER FOUR

Error Analysis of the Undergraduates' Rhythmic Components

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Introduction

To better classify the rhythm of any interlanguage, it is preliminary to first understand the nature of its components: vowel reduction, syllable structure, and stress correlates as foreign language learners and/or speakers must have been introduced to at least one linguistic system before embarking on learning the language in hand. Therefore, the present overall analysis, that was carried out in two steps: an error analysis followed by a confirmation test, aims at identifying the patterns of the aforementioned components as produced by the informants enrolled in this investigation.

First, the three rhythm components will be examined through the analysis of audio recordings of discussions in which thirty third-year EFL students took part (Appendix 1). The first analysis deals with the different renditions of reduced vowels, notably the schwa in both function and content words. The second analysis sketches the different patterns of syllable structures that are made up of either syllabic consonants /l̩/ and /n̩/ or the past tense suffix 'ed'. The last analysis deals with the third component i.e. stress correlates. Duration, pitch and intensity of a set of disyllabic words of different make ups (sorted out from the learners' discussions) will be measured using Praat, speech analysis software (Appendix 2). This is basically done to draw a comparison between the nature of the stressed and unstressed syllables pronounced by the informants.

Second, a confirmation test (Appendix 3) of a set of individual sentences containing the most prevalent function words, a set of words having different patterns of syllable structures, and a set of common disyllabic words will be analysed. The aim behind

administering a confirmation test to another group of thirty third year students is to see whether the previous rendition of the three rhythm components remains rather systematic, no matter whether they are pronounced in a larger unit of speech or in isolation.

4.1 Sample

Involved in this error analysis are 30 third year EFL students reading for a BA degree in the LMD system, in the academic year 2012-2013, at the Department of English, Mentouri University, Constantine. The choice of the population[1] is based on the fact that the Licence degree is obtained after successfully completing three years of study. Therefore, students at that level are presumably supposed to have a good command of English both in using it and understanding it. All the informants reside in Constantine city and studied English for 9 years. Prior to recording, the teacher asked the informants about their knowledge of the French language. What is meant by the word 'knowledge' here is not necessarily a full mastery and a good command of speaking and writing the language. It rather refers to the physical scheme of the language such as pronunciation rules. Apart from two who claimed to be good in French (7.40%), the remaining twenty five informants judged their level as average (92.59%).

4.2 Tasks

The data used for analysis were gathered over two Oral Expression sessions in which the teacher recorded her students commenting on the following set of sayings (Appendix 1):

- The best and most beautiful things in the world cannot be seen or even touched; they must be felt with the heart. (Helen Keller)

-To have joy one must share it, happiness was born a twin. (Lord Byron)

[1]The sample of the overall study is a total of 123 students, derived from a population of 783 third year EFL students. The sample was divided into three sub samples: 30 students in the error analysis and other 30 students in the confirmation test of chapter 4, and 63 students in the acoustic analysis of chapter 5.

- That which doesn't kill us makes us stronger. (Friedrich Nietzsche)

- It is easier to forgive an enemy than to forgive a friend. (William Blake)

- Be open to suggestions, no one is so perfect that they may not need advice from time to time. (Baltasar Gracian)

4.3 Analysis of the Results

In what follows, the analysis of the three components of the informants' interlanguage speech rhythm will be analysed:

4.3.1 Vowel Reduction

To look up how the schwa is rendered by the informants, all the function words that ought to be reduced as well as all the content words that contain at least one schwa were sorted out from the students' discussions (see Appendix 1) and tabulated in order to facilitate the analysis procedure. The main concern of this analysis is to find out the role of transfer in shaping the different realisations of the schwa performed by the subjects under investigation.

4.3.1.1 Function Words

The most striking remark that can be observed when analysing the data organized in Table 12 is that the informants under investigation tend to use the strong form of all function words instead of their ought-to-be-used weak forms, sometimes with the use of the different sounds that are represented in spelling by the same letter: the letter 'a' was pronounced /æ/ and /ʌ/ in addition to its strong pronunciation /ɑ:/, the letter 'e' was pronounced /e/, and the letter 'o' was pronounced either /ɒ/ or /ʊ/ along with the strong /u:/. The weak form, however, seems to be maintained only in 3 words: and (5 instance out of 194), them (6 instances out of

21), and can (5 instances out of 48). Table 12 groups all the 22 function words that were used by the informants while commenting on the aforementioned topics:

Table 12

Pronunciation of Function Words

Word	Pronunciation	Informants' pronunciation	Number of instances	
M**u**st	m**ə**st	ʌ	26	
S**o**me	s**ə**m	ʌ	14	23
		ɒ	9	
And	**ə**nd	æ	189	194
		ə	5	
F**o**r	f**ə**(r)	ɒ	94	100
		ə	6	
Th**a**t	ð**ə**t	æ	133	
T**o**	t**ə**/t**u**	ʊ	225	235
		uː	10	
As	**ə**z	æ	19	24
		ɑ	5	
D**o**	d**ə**/d**u**	ʊ	28	30
		uː	2	
Of	**ə**v	ɒ	68	70
		ə	2	
at	**ə**t	æ	14	
B**u**t	b**ə**t	ʌ	85	
H**a**ve	h**ə**v	æː	1	64
		æ	63	
Th**e**m	ð**ə**m	e	15	21
		ə	6	
W**a**s	w**ə**z	ɒ	33	36
		ə	3	
Fr**o**m	fr**ə**m	ɒ	32	
H**a**s	h**ə**z	æ	12	
C**a**n	k**æ**nt	**ə**	5	48
		æ	13	
		ɑ	30	
Us	**ə**s	ʌ	22	
D**oe**s	d**ə**z	ʌ	2	
Sh**ou**ld	ʃ**ə**d	ʊ	4	13
		uː	9	
th**a**n	ð**ə**n	ɑ	1	12
		æ	11	

Note. Vowels in focus are bolded

Two possible reasons can account for the informants' faulty pronunciation of the weak forms of English function words. The first one has rather to do with their attitudes towards speaking English (RP) and how to sound more formal and respectful in the presence of other speakers of the same language. Our learners think that they should sound stilted, prestigious when speaking English while the use of weak forms gives a bad impression on their person. Such a way of thinking urgently appeals for raising foreign learners' awareness and train them on how and when to use strong forms and weak forms of function words. Besides, students need to be made aware of the importance of pronouncing correctly weak forms in order to maintain the overall rhythm of speech. They need to know that, contrary to what they believe, reducing function words where obligatory allows them to sound more native-like speakers, not the other way round.

In addition to that, one cannot rule out the fact that in the informants' previous linguistic systems, the concept of reducing function words does not exist. Neither Algerian Arabic nor French exhibit a dual pronunciation of less important or grammatical words. Therefore, it seems safe to say that the lack of such items in the previously known languages obscured the possibility for a deflected pronunciation in the foreign language. Moreover, the fact that French shares the same Latin alphabetical system with English misguides students and results in the replacement of the weak central mid-open vowel /ə/ by strong French and/or English vowels that best fit the representations of the schwa in spelling: */s**ɒ**m/, */fr**ɒ**m/, etc.

4.3.1.2 Content Words

In what follows, the rendition of the schwa in six sets of content words will be analysed.

4.3.1.2.1 Words Ending in /r/

The results presented in Table 13 show that the informants pronounced the combination /er/ in final positions, which ought to be a schwa, more or less the same way as it is pronounced in middle positions such as in univ**er**sity /juːnɪ'v**ɜːr**sɪti/ (3 instances) and p**er**sonality /p**ɜːr**sɒnælɪti/ (3 instances). As a matter of fact, even the word en**er**gy was rendered as /'ɪn**ɜːr**dʒi/ (1 instance) instead of /'en**ə**dʒi/, p**er**haps /'p**ɜːr**.hæps/ instead of /pə.'hæps/ (1 instance). On the other hand, few informants kept the correct pronunciation and used schwa instead: oth**er** (3 instances out of 30), anoth**er** (5 instances out of 12), ord**er** (3 instances out of 6), aft**er** (2 out of 4), matt**er**, ov**er**, both**er,** consid**er,** daught**er** (one instance out of 3, 3, 2, 4, 2 respectively).

Table 13

Pronunciation of Final Schwa Represented by 'er' in Spelling

Word	Pronunciation	Informants' Pronunciation	Number of Instances	
Oth**er**	'ʌð**ə**(r)	**ə**	3	30
		ø	25	
		ɜː /œ/	2	
Anoth**er**	ə'nʌð**ə**(r)	**ə**	5	12
		ø	7	
Moth**er**	'mʌð**ə**(r)	ɜː /œ/	5	15
		ø	10	
Strong**er**	strɒŋg**ə**(r)	ø	14	
Bett**er**	'bet**ə**(r)	ø	7	
Ord**er**	'ɒːd**ə**(r)	**ə**	3	6
		ø	3	
Matt**er**	mæt**ə**(r)	**ə**	1	3
		ø	2	
Fath**er**	fɑːð**ə**(r)	ø	5	6
		ɜː /œ/	1	
Ov**er**	'əʊv**ə**(r)	ø	2	3
		ə	1	
Nev**er**	'nev**ə**(r)	ø	7	
Sist**er**	'sɪst**ə**(r)	ø	8	10
		ɜː /œ/	2	

Word	Pronunciation	Informants' Pronunciation	Number of Instances	
Consid**er**	‘kənsıdə(r)	ø	3	4
		ə	1	
Broth**er**	‘brʌðə(r)	ø	8	9
		ɜ: /œ/	1	
Memb**er**	‘membə(r)	ø	2	
Togeth**er**	‘təgeðə(r)	ø	3	
Weath**er**	‘weðə(r)	ø	4	
Aft**er**	‘ɑ:ftə(r)	ø	2	4
		ə	2	
Teach**er**	‘ti:tʃə(r)	ø	2	3
		ɜ: /œ/	1	
Rememb**er**	rı’membə(r)	ø	4	
Daught**er**	‘dɒ:tə(r)	ø	1	2
		ə	1	
Both**er**	‘bɒðə(r)	**ə**	1	2
		ø	1	
Univ**er**sity	/ˌju:nıˈv**ɜ:**səti/	ɜ:r	3	
P**er**sonality	/ˌp**ɜ:**səˈnæləti/	ɜ:r	3	
En**er**gy	/ˈenədʒi/	ɜ:r	1	
P**er**haps	/pə.ˈhæps/	ɜ:r	1	

The wrong pronunciation of final /er/ can be attributed to the following reasons: generally speaking, post-vocalic /r/ modifies the quality of the preceding vowel that tends to have a more open quality. Indeed, the retroflexion of the tongue in preparation to pronounce the /r/, gives a sign to the tongue to add a rather colouring aspect to the vowel before the /r/ (Cruttenden, 2005, p. 223). In this case, the schwa becomes somehow lower in F3 and gives a /ɚ/ which according to Fuhrken (1932, 50): “has a more sonorous quality than /ə/, is slightly lower and very nearly a back vowel”. Likewise, since the majority of the informants pronounced the /r/, they indeed added a colouring aspect to the preceding vowel, yet different from the one used by American native speakers. The pronounced vowel is rather closer to the mid front-central, French schwa-like /ø/ (117 instances out of 144) and in this case they accentuated the syllable resulting in a stress shift: */be’tør/, */ne’vør/, */sıs.’tør/, etc. In some cases, a vocalization of /r/ results in the lengthening of the preceding vowel to /ɜ:/ (which is not so different from the French /œ/): */sıs.’t**ɜ:r**/, */‘ti:tʃ**ɜ:**r/, etc.

To put it in a nutshell, the informants' pronunciation tends to incline, deliberately or not, towards the American variety as they pronounce the post-vocalic /r/ especially in final positions. It is worth mentioning that their pronounced post-vocalic /r/ is, by no means, the American retroflex, it is instead the RP's post-alveolar frictionless continuant /r/. However, as it is the way with the American retroflex /r/ in a pre-rhotic environment, the informants' pronounced vowel underwent a change in quality and tended to be more back than central as well as longer, differing from both the ought-to-be RP schwa /ə/ as well as the American r-coloured schwa /ɚ/.

4.3.1.2.2 Words Including /o/

The combination of the letters om/on were represented by either the nasalized open, back and rounded French vowel /ɔ̃/ (8 instances) or the English open, central and unrounded /ʌ/ (5 instances). This was observed mainly with words sharing the same spelling in both English and French. It is worth mentioning, though, that the word 'c**om**plaining', which has no cognate in French, was also rendered as /'kɔ̃.pleɪnɪŋ/). The individual letter 'o' (both in words sharing the same graphological makeup and other English words notably forgive, forget and together) were pronounced by one of the sounds that correspond to one of the representations of the English 'o' in spelling: /ɒ/ (**o**live) 41 instances, /ʊ/ (w**o**man) 3 instances, /əʊ/ (**o**cean) 2 instances. The correct pronunciation i.e. with the schwa was only used in 14 instances out of 73, constituting only 19.17%. Thus, both interlingual and intralingual transfer could be the reason behind the faulty pronunciation of the subjects under study. As a matter of fact, they resorted to the French pronunciation whenever the letter/s in question has/ve an individual sound in French, or resort to the different sounds allocated to the letter 'o' in the English language.

Table 14 shows all the possible vowels, substituted the schwa when represented by ‘o’, ‘on/m’ in spelling:

Table 14

Pronunciation of Schwa Represented by ‘o’ in Spelling

Word	Pronunciation	Informants’ pronunciation	Number of instances	
C**o**ntrolling	/kən’trəʊlıŋ/	ɔ̃	2	
Opinion	/ə’pınjən/	ɒ	5	
C**o**nside(ration)	/kənsıdəreıʃn/	ɔ̃	4	9
		ə	4	
		ʌ	1	
Aut**o**matically	ɒ:təmætıklı	ɒ	1	
Inn**o**cent	‘ınəsnt	ɒ	1	
C**o**mpare	kəm’peə(r)	ɔ̃	1	
Objective	əb’dʒectıv	ɒ	2	
C**o**nfronted	kən’frʌntıd	**ə**	1	
C**o**nfirm	kən’fɜ:m	ʌ	1	
C**o**mplaining	kəm’pleınıŋ	**ə**	1	
		ɔ̃	1	
C**om**passion	Kəm’pæʃn	**ə**	1	
Inf**o**rmation	ınfəmeıʃn	**ə**	1	
		ɒ	1	
Occasion	**ə**’keıʒn	əʊ	1	
F**o**rgive(ness)	fə’gıv	ɒ	20	24
		ə	4	
S**o**lution	sə’lu:ʃn	ɒ	1	
C**o**nvince	kən’vıns	**ə**	1	
F**o**rget(table)	fə’get	ɒ	11	
S**o**ciety	sə’saıətı	ɒ	2	
C**o**mplete(ly)	kəm’pli:t	ʌ	3	5
		ɒ	1	
		ə	1	
T**o**gether	tə’geðə(r)	ʊ	3	
Devel**o**ped	dı’veləpt	əʊ	1	
Pers**o**nality/pers**o**nally	pɜ:sənælətı/pɜ:sənəli	ɒ	3	6
		ə	3	

4.3.1.2.3 Words Starting With /a/

Abbound and Jableh (1997, p. 56) stated that among the common errors committed by Arab learners of English is the replacement of initial schwas by the front, open vowel /æ/, a

fact which considerably matches the results of the informants (97 instances out of 117). This can be attributed to the 'spelling pronunciation' phenomenon in general and the interference of French in particular. French words that share the same graphological make up with English words can easily alter the pronunciation of initial schwas represented in spelling by the letter 'a': **a**ccept, **a**dapt, **a**pparent, etc. and generalize this process to all English words starting with the letter 'a', blanking out the correct pronunciation i.e. an initial schwa. Table 15 shows the informants' rendition of initial schwas represented by the letter 'a' in spelling:

Table 15

Pronunciation of Initial Schwa Represented by 'a' in Spelling

Word	Pronunciation	Informants' pronunciation	Number of instances	
About	ə'baʊt	**ə**	9	51
		æ	42	
Advise/ce	ədˈvaɪz/s	**ə**	2	35
		æ	33	
Afraid	ə'freɪd	æ	1	
Accept	əkˈsept	**ə**	5	17
		æ	12	
Admit	ədˈmɪt	æ	1	
Apparent	əˈpærənt	ʌ	1	
Adapted	əˈdæptɪd	æ	1	
Allowed	əˈlaʊd	æ	2	
Another	əˈnʌðə(r)	**ə**	3	8
		æ	5	

4.3.1.2.4 Words Ending in /ness/

Among the 81 instances in which the words end in the suffix 'ness', the schwa was substituted by /e/ in 47 instances (see Table 16). In English, inflectional words follow a special way of stress assignment, whereas suffixes do not influence the placement of primary stress in Algerian Arabic, which stresses the last syllable if it is long and closed from both sides, while French usually stresses the final syllable in a word regardless of its formation. Therefore, learners seem not to be aware of when English suffixes influence stress assignment

and follow the hypotheses they have already developed about earlier learnt linguistic systems, notably Algerian Arabic. How words are spelled seems to be, by far, the major cause behind misplacing stress and thereby mispronouncing the weak vowel schwa. In fact, gemination in Arabic triggers word stress which means that the surrounding vowel should not be weak. Therefore, the double /s/ in 'ness' entails that the latter bears stress and accordingly the ought-to-be schwa becomes a full vowel, particularly the one represented in spelling, 'e'. Table 16 illustrates the pronunciation of the schwa in the suffix 'ness':

Table 16

Pronunciation of Schwa in the Suffix 'ness'

Word	Pronunciation	Informants' pronunciation	Number of instances	
Happin**e**ss	'hæpin**ə**s	**ə**	25	69
		e	42	
		e:	2	
Sadn**e**ss	'sædn**ə**s	**ə**	5	7
		e	2	
Madn**e**ss	'mædn**ə**s	**ə**	1	
Emptin**e**ss	'emptin**ə**s	e	1	
Weakn**e**ss	'wi:kn**ə**s	**ə**	1	
Forgiveness	Fə'gɪvnəs	**ə**	2	

4.3.1.2.5 Words Ending in /ous/

The combination 'ou' in the suffix 'ous' was pronounced in the majority of instances (4 out of 7) the close, back and rounded vowel /ʊ/ (see Table 17). This can be due to the fact that in both English and French, languages that share the same Latin alphabetical system, the representation 'ou' in spelling is rendered by more or less the same sound in both languages; it is pronounced /u/ in French such as in the word 'fou' /fu/ (crazy), and pronounced /ʊ/ in English such as in 'could' /kʊd/. Furthermore, the combination 'ou' in 'nervous' was wrongly pronounced as /**ø**/, exactly as it would be pronounced in the French word /nɛʁv**ø**/ (nerveux/se). This highlights more the influence of French spelling on pronouncing English

individual sounds in general and words sharing almost the same graphological make up in particular. Table 17 illustrates the informants' erroneous instances:

Table 17

Pronunciation of the Schwa in 'ous'

Word	Pronunciation	Informants' pronunciation	Number of instances
Nerv**ou**s	'nɜ:və**s**	ø	2
Jeal**ou**s	'dʒelə**s**	ʊ	2
Danger**ou**s	'deɪndʒərə**s**	ɒ	1
Gener**ou**s	'dʒenərə**s**	ʊ	1
fam**ou**s	'feɪmə**s**	ʊ	1

4.3.1.2.6 Miscellaneous Substitutions

In addition to the aforementioned categorised substitutions, the vowel schwa was substituted, in six instances, by one of the sounds that correspond to its representation in spelling. The letter 'u' was substituted by the sound /ʊ/, the letters 'i' and 'e' by /ɪ/, and the letter 'a' by /æ/ (see Table 18). This can be attributed to the 'Generalization' strategy as learners, when not sure or do not know how to pronounce sounds, tend to map the written letters in question onto their equivalent sounds represented in the International Phonetics Alphabet chart as it is shown in Table 18 (see the example of 'wind' in Table 41).

Table 18

Other Mispronunciations of Schwa

Word	Pronunciation	Informants' pronunciation	Number of instances
Germ**a**ny	'dʒɜ:m**ə**ni	æ	1
S**ur**prized	s**ə**'praɪzd	ʊ	2
Personal**i**ty	pɜ:sənæl**ə**ti	ɪ	1
Lect**ure**	'lektʃ**ə**(r)	ʊ	1
Gen**e**rous	'dʒen**ə**rəs	ɪ	1

4.3.2 Syllable Structure

In the following analysis, two phenomena that contributed to the erroneous rendition of English syllable structure were analysed. The first analysis deals with the pronunciation of 'ed' past tense suffix while the second concerns the rendition of syllabic consonants mainly /l̩/ and /n̩/.

4.3.2.1 Past Tense Suffix 'ed'

In the following error analysis of the regular past morpheme 'ed', the stems that end in the voiced /d/ or the voiceless /t/ such as deci**d**ed and wan**t**ed were not considered mainly because they are, by rule, separated from the related allomorph by an epenthetic vowel. Whether the latter is a schwa or /ɪ/ did not make much difference as long as it creates an additional syllable, which is basically the core point of this section.

Among all the regular past verbs used by the informants of this study, no correctly pronounced 'ed' suffix could be found (see Table 19). Among the 61 erroneous instances, a schwa was inserted before the final /d/ in 57 pronunciations and in the other remaining 4 instances, the half close front vowel, /e/, was inserted instead (see Figures 7 and 8 for spectrograms representing a sample pronunciation of final 'ed'). Accordingly, the underlying representation of the English past tense suffix 'ed' to the informants of the present study seems to be /əd/ instead of /d/ or /t/. Table 19 shows the informants' pronunciation of 'ed' past tense suffix:

Table 19

Pronunciation of 'ed' Past Tense Suffix

Word	Pronunciation	Informants' pronunciation	Number of instances	
Touch**ed**	/'tʌ:tʃ**t**/	ed	3	18
		əd	15	
Tri**ed**	'traɪ**d**	əd	2	
Lov**ed**	'lʌv**d**	əd	2	

Word	Pronunciation	Informants' pronunciation	Number of instances	
Achiev**ed**	əˈʧiːv**d**	əd	1	
Suppos**ed**	səˈpəʊz**d**	əd	2	3
		ed	1	
Blam**ed**	‘bleɪm**d**	əd	1	
Happen**ed**	‘hæpən**d**	/hæpnəd/	1	
Used	juːz**d**	əd	11	
Recognize**d**	‘rekəgnaɪz**d**	əd	1	
Chang**ed**	ʧeɪnd**ʒd**	əd	2	
Preferr**ed**	prɪˈfɜː**d**	rəd	2	
Talk**ed**	tɔːk**t**	ət	1	
Develop**ed**	dɪˈveləp**t**	əd	1	
Fac**ed**	feɪs**t**	əd	1	
Serv**ed**	sɜːv**d**	əd	1	
Surpris**ed**	səˈpraɪz**d**	əd	2	
Allow**ed**	əˈlaʊ**d**	əd	2	
Pass**ed**	pɑːs**t**	əd	3	
Call**ed**	kɔːl**d**	əd	3	
Betrey**ed**	bɪˈtreɪ**d**	əd	2	
Advis**ed**	ədˈvaɪz**d**	əd	1	

The /d/ in the past tense of regular verbs was pronounced in 59 instances (out of 61) as the allomorph /d/ regardless of the sonority of the preceding consonant i.e. whether it is voiced or voiceless. This overgeneralization of the allomorph /d/ can be taken as another instance of the effect of spelling on pronunciation, especially because the generalised allomorph is the /d/ and not the /t/. Furthermore, not considering the sonority of the preceding consonants before pronouncing final /d/ lead to the conclusion that the informants rendition of /əd/ in words like ‘wanted’ and ‘decided’, instead of /ˈwɒntɪd/ and /dɪˈsaɪdɪd/, might not be considered a slightly faulty application to the pronunciation rule of ‘ed’ past tense after /t/ and /d/, wherein the epenthetic vowel /ɪ/ is inserted to avoid juxtaposing two consonants sharing the place and manner of articulation. On the contrary, such a pronunciation could be simply attributed to the underlying representation of final ‘ed’, developed by foreign learners of English in general and the informants of the present study in particular. Accordingly, it seems safe to conclude that the faulty pronunciation of the sample is fuelled by either the lack of practicing rules of pronouncing final ‘ed’ or even not knowing how and when to pronounce the allomorphic variations of the regular past morpheme ‘ed’.

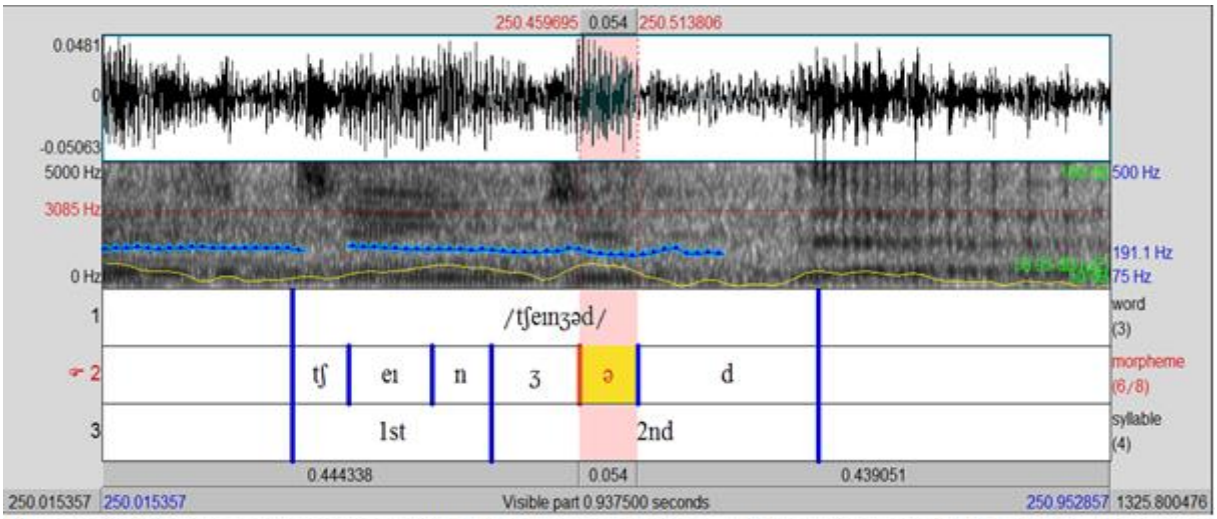

Figure 7. Spectrogram representing the pronunciation of past tense suffix 'ed' in the word 'changed' by one informant

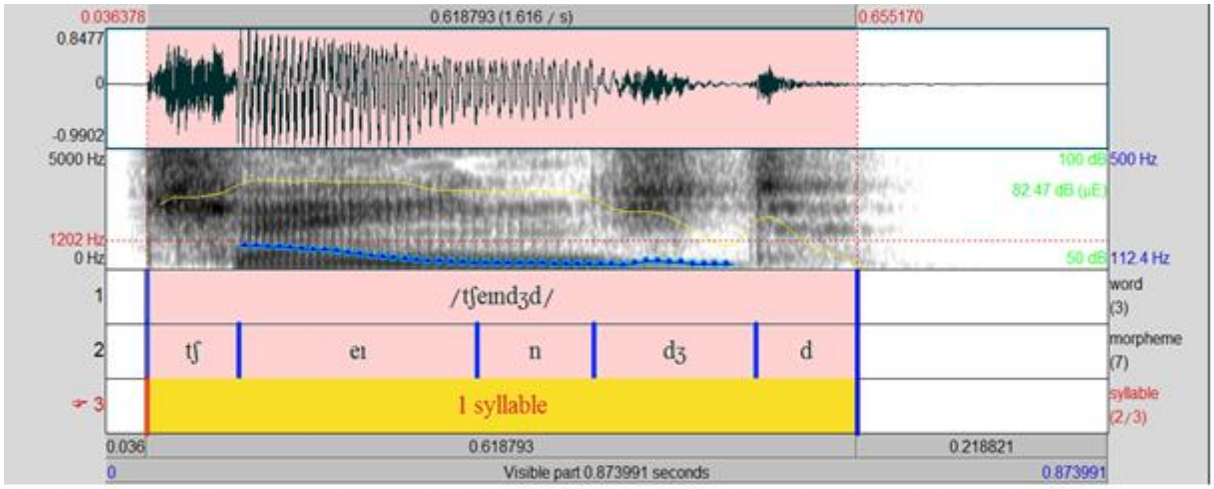

Figure 8. Spectrogram representing the pronunciation of the past tense suffix 'ed' in the word 'changed' by one native. Data of native speakers were analysed to provide norm values for comparison. They were taken from Cambridge Dictionaries Online (http://dictionary.cambridge.org/fr/

4.3.2.2 Syllabic consonants [l̩] and [n̩]

Words ending in syllabic [l̩] and [n̩] were also mispronounced in all their occurrences[2] (137 instances for the lateral and 48 instances for the nasal). The final /l/ was separated from the preceding consonant by /ɒ/ (114 instances), /ʊ/ (14 instances) or /ə/ (9 instances) whereas the final /n/ was only separated by /ə/. This is quite opposite to the pronunciation of syllabic consonants in English where two articulations must be involved. The tip of the tongue

[2] Only the words that appeared in the recordings more than twice were considered. Those words having two occurrences were excluded as well from the analysis unless if they were uttered by the same informant. This is mainly to eliminate the possibility for that erroneous pronunciation to be a mistake instead.

performs no transitional movement between the articulation of what precedes the syllabic consonant and the latter's articulation; it rather remains against the alveolar ridge allowing no vocalic airflow while the back of the tongue raises towards the velum in order to give the consonant a vocalic quality (or releasing the air through the nose to produce the syllabic nasal). However, since the informants of the present study were not sufficiently, if not never, trained in the special articulation of syllabic consonants (as opposed to normal laterals and nasals), they followed a rather spelling-based pronunciation and inserted a vocalic articulation in between; either a back vowel /ʊ/ or /ɒ/, or the schwa. Table 20 illustrates how syllabic consonants were rendered by the informants:

Table 20

The Informants' Pronunciation of [l̩] and [n̩]

Word	Pronunciation	Informants' pronunciation	Number of instances	
Beauti**ful**	ˈbjuːtɪ**fl**	ʊ	12	35
		ɒ	22	
		uː	1	
Peo**ple**	ˈpiː**pl**	ɒ	46	
Exam**ple**	ɪgˈzɑːm**pl**	ɒ	28	32
		ə	4	
Help**ful**	ˈhelp**fl**	ʊ	1	2
		ɒ	1	
sim**ple**	ˈsɪm**pl**	ɒ	5	
Lit**tl**e	ˈlɪtl	ɒ	4	
Perso**nal**	ˈpɜːsə**nl**	ɒ	3	
Trou**ble**	ˈtrʌ**bl**	ə	3	
Vulnerable	ˈvʌlnərə**bl**	ɒ	2	
Cou**ple**	ˈcʌ**pl**	ə	2	
Use**ful**	ˈjuːs**fl**	ʊ	1	2
		ɒ	1	
Capa**ble**	ˈkeɪpə**bl**	ɒ	2	
Situa**tion**	ˌsɪtʃuˈeɪ**ʃn**	ə	12	
Per**son**	ˈpɜː**sn**	ə	20	
Le**sson**	ˈle**sn**	ə	2	
Considera**tion**	kənˌsɪdəˈreɪ**ʃn**	ə	4	
Emo**tion**	ɪˈməʊ**ʃn**	ə	6	
Expre**ssion**	ɪkˈspre**ʃn**	ə	2	
Informa**tion**	ˌɪnfəˈmeɪ**ʃn**	ə	2	

Moreover, in cases where no vowel preceding the syllabic consonant is attested in spelling (peo**pl**e, sim**pl**e, trou**bl**e, lit**tl**e, etc.), the tendency for the informants was to strip the syllabic lateral its vowel-like timbre (keeping only the non-syllabic dark l) and use the second articulation (the back of the tongue raises towards the soft palate) to produce a separate vowel mostly the back vowel /ɒ/ (as it meets the articulatory requirements of a syllabic darkened l) or the weak vowel /ə/[3]. As for the syllabic nasal, the informants, instead of blocking the air while the tongue is against the alveolar ridge and then release it through the nose, they tended to fully articulate the nasal consonant wherein they release the air from the mouth and precede this gesture by a vocalic articulation mostly a schwa. Figures 9, 10, 11 and 12 show sample spectrograms about the difference in the pronunciation of syllabic [l̩] and [n̩] by one informant vs. one native speaker[4]:

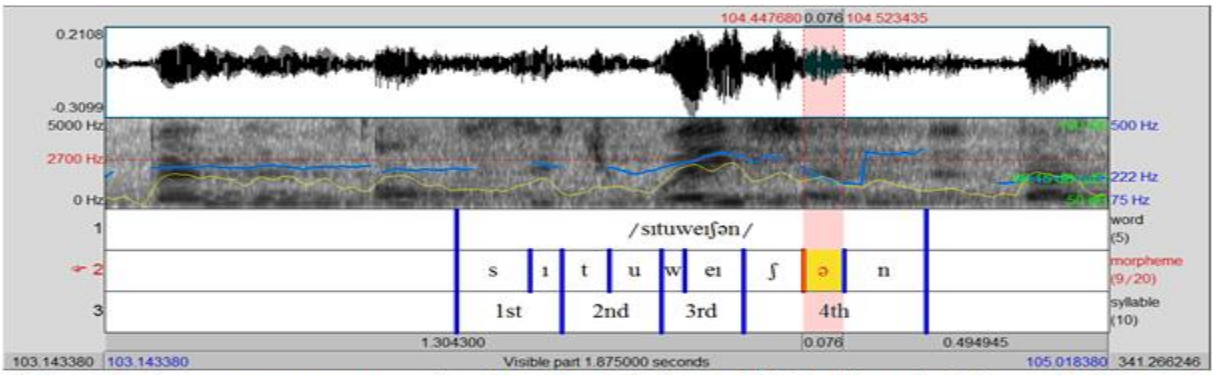

Figure 9. Spectrogram representing the pronunciation of [n̩] in 'Situation' by one informant

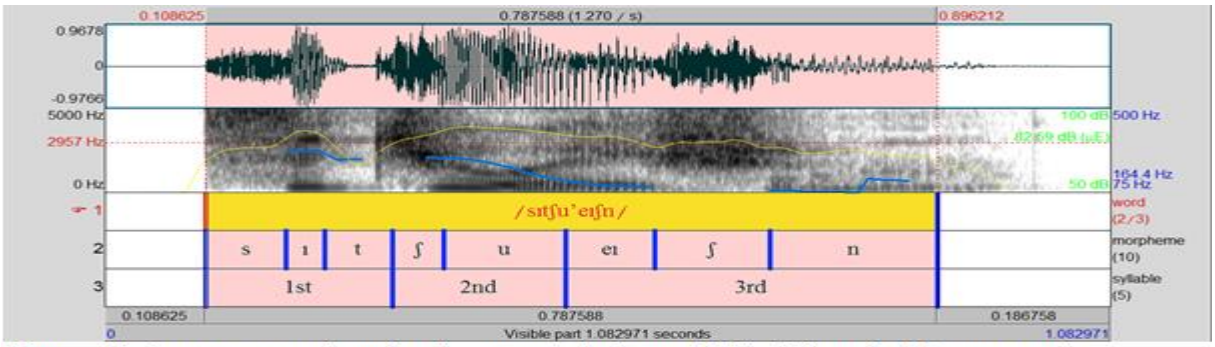

Figure 10. Spectrogram showing the pronunciation of [n̩] in 'Situation' by one native

[3] While this pronunciation is deemed over careful and plainly wrong, some researchers consider it correct especially in American English or in very slow speech.

[4] Data of native speakers were analysed to provide norm values for comparison. They were taken from Cambridge Dictionaries Online (http://dictionary.cambridge.org/fr/).

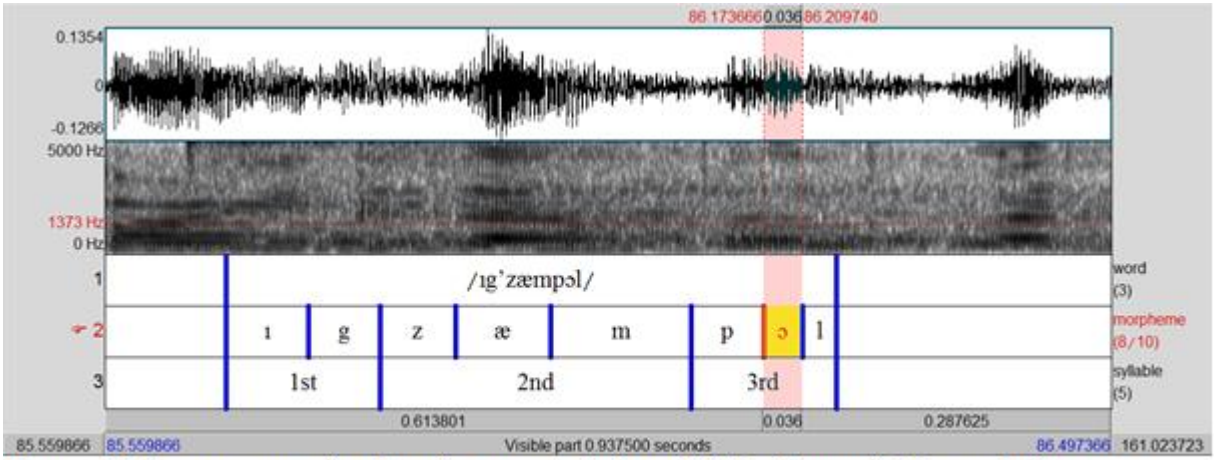

Figure 11. Spectrogram showing the pronunciation of [ɪ] in 'Example' by one informant

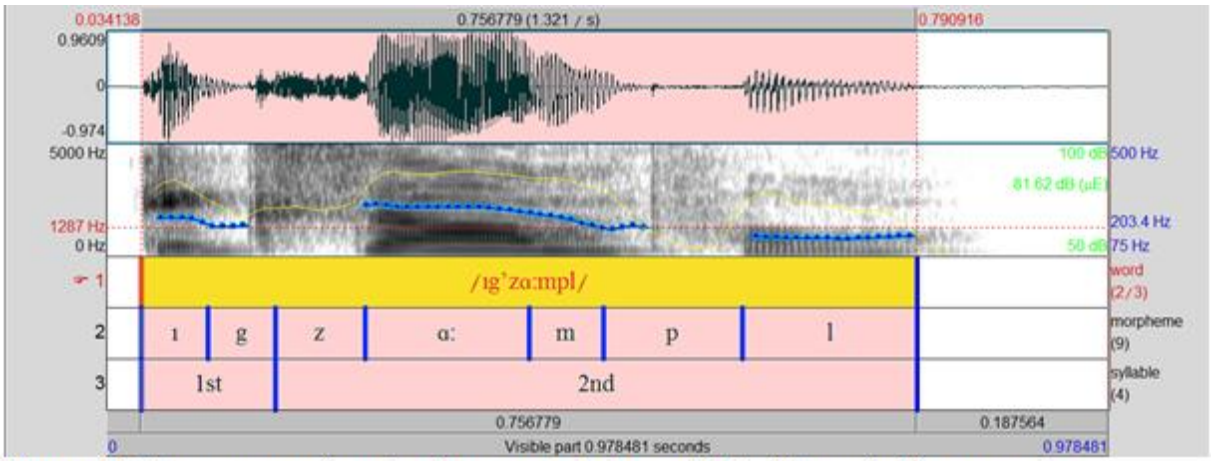

Figure 12. Spectrogram showing the pronunciation of [ɪ] in 'Example' by one native

4.3.3 Stress

In this section, a set of disyllabic words (see Appendix 2) collected from the informants' recordings was deliberately chosen as this word category must contain a schwa in one of the two syllables. Moreover, working with disyllabic words would make the analysis of stress correlates i.e. duration, pitch, and intensity easier. 31 words could be distinguished, among which 21 words are disyllabic by origin whereas the remaining 10 words are made disyllabic by virtue of the informants' mispronunciation. All the different pronunciations of the same word, if any, were considered and in case where there was more than one instance per pronunciation, the mean was calculated and the number of instances was mentioned in the last column (N) in Table 21. The author of the present thesis listened to the recordings as

many times as it was needed in order to identify the stressed syllables. Praat, then, was used to measure the three stress correlates of both stressed and unstressed syllables.

It is worth mentioning that some monosyllables were taken into account during the present analysis of disyllabic words as they were wrongly pronounced by the informants in a way that they became disyllabic. This category includes inflected words ending in the ‘ed’ past tense suffix as well as words ending in syllabic [l̩] or [n̩]. As far as the former is concerned, epenthetic /ə/ was added in all the nine instances (see Appendix 3) /tʌtˈʃəd/, /ˈtʃeɪndʒəd/,/ˈlɒvəd, /ˈfeɪcəd/, and /ˈmærɪəd/. As for the second category, vowels were also added before final liquids and nasals in all the 25 instances: /ˈsɪmp**ɒ**l/, /pɪˈp**ɒ**l/, /helpˈf**ʊ**l/, /ˈjʊzf**ʊ**l/, /ˈtrʌbə**l**/, /ˈkʌpə**l**/, /ˈlesə**n**/, and /pɜrˈsə**n**/. This creation of additional syllables, in the majority of cases, disarranged the usual placement of stress from one syllable to another (/pɪˈp**ɒ**l/, /helpˈf**ʊ**l/, and /pɜrˈsə**n**/).

According to the data grouped in Table 21, pitch seems to be the most stress correlate that is responsible for setting apart stressed syllables from those unstressed (105 instances out of 146, see Appendix 2). Vowel quality is of little importance as weak and short vowels have been attested to bear stress in different occasions (/tʌtˈʃəd/, /pɜrˈsən/, /ˈsɪs.tɜ**ː**/, /ˈb**e**tɜ/, etc.). However, in the majority of instances where stress shift took place, stress was assigned to the syllable whose peak is a strong vowel (*/ˈpɜr.hæps/, */sɪs.ˈtɜ**ː**/, */brʌˈðɜ**ː**/, */ˈ**æ**k.sept/, */weˈðɜ/, */kəˈm**e**nt/, */neˈvɜr/, */mʌˈðɜr/, and */ˈf**ɒ**r.get/). In contradistinction, in the instances where stress was respectfully assigned, vowel quality presented no issue (/ˈt**i**tʃɜ**ː**/ vs. /ˈt**iː**tʃɜ/, /ˈsɪs.tɜ**ː**r/ vs. /ˈsɪ**ː**s.tɜr/, /ˈb**e**tɜ/ vs. /ˈb**eː**tɜ/, etc.). Similarly, intensity had no effect on assigning stress to stressed syllables. The attested difference is rather small, merges roughly between 1/-1 to 4/-2 db (decibel) between stressed and unstressed syllables.

Table 21

Disyllabic Words Stress Correlates as Produced by the Informants

Word		Pitch		Diff	Intensity		Diff	Duration		N
		Str	Unstr		Str	Unstr		Str	Unstr	
Complete	*/ˈkʌm.plit/	282	268	14	65	63	2	266	235	3
Perhaps	*/ˈpɜ:r.hæps/	220	217	3	65	66	-1	216	119	1
Father	/ˈfɑ:ðɜr/	227	212	15	61	61	0	211	166	6
Order	/ˈɒ(:)r.dɜr/	287	270	1	68	65	3	115	136	6
Sister	/ˈsɪ(i:)s.tɜ(:)r/	227	206	21	58	58	0	281	176	7
	*/sɪs.ˈtɜ:(r)/	240	213	27	56	58	-2	219	210	3
Brother	ˈbrʌðɜ(r)	224	209	14	63	61	2	166	164	8
	*brʌˈðɜ:	207	205	2	65	64	1	180	225	1
Accept	(ə)ækˈsept	266	237	28	58	57	1	336	130	10
	*/ˈæk.sept/	247	251	-3	59	57	2	149	371	4
Jealous	/ˈdʒɪ/ælʊs/	230	205	24	61	57	4	202	285	2
Weather	/ˈweðɜ(r)/	230	182	48	63	57	6	216	181	2
-	/ˈweðɜr/	264	254	9	62	62	0	115	141	2
Whether	*/weˈðɜ/	313	302	11	61	64	-3	124	98	2
Comment	*/kəˈment/	325	265	60	66	61	5	251	99	1
Teacher	/ˈti(:)tʃɜ/	208	125	82	56	58	-2	143	273	3
	/ˈtitʃɜ:/	273	257	14	60	64	-4	173	288	1
After	/ˈʌftɜr/	270	266	4	62	60	2	140	231	2
Better	/ˈbetɜ(r)/	284	271	13	62	63	-1	117	118	3
	/ˈbe:tɜ/	239	233	6	66	56	10	178	140	1
Never	/ˈnevɜ(r)/	229	220	9	60	60	0	157	227	3
	*/neˈvɜr/	308	270	38	63	64	-1	150	155	4
Stronger	/ˈstrɔ̃gɜ(r)/	249	204	45	60	59	1	396	156	7
	/ˈstrɒngɜ(r)/	241	199	41	61	60	1	393	153	5
Mother	/ˈmʌðɜr/	240	209	30	63	62	1	145	143	9
	*/mʌˈðɜr/	241	247	-5	62	64	-2	213	128	4
Forget	/fɒrˈget/	257	221	36	60	59	1	284	231	7
	*/ˈfɒr.get/	270	181	89	60	58	2	224	261	3
Forgive	/fɒrˈgɪ:v/	233	230	3	57	58	-1	285	193	6
	/fɒrˈgɪv/	240	234	6	59	57	2	271	199	5
Nervous	/ˈnervøs/	268	166	97	61	57	4	269	218	2
Famous	/ˈfeɪmʊs/	224	214	10	61	57	4	286	411	1
Changed	/ˈtʃeɪndʒət(d)/	170	172	-2	60	57	2	284	301	2
Loved	/ˈlɒvəd/	314	317	-3	67	62	5	156	142	1
Faced	/ˈfeɪcəd/	296	285	11	59	57	2	252	284	1

Word		Pitch		Diff	Intensity		Diff	Duration		N
		Str	Unstr		Str	Unstr		Str	Unstr	
Married	/ˈmærɪəd/	178	159	19	64	60	4	221	356	2
Simple	/ˈsɪmpɒl/	290	253	38	64	64	0	260	179	5
Helpful	/ˈhelpfɒl/	262	206	56	58	54	4	250	169	1
	*/helpˈfʊl/	235	240	-5	57	58	-1	272	183	1
Useful	/ˈjʊzfʊl/	258	264	-6	57	54	3	202	252	1
	/ˈjʊzfɒl/	297	269	28	58	55	3	224	306	1
Trouble	/ˈtrʌbəl/	161	130	26	55	55	0	283	222	3
Couple	/ˈkʌpəl/	199	196	3	62	59	3	109	200	2
Lesson	/ˈlesən/	281	233	47	67	60	7	154	250	2

Note. Str = stressed, Unstr =unstressed, Diff =difference, N =number. Words with unclear spectrograms were not considered in the analysis of stress correlates, that is why the number of the instances used under the heading N does not match, sometimes, the number of the same instances (disyllabic words) mentioned in the previous tables. Asterisks refer to erroneous placements of stress.

As it is the way with native speakers of English, the informants of the present study relied on pitch as the first distinctive stress correlate, but due to not reducing vowels in unstressed syllables (as natives would do), the second important stress correlate namely duration was not as distinctive as it should be. As a matter of fact, it was highly sensitive to both the number of phonemes within the syllable as well as the vowel quality. It fluctuated from one word to another depending on the latter's constituents. Therefore, it sometimes tallied with pitch in identifying the stressed syllable (68 instances) and other times was found completely irrelevant (37 instances). As a result, pitch, is the stress parameter that would differentiate stressed syllables of the subjects under investigation from those of native speakers of English.

Generally speaking, duration is relatively related to the vowel quality within a given syllable. Unstressed syllables are said to have a weak vowel notably 'schwa' in order to give the alternation effect of the stress-timing rhythm. However, no case could exemplify the correct pronunciation of weak syllables as the latter was replaced by the full pronunciation of either one of the sounds devoted to the letter represented in spelling (a, o), or the spelling pronunciation of the letters combination that ought to be pronounced a schwa (er, ou).

In a nutshell, a failure to produce correctly a sound, especially schwa, results in distorting one of the important stress correlates of English namely duration, which sometimes gives prominence to the unstressed syllable at the expense of the stressed one. Even if pitch was respected by the informants in setting apart stressed syllables from those unstressed, the fluctuation in combining pitch and duration in one syllable, in order to give it the enough prominence, is one of the causes responsible for the non-native stressedness produced by the informants under investigation. Besides, not reducing vowels or even adding epenthetic or short vowels where it should not, may lead to stressing the wrong syllable. Therefore, if stress shift takes place, the weak syllable will no longer be weak and will provide a suitable setting to attract stress.

4.4 Confirmation Test

To highlight more the patterns of the rhythmic components as produced by the informants, a confirmation test (Appendix 3) was administered to another group of thirty third year students reading for a BA degree, at the Department of English, Mentouri University, Constantine 1. The test was about pronouncing individual words/sentences containing the schwa in function and content words, 'ed' past tense suffix, syllabic [l̩] and [n̩]. The words/sentences were jumbled to guarantee that students will not copy the pronunciation of the same tokens, which would otherwise be assumed due to closeness in their occurrences. Again, in order to see to what extent the second language i.e. French influences the acquisition of English as a foreign language, the teacher asked the students to level their knowledge of French. Their answers are shown in Table 22:

Table 22

Informants' Level in French

Level	Number of students	%
Good	7	23.33
Average	17	56.66
Bad	5	16.66
Very Bad	1	3.33
Total	30	100

When asked about what they mean by average, which represents the highest percentage (56.66%), students responded that they understand, globally, when they listen to French; they can read it but cannot formally write and speak it or maintain long conversations with other speakers of French. Therefore, the majority of the informants enrolled in this investigation, know, at least, the rudiments of the French language system, notably, vocabulary and, to a fair degree, pronunciation.

4.4.1 Vowel Reduction

The following section verifies whether the informants' rendition of the schwa in the previous error analysis is systematic. The verified patterns encompass the pronunciation of weak and strong forms of function words, the rendition of English words that share the same graphological make up with French, and the pronunciation of schwa in words ending in /r/.

4.4.1.1 Function Words

In order to see whether students are aware of when using the strong form and the weak form of function words, 30 students were asked to read jumbled pairs of sentences containing the most prevalent function words found in the audios of the previous error analysis. Each pair of all the eleven pairs covers the weak as well as the strong pronunciations of one function word (see Appendix 4). We deliberately did not ask the students to read function words in isolation since they should always be strong. Table 23 shows how function words were pronounced by the informants in both of their versions: weak and strong:

Table 23

Pronunciation of Function Words in Weak and Strong Forms

Word	Weak form			Strong form		
	Pronunciation	Number		Pronunciation	Number	
To	**ə**	**2**	30	ʊ	13	27
	ʊ	25				
	u:	2		u:	13	
	u	1		u	1	
Of	ɒ	26	30	ɒ	13	30
	ɔ:	4		ɔ:	17	
Could	ʊ	25	30	ʊ	10	30
	u:	5		u:	20	
For	ɒ	22	30	ɒ	17	30
	ɔ:	8		ɔ:	13	
Can	æ	20	30	æ	13	30
	æ:	4		æ:	11	
	ɑ	5		ɑ	6	
	ə	1				
Was	ɒ	18	30	ɒ	8	30
	ɔ:	11		ɔ:	20	
	ə	1		æ:	1	
				u:	1	
Have	æ	26	30	æ	2	30
	æ:	4		æ:	28	
Should	ʊ	23	30	ʊ	16	30
	u:	6				
	ə	**1**		u:	14	
From	ɒ	25	30	ɒ	19	30
	ɔ:	4		ɔ:	11	
	ə	1				
Has	æ	20	29	æ	4	30
	æ:	9		æ:	26	
at	æ	23	29	æ	2	29
	æ:	6		æ:	27	

Note. The sound /u/ is closer to the French close back rounded vowel more than to the English /ʊ/. Some informants did not pronounce all the function words in the sentences (at, has, to), which explains the non-consistency in the sum of the aforementioned function words.

The striking observation when you scrutinize the scores in Table 23 is that students have a wrong conception about how to pronounce and use weak forms as opposed to strong forms of function words. They, in the majority of cases, keep the same vowel sound of the strong form and merely reduce more or less its duration instead of changing its quality to become more centralized. The schwa was used only in three instances representing a very

poor percentage of the correct use (10%) as opposed to a higher percentage of the wrong use (90%). The latter does not only confirm the strong effect such a mispronunciation plays in shaping the interlanguage of EFL learners in general and in distorting the speech rhythm of English in particular, but also sheds more light on the attitudes learners develop as when to generalize the pronunciation of a given sound to whenever its represented letter in spelling takes place. Accordingly, the lack of awareness of when one should use the strong form of a function word highlights the gap that resides in the curriculum designed to teach 'Phonetics' and 'Oral Expression' modules, as they are the ones that should teach the different aspects of oral accuracy, to undergraduate foreign learners at Mentouri Brothers University.

4.4.1.2 Content Words

Because of the influence of French alphabet on English pronunciation was the main reason behind the deviated interlanguage of the informants enrolled in the previous error analysis, we opted, in the confirmation test, to ask students to read ten English words that share the same graphological make up with French. The words were chosen in a way that the schwa occurs in the first syllable of five words and in the second syllable of the other five words (see Appendix 3). Moreover, intralingual transfer i.e. the pronunciation of the final 'er' in the same way as in middle positions compelled us to give students a set of five words ending in /r/ regardless of the alphabetical representation of the preceding vowel ('er' in fath**er**, 'ure' in meas**ure**, 'our' in lab**our**) as long as it is rendered, most of the time, as the French /œ/ (if followed by r) or /ø/ (if the vocalic r is not pronounced) or the English /ɜ:/.

4.4.1.2.1 Words of French Make up

All the three languages involved in the informants' linguistic repertoire play a major role in the shaping of their pronunciation of English, though French surpasses both English and Algerian Arabic. Among the 10 words used in this error analysis, a good number of students pronounced the schwa correctly in only 3 words namely demon, climate, and organ

(27, 19, and 26 respectively). Furthermore, 149 instances showed a mispronunciation of the schwa in different positions, as it is shown in Table 24, among which 119 are French-based errors and 17 are English-related errors.

Table 24

Pronunciation of Schwa in Content Words of French Make up

Word	Pronunciation		Informants' pronunciation	Number of instances	
S**u**pport	/sə.ˈpɒːt/	**ɪ**	/s**ɪ**.p(ɒ/ɒː-r)ɾt/	8	30
		ə	/s**ə**.pɒːrt/	14	
		ʊ	/s**ʊ**.pɒːrt/	3	
		y	/s**y**.pɒrt/	4	
		ɸ	/s|pɒːrt/	1	
C**a**goule	/kə.ˈguːl/	**æ**	/k**æ**.g(ʊ/uː/ɒ)l/	18	30
		ə	/k**ə**.guːl/	7	
		əʊ	/k**əʊ**gɒl/	1	
		eɪ	/k**eɪ**.g(uː/ʊ/ɒ)l/	4	
F**a**tigue	/fə.ˈtiːg/	**æ**	/f**æ**t(ɪ/ɪː)g/	20	30
		ə	/f**ə**.tiːg/	9	
		ɸ	Not Pronounced	1	
B**a**lloon	/bə.ˈluːn/	**æ**	/b**æ**.l(ɒ/uː/ʊ/ɜ̃)n/	19	30
		ə	/b**ə**.luːn/	11	
P**o**lice	/pə.ˈliːs/	**ə**	/p**ə**.lɪː(s-z)/	11	30
		ʊ	/p**ʊ**.liːs/	2	
		ɒ	/p**ɒ**.l(ɪ/ɪː)s/	15	
		æ	/p**æ**ləs/	1	
		ɸ	/p|lɪːs/	1	
Dem**o**n	/ˈdiː.mən/	**ə**	/d(eː/ɪː/ɪ/aɪ/ɜ/æ)mən/	27	30
		ɒ	/d(e/æ)m**ɒ**n/	2	
		ɸ	/dæm|n/	1	
Clim**a**te	/ˈklaɪ.mət/	**eɪ**	/kl(ɪ/aɪ).m**eɪ**t/	8	30
		ə	/klaɪ.mət/	19	
		ɛ	/klaɪ.m**ɛ**/	1	
		æ	/klaɪ.m**æ**/	1	
		ɸ	/klaɪ.m|t/	1	
Org**a**n	/ˈɔː.gən/	**ə**	/(ɒ/ɒː)rgən/	26	30
		ɑː	/ɒrg**ɑː**n/	4	
Bon**u**s	/ˈbəʊ.nəs/	**e**	/b(ɒ/əʊ).n**e**s/	3	30
		ə	/b(əʊ/ɒ).nəs/	9	
		u	/bɒ.n**u**s/	10	
		ɪː	/bəʊ.n**ɪː**s/	1	
		ɪ	/b(ɒ/əʊ/ɜ)n**ɪ**s/	4	
		uː	/bɔ̃j**uː**s/	1	
		ɸ	/bəʊn|s/	1	
			Not Pronounced	1	

Word	Pronunciation		Informants' pronunciation	Number of instances	
Conc**e**rt	/'kɒnsət/	**ɛ**	/k(æ/ɔ̃/ə/ɒ:)ns**ɛ**rt/	25	30
		ə	/k(æn/ɔ̃)s**ə**t/	2	
		ɜ:	/kɔ̃s**ɜ:**t/	2	
		ϕ	Not Pronounced	1	

Note. Φ stands for zero vowel. Vowels in focus are bolded for easiness of reference.

The informants were fooled by the resemblance between the English and French words given to them and mapped the pronunciation of French vowels while pronouncing the English words. The letter 'u' was rendered as the French /y/ in 15 occasions, the letter 'a' was pronounced /a/ in 58 instances and /ɑ:/ in 4 instances, the letter 'o' was rendered /ɒ/ in 17 occasions, and the letter 'e' was used as either /ɛ/ or /ɜ:/ in 27 instances. Moreover, cases like /s**ɪ**.pɒ:t/ and /bəʊ.n**ɪ-ɪ:**s/ were also attested among some of the pronunciations (13 instances). This exactly matches the pronunciation of French words by some of the Algerians who have a very weak level in French. As a way of example, the French word 'bus' /bys/ is generally speaking rendered as /bɪ-:s/, mainly, due to the absence of the back vowel /y/ in the Arabic language, be it the standard or the dialectal variety. From this, learners weak in French, carry over such a habit when pronouncing words in English sharing the same graphological make up as French words. In addition to interlingual sources of transfer, English itself introduced some tokens of transfer as well. The informants seem to generalize the pronunciation of some sounds to whenever their prevalent representations in spelling appear. To be more concrete, The English sound /ʊ/ (6 instances) was used either with the letter 'u' or 'o' while the sound /eɪ/ was pronounced in 12 instances where the letter 'a' was represented in spelling. All in all, the production of the informants of the present investigation, regardless of the source of transfer adopted, showed a clear gap in the use of vowel reduction.

4.4.1.2.2 Words Ending in /r/

Only two instances where the vowel preceding the final postvocalic /r/, the combination that is represented in spelling by either 'er', 'ure' or 'our', was correctly

pronounced as the half-close central vowel, the schwa. In the remaining 147 instances, the schwa was substituted by a number of vowels: /ɜ/ (129 instances), /ɒ/ (8 instances) and /u:/ (7 instances). Table 25 illustrates the informants' pronunciation of final schwas, preceding the postvocalic /r/:

Table 25

Pronunciation of Final Schwa in Content Words

Word	Pronunciation		Informants' pronunciation	Number of instances	
Fath**er**	/ˈfɑːð.**ə**/	**ɜ**	/f(ɑ/ɑː)ð**ɜ**-r/	30	
Lab**our**	/ˈleɪ.bə/	**ɒ**	/l(eɪ/ʌ).b**ɒ**r/	4	30
		ɜ	/leɪ.b**ɜ**-r/	25	
		ɪə	/leɪ.b**ɪə**/	**1**	
Coff**er**	/ˈkɒ.fə/	**ɒ**	/kæ.f**ɒ**l-r/	**2**	30
		ə	/kɒ.fə**r**-n/	**2**	
		ɪ	/kɒ.f**ɪ**/	**1**	
		ɜ	/kæ/æː/ɒ/əʊ)f**ɜ**-r/	25	
Measu**re**	/ˈme.ʒə/	**ɒ**	/mɪ.ʒ**ɒ**r/	**1**	30
		u:	/mɪ.ʒj**u:**/	**1**	
		ɜ	/m(e/ɪ/eɪ/ɪː).ʒ**ɜ**-r/	28	
Censu**re**	/ˈsen.ʃə/	**ɒ**	/sen.sɒr/	**1**	30
		u:	/s(e/ɪ/ə/æ)n.s-ʃ(j)u:r/	6	
		u	/sen.sur/	**1**	
		ɜ	/s-k(e/æ)ns-ʃ(j)ɜr/	21	
		ϕ	Not pronounced	**1**	

Again, since the informants tend to pronounce the postvocalic /r/, the colouring aspect of the /r/ defines the quality of its preceding vowel, which tends to be more central than a schwa to the point that it is believed to be nearly a back vowel. This explains why the vowels used for substitution, in addition to /ɜ/ that is mostly enhanced by its longer pronunciation in other word positions like j**our**nal /ˈdʒ**ɜ:**nl/ and s**er**ve /s**ɜ:**v/, tend to be specifically back vowels, either /ɒ/, /u/ or /u:/, and not open vowels as such.

4.4.2 Syllable Structure

Five disyllabic words ending in the 'ed' past tense suffix as well as seven words ending in either a syllabic [l̩] or [n̩] were analysed in this section. All the different

pronunciations of the same token, if any, were considered and the number of instances of all the wrong pronunciations was mentioned in addition to the correct ones.

4.4.2.1 'Ed' Past Tense Suffix

The mispronunciation of 'ed' past tense suffix in the confirmation test (see Table 26) backs up the findings obtained from the previous error analysis (see Table 19), yet not to the same large extent as it was attested before (32% vs. 100%). One possible reason for this discrepancy in the results obtained in the error analysis and confirmation test can be attributed to the fact that the data in the former were extracted from spontaneous speech in which longer units come into play; whereas in the second error analysis, learners were asked to read words in isolation. This suggests that the longer the unit, the less paying attention to details will be. Learners while speaking are more interested in conveying the meaning rather than speaking correctly. Such a strategy results in non-possible communications (according to Hymes' criteria of a communicative competence, 1971) either grammatically or phonetically speaking. Table 26 shows the pronunciation of 'ed' past tense suffix by the informants:

Table 26

Pronunciation of 'ed' Past Tense Suffix

Word	Pronunciation	Informants' pronunciation	Number of instances	
Played	/pleɪd/	/pleɪəd/ /pleɪd/	**13** 17	30
Missed	/mɪst/	mɪ/iːsd misəd	22 **8**	30
Parked	/pɑːkt/	pɑːrkt/d pɑːrkəd/t paːrk	16 **13** 1	30
Jumped	/dʒʌmpt/	dʒʌmpt/d d/ʒæmpəd jumper	18 **11** 1	30
Called	/kɒːld/	kɒːld kɒːləd	26 **4**	30

4.4.2.2 Syllabic Consonants [l̩] and [n̩]

Few are the instances where syllabic [l̩] and [n̩] were maintained in the second error analysis (14 instances out of 210 i.e. 6%). The back vowel /ɒ/ was the mostly used in order to separate the syllabic [l̩] from the preceding consonant, as the back of the tongue raises towards the velum, an articulation that is exclusively performed when producing back vowels (103 instances, 68%). Likewise, the same principle of stripping off the syllabic consonant from its vocalic quality and thereby producing a separate vowel applies to the syllabic nasal, wherein /ə/ was produced in 55 instances (91%). Table 27 shows the informants' different renditions of syllabic [l̩] and [n̩]:

Table 27

Pronunciation of [l̩] and [n̩]

Word	Pronunciation	Informants' pronunciation		Number of instances		
Noble	[ˈnəʊbl̩]	**l̩**	ˈn(əʊ/ɒ)bl̩	3	27	30
		ə	n(ɒ/əʊ)bəl̩	14		
		ɒ	n(əʊ/ɒ)b**ɒ**l̩	13		
Travel	[ˈtrævl̩]	**l̩**	trævl̩	1	29	30
		ə	trævəl̩	6		
		ɒ	trævɒl̩	23		
Journal	[ˈdʒɜːnl̩]	**l̩**	dʒɜːnl̩	3	27	30
		ə	dʒʊrnəl̩	5		
		ɒ	dʒ(ʊ/ɜː)rn**ɒ**l̩	22		
Scandal	[ˈskændl̩]	**l̩**	skændl̩	1	29	30
		ə	skændəl̩	4		
		ɒ	skænd**ɒ**l̩	22		
		æ	sk(æn/ɔ̃)d**æ**l̩	3		
Bible	[ˈbaɪbl̩]	l̩	baɪbl̩	3	27	30
		ə	baɪ/iːbəl	4		
		ɒ	baɪ/iːb**ɒ**l̩	23		
Occasion	[əˈkeɪʒn̩]	n̩	əkˌeɪʒn̩	2		30
		ə	(ɒ/ə/əʊ)kˌeɪʒən̩	28		
Vision	[ˈvɪʒˌn̩]	n̩	vɪʒˌn̩	1	28	30
		ə	v(ɪ/iː/e)ʒəˌn̩	27		
		e	vɪʒ**e**n̩	1		

4.4.3 Stress

The same set of disyllabic words used in the confirmation test of vowel reduction was used in the analysis of stress correlates as well. All the different pronunciations of the same word, if any, were considered and in case where there was more than one instance per pronunciation, the mean was calculated and the number of instances was mentioned in the last column (N) in Table 28. Stressed syllables were identified by the author of the present thesis after listening to the recordings as many times as needed. Once the stressed and unstressed syllables were identified, duration, pitch and intensity were measured using Praat (see Appendix 5). Table 28 shows the obtained measurements:

Table 28

Stress Correlates of Disyllabic Words as Produced by the Informants

Word		Duration		Pitch		Intensity		N of Instances
		Str	Unstr	Str	Unstr	Str	Unstr	
Support	/sɪ.ˈpɒrt/	486	180	191	161	70	68	3
	/sə.ˈpɔːrt/	480	158	216	215	61	55	5
	/sʊ.ˈpɔːrt/	551	191	218	224	62	58	1
	/su.ˈpɒrt/	541	138	130	127	73	68	1
	*/ˈsɪ.pɒ(ː)rt/	285	430	220	206	62	62	6
	*/ˈsə.pɔːrt/	164	526	268	250	68	71	8
	*/ˈsʊ.pɔːrt/	212	405	205	212	62	67	3
	*/ˈsu.pɒrt/	214	544	277	242	55	58	2
Cagoule	/kæ.ʾguːl/	363	201	175	158	68	65	5
	/kæ.ˈgæʊl/	279	124	156	135	71	72	1
	/keɪ.ˈgɒl/	436	173	285	238	80	80	1
	/kə.ˈguːl/	369	138	217	222	69	66	1
	*/ˈkæ.gɒ-ʊl/	201	292	243	239	71	69	8
	*/ˈkəguː-ʊl/	110	423	252	210	65	67	5
	*/ˈkæ.guːl/	140	356	251	234	68	66	5
	*/ˈkeɪguː-ʊl/	231	417	213	197	60	59	3
	*/ˈkəʊgɒl/	191	266	267	250	68	65	1
Fatigue	/fə.ˈtiːg/	420	145	188	108	57	55	3
	/fæˈtɪːg/	465	189	124	121	70	68	1
	*/ˈfætɪg/	159	273	214	191	70	63	6
	*/ˈfætɪːg/	168	397	243	201	63	61	12
	*/ˈfə.tiːg/	131	421	260	204	58	60	7

Word		Duration		Pitch		Intensity		N of
		Str	Unstr	Str	Unstr	Str	Unstr	Instances
Balloon	/bæ.ˈluːn/	370	123	227	208	68	68	11
	/bə.ˈluːn/	384	82	225	203	74	74	6
	*/ˈbæ.lʊ-ɒn/	166	240	214	214	68	66	4
	*/ˈbælɔ̃/	187	183	234	229	71	69	2
	*/ˈbə.luːn/	80	407	225	219	66	65	5
	*/ˈbæ.luːn/	144	335	241	254	73	69	2
Police	/pɒ-ʊ.ˈlɪːs/	483	111	243	245	61	64	4
	/pə.ˈlɪːs/	435	86	189	168	69	67	6
	*/ˈpə.lɪːs/	83	467	265	254	70	70	4
	*/ˈpɒ.lɪs/	142	309	247	227	71	67	8
	*/ˈpɒ-ʊ.lɪːs/	142	423	219	216	69	66	7
Demon	/ˈdɪː.mən/	139	270	218	210	72	70	14
	/ˈdæ-e.mən/	145	229	241	253	70	68	9
	/ˈdæmɒn/	225	279	226	251	72	67	1
	/ˈdaɪ.mən/	184	281	257	256	69	65	1
	*/de-ɜ :.ˈmən/	216	117	239	233	69	72	3
	*/de.ˈmɒn/	313	137	280	271	67	71	1
Climate	/ˈklɪ.meɪt/	236	504	262	239	66	64	6
	/ˈklaɪ.mət/	264	332	241	229	66	62	15
	/ˈklaɪ.mɜ/	212	304	280	273	73	73	1
	/ˈklaɪ.meɪt/	248	438	232	214	67	63	1
	/ˈklaɪ.mæ/	277	234	251	236	71	70	1
	*/klaɪ.ˈmət/	293	293	165	135	69	71	3
	*/klɪ.ˈmeɪt/	414	162	130	111	78	74	1
Organ	/ˈɒ(ː)rgən/	199	156	239	233	70	65	20
	*/ɒ(ː)r.ˈgən/	255	197	215	191	71	71	6
	*/ɒr.ˈgɑːn/	356	158	221	225	69	72	4
Bonus	/ˈbəʊnə-ɪs/	205	421	245	227	66	61	8
	/ˈbɒnu-ə-ɪ-s/	172	381	247	243	68	64	8
	/ˈbɜ.nɪs/	121	272	206	202	68	65	1
	*/bɒ.ˈnu-es/	374	125	197	190	68	70	7
	*/bəʊ.ˈnəs/	303	189	152	140	65	67	3
	*/bɔ̃ˈjuːs/	522	67	128	105	70	72	1
Concert	/ˈkæ-ənsɛr(t)/	181	504	122	226	62	61	10
	/ˈkɔ̃.sɜ(ː)rt/	201	428	245	236	67	67	15
	/ˈkɔ̃sət/	187	364	188	148	63	65	2
	*/kɔ̃ˈsɜrt/	477	137	138	110	76	75	1
	*/kən.ˈsɜrt/	474	133	159	124	77	69	1
Father	/ˈfɑ.ðɜr/	214	234	207	192	68	66	8
	/ˈfɑː.ðɜr/	236	231	230	215	67	66	20
	*/fɑ.ˈðɜ/	251	186	249	196	69	67	2
Labour	/ˈleɪ.bɒr/	198	245	161	160	72	67	3
	/ˈleɪ.bɜ(r)/	209	242	224	221	68	66	23
	/ˈleɪ.bɪə/	216	322	215	213	64	62	2
	*/leɪ.ˈbɜr/	200	151	155	140	71	74	1
	*/lʌ.ˈbɒr/	241	183	134	105	73	72	1

Word		Duration		Pitch		Intensity		N of
		Str	Unstr	Str	Unstr	Str	Unstr	Instances
Coffer	/ˈkæ(ː)fɜ-ɒ(r)/	166	309	263	260	65	63	10
	/ˈkɒ.fɜ(r)/	155	287	223	203	68	65	16
	/ˈkəʊ.fɜr/	147	283	197	198	79	74	2
	*/kɒ.ˈfɜr/	187	146	167	153	71	74	1
	*/kæ.ˈfɜr/	250	129	249	246	62	63	1
Measure	/ˈme.ʒɜ(r)/	204	247	206	200	67	66	17
	/ˈmɪ.ʒɜ-ɒr/	188	272	236	234	65	61	4
	/ˈmeɪ.ʒɜ/	250	227	230	192	65	61	1
	*/me.ˈʒɜ/	230	189	223	189	68	67	6
	*/me.ˈʒɒr/	230	171	146	140	78	79	1
	*/mɪ.ˈʒjuː/	324	166	230	230	71	71	1
Censure	/ˈsen.ʃ-sɜ(r)/	281	287	219	113	66	65	18
	/ˈsən.ʃ-sjuːr/	283	536	250	254	63	63	2
	/ˈkænsɜr/sjuː/	157	393	262	174	69	67	2
	*/sen.ˈʃuːr/	423	234	250	270	74	74	1
	*/sen.ˈʃ-sɜ®/	285	248	237	221	68	67	4
	*/kən.ˈsjuː/	373	196	258	260	62	61	1
	/ɪnˈʃjuː/	418	122	248	246	72	70	1

Note. Str = stressed, Unstr =unstressed, N =number. Asterisks refer to erroneous placements of stress.

The conclusion that can be drawn from the informants production as regards the acoustic assignment of lexical stress is that the three correlates of stress do not necessarily co-occur in one syllable in order for the latter to be set apart from surrounding syllables. Intensity and vowel quality, by way of example, are not distinctive (short and reduced vowels bore stress in different occasions (89 instances) instead of long vowels that were the peak of unstressed syllables: */ˈsə.pɒːrt/, */ˈkə.guːl/, */ˈfætɪːg/, */de.ˈmən/, */klaɪ.ˈmət/, etc.). Pitch, again, seems to be the likely parameter that best differentiates between stressed syllables and those unstressed (327 instances out of 439[5]). As for duration, we could notice that when the correct stress assignment is respected in words cuing stress on the first syllable (147 instances), stressed syllables are longer in duration than unstressed syllables (49 instances), and when stress shifts from its correct placement (98 instances), unstressed syllables were longer instead /kə.ˈ**guːl**/ vs. */ˈkæ.**guːl**/. The opposite can be said about when stress was

[5] 11 instances were excluded from the analysis as they were either not pronounced or confused with other words: concert vs. cancer.

correctly assigned to disyllabic words bearing stress on the second syllable (292 instances), unstressed syllables are longer in duration than unstressed syllables (102 instances) while stressed syllables are longer if stress is wrongly assigned to the first syllables (190 instances). This entails that duration is a function of both the number of segments within the syllable as well as the quality of the vowel. The latter indirectly influenced stress assignment in the informants' productions as the longer syllables, most of the time (82%), contained full vowels as opposed to what should be, i.e. the schwa (17%). Again, it seems safe to conclude that replacing reduced vowels notably the schwa by full vowels results in distorting the distinctive role that duration plays in differentiating between the native speakers and non-native speakers rendition of stressed and unstressed syllables.

Conclusion

The error analysis carried out in the present chapter has revealed that the rhythmic components of the informants under investigation differed from how they should be rendered with reference to the norms of the English language. Vowel reduction, mainly the use of the weak vowel schwa was, to a large extent, absent in the informants' productions. Similarly, the mispronunciation of 'ed' past tense suffix and the misarticulation of syllabic consonants [l̩] and [n̩] created a different pattern of syllable structure as far as the attested tokens are concerned. Besides, vowel quality was shown to influence one of the most distinctive correlates of stress namely duration, which, in turn, reduced the unequivocal prominence of one syllable over another. Therefore, the arrhythmic performance of the learners is strictly related to the failure to produce some sounds that can affect the natural flow of speech, mostly the reduced vowel schwa and syllabic consonants.

CHAPTER FIVE

The Interlanguage Rhythm of the Undergraduate Students

CHAPTER FIVE

The Interlanguage Rhythm of the Undergraduate Students

Introduction

The major aim of this chapter is to identify the rhythmic category of the interlanguage of 63 third year students majoring in English at Mentouri University: does it belong to the classical stress-timed vs. syllable-timed dichotomy or rather to the recent phonological-based continuum? To answer this question, an acoustic segmentation was conducted with the help of Praat, international speech analysis software. The measured rhythm metrics are the %V and ΔC generated by Ramus et al. (1999). The results obtained will be compared with those of the three languages known to the informants: Algerian Arabic, French, and English that are taken from the study of Hamdi et al., 2004. This is mainly to best classify the rhythm of the interlanguage under investigation, knowing that different features (segmental and suprasegmental) are responsible for shaping the rhythm of a given interlanguage.

5.1 Subjects

Sixty three third year students reading for a BA degree at the Department of English, Mentouri University, during the academic year 2012-2013 were involved in the present study. The choice of the population is based on the fact that the Licence degree is obtained after successfully completing three years of study. Therefore, students at that level are presumably supposed to have a good command of English both in using it and understanding it. Though all the informants study at Mentouri University, they do not all reside in Constantine city as such. Table 29 lists the informants' regional varieties:

Table 29

Informants' Place of Residence

Dialect	Number
Constantine	53
Mila	3
Ghardaïa	1
El Taref (El Kala)	1
OumBouaghi	1
Setif	1
Skikda	2
BordjBouArreridj	1

5.2 Recording Procedure

The data were collected deliberately at the end of the academic year 2012-2013 for two main reasons. First, to ensure that the informants took all the courses scheduled for the third year and second, to provide the best environment for the recording process (less background noise and available laboratories).

Students were gathered in one classroom and asked to read silently the International Phonetic Association's story 'the north wind and the sun'[1] (Appendix 6), as many times as they needed in order to get acquainted with the passage. The choice of using scripted speech instead of non-scripted speech is of twofold: to make sure that consonantal and vocalic intervals are not altered by factors that might increase or decrease the duration of intervals such as the syntactic-lexical structure and idiosyncratic speech styles. By doing so, any calculated difference would be more likely the result of rhythmic features rather than individual differences between speakers. Second, the insufficient EFL learners' vocabulary repertoire as well as hesitations, false starts, among others, would have prevented the informants from producing natural speech, hence weakening the process of measuring the metrics of speech rhythm.

[1]A story used in the Handbook of the International Phonetic Association as a sample to represent all phonemic contrasts in various languages including English.

For authenticity purposes, the informants were not allowed to discuss the pronunciation of the words, their meanings or engage in whatever communication (including using dictionaries) that might lead to a change in their actual level of proficiency and fluency.

The recording process took place in a laboratory at the Department of English, Mentouri University, and students were recorded individually by means of Praat, using a condenser microphone. The author's laptop was used as the main equipment for completing the task.

5.3 Segmentation Tool and Analysis Procedure

All the 63 recorded files (approximately 40 to 50 seconds per each file) were segmented (see Appendix 7 for a sample) by the author of this study following the experimental procedures put by Ramus et al. (1999). The speech analysis software, Praat, was used to tokenize the audio files as well as to segment the phonemes into vowels and consonants sequences (see Figure 13 for a sample), relying on acoustic (formants, shape of spectral waveforms, etc.) and audio cues. The criteria responsible for the identification of vowels and consonants adopted in this study comply with those generated by Ramus et al. (1999):

- Formants were basically the main criterion used to mark the offset and onset of vowels and consonants, but the audio cues took precedence over in the absence of clear spectral cues.

- The phenomenon of assimilation was taken into consideration. Whenever there was no clear- cut between the offset of some words and the onset of what follows, they were merged in one phoneme.

- Pauses and hesitations were marked by the symbol # and were excluded from the analysis and measurements.

- Pre-vocalic (wind /**w**ind/) and inter-vocalic (the one /ðə**w**ʌn/) glides were marked as Cs whereas post-vocalic glides (ble**w** /bluː/-pronounced by many /bləʊ/-) were marked as Vs as they were phonetically transcribed as a vowel sound in the first place.

- The post-vocalic /r/ has been labelled C whenever pronounced.

- Unlike the burst phase of plosives that is clearly observed on spectrograms, neither visual nor audio cues can help in determining how long the hold phase of initial-voiceless plosives (p, t, k) lasts as it is represented by silence. Therefore, we arbitrary opted not to take into consideration this phase while analysing the present data.

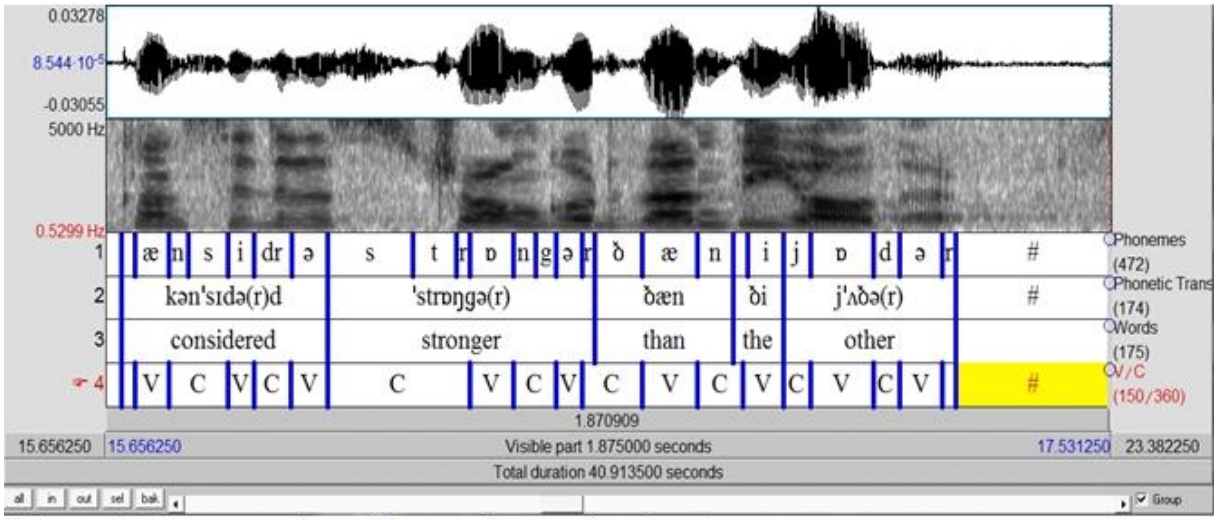

Figure 13. Segmentation of a speech sample using Praat

5.4 V% and ΔC Measurements Procedures

The first step was to merge any string of consecutive vowels or consonants, except those separated by a pause, in the same sequence at the V/C annotation tier (highlighted in red in Figure 13) since the concern of the present study is to measure the proportion of vocalic and inter-vocalic intervals and not the duration of individual phonemes per se. As a way of illustration, /ðænðə/ was segmented as follows: |CVCV| where the second C refers to both /n/ and /ð/.

The second step was to compute the proportion of vocalic intervals' duration and the standard deviation of the duration of intervocalic intervals (V% and ΔC, respectively) using Correlatore, software specially designed to measure different rhythm metrics (see Figure 14). The choice behind using this set of metrics over nothers is that V% and ΔC were the first derived rhythm metrics that took into account the implementation of the phonological properties associated to stress-timing and syllable-timing, and that they are directly related to variability in the number of consonants (ΔC) and consonant/vowel ratio (%V).

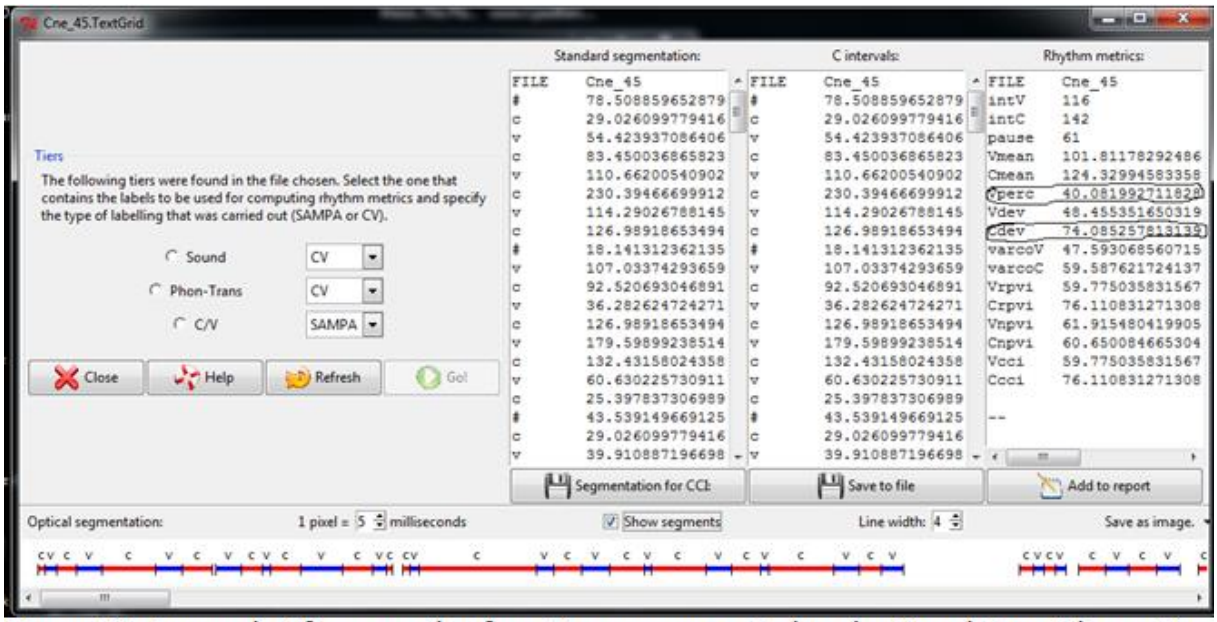

Figure 14. Screenshot for a sample of metric measurements done by Correlatore. The metrics in focus are circled.

There was no need to measure the individual duration of vowel and consonant sequences since Correlatore automatically subtract pauses (≠) from the whole duration of the audio file, thereby gives the sum of all V and C sequences.

5.5 Results and Discussion

After measuring V% and ΔC of all the 63 audio files (see Appendix 8 for individual scores), the Mean of each metric was counted. Table 30 shows the mean obtained when counting %V and ΔC of all the 63 audio files:

Table 30

Mean Values of %V and ΔC

Metric	Mean
%V	40.87
ΔC	64.75
V duration (ms)	98 (46.66%)
C duration (ms)	112 (53.33%)

The results show the Mean values of %V and ΔC of all the participants. The proportion of vocalic intervals falls in the forties range (40.87), representing less than 50% of the overall duration of the passage recorded (46.66%). The value of the standard deviation of the consonantal intervals displays a higher value and falls in the sixties range (64.75) which means that it represents more than 50% of the overall duration (53.33%).

Before embarking on the discussion of the results, it is worth mentioning that the present analysis departs from what is a common consensus of speech rhythm among professionals in the field as well as non-professionals. Generally speaking, speech rhythm is included in the branch of suprasegmentals since it deals with how speech sounds or segments are patterned together to form a sort of tone. However, given the fact that the latter has to do with a timing regularity of intervals, the length of the constituents of those intervals is equally important. As a matter of fact, relating speech rhythm only to what is beyond the segment is, we believe, something of a misnomer since a mispronunciation and/or a slight change in sounds acoustic characteristics definitely results in a distortion of the speech rhythm as a whole, as will be shown in the upcoming results.

The results obtained (see Table 30) show a weak correlation between %V and ΔC (40.87 and 64.75) which is not statistically significant (r=0,013, p= 0.91). According to Ramus et al. (1999), the rhythmic class that best fits this correlation is the stress-timed category. The latter exhibits a variation in the syllable structure which implies variability in the number of consonants included within a syllable as well as variability in the overall

duration of individual consonants within the syllable. Lower values of %V are an inescapable result of higher ΔC as the more consonants used, the fewer vowels displayed.

At first glance, such scores give the impression that the interlanguage performance is more or less native-like as they put it in the vicinity of stress-timed category. However, the values here do not present an accurate picture of the data and seem, accordingly, misleading. A closer inspection on the gathered data will clarify such a seemingly native-like correlation.

5.5.1 ΔC Analysis

The following reasons can be held responsible for the higher percentage of ΔC:

5.5.1.1 Unrestricted Retention of /r/

What makes the informants' ΔC higher is first the retention of the /r/ sound in all phonological environments; this is shown more or less in all the participants' pronunciation of words containing the postvocalic /r/ in non-final and final positions (see Tables 31 and 32, respectively). Both interlingual and intralingual transfer can account for this faulty realization of /r/:

5.5.1.1.1 Interlingual Transfer

Unlike the English /r/, which is pronounced only before vowels or intervocalically, its Arabic and French counterparts are pronounced before and after vowels: رتبة/**r**utbæ/ (rank), حمار /ḥima:r/ (donkey), **r**endre /**r**ɔ̃drə/ (give back), a**rr**ondi /a**r**ɔ̃di/ (rounded), respectively (except for the French 1st group infinitive verbs: mange**r** /mɔ̃ge/ (to eat). Therefore, Algerian learners of English are accustomed to the Arabic's letter-to-sound correspondence orthographic system i.e. each grapheme represents one phoneme and to the more or less consistent and predictable pronunciation rules of French (except for silent letters, nasal vowels with different grapheme representations and elision). Accordingly, in their quest to learn English, which is highly deemed to lack correspondence between pronunciation and

spelling, they rely on the attitudes they developed on the orthographic systems of their L1 and L2 and use them when speaking English (see Table 31). Moreover, since English shares the same alphabet as French, such a resemblance in spelling militated, enormously, against the correct pronunciation of English sounds since the informants under investigation were exposed to French before learning English. Consequently, they tend to model the latter's pronunciation rules on that of French and pronounce the majority of sounds in the same manner as it would be pronounced in the French system.

Table 31

Retention of /r/ Sound

Word	Informants' pronunciation	French possible source of transfer	Arabic possible source of transfer	Number of students
/nɔːθ/	/nɔː**r**θ/	/nɔʁ/	-	54
/wɔːm/	/wɔː**ɹ**m/	-	/wa**r**d/	55
/ˈfɜːst/	/ˈfɜː**ɹ**st/	-	-	53
/kənˈsɪdəd/	/ˈkɔ̃sɪd**r**əd/	/kɔ̃sideʁe/	-	61
/hɑːd/	/hɑː**r**d/	-	/lla**r**ḍ/	54
/wɔːmli/	/wɔː**ɹ**mli/	-	-	58

In the same respect, Iddou-Derraz (2009) limited the influence of French in the Algerian context at the phonological level to English words having the same form and meaning as French words. Accordingly, in addition to individual sounds, interlingual transfer can be seen in words having almost the same graphological make-up in both English and French: *north vs. nord* and *considered vs. considerer* (see Table 31). In the majority of cases, the /r/ is retained and under some circumstances is substituted with a trill that is mostly used in Dialectal Arabic. This shows the influence of the mother tongue on learners' pronunciation even if French is the language used as the source of the graphological transfer.

Based on such a discrepancy, students are more likely to employ the attitudes they developed about the orthographic systems of their previously known languages while attempting to acquire the one of the language being learnt. They, indeed, pronounced the

English /r/ whenever it occurred. Figures 15, 16 and 17 show sample spectrograms illustrating the retention of postvocalic English /r/:

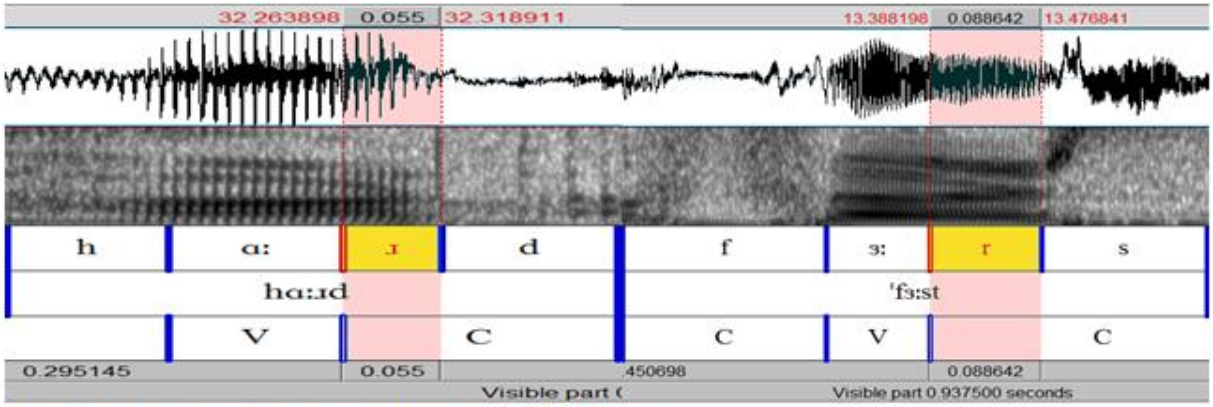

Figure 15. Retention of /r/ in /hɑːɹd/ and /ˈfɜːɹst/

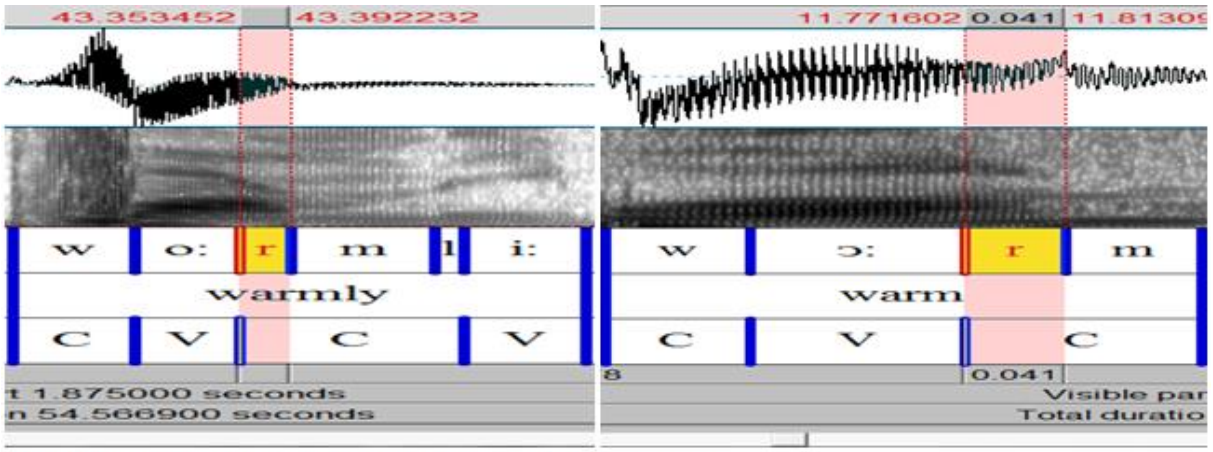

Figure 16. Retention of /r/ in /wɔːrmli/ and /wɔːrm/

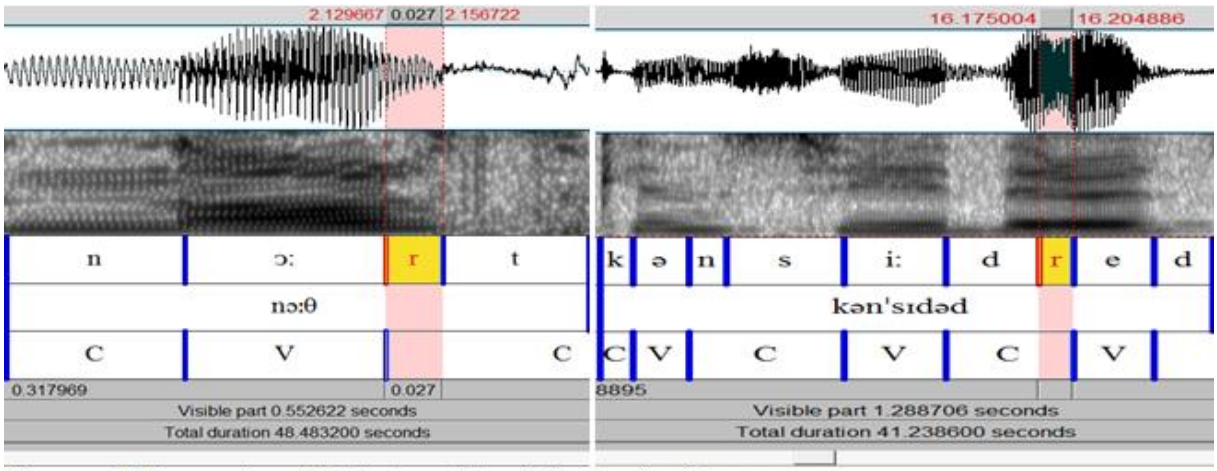

Figure 17. Retention of /r/ in /nɔːrθ/ and /kənˈsɪdrəd/

5.5.1.1.2 Intralingual Transfer

Intralingual transfer can, by the same token, be held responsible for the informants' faulty pronunciation of postvocalic /r/, especially in last positions. This recurrent retention of postvocalic /r/ can be related to the students' obsession and pursuit of sounding American, even if the pronounced /r/ is unequivocally far from being the American retroflex approximant. The informants replaced the latter in the majority of cases with the trill in final positions: /ˈstrɒŋgə**r/, /**ˈtrævlə**r/**, /ˈʌðə**r/,** and **/**mɔː**r/** (see Table 32 and Figures 18, 19, 20 and 21 for sample spectrograms). Consequently, a total distortion of rhythm is noticed as a wrong retention of /r/ triggers a change in its quality and, occasionally, in the quality and quantity of the preceding vowels which are more lengthened or shortened than what should be (as in the word /ˈtrævələ/, which was rendered /ˈtrævlɒr**/)**.

Table 32

Final /r/ as Pronounced by the Informants

Word	Informants' pronunciation	Retroflex /r/	Trill /r/	Standard /r/
/ˈstrɒŋgə/	/ˈstrð/ɔːgə**r/**	4	17	13
/ˈtrævələ/	/ˈtrævlə/ɒ**r/**	4	19	11
/ˈʌðə/	/ˈɒ/ɔː/ʌ/æːðə**ɹ/**	4	18	17
/mɔː/	/mɔː**ɹ/**	5	18	35
/wə/	/we**r/**	4	7	23

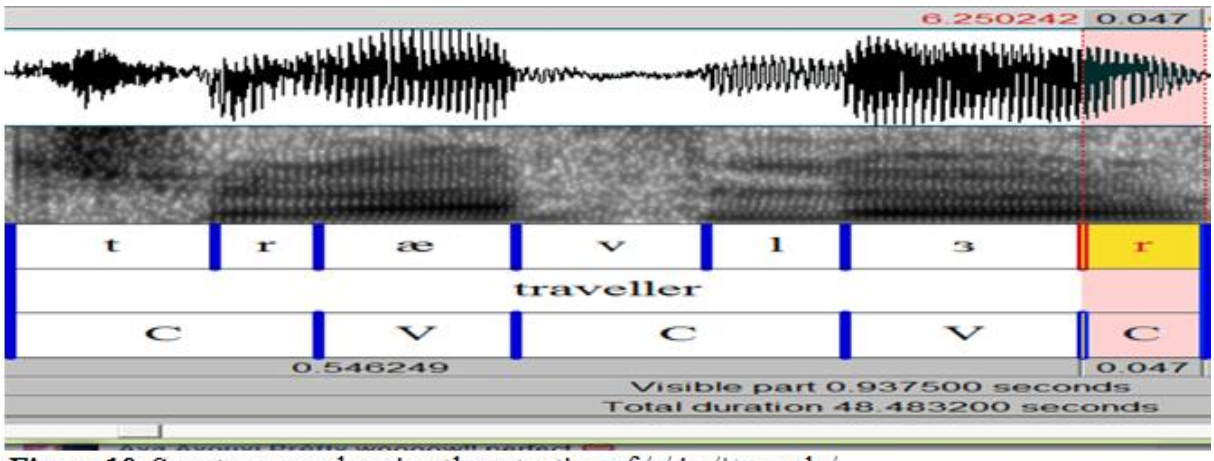

Figure 18. Spectrogram showing the retention of /r/ in /ˈtrævələ/

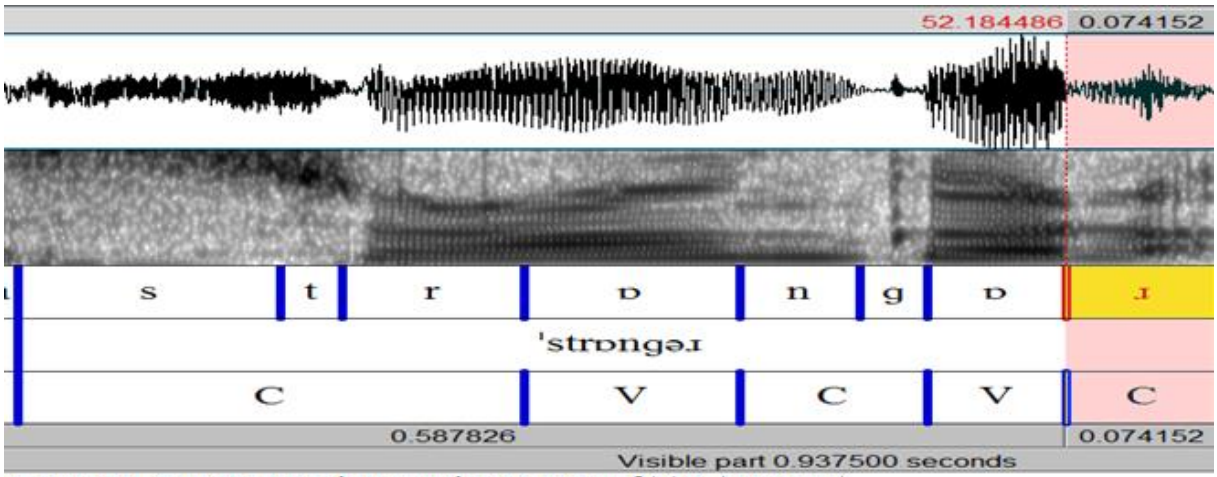

Figure 19. Spectrogram showing the retention of /r/ in /ˈstrɒŋgə/

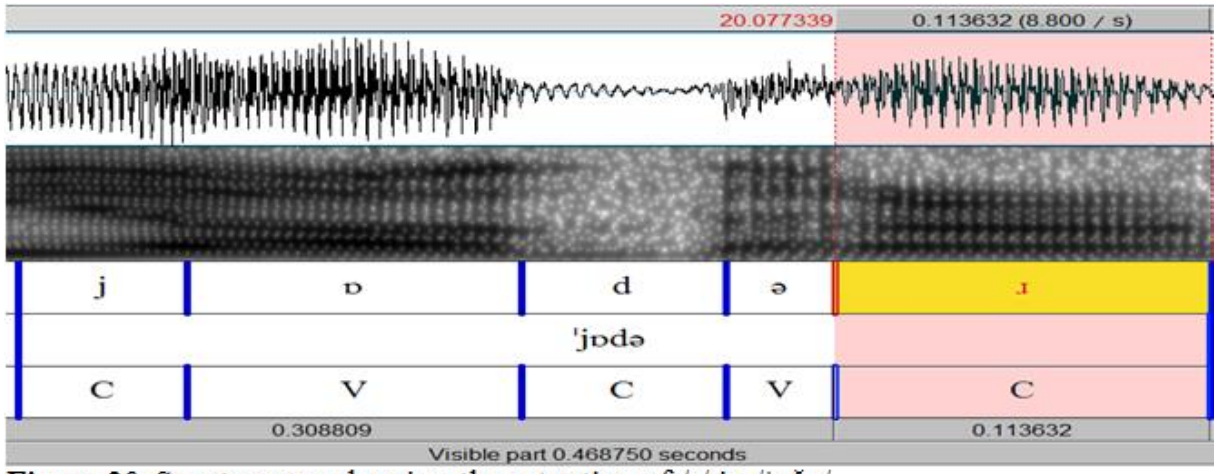

Figure 20. Spectrogram showing the retention of /r/ in /ˈʌðə/

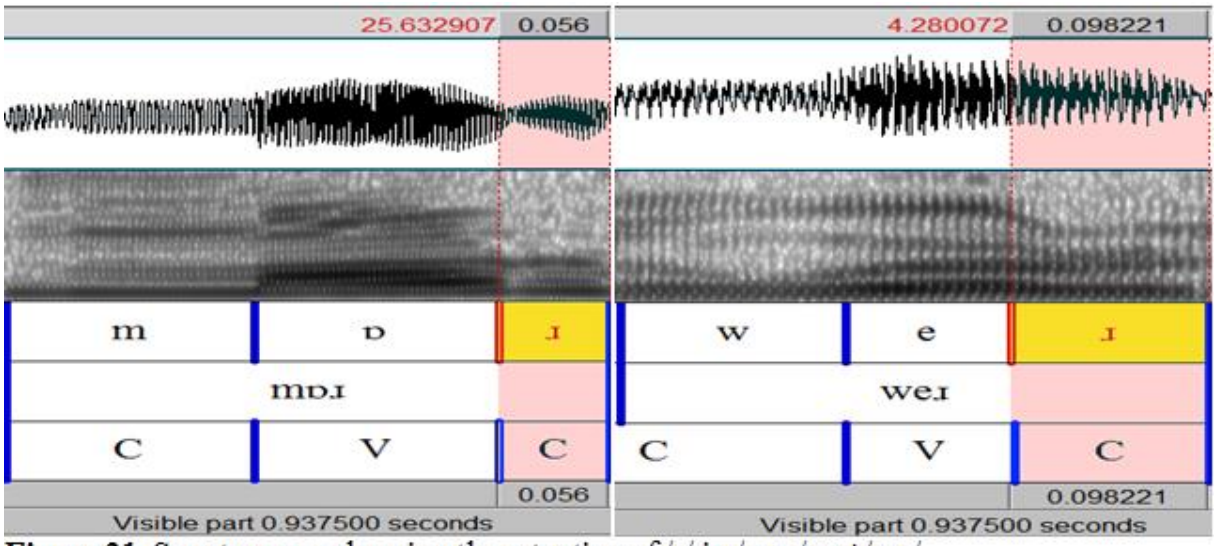

Figure 21. Spectrogram showing the retention of /r/ in /mɔ:/ and /wə/

Generally speaking, the English post-vocalic /r/ is not pronounced yet it has a certain impact on the surrounding sounds. This, according to Odisho (2005, p. 110) is called 'the r

gesture prosody'. In such a position, the preceding vowel takes the phonetic characteristics of the /r/: additional length with an overall schwa-like tongue configuration or tagged with a glide in the form of a schwa resulting in diphthongs /hɪə/. However, Arab speaking learners of English including Algerians, as they did pronounce the /r/, instead of performing the 'r gesture', they either shorten the vowel, transform a diphthong into a long vowel or transform a diphthong to a short vowel with a glide in lieu of the schwa (Odisho, 2005). Given the limited set of words containing postvocalic /r/ in the text administered to the informants, only the first possible transformation was observed e.g. /h**æ**rd/ instead of /h**ɑ**:d/ (see Figure 22). In addition to the three characteristics of the 'r gesture' asserted by Odisho, we could notice through the informants' performances that some vowels maintained their lengthening aspect yet with retaining the /r/ sound such as in the word /m**ə**:**ɹ**/ (see Figure 23). This combination of characteristics is tolerated neither in RP nor in American English, yet very recurrent in foreign language speech in general and the interlanguage of this study in particular. This behaviour could be attributed to the fact that the informants do not know what the principle of 'r gesture' is and how it should be rendered. Accordingly, a failure in producing the 'r gesture prosody' results in more than a segmental problem as it distorts the overall rhythm.

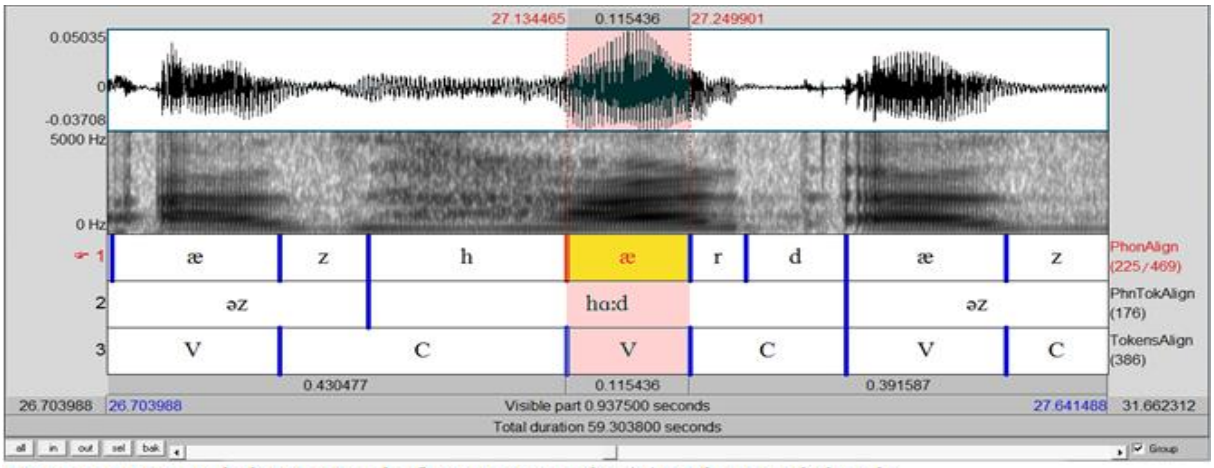

Figure 22. Vowel shortening before postvocalic /r/ in the word 'hard'

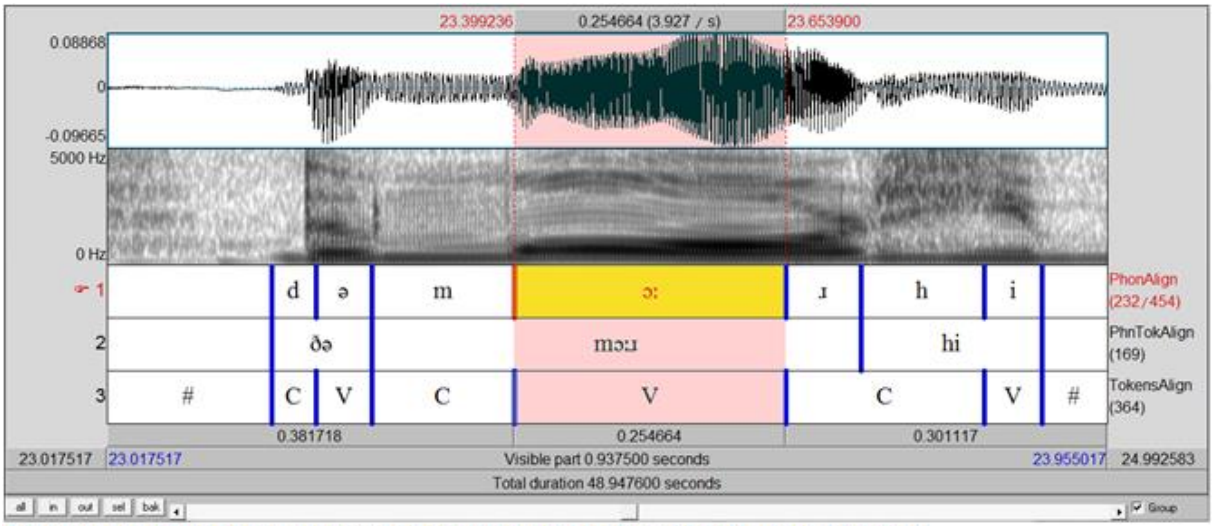

Figure 23. Vowel lengthening before postvocalic /r/ in the word 'more'

Besides, pronouncing the /r/ reduces the duration of vocalic segments. Final schwas in an utterance, according to Marusso and Silva (2007) can be far longer than in other prosodic positions and attain 123 ms[2]. If final /r/ is pronounced, the schwa is no longer final and therefore its duration should not be as long as final ones but around 30 ms. The informants did pronounce the /r/, yet the duration of schwa remains relatively long if compared to the standard one set by Marusso and Silva i.e. 30 ms (73 ms for stronger, 85 ms for traveller, and 59 ms for other) (Appendix 9). As a matter of fact, the produced vowel is closer to the English /ɜ:/, if not followed by /r/ and to the French /ø/, if followed by /r/ (see Table 33). Additionally, the schwa in final positions was longer than when it is followed by the postvocalic /r/ in the three words attested in the script i.e. 'stronger' (114 >73), 'traveller' (118> 85), and 'other' (84 > 59). However, if compared to their normal counterparts, the difference in duration appears to be significant (at the significance level 0.05) except for /ə/ in /ˈtrævəl**ə**/ where the number of instances is the largest. So, the pronunciation of /r/ contributed to the high value of ΔC while the schwa did not, as it should do in normal circumstances, reduce the percentage of vocalic intervals since it was long in both pronunciations i.e. with

[2]Values were converted to milliseconds (ms) for ease of reading.

and without the /r/ sound (p=0,91). Table 33 shows the duration of final schwas in both cases; with and without the pronunciation of postvocalic /r/:

Table 33

Schwa Duration With and Without /r/

Word	Informants' pronunciation	Duration of /ə/ in ms			Number of instances	P-Value
/ˈstrɒŋgə/	/ˈstrɔ̃g**ør/**	26< ø <140	73	113	187/189	0.00001
	/ˈstrɔ̃gɜ:/	55< ɜ: <190	114	74		0.028
/ˈtrævələ/	/ˈtrævl**ør/**	36< ø <160	85	126	227/252	0.037
	/ˈtrævlɜ:/	61< ɜ: <180	118	101		**0.16**
/ˈʌðə/	/ˈʌð**ø.ɹ/**	37< ø <100	59	42	63/63	0.00001
	/ˈʌðɜ:/	36< ɜ: <130	84	21		0.00001

5.5.1.2 Vowel Syncope

Second**,** vowel syncope or the deletion of weak vowels notably the schwa in some unstressed syllables caused the creation of consonant clusters and hence an addition to the overall duration of consonantal intervals as two resulting juxtaposed consonants, normally separated by the schwa, are gathered in the same sequence: /ˈtræ**vl**ə/ɒr/ instead of/ˈtræ**vəl**ə/ (49/63, see Figure 24 for a spectrogram sample) and /ˈkə/ɔ̃/æ:/ænsɪ**dr**əd/ instead of /kənˈsɪ**d**əd/ (63/63, see Figure 25 for a spectrogram sample) since our informants tend to pronounce the /r/. Table 34 illustrates the only two cases of schwa deletion attested by the informants:

Table 34

Instances of Schwa Deletion

Word	Informants' pronunciation	French possible source of transfer	English possible source of transfer	Number of students
/ˈtrævələ/	/ˈtræ**vl**ə/ɒr/	/ɔ̃**vl**op/	-	49
/kənˈsɪdəd/	/ˈkɔ̃sɪ**dr**əd/	/**dʁ**a/	/əˈ**dr**es/	63

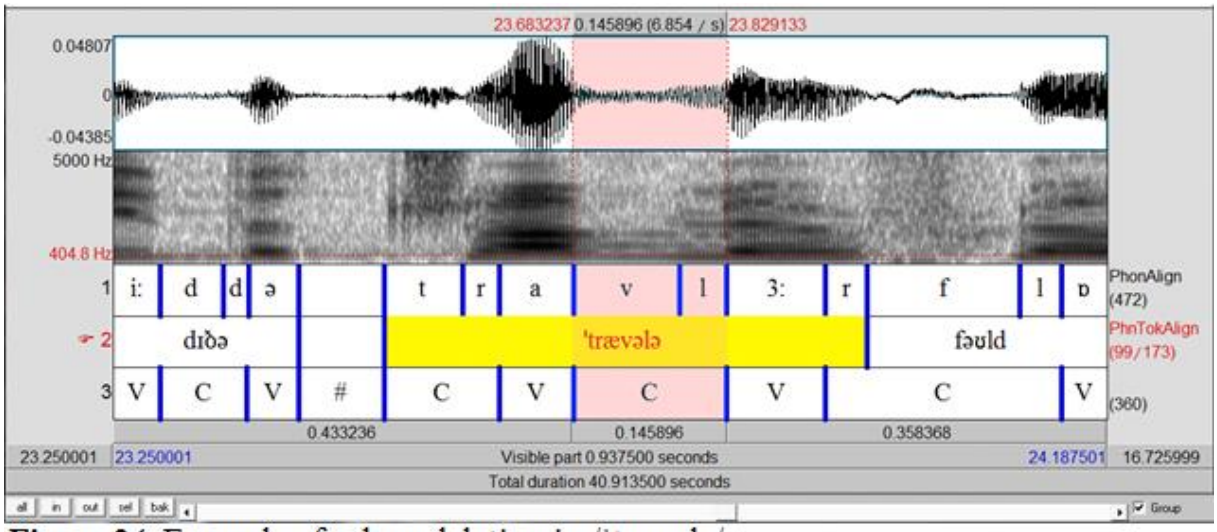

Figure 24. Example of schwa deletion in /ˈtrævələ/

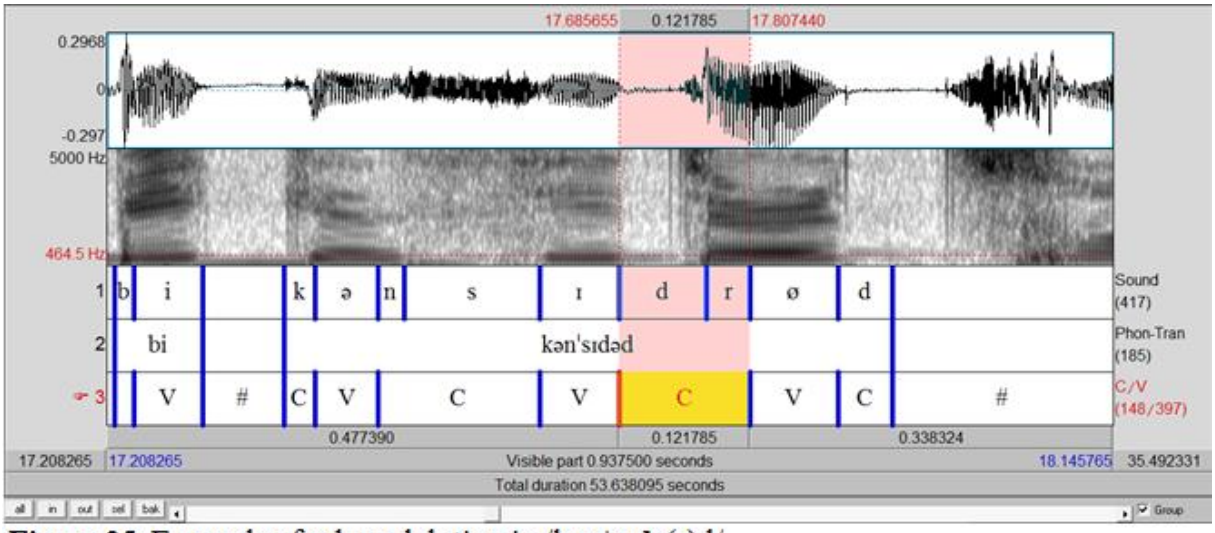

Figure 25. Example of schwa deletion in /kənˈsɪdə(r)d/

5.5.1.2.1 Interlingual Transfer

Algerian Arabic is characterised by clusters basically impermissible in Standard Arabic: شْبَع /**ʃb**əʕ/ (he is full) instead of /**ʃaba**ʕa/ شَبَعَ in standard Arabic. Therefore, learners would norm this characteristic and apply it whenever two juxtaposed open syllables are displayed, be it the schwa sound or other short vowel. As for Standard French, word internal schwas are generally speaking subject to deletion in order to preserve the adequacy of 'la loi des trois consonnes'. This rule takes into consideration the number of consonants preceding the schwa; if it is one consonant the schwa is deleted otherwise it is pronounced. However,

not all Algerians using French are fully aware of such a standard rule. As a matter of fact, and more precisely, with the emerging interest in dialectal French mainly due to the influence of French TV programs, Algerians are more or less adopting the characteristics of spoken French that tends to reduce vocalic segments in conversations and thereby making open syllables closed ones: /dəvənɛ/ (you become) becomes/də**vn**ɛ/.

Even though they are not fluent in French, Algerians, to a large extent, are accustomed to code switch smaller constituents like adjectives, conjunctions, prepositions, etc to French. It is worth mentioning though that among the common code switched discourse markers are adverbs of manner such as facil**e**ment (easily), logiqu**e**ment (logically), normal**e**ment (normally), etc. which according to Dell (1973) undergo a compulsory schwa deletion /fa.sil.mɑ̃/, /lɔ.ʒik.mɑ̃/, /nɔʁ.mal.mɑ̃/, respectively.

5.5.1.2.2 Intralingual Transfer

In addition to those possible interlingual sources of transfer, the consonantal hierarchy of the informants' mispronounced words complies with the observations of Zwicky (1972) and Hooper (1978) regarding the deletion of the schwa in American English. They both believe that the deletion of the schwa in post-stressed syllables among native speakers of American English is favoured in contexts where a resonant consonant follows it (liquid: l, r) and especially when it is also preceded by an obstruent (stops and fricatives: v, d). The informants' production revealed only two words containing the schwa in open syllables that have undergone a schwa deletion process and, surprisingly enough, match the pre-mentioned context: /ˈtræ**vəl**ə/ became /ˈtræ**vl**ə/ɒr /and /kənˈsɪ**də**d/ became /ˈkɔ̃sɪ**dr**əd/ or /kənˈsɪ**dr**əd/ Thus, a missing vowel increases the duration of consonantal segments through creating clusters and decreases, thereby, the duration of vocalic segments. This difference in duration

would be significant if the faulty pronunciation of the word is repeated more than once, as it is the case with the word ‘traveller’ (4 occurrences per informant).

5.5.2 %V Analysis

%V (40.87) is lower than ΔC (64.75) but to some extent high in respect to the native performance taken from the study conducted by Hamdi and colleagues (2004) as a comparative value: 38.07. Two basic factors can account for such a production: the resort to epenthetic vowels and the use of strong forms of function words.

5.5.2.1 Addition of Short Vowels

The addition of an epenthetic vowel /ə/ or /ɪ/ to break clusters adds a non-existing syllable and thereby extra vocalic duration. This phenomenon was observed in the pronunciation of final ‘ed’ of regular past tense exactly the same way as it is written. Table 35 illustrates the informants’ faulty pronunciation of final ‘ed’ in wrapped /ræpt/, succeeded /səkˈsiːdɪd/, shined /ʃaɪnd/, and obliged /əˈblaɪdʒd/:

Table 35

Informants’ Faulty Rendition of Final ‘ed’ in Past Tense Verbs

Word	Correct pronunciation	Informants’ pronunciation	Number of students
Wrapped	/ræpt/	/ræp**i**d/	2
		/ræp**ə**d/	29
		/ræp**ə**t/	3
		/ræpt**ə**d/	1
Succeeded	/səkˈsiːdɪd/	/sə/ʌkˈsiːdəd/	47
Shined	/ʃaɪnd/	/ʃaɪnəd/	15
Obliged	/əˈblaɪdʒd/	/ɒ/əˈblaɪdʒəd/	26

Generally speaking, foreign learners of English including Algerians (Kelly, 2000) resort to epenthetic vowels to facilitate and smooth the pronunciation of complex consonant clusters. However, we believe that the informants’ incorrect rendition of some syllable structures notably the ones ending with the suffix ‘ed’ cannot be taken as a proof to the

complexity of English syllable structures for the students under investigation. As a matter of fact, the addition of an epenthetic vowel to break the two consonantal coda /pt/ in /ræ**pt**/ (40 instances), /nd/ in /ʃaɪnd/ (15 instances), and /dʒd/ in /əˈblaɪdʒd/ (26 instances) cannot be regarded as a simplification strategy since other complex syllable structures did not undergo such a process (/mpt/ in 'əˈte**mpt**', /str/ in ˈ**str**ɒŋgə'). Even though the 'ed' in succeeded creates an extra syllable by rule /ɪd/, the majority of the informants' rendition uses the schwa instead of /ɪ/. This means that the problem resides in the students' developed attitudes towards spelling pronunciation and not in the syllable structure as such. Figures 26, 27, 28, 29 and 30 show sample spectrograms representing the presence vs. the absence of the schwa (Figure 30 represents the pronunciation of one native speaker[3]):

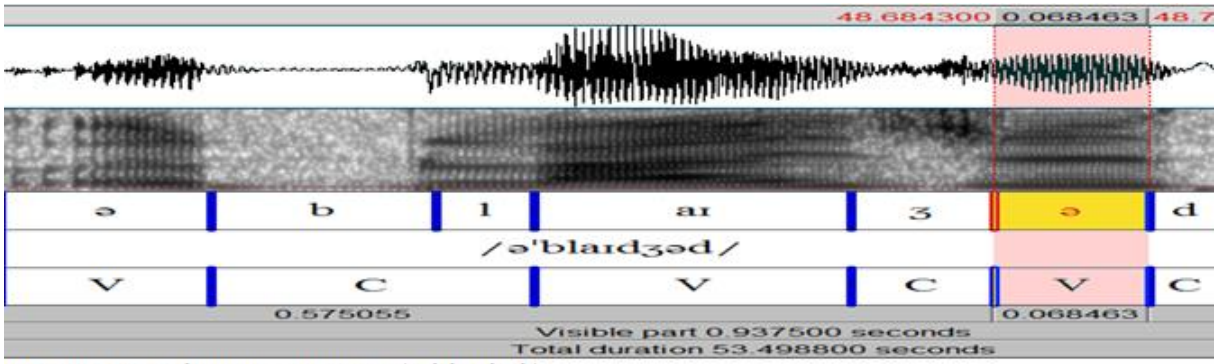

Figure 26. Schwa insertion in /əˈblaɪdʒd/

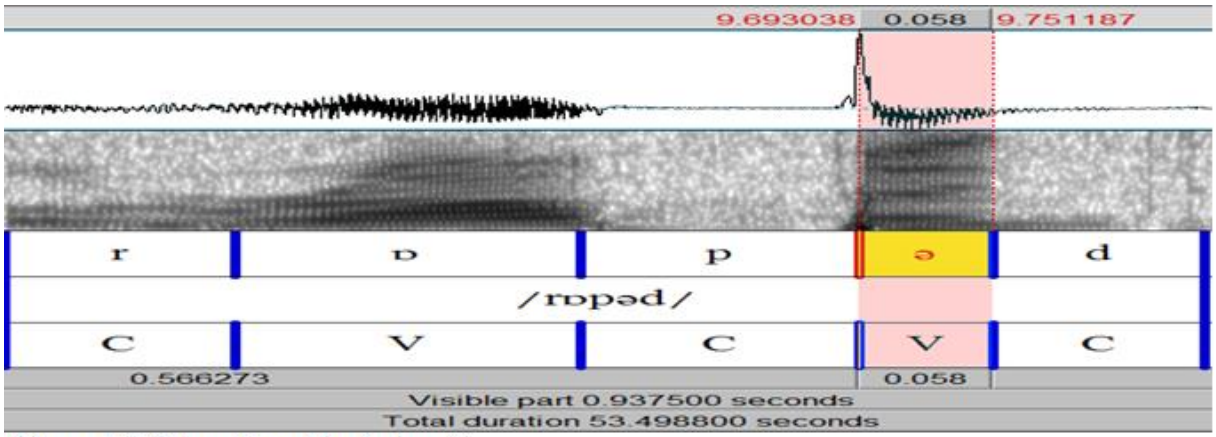

Figure 27. Schwa insertion in /ræpt/

[3]Data of native speakers were analysed to provide norm values for comparison. They were taken from Cambridge Dictionaries Online (http://dictionary.cambridge.org/fr/).

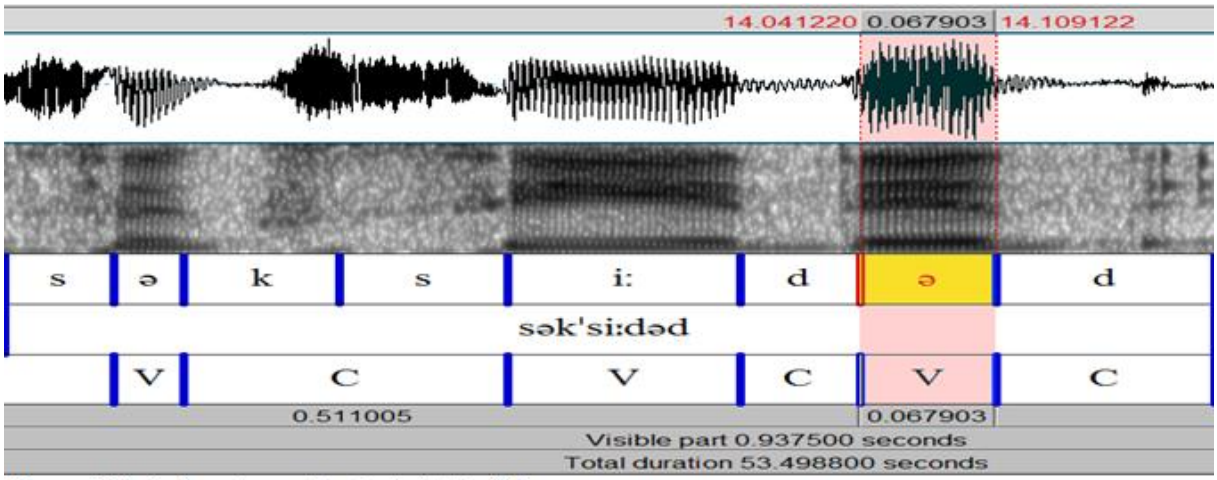

Figure 28. Schwa insertion in /sək'si:dɪd/

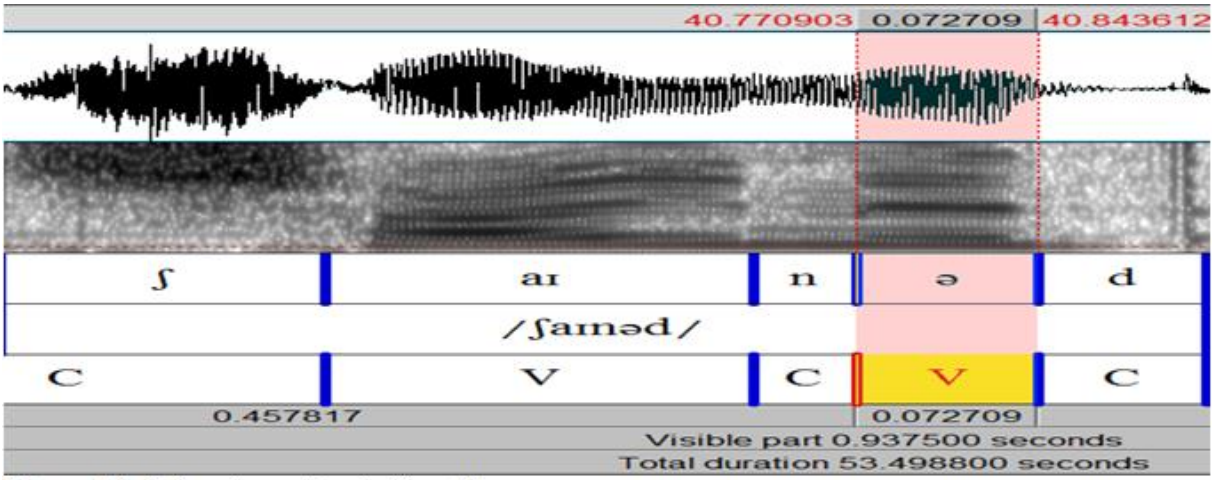

Figure 29. Schwa insertion in /ʃaɪnd/

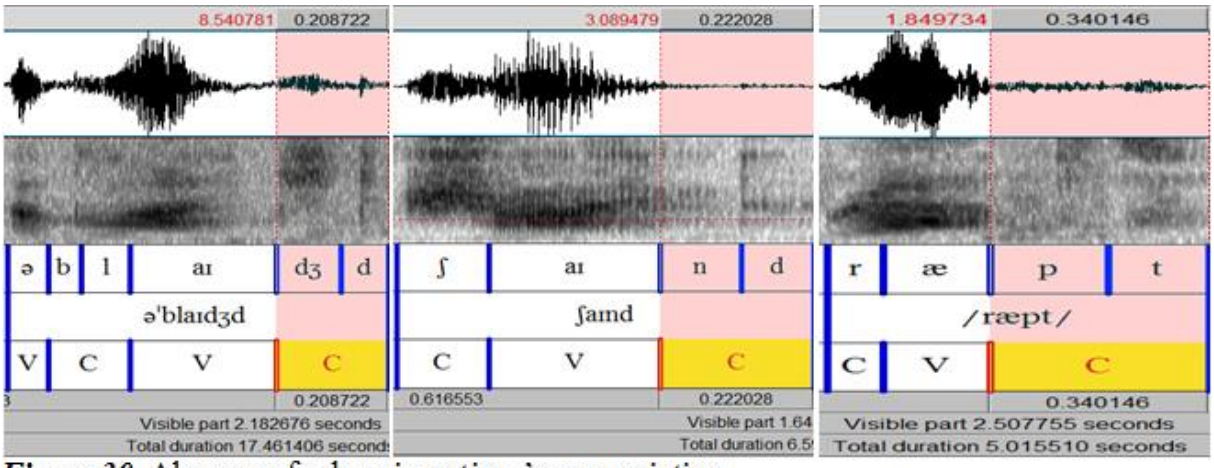

Figure 30. Absence of schwa in natives' pronunciation

Perhaps, what best accounts for the insertion of vowels is the influence of spelling on pronunciation. English, as often cited in the literature (C. Chomsky: 1970, Frost: 1992, Bell: 2004), possesses a recalcitrant spelling system that entails a highly inconsistent mapping

between grapheme and phoneme. This inconsistency, though claimed to touch only 400 but common words among the English lexicon as a whole (Crystal, 2002), is considered the major cause of pronunciation errors for EFL learners (Cook, 1997). Therefore, instead of applying pronunciation rules of how to pronounce the suffix 'ed', the informants rather pronounced the words exactly as they appear in spelling (except for /**wr**/ in **wr**apped since they are familiar with such a silent letter in the prevalent word '**wr**ite'). Such purely physical pronunciation is fuelled, we believe, by the orthographic systems already known to the informants. Each letter or digraph in the Arabic orthographic system has only one reading, which means that Arabic is more or less characterised by a transparent letter to sound correspondence. French, on the other hand, has similar Latin alphabetical symbols as the ones of English, though with some difference in pronunciation. Therefore, the addition of epenthetic vowels that created extra syllables added to the overall vocalic duration and contributed to the arrhythmicity of the informants' utterances.

5.5.2.2 Replacing Schwa by Full Vowels

Schwa is considered, by many, the most troublesome vowel for EFL learners basically due to its acoustic characteristics and especially if it is absent in the sound repertoire of their native languages. Though it exists in Algerian Arabic, the performance of the informants showed a clear vacuum in the use of the English schwa.

5.5.2.2.1 Function Words

Undoubtedly, the students are not sufficiently familiar with the circumstances under which function words should be reduced; they almost always use the strong forms. This is triggered off by the faulty assumption that the reduced forms are incongruous, slangy and sloppy in Received Pronunciation not knowing that both forms co-exist in this variety, and more importantly the weak form is the norm and the strong one is the exception. Moreover, the fact that French shares the same alphabetical system with English misguides students and

results in the replacement of the weak central mid-open vowel /ə/ by strong French vowels as they are more or less accustomed to the relatively consistent French spelling if compared to its English counterpart. This fact adds to the overall vocalic duration if we are to compare the standardized duration of the English schwa, which is 30 ms according to Marusso and Silva (2007), with the duration of the substituted vowel in the informants' production (see Appendix 10 for all the instances). Table 36 illustrates the duration of the different realizations of the schwa in weak forms:

Table 36

Schwa Production/Substitution and Duration in Weak Forms

Word	Correct use	Wrong pronunciation	Vowel duration in ms	Number of instances	Total
And	/ənd/	/**ə**nd/	45 < X <79	67	252/252
		/**æ**nd/	60 < X <150	105	
		/**æ:**nd/	100 < X <250	80	
Were	/wə/	/wə**r**/	27 < X <58	05	63/63
		/w**e**r/	32< X <110	16	
		/w**e**ːr/	68< X <150	42	
Was	/wəz/	/wə**z**/	54< X <57	02	188/189
		/w**ɒ**z/	40< X <150	97	
		/w**ɔ**ːz/	100< X <270	89	
As	/əz/	/**ə**z/	62< X <63	02	63/63
		/**æ**z/	74< X <180	48	
		/**æ:**z/	120< X <220	13	
At	/ət/	/**ə**t/	69< X <77	03	63/63
		/**æ**t/	64< X <100	47	
		/**æ:**t/	100< X <170	13	
To	/tə/	/t**ə**/	23< X <48	11	62/63
		/t**ʊ**/	28< X <95	39	
		/t**u:**/	110< X <220	12	
Of	/əv/	/**ɒ**v/	23< X <110	37	63/63
		/**ɔ:**v/	92< X <200	26	
Should	/ʃəd/	/ʃ**ʊ**d/	28< X <99	51	63/63
		/ʃ**u**ːd/	86< X <140	12	

5.5.2.2.2 Content Words

Replacing the schwa by full vowels is not exclusively related to function words; it expands to content words as well. As a matter of fact, if a given vowel is pronounced in its

full, stressed pattern instead of being weakened to the schwa /ə/, stress shifts from the stressed syllable to the unstressed one. Accordingly, this stress-shift-related pronunciation gives a non-significant difference in duration (see Appendix 11 and 12) between stressed and unstressed vowels and distorts the rhythm of speech as it gives a non-native accent to what is uttered. Generally speaking, the durational differences between stressed and unstressed syllables are correlated with the related vocalic duration and not the consonantal one as the latter is subject to the number of consonants within the syllable. Weak vowels are the responsible for the shortest duration of unstressed syllables while strong or full vowels contribute to the longest duration of stressed syllables. Therefore, a faulty pronunciation and a faulty stress assignment to what should be unstressed distort the timing interval that is responsible for the isochronous timing in English speech rhythm. Tables 37 and 38 represent the difference in duration between stressed and unstressed vowels as it was performed by the informants when pronouncing 'attempt' and 'confess':

Table 37

Rendition of First Syllables /kən/ and /ə/ in /kənˈfes/ and /əˈtempt/, Respectively

Informants	1st syllable		Mean of /ə/ and its substitutes in ms		Number of students	
Natives	/**kən**ˈfes/		**43**		03	
	/**ə**ˈtempt/		61		03	
Informants	/**kən**ˈfes/	/kən/	**50**	**86**	32	**63**
		/ˈkə̃/	110		09	
		/ˈkɔːn/	120		01	
		/ˈkæn/	80		05	
		/ˈkɒn/	70		16	
	/**ə**ˈtempt	**/ə/**	47	**72**	39	**63**
		/ˈ**æ/**	90		16	
		/ˈæː/	101		06	
		/ˈ**ɜ**/	50		01	
		ø	00		01	

Concerning the first syllable, the half number of the students i.e. 32 out of 63 have pronounced the weak vowel in /kən/ correctly, though with a slight increase in duration (50

ms vs. 43ms). The remaining students (31) substituted the schwa with one of the following sounds: /ɒ/ (16 instances), /ɔ̃/ (09 instances), /æ/ (05 instances), and /ɔː/ (01 instance). As a result and as it is shown in Table 37, the duration of the vowel in question increased (70, 110, 80, and 120, respectively). The increase in the duration of weak syllables in unstressed positions adds to the overall duration of the utterance and results in a higher %V.

Similarly, the first syllable in 'attempt' was correctly rendered, though shorter if compared to the natives' (47 vs. 61), by 39 students i.e. 61% of the whole sample. We believe that even though the schwa constitutes a syllable on its own, non-native speakers try to pronounce the weak vowel as short as possible. The other 29 students varied in their pronunciation of the same vowel: 16 used /æ/ instead, 06 substituted the schwa by /æ:/, one student used /ɜ/ and another student did not pronounce the first vowel at all.

Table 38

Rendition of Second Syllables /ˈfes/ and /ˈtempt/ in /kənˈfes/ and /əˈtempt/, Respectively

Informants	2nd syllable		Mean of /e/ and its substitutes in ms		Number of students	
Native	/kənˈ**fes**/		**183**		03	
	/əˈ**tempt**/		90		03	
Non-natives	/kənˈ**fes**/	/f**e**s/	**130**	**100**	48	**63**
		/ˈf**i:**s/	120		07	
		/f**ə**s/	50		06	
		/f**ø**s/	00		02	
	/əˈ**tempt**	/ˈ**te**mpt/	112	**111**	62	**63**
		/t**ə**mpt/	110		01	

As for the second syllable of the word confess /kənˈ**fes**/, the duration of the informants' is shorter if compared to the one of natives' (130 vs. 183). This is because some students did not pronounce the vowel at all (2), others substituted it by a schwa (6) and those supposedly long i.e. /e/ (48) and /i:/ (07) are not long enough as the standard duration of /e/ (170 ms). Furthermore, some students pronounced the schwa at the end of the word (11) that is why they shortened the duration of the peak and added it to the extra pronounced vowel.

As for the second syllable of the word attempt /əˈ**tempt**/, the informants' attested duration is longer if compared to the one of natives (112 vs. 90). The informants pronounced the vowel longer than it should be in order to preserve the distinguishable feature between both syllables and compensate for the absence of onset and coda in the first syllable.

The word /ətempt/

The higher mean of the duration of the vowel of /t**e**mpt/ in non-natives production (111 > 90, see Table 39) entails a higher mean of the duration of the whole syllable as well; yet, it was not the case (504 < 510). We believe that the simplification strategies adopted by the informants when pronouncing the second syllable contributed to such a difference: /emp/ (1 instance), /emt/ (6 instances), /em/ (1 instance), and /emɵ/ (1 instance). So, the duration of unpronounced consonants covered the extra vocalic duration, giving more or less an equal value. The difference between the duration of the first syllable produced by natives and non-natives is not significant (p=0.80), mainly because the majority of students (39 out of 63) used a shorter schwa sound (40 ms). Table 39 compares the mean of vowels and consonants in the first and second syllables of the word 'attempt', as produced by native speakers and non-native speakers (i.e. the informants of the present study):

Table 39

Vowels and Syllables Mean in /ətempt/ by Natives vs. Non-Natives

Informants	Mean of vowels		Mean of syllables	
	/**ə**/	/t**e**mpt/	/**ə**/	/**tempt**/
Natives	61	90	61	510
Non Natives	72	111	77	504

Note. The reason behind this difference between the mean of the first vowel and syllable, though the syllable constitutes the same sound, is that one instance of pronunciation included the semi-vowel /j/ as a part of the same syllable /**jæ:**tempt/, thereby added to the mean of the syllable as such.

The word /kənfes/

The mean of the first vowel in a non-native performance is higher than its counterpart in the one of natives (86 > 43, see Table 40). Accordingly, one expects that the duration of the syllable containing the vowel would be higher as well, but that was not the case (152 < 186). This is mainly because the non-native informants tended to not pronounce the /n/ sound as a separate consonant but render it as a part of the French nasalized vowel /ɔ̃/. As for the second syllable, the difference between /fes/ of natives and its non-native counterpart (183 vs. 100) is statistically significant (p=0.012) due to the shorter duration of the vowels that substituted the correct one (see Table 38). Table 40 compares the mean of vowels and consonants in the first and second syllables of the word 'confess', as produced by native speakers and the informants of the present study:

Table 40

Vowels and Syllables Mean in /kənfes/ By Natives vs. Non-Natives

Informants	Mean of vowels		Mean of syllables	
	/kə̲n/	/fe̲s/	/**kən**/	/**fes**/
Natives	43	183	186	591
Non Natives	86	100	152	414

Figures 31, 32, 33, 34, 35 and 36 represent sample spectrograms comparing the difference in duration between stressed and unstressed syllables in both words: /ə/ vs. /tempt/ and /kən/ vs. /fes/:

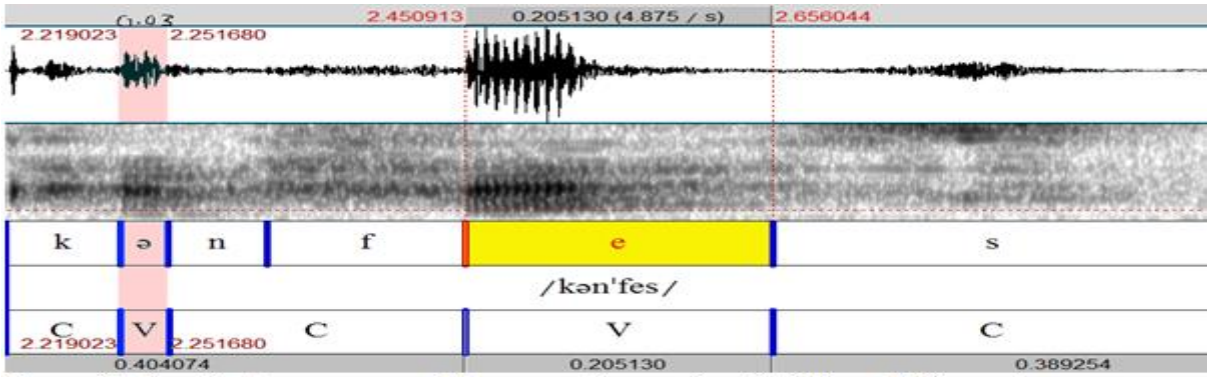

Figure 31. /kən'fes/ as pronounced by one native speaker (≃170 ms difference)

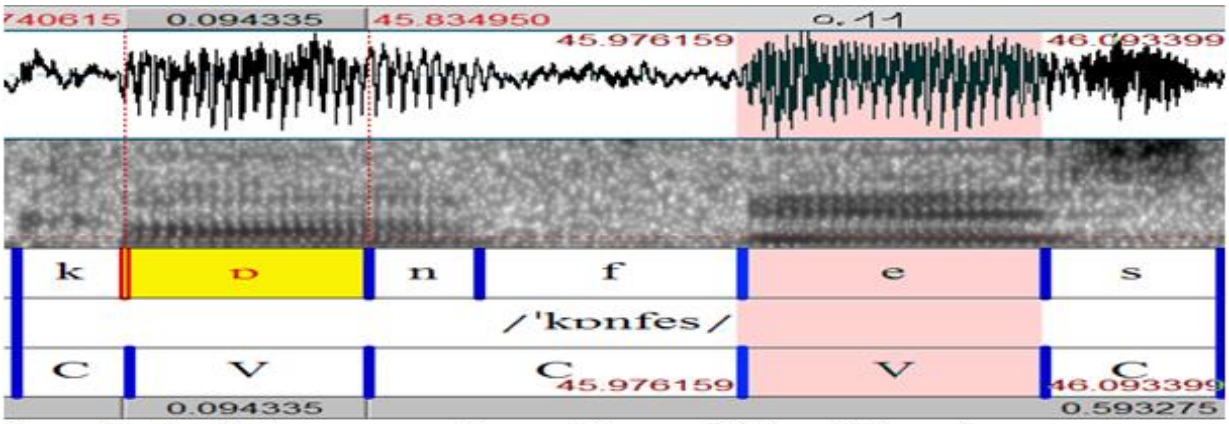

Figure 32. /kən'fes/ as pronounced by one informant (≃20 ms difference)

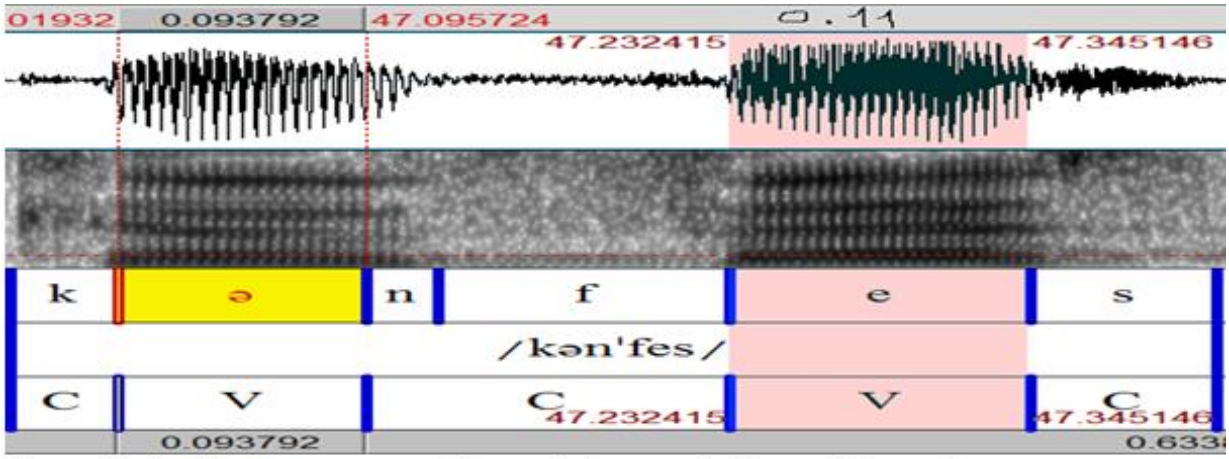

Figure 33. /kən'fes/ as pronounced by one informant (≃20 ms difference)

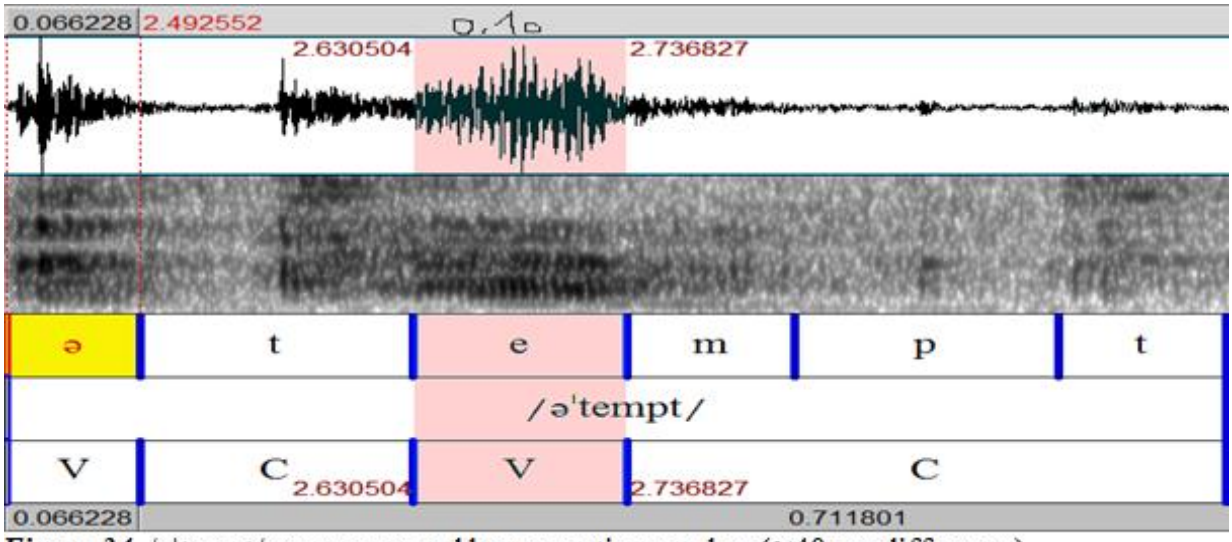

Figure 34. /ə'tempt/ as pronounced by one native speaker (≃40 ms difference)

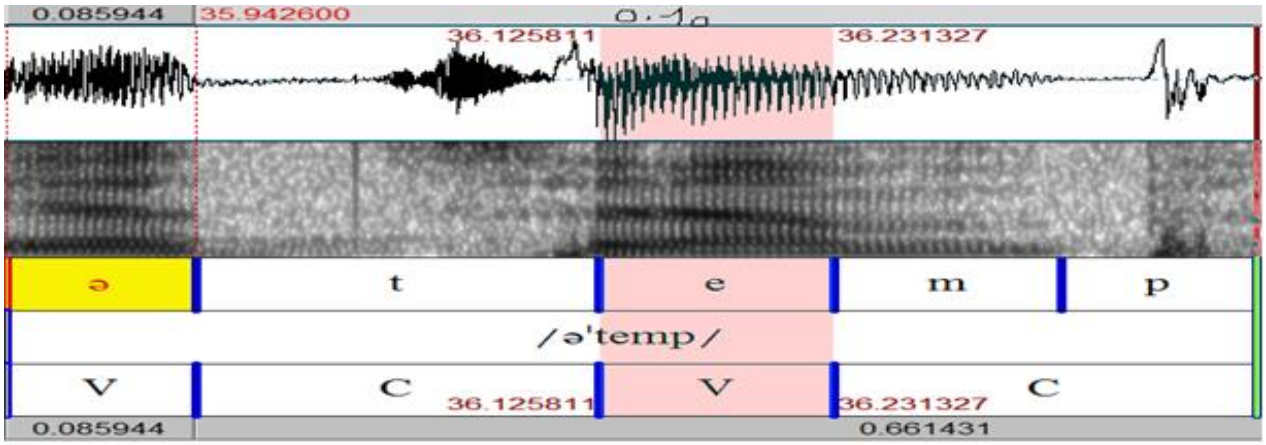

Figure 35. /ə'tempt/ as pronounced by one informant (≃20 ms difference)

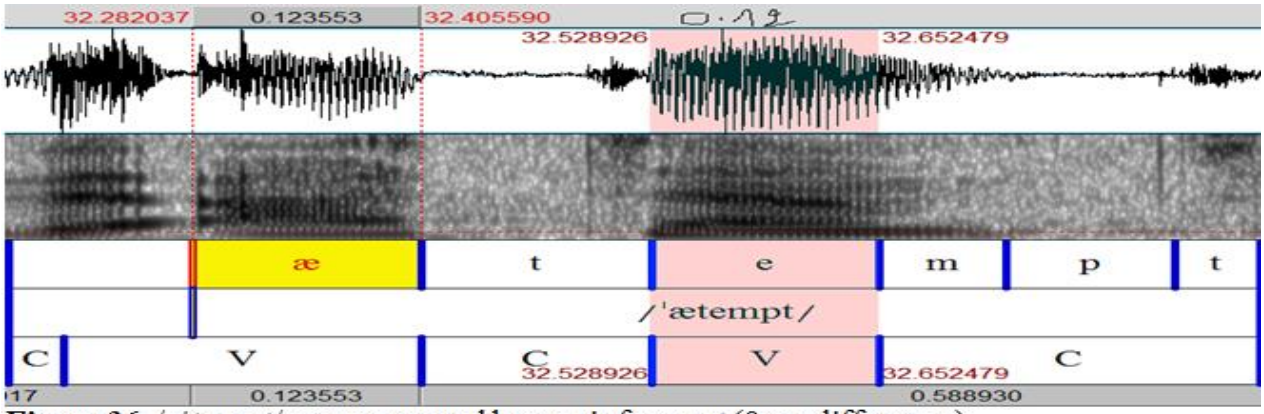

Figure 36. /ə'tempt/ as pronounced by one informant (0 ms difference)

The clear durational distinction between stressed and unstressed vowels in the natives performance as opposed to the non-distinctive difference in duration in the informants performance, as shown on the the spectrograms, could be attributed to the fact that native speakers give each vowel its due pronunciation while non-natives tend to lenghten weak vowels and even shorten the long ones.

5.5.2.3 Other Generalizations

The schwa is not the only sound subject to be replaced by full vowels; substitution can expand to other short vowels as well. Learners, confused by the inconsistencies in the spelling of English, tend to generalize the pronunciation of either English (intralingual transfer) or French (interlingual transfer) vowels to one of the sounds represented by the same grapheme as both languages share more or less the same Latin alphabetical symbols. Table 41 shows the substitution of weak vowels by their represented graphemes:

Table 41

Weak Vowels Substitution by Their Graphemes

Sound	Correct use	Wrong pronunciation	Standard duration of Vowel	Actual duration by informants	Number of instances	
/i/	/w**ɪ**nd/	/w**aɪ**nd/	139	110< X <200	36/ 252	
/ʌ/	/**ʌ**ðər/	/**ɒ**ðər/	148	63< X <129	6	50/63
		/**ɔ:**ðər/		92< X <221	18	
		/**æ:**ðər/		82< X <188	26	
/ɒ/	/ˈstr**ɒŋ**gər/	/ˈstr**ɔ:**ngər/	178	91< X <170	26	70/189
		/ˈstr**ɔ̃**gər/		91< X <240	44	
/ə/	/k**ən**ˈsɪdəd/	/ˈk**ɔ̃**sɪdrəd/	30	100	2	50/63
		/ˈk**ɒ**nsɪdrəd/		23< X <100	23	
		/k**æ**nˈsɪdəd/		38< X <94	22	
		/k**æ:**nˈsɪdəd/		80< X <100	3	
	/**ə**ˈblaɪdʒd/	/ˈ**ɒ**blaɪdʒəd/		30< X <110	32	32/63
	/səkˈsiːdid/	/ˈs**ʌ**ksiːdəd/		30< X <79	19/63	
	/**ə**ˈtempt/	/ˈ**ɑ**:tempt/		96< X <140	07	27/61
		/ˈ**æ**təmpt/		42< X <120	20	
	/k**ən**ˈfes/	/ˈk**ɔ̃**fes/		96< X<240	04	31/63
		/ˈk**ɒ**nfəs/		45< X<120	24	
		/ˈk**æ**nfəs/		66< X <110	03	

Note. The data used for comparison are the norm duration of British English pure vowels identified by Wells, 1962.

Learners pronounced the word ‘w**i**nd’ as /w**aɪ**nd/ instead of /w**ɪ**nd/, assuming that the English vowel ‘i’ often corresponds to the sound /aɪ/ in conformity with its alphabetical pronunciation (36 erroneous occurrence). The same can be said about the close-mid central vowel /ə/, that was either substituted by /æ/ or /ɑː/, that best represent the English letter ‘a’ in ‘**a**ttempt’. The word ‘s**u**cceeded’ also was pronounced, in 19 instances, with the sound /ʌ/ that is generally represented by the grapheme ‘u’ in spelling. Likewise, the ‘o’ in ‘**o**ther’ was influenced in 24 instances by two possible pronunciations; either the short /ɒ/ or its long counterpart /ɔː/.

In addition to these intralingual instances of transfer, erroneous instances due to interlingual transfer are depicted in the use of the French nasal vowel /ɔ̃/ when producing the English 'on' combination: e.g. c**on**fess /ˈkɔ̃fes/, str**on**ger /ˈstrɔ̃gər/, and c**on**sidered /ˈkɔ̃sɪdrəd/ instead of /k**ən**ˈfes/, /ˈstr**ɒŋ**gər/, /k**ən**ˈsɪdəd/, respectively. Words of Latin descent, as well, took the original French pronunciation; the grapheme 'o' in **o**bliged is pronounced as the French close-mid back vowel /o/ /ˈ**o**blaɪdʒəd/ instead of the English schwa /**ə**ˈblaɪdʒd/. Therefore, as a result of generalizing the full form of vowels in unstressed syllables (see Appendix 13 for all faulty instances), the phonetic characteristics of both types of syllables, especially length, became nearly undistinguishable. This contributed to the violation of the standard speech rhythm of English which is perceived through a difference in timing between both intervals.

5.6 Comparison of AA, AE, EN, and FR

To best classify and thereby account for the classification of the Algerian English[4] (AE) rhythm, it is of prime importance to compare the latter against the prototypical stress-timed language, English, along with the prototypical syllable-timed language, French, in addition to the mother tongue of the informants, Algerian Arabic. Table 42 groups %V and ΔC mean values in all the aforementioned languages:

Table 42

%V and ΔC Mean Values in AA, AE, EN, and FR

Language	Mean %V	Mean ΔC
AE	40.87	64.75
AA	31.14	57.54
EN	38.07	75.27
FR	43.38	48.72

Note. %V and ΔC values used for comparison are taken from Hamdi et al., 2004.

[4] The term 'Algerian English' is exclusively used in the present work to refer to the interlanguage produced by Algerian EFL learners.

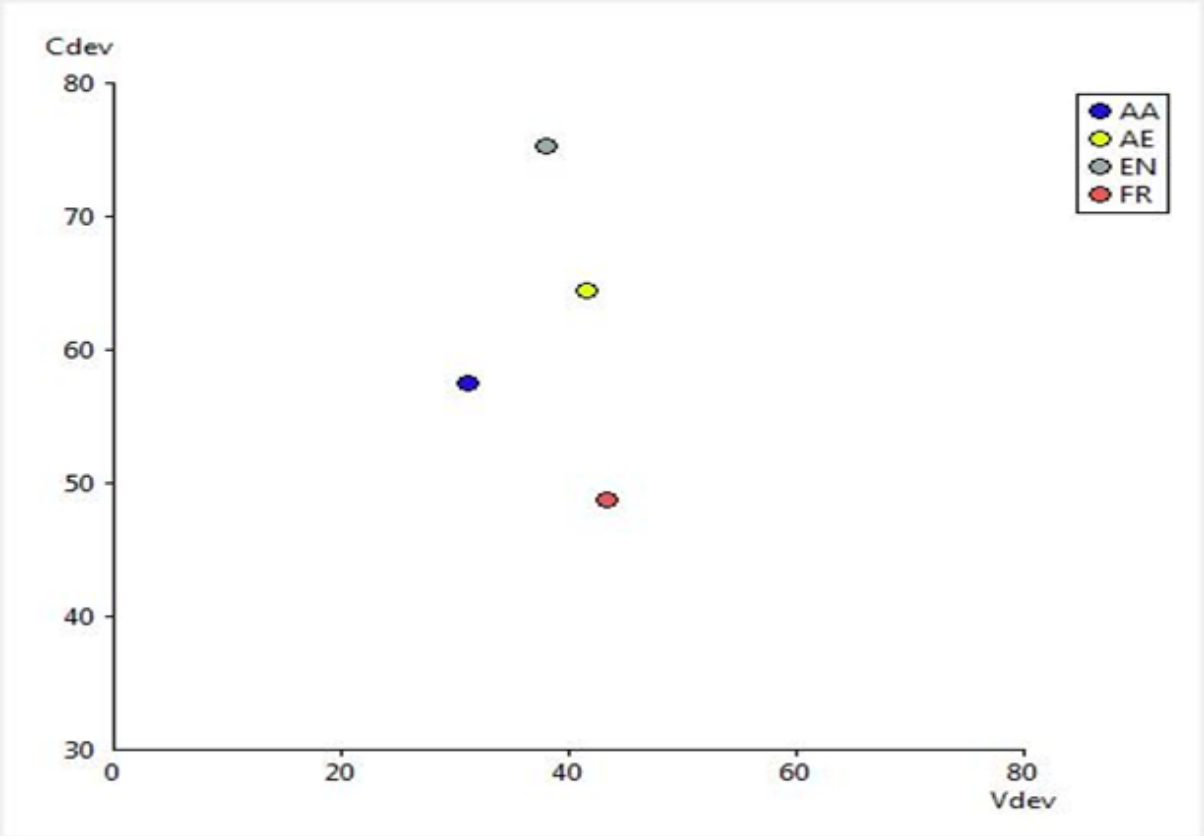

Figure 37. Comparison of %V (x axis) and ΔC (y axis) in AA, AE, EN, and FR.

The data presented in Figure 37 tallies with the aforementioned explanation of the informants' deviated components of speech rhythm. The AE' %V (40.87) nearly matches the one of FR (43.38) than the other languages presented on the figure. Conversely, the AE' ΔC (64.75) is closer to AA (57.54) rather than FR (48.72) or EN (75.27). The AE is situated somewhere between the prototypical extremes and, therefore, can be classified, according to the results of the present study, as neither a pure stress-timed system nor a discrete syllable-timed system but an intermediate language combining properties of both classes.

Conclusion

The analysis of the three speech rhythm components showed that the informants faced no problems when it comes to pronouncing English complex syllables. Positive transfer either from AA, as it allows consonant clusters in the onset position, or FR, as it allows up to four consonants in the onset and coda positions, might be the reason behind not using

simplification strategies to ease the pronunciation of assumed problematic complex syllable structures of English by Arab speaking learners including Algerians (Swan and Smith, 1987 and Kelly, 2000).

Vowel reduction plays a great role in determining the rhythmic class to which the informants' speech rhythm belongs. Failure to produce the English mid-central unrounded vowel /ə/ correctly led to the overuse of the strong forms of function words that hold up the natural flow of speech and call for an exaggerated, unneeded energy to be spent. Besides, substituting the same vowel in content words engendered stressing unstressed syllables and/or overstressing syllables that enormously added to the overall duration of an utterance and, substantially, permeated the overall rhythm. Accordingly, to master an English-like speech rhythm, more focus should be given to the pronunciation of vocalic segments especially the mid-central unrounded vowel /ə/ in order to get a lower %V and a higher ΔC, a common property of stress-timed languages.

CHAPTER SIX

Pedagogical Implications

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Pedagogical Implications

Introduction

The teaching of pronunciation to foreign language learners has varied over history, from the explicit teaching of individual sounds to the implicit teaching of suprasegmental aspects. The latter came into focus with the advent of the communicative approach as it concentrates on how to globally foster the communicative skills of the learners and make them achieve the threshold of intelligibility. However, an effective instruction of pronunciation calls for a balanced consideration of the segmental and suprasegmental aspects, as both of them affect intelligibility and can lead to communication breakdown. This chapter reviews the way pronunciation, in general, and speech rhythm, in particular, are taught at the Department of English, Mentouri University. It also suggests some recommendations for syllabus designers and teachers of 'Phonetics' and 'Oral Expression' on the teaching of speech rhythm components to EFL learners.

6.1 Pronunciation Teaching at the Department of English, Mentouri University

Theoretically, pronunciation at the Department of English at Mentouri University is taught over two modules: Phonetics with a one-and-a-half-hour session per week and 'Oral Expression and Listening Comprehension' (henceforth OE) with two sessions of one hour and a half for each per week. The Ministry of Higher Education highlighted the fact that both modules should work in tandem as they complement each other, and tailored both syllabuses accordingly (Appendix 14[1]). In what follows, the syllabus of each module in the undergraduate phase is outlined and assessed in order to find out the extent to which 'practice' matches 'theory'.

[1] Appendix 14 is the common framework designed to teach foreign languages to first and second year students at the BA level, 2012-2013.

6.1.1 The Syllabus Designed for Teaching 'Phonetics' in Theory

In the LMD system, the module of Phonetics is taught over the first two years in the three-year BA degree curriculum, with one session of one hour and a half per week. In the first three semesters, the objective of teaching phonetics pivots around introducing the general concepts of the sound and its production along with practicing pronunciation in a language laboratory. The fourth semester, however, encompasses three different objectives. It first calls for more practice of what has been acquired during the three first semesters, in a language laboratory. Second, it moves to introducing the visual representation of sounds i.e. the phonetic transcription. Then, the focus shifts to introducing the suprasegmental aspects of English namely rhythm, stress, and intonation. In what follows, the syllabus as it appears on the common framework[2] suggested by the training committee is outlined:

Semester 1, 2, and 3

Must be taught in tandem with OE module[3]

The basic concepts of speech sounds and their production along with practicing pronunciation **in a language laboratory**: listen and correctly pronounce sounds (recordings): **practice teaching** in a language laboratory.

-Phonetics as a discipline: a general overview of the scientific study of speech sounds

-Articulatory phonetics: speech organs

-Alphabet, vowels and consonants of English

-The production of consonants: description and classification

-The production of vowels and semi-vowels: description and classification

-The phonemes of English

[2]See Appendix14 for the original French version.

[3]All what is bolded in the translated version of the common framework conforms to the original version in French, (Appendix 14).

-The correction of errors in the production of intonation, rhythm and phonemes (nasalization, etc.)

-Intonation, rhythm, and accentedness

Semester 4

Teaching that has a relation to the practice of the language and the OE module

Articulatory phonetics: differentiate between speech organs: a detailed scheme of the speech apparatus.

-Introduction to the phonetic transcription of the studied speech sounds: an IPA-based transcription.

-A practice-oriented definition of the main aspects of prosody: suprasegmental feature, stress, intonation, rhythm...

-A practice-oriented definition of accentedness: breath-groups, rhythmic groups, word stress, and sentence stress.

-A practice-oriented definition of intonation: pitch, intensity, duration, tempo, melody, interrogation, assertion.

Before identifying the extent to which the theoretical syllabus suggested by the training committee is applied in reality, some errors in the text provided must be discussed. The last lesson in the first three semesters does not seem to fit with the overall objective set for those semesters i.e. concepts related to speech sounds. Intonation, rhythm and accentedness are aspects of prosody that deal with larger units than the segment; accordingly, they should not appear in the syllabus designed to teach the basic concepts of speech sounds and their production. Moreover, the fragment 'suprasegmental feature', unless it is not faithfully translated by the author, does not differ from 'aspects of prosody' (both refer more or less to the same features, namely stress, rhythm, intonation). Therefore, the use of 'suprasegmental feature' as one aspect of prosody (first, it appears after a colon which is

usually used when introducing a given list, and second, it is singular) is definitely misleading. We believe that the fragment ‘suprasegmental unit’ would be more appropriate provided that it refers to ‘the syllable’ as it is a suprasegmental unit.

6.1.2 The Syllabus of ‘Phonetics’ as Taught in Practice

To draw a comparison between the syllabus of ‘phonetics’ in theory and practice, we asked the lead teacher of this module to give us a copy of the actual syllabus for teaching pronunciation to undergraduate students. In what follows, the syllabus as it is taught in the first four semesters is outlined:

Semester 1

1. Linguistics (Phonology, Grammar and Semantics)
2. Phonetics: Branches of phonetics
3. The production of speech: Organs of speech
4. Vowels (Front vowels, Central vowels and Back vowels)
5. Diphthongs (Centering diphthongs and Closing diphthongs)

Semester 2

1. English Consonants
   a. Definition
   b. Voiced and voiceless consonants
   c. The point of articulation
   d. The manner of articulation
      - English stops
      - Nasals
      - Affricates
      - Laterals

- Fricatives
- Post alveolar frictionless continuant
- Semi vowels

2. An introduction to stress

3. Weak forms/strong forms

Semester 3

Overview of the elements involved in the description of the English vowels and consonants.

Semester 4

1. Syllables (the structure)

2. Simple, complex, and compound word stress

3. Weak and strong forms of function words.

The striking difference between what is mentioned in the curriculum and what is applied in reality is the non-use of language laboratories. Phonetics is allotted only one session of one hour and a half per week, which takes place in a classroom and never in a language laboratory. This fact makes it hard for the teachers to both teach and practice the segmental and suprasegmental aspects of pronunciation in the same classroom session. Moreover, the syllabus suggested by the training committee does not, to some extent, seem to tally with what teachers really teach on the ground. As a matter of fact, among the three suprasegmental features scheduled in the first three semesters, only stress is introduced to the students (even if it does not fit with the objectives set for the first three semesters). Similarly, we could notice the absence of the practice-oriented teaching of suprasegmental aspects notably rhythm and intonation, though it represents the genuine focus of the syllabus designed for the fourth semester. Given the primary objectives suggested by the higher core of education, it seems that the syllabus applied to teach phonetics to undergraduate students at

Mentouri University lacks coherence as it focuses on theoretical phonetics rather than applied phonetics.

6.1.3 The Syllabus Designed for Teaching 'Oral Expression' in Theory

The main objective behind teaching OE in the first two years[4] of the BA degree is to reinforce the speaking and listening skills. A list of prerequisite knowledge is provided, in each semester, along with a set of activities and the content to be taught with both skills: oral expression and listening compression.

Semester 1

Recommended Prerequisite Knowledge

Listening Comprehension

1. Develop skills of listening and classification of content
2. Recognize different intonations so to react accordingly
3. Construct the meaning of an oral message
4. Adopt a selective ear in order to spot a piece of information
5. Understand common vocabulary related to daily life situations

Oral Expression

1. Interact in different daily life situations
2. Take part in a discussion
3. Give and ask for information
4. Take part in short communications

Types of Activities

Listening Comprehension

[4] The original common framework includes only the first four semesters in the BA degree. All the author's attempts to get the syllabus designed for the fifth and sixth semesters were in vain. Therefore, we opted only to deal with how the latter is taught in practice.

1. Listening to audio files

2. Select and classify pieces of information

3. Identify voices[5]

Oral Expression

1. Elocution exercises

2. Give a point of view, express feelings

3. React to situations

4. Respond to questions

5. Summarize, synthesize, reformulate

6. Ask questions to gain information

7. Debate about familiar topics

Content

Listening Comprehension

1. Rhythm

2. Pause

3. Prosody

4. Intonation

5. The tokens of enunciation

6. The scheme of communication

Oral Expression

1. Speech acts

2. Exercises of diction and elocution

Semester 2

Recommended Prerequisite Knowledge

[5] I believe what is really meant is sounds and not voices as it has to do with tokens of enunciation.

Listening Comprehension

1. Grasp the core meaning of simple and clear messages

2. Speak spontaneously (example: take part in an extempore discussion)

3. Understand expressions

4. Understand the core meaning of audio and visual messages related to current topics

Oral expression

1. Interact in communications about current topics

2. Express oneself constantly in order to learn how to briefly communicate and develop an idea as well as to tackle current topics using simple and coherent sentences.

3. Take part, spontaneously, in conversations of common topics of personal interest

Types of Activities

Listening Comprehension

1. Listen to radio and TV programs

2. Formulate hypotheses of meaning

Oral Expression

1. Address the audience in an adapted way

Content

Listening Comprehension

1. Language registers

2. Idiomatic expressions

Oral Expression

1. Announcements

2. Presentations

3. Delivery

4. Language register

Semesters 3 and 4

Recommended Prerequisite Knowledge

Listening Comprehension

1. Understand long and varied messages

2. Grasp the content of a verbal communication (theme, basic arguments, etc.)

Oral Expression

1. Produce long and varied messages

2. Produce verbal interactive communications

3. Defend one's opinions

4. Express oneself

Types of activities

Listening Comprehension

1. Listen to conferences

2. Listen to speeches of political and academic personalities, etc.

Oral Expression

1. Mimes

2. Presentation

3. Debate

4. Defend a point of view

5. Interview

6. Round table

Content

Listening Comprehension

1. Sketch

2. Monologue

3. Plays

4. Academic speeches

Oral Expression

1. Announcements

2. Presentations

3. Delivery

4. Language register

The designers of this syllabus seem to be highly optimistic about the level of students enrolled in learning a foreign language. This can be clearly deduced from the list of the knowledge students are recommended to have before embarking on learning the language, which seems to better fit the objectives rather than the prerequisite knowledge.

In the first semester, the focus of teaching listening comprehension is to a large extent on the suprasegmental features of the language with little attention given to the segmental aspect. Likewise, in oral expression, the functional aspect of the language takes precedence over the linguistic accuracy notably the use of accurate pronunciation. This does not seem to be coherent with the aforementioned Phonetics syllabus if we are to consider the fact that both syllabuses are initially put to work in tandem. Moreover, even this little focus given to pronunciation wanes starting from the second semester where the development of students' communicative skills shifts to be the only interest. This highlights the urge to have a separate timeline for practicing pronunciation, as it is related more or less to individual segments.

6.1.4 The Syllabus of 'Oral Expression' as Taught in Practice

In order to draw a comparison between the syllabus of OE in theory and the one applied in practice, an interview was carried out with teachers of Oral Expression and Listening Comprehension to undergraduate students. In what follows, the nature of the interview will be described and the gathered data will be analysed:

6.1.4.1 Description of the Interview

By means of a descriptive structured interview, 13 teachers of 'Oral Expression and Listening Comprehension' module (five teaching the first year, five teaching the second year and three teaching the third year) were asked two open and exploratory questions. This is mainly to see how far their practices match the original practice proposed by syllabus designers, which urges the equal teaching of listening and speaking skills (see Appendix 14). To this end, the questions of the interview pivoted around the teaching of 'Oral Expression and Listening Comprehension' module, both in the classroom and laboratory. It also investigated the place given to the teaching of segmental and suprasegmental aspects of pronunciation, in the same module.

The choice behind choosing interviewing over other qualitative research tools is mainly due to its flexible nature. Therefore, the interviewer is able to interfere and ask for elaboration, whenever needed, even if the questions are meant to be structured in the first place. It is worth mentioning, though, that some teachers suggested writing down their answers once they are home, as they were limited by time at the university setting. The recording and/or taking notes procedure took place at the department of English, Mentouri University. All the recordings and notes taking were transcribed to be easily analysed (Appendix 15). In the analysis, teachers are referred to by numbers; from the first interviewed (teacher 1) to the last (teacher 13).

6.1.4.2 Analysis and Interpretation of the Interview

As stated earlier, the researcher was interested in the way teachers of OE teach it in practice. Therefore, the interviewed teachers were asked 2 questions, which the researcher believe to be productive enough to gather the information required in order to draw the comparison between the syllabus in theory and practice. The first question sheds light on the

elements teachers mostly focus on as well as investigating the techniques used in teaching the speaking and listening skills. The second question intends to see how far students are introduced to the segmental and suprasegmental aspects of pronunciation in the OE session. In what follows, the answers of the interviewed teachers will be discussed.

Question 1: How do you teach 'Oral Expression and Listening Comprehension' module in both, the classroom session and the language laboratory?

In order to analyse the answers of the interviewed teachers, the researcher transcribed the recordings and coded the answers under each skill (speaking vs. listening) and academic level (see table 43).

Table 43

Techniques Used to Teach Speaking and Listening Skills

Activities		Speaking	Listening
1st Year	Teacher 1	Role plays, conversations, discussing idioms, etc.	Listening to conversation Listening comprehension-related activities
	Teacher 2	Group/pair performances : practicing the vocabulary introduced in the listening session	Listening to audio materials and watching videos: contextual vocabulary
	Teacher 3	Fluency activities: discussions, debates, presentations, interviews, role plays and simulations	Watching movies, role plays, drama, live talks and shows
	Teacher 4	Situational speaking conversations: practice what have been dealt with in the listening session:	Listening comprehension-related activities: new vocabulary
	Teacher 5	Speaking activities related to the listening material: post-listening discussions	Every day listening situations: language is use, pronunciation, culture
2nd Year	Teacher 6	Role plays and discussions Vocabulary building activities Games	Listening to audio materials of native speakers
	Teacher 7	Role plays: practise using the vocabulary learned in the laboratory session	Listening to audio materials: vocabulary and language functions
	Teacher 8	Role plays and simulation	No listening activities

Activities		Speaking	Listening
2nd Year	Teacher 9	Role plays and debates A variety of games Vocabulary building activities	No listening activities
	Teacher 10	Classroom discussions and debates	Listening to native conversations and watching moral movies
3rd Year	Teacher 11	Classroom presentations and debates	No listening activities
	Teacher 12	Classroom presentations and discussions	No listening activities
	Teacher 13	Classroom debates, reports, presentations and role plays	No listening activities

Not all the teachers in question used a language laboratory, a session which is meant to be devoted to improving the students' listening skills as well as recognizing the importance and practicing the different segmental and suprasegmental aspects of English. However, it is worth mentioning that some teachers (3 and 5) do not use the laboratory due to out of order equipment. He rather prefers teaching listening in the classroom using mostly his own devices (speakers and laptop).

Teachers 8, 9, 11, 12 and 13 skipped purposefully teaching listening skills in favour of speaking skills, on the pretext of helping the students to reach native-like fluency in the long run and preparing them to take part in daily life communications (see Appendix 15 for the interviewees' answers). All the teachers adopted, in the classroom session, different speaking activities to teach students how to build up their productive skills. Role plays and classroom discussions seem to take the lion's share, though, as all the interviewed teachers rely, partly or totally, on them. Three teachers, (4, 5 and 7), tended to make those role plays and discussions a follow up practice to what have been dealt with in the laboratory session. They first introduced, through listening activities, the related vocabulary that students will later use in the classroom while doing situational speaking activities.

As for the laboratory session, the seven teachers who used listening activities (1, 2, 3, 4, 5, 6, 7 and 10) tended to expose their students to native speakers' audio and video materials in an attempt to either develop their perceptive skills or to acquire contextual vocabulary (Appendix 15). The integration of listening activities, though, seems to be exclusive as teachers focus on the information rather than on how to enable students to process the information in the first place. Except for teacher 5, all of them focus on understanding the topic in question or learning how to use the language in context, but never how to listen and extract the message from smaller constituents, that are mostly difficult to grasp from the blur of sounds at early levels. Teacher 5, however, teaches different aspects of the language in oral expression and listening comprehension, using a textbook, as it encompasses a variety of language aspects: pronunciation (segmentals and suprasegmentals), vocabulary, language functions, etc.).

Question 2: Do you devote some time to teach the segmental and suprasegmental aspects of pronunciation? If yes, how?

As far as pronunciation is concerned (see table 44), apart from three teachers (5, 6 and 9) who explicitly introduced aspects of pronunciation via targeted activities; the other teachers limited their involvement to giving feedback whenever pronunciation mistakes/errors take place or when students are introduced to new vocabulary. Indeed, teachers 7 and 10 claimed that phonetics, the module that genuinely deals with pronunciation as such, would do better in this matter. It is worth mentioning, though, that even the teachers who integrated the teaching of pronunciation, disregarded introducing the suprasegmental aspects (except for teacher 5), and merely focused on either individual sounds or on the phonetic transcription of whole words.

Similarly, the teachers of third year think that students need to work on their speaking skills through participating in presentations and classroom discussions. According to them, pronunciation should have been dealt with in the 1st and 2nd year. Students are supposed to attain a fairly good command of language when they are in the 3rd year. Yet, they highlighted the fact that this is way too far to be the case with their students, and that they try to talk about pronunciation rules whenever the opportunity arises i.e. feedback after presentations or whenever new words are introduced (see Appendix 15). Table 44 outlines the techniques, if any, used to teach pronunciation per teacher.

Table 44

Pronunciation Teaching in the OE Session

Pronunciation teaching		Targeted activities	Others
1st Year	Teacher 1	No teaching of pronunciation	
	Teacher 2	-----	Correction of pronunciation mistakes as a feedback Deal with the pronunciation of new words
	Teacher 3	-----	Feedback on pronunciation mistakes Discuss the pronunciation of new lexical items
	Teacher 4	No teaching of pronunciation	
	Teacher 5	Enunciation activities Practicing suprasegmentals: stress and intonation	-----
2nd Year	Teacher 6	Enunciation activities Reading dialogues Transcription activities	-----
	Teacher 7	-----	Discuss the pronunciation of new words Correction of pronunciation mistakes
	Teacher 8		Feedback on pronunciation mistakes
	Teacher 9	Enunciation activities	-----
	Teacher 10	No teaching of pronunciation	

Pronunciation teaching		Targeted activities	Others
3rd Year	Teacher 11	-----	Correction of pronunciation mistakes
	Teacher 12	-----	Discuss the pronunciation of new words Correction of pronunciation mistakes
	Teacher 13	-----	Correction of pronunciation mistakes Talk about pronunciation rules whenever the opportunity arises

Note. Empty cells means no data were provided under the heading in question by the interviewed teachers.

Clearly, all of the thirteen teachers are inclined towards improving their students' communicative skills, right from the first year. They pay considerable importance to the meaning rather than the form as such. Teachers per each academic level are not confined to a common content; each one tailored her/his lessons according to the objectives s/he believes must be attained from teaching OE. They mostly rely on teachers of phonetics to teach the different aspects of pronunciation and merely introduce the latter in the form of feedback or whenever new words are encountered. What is also striking is the absence of gradual variation in the techniques used to teach OE over the three years of the BA degree. Obviously, students' needs are not effectively taken into consideration while designing oral expression and listening comprehension courses. EFL learners need first to work on the difficulties they face and hinder to a large extent their receptive and, as a result, their productive skills as well. They should be learning how to parse the string of sounds they listen to and be able to tell when a word starts and when it finishes. This is mainly through being exposed to listening activities targeting the way sounds are pronounced in English. Also, in order to develop their speaking skills, students need to move from a dependent practice to a rather spontaneous use of the language. It is of paramount importance not to load the students with too many complexities of English early in their long journey of learning a foreign language, which, if taken this way, ends to be counterproductive, instead.

All in all, in theory, the syllabus designed to teach pronunciation to undergraduate students encompasses more or less the basics that a foreign learner needs to know about the phonetics and phonology of English. However, in reality, the level of students does not really reflect the aspired results. This leads us to ask the following question: Why are not students of English at Mentouri University getting any better in terms of pronunciation despite being taught the basic aspects of English phonetics and phonology? The answer to this question would be, to a large extent, the lack of practice in language laboratories. Even if the training committee tailored syllabuses of Phonetics and OE modules in a way that, on the face of it, they seem to complement each other, on the ground, however, the focus is on the communicative function of the language not on the form as such.

6.2 The Teaching of Speech Rhythm at Mentouri University

At the Department of English at Mentouri University, speech rhythm is introduced to EFL students in the first year of the Master's degree, even though it is scheduled starting from the first year of the BA degree in the syllabus designed by the training committee. On a closer inspection, the concept of rhythm is merely introduced from the 'isochrony' perspective, even if the latter turned out not to be the basis of languages' rhythmic categorization. Indeed, further research works were conducted, throughout the few recent years, in order to account for the perceived differences in languages rhythms and their results highlighted the importance of some phonological properties in the shaping of each speech rhythm. Besides, the teaching of speech rhythm at the same department has always been taken from a holistic perspective, as to what constitutes 'the foot'. The other rhythmic components, at the word level, that are proven to be indirect contributors to the perceived speech rhythm are more or less left uncovered. In addition to that, speech rhythm is only introduced in theory; no attempt is made in order to help EFL students perceive it and practice it in order to use it in their

interlanguage. Therefore, in what follows, recommendations for how to teach speech rhythm will be introduced as well as a suggested syllabus to teach it in both Phonetics and OE.

6.3 Recommendations for Teaching Speech Rhythm

The program designed for teaching English to undergraduate students at Mentouri University needs to be adapted in some contexts to meet the language learning needs of EFL learners, especially in the teaching of speech rhythm, an aspect that is generally overlooked as it is considered the most difficult and challenging area for both language learners to master and for language teachers to teach. Recently, researchers in the field of phonetics and phonology acknowledged the fact that suprasegmentals must be given much importance not only because they make the foreign speech more native-like but also as they represent road signs to guide communication. Speech rhythm, in particular, organises the structure of information in the spoken language in order to help the listener understand the intention of the speaker, and since the goal behind teaching a language is to develop a fluent and comprehensible speech, focus should be given to the teaching of speech rhythm in both modules concerned with speech and communication i.e. Phonetics and OE. Speaking of its importance, Roach (2001: 37) said "Rhythm is useful to us in communicating: it helps us to find our way through the confusing stream of continuous speech, enabling us to divide speech into words or other units, to signal changes between topic or speaker, and to spot which items in the message are the most important". Therefore, due to its importance and its difficulty to master by foreign learners of English, students should be taught and guided as how to tune their foreign speech. They have to learn *how to correctly produce* those cues they count on to help the listener follow meaning in conversation.

Generally speaking, speech rhythm is related to longer units of speech and its teaching is believed to be best considered from a holistic perspective, hence approached by a top-down

scheme that is based mostly on suprasegmental features. However, longer units of speech are combinations of smaller constituents that make, by definition, the teaching of speech rhythm approachable from a bottom-up scheme as well. With this in mind, there should be no inclination towards one approach over another in the teaching of speech rhythm as the latter brings together segmental and suprasegmental features. Therefore, the appropriate syllabus to better teach speech rhythm to EFL learners is the one geared towards a balanced segmental-suprasegmental instruction in the sense that both of them affect in a way or another intelligibility (perception) and fluency (production). Making the ear accustomed to discriminate auditory differences among rhythmic patterns and familiarize them with the melody of English is as important as teaching the necessary features to produce the correct rhythmic pattern. Teachers, thus, should use a top-down approach to teach rhythm perception as it deals with longer chunks of the language and serves for communicative purposes (thought group and its characteristics) and should use the bottom-up approach to teach the production of smaller elements like the aspects of word rhythm as they need dedicated practice.

As kenworthy (1987) claimed, when hearing a language people are very sensitive to the intonation and rhythm rather than to different sounds of that language. Therefore, the first thing to tackle while trying to teach speech rhythm is to expose the students to the prosodic framework within which the sounds are organized. Instruction should first concentrate on making the students accustomed to the way native speakers of English use rhythmic cues to organize thoughts and highlight important words in order to guide their listeners. Then, instruction should shift towards learning how to produce those related aspects of speech rhythm. Perception, indeed, would be a prerequisite step before learning to produce all the features of the speech rhythm of English because:

- It raises the students' awareness about the fact that in order to convey the intended meaning, more than producing a correct language is involved. Students would know that speech rhythm would compensate for other faults, including those of pronunciation, if they know how to direct the listener to the centre of attention in the stream of speech without making him/her lose the thread of communication.
- It shows the foreign learner how words in isolation and their normative pronunciations change when said in longer stretches of words: function words and aspects of connected speech.
- It allows students to identify their rhythmic weaknesses at the word level (the segment /ə/ that is directly related to rhythm as it gives the alternation between stressed and unstressed syllables).

6.4 A Suggested Syllabus for Teaching Speech Rhythm

In what follows, a suggested syllabus for teaching the perception and production of speech rhythm will be introduced.

First of all and as mentioned earlier, speech rhythm should be taught over two modules: 'Phonetics and Phonology' and 'Oral Expression' for both of them are concerned with the speaking skill. It is worth mentioning that exposing students in their first year BA to some theoretical and practical knowledge about the production of speech sounds of English is a prerequisite to the teaching of the different features of speech rhythm that should be introduced right at the beginning of the second year.

In the second year, students need to be exposed to authentic listening resources of English in order to develop a distinctive ear for the rhythmic patterns of the English language (either at the word level or with thought groups). Students are implicitly exposed to the target language form and are, thereby, expected to recognize the rhythmic gaps in their

interlanguage. Teachers of phonetics should rely on recognition activities in order to direct the students' attention and raise their awareness about the prosodic markers and the characteristics of English rhythm at the word level. Teachers should then introduce the particularities of word rhythm: the weak central vowel /ə/ and its role in creating a weak version of function words, how to differentiate between stressed and unstressed syllables, the different pronunciations of the past suffix 'ed', and the articulation of syllabic consonants notably [n̩] and [l̩]. In OE module, however, teachers should use a set of dependent activities in which students are asked to produce the items in focus following a 'listen and repeat' technique.

Once students have developed a fairly moderate command of the use of word rhythmic features, instruction gradually moves towards the introduction of other rhythmic features concerned with longer stretches of language. The first step concentrates on raising the students' awareness about how the pronunciation of individual words is modified when not said in isolation i.e. between word boundaries. This encompasses introducing the different aspects of connected speech along with how they are produced. Meantime, teachers of OE should provide a set of well-chosen guided activities in order to allow the students to produce and compare their own performance against what has been seen in the input sessions.

Speaking in English involves more than combining words together to form longer units. It is governed by the logical use of thought groups that are separated by a pause (break long sentences into shorter pieces, separated by slight pauses, to help listeners organize the meaning). Thus, the second step focuses on introducing the other rhythmic-related parameters that are responsible for organizing the speaker's speech and serve as road signs for the listener as they are crucial to grasp the speaker's intended meaning: thought group and its related characteristics. More precisely, the thought group is additionally marked by the main idea or a focus word that catches the speakers' intention through being more prominent and

emphasized (one syllable is stressed), the other words in a thought group are strung together and deemphasized. Therefore, non-native speakers need to be made aware of the characteristics that govern the thought group:

- Speech tempo: The focus word needs to be emphasized clearly than the other surrounding words within the thought group that, in turn, need to be deemphasized and said quickly.
- Pausing: Pausing too much without forming a thought group, as it is usually the case with foreign learners, would create a choppy and confusing way of communication. Besides, not pausing at all or making an illogical pause from time to time is tiresome to the listener as s/he tries to grasp the meaning from the information load.
- Pitch change and the lengthening of final syllable.

Again, a set of guided activities that focuses chiefly on how to produce organized chunks of language using the aforementioned characteristics should take place in the OE module.

Once all the pre-mentioned components are moderately under command, students need to recycle what has been acquired in a rather semi-guided practice with self-initiated and rehearsed speech, in order to prepare themselves for daily speech situations. Students, therefore, are expected to control their speeches as they are given the opportunity to generate and rehearse their productions. To make sure that students will apply the rhythmic features, teachers should instruct them to avoid generating a flat mechanical speaking, and why not giving a bonus to the performance(s) that better meet(s) the rhythmic norms of the English language. At the end, a follow up discussion and reflexion section would make a good synthesis to sum up the points that are really controlled and those that need further focus from the part of the student.

Instruction in the third year should concentrate on having the students transfer on their own what has been gained before, to spontaneous speech situations, in an attempt to prepare them for real life communications.

The following table summarizes the proposal of how speech rhythm should be taught over the three years of the BA degree in both Phonetics and OE modules:

Table 45

A Syllabus Designed for Teaching Speech Rhythm

First Year	
Oral Expression	**Phonetics**
-Practice how to correctly produce and articulate the sounds of English through repetition and imitation. -Use of minimal pairs to practice the difference between vowels (tense/lax, short/long, full/reduced) -Use of minimal pairs to practice the difference in vowel length in accordance to syllable type and consonant voicing. -Practice to transcribe speech sounds using the IPA symbols.	-Introduction to the basic concepts of phonetics and phonology: speech sounds. -Raise students' awareness about the complex orthographic system of English and to spelling pronunciation. More focus should be given to this matter and practice can involve reading poems including the different problematic sounds whose pronunciation does not match their orthographic representations. -Introduction to syllable structure and word stress.
Second Year	
Oral Expression	**Phonetics**
-Have the students practice and use, in their interlanguage, the newly learned items, in the phonetics module, through a series of dependent activities with a given model, a series of guided activities, and a series of semi-guided activities with self-initiated and rehearsed speech.	-Listening to authentic audio to sensitize the students to the stress timed nature of English and make them actively perceive the distinctive features of natural speech through a series of recognition activities[6]:

[6]Selected recognition activities can be found in Bowen and Marks (1992), Underhill (1994), Laroy (1995), and Hancock (1995).

<table>
<tr><th colspan="2">Second Year</th></tr>
<tr><th>Oral Expression</th><th>Phonetics</th></tr>
<tr><td>-Teachers should take into account the nature of the item in focus while choosing the type of activity. One cannot use a ‘listen and repeat’ activity to practice rhythmic features that go beyond the word level such as pauses.
• Listen and repeat (more profitable with individual items). Such a kind of activities should be kept to a minimum; once the students produce the targeted item, it is better to move to less controlled speaking activities.
• Oral reading: reading aloud scripts allows students to pay attention to pronunciation rather than vocabulary since they do not need to construct their own sentences, their cognitive load is lessened. This type of activity is suitable to practice rhythmic features that are related to longer linguistic units.
• Pre-planned oral presentations and rehearsed performances followed by a section of students’ feedback. In this semi-controlled type of activities, students are given the opportunity to build their own productions, abiding by what they have learnt, and rehearse what they are going to say.</td><td>• Dictation of words/passages featuring the item in focus followed by targeted questions
• Listening to authentic audio featuring the item in focus followed by targeted questions
Vowel reduction, ‘ed’ past suffix and syllabic consonants
Objective 1: raise the students’ awareness about the importance of making one syllable more prominent than the other, to give the alternation between stressed vs. unstressed syllables.
Objective 2: raise the students’ awareness about the importance of the correct pronunciation of the past tense suffix ‘ed’ and syllabic consonants ([n̩] and [l̩]) in maintaining the correct number of syllables, and thereby the correct placement of stress.
Aspects of connected speech
Objective: introduce the different aspects of connected speech and how sounds change or disappear as a result of their environment. Explanation follows once the students succeed to recognize the item in focus.
Thought group
Objective: sensitize students to the characteristics of rhythmic groups (pause, pitch change, etc.) and raise their awareness to the correct segmentation in speech.</td></tr>
<tr><th colspan="2">Third Year</th></tr>
<tr><th>Oral Expression</th><th>Phonetics</th></tr>
<tr><td>Objective: Prepare the students to real life communication and have them practice how to use the language in an independent manner i.e. practice the language with self-generated content.</td><td>-----</td></tr>
</table>

Note. The cell under the heading ‘Phonetics’ in the third year is deliberately empty. By the end of the second year, the basic aspects of English phonetics and phonology would all have been covered

Conclusion

Since the aim behind teaching a foreign language is to understand and to be understood, more focus should be given to the teaching of suprasegmentals notably speech rhythm as it can lead to a communication breakdown on the part of the listener as well as on the part of the speaker. It is worth mentioning that teachers generally tend to neglect the necessity of teaching speech rhythm mostly because it is regarded as something that comes naturally with the language and, therefore, cannot be acquired. However, if instructors stop considering speech rhythm from a holistic point of view and rather focus on the different components that contribute directly or indirectly to the tune of English, the longstanding challenge to teach speech rhythm would be, more or less, met.

Foreign learners need first to develop their perceptive skills and then move forward to develop their productive skills. Therefore, a good syllabus to teach speech rhythm should be geared towards the teaching of both, its perception and its production. The former should be introduced in the Phonetics module while the latter should be dealt with in OE module. Teachers of 'Phonetics' should use a set of recognition activities in order to sensitize the students to the different rhythmic components (either at the word level or thought group level) that ought to be mastered if they are to speak intelligible and fluent English. In parallel, students should be trained, in the OE, on how to use those different rhythmic components in their interlanguage, through a series of speaking activities: dependent, guided or semi-guided, the choice of which depends on the item in focus.

GENERAL CONCLUSION

The present work tackles how the components of English speech rhythm are rendered by the undergraduate students at the Department of English, Mentouri University. The notion of English speech rhythm considered in the present work departs from the classic isochronous perspective and takes into account the phonological and phonetic factors that are responsible in setting apart the different perceived speech rhythms i.e. syllable structure, vowel reduction and salient stress. Given the fact that those factors are language-dependent, and that EFL learners have already been exposed to at least one other language before embarking on learning English, a contrastive and error analysis are compulsory in order to be able to identify the patterns of the students' speech rhythm components and hence classify the rhythmic category of their interlanguage.

The undergraduate students enrolled in the present study suffer from several pronunciation problems that seriously affect the rhythm of their interlanguage: mispronunciation of the past tense suffix 'ed' and syllabic consonants [l̩] and [n̩], misuse of vowel reduction and the tendency to generalize the full form of vowels even when the reduced ones should be used, misplacement of lexical stress and the non- differentiation between stressed vs. unstressed syllables in terms of duration, pitch, and intensity. What accounts for such a performance is mainly transfer of attitudes that is based mostly on generalizations developed by the learners themselves in their quest to learn English. The Latin alphabet that is shared between English, the language being learnt and French, the learners' second language is what is most responsible for the deviation from the English language norms, despite the fact that most of the students have an average competence in French.

The influence of spelling on pronunciation results in the mispronunciation of some components that directly lead to the deviation from the rhythmic norms of English. Failure to

produce correctly the mid-central unrounded vowel /ə/ represents the major problem that shapes the rhythmic category of the undergraduates' interlanguage as it leads, mostly, to the overuse of the strong forms of function words and therefore holds up the natural flow of speech and calls for an exaggerated, unneeded energy. Besides, substituting the same vowel in content words, generally by their represented graphemes in spelling, leads to stressing unstressed syllables and/or increasing the number of stressed syllables that enormously adds to the overall duration of an utterance, permeating, substantially, the overall speech rhythm.

The sketchy syllabus designed for teaching pronunciation in both Oral Expression and Phonetics modules even makes things worse as it mostly focuses on the functions of the language in the former and lacks practice on the form in the latter. Therefore, it is incumbent on syllabus designers to consider the most challenging pronunciation issues for EFL learners right from the start, especially those that have a direct effect on the intelligibility as well as the smoothness of the communication. The resulting interlanguage does not seem of much enthusiasm as it deviates, to a large extent, from the one aspired and ought to be learnt by the majority of those who are enrolled in studying English with gusto and have already achieved a good command in other aspects of the target language. Therefore, an equilibrium syllabus that takes into account both the segmental and suprasegmental aspects of pronunciation would be of much help for EFL learners. Phonetics and Oral Expression modules should be designed in a way that they work in tandem, as both of them focus on the spoken language as such. Phonetics, on the one hand, should focus on recognition activities in order to sensitize the students to the different rhythmic components (either at the word level or thought group level) that ought to be mastered if they are to speak intelligible and fluent English. Oral Expression, on the other hand, should provide the opportunity for students to practice the use of those different rhythmic components in their interlanguage, through a series of speaking activities: dependent, guided or semi-guided. English, after all, has its own norms that must be, more or

less, fully respected even if the farthest performance that can be achieved by foreign learners remains an interlanguage.

Further research in the realm of improving speech rhythm of EFL learners can deal with the devices of connected speech as they also constitute one means to the same end. Besides, the implementation of the suggested syllabus for teaching pronunciation in the present study would make a follow-up piece of research to study the viability of such a program. Following the would-be obtained results, a more coherent and viable syllabus could be designed taking into consideration what needs to be added, deleted, or amended. Moreover, a pure spectral analysis could show a minute description of the acoustic characteristics of reduced vowels of EFL learners, in the F1/F2 Formant space and would provide valuable insights, especially if it is compared with the performance of native speakers. Last but not least, the application of different speech rhythm metrics to the same data of this study would add more significance to the classification of EFL's interlanguage speech rhythm.

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APPENDICES

APPENDIX 1

Transcripts of the Informants' Discussions

Turquoise = schwa in function words Yellow = schwa in content words

Bright Green = syllabic consonants Pink = 'ed' past tense suffix

Audio File 1

Student: This is the most terrible exam that I have passed

Teacher: Which one?

Student: This semester, the whole semester because I think that things going difficult, yes it's different from the first and second.

Be open to suggestions, no one is so perfect that they may not need advice from time to time
/ʊ/ /æ/ /æ/ /ɒ/ /ʊ/

People must be open to the other opinions and accept the opinions of the others, you must
/ɒ/ /ʌ/ /uː/ /ø/ /ɒ/ /æ/ /æ/ /ɒ/ /ɒ/ /ø/ /ʌ/

have the acceptability, acceptance to hear the others, the opinions of the other. No one is
/æ/ /ʊ/ /ø/ /ɒ/ /ɒ/ /ø/

perfect this means no one is perfect, no one is — right and always think right, that's why
/æ/

we accept the others opinion. People need someone advice from time to time.
/æ/ /ø/ /ɒ/ /ɒ/ /ə/ /ɒ/ /ʊ/

Teacher: Have you ever been through an experience where you were like, were you decided to, I mean ask someone for advice?

Student: Oh yes

Teacher: Tell me

Student: For example, today, I decide to do something after taking
/ɒ/ /ɒ/ /ʊ//ʊ/ /ø/

consideration and many opinion of others because I think, I always think from the negative
/ɔ̃/ /ə/ /æ/ /ɒ/ /ɒ/ /ø/ /ɒ/

side because I pass through a terrible things in this life and (I have always) I am always cared
/ɒ/ /æ/

(scared) from doing things especially —
/ɒ/

Teacher: Scared!

Student: Scared to do things
/ʊ/ /uː/

Teacher: Yes miss

Student: Shall I tell you about another experience
/ə/ /ə/ /ə/

Teacher: No tell me a little bit about have you ever advised someone and then this person was not too open to your advice or it was the opposite.

Student: Yes

Teacher: Ok, tell me

Student: My father doesn't accept any opinion of any one; he is, he thinks that
/ø/ /ə/ /ɒ/ /ɒ/ /æ/

he always right, always right, I tried to talk him and to advise him I am his
/ə/ /ʊ/ /æ/ /ʊ//æ/

daughter ok but I can tell him advices, advise him but he can't accept these advices
/ə/ /ʌ/ /ɑ/ /æ/ /æ/ /ʌ/ /ə/ /æ/.

Teacher: Because you think he is —

Student: He is —

Teacher: What's your opinion about that?

Student: About what!
/æ/

Teacher: About his, about your father's or the person who cannot you know

Student: Understand the others.
/ø/

Student: I can't deal with him, I can't, I prefer to keep silent than I talk to get nothing.
/uː/ /æ/ /uː/

Teacher: There is something I like about your personality —

Student: I need to be less strong?
/ʊ/

Teacher: Less strong

Student: May be. I hate to talk to someone who doesn't make a reaction, why I just don't
/ʊ/ /ʊ/

bother myself
/ə/

Teacher: Do you want to add something?

Student: Nothing

Audio File 2

Student: The most beautiful things in the world cannot be seen or touched; they must be felt
/ɒ/ /ə/ /ʌ/

with the heart.

Student: What shall I do, explain?

Teacher: Yes

Here it depends on the — beautiful things. Some people see some beautiful things in a way
/ɒ/ /ʌ/ /ɒ/ /ʌ/ /ɒ/

and others in another way. For example, for some people the beautiful things in life is
/æ/ /ə/ /ə/ /ɒ/ /ɒ/ /ɒ/ /ɒ/ /ɒ/ /ɒ/

happiness or something, for others is money.
/e/ /ɒ/ /ø/

Talking about things that cannot be seen or touched, she is talking about something that we
/æ/ /æ/ /e/ /æ/ /æ/

feel and I think that the most beautiful thing in the world that cannot be seen or touched is
/æ/ /æ/ /ɒ/ /æ/ /ed/

happiness for me, is to be happy and you live your life as you wish.
/e/ /ɒ/ /ʊ/ /æ/ /æ/

Teacher: 'as you wish' what do you mean?

Student: As you are planning
/ɑ/

Teacher: How are you planning it?

Student: You are talking about me?
/ə/

Teacher: Sure

Student: I see, all the things I wanna to do I am doing it right now and I'm happy with it.
/ʊ/ /ʊ/ /æ/

Teacher: A very diplomatic answer.

Student: Yes? and when you are living your dream or doing things that you wanted to do. Of
/æ/ /æ/ /ʊ//ʊ/ /ɒ/

course you will feel happy and of course you will feel with your heart. And when you feel
/æ/ /ɒ/ /æ/

with your heart, it means that you are doing right.
/æ/

Teacher: Have you ever been through an experience where you decided like when you discovered (misunderstood word), it's better when I felt it with heart in the beginning.

Student: You think we must feel with your mind because thinking with mind and heart is
/ʌ/

different when you think with your heart, it's gonna be easy with your heart because it's feeling. It's not something real

Teacher: Do you believe that God exists?

Student: Of course
/ɒ/

Teacher: It is something that you cannot see but you feel him

Student: You feel him through your worship. I didn't start praying in an early age but now El
/ʌ/

Al hamdoulilah (thanks be to God)

Teacher: Why do you pray?

Student: Ask God for forgiveness and for help and it's something that we have to do since
/ɒ/ /ɒ/ /æ/ /ɒ/ /æ/ /æ/ /æ/ /ʊ/ /ʊ/

we are Muslims.

Teacher: When you have an exam, a module, that you don't like but you have to study and there some module that you love and you do it with your heart or so, here comes the difference

Student: Talking about modules, all modules are important even when you really dislike
/æ/

them. There is things in life you dislike them but you have to do them. I hate a lot of
/ə/ /ʌ/ /æ/ /ʊ/ /ʊ/ /ɒ/

modules; anyway, I wanted to study English just for the language.
/ʊ/ /ɒ/

Teacher: Do you hate my module, too?

Student: Oh no, this is the best module because I see people share ideas. I'm sitting here
/ɒ/

every lecture and I'm noticing some things that's why I cannot share some ideas with them.
/ʊ/ /æ/ /ʌ/ /ɒ/

Teacher: You know your ideas with me, do not care about them. Back to the beauty thing,

consequently beauty is felt with the heart or what is seen with the eyes, for you?

Student: Something touched with the eyes. I mean the beauty, I see as my family, parents,
/e/ /æ/

people I deal with everyday, that's all that the most important thing.
/ɒ/ /æ/

Audio File 3

Teacher: How are you?

Student: Afraid, a little bit

Teacher: Why is that, exams?

Student: Yes, because I'm, I do some mistakes. in pack, linguistics because I revise well but

I'm forgettable.

Teacher: I hope that you are going to do better here.

Student: But I am not good

The student picked a piece of paper

Student: To have joy, one must share it, happiness was born a twin
/ʊ/ /æ:/ /ʌ/ /e/ /ɒ/

I think that it talks about happiness and that happiness comes from different factors that lead
/æ/ /ə/ /e/ /æ/ /æ/ /e/ /ɒ/ /æ/

someone to be happy. — it starts from joy and someone will be happy first will be like life
/ʊ/ /ɒ/ /æ/

Teacher: Alive you mean

Student: Yes, and he is supposed to be active, ah thankful
/æ/ /e/ /ʊ/ /u:/

Teacher: Thankful, grateful to God.

Student: He must share many beautiful things with her/his friends or society and he must be
/ʌ/ /ɒ/ /ɒ/ /æ/ /ʌ/

generous he must be helpful when someone has problems, he must share especially when
/ɪ/ /ʊ/ /ʌ/ /ɒ/ /ʌ/ /ʌ/

this, his friend, is the best friend because when real friends appear in difficulties, harsh

situations, he must share this problem with this friend and he must give him some advice to
/ə/ /ʌ/ /æ/ /ʌ/ /ɒ/ /ə/ /ʊ/

be forgettable of his bad situations.
/ɒ/ /ɒ/ /ə/

Teacher: What's happiness for you?

Student: Happiness for me is my mother
/ə/ /ɒ/ /ø/

Teacher: Lovely

Student: Because I have bad situation about happiness and about this problem because I have
/æ/ /ə/ /æ/ /ə/ /æ/ /æ/ /æ/

plenty of problems. That's why I'm very ..
/ɒ/

Teacher: Happy person?

Student: I feel sad and that's why I didn't study well this year because this is not my
/æ/

personality. I'm not quiet, I like make joking and I like, I'm always laughing, because this
/ɒ/ /ɪ/

year I'm like that, so I think that happiness must be achieved by everyone in society to have a
/æ/ /ə/ /ʌ/ /ə/ /ɒ/ /ʊ/ /æ/

nice day and it make life better especially in job, in work, education.
/æ/

Teacher: Yes, very good. The second part is happiness is born twin. What doesn't mean, what does twin mean?

Student: Two things that share? Two similarities may be two people who are similar. I suppose. That, they share many things. So this is the twin for happiness, when you have happiness and you share it with people.

Teacher: Happy in exams?

Student: No, not like that (laugh) when I do mistakes and I will — when I go out from the situation, I tried to be happy, to forget what I do (did, teacher) and as what I said before, when I be at home, I try to be happy to forget the problems.

Audio File 4

Student: The most beautiful things in the world cannot be seen or even touched, they must be felt with the heart. It's may be talk about feelings, it said things that we can touched and she mean maybe love, hate or anything that we fell.

Teacher: But hater cannot be a beautiful thing

Student: Maybe love, making something good for another one, try to — what can I say about beautiful things: love and things we love to make to people, to help them when they fall in problems or so and that's it.

Teacher: What's the thing that is not seen but makes you feel happy, or makes you feel deep down like wow, this is a beautiful thing.

Student: For example when I have something or someone that she or he have problem, I felt
/ɒ/ /ɒ/ /æ/ /æ/ /æ/

very happy, when I seen him happy too.

Student: When someone is support her work, and be with her, help her to move and achieve
/ə/ /æ/ /ʊ/ /æ/

her goals like you said, and to motivate people to be like her, and there is nothing that can't
/æ/ /ʊ/ /ɒ/ /ʊ/ /æ/ /æ/

talk about a person to achieve his goal.
/ə/ /ə/ /ʊ/

Teacher: Ok

Student: That's it.

Teacher: Do you want to add something?

Student: Not really, all the time I need time to think, that's the problem, that's it.
/ʊ/

Teacher: Ok, thank you.

Audio File 5

Teacher: Pick up one, read it for me.

Student: That which not kill us, makes us stronger
/æ/ /ʌ/ /ʌ/ /ø/

Sometimes we face problems in order to make the problems make us disappointed trying to
/ə/ /ʊ/ /ʌ/ /ʊ/

making something negative or thinking in a negative way. In order to think in this way, we
/ə/ /ʊ/

have to take this problem as something positive. They make us to made challenge with life.
/æ/ /ʊ/ /æ/ /ʌ/ /ʊ/

that means that things which not kill us make us stronger, like when — shall I give an
/æ/ /æ/ /ʌ/ /ʌ/ /ø/

example?
/ɒ/

Teacher: Sure

Student: Sometimes when you have family problem, love problem when you love someone
/æ/

very much and he will done for you something you have ever think that he will ever does
/æ/ /ɒ/ /æ/ /æ/ /ʌ/

for you, you must to take (correction) this problems as positive thing to complete your life, to
/ɒ/ /ʌ/ /ʊ/ /æ/ /ʊ/ /ʌ/ /ʊ/

move on.

Teacher: It seems like you love story have destroyed you somewhere.

Student: Yes, one time, it's the first and perhaps it's the last time.
/æ/

Teacher: This is stupid if you think this way. He is going to build his life again.

Student: In fact, he does.
/ʌ/

Teacher: You see

Student: No, but because, the matter is that — In this moment, I'm going to have a
/ʌ/ /ə/ /ʊ/ /æ/

relationship (I think so) but it's not like the first time because the person you love the first
/ʌ/ /ə/

time was someone I cannot say perfect, but he is special.
/ɒ/ /ʌ/ /ə/

Teacher: How old were you when you fell in love?

Student: Perhaps 18, in the second year in high school. It was the first time.
/ɒ/

Teacher: Wow, and how long have you been with this person?

Student: 2 years. The problem is not between me and him, it's between his family, not with
/æ/

his father, with his mother.
/ɜ:/ /ɜ:/

Teacher: She doesn't love you?

Student: No, in fact he (she, she means) is loving me, but he is not a Muslim and she has
/ʌ/ /ə/ /ʌ/

problems.

Teacher: What do you mean?

Student: When she was talking to my mother, I don't know, she like — she is different. In
/ɒ/ /ʊ/ /ɜ:/

fact she is different, I don't know.

Teacher: Is she Christian?

Student: yes

Teacher: Your boyfriend is Christian?

Student: No, he is not and very Muslim.

She create problem I don't know why. In fact she was loving me and makes things when I
/ɒ/ /æ/

have problems with him.
/æ/

Teacher: Where did she come from?

Student: Lebanon

even problems in my family make me strong. My mother always if there is a problem come
/ɜ:/

to talk to me because if i, if the problem is very big. I don't give as much the problem is big. I
/ʊ/ /ʊ/ /æ/

always take it simple in order to make my mother don't care about, a lot about that problem.
/ɒ/ /ə/ /ʊ/ /ɜ:/ /æ/ /ə/ /æ/

Even problem that happen with you, I'm thinking to make it, what happen to me as a lesson
/æ/ /ʊ/ /ʊ/ /æ/ /ə/

to make me strong.
/ʊ/

Audio File 6

Teacher: Pick up one

Student: That which kill us make us stronger
/ʌ/ /ʌ/ /ø/

As we are human beings, there are things that make us ah there are things we face in our
/ʌ/ /æ/ /ʌ/

lives ah as it was said in the proverb, do not kill us but make us stronger by challenging in
/æ/ /ɒ/ /ʌ/ /ʌ/ /ʌ/ /ø/

order to fulfil something. by challenging that obstacle in our life or something, we want to
/ø/ /ʊ/ /æ/ /ʊ/

achieve something and then this thing faces us. So then we need to pass over this thing in
/æ/ /ʌ/ /u:/ /ə/

order to be strong.
/ø/ /ʊ/

Teacher: Have you ever been through a situation where you were like feeling very big and

then you decided this thing is not killing me, I'm gonna be stronger?

Student: Yes, yes as you know, we are human beings, yes because I loved someone, yes, and
/æ/ /ə/ /æ/

then I decided not to be weak anymore because —
/ʊ/

Teacher: How old were you when you fell in love the first time?

Student: First year, secondary school. I don't know but I am the eldest lady, not lady but girl
/ʌ/ /ʌ/

in my family. I feel like I am —

Teacher: You are the eldest?

Student: Yes

Teacher: This is the thing that I have never felt (laughing) I am the little.

Student: It is a good feeling. If you feel like you are the youngest one, kit's, it's a good

feeling that I really like, to be —
/æ/ /ʊ/

Teacher: My place

Student: Yes, it's not going to happen anymore. I still, I have my little sister, as I done. If I
/ʊ/ /æ/ /ɒ/ /ɜ:/ /æ/

was in three days before, she is ill even if she is — So, it's not good at all because I was just
/ɒ/ /æ/ /ɒ/

wasting my time and then I decided not to — my friends all the time advising me to not, to
/æ/ /ʊ/ /æ/ /ʊ/ /ʊ/

forget to just studies and then I try to be as stronger as I can.
/ɒ/ /ʊ/ /æ/ /ʊ/ /æ/ /ø//æ/

Audio File 7

Teacher: How are you?

Student: Good

Teacher: Good, why something special?

Student: No, because we finished the exams. This one is the last one.

Teacher: The best is for the last. Did you do well in the other exams?

Student: Not all of them, TEFL and linguistic, it was a catastrophy.

Teacher: These are the most difficult modules in your speciality.

Pick up one and tell me the story

Student: Be open to suggestions, no one is so perfect that might not need advice from time to
/ʊ/ /æ/ /æ/ /ɒ/ /ʊ/

time There is some people who, when you advise them, they don't like, they feel like you
/ʌ/ /ɒ/ /æ/

blamed them, they don't take it like an advice. And that happen to me sometimes. — but
/ə/ /æ/ /æ/ /æ/ /ʊ/ /ʌ/

what I don't like when those people do the same thing and come to me and say don't do that,
/ɒ/ /ʊ/ /æ/ /ʊ/ /æ/ /ʊ/

i feel like they want to show up (show off, correction). It's not like an advice and personally I
/ʊ/ /æ/ /æ/

don't like to give others advise.
/ʊ/ /ɜ:/ /æ/

Teacher: Why?

Student: I think, I, I, sometimes I'm afraid if they, I'm talk to something that is personal to
/æ/ /ʊ/ /æ/ /ɒ/ /ʊ/

them and I'm not supposed to do that.
/e/ /æ/ /ə/ /ʊ/ /ʊ/

Teacher: Didn't you think about the way, your way giving them the advice.

Student: Sometimes, when you tell them, and you — it's like you're controlling them, but
/æ/ /ð/ /ʌ/

when you do it in the right way, it's, they may accept it.
/ʊ/ /ə/

Teacher: What do you mean by the right way?

Student: — your tone is very important, and when you are very close with that person, it's
/æ/ /æ/ /ə/

not like you find your friend with another one who tell her, her problems, and — you talk
/ə/ /ø/ /æ/

about something, it's not , your business.
/ə/

Teacher: You the kind of person who is open to suggestions or you the kind of persons who is the opposite?

Student: Sometimes I accept, sometimes no. Sometimes I know that I did something wrong
/ə/ /æ/

and you don't want to say I did it when others tell you be strong and I don't know, you don't want to admit sometimes. That happens to me yesterday
/æ/ /ʊ/ /ø/ /æ/ /ʊ/ /æ/ /æ/ /ʊ/

Teacher: What was the advice if I may know?

Student: My friend told me don't talk to people, don't trust people that you don't know for a long time, and —
/ʊ/ /ɒ/ /ɒ/ /æ/ /ɒ/

Teacher: You trusted and then you paid?

Student: Yes

Teacher: And then you are suffering?

Student: No, I just one day I cried because it hurt me. It's a lesson.
/ə/

Audio File 8

Student: Be open to suggestions, no one is so perfect that they may not need advice from time to time.
/ʊ/ /æ/ /æ/ /ɒ/ /ʊ/

From my point of view, I mean that the writer wants that— peoples, each one, I mean each
/ɒ/ /ɒ/ /æ/ /ɒ/

one has good qualities and bad qualities. I mean we should know how to deal with others.
/æ/ /æ/ /ʊ/ /ʊ/ /ø/

Bear in mind that he may be good and he may not be good? That's it. Me either, some people
/æ/ /æ/ /ə/ /ʌ/ /ɒ/

may like me and they may not.
/æ/

Teacher: You're lovely; anyway, the thing is that — what about advise? Here we are talking about advice.

Student: You mean when people advise you?
/ɒ/ /æ/

I like to use, I mean to have advises from people. It's good for me, I mean they help me in
/ʊ/ /ʊ/ /æ/ /æ/ /ɒ/ /ɒ/ /ɒ/

some way, and I should advise especially my friends, the people that are close to me in order
/ʌ/ /u:/ /æ/ /ɒ/ /æ/ /ʊ/ /ø/

to help them, too.
/ʊ/

Teacher: Have you ever been in a situation where you were advising someone and this someone was like not really ok with that?

Student: It's not like that, but I have a friend I'm always —she want to marry and she is
/ʌ/ /æ/ /ʊ/ /æ/

engaged now and I try so hard, I tell her, I mean you are still young, you have to, I mean
/æ/ /æ/ /ʊ/

complete your studies. She is only a second year now. Yea, I don't know really that she was
/ʌ/ /æ/ /ɒ/

going to engaged. I mean at the time she don't tell me that no and no and no like I will think
/ʊ/ /æ/ /æ/ /æ/ /æ/

but she didn't take my advice.
/ʌ/ /æ/

Teacher: And have you ever been in a situation where people were advising you and you were like no, no, no —

Student: My mother sometimes. She is always tell me don't be so nervous. Yes, I'll tell her
/ø/ /ø/

yes, I will do. And I wish that I won't be so nervous, but sometimes when you face a situation
/æ/ /æ/ /ø/ /ʌ/ /ə/

you can't control yourself.
/ɔ̃/

Teacher: Ok, thank you.

Audio File 9

Student: Be open to suggestions, no one is perfect that they may not need advice from time
/ʊ/ /æ/ /æ/ /ɒ/

to time.
/ʊ/

Those —, it means that people should be — accept others advise — opinions — for
/æ/ /ɒ/ /ʊ/ /æ/ /ə/ /æ/ /ɒ/ /ɒ/

example when one of your girlfriends or your cousins advise you to change something in
/ə/ /ɒ/ /æ/ /ʊ/

your style or — you should accept it and take it in consideration because they, people not
/uː/ /æ/ /æ/ /ɔ̃/ /ə/ /ɒ/

wish, those who loves you always wish the best for you. Also, no one is perfect of course
/ɒ/ /ɒ/

there is no one is perfect. All of us have, miss, in our characteristics and but we should work
/ɒ//ʌ/ /æ/ /æ/ /ʌ/ /uː/

to make them better. We should not prove ourselves. We should not continue in the same way
/ʊ/ /e/ /ø/ /uː/ /uː/

Teacher: Are you the kind of persons who are open to advise or not?

Student: Yes, I am. I always discuss things with my cousins, especially when we go to shop.
/ʊ/

When shopping, we always share our ideas: what about this? What do you think of this? I
/ə/ /ʊ/ /ɒ/

accept all their — each suggestion, yes.
/æ/

Teacher: What else? How the way to advise? Do you have a specific way to advise people?

Student: I, sometimes, advise only my two girls friends and my cousin, those are, because i
/æ/ /æ/

know that they will take in consideration my advice. I don't like to advise people who don't
/æ/ /ð/ /ə/ /æ/ /ʊ/ /æ/ /ɒ/

accept your advice or they feel that it's a joke or for example my brother's wife. I advise her
/æ/ /æ/ /æ/ /ɒ/ /ɒ/ /ø/ /æ/

to change some of her way of talking, way of — but she don't care (correction) that's me,
/ʊ/ /ʌ/ /ɒ/ /ɒ/ /ɒ/ /ʌ/

that's me, you will accept me as I am. But this is not the way of —me a lot of people
/æ/ /ɑ/ /ʌ/ /ɒ/ /ɒ/ /ɒ/

don't like her because when you say don't do this and you do this because you are alone. You
/ʊ/ /æ/ /ʊ/

are with the family, new members. We are not, I am not your sister, my brother is not her
/ø/ /ø/ /ø/

brother, you should respect yourself. But she always say, no, that's me, you should accept
/ø/ /u:/ /ʌ/ /u:/ /æ/

me. I try twice to talk to her but only good morning, how are you and —
/ʊ/ /ʊ/ /ʌ/

Teacher: Ok, thank you.

Audio File 10

Student: The most beautiful things in the world cannot be seen or even touched; they must

be felt with the heart. (**The student read the proverb silently**)

I think that there are many things that we cannot see but, we can't see them but we
/æ/ /æ/ /ʌ/ /e/ /ʌ/

feel them with our hearts such as sadness. For example, when you are sad, even if this
/e/ /ɑ/ /ə/ /ɒ/ /ɒ/

sadness appears on your face, no one can reach the degree of sadness that is inside your heart.
/ə/ /æ/ /ɑ/ /ɒ/ /ə/ /æ/

Also when you are happy for example, you need to share. When you share happiness with
/ɒ/ /ɒ/ /ʊ/ /ə/

other person, —the other person will realise that you are happy with this thing, you can
/ø/ /ə/ /ø/ /ə/ /æ/ /ɑ/

make your feeling apparent.
/ʌ/

Teacher: Here is saying the most beautiful things ever are the ones that you cannot see with your eyes but you can feel them.

Student: I think that love is the most beautiful thing ever since love is very good feeling — not necessarily love with girls and boys, love with your parents, your friends, your sisters. For me, for example, I'm living a very good love with my family. I'm, I mean, very good relation with them; with my sister, my brother and parents.

Teacher: That's beautiful

Student: Yes, we are open-minded, we share our ideas together, we speak together.

Teacher: When you need advice, you go to your sister you go to your brother, mother, father.

Student: Yes, because I think you can't find another one that advise you and love for you the good things such as — more than your family. Even if you have friend, I think that friendship will end someday, yes, it happen to me, yes I used to have a friend, we were friend since secondary school and friendship ended.

Teacher: Why?

Student: There were some problem. She has a problem with her heart, she is jealous. I'm alone but I feel good.

Teacher: Better off alone.

Student: I have friends here at university. I have my family in the house.

Teacher: That's fair enough. Do you want to add something else?

Student: I feel, I wish this feeling for my happiness for all persons. We must get rid of
/ɒ/ /e/ /ɒ/ /ə/ /ʌ/ /ɒ/

problems and bad things and live with happiness because life will end, we will die in the end.
/æ/ /æ/ /e/

Audio File 11

Teacher: How are you?

Student: I'm fine, because it's the last day of the exams.

Teacher: Yes. Pick up one please.

Student: The most beautiful things cannot be seen or even touched, they must be felt with the heart
/ʊ/ /ə/ /ʌ/

So, in this world we have a lot of things. For me, I separate them for two kinds: things I can
/æ/ /ɒ/ /ɒ/ /e/ /ɒ/ /ɑ/

touch and see in the same time I feel about them. The second kind, those things I feel about
/æ/ /æ/ /æ/

them but I cannot see them, but it depend— this feeling, is it good or bad? So, it's dependent
/e/ /ʌ/ /ʌ/

on the situation that you, you, happened to you that makes you feel good or bad. So, I think, I
/ə/ /æ/ /ə/ /ʊ/ /æ/

think that the most beautiful things that I can feel and I can't touch, first, love. It's a big
/æ/ /ʊ/ /æ/ /ɑ/ /æ/

emotion, it's a very very nice emotion that you feel your heart. I don't know, run away and
/ə/ /ə/ /æ/ /æ/

you always feel it's beautiful luck I don't know it's even if you have problem or I don't
/ʊ/ /æ/

know you are not ok in something happen to you makes you feel bad. But when you think
/ʊ/ /ʌ/

that you are in love or your heart is full of love.
/æ/ /ɒ/

Second thing may be happiness. Happiness also is a good feeling. — it happens to you
/e/ /e/ /ʊ/

when, in many situations, when you are, when you success (succeed: correction). When you,
/ə/

I don’t know, when you marry. For me, I don’t care to money and things, yes, I hate,
/ɒ/ /ʊ/ /æ/

believe me I hate something, —, that make me always in bad situation or always in bad
/æ/ /ə/

emotion and because of money or of car or — I don’t care, I hate cars, I hate ah
/ə/ /æ/ /ɒ/ /ɒ/

I said love, happiness, —
/e:/

Happiness especially when you are with your family. You have your parents, you have a
/e:/ /æ/ /æ/

complete, —. God gives you all what you want: I see, I hear, I smell, I walk. I always think
/ʌ/

about the case of Rokia, it’s — she’s not happy. Inside herself she is not happy because she
/æ/ /ɒ/

lost something very very very important because if you can’t see, it’s a bad feeling.

So, I said happiness, love, may be success also, yes success play (plays: correction) an
/e/

important and big role in our life especially when you work hard, you put all your energy on

that, in some situation or in some projector in your studies. So, it’s a good feeling that you
/ɒ/ /ə/ /ɒ/ /æ/

feel, that you see yourself. And you gain what’s you want finally after a really hard way. You
/æ/ /ø/

find yourself a successful person. It depends on what’s God gave you, what’s God really
/ə/

wants to you. — if everything in this life wants you to — everything in this life is guided by
/ʊ/ /ʊ/

God.

Audio File 12

Teacher: The most beautiful things in the world cannot be seen or even touched; they must

be felt with the heart. (**The teacher read the proverb because the student is blind**)

Student: Yes, madam, this is true, no one can reject this truth .or say that this expression is
/ɑ/ /ə/

not right— I live in this expression because for example if a person is honest with you
/ə/ /ɒ/ /ɒ/ /ə/

and loves you, his or her love is pure. You are not in need to see his or her feelings or to
/æ/ /ʊ/ /ʊ/

hear him says I love you. Something with, for example, madam, the weather. Some people
/ɒ/ /ɒ/ /ø/ /ʌ/ /ɒ/

believe that stormy weather, yes, is not good but if you depend in your heart, in your feelings,
/æ/ /ø/ /ʌ/

believe me, some people like me for example. I feel so happy when the weather is stormy.
/ʌ/ /ɒ/ /ɒ/ /ɒ/ /ø/

Teacher: Just the opposite. I don't feel ok when it is stormy.

Student: May be because you are relying on your eyes.

Teacher: No, it's cold, whenever I feel cold; I fell like, you know, not good.

Student: Automatically, relate this weather with the person. For example, a person who
/ɒ/ /ø/ /ə/ /ɒ/ /ɒ/ /ə/

seems hard but once you speak with him you felt that—this person is very good person
/ʌ/ /ə/ /ə/

without needing to see, to hear about him. Only depend on my heart.
/ʊ/ /ʊ/ /æ/

Teacher: What else, do you want to tell me something?

Student: May I think a bit?

Teacher: Yes, sure

Student: Madam, I think that beautiful things are made by people. If you believe that, even
/æ/ /ʊ/ /ɒ/

some people think that days are not, are always bringing problems, how to say it, sadness
/ʌ/ /ɒ/ /æ/ /ʊ/ /ə/

Teacher: What's the most beautiful thing in the world that you felt Rokia and you said I'm feeling this ever if I am not seeing it?

Student: — (laughter), frankly, when I, for example, I will give you the example about you.
/ɒ/ /ɒ/ /ɒ/ /æ/

Teacher: Oh, let's go

Student: I love persons without seeing them. Believe me, I just I feel that, that, a person is a
/ə/ /ə/

good person. However, for example, I feel you innocent, believe me, this is a good thing, this
/ə/ /ɒ/ /ɒ/ /ɒ/

is a beautiful thing I feel—You help me too much this year because you are in helpful a good
/ʊ/ /ʊ/

way to make me stronger whether we are not feeling it, me I feel it.
/ʊ/ /ø/ /ø/

Audio File 13

Teacher: You did well in the exams?

Student: No, not really, linguistics and —

Teacher: TEFL

Student: Oh no TEFL no.

Teacher: Pick up one

Student: To have joy one must share it, happiness was born a twin.
/ʊ/ /æ/ /ʌ/ /e/ /ɒ/

I start by defining happiness is a good feeling which everyone looks for it and when we have
/e/ /ɒ/ /æ/ /æ/

happiness we can name it happiness only if we share it with others because when we are
/e/ /ɑ/ /e/ /ø/

happy, your parents also be happy and you are happy, you feel joy, you feel that everything is
/æ/ /æ/

Ok with you. May be happiness is something which is difficult to reach it. You need to work
/e/ /ʊ/ /ʊ/

very hard and to be ok with yourself, to love yourself and you accept what you are and what
/æ/ /ʊ/ /u:/ /æ/ /æ/ /æ/

you have, and you don't compare yourself with others.
/æ/ /æ/ /ɔ̃/ /ø/

Teacher: Do you believe in this or you are just saying this?

Student: I believe in this. I never look for something which others have and I don't have.
/ø/ /ɒ/ /ø/ /æ/ /æ/

Now, I'm really happy. — may be happiness sometimes we find it in things which others see
/e/ /ø/

that are—
/æ/

Teacher: Not important

Student: Yea, but for me, for us may be you find it that this is happiness for me; this is what
/ʌ/ /ɒ/ /ɒ/ /ʌ/ /æ/ /e/ /ɒ/

bring happiness. For example, when you are with you family and we are ok and you
/e/ /ɒ/ /ɒ/ /æ/ /æ/

love each other and you take care of each other. This is bring you all the happiness of the
/ø/ /æ/ /ɒ/ /ø/ /e/ /ɒ/

world, not necessarily money, I don't know, you have cars, this is happiness. I think that
/æ/ /e/

happiness is in, we find it in things which are, which are not important, which are simple.
/e/ /ɒ/

Yes, happiness is in simple things, not necessarily to have huge things or to be someone who
/e/ /ɒ/ /ʊ/ /æ/ /ʊ/

is famous, or —
/ʊ/

Teacher: It may help you be happy.

Student: Yes, with yourself. When you believe in yourself and trust on what you have, you
/æ/

can easily feel happy, you can find happiness everywhere. May be when you look at someone
/ɑ/ /ɑ/ /e/ /æ/

and he smile at you, you feel that, especially, when he is, when he is someone that means to
/æ/ /æ/ /æ/ /ʊ/

you, this is happiness.
/e/

Teacher: Why you don't participate?

Student: I don't know, may be because I'm shy and I don't know these people.
/æ/ /ɒ/

Teacher: You don't care about them, you care about me.

Student: Yes.

Audio File 14

Teacher: Read it for me

Student: The most beautiful things in the world cannot be seen or even touched; they must
/ʊ/ /ə/ /ʌ/

be felt with the heart.

There are many things that we can feel and don't see them, for example, love, we can feel it
/æ/ /ɑ/ /æ/ /ɒ/ /ɒ/ /ɑ/

but not see. happiness, objective of dreams, I can feel them (it: correction) but not see them
/ʌ/ /ə/ /ɒ/ /ɒ/ /ɑ/ /e/ /ʌ/

Teacher: Yes, what else?

Student: For example, for me, I have many objectives for life. I can feel them but I don't see
/ɒ/ /ɒ/ /ɒ/ /æ/ /ɒ/ /ɒ/ /ɑ/ /e/ /ʌ/

them.

Teacher: Ok, what's happiness for you?

Student: Happiness, good life with family, with friends, best friend (best friends: correction),
/e/

despite my best friend is dead.

Teacher: I'm sorry.

Student: Good job, I want to see my child (children: correction). Two is the best.
/ʊ/

Audio File 15

Student: To have joy one must share it, happiness was born a twin
/u:/ /æ/ /ʌ/ /e/ /ɒ/

For me I think that when someone is happy, feel with happiness, you must share this with
/ɒ/ /æ/ /e/ /ʌ/

other people because you cannot for example — feel with happiness alone. When, for
/ø/ /ɒ/ /ɒ/ /ɒ/ /ə/ /ɒ/

example, when you go to the party or not only the one who prepared this party but all the
/ɒ/ /ʊ/ /ʌ/

guests. So, we share this happiness with the one who prepared this party. Also, happiness is
/ə/ /ə/

one of the most beautiful things people feel.
/ɒ/ /ʊ/ /ɒ/

Teacher: What makes you feel happy?

Student: When I succeed in my studies I feel very happy. Also, when I see my mother happy
/ø/

I feel also very very happy, especially the things that my mother dream happen to me. You
/æ/ /ø/ /ʊ/

should divide happiness with the other people (share: correction)? Only madness people can
/u:/ /ə/ /ø/ /ɒ/ /ə/ /ɒ/ /ɑ/

feel happy alone (mad people: correction). For example, when your sister or your brother
/ɒ/ /ɒ/ /ø/ /ø/

succeed in baccalaureate exam or, you must share it her or his happiness because you too feel
/ʌ/ /ə/

with this beautiful feeling. In general, happiness is one of the most important things in life.
/ɒ/ /ə/ /ɒ/

We cannot live without happiness.
/ə/

Audio File 16

Student: The most beautiful things in the world cannot be seen or even touched; they must
/ʊ/ /ə/ /ʌ/

be felt with the heart. I have to comment this?
/æ/ /ʊ/

Teacher: Yes

Student: For me, life is full of beautiful things, you may not touch them but you can feel
/ɒ/ /ɒ/ /ʊ/ /ə/ /ʌ/ /æ/

them. As for me, for my little experience, the smile of my little children, the best thing that I
/æ/ /ɒ/ /ɒ/ /ɒ/ /ɒ/ /ɒ/ /æ/

can feel, when they smile I forget all my pains. You know, with all my duties, I can distinguish —
/ə/ /ɒ/ /æ/

The student was interrupted to give the paper back. She was folding the paper

Student: It is anxiety

Teacher: Don’t be, we are having fun, talking—

Student: The topic was — the most beautiful thing we can’t touch but feel yes. You can
/ɒ/ /ʊ/ /ʌ/ /æ/

feel beautiful emotions like love, peace, health, happiness, especially health because there is
/ʊ/ /ə/ /e/

another proverb that says: we can’t feel happiness till we feel sadness. When we have pain,
/æ/ /ø/ /æ/ /e/ /e/ /æ/

we realize how was our life beautiful and peaceful — For me, I passed last year strong
/ɒ/ /ʊ/ /æ/ /ʊ/ /ɒ/ /ə/

experience about my health and I was confronted to thyroid trouble and doctor said that it
/æ/ /æ/ /ɒ/ /ə/ /ʊ/ /ə/ /æ/ /æ/

may be something that — and I had to wait for a couple of week to do the, the radio to
/æ/ /ʊ/ /ɒ/ /ə/ /ɒ/ /ʊ/ /ʊ/ /ʊ/

confirm that, it may not be a tumour or something. And you know, it was the most longest
/ʌ/ /æ/ /ɒ/

couple of week I had never had in my life. I tell you this because when I passed this period, I
/ə/ /ɒ/ /ø/ /ø/ /ə/

recognized that I had a very beautiful life before this period and health is something crucial to
/ə/ /æ/ /ʊ/ /æ/ /ʊ/

be happy — I can say that love also, love is important to be happy —
/æ/ /æ/ /ʊ/

Teacher: Did you love your husband before getting married?

Student: No, it was a traditional marriage. But now, you know, when you know someone
/ɒ/ /ʌ/

before, even if you know someone or you don’t know, you will start both from the same
/ɒ/

point. We find many girls complaining that their husbands changed. It’s life, you will start
/ə/ /æ/ /ə/

from the same point. You will start even if you don’t know your husband and by days you
/ɒ/ /æ/

will love him especially when you discover his qualities.

Teacher: I wish you a happy life.

Student: Thank you, for you too.
/ɒ/

I was about to talk about something and I forgot, yes, for me all people are wondering and
/ɒ/ /æ/ /ʊ/ /æ/ /æ/ /ɒ/ /ɒ/ /ɒ/ /æ/

asking me since you have a house, children, a car, a husband, why are you here? what do you
/æ/ /ʊ/

do? What do you want from this information and I say: I'm not learning for the diploma or
/ʊ/ /ɒ/ /ə/ /ə/ /æ/ /ɒ/

for money. That what make my exception may be. I'm learning for knowledge, and this is
/ɒ/ /æ/ /ɒ/ /æ/

make me happy.

Teacher: What do you work?

Student: I didn't work. I'm an engineer but i'm not working. All my friends are now teachers
/ʌ/ /ø/

and engineers and they pursuit their first specialty. And you know my hope is one day, why
/æ/ /æ/

not, I can be a teacher at the university and I am working for that. So, I preferred not let my,
/æ/ /ø/ /æ/ /æ/ /ɒ/ /ə/

it's difficult to get the 'magister' in biology so I preferred to change and start from the
/ʊ/ /ə/ /ɒ/

beginning; getting the Baccalaureate and doing something that I like. I like English, each day
/æ/

I learn new word, I feel happy. Even I am sometimes, I'm —.happy and I am saying to
/æ/ /ʊ/

myself what am I doing, but when I feel this inner happiness, I forget all my problems.
/ʌ/ /e/ /ɒ/

You know, life told me many things, many. Your age what you have seen, it's not measure
/æ/

by years. What we have seen, this is our age.
/æ/

Teacher: You seem you have seen too much

Student: Many beautiful things and many sad things.
/ʊ/ /æ/

Teacher: Do you want to talk about them?

Student: I will start by the beautiful, and if you want. I have been in many places in the
/ʊ/ /æ/

world. I have the occasion to pray in front of the Kaaba, in front of Masdjid Nabawi, in front
/æ/ /əʊ/ /ʊ/ /ɒ/ /ɒ/

of the El Masdjid El Azrak. I have been in many places.
/ɒ/ /æ/

Teacher: Where?

Student: Kaaba, in Syria, Masdjid Nabawi. I saw, I was in Turkey, Masdjid El Azrak. I was
/ɒ/ /ɒ/

in Masdjid Sahet El Fetna, Morocco. And I have seen many ugly things like the illness, you
/æ/ /æ/

know my trouble, the thyroid trouble, my — I was about to divorce. I was about to lose my
/ə/ /ə/ /ɒ/ /æ/ /ɒ/ /æ/

children.

Teacher: Why?

Student: Because of many problems. I had many problems, not with my husband, not with
/ɒ/

his family but many problems of wishcrafts (witchcraft) and I have told you, I have seen
/ʌ/ /ɒ/ /æ/ /æ/ /æ/

many sad things.

Audio File 17

Student: That which not kill us makes us stronger.
/ʌ/ /ʌ/ /ø/

I think it speak about experience in the past because when you face something it make, kill
/æ/

you inside not kill you as you will be dead or you learn so much new information and you
/æ/ /ɒ/ /ə/ /æ/

can face other problems, it gives you a lot of advices, a lot of things you not, you doesn't
/æ/ /ø/ /ɒ/ /æ/ /ɒ/

know about (you do not: correction).
/æ/

Teacher: Have you ever been through an experience and then you decided to ‘I have to be stronger’

Student: Yes, with a friend, ex friend, she was my best friend. I loved her, I gived her
/ɒ/

everything, tell, I told her about my secrets, all things in my life and she was told me
/æ/ /æ/ /ɒ/

everything about her but one day girls told me she speaks about you, she speak about wrong
/æ/ /ʌ/ /æ/ /æ/

things, I did wrong things. Speak about others not in front of them, behind their back. I didn’t
/æ/ /ø/ /ɒ/

believe them, but one day I heart from my neighbour and I know that she has nothing to lie
/ʌ/ /ɒ/ /æ/ /æ/ /æ/ /ʊ/

about. I, I go to her (went: correction) in this, that moment I went to her and she deny
/æ/ /ʊ/ /æ/ /ʊ/ /æ/

everything. She didn’t, she said that she didn’t tell her about this things and then, I —
/æ/ /æ/ /æ/

Teacher: How did you feel?

Student: She is betrayal. From that time I didn’t speak to her till now, but she—
/ɒ/ /æ/ /ʊ/ /ʌ/

Teacher: She insists on coming back to me.

Student: Yes but I didn’t
/ʌ/

Teacher: You can’t trust her anymore

Student: Yes, because everything is about trust. When you don’t trust someone, you can’t
/æ/

feel at ease with her or told him everything.
/ɑ/

Audio File 18

Teacher: Pick up one please

Student: It is easier to forgive an enemy than to forgive a friend.
/ʊ/ /ɒ/ /æ//ʊ/ /ɒ/

Because the enemy doesn't know you and doesn't have any feeling to you. A friend have
/æ/ /æ/ /ʊ/ /æ/

everything of you and since she is — he is very close to you, he know your (he knows:
/ɒ/ /æ/ /ʊ/

correction). He knows your weakness and he can always —
/ə/ /æ/ /ɑ/

I passed an experience like this and my close friend hurted me (hurt: correction) a lot and now I
/æ/ /æ/

can't forgive her, I love her, I always ask about her and her situation and I wish all the best
/ɒ/ /æ/ /æ/ /ə/ /æ/

for her but I cannot forget her (meaning forgive) but someone doesn't close to me, near to
/ɒ/ /ʌ/ /ɒ/ /ʌ/ /ʊ/ /ʊ/

me, I always forgive them. I don't know if it is wrong or something, I'm like, I couldn't
/ɒ/

believe that she —
/æ/

Teacher: Would do this to you

Student: Yes, since she is the

Teacher: You are going always to think if she could do this once, she could do it more.

Student: Why someone who doesn't know you give you something more, always try make

you feel happy and the one who is close to you, do this to you.
/æ/ /ʊ/ /uː/ /ʊ/

Teacher: Anyway, I wish you all the best

Student: In the same time I have another friend, she is amazing, she got married last year and
/æ/ /æ/ /ø/ /æ/

she went to another country, Germany, and she always called me, every time, every week.
/ʊ/ /ø/ /æ/ /æ/ /ə/

Whenever she come to here, I always go to meet her and spend all the time she spend it here.
/ʊ/ /ʊ/ /æ/

Audio File 19

Student: Should I pick one?

Teacher: Yes

Student: To have joy one must share it, happiness was born a twin
/ʊ/ /æ/ /ʌ/ /e/ /ɒ/

Good saying miss, I think that everyone of us have its own meaning of happiness and
/æ/ /ɒ/ /ʌ/ /æ/ /ɒ/ /e/ /æ/

happiness is a very good feeling, a deep one and happy people are lucky and personally I am
/e/ /æ/ /ɒ/ /æ/

from the kind that easily get happy or easily feel sad, and I think that for me I find happiness
/ɒ/ /æ/ /æ/ /æ/ /ɒ/ /e/

in very simple things, in very simple situations. I'm very humble in finding happiness and I
/ɒ/ /ɒ/ /ə/ /ɒ/ /e/ /æ/

hate measurable. I mean those who say I'm not happy, I feel sad; I think that they are looking
/æ/

for this sadness. If you have your health, you are pursuing some goals in your life, you have a
/ɒ/ /e/ /æ/ /ɒ/ /æ/

family, you should be happy, why not?
/u:/

And I think that happy people can deal with, they can hold on I mean, if you are not happy,
/æ/ /æ/ /ɒ/ /ə/ /ə/

you can't feel everything, you will miss a lot in this life. I think that there are many situations
/æ/ /ə/

or tough moments but we should not let them stay as a barrier between us and our dream
/ʌ/ /ʊ/ /ə/ /ʌ/ /ʌ/

Teacher: Happiness was born a twin

Student: Yes, I think that, happiness, miss for me, I can't keep it. I think it's so deep and so huge
/ə/ /ɒ/ /æ/

at the same time. It cannot be hidden for me and I share my happiness, I share it, I have good
/ʌ/ /ɒ/ /æ/ /ə/ /æ/

news, I share it with everybody. I have something, even when I buy something; I say I bought
/æ/

something new, I think it's true. The fact that it is said, he said that it is born a twin because it
/æ/ /æ/

is true sharing happiness with somebody you are, kind of living this happiness, living it is for
/ə/ /ɒ/ /e/ /ɒ/

me sharing it is living it because you cannot keep those things.

I just want to say that for me happiness is my family especially my parents, I cannot imagine
/ʊ/ /æ/ /ɒ/ /ə/

myself smiling or feeling happy without them and of course my siblings.
/æ/ /ɒ/

Teacher: May Allah keep your family to you.

Student: Thank you.

Audio File 20

Student: The most beautiful thing in the world cannot be seen or even touched, they must be
/u:/ /ə/ /ʌ/
felt with the heart.

There are a lot of beautiful things that we cannot touch them like love and happiness. We
/ɒ/ /ʊ/ /æ/ /e/ /ə/

can't share love or happiness with those who you feel that — That. Like love we can share it
/ə/ /ɑ/

with the one who love him or happiness we can share with our friends. We cannot touch
/e/ /ɑ/

them, we can only feel them by heart. (pause) Im really stressed.
/ɑ/ /e/

Teacher: Don't be.

Student: Happiness is a good feeling.
/e/

Teacher: What's the feeling, we say the most beautiful things are felt with the heart, What's

the most beautiful thing that you may feel.

Student: Love.

Teacher: How can you feel it?

Student: For example, when I love someone, when I saw him I feel happy, I want to share
/ɒ/ /ə/ /uː/

everyting with her.

Teacher: The most beautiful things are not seen but felt with the heart.

Student: Those beautiful things we cannot share it only with those who I love them, for
/ʊ/ /ɒ/

example when I have someone I love I share with him my happiness, for example when I
/ə/ /æ/ /ə/ /ɒ/ /ə/

succeed in my studies or when achieve my dreams.

Teacher: What's the thing that someone did for you and you really felt it with your heart.

Student: When this person doesn't cheated (doesn't cheat) on me, he is honest with me, he is
/ə/

really care about me
/æ/

Audio File 21

It is easier to forgive an enemy than to forgive a friend
/ʊ/ /ɒ/ /æ//ʊ/ /ɒ/

This is true — because — actually I have an experience with my friend, she was we were
/æ/ /ɒ/

too close and when we passed the Bac exam I discover that he told my other friend about me
/æ/ /ə/ /æ/ /ø/ /æ/

so bad things that hurt me a lot because you cannot even imagine that person can speak, can
/æ/ /æ/ /ə/ /ɑ/ /ɑ/

tell things like that. But for me, it is not a problem, I didn't care about — they didn't have
/ʌ//ɒ/ /æ/ /æ/

place in your heart even because I can't hate people. I can love people but I can't hate them.
/ɒ/ /ɑ/ /ɒ/ /ʌ/

If you hate them, you will give them place in your heart. About me, I forgive but I didn't
/e/ /æ/ /ɒ/ /ʌ/

forget it. I keep remember when I saw this — person, I remember that he hurted me. But it's
/ɒ/ /ø/ /ə/ /ø/ /æ/ /ʌ/

bad, I want to change it but I can't, a bad habit for me.
/ʊ/ /ʌ/ /ɒ/

Teacher: Why, don't you think we can't forgive a friend?

Student: Because you care, you were really care about this person. You want to live a good
/æ/ /ə/ /ʊ/

life with him. You pass a good time when you lose him or her, you feel some emptiness in
/ʌ/ /e/

your life because — close friend know everything about you, even personal life or that you
/ə/ /ɒ/ /æ/

saw them as your secret, how we say —
/e/ /ɑ/

Teacher: Secret keeper

Student: Yes, secret keeper, you always keep thinking about them.

Teacher: Anyway, you forget about them

Student: But I still love her, I don't know
/ʌ/

Teacher: Because it's been too much between you, that's why

Student: We were close for six years.

Audio File 22

Student: That which doesn't kill us make us stronger
/æ/ /ʌ/ /ʌ/ /ø/

It means that if I faced some problems in my life, whether it is personal, family or
/æ/ /ə/ /ʌ/ /ø/ /ɒ/

psychological, healthy problems —
/ɒ/

Teacher: Ok, all kinds of problems

Student: I'm supposed to, to not be worried of that, and I work to find a solution because that
/ə/ /ʊ/ /ʊ/ /ɒ/ /æ/ /ʊ/ /ɒ/

can help me, it can be useful not just harmful. It can be useful for me to get stronger and —
/æ/ /ə/ /ɒ/ /ʊ/ /æ/ /ʊ/ /ʊ/ /ɒ/ /ʊ/ /ø/

So, it means that when you face something bad in your life, do not bother yourself, face it
/æ/ /ʊ/ /ø/

because not all problems are dangerous or killing, some of them can help you to resoract
/ɒ/ /ʌ/ /ɒ/ /e/ /æ/ /ʊ/

(strange word used by the student) and resist in this life. May I give you some example?
/æ/ /ʌ/ /ɒ/

Teacher: Sure, sure

Student: For example, at home I have many problems but now I feel I'm adapted with those
/ɒ/ /ɒ/ /æ/ /æ/ /ʌ/ /æ/

problems. For example when I get problems stronger than those I can manage them, I can
/ɒ/ /ɒ/ /ø/ /æ/ /æ/ /æ/

live. It's a matter of resistance and, the person should be pessimistic (optimistic: correction)
/ø//ɒ/ /ə/ /ʊ/

Student: (laughs) yes, optimistic, powerful. I have to get mighty heart.
/æ/

Teacher: Ok, thank you.

Audio File 23

Student: Shall I read it?

Teacher: Sure

Student: The most beautiful things in the world cannot be seen or even touched, they must
/ɒ/ /ə/ /ʌ/

be felt with the heart.

I think that love, most beautiful thing that you cannot touched but you fel it (teacher: feel it)
/æ/ /ɒ/ /æ/ /ə/ /ʌ/

with your heart. Also, success and happiness. This is the main three things that I think that are
/ə/ /æ/ /æ/

very beautiful things.
/ɒ/

Love the most one, for example, when you love someone and you cannot heard (meaning
/ɒ/ /ɒ/ /æ/

hurt), you cannot express your feeling, express your emotions, but inside you feel that you
/ə/ /ʌ/ /æ/

love this person and you need this person and you cannot express your feeling to.
/ə/ /æ/ /ə/ /æ/

Happiness, happiness, miss, I think that you want to achieve, when you achieve the most
/ə/ /ə/ /æ/ /ʊ/

things that you are wanted and you feel great feeling and emotion. It's a good feeling, you
/æ/ /æ/ /æ/ /ə/

can feel it and you cannot touch it. Also success, when you succeed in your studies, succeed
/ɑ/ /æ/

in your life, succeed in many things, that's it, that's the main thing.
/æ/ /æ/

Teacher: What's the thing that someone gave you something and you didn't feel it but

someone gave you a small thing and you were like 'oh my God, it's beautiful'

Student: Yea, when my grandmother, I live my grandmother since, I don't remember but
/ø/ /ø/ /ø/ /ʌ/

maybe 8 years ago when my mother die, my grandmother take me with her. I feel that I
/ø/ /ø/ /æ/

cannot accept this life, I feel really, I hate myself. But after time, when I feel that she love me
/æ/ /ʌ/ /ə/ /æ/

and she remember his daughter when she saw me, I feel that, I feel happy.
/æ/ /ø/ /ø/

Teacher: Thank you.

Audio File 24

Teacher: Would you please, pick up one

Student: The most beautiful things in the world are not seen or even touched, they must be
/ʊ/ /ə/ /ʌ/

felt with the heart

For me the most beautiful thing that cannot be touched and we can they can be felt with
/ɒ/ /ʊ/ /æ/ /ə/ /æ/ /ɑ/ /ɑ/

the heart is happiness and the most beautiful thing is the relationship between me and my god
/e/ /æ/ /ʊ/ /æ/

it is not touched it is not seen and —
/ə/

Teacher: Do you love him?

Student: Yes of course and I think it cannot be touched but you feel as if you are touched
/ɒ/ /æ/ /ə/ /ʌ/ /æ/ /ə/

with someone not someone I mean, yes

Teacher: Why do you pray?

Student: Because it is we are Muslims we need to feel satisfaction

Teacher: Do you pray because it's a must or because you love god you respect him

Student: Of course when I was a kid I used to pray just to satisfy my mother or my father of
/ɒ/ /ɒ/ /ə/ /ʊ/ /ʊ/ /ø/ /ø/ /ɒ/

sometimes I told them I pray and I didn't at all but now I am grown up and I'm why I pray,
/ə/ /æ/ /æ/ /ʌ/ /æ/

why I read Qur'an, why I— this the most beautiful things thing that makes feels happy and
/ɒ/ /æ/ /æ/

good and especially when doing something good when feeling that your day is not of bad
/æ/ /æ/ /ɒ/

things and success in life in studying in our lives in relationship between me members of
/æ/ /ø/ /ɒ/

family friends what else.

Teacher: Why she is saying the most beautiful things are felt and not seen why do you think?

Student: Because it is inside you can see but not I mean touched things you can see that over
/ɑ/ /ʌ/ /ə/ /ɑ/ /æ/ /ø/

your heart not over your eyes
/ø/

Teacher: Thank you so much.

Audio File 25

Teacher: You did well in yesterday's exam

Student: Somehow.

Be open to suggestions, no one is perfect that they may need advice from time to time.
/ʊ/ /ə/ /æ/ /æ/ /ɒ/ /ʊ/

no one is perfect, every person has a positive and a negative aspect in his personality yes
/ə/ /æ/ /æ/ /ɒ/

from me I will be open person for suggestion but in limits. As we know the moon has black
/ɒ/ /ə/ /ɒ/ /ə/ /ʌ/ /æ/ /æ/

side. So we open minded, yes. I will accept suggestions, advises but with limits.
/æ/ /ə/ /æ/ /ʌ/

Teacher: And concerning persons when you advise them for example.

Student: Me, advise persons yes I will advise them but in limits too
/æ/ /ə/ /æ/ /e/ /ʌ/

Teacher: No they are usually open or somehow close

Student: It depends on the subject they advised me
/æ/ /ə/

Teacher: And you, yourself when someone comes to you and advises you

Student: No, I will listen to him first carefully, then I will accept what I need, what served
/ʊ/ /æ/ /ə/

me then I leave him things don't serve me I will just hear then I will not take into

consideration I just hear her or his suggestions then I will not take it into —
/ʌ/ /ə/ /ə/

there is some persons who are close they do not accept anything they do not —; they like
/ɒ/ /ə/ /ʊ/ /ə/ /ʊ/

that, they just thinks that they are they do not need any suggestion or any advice from persons
/æ/ /ʊ/ /ə/ /æ/ / ɒ/ /ə/

because they think like that. They don't need they think they perfect they don't need but in
/ʌ/

our life we need suggestion to carry on to move on yes if someone for example advise me
/ə/ /ʊ/ /ʊ/ /ɒ/ /ɒ/ /æ/

because he live the experience I will learn from his experience that I will not repeat her
/ɒ/ /æ/

Teacher: Mistakes

Student: Yes

Teacher: Thank you

Audio File 26

Student: It is easier to forgive an enemy than to forgive a friend
/ʊ/ /ə/ /æ/ /ʊ//ə/

For me, yea it is easier to forgive an enemy than to forgive a friend, am, I m kind,
/ɒ/ /ʊ/ /ɒ/ /æ//ʊ/ /ɒ/

I forgive people but it hurts when you think that someone is your friend but do something
/ə/ /ɒ/ /ʌ/ /æ/ /ʌ/ /ʊ/

betrayed you on something like that it hurt more than this one.
/ə/ /æ/

From the beginning I consider him as an enemy friend hurts it hurts when a friend betrayed
/ɒ/ /ə/ /ø/ /æ/ /ə/

you and do things to hurt you it's a little bit hard to forget
/æ/ /ʊ/ /ʊ/ /ɒ/ /ʊ/ /ɒ/

Teacher: Have you ever been through such an experience

Student: Yea I did

once I, when I was in my baccalaureate exam I had a boy friend that I used to love him so
/ɒ/ /æ/ /ə/ /ʊ/

much my friend I used to tell her everything about him everything happen between us
/ə/ /ʊ/ /æ/ /ʌ/

when I get home I call her and — I don't know I used to consider her as a friend that I never
/ə/ /ʊ/ /ə/ /ø/ /æ/ /æ/ /ø/

had because I don't have a sister and she when I tell her she used to do am sound the feeling
/æ/ /ø/ /æ/ /ə/ /ʊ/ /ʊ/

on her face that, you discover that she is jealous yea and once she stole her phone number
/æ/ /ʊ/ /æ/ /ø/

from my phone — behind my back she called him and talk, and he didn't tell me about her
/ɒ/ /ə/ /æ/ /æ/ /æ/

yea and everything is normal. Once I was near to my high school and I found him the two
/æ/ /ɒ/ /ɒ/ /ʊ/ /æ/

together are sitting chatting and I was completely surprised she start crying I was
/ʊ/ /ø/ /æ/ /ɒ/ /ə/ /ʊ/ /ə/ /ɒ/

surprised why you are crying I'm supposed to be the one who cry
/ʊ/ /ə/ /ə/ /ʊ/

then she said they, she will feel sorry about me and I didn't mean to or something like that, I
/æ/ /æ/ /ʊ/

told her I will never forgive you both of you because its true you used to be my friend then
/ø/ /ə/ /ɒ/ /ə/ /ʊ/

they didn't spoke to her till today but now I forgive her but I will never forget both of
/ʊ/ /ʌ/ /ɒ/ /ʌ/ /ø/ /ɒ/ /ɒ/

them, although after a month and a half he called me and I'm sorry I told him are you
/ə/ /æ/ /ə/ /ə/

kidding me never come back told now I meet her out. I forgive them but I will never forget,
/ø/ /ɒ/ /ə/ /ʌ/ /ø/ /ɒ/

although I forgive people who hurt me but I don't know its stuck in my mind.
/ɒ/ /ɒ/ /ʌ/

Teacher: The situation is really bad, honestly.

Student: So bad. When I got home I told my sister don't cry, both of them doesn't deserve
/ɒ/ /ə/

but i start crying, she come to my home she told me sorry. Honestly I kick her out if I allowed
/ʊ/ /æ/ /ə/

to say it yes I'm allowed to do it. I considered her as a sister. I told her everything and at the
/ʊ/ /æ/ /ə/ /ʊ/ /ʊ/ /ə/ /æ/ /ø/ /æ/ /æ/

end — yea. So forgiving an enemy is not like forgiving a friend when I consider a person
/ɒ/ /ɒ/ /ə/ /ə/ /ə/

who is far from me I don't know, I convince myself that person is capable to do anything to
/ɒ/ /ə/ /æ/ /ə/ /ɒ/ /ʊ/ /ʊ/ /ʊ/

hurt me however a friend —

Teacher: Be strong.

Student: I am Wallah (I swear) from that day yea nothing is nothing can destroy me
/ɒ/ /æ/ /æ/

I just wanna say that I'm not saying that I have, I have, I can't capable to forgive no
/æ/ /æ/ /æ/ /ɒ/ /ʊ/ /ɒ/

(I'm not capable: correction) I'm kind, I'm so kind with people, even when people hurt me
/ɒ/ /ɒ/

and now it doesn't matter for me, when people do something for me I consider myself better
/æ/ /ø/ /ɒ/ /ɒ/ /ʊ/ /ɒ/ /ɔ̃/ /ø/ /ø/

than them, I won't do the same things they did to me. When I find something for example
/æ/ /ʊ/ /ʊ/ /ɒ/ /ɒ/

that a friend is lying to me, no, I won't say to myself I will lie too. No, I'm better than you,
/æ/ /ʊ/ /ʊ/ /ø/ /æ/

you lie, I won't.

Teacher: Very good

Student: Wallah (I swear) because I'm better than you, I won't —
/ø/ /æ/

Teacher: Get to your level

Student: Your level yea.

Teacher: Thank you

Audio File 27

Teacher: Did you do well in the exams.

Student: No

Teacher: A particular reason

Student: I had many problems and the biggest one. I had car accident. The one if you heard

about it 'Chaaba', and it was a very dangerous accident. The road was empty (discussion in Arabic)

That which not kill us make us stronger
/æ/ /ʌ/ /ʌ/ /ø/

Yes, may be, it can be. It is a reality problem, make you stronger, but at the moment, when a
/ɑ/ /ø/ /ʌ/ /æ/

problem happened you feel weak especially me. I'm so so very very very sensitive. This is, I

hate this quality in my personality. I'm very sensitive any one hurt me. I seem so strong in
/ə/

front of people but inside. I feel so sensitive. I can cry any time —. What else, for the
/ɒ/ /ɒ/ /ʌ/ /ɑ/ /ɒ/

moment, many problems are making me lost. For the moment I feel lost. I'm really really
/ɒ/

lost. I'm trying to get up every morning, come to university and try to be —
/ʊ/ /ʊ/ /æ/ /ʊ/

Teacher: How many are you in the family?

Student: We are six

Teacher: Sisters and brothers

Student: No, we are four, 2 brothers, one sister and me. And there is another family, I have a
/ɜ:/ /ɜ://æ/ /æ/ /ø/ /æ/

stepmother, and there is another one we have just heard about it/her. It is very very
/ɜ://æ/ /ø/ /æ/ /æ/

complicated, our life changed completely. I don't know, I was depending on my father, he
/ɒ/ /ə/ /ɒ/ /ɒ/ /ø/

used to give us everything. Last time when we talked about your family, tears where in my
/ə/ /ʊ/ /ʌ/ /ə/ /æ/

eyes, because I felt, this is how we used to be small family, living in happiness, small
/ə/ /ʊ/ /e/

problems, but now you see your father twice a week, no one cares about you, you are always
/ʌ/ /ø/ /æ/

Teacher: Your mother barely cares about herself

Student: Yes but my mother is always and me is always complaining, always in bad mood.
/ʌ/ /ø/ /æ/ /ɔ̃/

This is has a very big influence on us, not just me. So, my brothers and sister are trying to
/æ/ /æ/ /ø/ /æ/ /ø/ /ʊ/

move on in the life and my sister is going to be married. Yes, she is engaged, next year she
/æ/ /ø/ /ʊ/

will go. My brother is trying to build something with father, I don't know exactly; but he is
/ø/ /ʊ/ /ø/ /ʌ/

trying to do a project and my small brother is studying and me I don't know what i'm doing.
/ʊ/ /ʊ/ /æ/ /ø/ /æ/

Teacher: You are studying

Student: No, I used to be a very very good student, I used to love English. Every day I learn
/ə/ /ʊ/ /ə/ /ʊ/

something, every day. Every teacher in my first year, every teacher told me that I have many
/ɜ:/ /ɜ:/ /æ/ /æ/

privileges that other students don't, so unfortunately I didn't developed those privileges or
/æ/ /ø/ /əʊ/ /ə/

those skills and now —
/æ/

Teacher: There is always the time when you can make a move

Student: Yes, that's what I'm trying to do. I'm trying to make a move, but I don't know from
/ʊ/ /ʊ/ /ʌ/ /ɒ/

where, from where I start.
/ɒ/

Teacher: Just enjoy what you are doing.

Audio File 28

Student: To have joy one must share it, happiness was born a twin

Actually, I totally agree with this saying, I believe that, we're born with happiness.
/e/

Actually, if you are happy why not to share it with your friends. Personally, when I am happy,
/ʊ/ /ɒ/

I like to make others happy, even my family my friends, I like to share my happiness with …
/uː/ /ɜː/ /uː/ /e/

Teacher: In what why? How would you share happiness with others? Let's say you have a

dog or something and you are very happy with this, would like to split it or, what's the

meaning here, how would you share this happiness you feel with others?

Student: For example with the dog, if I am happy with it, I would probably give it to my, one
/ɒ/ /ɒ/ /ʊ/

or two of my friends, to have, let's say the dog for one night or two.
/ɒ/ /ʊ/ /ɒ/

Teacher: Ok, so to feel the joy you feel

Student: Yes, or may be if had something like a good news I will directly go and tell him,
/æ/

tell that news to my friends or even my family.
/æ/ /ʊ/

Teacher: Ok, do you believe when you tell something that really makes you happy to others,

they will not envy you let's say, or you rather choose.

Student: No, because I do know how to choose my friends or let's say my best friends, they
/ʊ/

are not jealous at all, they would rather be happy for me.
/æ/ /ə/

Teacher: So, have you ever been in an experience in which you were like very, very happy and told your friends about this but they haven't reacted well, like it's not my business.

Student: Yes, it happened for me once, it's about the baccalaureate exam, one of my friends
/ə/ /æ/ /ɒ/

when I told her I have the baccalaureate exam, I, I have the baccalaureate exam, she didn't
/æ/ /æ/

have unfortunately, she didn't react, she just like staring at me, not even she's not even happy
/æ/ /æ/

for me, the bad thing ever happened for me, the case now is not, because I have a different
/ə/ /ə/ /æ/

kind of different friends like open different minds different way of thinking.
/ɒ/ /ə/

Teacher: Ok, what about the reverse? The opposite of this situation, let's say you are not happy and somebody who is very happy and tells you what makes him or her happy, so, he wants to share the joy he feels with you, and you were very upset, so how would you do in such a situation?

Student: I would, I would be happy for the person, yes, I'm not the kind of people that if I
/ɒ/ /ə/ /ɒ/ /ɒ/ /æ/

am sad I, I would not be happy for everyone, no. If you are happy and come and share this
/ɒ/ /æ/ /æ/

happiness with me, personally I would be very happy for you.
/ə/ /ə/ /ə/

Teacher: Yea good, thank you

Audio File 29

Student: It is easier to forgive an enemy that to forgive a friend

I totally agree, because an enemy is like has been straightforward since the
/æ/

beginning, hates me and I hate me, but a friend has been like wearing a mask, acting like
/æ/ /ʌ/ /æ/

acting to be like your friend, then it turns out that, he's a total enemy. That actually happened
/ʊ/

to me and my friends, it hasn't been a long time, we had a, other friend with us, it turns out
/ʊ/ /æ/

she was a total liar, so, it was really shocking. An enemy you're not really shocked, you know
/ɒ/ /ə/

he's an enemy, when he asks for your forgiveness you may forgive him because he may be
/ɒ/ /ɒ/ /ə/ /ɒ/

honest, because he has been honest since the beginning. But a friend, I don't think I'm able to
/æ/ /ʌ/ /ʊ/

forgive a friend, because he may be, he may lie to me another time since he did it before, so
/ɒ/ /ʊ/

yea, it's, it's, you may forgive an enemy but it's no way to forgive a friend.
/ɒ/ /ʌ/ /ʊ/ /ɒ/

Teacher: No way?

Student: No way for me, yea
/ə/

Teacher: Why is that? What about compassion, I mean God forgives, so what do you think?

Student: But, For me, if someone who lies and cheats first can lie and cheat another time and
/ɒ/ /ə/ /ə/ /æ/ /ə/ /æ/

a second time and a third time
/æ/

Teacher: Ah, so if you lose trust in somebody you won't give him a second chance?

Student: I may give a second chance but trust him, someone, for another time, no, it's just
/ʌ/ /ɒ/ /æ/ /ə/

Teacher: You'd rather be careful

Student: Yes, of course
/ə/

Teacher: You said something happened to you and your friends, and you haven't really discussed the experience, can you elaborate more, I mean this is confidential; it's between you and me

Student: It's, we had a friend we us, she was a friend since been 4 years, and it's been like
/ə/ /æ/

two weeks we discovered that she was, I mean our enemy is her best friend, she was like
/ə/

giving her everything we've been doing. I don't wanna talk to her anymore
/ʊ/

Teacher: Yea, for sure, probably it takes some time to heal and then ….

Student: She didn't even ask for forgiveness
/ɒ/ /ɒ/ /ə/

Teacher: She hasn't even recognized her fault. Mm ok, this is too bad. Thank you

Audio File 30

Student: That which doesn't kill us makes us stronger

Well, when I read this, the first thing that came to my mind is the song, it's a very
/æ/ /ʊ/

beautiful song but, it means that if you are in difficulties and, hard times, depression, sadness
/ɒ/ /æ/ /ə/

even, instead of drowning, you can just make it better you know, benefit from it. You'll
/ɒ/ /ə/ /ə/ /ɒ/

be vulnerable, you'll be, you'll have an experience. Next time if happens again the same
/ɒ/ /æ/

Thing the same problem, the same difficulties you know how to survive, I mean that's what
/ʊ/ /æ/

they mean by stronger. Next time you'll be more vulnerable, stronger, to deal with it, to face
/ø/ /ɒ/ /ø/ /ʊ/ /ʊ/

It. Me personally, this quote actually works with me, because I'm not the kind that goes into
/ə/ /æ/

depression, or don't face the problem and, always expect better results
/ø/

Teacher: So, is there a particular experience you want to talk about?

Student: Yea, it's always has to deal with friends and, you always trust some people they want,
/æ/ /ʊ/ /ʌ/ /ɒ/

and you want the best for them but all they wants to use, even they wish the best thing but
/æ/ /ɒ/ /ʌ/ /ʊ/ /æ/

not better than them, yea. If you be better than anybody, even a best friend, you will feel that,
/ø/ /æ/ /ø/ /æ/

she's not really …. And when you trust them with everything, you know, even if it's not ….
/ə/

Even secrets or stuff that happened to you and then you see, you see it everywhere or you

hear from other people talking about you. That happens to me, that's fine, I faced it, I, it was
/ɒ/ /ə/ /ɒ/ /æ/ /æ/ /ʊ/ /æ/ /ɒ/

difficult at first because you really loved the friend and you trusted her, but I actually face her
/æ/ /ə/ /æ/ /ʌ/

and now she's not my friend, of course, even if I say hi doesn't mean … yes. Now I don't trust anybody
/æ/ /ɒ/

Teacher: Is it because of what happened to you, you will never trust people?

Student: No, I do trust, but not to the extreme, I don't tell everything, I don't expect to do
/ʌ/ /ʊ/ /ʊ/ /ʊ/

things from anybody, I don't expect compassion, I don't expect somebody to stay with me
/ɒ/ /ʊ/

when I am in depression. I know that I'm alone, and I have to get over it and move on,
/æ/ /æ/ /æ/ /ʊ/ /æ/

especially.

Teacher: Thank you

APPENDIX 2

Stress Measurements of Disyllabic Words

Word		Pitch		Diff	Intensity		Diff	Duration	
		Str	Unstr		Str	Unstr		Str	Unstr
Complete	*/ˈkʌm.plit/	285	264	21	68	64	4	243	387
		277	266	10	65	66	-1	321	140
		285	274	11	64	61	3	234	178
	Mean	**282**	**268**	**14**	**65**	**63**	**2**	**266**	**235**
Perhaps	*/ˈpɜr.hæps/	220	217	3	65	66	-1	216	119
Father	/ˈfɑːðɜr/	248	216	32	69	63	6	230	147
		296	279	17	64	66	-2	203	191
		196	190	6	58	58	0	223	227
		197	193	4	59	60	-1	216	149
		212	176	36	57	58	-1	196	149
		218	220	-2	59	62	-3	200	137
	Mean	**227**	**212**	**15**	**61**	**61**	**0**	**211**	**166**
Order	/ˈɔ(:)r.dɜr/	278	277	1	66	65	1	99	114
		321	316	5	72	66	6	149	128
		253	133	20	63	59	4	99	146
		273	287	-14	67	64	3	132	145
		287	287	0	70	66	4	106	157
		315	321	-6	73	71	2	105	129
	Mean	**287**	**270**	**1**	**68**	**65**	**3**	**115**	**136**
Sister	/ˈsɪ(iː)s.tɜ(:)r/	233	257	-24	56	57	-1	218	131
		315	278	37	63	62	1	236	221
		199	undefined	199	55	51	4	275	144
		298	260	38	62	58	4	481	241
		267	240	27	62	65	-3	319	155
		102	187	-85	55	58	-3	221	194
		175	220	-45	55	57	-2	223	149
	Mean	**227**	**206**	**21**	**58**	**58**	**0**	**281**	**176**
	*/sɪs.ˈtɜ:(r)/	253	231	22	56	58	-2	245	135
		261	201	60	59	57	2	167	308
		206	207	-1	54	60	-6	245	189
	Mean	**240**	**213**	**27**	**56**	**58**	**-2**	**219**	**210**
Brother	ˈbræðɜ(r)	211	204	7	63	63	0	174	205
		211	180	31	63	61	2	216	200
		191	175	16	61	60	1	178	176
		201	199	2	65	64	1	265	155
		211	209	2	63	59	4	164	158
		268	269	-1	66	65	1	153	110
		280	216	64	64	60	4	2 36	171
		219	227	-8	60	59	1	178	144
	Mean	**224**	**209**	**14**	**63**	**61**	**2**	**166**	**164**
	*/brʌˈðɜ:/	207	205	2	65	64	1	180	225
Accept		253	223	20	55	54	1	357	129
		260	251	9	58	57	1	344	144

	(ɪ)ækˈsept	240	213	27	54	54	0	447	160
		287	264	23	60	60	0	303	169
		254	263	-9	56	57	-1	263	117
		213	164	48	56	55	1	357	133
		317	273	44	63	60	3	281	106
		263	214	49	60	61	-1	472	108
		269	246	23	60	57	3	266	114
		313	264	49	61	59	2	272	120
	Mean	**266**	**237**	**28**	**58**	**57**	**1**	**336**	**130**
	*/ˈæk.sept/	271	269	2	66	63	3	173	508
		245	254	-9	61	58	3	154	307
		243	250	-7	56	55	1	103	360
		230	231	-1	56	55	1	167	312
	Mean	**247**	**251**	**-3**	**59**	**57**	**2**	**149**	**371**
Jealous	/ˈdʒɪ/ælʊs/	222	188	34	63	58	5	200	304
		238	223	15	60	57	3	205	267
	Mean	**230**	**205**	**24**	**61**	**57**	**4**	**202**	**285**
Weather - Whether	/ˈweːðɜ(r)/	221	204	17	65	58	7	191	177
		240	160	80	61	56	5	241	185
	Mean	**230**	**182**	**48**	**63**	**57**	**6**	**216**	**181**
	/ˈweðɜr/	273	260	13	62	63	-1	108	131
		255	249	6	63	62	1	122	151
	Mean	**264**	**254**	**9**	**62**	**62**	**0**	**115**	**141**
	*/weˈðɜ/	284	269	15	61	62	-1	149	99
		343	336	7	62	66	-4	99	97
	Mean	**313**	**302**	**11**	**61**	**64**	**-3**	**124**	**98**
Comment	*/kəˈment/	325	265	60	66	61	5	251	99
Teacher	/ˈti(ː)tʃɜ/	206	169	37	58	60	-2	182	335
		196	undefined	196	56	55	1	120	173
		223	208	14	56	59	-3	129	313
	Mean	**208**	**125**	**82**	**56**	**58**	**-2**	**143**	**273**
	/ʻtitʃɜː/	273	257	14	60	64	-4	173	288
After	/ʻʌftɜr/	301	295	6	67	61	6	129	234
		240	237	3	57	59	-2	152	228
	Mean	**270**	**266**	**4**	**62**	**60**	**2**	**140**	**231**
Better	/ˈbetɜ(r)/	264	249	15	59	63	-4	149	88
		273	242	31	60	63	-3	126	111
		317	324	-7	69	65	4	78	156
	Mean	**284**	**271**	**13**	**62**	**63**	**-1**	**117**	**118**
	/ˈbeːtɜ/	239	233	6	66	56	10	178	140
Never	/ˈnevɜ(r)/	208	181	27	60	62	-2	200	353
		252	253	-1	60	59	1	189	183
		227	228	-1	62	60	2	83	147
	Mean	**229**	**220**	**8**	**60**	**60**	**0**	**157**	**227**
	*/neˈvɜr/	320	299	21	63	68	-5	133	162
		229	217	12	59	58	1	138	115
		359	309	50	68	68	0	165	142
		324	255	69	64	65	-1	167	202

	Mean	**308**	**270**	**38**	**63**	**64**	**-1**	**150**	**155**
Stronger	/ʻstrɔ̃gɜ(r)/	232	224	8	57	58	-1	465	135
		203	193	10	56	56	0	339	101
		198	164	34	58	56	2	465	209
		246	192	59	63	61	2	394	111
		284	124	167	63	63	0	396	106
		269	268	0	58	57	1	367	245
		311	268	89	66	62	4	348	185
	Mean	**249**	**204**	**52**	**60**	**59**	**1**	**396**	**156**
	/ʻstrɔngɜ(r)/	171	undefined	171	60	55	5	404	227
		280	279	1	58	60	-2	465	110
		269	265	4	56	58	-2	474	181
		268	259	9	64	63	1	265	153
		219	196	23	67	64	3	358	97
	Mean	**241**	**199**	**41**	**61**	**60**	**1**	**393**	**153**
Mother	/ˈmæðɜr/	244	217	27	62	59	3	135	133
		247	216	31	69	66	3	202	108
		278	274	4	67	67	0	149	144
		229	224	5	62	61	1	167	191
		233	223	10	61	59	2	99	158
		234	223	11	65	64	1	133	135
		234	226	8	65	63	2	105	156
		213	undefined	213	57	56	1	105	114
		255	286	-31	67	67	0	212	156
	Mean	**240**	**209**	**30**	**63**	**62**	**1**	**145**	**143**
	*/mʌˈðɜr/	243	234	9	59	60	-1	211	90
		218	226	-8	61	65	-4	162	138
		273	284	-11	68	68	0	234	156
		232	245	-13	60	63	-3	247	128
	Mean	**241**	**247**	**-5**	**62**	**64**	**-2**	**213**	**128**
Forget	/fɔrˈget/	289	274	15	60	62	-2	243	108
		215	198	17	57	52	5	340	229
		309	263	46	65	65	0	259	340
		378	184	194	65	66	-1	211	346
		188	202	-14	60	59	1	214	182
		221	217	4	58	58	0	275	238
		203	212	-9	56	54	2	447	174
	Mean	**257**	**221**	**36**	**60**	**59**	**1**	**284**	**231**
	*/ˈfɔr.get/	316	127	189	62	59	3	205	279
		268	227	41	64	62	2	263	259
		228	189	39	56	53	3	205	247
	Mean	**270**	**181**	**89**	**60**	**58**	**2**	**224**	**261**
Forgive	/fɔrˈgɪːv/	225	233	-8	57	57	0	189	182
		216	218	-2	57	58	-1	395	218
		213	207	6	56	55	1	221	207
		255	255	0	61	63	-2	284	118
		237	236	1	59	59	0	335	191
		255	232	23	57	56	1	288	247

	Mean	**233**	**230**	**3**	**57**	**58**	**-1**	**285**	**193**
	/fɔrˈgɪv/	265	225	40	64	58	6	310	239
		248	246	2	60	59	1	395	229
		220	221	-1	56	56	0	272	216
		206	209	-3	57	56	1	194	149
		265	270	-5	59	59	0	185	162
	Mean	**240**	**234**	**6**	**59**	**57**	**1**	**271**	**199**
Nervous	/ˈnervɜs/	266	90	167	61	56	5	331	252
		270	242	28	61	58	3	207	185
	Mean	**268**	**166**	**97**	**61**	**57**	**4**	**269**	**218**
Famous	/ˈfeɪmʊs/	224	214	10	61	57	4	286	411
Changed	/ˈtʃeɪndʒət(d)/	136	164	-28	63	60	3	342	350
		205	181	24	57	55	2	227	252
	Mean	**170**	**172**	**-2**	**60**	**57**	**3**	**284**	**301**
Loved	/ˈlɔvət/	314	317	-3	67	62	5	156	142
Faced	/ˈfeɪcəd/	296	285	11	59	57	2	252	284
Married	/ˈmærɪəd/	106	97	9	65	62	3	232	321
		251	222	29	63	58	5	211	391
	Mean	**178**	**159**	**19**	**64**	**60**	**4**	**221**	**356**
Simple	/ˈsɪmpəl/	281	193	91	63	62	1	301	224
		326	287	39	64	62	2	261	173
		316	246	70	72	69	3	229	236
		260	266	-6	58	61	-3	299	129
		270	273	-3	64	66	-2	214	133
	Mean	**290**	**253**	**38**	**64**	**64**	**0**	**260**	**179**
Helpful	/ˈhelpfəl/	262	206	56	58	54	4	250	169
	/helpˈfʊl/	235	240	-5	57	58	-1	272	183
Useful	/ˈjʊzfʊl/	258	264	-6	57	54	3	202	252
		297	269	28	58	55	3	224	306
	Mean	**277**	**266**	**11**	**57**	**54**	**3**	**213**	**279**
Trouble	/ˈtrʌbəl/	183	175	8	58	57	1	275	189
		167	99	68	53	53	0	263	203
		135	117	4	54	55	-1	312	275
	Mean	**161**	**130**	**26**	**55**	**55**	**0**	**283**	**222**
Couple	/ˈkʌpəl/	188	172	16	59	57	2	117	194
		211	220	-9	66	62	4	101	207
	Mean	**199**	**196**	**3**	**62**	**59**	**3**	**109**	**200**
Lesson	/ˈlesən/	245	229	16	71	63	8	158	256
		317	238	79	64	58	6	150	245
	Mean	**281**	**233**	**47**	**67**	**60**	**7**	**154**	**250**

APPENDIX 3

Confirmation Test

I. Vowel Reduction

1. Function Words

Sentences

You always forget to add more details where it **should**.

He asked his father **to** buy him a car.

To my great astonishment, she couldn't tell where it **was**.

Eating too much is a sign **of** boredom and depression.

We have been talking about a job offer she has heard **of**

With royal coffers **at** his disposal, Robert Vertue **could** ornament with a lavish hand.

My sister is obsessed by the jewellery she **has**.

Better to attend all your sessions if you are looking **for** a bonus.

Where are you **from**?

She couldn't solve the problem while her friend **could**.

I can't remember when exactly the presidential palace **was** hit.

What's he shooting **at**?

I **have** never been in a hot air balloon.

Conventional wisdom and common logic are the general beliefs that people **have**.

The labour law **has** been open for a number of years.

What's that thing you have been looking **for**?

You **should** either use your valise or my bag to pack.

Institutions **can** offer support for work experience.

She rocked the baby **to** and fro.

To save a village **from** a powerful demon fox, top ninja traps it inside newborn Naruto.

I can't speak German, but my friend **can**

2. Content Words

A. **Words ending in /r/**

Father labour measure censure coffer

B. Words with French make up

cagoule balloon support demon concert climate police organ fatigue bonus

II. Syllable Structure

A. 'ed' past tense suffix

missed called jumped played parked

B. Syllabic /l/

bible noble travel journal scandal

C. Syllabic /n/

vision season

III. Stress

Support	Cagoule	Fatigue	Balloon
Police	Demon	Climate	Organ
Bonus	Concert	Father	Labour
Coffer	Measure	Censure	

APPENDIX 4

Function Words: Confirmation Test

S= Strong Form W= Weak Form

		To	Of	Could	Can	From	For	Has	Have	Was	Should	At
1	**S**	78/ʊ	138/ɒ	117/ʊ	146/æ	119/ɒ	122/ɒ	156/æ	87/æ	127/ɒ	87/ʊ	114/æ
	W	68/ʊ	-	96/ʊ	114/æ	76/ɒ	138/ɒ	114/æ	96/æ	103/ɒ	119/ʊ	119/æ
2	**S**	138/u:	198/ɔ:	122/ʊ	162/æ:	106/ɒ	133/ɒ	194/æ:	232/æ:	97/ɒ	128/ʊ	212/æ:
	W	70/ʊ	87/ɒ	88/ʊ	83/æ	52/ɒ	114/ɒ	88/æ	151/æ:	99/ɒ	85/ʊ	138/æ:
3	**S**	294/u:	169/ɒ	182/u:	182/æ:	167/ɔ:	205/ɔ:	192/æ:	200/æ:	252/ɔ:	184/u:	202/æ:
	W	112/u:	137/ɒ	83/ʊ	61/æ	54/ɒ	122/ɒ	81/æ	Contr87	187/ɔ:	78/ʊ	92/æ
4	**S**	96/ʊ	176/ɒ	160/u:	147/æ:	169/ɔ:	162/ɔ:	236/æ:	229/æ:	203/ɔ:	126/ʊ	194/æ:
	W	70/ʊ	124/ɒ	87/ʊ	88/æ	153/ɔ:	106/ɒ	108/æ	108/æ	151/ɔ:	128/ʊ	115/æ
5	**S**	85/ʊ	165/ɔ:	160/u:	83/æ	155/ɔ:	158/ɔ:	174/æ:	156/æ:	155/ɔ:	158/u:	259/æ:
	W	47/ʊ	51/ɒ	76/ʊ	92/æ	72/ɒ	83/ɒ	87/æ	83/æ	85/ɒ	115/u:	99/æ
6	**S**	149/u:	140/ɒ	112/ʊ	140/æ	167/ɒ	103/ɒ	183/æ:	173/æ:	183/ɔ:	138/u:	212/æ:
	W	72/ʊ	133/ɒ	97/ʊ	133/æ	78/ɒ	135/ɒ	135/æ	117/æ	99/ɒ	85/ʊ	174/æ:
7	**S**	78/ʊ	101/ɒ	129/u:	117/æ	49/ɒ	133/ɔ:	140/æ:	156/æ:	106/ɒ	70/ʊ	131/æ
	W	68/ʊ	101/ɒ	85/ʊ	92/æ	78/ɒ	101/ɒ	94/æ	106/æ	56/ɒ	88/ʊ	122/æ
8	**S**	149/u:	187/ɔ:	126/ʊ	90/æ	117/ɒ	189/ɔ:	160/æ:	189/æ:	146/ɔ:	110/ʊ	169/æ:
	W	26/ə	135/ɒ	112/ʊ	90/æ	52/ɒ	96/ɒ	112/æ	63/æ	167/ɔ:	38/ʊ	88/æ
9	**S**	72/ʊ	234/ɔ:	164/u:	165/æ:	221/ɔ:	155/ɔ:	250/æ	238/æ:	191/ɔ:	138/u:	202/æ:
	W	106/ʊ	196/ɔ:	124/u:	183/æ:	110/ɔ:	173/ɔ:	164/æ:	169/æ:	156/ɔ:	87/ʊ	114/æ
10	**S**	90/ʊ	175/ɔ:	178/u:	162/æ:	101/ɔ:	153/ɔ:	155/æ:	169/æ:	138/ɔ:	106/u:	156/æ:
	W	58/ʊ	105/ɒ	87/ʊ	74/æ	88/ɒ	137/ɔ:	94/æ	96/æ	78/ɒ	60/ʊ	99/æ
11	**S**	88/ʊ	129/ɒ	103/ʊ	112/æ	101/ɒ	112/ɒ	138/æ:	144/æ:	90/ɒ	121/ʊ	180/æ:
	W	81/ʊ	96/ɒ	101/u	92/æ	131/ɔ:	92/ɒ	117/æ	92/æ	92/ɒ	105/ʊ	79/æ
12	**S**	256/u:	180/ɔ:	115/ʊ	94/æ	101/ɒ	83/ɒ	103/æ	137/æ:	110/ɒ	131/ʊ	129/æ:
	W	72/ʊ	120/ɒ	66/ʊ	124/ɑ	79/ɒ	101/ɒ	140/æ:	99/æ	92/ɒ	99/ʊ	110/æ
13	**S**	174/u:	151/ɒ	167/u:	103/æ	78/ɒ	138/ɔ:	114/æ	144/æ:	119/ɒ	133/u:	158/æ:
	W	108/ʊ	137/ɒ	117/ʊ	137/æ:	126/ɔ:	129/ɔ:	128/æ:	87/æ	138/ɔ:	142/u:	97/æ
14	**S**	-	158/ɔ:	106/ʊ	106/æ:	88/ɒ	72/ɒ	153/æ:	133/æ:	119/ɔ:	68/ʊ	128/æ:
	W	78/ʊ	74/ɒ	63/ʊ	78/æ	63/ɒ	68/ɒ	81/æ	74/æ	79/ɒ	52/ə	76/æ
15	**S**	87/ʊ	238/ɔ:	110/u:	62/æ	103/ɒ	96/ɒ	112/æ:	122/æ:	142/ɔ:	144/u:	147/æ:
	W	144/u:	160/ɔ:	92/u:	133/æ:	61/ɒ	101/ɒ	111/æ:	87/æ	144/ɔ:	110/u:	171/æ:
16	**S**	119/u:	183/ɔ:	140/u:	78/æ	129/ɔ:	106/ɒ	129/æ:	144/æ:	137/ɔ:	133/u:	198/æ:
	W	45/ʊ	103/ɒ	137/u:	60/æ	64/ɒ	81/ɒ	83/æ	81/æ	294/ɔ:	60/ʊ	129/æ
17	**S**	74/ʊ	115/ɒ	133/u:	108/æ	171/ɔ:	173/ɔ:	144/æ:	162/æ:	140/ɔ:	137/u:	180/æ:
	W	74/ʊ	105/ɒ	131/u:	155/æ:	117/ɒ	284/ɔ:	140/æ:	97/æ	114/ɔ:	126/u:	97/æ
18	**S**	144/u:	110/ɔ:	128/u:	100/ɑ	72/ɒ	127/ɔ:	127/æ:	112/æ	107/ɒ	101/ʊ	165/æ:
	W	61/ʊ	64/ɒ	104/ʊ	72/ɑ	71/ɒ	63/ɒ	117/æ:	71/æ	90/ɒ	87/ʊ	115/æ:
19	**S**	74/ʊ	203/ɔ:	146/u:	67/ɑ	75/ɒ	116/ɔ:	114/æ:	164/æ:	141/ɔ:	151/u:	171/æ:
	W	79/ʊ	100/ɒ	69/ʊ	89/æ	54/ɒ	83/ɒ	110/æ:	80/æ	86/ɒ	59/ʊ	110/æ
20	**S**	97/ʊ	110/ɒ	126/u:	160/æ:	128/ɔ:	151/ɔ:	144/æ:	133/æ:	198/u:	112/ʊ	160/æ:
	W	74/ʊ	115/ɒ	63/ʊ	30/ə	45/ə	83/ɒ	92/æ	97/æ	60/ə	68/ʊ	64/æ
21	**S**	114/u:	239/ɔ:	146/u:	94/æ	176/ɔ:	174/ɔ:	205/æ:	257/æ:	174/ɔ:	128/u:	202/æ:
	W	56/ə	94/ɒ	54/ʊ	81/æ	108/ɒ	66/ɒ	106/æ	171/æ:	76/ɒ	165/u:	135/æ:
22	**S**	265/u:	209/ɔ:	160/u:	144/æ:	94/ɒ	112/ɒ	189/æ:	169/æ:	232/ɔ:	185/u:	174/æ:
	W	46/ʊ	51/ɒ	72/ʊ	99/æ	96/ɒ	133/ɔ:	108/æ:	96/æ	83/ɒ	90/ʊ	88/æ
23	**S**	158/u:	155/ɔ:	229/u:	146/æ:	155/ɔ:	180/ɔ:	202/æ:	198/æ:	173/ɔ:	138/u:	194/æ:
	W	52/ʊ	101/ɒ	90/ʊ	63/æ	85/ɒ	112/ɒ	128/æ:	79/æ	90/ɒ	90/ʊ	87/æ

24	**S**	96/ʊ	92/ɒ	155/ʊ	174/æ:	122/ɒ	174/ɔ:	174/æ:	178/æ:	112/ɒ	129/ʊ	108/æ:
	W	61/ʊ	58/ɒ	66/ʊ	72/æ	63/ɒ	140/ɔ:	83/æ	54/æ	94/ɒ	45/ʊ	63/æ
25	**S**	-	212/ɔ:	124/u:	57/æ	126/ɒ	125/ɔ:	147/æ:	158/æ:	179/æ:	44/ʊ	176/æ:
	W	58/ʊ	42/ɒ	44/ʊ	49/æ	50/ɒ	111/ɒ	111/æ	83/æ	108/ɔ:	49/ʊ	73/æ
26	**S**	117/u:	238/ɔ:	131/u:	92/ɑ	155/ɔ:	239/ɔ:	173/æ:	203/æ:	151/ɔ:	115/ʊ	187/æ:
	W	51/ʊ	66/ɒ	41/ʊ	68/ɑ	88/ɒ	108/ɒ	114/æ	112/æ	110/ɒ	89/ʊ	97/æ
27	**S**	78/u	122/ɒ	137/u:	54/ɑ	115/ɒ	115/ɒ	137/æ:	167/æ:	183/ɔ:	124/ʊ	-
	W	90/u	131/ɒ	92/ʊ	108/ɑ	88/ɒ	85/ɒ	83/æ	108/æ	153/ɔ:	105/ʊ	99/æ
28	**S**	-	115/ɒ	198/u:	158/æ:	76/ɒ	103/ɒ	185/æ:	174/æ:	185/ɔ:	129/u:	198/æ:
	W	74/ʊ	169/ɔ:	140/u:	103/ɑ	90/ɒ	165/ɔ:	-	97/æ	174/ɔ:	138/u:	117/æ
29	**S**	191/u:	137/ɔ:	112/ʊ	110/ɑ	99/ɒ	162/ɔ:	124/æ:	151/æ:	194/ɔ:	114/ʊ	225/æ:
	W	108/ʊ	174/ɔ:	121/ʊ	97/æ	126/ɒ	135/ɔ:	110/æ	114/æ	112/ɒ	129/ʊ	-
30	**S**	78/ʊ	114/ɒ	103/ʊ	79/ɑ	79/ɒ	76/ɒ	147/æ:	137/æ:	182/ɔ:	101/ʊ	174/æ:
	W	61/ʊ	147/ɒ	78/ʊ	85/æ	41/ɒ	92/ɒ	96/æ	96/æ	108/ɒ	76/ʊ	129/æ:

APPENDIX 5

Stress Measurements: Confirmation Test

Str.= Stressed Unstr.= Unstressed

Word		Duration		Pitch		Intensity	
		Str.	**Unstr.**	**Str.**	**Unstr.**	**Str.**	**Unstr.**
Support	/sɪ.ˈpɔrt/	523	216	268	241	64	64
		497	194	140	101	75	72
		438	131	165	141	72	68
	Mean	**486**	**180**	**191**	**161**	**70**	**68**
	/sə.ˈpɔːrt/	550	137	214	225	61	53
		514	119	245	246	61	54
		469	162	119	110	56	54
		407	170	260	234	67	63
		462	202	245	260	62	51
	Mean	**480**	**158**	**216**	**215**	**61**	**55**
	/sʊ.ˈpɔːrt/	551	191	218	224	62	58
	/su.ˈpɔrt/	541	138	130	127	73	68
	/ˈsɪ.pɔːrt/	221	658	272	258	54	58
		209	569	270	210	69	59
		250	521	250	236	65	64
		174	414	115	94	61	72
		153	398	256	258	56	60
		185	553	256	248	56	63
	Mean	**285**	**430**	**220**	**206**	**62**	**62**
	/ˈsə.pɔːrt/	220	257	233	210	65	65
		153	515	305	274	74	77
		180	546	286	276	72	74
		173	551	254	223	54	62
		135	485	261	240	71	74
		112	649	311	266	70	77
		152	627	244	268	75	71
		191	583	254	249	67	70
	Mean	**164**	**526**	**268**	**250**	**68**	**71**
	/ˈsʊ.pɔ(ː)r/	191	537	218	235	55	63
		173	555	233	276	71	73
		274	422	166	126	61	65
	Mean	**212**	**405**	**205**	**212**	**62**	**67**
	/ˈsu.pɔrt/	202	468	271	246	61	66
		227	620	283	239	49	50
	Mean	**214**	**544**	**277**	**242**	**55**	**58**
	/spɔːrt/	-	-	-	-	-	-
Cagoule	/ˈkæ.gʊ-ɒl/	192	297	260	271	67	64
		198	324	265	258	69	68
		180	284	117	104	73	70
		239	244	259	264	60	57
		191	319	292	262	79	76

		231	313	223	258	76	76
		242	324	249	250	78	77
		137	234	282	247	69	71
	Mean	**201**	**292**	**243**	**239**	**71**	**69**
	/ˈkə.guː-ʊl/	85	420	260	217	62	65
		101	432	280	131	73	76
		119	317	232	240	66	67
		96	533	221	218	58	62
		151	416	267	248	68	65
	Mean	**110**	**423**	**252**	**210**	**65**	**67**
	/ˈkæ.guːl/	158	348	233	230	68	65
		110	351	264	200	77	72
		133	324	272	256	63	61
		144	378	250	254	65	63
		155	382	239	231	71	72
	Mean	**140**	**356**	**251**	**234**	**68**	**66**
	/ˈkeɪ.guː-ʊl/	188	468	241	212	64	64
		242	418	284	224	55	57
		265	365	115	155	63	58
	Mean	**231**	**417**	**213**	**197**	**60**	**59**
	/kæ.ˈgu(:)l/	631	171	260	257	58	59
		165	396	230	198	67	63
		315	117	126	107	76	74
		376	115	142	123	73	72
		331	209	119	105	66	60
	Mean	**363**	**201**	**175**	**158**	**68**	**65**
	/kæ.ˈgæʊl/	279	124	156	135	71	72
	/keɪ.ˈgɔl/	436	173	285	238	80	80
	/ˈkəʊgɔl/	191	266	267	250	68	65
	/kə.ˈguːl/	369	138	217	222	69	66
Fatigue	/ˈfætɪg/	140	198	245	227	60	57
		133	308	270	253	74	72
		192	261	123	85	76	70
		216	313	107	109	73	62
		140	250	264	252	59	48
		137	310	276	223	79	70
	Mean	**159**	**273**	**214**	**191**	**70**	**63**
	/ˈfætɪːg/	189	490	295	242	55	49
		90	344	168	124	71	69
		173	355	117	106	60	61
		133	326	252	184	76	73
		209	472	278	211	65	59
		133	382	299	247	59	56
		214	272	283	223	55	56
		156	526	236	224	76	69
		184	490	245	246	52	50
		262	281	242	190	54	58
		97	357	241	180	75	67

		177	476	260	238	68	70
	Mean	**168**	**397**	**243**	**201**	**63**	**61**
	/ˈfə.tiːg/	209	404	261	232	66	67
		144	588	276	221	51	54
		108	376	254	153	52	51
		97	366	281	197	65	66
		119	409	242	188	63	60
		144	384	266	227	60	63
		101	422	241	211	54	64
	Mean	**131**	**421**	**260**	**204**	**58**	**60**
	/fəˈtiːg/	364	196	140	104	52	52
		436	135	199	220	62	62
		461	106	225	-	58	51
	Mean	**420**	**145**	**188**	**108**	**57**	**55**
	/fæˈtɪːg/	465	189	124	121	70	68
	-	-	-	-	-	-	-
Balloon	/ˈbæ.lɔ-ʊn/	174	245	259	264	67	68
		171	303	241	216	71	65
		135	169	101	105	75	74
		185	245	256	264	62	59
	Mean	**166**	**240**	**214**	**214**	**68**	**66**
	/ˈbælɔ̃/	277	220	224	209	65	64
		97	147	244	250	78	75
	Mean	**187**	**183**	**234**	**229**	**71**	**69**
	/ˈbə.luːn/	31	460	234	238	68	66
		47	378	263	253	76	75
		148	391	148	114	61	62
		119	479	269	251	60	56
		58	331	213	241	65	66
	Mean	**80**	**407**	**225**	**219**	**66**	**65**
	/ˈbæ.luːn/	195	292	252	262	67	63
		94	378	231	246	80	75
	Mean	**144**	**335**	**241**	**254**	**73**	**69**
	/bæ.ˈluːn/	490	133	262	243	59	60
		443	87	212	208	66	65
		358	99	135	114	77	74
		301	138	257	228	64	66
		385	133	131	111	66	61
		355	99	273	233	66	69
		358	131	262	247	76	79
		292	99	248	235	81	83
		400	177	232	217	66	68
		402	135	213	205	62	63
		295	127	275	253	68	70
	Mean	**370**	**123**	**227**	**208**	**68**	**68**
		335	166	263	240	69	68
		413	94	149	129	77	74
		420	64	272	252	82	84

		326	43	156	133	72	71
		376	47	220	207	70	69
		436	79	292	261	78	78
	Mean	**384**	**82**	**225**	**203**	**74**	**74**
Police	/ˈpə.lɪːs/	40	524	283	266	64	65
		144	443	278	228	77	75
		86	476	252	268	70	71
		64	425	248	254	72	72
	Mean	**83**	**467**	**265**	**254**	**70**	**70**
	/ˈpɒ.lɪs/	141	323	119	122	78	75
		109	291	235	175	63	66
		119	400	282	266	73	67
		144	192	284	276	71	70
		176	427	242	243	71	64
		129	207	265	228	80	74
		182	245	278	245	66	57
		137	393	274	263	70	66
	Mean	**142**	**309**	**247**	**227**	**71**	**67**
	/ˈpɒ-ʊ.lɪːs/	92	416	148	164	74	72
		99	431	256	244	80	76
		185	376	105	113	74	70
		184	450	265	234	55	53
		195	299	277	266	66	58
		108	512	263	245	66	61
		133	483	221	250	70	73
	Mean	**142**	**423**	**219**	**216**	**69**	**66**
	/pʊ-ɒ.ˈliːs/	586	56	250	264	64	71
		483	135	264	255	56	60
		533	88	219	220	63	63
		331	167	242	241	64	64
	Mean	**483**	**111**	**243**	**245**	**61**	**64**
	/pə.ˈlɪːs/	440	122	119	109	68	61
		479	64	114	111	63	59
		357	119	265	240	69	69
		429	66	145	128	75	71
		433	71	273	196	78	76
		477	78	222	224	65	68
	Mean	**435**	**86**	**189**	**168**	**69**	**67**
	1 syllable	-	-	-	-	-	-
Demon	/ˈdiː.mən/	162	321	252	271	68	66
		162	275	129	134	75	73
		165	256	282	272	77	76
		164	194	221	220	64	64
		147	196	106	116	75	73
		173	292	230	213	68	65
		131	229	125	126	79	78
		170	313	274	230	54	52
		180	242	281	263	77	76

		159	248	235	248	75	72
		147	202	115	102	65	63
		196	231	116	98	63	60
	Mean	**163**	**249**	**197**	**191**	**70**	**68**
	/ˈdɪ.mən/	94	236	226	230	81	79
	/ˈdɪ.mən/	137	349	255	229	70	67
	Mean	**115**	**292**	**240**	**229**	**75**	**73**
	/ˈde-æ.mən/	128	216	252	205	67	64
		97	223	263	252	80	76
		149	257	217	209	68	66
		115	180	249	254	79	74
		126	220	260	246	62	60
		144	248	255	260	64	61
		140	274	219	248	68	60
		155	231	242	259	74	75
		169	223	232	277	69	70
	Mean	**145**	**229**	**241**	**253**	**70**	**68**
	/deɜ:.ˈmən/	202	119	250	246	66	68
		241	140	187	150	70	75
		212	105	261	268	71	73
	Mean	**216**	**117**	**239**	**233**	**69**	**72**
	/de.ˈmɒn/	313	137	280	271	67	71
	/ˈdæ.mɔn/	225	279	226	251	72	67
	/ˈdaɪ.mən/	184	281	257	256	69	65
	-	-	-	-	-	-	-
Climate	/ˈklɪ.meɪt/	155	530	250	281	70	66
		256	346	298	263	68	66
		218	813	275	255	56	58
		183	461	214	211	63	63
		137	678	290	195	79	75
		467	198	247	229	62	61
	Mean	**236**	**504**	**262**	**239**	**66**	**64**
	/ˈklaɪ.mət/	281	313	303	241	63	56
		225	404	272	258	79	74
		319	321	245	232	62	56
		263	297	162	163	73	66
		261	326	114	104	63	62
		256	349	231	213	64	60
		295	196	220	217	68	65
		294	254	261	261	67	68
		225	261	258	253	59	56
		295	465	273	243	53	49
		274	331	250	265	62	58
		250	366	242	243	65	60
		295	292	277	255	70	63
		252	440	244	240	77	71
		188	375	265	254	68	66
	Mean	**264**	**332**	**241**	**229**	**66**	**62**

	/ˈklaɪ.mɜ/	212	304	280	273	73	73
	/ˈklaɪ.meɪt/	248	438	232	214	67	63
	/ˈklaɪ.mæ/	277	234	251	236	71	70
	/klaɪ.ˈmət/	274	304	128	118	59	62
		203	308	211	145	79	76
		404	268	158	142	70	77
	Mean	**293**	**293**	**165**	**135**	**69**	**71**
	/klɪ.ˈmeɪt/	414	162	130	111	78	74
	/ˈklaɪ.mt/	-	-	-	-	-	-
	-	-	-	-	-	-	-
Organ	/ˈɔː-ɒr.gən/	194	257	256	251	68	66
		194	236	285	205	69	61
		221	243	297	210	80	74
		241	281	249	296	67	60
		216	281	234	208	69	64
		238	191	140	108	69	63
		174	286	230	204	67	63
		234	238	269	303	72	68
		192	165	246	285	70	66
		187	229	134	133	76	71
		212	275	285	279	65	63
		171	268	249	215	81	73
		187	247	109	114	76	72
		198	232	272	294	65	59
		220	303	246	292	54	50
		177	256	232	265	67	63
		172	248	247	241	68	62
		188	303	269	282	69	66
		213	313	241	209	77	71
		162	270	296	270	76	72
	Mean	**199**	**156**	**239**	**233**	**70**	**65**
	/ɔː-ɒˈgən/	284	184	276	234	76	75
		214	265	280	250	67	66
		268	146	256	209	71	69
		263	162	116	118	62	61
		259	282	214	212	78	78
		247	144	151	127	77	78
	Mean	**255**	**197**	**215**	**191**	**71**	**71**
	/ɔrˈgɑːn/	319	124	167	151	73	72
		378	144	211	217	61	66
		337	209	252	245	65	72
		393	155	254	288	78	79
	Mean	**356**	**158**	**221**	**225**	**69**	**72**
Bonus	/ˈbəʊ.nə-ɪs/	268	337	243	183	69	59
		187	389	218	201	66	62
		248	422	272	251	58	51
		159	407	240	223	66	60
		170	317	244	252	80	74

		284	634	239	215	65	61
		211	337	245	243	67	61
		115	532	260	254	63	60
	Mean	**205**	**421**	**245**	**227**	**66**	**61**
	/ˈbɔ.nu-ə-ɪs/	178	476	281	278	82	78
		144	418	252	251	71	69
		131	376	225	208	64	59
		187	324	249	258	60	58
		184	407	260	271	77	69
		177	468	225	216	67	62
		192	337	230	223	59	58
		184	242	254	245	64	61
	Mean	**172**	**381**	**247**	**243**	**68**	**64**
	/ˈbɜ.nɪs/	121	272	206	202	68	65
	/bɔ.ˈnu-es/	333	42	142	129	68	71
		378	159	129	116	69	67
		445	106	229	226	76	80
		400	124	123	141	73	73
		407	101	240	258	73	71
		385	119	280	251	57	62
		270	230	240	214	66	67
	Mean	**374**	**125**	**197**	**190**	**68**	**70**
	/bəʊ.ˈnəs/	342	209	118	107	61	63
		263	166	228	213	67	67
		304	192	110	101	68	73
	Mean	**303**	**189**	**152**	**140**	**65**	**67**
	/bɔ̃ˈju:s/	522	67	128	105	70	72
	/bəʊns/	-	-	-	-	-	-
	-	-	-	-	-	-	-
Concert	/ˈkæ-ənsɜrt/	180	555	276	268	69	62
		185	501	284	254	56	62
		247	404	223	210	64	57
		212	416	116	123	60	56
		131	407	222	216	61	63
		159	645	288	248	50	52
		166	573	269	256	79	74
		238	559	288	247	63	67
		140	541	249	230	62	60
		108	515	253	244	62	65
	Mean	**191**	**504**	**122**	**226**	**62**	**61**
	/ˈkɔ̃.s(ɜ:)rt/	191	292	244	276	77	77
		174	461	284	219	58	59
		376	200	259	261	53	58
		263	443	254	261	76	72
		173	624	261	275	67	71
		224	313	290	253	75	78
		165	313	258	252	65	64
		162	306	273	280	76	77

		118	562	219	222	62	66
		185	366	165	164	72	70
		207	560	243	236	67	61
		206	631	260	241	59	57
		149	578	266	256	74	72
		252	339	304	244	67	65
		178	432	102	108	70	69
	Mean	**201**	**428**	**245**	**236**	**67**	**67**
	/ˈkɔ̃sət/	197	232	120	104	64	63
		178	497	257	192	63	68
	Mean	**187**	**364**	**188**	**148**	**63**	**65**
	/kɔ̃ˈsɜrt/	477	137	138	110	76	75
	/kən.ˈsɜrt/	474	133	159	124	77	69
	Not pron	-	-	-	-	-	-
Father	/ˈfɑ.ðɜ(r)/	205	247	243	241	70	66
		115	317	202	187	62	58
		155	185	169	156	75	72
		238	259	262	248	71	68
		303	188	126	113	67	65
		242	238	261	210	60	59
		209	220	268	248	70	67
		252	225	132	133	72	73
	Mean	**214**	**234**	**207**	**192**	**68**	**66**
	/ˈfɑː.ðɜ(r)/	239	313	275	231	68	64
		326	252	288	260	73	72
		200	273	285	256	59	63
		178	191	208	205	64	64
		191	248	108	128	74	74
		257	196	256	255	66	63
		183	202	113	124	62	66
		295	263	239	226	67	67
		274	231	212	239	65	66
		294	241	269	265	79	76
		349	227	238	216	59	60
		162	198	236	205	67	61
		257	140	258	269	76	75
		203	236	105	104	75	73
		189	164	273	260	65	59
		198	292	250	270	52	52
		288	209	258	209	76	72
		270	288	234	220	64	62
		213	245	257	121	75	75
		159	224	244	250	73	71
	Mean	**236**	**231**	**230**	**215**	**67**	**66**
	/fɑ.’ðɜ/	225	138	215	147	80	77
		277	234	283	245	59	58
	Mean	**251**	**186**	**249**	**196**	**69**	**67**
Labour	/ˈleɪ.bɔr/	211	294	231	238	70	62

		180	216	114	103	67	62
		205	225	139	140	79	77
	Mean	**198**	**245**	**161**	**160**	**72**	**67**
		225	284	269	214	63	60
		173	241	250	246	75	75
		225	304	255	240	62	61
		259	279	203	193	62	62
		180	236	206	197	67	66
		236	200	112	106	63	61
		173	198	231	206	78	76
		220	245	214	231	66	67
		216	265	258	261	81	79
		147	275	216	200	64	61
	/ˈleɪ.bɜ(r)/	205	203	228	192	64	61
		192	194	250	265	75	75
		180	221	101	107	73	70
		180	171	252	250	60	56
		216	321	242	269	58	54
		284	266	259	236	77	75
		205	278	244	278	66	64
		216	238	240	219	65	62
		140	202	228	223	66	63
		353	288	202	242	75	75
		202	227	228	241	72	70
		162	224	232	242	71	66
		225	209	240	235	65	63
	Mean	**209**	**242**	**224**	**221**	**68**	**66**
	/ˈleɪ.bɪə/	159	382	209	206	62	57
		274	263	222	221	67	68
	Mean	**216**	**322**	**215**	**213**	**64**	**62**
	/leɪ.ˈbɜr/	200	151	155	140	71	74
	/lʌ.ˈbɔr/	241	183	134	105	73	72
Coffer	/ˈkæ(:).fɜ-ɒr/	189	385	275	265	59	63
		224	303	243	258	48	52
		195	389	305	282	75	73
		129	303	267	250	68	62
		115	227	289	260	70	69
		137	259	262	259	69	68
		165	310	229	219	67	62
		178	252	249	283	67	60
		166	346	261	252	67	64
		171	319	253	275	67	62
	Mean	**166**	**309**	**263**	**260**	**65**	**63**
	/ˈkɒ.fɜ(r)/	105	358	284	245	70	64
		129	257	126	144	77	75
		147	194	126	106	70	63
		114	315	246	200	61	60
		164	279	110	103	59	56

		191	378	295	260	70	68
		165	261	296	286	66	61
		144	248	232	207	59	57
		162	319	249	258	73	65
		164	330	258	228	79	73
		156	232	106	111	73	70
		189	196	274	280	60	59
		170	324	272	262	64	60
		166	349	250	270	78	75
		158	310	306	202	60	60
		167	250	148	88	77	74
	Mean	**155**	**287**	**223**	**203**	**68**	**65**
	/ˈkəʊ.fɜr/	169	268	146	148	78	73
		126	299	248	249	80	75
	Mean	**147**	**283**	**197**	**198**	**79**	**74**
	/kɒ.ˈfɜr/	187	146	167	153	71	74
	/kæ.ˈfɜr/	250	129	249	246	62	63
Measure	/ˈme.ʒɜ(r)/	203	283	263	213	66	61
		169	220	243	241	75	73
		286	290	190	183	60	59
		198	200	112	134	73	74
		202	248	117	101	63	61
		221	174	109	104	63	59
		227	277	222	219	67	67
		173	239	262	264	79	76
		153	232	98	102	72	70
		324	216	271	242	51	54
		227	347	277	269	79	74
		224	256	250	275	65	62
		118	253	216	213	64	62
		137	214	230	224	62	64
		227	266	183	122	74	73
		159	234	259	246	68	72
		224	259	213	249	68	63
	Mean	**204**	**247**	**206**	**200**	**67**	**66**
	/ˈmɪ.ʒɜ-ɒr/	124	171	247	256	65	61
		247	362	252	244	58	59
		191	261	222	194	66	62
		191	295	226	244	71	62
	Mean	**188**	**272**	**236**	**234**	**65**	**61**
	/ˈmeɪ.ʒɜ/	250	227	230	192	65	61
		236	114	263	235	78	75
		317	177	219	201	60	61
		156	196	223	162	77	75
		225	238	221	209	64	62
		259	189	252	188	65	66
		167	182	156	138	70	71
	Mean	**230**	**189**	**223**	**189**	**68**	**67**

	/me.ˈʒɔr/	230	171	146	140	78	79
	/mɪ.ˈʒjuː/	324	166	230	230	71	71
Censure	/ˈsen.ʃ-sɜ(r)/	339	297	225	198	67	63
		308	313	224	189	64	60
		283	256	113	136	74	76
		288	198	121	99	66	65
		281	230	129	100	58	57
		257	272	259	225	76	73
		238	288	236	315	68	67
		256	326	283	268	76	78
		277	313	280	257	69	70
		254	238	265	223	63	59
		261	321	105	109	69	69
		261	228	261	260	56	55
		281	324	253	278	52	51
		331	306	295	252	75	73
		313	346	246	299	61	62
		266	249	169	149	76	76
		265	317	239	255	66	61
		299	348	242	233	57	59
	Mean	**281**	**287**	**219**	**113**	**66**	**65**
	/ˈsən.ʃ-sjuːr/	342	595	250	241	64	64
		225	477	250	268	62	63
	Mean	**283**	**536**	**250**	**254**	**63**	**63**
	/ˈkæn.sɜr-sjuː/	155	339	264	231	62	59
		159	447	260	118	76	76
	Mean	**157**	**393**	**262**	**174**	**69**	**67**
	/sen.ˈʃuːr/	423	234	250	270	74	74
	/sen.ˈʃ-sɜ(r)/	272	266	257	247	63	64
		321	223	160	142	69	68
		353	284	244	244	66	64
		196	220	288	254	76	73
	Mean	**285**	**248**	**237**	**221**	**68**	**67**
	/ɪnˈʃjuː/	418	122	248	246	72	70
	/kən.ˈsjuː/	373	196	258	260	62	61
	-	-	-	-	-	-	-

APPENDIX 6

The North Wind and the Sun: Script and Transcription

The North Wind and the Sun were disputing which was the stronger, when a traveller came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other.

Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveller fold his cloak around him; and at last the North Wind gave up the attempt. Then the Sun shined out warmly, and immediately the traveller took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.

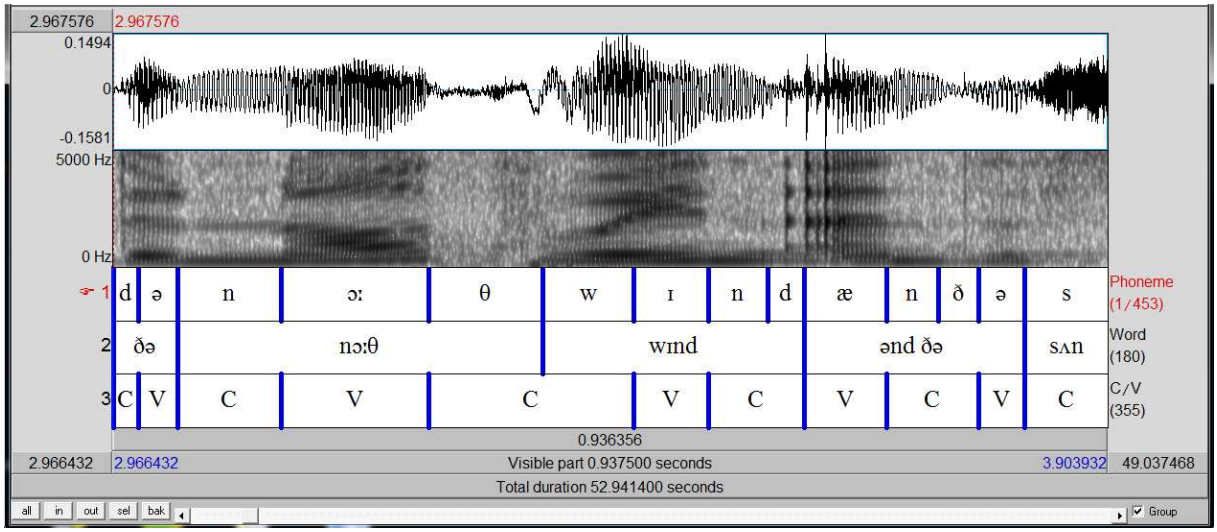
| ðə nɔːθ wɪnd ənd ðə sʌn |

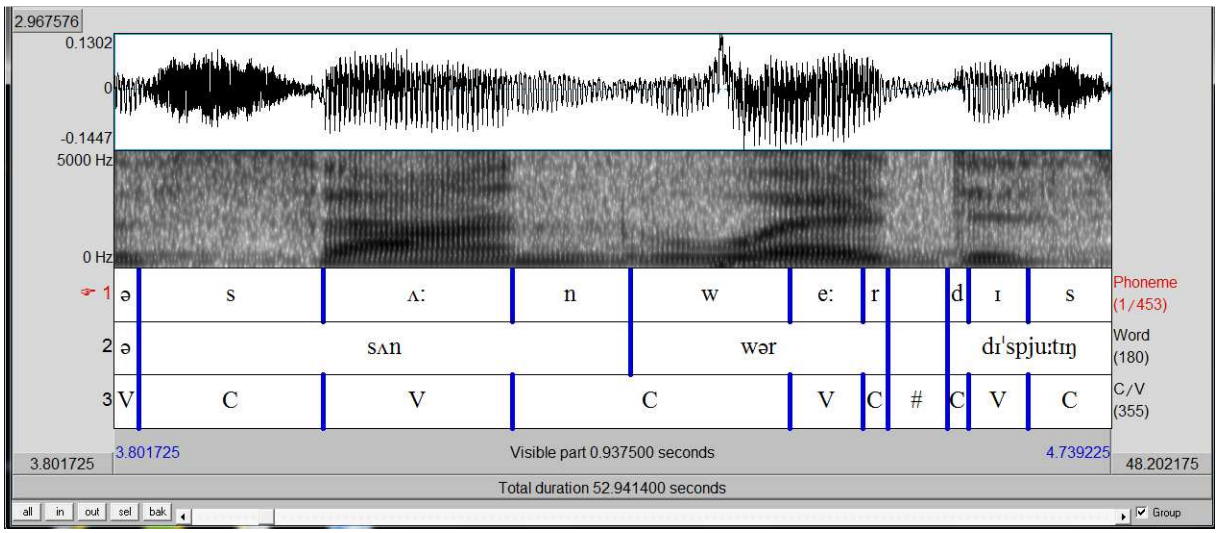
ðə nɔːθ wɪnd ənd ðə sʌn wə dɪˈspjuːtɪŋ wɪtʃ wəz ðə ˈstrɒŋgə | wen ə ˈtrævələ keɪm əˈlɒŋ ræpt ɪn ə wɔːm kləʊk | ˈðeɪ əˈgriːd ðət ðə ˈwʌn huː ˈfɜːst səkˈsiːdɪd ɪn ˈmeɪkɪŋ ðə ˈtrævələ teɪk ɪz kləʊk ɒf ʃəd bi kənˈsɪdəd ˈstrɒŋgə ðən ðɪ ˈʌðə |

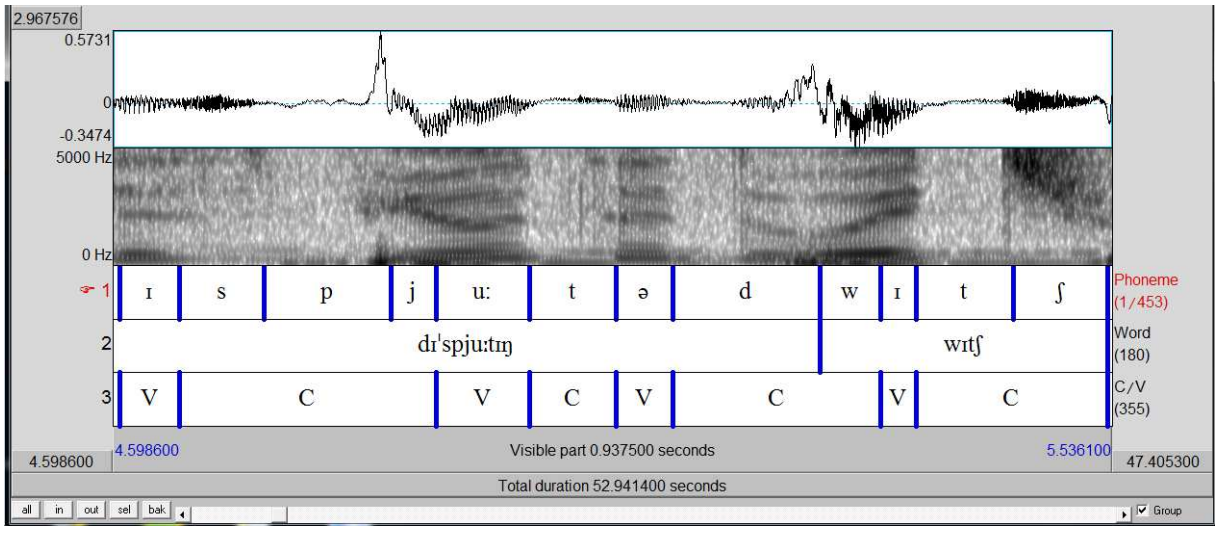
ðen ðə nɔːθ wɪnd bluː əz hɑːd əz hi kʊd | bət ðə mɔː hi bluː ðə mɔː ˈkləʊsli dɪd ðə ˈtrævələ fəʊld ɪz kləʊk əˈraʊnd ɪm | ənd ət lɑːst ðə nɔːθ wɪnd geɪv ʌp ði əˈtempt | ðen ðə sʌn ʃɪnd ˈaʊt ˈwɔːmli | ənd ɪˈmiːdɪətli ðə ˈtrævələ tʊk ɒf ɪz kləʊk | ənd ˈsəʊ ðə nɔːθ wɪnd wəz əˈblaɪdʒd tə kənˈfes ðət ðə sʌn wəz ðə ˈstrɒŋgər əv ðə ˈtuː |

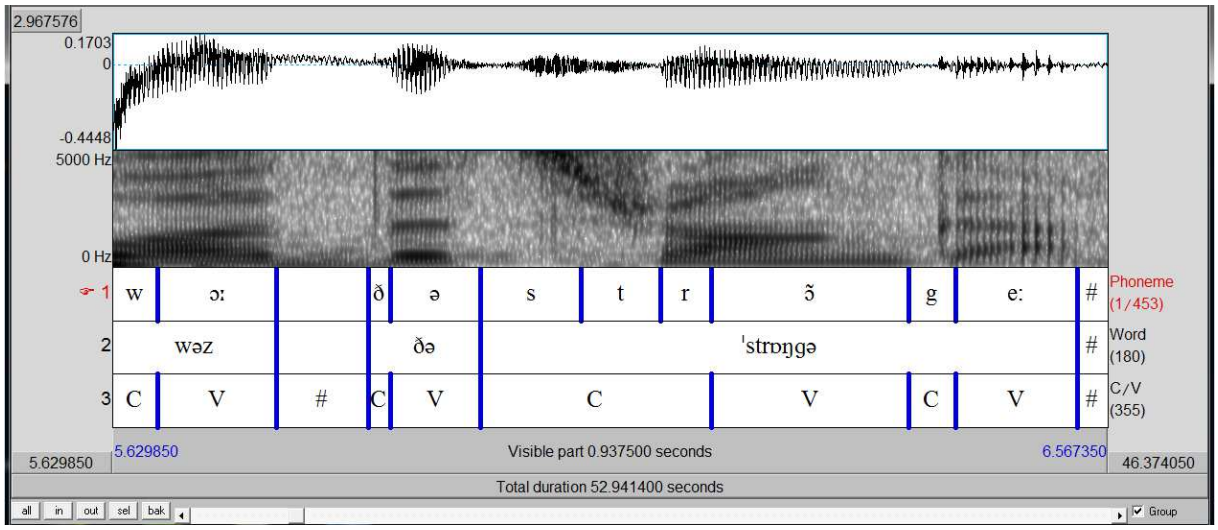
APPENDIX 7

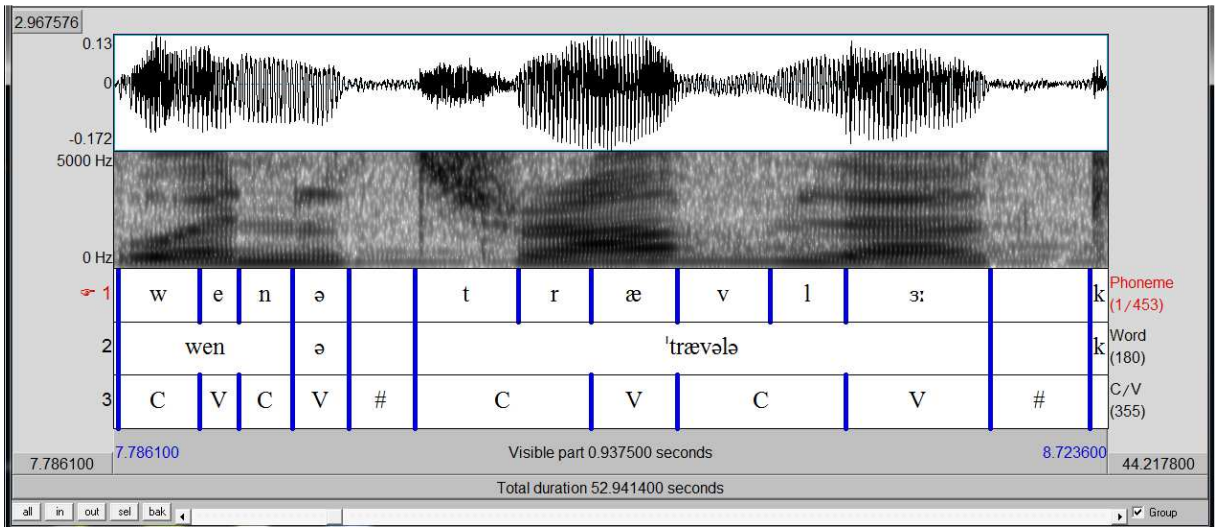
Spectrograms of a Sample Segmentation of One Audio File, Using Praat

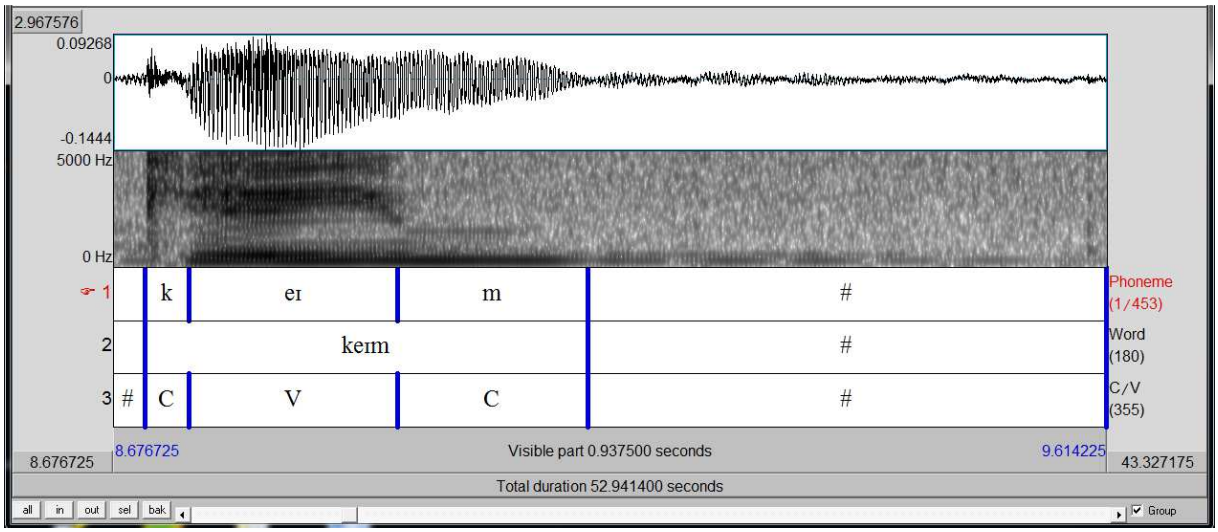


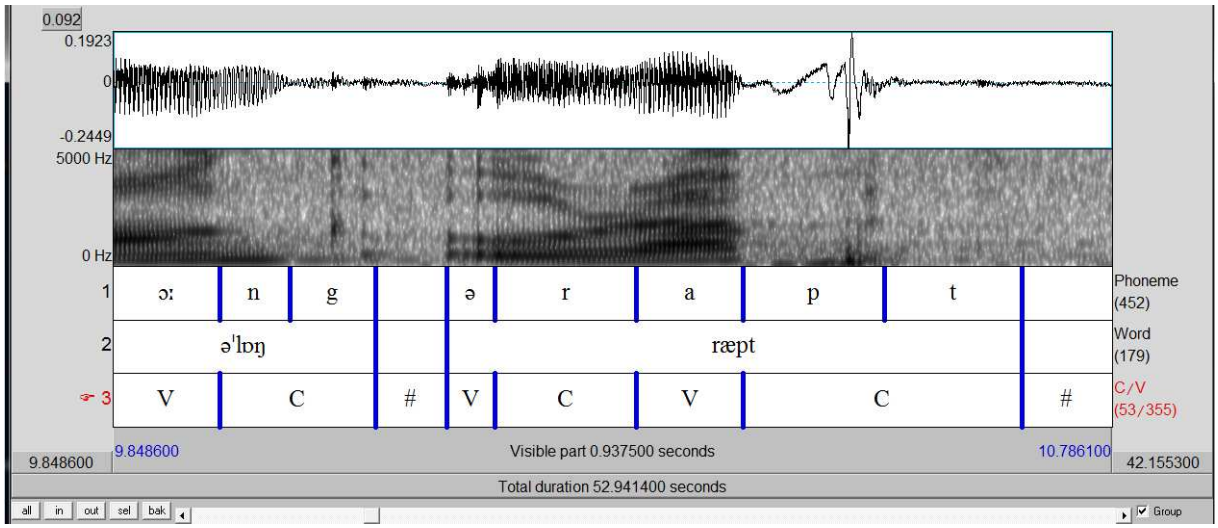


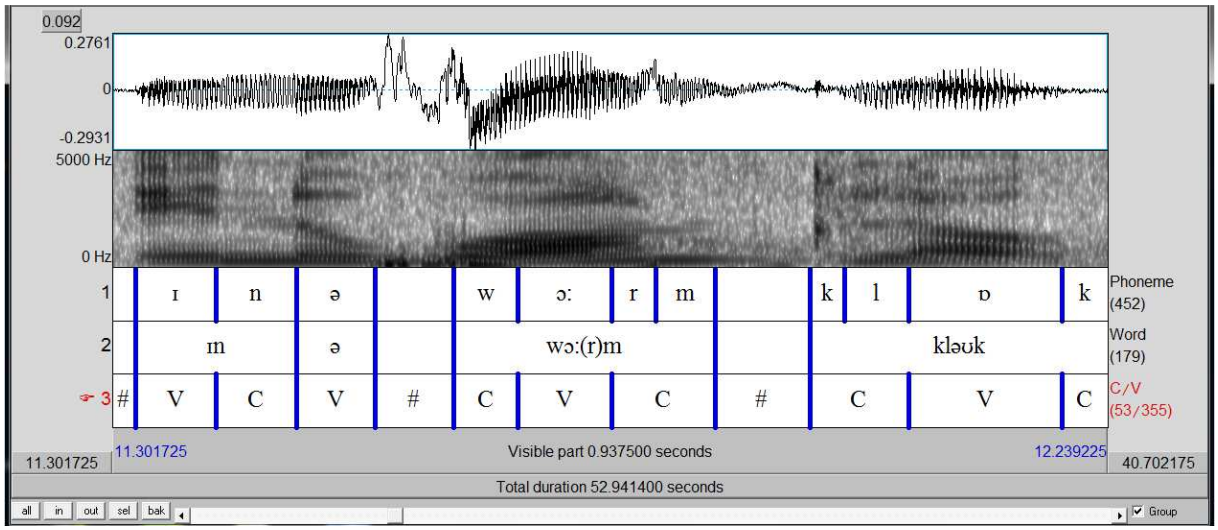


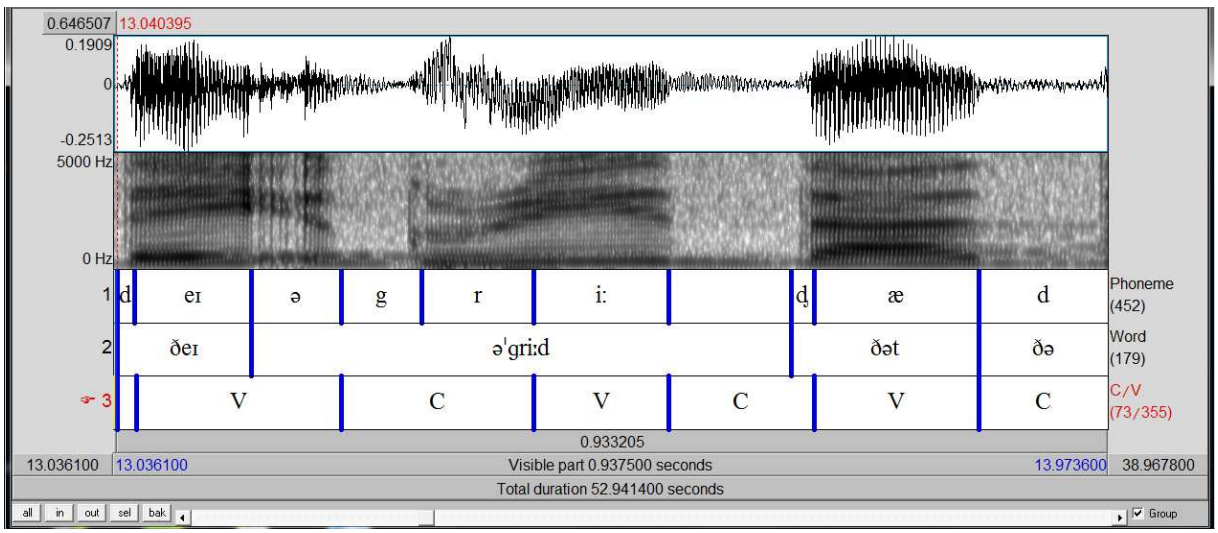

2.967576
0.1703
0
-0.4448
5000 Hz
0 Hz
1 w ɔː ð ə s t r ɔ̃ g eː #
Phoneme (1/453)
2 wəz ðə ˈstrɒŋgə #
Word (180)
3 C V # C V C V C V #
C/V (355)
5.629850
5.629850
Visible part 0.937500 seconds
6.567350
46.374050
Total duration 52.941400 seconds
all in out sel bak
Group

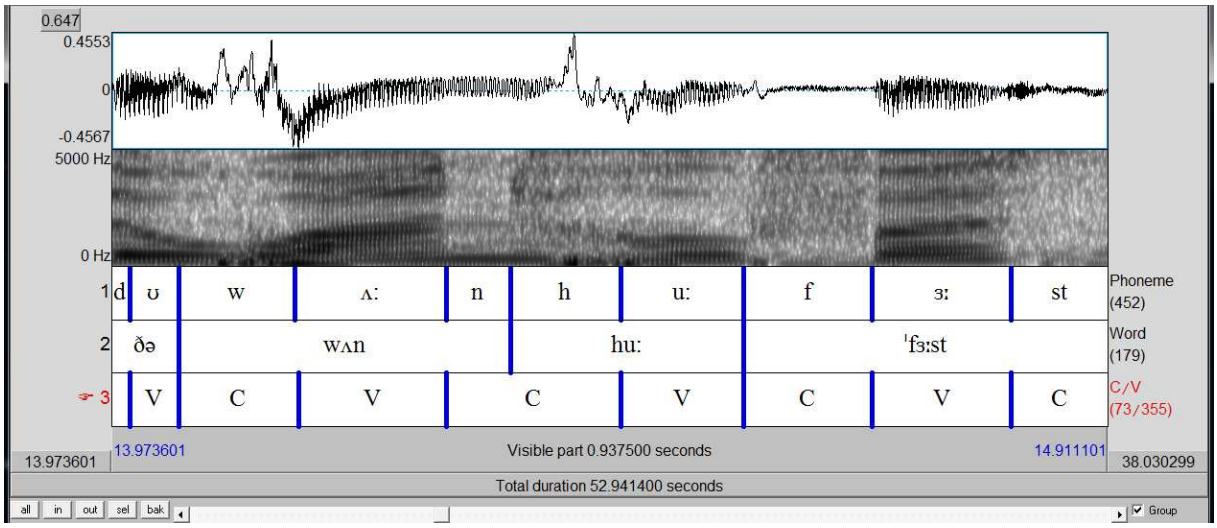

2.967576
0.13
0
-0.172
5000 Hz
0 Hz
1 w e n ə t r æ v l ɜː k
Phoneme (1/453)
2 wen ə ˈtrævələ k
Word (180)
3 C V C V # C V C V #
C/V (355)
7.786100
7.786100
Visible part 0.937500 seconds
8.723600
44.217800
Total duration 52.941400 seconds
all in out sel bak
Group

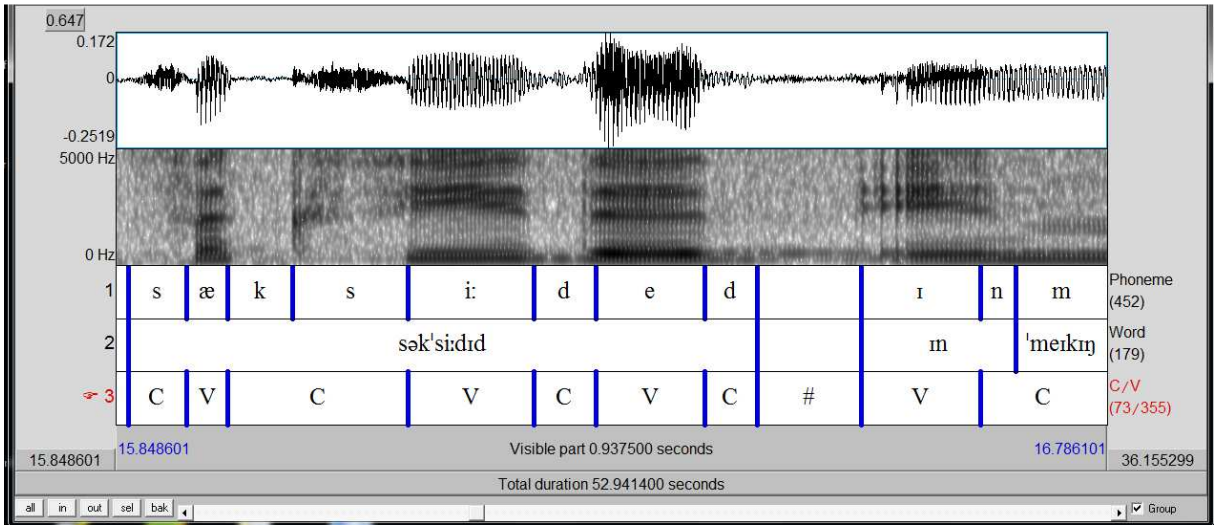

2.967576
0.09268
0
-0.1444
5000 Hz
0 Hz
1 k eɪ m #
Phoneme (1/453)
2 keɪm #
Word (180)
3 # C V C #
C/V (355)
8.676725
8.676725
Visible part 0.937500 seconds
9.614225
43.327175
Total duration 52.941400 seconds
all in out sel bak
Group

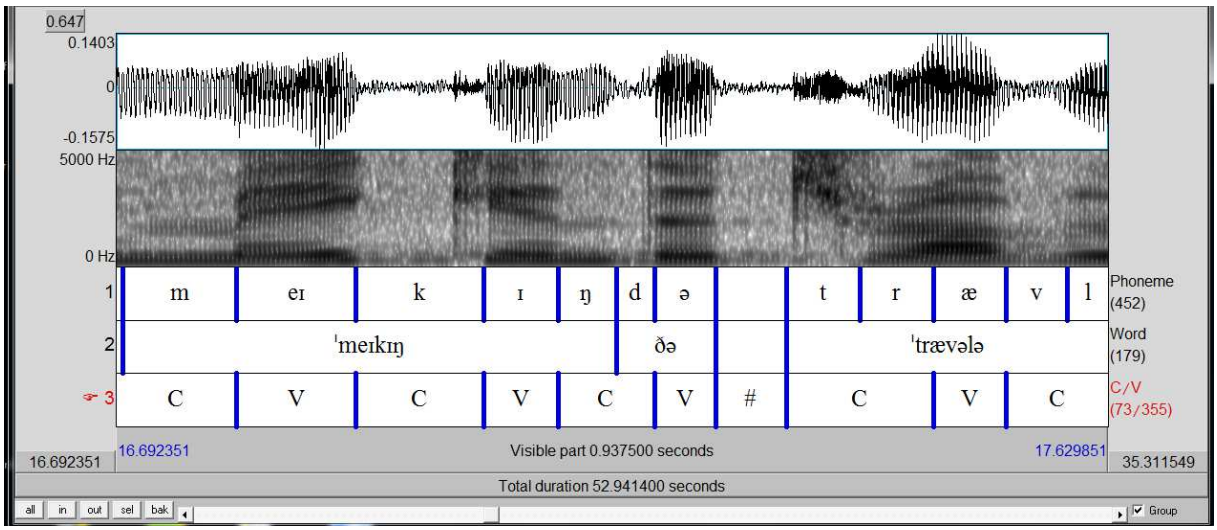

0.092
0.1923
0
-0.2449
5000 Hz
0 Hz
1 ɔː n g ə r a p t
2 əˈlɒŋ ræpt
3 V C # V C V C #
Phoneme (452)
Word (179)
C/V (53/355)
9.848600
9.848600
Visible part 0.937500 seconds
10.786100
42.155300
Total duration 52.941400 seconds
all in out sel bak
Group

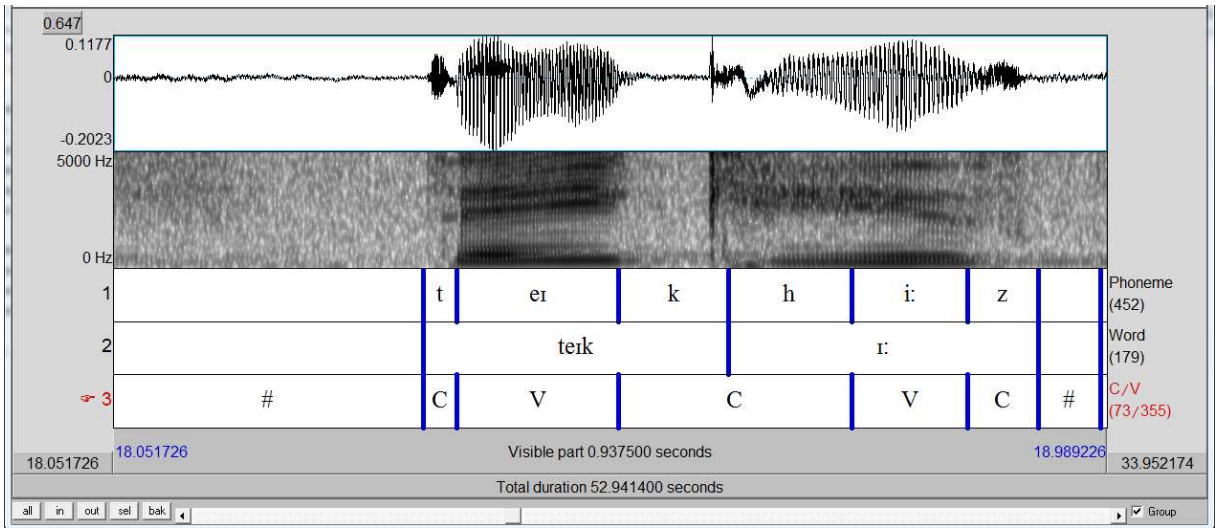

0.092
0.2761
0
-0.2931
5000 Hz
0 Hz
1 ɪ n ə w ɔː r m k l ɒ k
2 m ə wɔː(r)m kləʊk
3 # V C V # C V C # C V C
Phoneme (452)
Word (179)
C/V (53/355)
11.301725
11.301725
Visible part 0.937500 seconds
12.239225
40.702175
Total duration 52.941400 seconds
all in out sel bak
Group

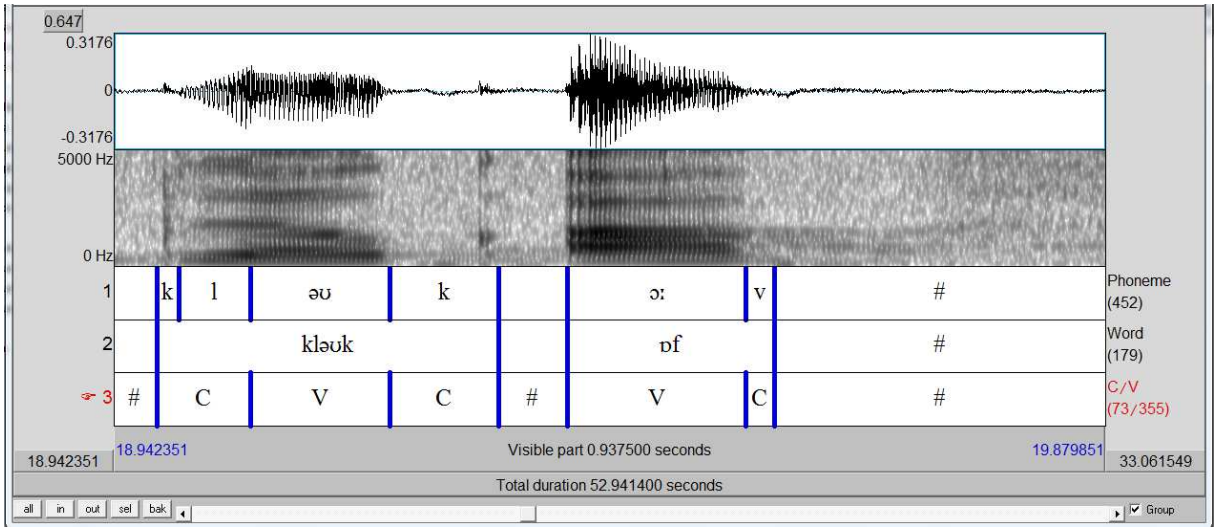

0.646507
13.040395
0.1909
0
-0.2513
5000 Hz
0 Hz
1 d eɪ ə g r iː d̩ æ d
2 ðeɪ əˈgriːd ðət ðə
3 V C V C V C
Phoneme (452)
Word (179)
C/V (73/355)
0.933205
13.036100
13.036100
Visible part 0.937500 seconds
13.973600
38.967800
Total duration 52.941400 seconds
all in out sel bak
Group

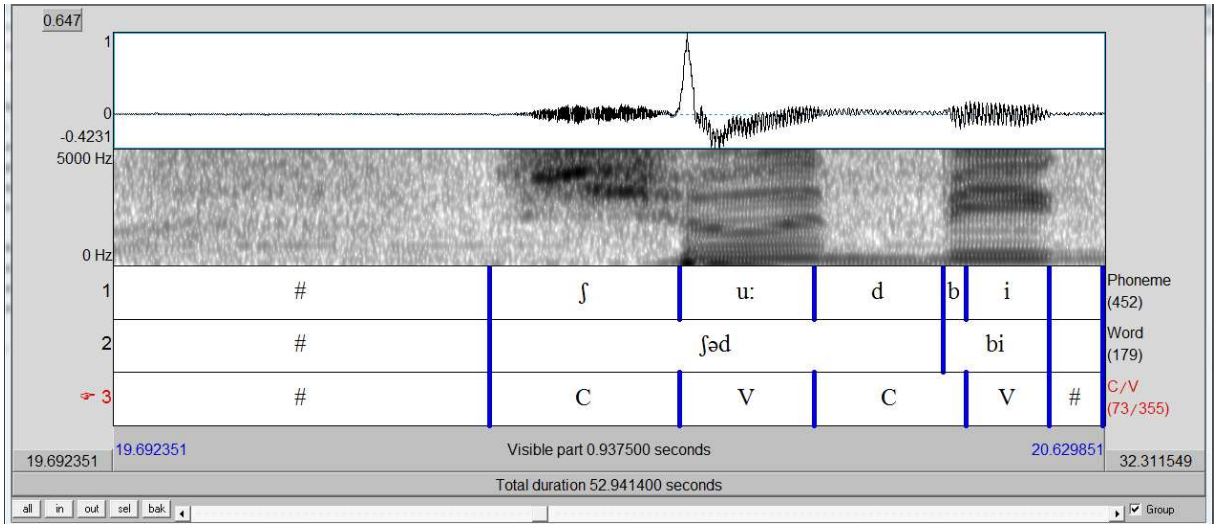

0.647
0.4553
0
-0.4567
5000 Hz
0 Hz
1 d ʊ w ʌ: n h u: f ɜ: st
Phoneme (452)
2 ðə wʌn hu: ˈfɜːst
Word (179)
3 V C V C V C V C
C/V (73/355)
13.973601
13.973601
Visible part 0.937500 seconds
14.911101
38.030299
Total duration 52.941400 seconds
all in out sel bak
Group

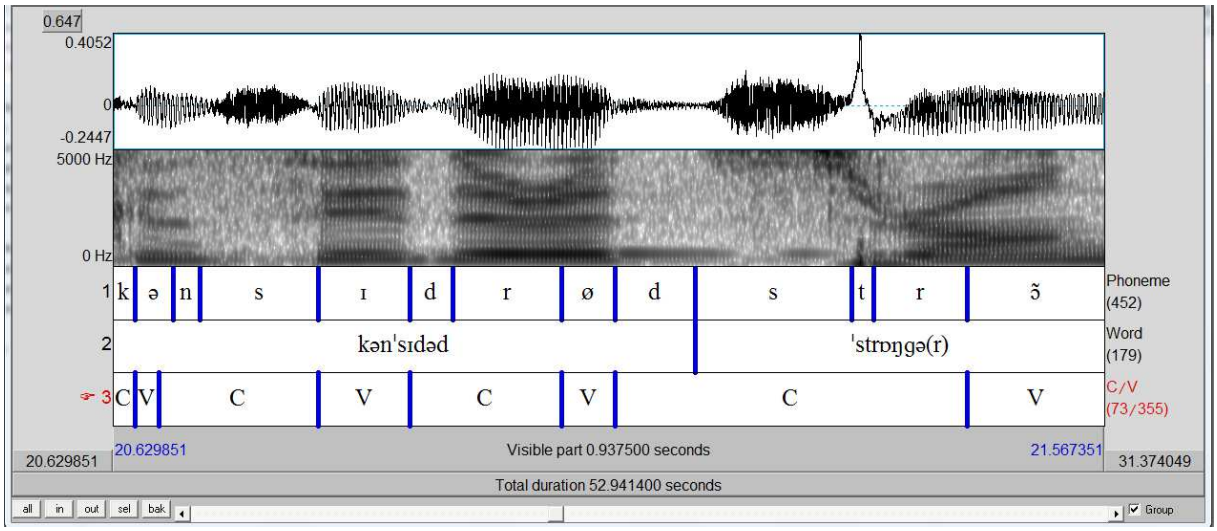

0.647
0.172
0
-0.2519
5000 Hz
0 Hz
1 s æ k s i: d e d ɪ n m
Phoneme (452)
2 səkˈsiːdɪd ɪn ˈmeɪkɪŋ
Word (179)
3 C V C V C V C # V C
C/V (73/355)
15.848601
15.848601
Visible part 0.937500 seconds
16.786101
36.155299
Total duration 52.941400 seconds
all in out sel bak
Group

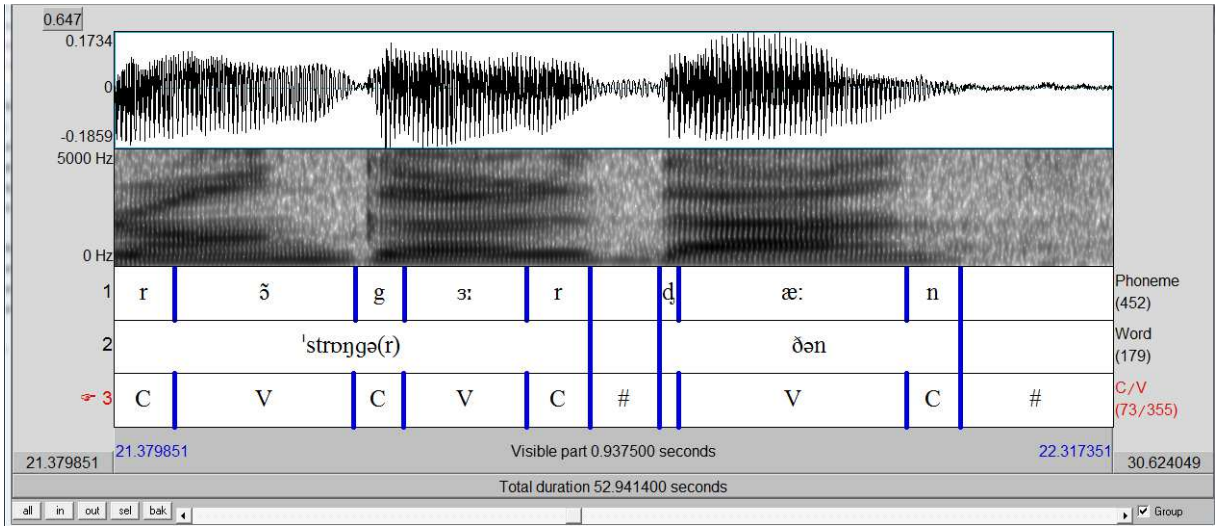

0.647
0.1403
0
-0.1575
5000 Hz
0 Hz
1 m eɪ k ɪ ŋ d ə t r æ v l
Phoneme (452)
2 ˈmeɪkɪŋ ðə ˈtrævələ
Word (179)
3 C V C V C V # C V C
C/V (73/355)
16.692351
16.692351
Visible part 0.937500 seconds
17.629851
35.311549
Total duration 52.941400 seconds
all in out sel bak
Group

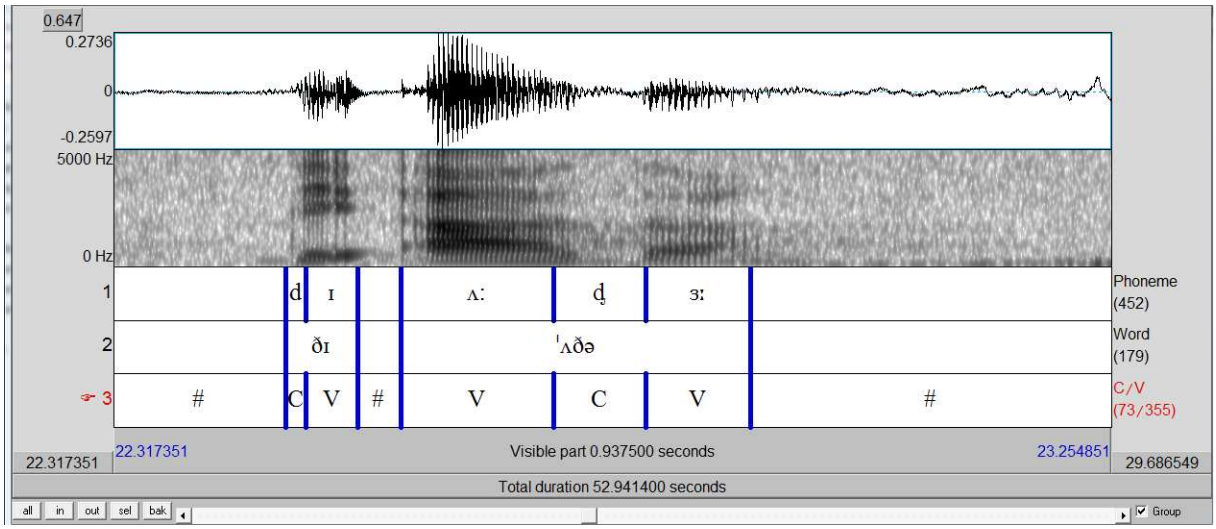

0.647
0.1177
0
-0.2023
5000 Hz
0 Hz
1
2
3
t
eɪ
k
h
i:
z
teɪk
ɾ:
#
C
V
C
V
C
#
Phoneme (452)
Word (179)
C/V (73/355)
18.051726
18.051726
Visible part 0.937500 seconds
18.989226
33.952174
Total duration 52.941400 seconds
all
in
out
sel
bak
Group

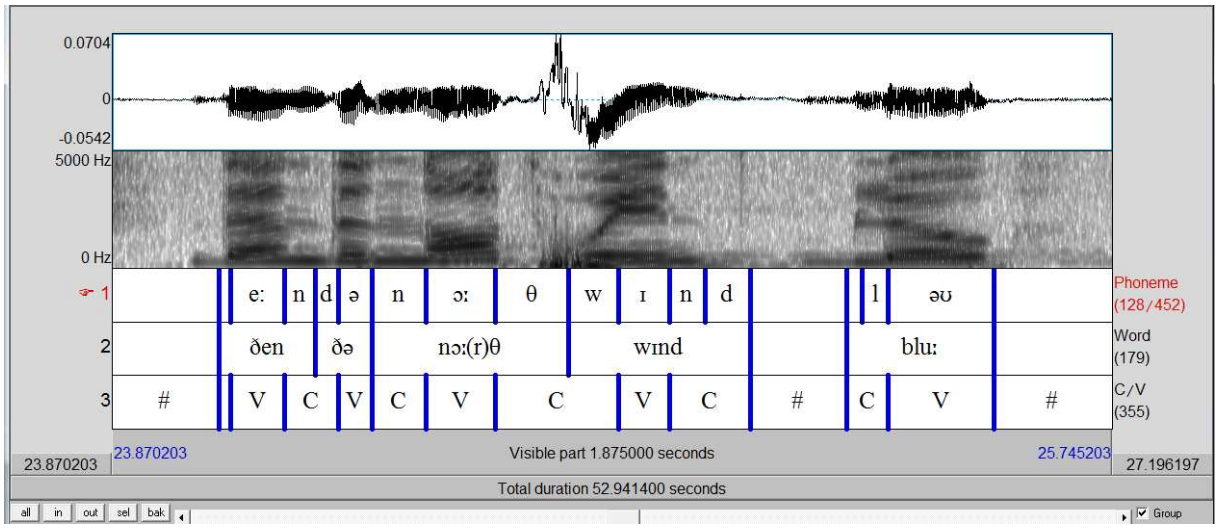

0.647
0.3176
0
-0.3176
5000 Hz
0 Hz
1
2
3
k
l
əʊ
k
ɔː
v
#
kləʊk
ɒf
#
#
C
V
C
#
V
C
#
Phoneme (452)
Word (179)
C/V (73/355)
18.942351
18.942351
Visible part 0.937500 seconds
19.879851
33.061549
Total duration 52.941400 seconds
all
in
out
sel
bak
Group

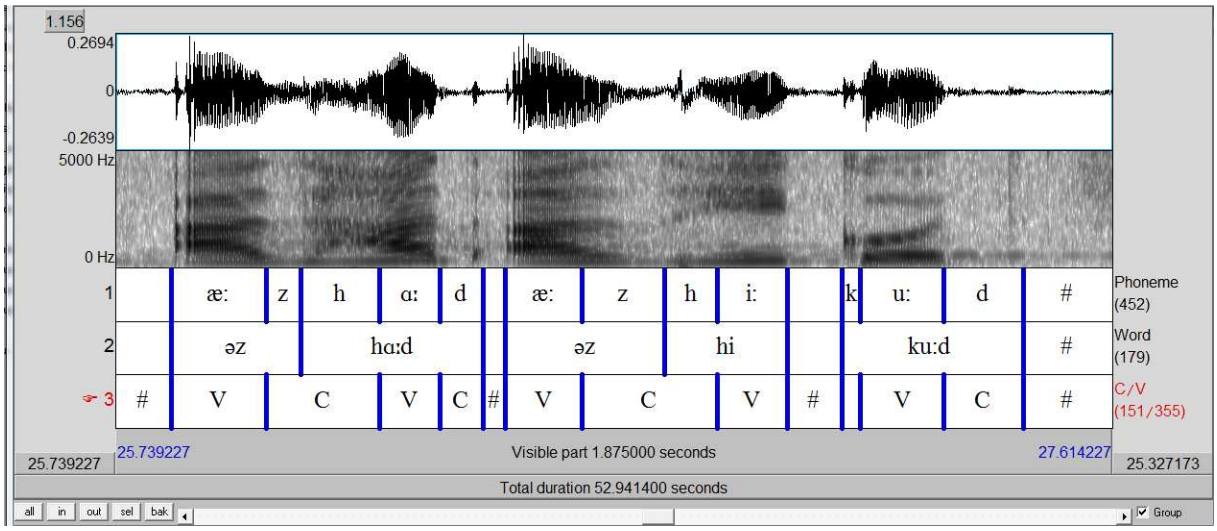

0.647
1
0
-0.4231
5000 Hz
0 Hz
1
2
3
#
ʃ
uː
d
b
i
#
ʃəd
bi
#
C
V
C
V
#
Phoneme (452)
Word (179)
C/V (73/355)
19.692351
19.692351
Visible part 0.937500 seconds
20.629851
32.311549
Total duration 52.941400 seconds
all
in
out
sel
bak
Group

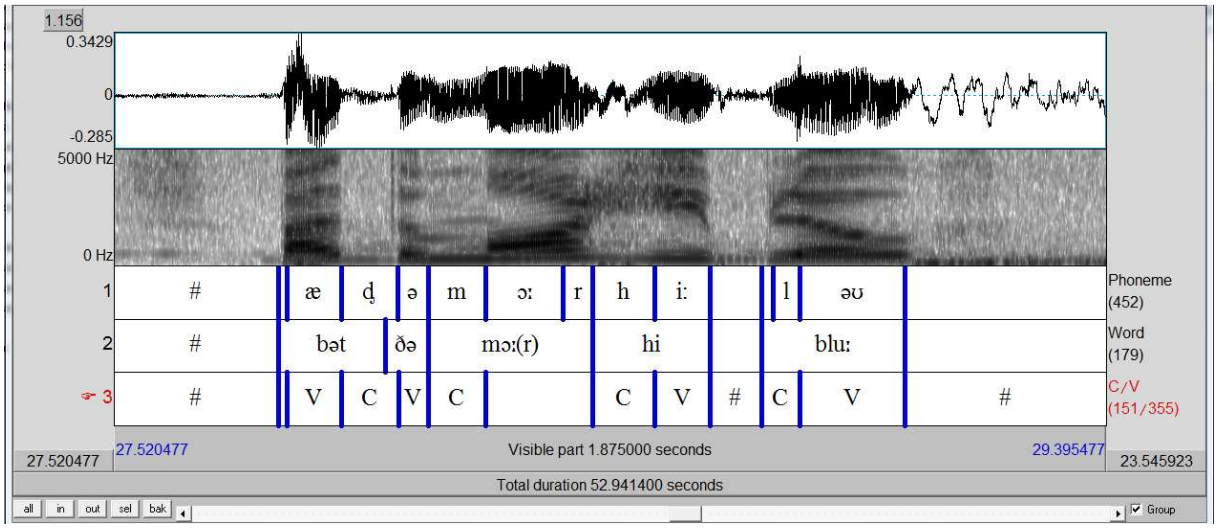

0.647
0.4052
0
-0.2447
5000 Hz
0 Hz
1 k ə n s ɪ d r ø d s t r ɔ̃
2 kənˈsɪdəd ˈstrɒŋgə(r)
3 C V C V C V C V
Phoneme (452)
Word (179)
C/V (73/355)
20.629851
20.629851
Visible part 0.937500 seconds
21.567351
31.374049
Total duration 52.941400 seconds
all in out sel bak
Group

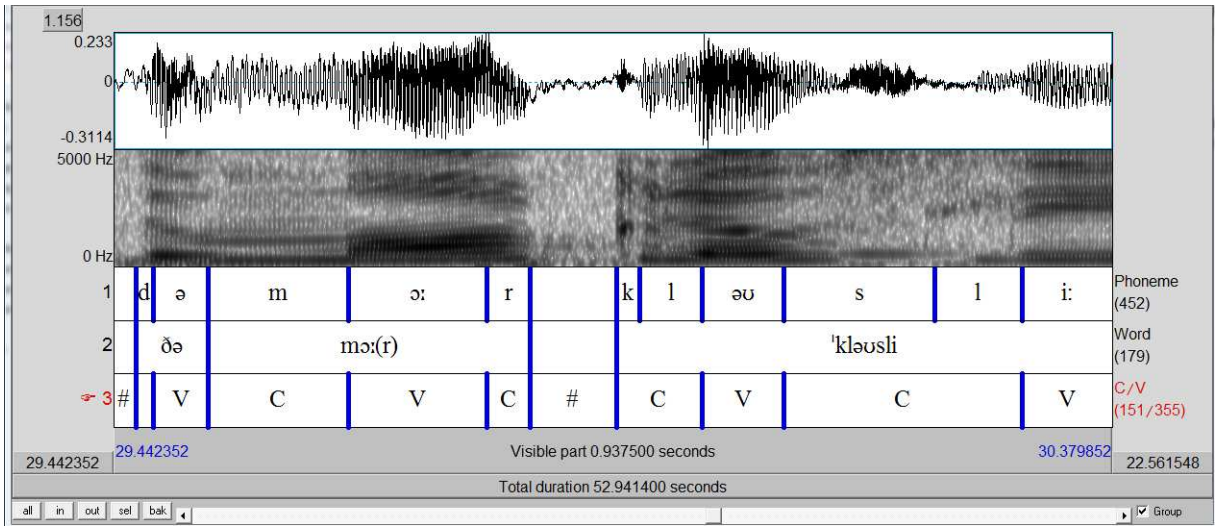

0.647
0.1734
0
-0.1859
5000 Hz
0 Hz
1 r ɔ̃ g ɜː r d̪ æː n
2 ˈstrɒŋgə(r) ðən
3 C V C V C # V C #
Phoneme (452)
Word (179)
C/V (73/355)
21.379851
21.379851
Visible part 0.937500 seconds
22.317351
30.624049
Total duration 52.941400 seconds
all in out sel bak
Group

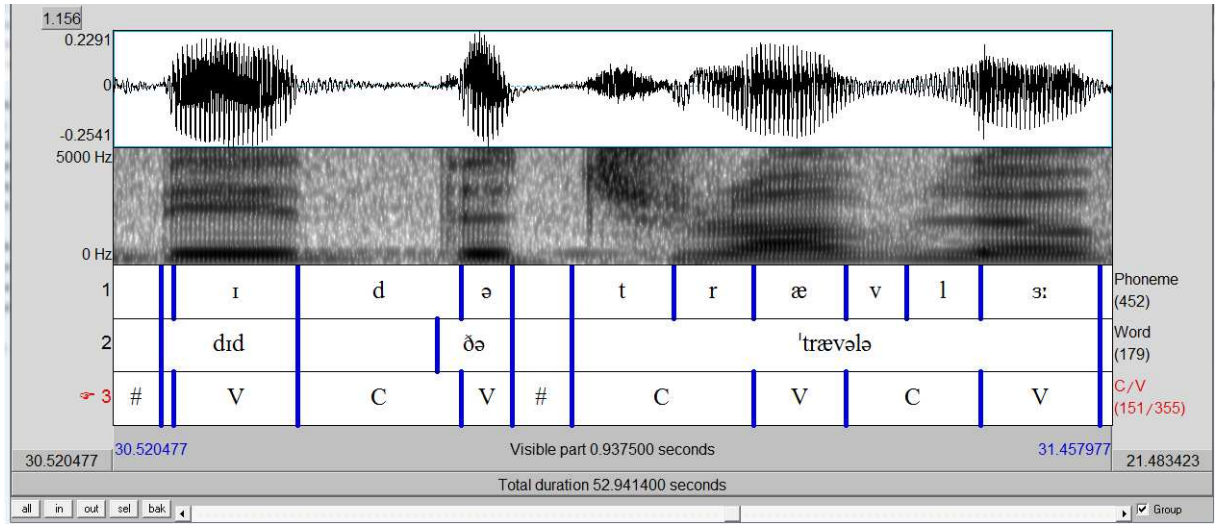

0.647
0.2736
0
-0.2597
5000 Hz
0 Hz
1 d ɪ ʌː d̪ ɜː
2 ðɪ ˈʌðə
3 # C V # V C V #
Phoneme (452)
Word (179)
C/V (73/355)
22.317351
22.317351
Visible part 0.937500 seconds
23.254851
29.686549
Total duration 52.941400 seconds
all in out sel bak
Group

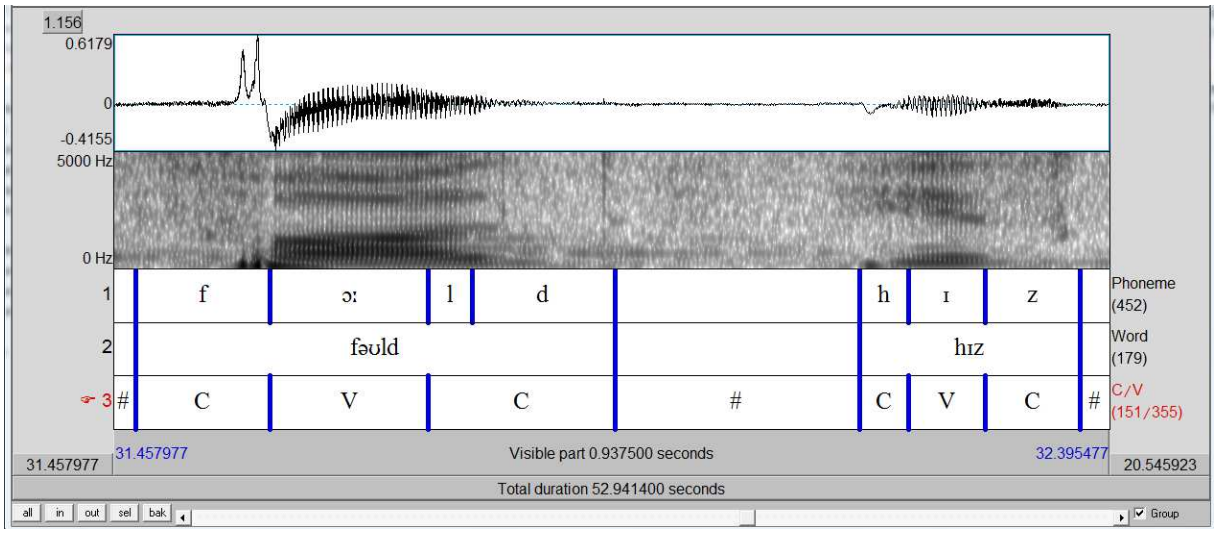

0.0704
0
-0.0542
5000 Hz
0 Hz
1 eː n d ə n ɔː θ w ɪ n d l əʊ
Phoneme (128/452)
2 ðen ðə nɔː(r)θ wɪnd bluː
Word (179)
3 # V C V C V C V C # C V #
C/V (355)
23.870203
23.870203
Visible part 1.875000 seconds
25.745203
27.196197
Total duration 52.941400 seconds
all in out sel bak
Group

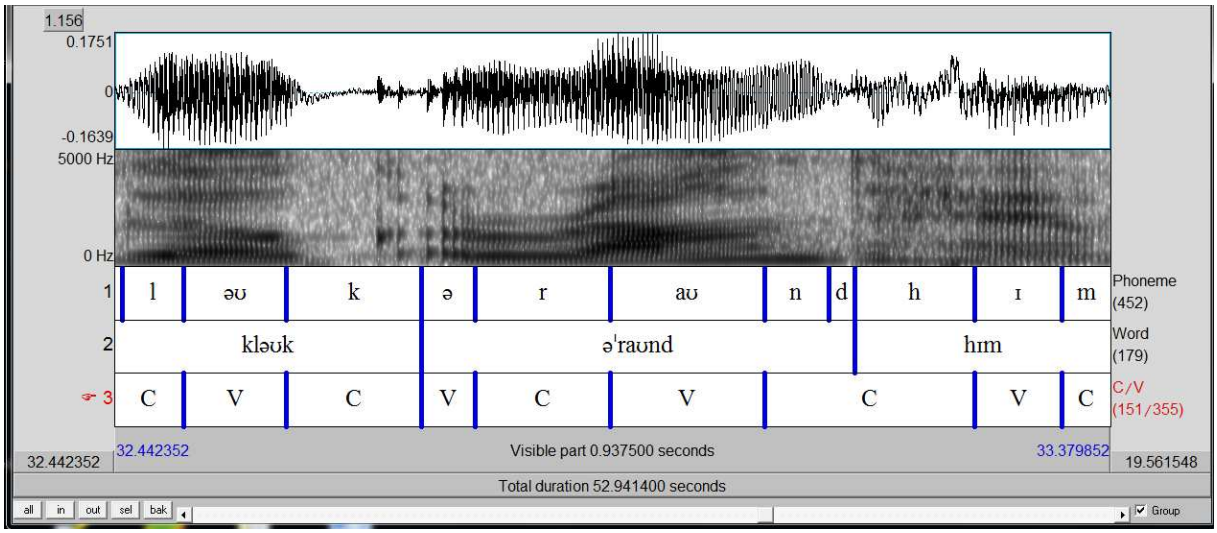

1.156
0.2694
0
-0.2639
5000 Hz
0 Hz
1 æː z h ɑː d æː z h iː k uː d #
Phoneme (452)
2 əz hɑːd əz hi kuːd #
Word (179)
3 # V C V C # V C V # V C #
C/V (151/355)
25.739227
25.739227
Visible part 1.875000 seconds
27.614227
25.327173
Total duration 52.941400 seconds
all in out sel bak
Group

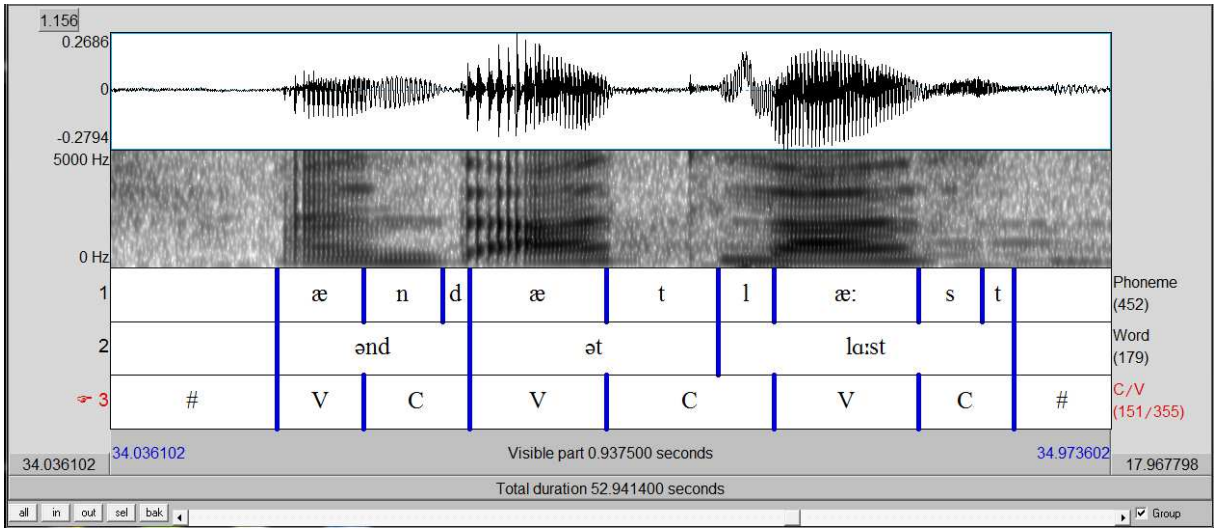

1.156
0.3429
0
-0.285
5000 Hz
0 Hz
1 # æ d̪ ə m ɔː r h iː l əʊ
Phoneme (452)
2 # bət ðə mɔː(r) hi bluː
Word (179)
3 # V C V C C V # C V #
C/V (151/355)
27.520477
27.520477
Visible part 1.875000 seconds
29.395477
23.545923
Total duration 52.941400 seconds
all in out sel bak
Group

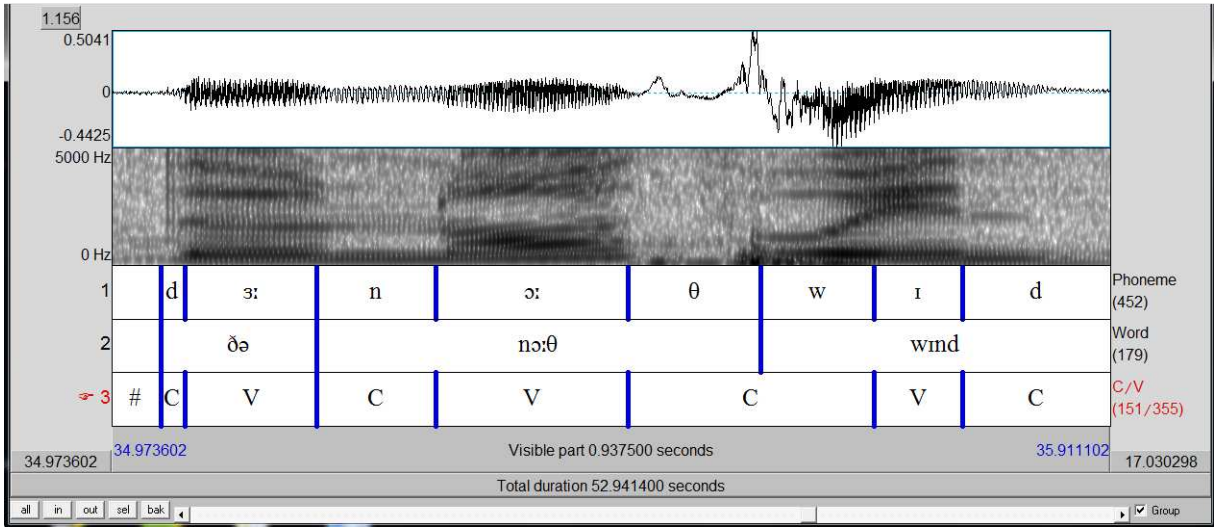

1.156
0.233
0
-0.3114
5000 Hz
0 Hz
1 d ə m ɔː r k l əʊ s l iː
Phoneme (452)
2 ðə mɔː(r) ˈkləʊsli
Word (179)
3 # V C V C # C V C V
C/V (151/355)
29.442352
29.442352
Visible part 0.937500 seconds
30.379852
22.561548
Total duration 52.941400 seconds
all in out sel bak
Group

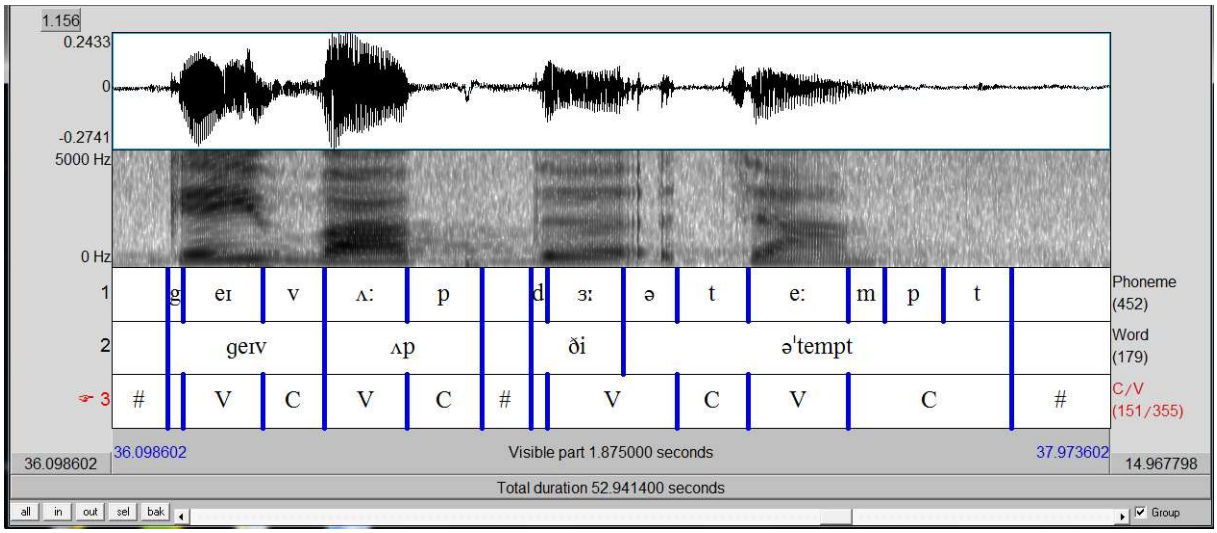

1.156
0.2291
0
-0.2541
5000 Hz
0 Hz
1 ɪ d ə t r æ v l ɜː
Phoneme (452)
2 dɪd ðə ˈtrævələ
Word (179)
3 # V C V # C V C V
C/V (151/355)
30.520477
30.520477
Visible part 0.937500 seconds
31.457977
21.483423
Total duration 52.941400 seconds
all in out sel bak
Group

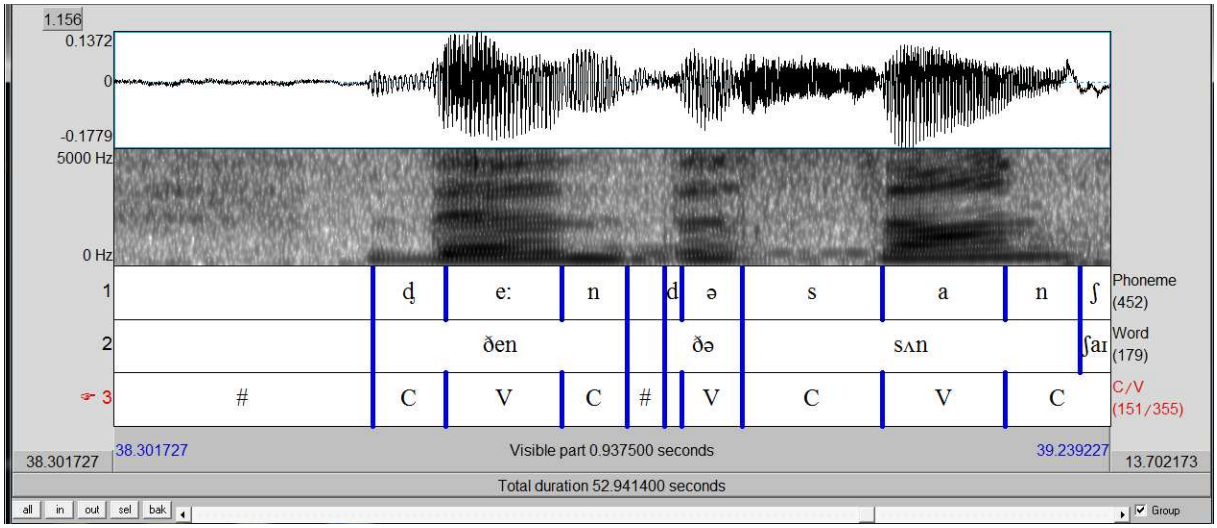

1.156
0.6179
0
-0.4155
5000 Hz
0 Hz
1 f ɔː l d h ɪ z
Phoneme (452)
2 fəʊld hɪz
Word (179)
3 # C V C # C V C #
C/V (151/355)
31.457977
31.457977
Visible part 0.937500 seconds
32.395477
20.545923
Total duration 52.941400 seconds
all in out sel bak
Group

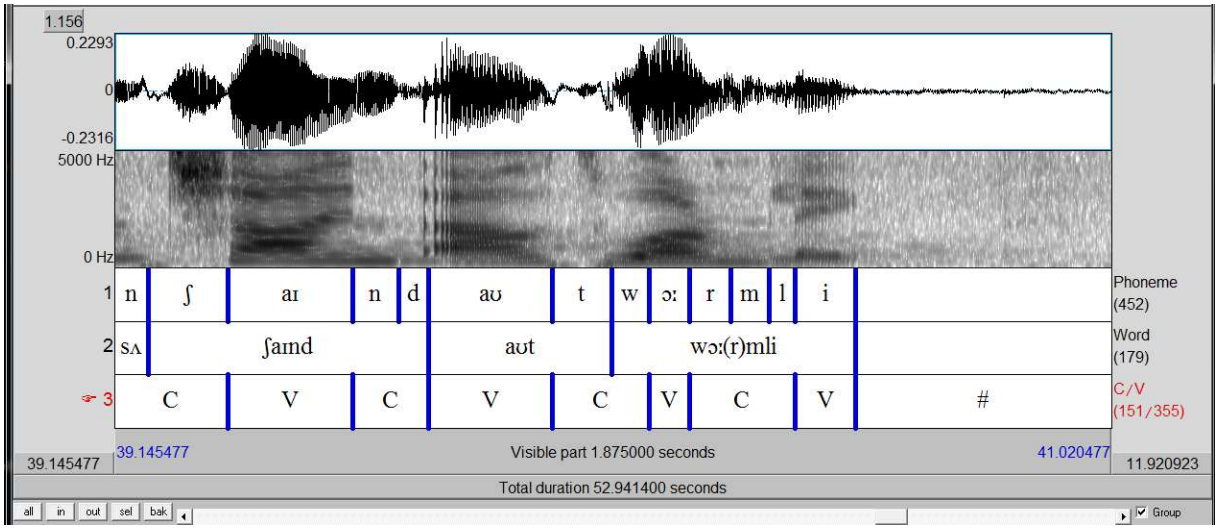

1.156
0.1751
0
-0.1639
5000 Hz
0 Hz
1 l əʊ k ə r aʊ n d h ɪ m
Phoneme (452)
2 kləʊk əˈraʊnd hɪm
Word (179)
3 C V C V C V C V C
C/V (151/355)
32.442352
32.442352
Visible part 0.937500 seconds
33.379852
19.561548
Total duration 52.941400 seconds
all in out sel bak
Group

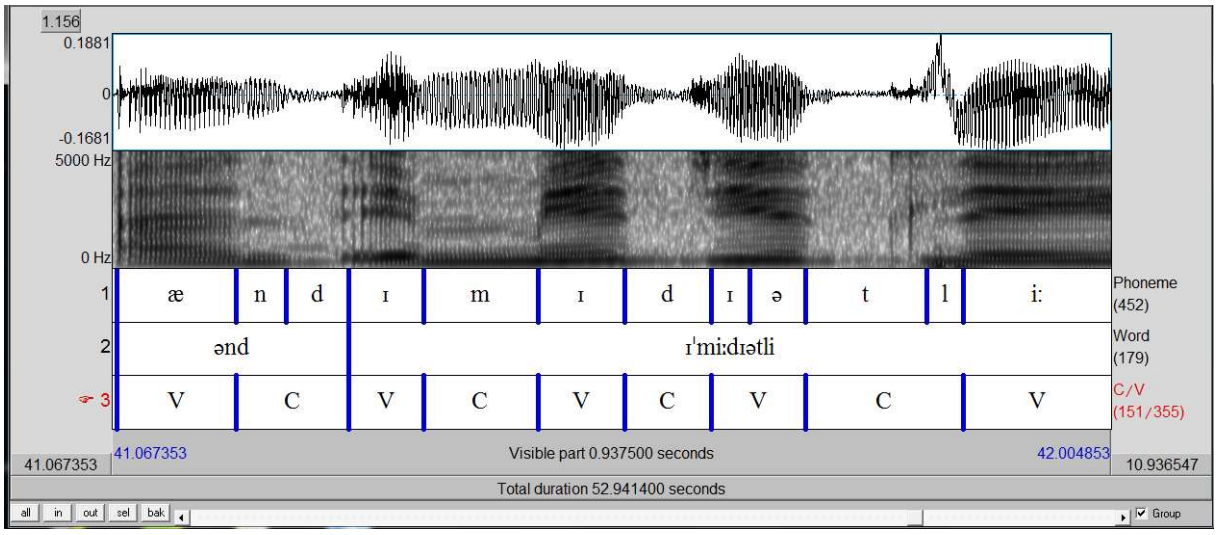

1.156
0.2686
0
-0.2794
5000 Hz
0 Hz
1 æ n d æ t l æː s t
Phoneme (452)
2 ənd ət lɑːst
Word (179)
3 # V C V C V C #
C/V (151/355)
34.036102
34.036102
Visible part 0.937500 seconds
34.973602
17.967798
Total duration 52.941400 seconds
all in out sel bak
Group

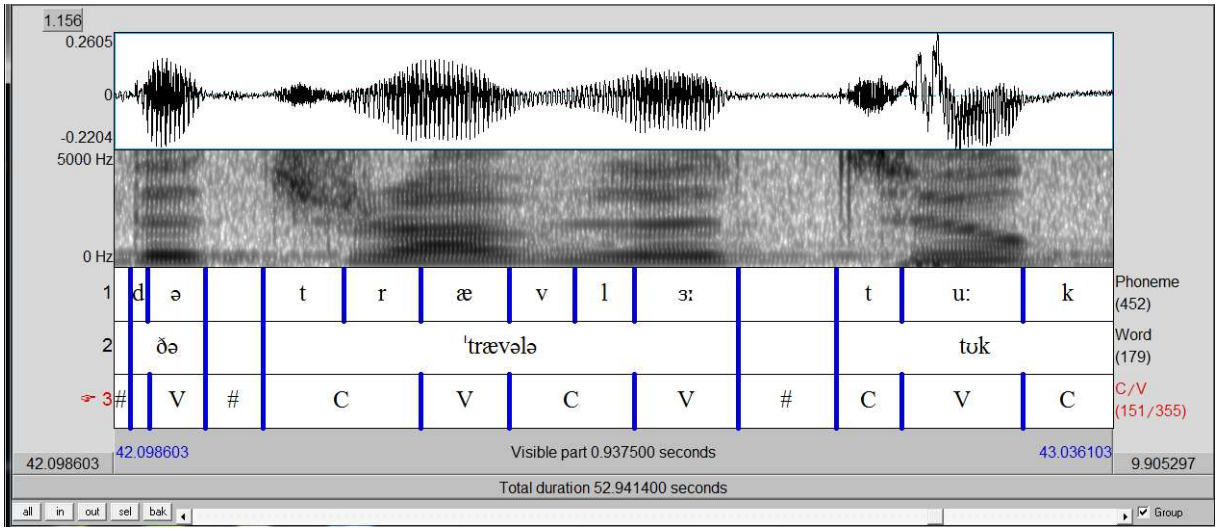

1.156
0.5041
0
-0.4425
5000 Hz
0 Hz
1 d ɜː n ɔː θ w ɪ d
Phoneme (452)
2 ðə nɔːθ wɪnd
Word (179)
3 # C V C V C V C
C/V (151/355)
34.973602
34.973602
Visible part 0.937500 seconds
35.911102
17.030298
Total duration 52.941400 seconds
all in out sel bak
Group

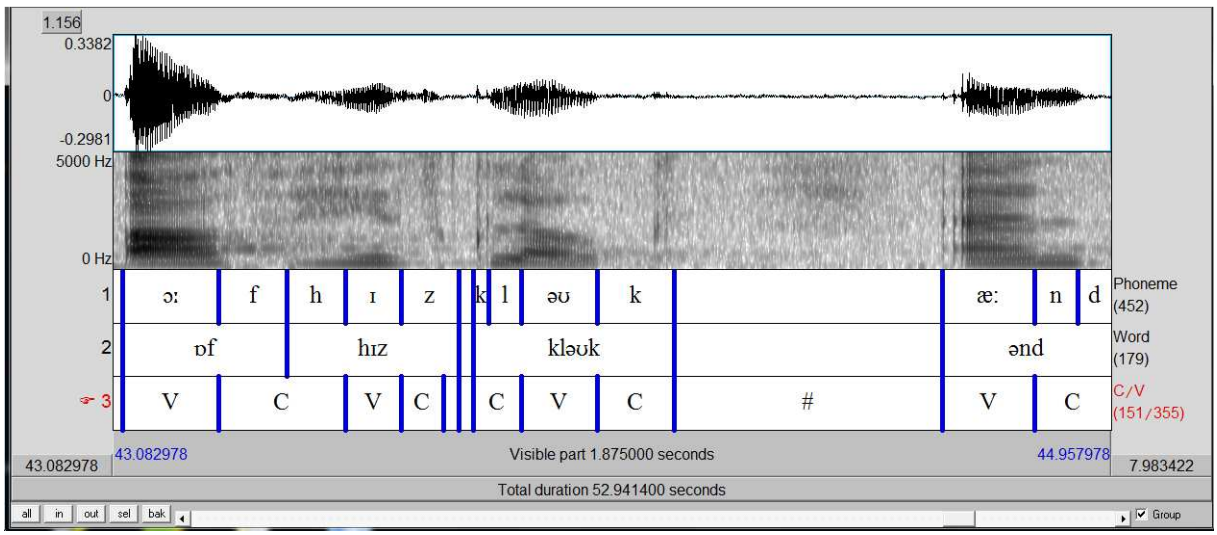

1.156
0.2433
0
-0.2741
5000 Hz
0 Hz
1 g eɪ v ʌː p d ɜː ə t eː m p t
2 geɪv ʌp ðə ˈtempt
3 # V C V C # V C V C #
Phoneme (452)
Word (179)
C/V (151/355)
36.098602
36.098602
Visible part 1.875000 seconds
37.973602
14.967798
Total duration 52.941400 seconds
all in out sel bak
Group

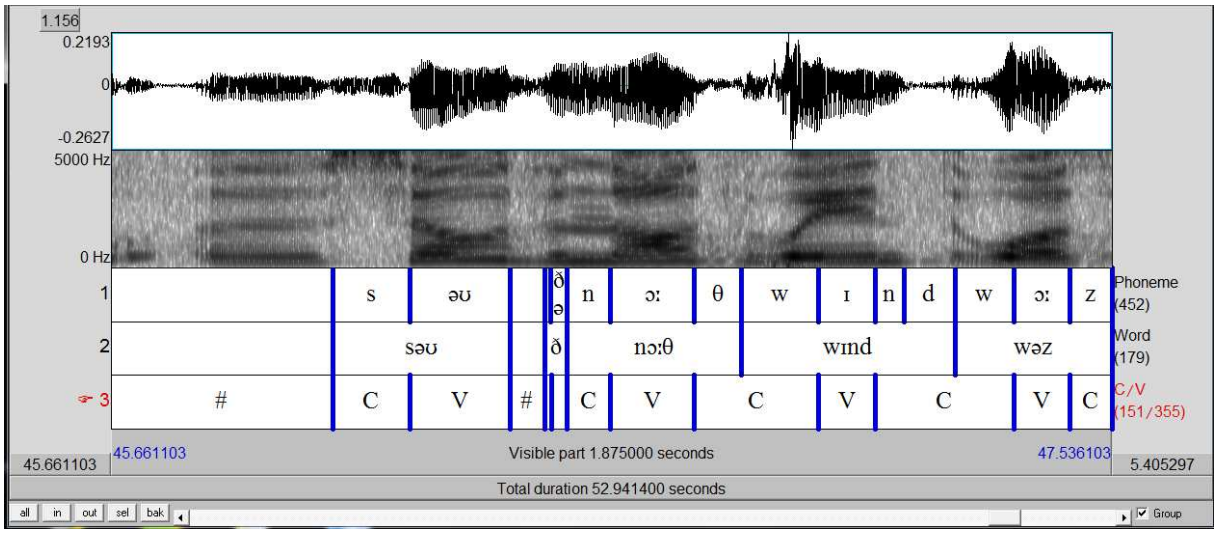

1.156
0.1372
0
-0.1779
5000 Hz
0 Hz
1 ḍ eː n d ə s a n ʃ
2 ðen ðə sʌn ʃaɪ
3 # C V C # V C V C
Phoneme (452)
Word (179)
C/V (151/355)
38.301727
38.301727
Visible part 0.937500 seconds
39.239227
13.702173
Total duration 52.941400 seconds
all in out sel bak
Group

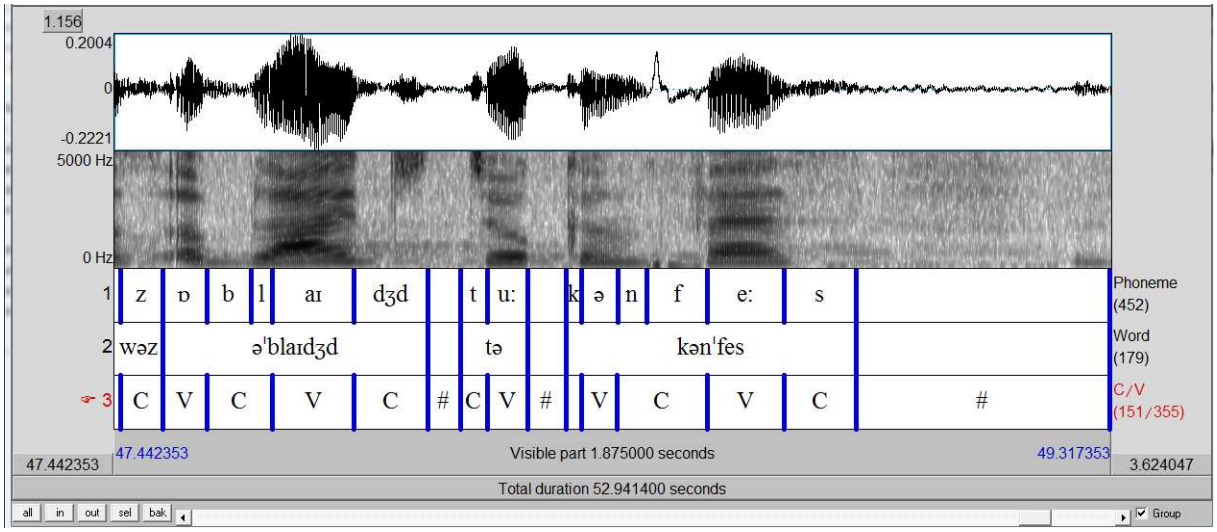

1.156
0.2293
0
-0.2316
5000 Hz
0 Hz
1 n ʃ aɪ n d aʊ t w ɔː r m l i
2 sʌ ʃaɪnd aʊt wɔː(r)mli
3 C V C V C V C V #
Phoneme (452)
Word (179)
C/V (151/355)
39.145477
39.145477
Visible part 1.875000 seconds
41.020477
11.920923
Total duration 52.941400 seconds
all in out sel bak
Group

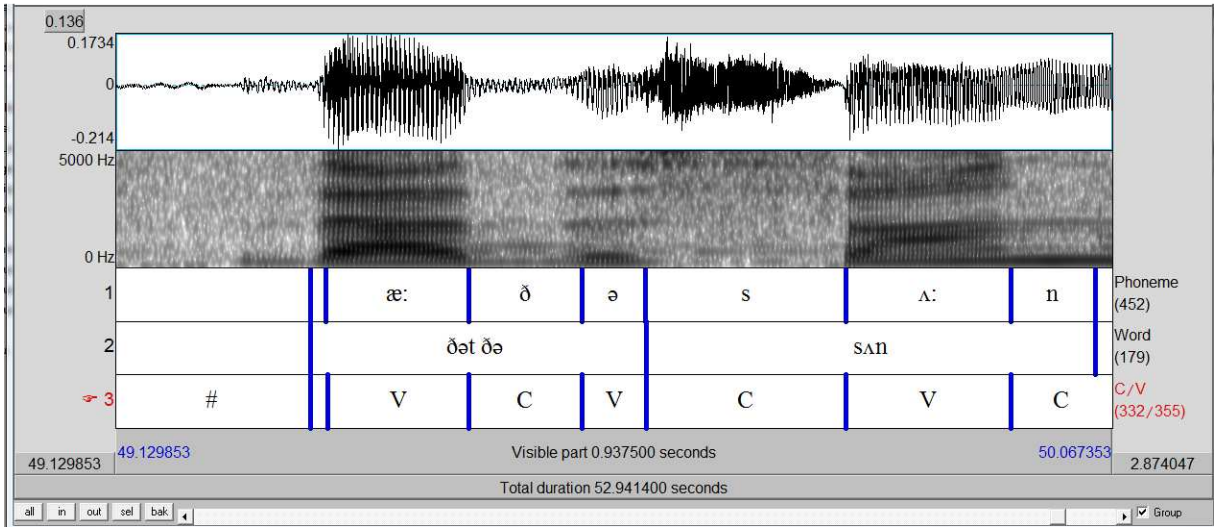

1.156
0.1881
0
-0.1681
5000 Hz
0 Hz
1 æ n d ɪ m ɪ d ɪ ə t l iː Phoneme (452)
2 ənd ɪˈmiːdɪətli Word (179)
3 V C V C V C V C V C/V (151/355)
41.067353
41.067353
Visible part 0.937500 seconds
42.004853
10.936547
Total duration 52.941400 seconds
all in out sel bak
Group

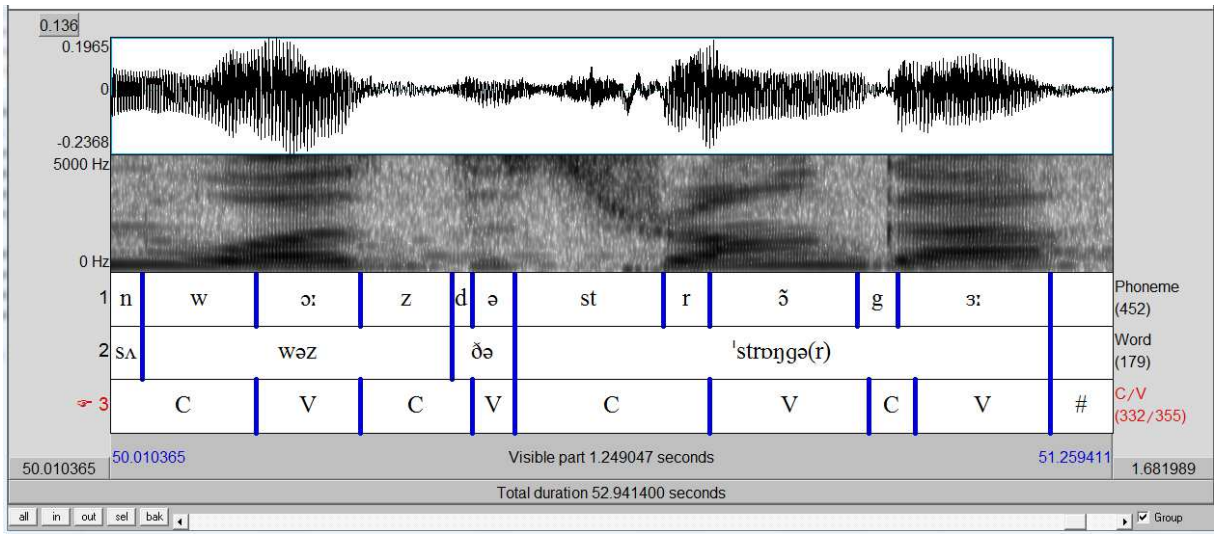

1.156
0.2605
0
-0.2204
5000 Hz
0 Hz
1 d ə t r æ v l ɜː t uː k Phoneme (452)
2 ðə ˈtrævələ tʊk Word (179)
3 # V # C V C V # C V C C/V (151/355)
42.098603
42.098603
Visible part 0.937500 seconds
43.036103
9.905297
Total duration 52.941400 seconds
all in out sel bak
Group

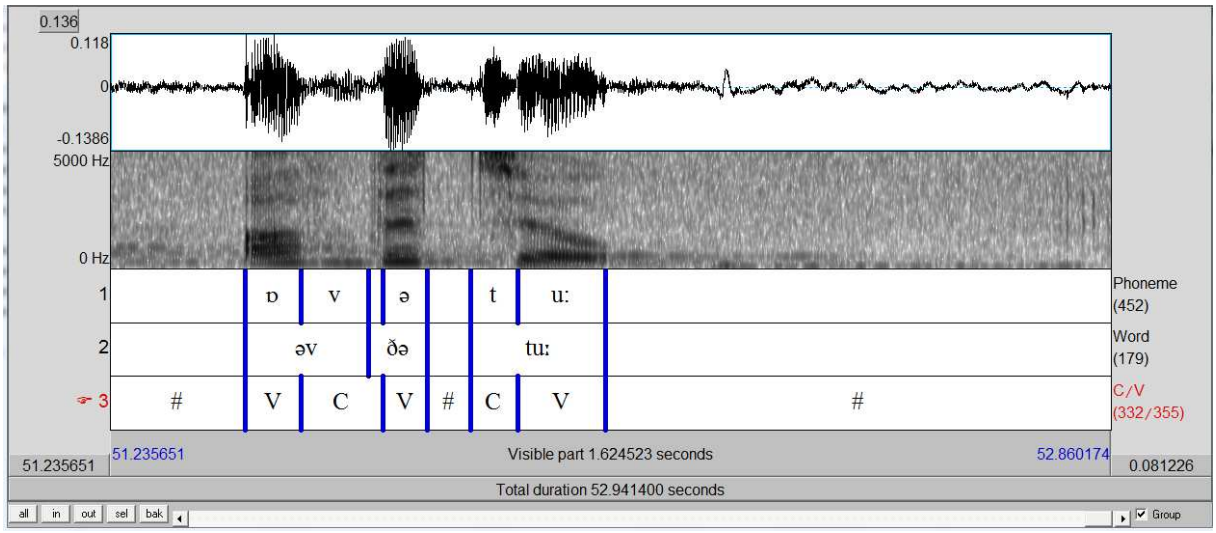

1.156
0.3382
0
-0.2981
5000 Hz
0 Hz
1 ɔː f h ɪ z k l əʊ k æː n d Phoneme (452)
2 ɒf hɪz kləʊk ənd Word (179)
3 V C V C C V C # V C C/V (151/355)
43.082978
43.082978
Visible part 1.875000 seconds
44.957978
7.983422
Total duration 52.941400 seconds
all in out sel bak
Group


1.156
0.2193
0
-0.2627
5000 Hz
0 Hz
1
2
3
s əʊ ð ə n ɔː θ w ɪ n d w ɔː z
səʊ ð nɔːθ wɪnd wəz
C V # C V C V C V C
Phoneme (452)
Word (179)
C/V (151/355)
45.661103
45.661103
Visible part 1.875000 seconds
47.536103
5.405297
Total duration 52.941400 seconds
all in out sel bak
Group


1.156
0.2004
0
-0.2221
5000 Hz
0 Hz
1
2
3
z ɒ b l aɪ dʒd t uː k ə n f eː s
wəz əˈblaɪdʒd tə kənˈfes
C V C V C # C V # V C V C #
Phoneme (452)
Word (179)
C/V (151/355)
47.442353
47.442353
Visible part 1.875000 seconds
49.317353
3.624047
Total duration 52.941400 seconds
all in out sel bak
Group


0.136
0.1734
0
-0.214
5000 Hz
0 Hz
1
2
3
æː ð ə s ʌː n
ðət ðə sʌn
V C V C V C
Phoneme (452)
Word (179)
C/V (332/355)
49.129853
49.129853
Visible part 0.937500 seconds
50.067353
2.874047
Total duration 52.941400 seconds
all in out sel bak
Group


0.136
0.1965
0
-0.2368
5000 Hz
0 Hz
1 n w ɔː z d ə st r ɔ̃ g ɜː
2 sʌ wəz ðə ˈstrɒŋgə(r)
3 C V C V C V C V #
Phoneme (452)
Word (179)
C/V (332/355)
50.010365
50.010365
Visible part 1.249047 seconds
51.259411
1.681989
Total duration 52.941400 seconds
all in out sel bak
Group


0.136
0.118
0
-0.1386
5000 Hz
0 Hz
1 ɒ v ə t uː
2 əv ðə tuː
3 # V C V # C V #
Phoneme (452)
Word (179)
C/V (332/355)
51.235651
51.235651
Visible part 1.624523 seconds
52.860174
0.081226
Total duration 52.941400 seconds
all in out sel bak
Group

APPENDIX 8

%V, ΔC, Duration of Vs and Cs per Individual

Student	V Duration (ms)	C Duration (ms)	%V	ΔC
1	93	105	41.07	62.79
2	93	100	42.57	54.53
3	114	123	46.30	71.00
4	101	108	41.18	69.21
5	91	116	42.74	63.48
6	92	105	42.85	56.00
7	91	120	34.84	68.89
8	89	107	36.96	67.19
9	104	108	43.38	64.15
10	96	110	38.36	65.63
11	95	109	40.29	63.64
12	80	102	40.69	60.26
13	114	111	47.79	58.29
14	101	124	39.50	72.84
15	102	112	45.01	64.06
16	115	131	42.27	81.96
17	94	123	40.33	66.54
18	99	124	36.05	73.71
19	115	125	44.62	66.18
20	100	122	40.92	62.73
21	94	110	42.69	65.27
22	85	110	35.69	61.10
23	98	98	45.93	53.27
24	92	123	38.45	70.73
25	103	110	41.50	68.39
26	94	95	45.52	51.38
27	84	112	36.21	71.09
28	95	112	40.65	62.83
29	95	117	41.16	66.28
30	87	107	44.73	63.05
31	106	118	43.76	76.63
32	102	124	40.38	73.54
33	119	119	42.73	68.97
34	84	104	37.23	56.26
35	102	108	42.61	66.12
36	104	127	40.10	71.94
37	97	118	39.18	58.56
38	79	113	37.45	61.09
39	105	108	46.68	66.15
40	97	119	37.64	71.86
41	90	113	37.83	62.72
42	96	118	37.14	71.00
43	109	119	45.83	55.76
44	114	126	44.52	72.58

45	82	97	37.04	61.22
46	108	108	45.47	60.95
47	108	109	41.45	67.79
48	91	115	41.76	68.77
49	91	119	38.98	63.11
50	95	116	42.25	72.07
51	102	103	45.82	60.14
52	117	98	49.14	56.05
53	92	96	42.82	56.42
54	96	113	41.24	62.08
55	106	111	45.61	63.08
56	106	120	41.81	67.98
57	93	90	45.20	56.05
58	98	112	44.16	59.22
59	87	107	40.39	58.57
60	94	112	39.93	62.23
61	110	110	45.05	59.56
62	96	120	39.52	67.38
63	104	108	44.20	58.64
Mean	**98**	**112**	**40.87**	**64.75**

APPENDIX 9

Pronunciation and Duration of Final Schwa per Individual

Informants	/ˈstrɒŋgə/	/ˈtrævələ/	/ˈʌðə/
1	ɜː 110 ø 83 ø 41	ø 53 ɜː 130 ɜː 130 ɜː 120	ø 68
2	ø 49 ø 41 ø 54	ø 100 ø 79 ø 92 ø 81	ø 66
3	ø 74 ø 95 ø 54	ø 76 ø 100 ø 64 ø 89	ø 100
4	ɜː 110 ɜː 120 ø 100	ɜː 180 ɜː 200 ɜː 130 ø 68	ɜː 100
5	ø 26 ø 50 ø 92	ø 95 ø 84 ø 65 ø 52	ɜː 36
6	ø 81 ø 49 ø 69	ø 69 ø 58 **ɜːr 160** ɜː 85	ø 54
7	ɜː 130 ɜː 130 ɜː 140	ɜː 130 ɜː 120 ɜː 130 ɜː 100	ø 46
8	ø 85 ø 110 **ɜːr 120**	ø 80 ø 59 **ɜːr 120** **ɜːr 140**	ø 54
9	ɜː 130 ɜː 110 ɜː 190	ɜː 90 ɜː 100 ɜː 72 ɜː 92	ø 63
10	ɜː 110 ɜː 44 ɜː 88	ɜː 100 ɜː 110 ɜː 130 ɜː 130	ɜː 88
11	ø 52 ɜː 99 ø 91	ɜː 150 ø 64 ø 78 ø 36	ø 47
12	ɜː 130 ɜː 140 ɜː 190	ɜː 84 ɜː 130 ɜː 130	ɜː 78

		з: 180	
13	з: 89 з: 70 з: 51	з: 80 з: 89 з: 65 з: 73	з: 72
14	ø 70 ø 58 ø 100	ø 100 ø 57 ø 100 ø 100	ø 72
15	з: 120 з: 100 з: 120	з: 100 з: 95 з: 110 з: 110	з: 73
16	ø 43 ø 74 ø 77	-	ø 40
17	з: 110 ø 110 з: 160	з: 130 з: 110 з: 110 з: 97	з: 98
18	з: 130 з: 150 з: 170	з: 150 з: 150 ø 69 з: 140	з: 100
19	з: 110 з: 150 ø 41	з: 92 з: 100 з: 93 з: 80	ø 54
20	з: 100 ø 74 ø 66	ø 69 ø 100 ø 60 ø 99	ø 67
21	ø 49 ø 100 ø 29	ø 76 ø 70 з: 110 ø 45	ø 56
22	ø 60 ø 42 ø 32	**з:r 140** ø 98 **з:r 130** ø 100	ø 57
23	з: 100 з: 90 **з:r 140**	з: 110 - - -	з: 120
24	ø 73 ø 130 ø 97	ø 120 ø 85 **з:r 130** ø 110	ø 66
25	ø 52 ø 51 ø 30	ø 68 ø 48 з: 95 ø 77	ø 38
26	з: 130	**з:r 140**	ø 68

	ø 140 з: 88	**з:r 140** з: 110 ø 110	
27	ø 41 ø 98 ø 110	ø 75 ø 63 ø 44	ø 71
28	ø 79 - ø 91	- - ø 89 ø 110	ø 61
29	ø 40 ø 84 ø 63	ø 97 ø 88 ø 81 ø 100	ø 39
30	з: 130 з: 110 ø 76	ø 96 ø 97 ø 100 ø 70	ø 56
31	ø 72 з: 80 з: 55	ø 58 ø 57 ø 53 ø 58	ø 46
32	ø 74 ø 96 ø 91	ø 70 ø 76 з: 140 ø 79	ø 95
33	з: 110 з: 170 з: 97	з: 140 з: 120 з: 170 з: 110	ø 62
34	з: 80 з: 100 з: 120	з: 120 з: 97 з: 88 з: 79	з: 120
35	ø 100 ø 66 ø 83	i: 170	ø 51
36	з: 120 ø 100 ø100	ø 120 ø 97 ø 86 ø 65	ø 61
37	ø 81 ø 73 ø 110	ø 71 ø 75 ø 77 ø 120	з: 82
38	з: 95 - з: 110	ø 91 ø 74 ø 93 ø 120	ø 38
39	ø 49 ø 100 ø 56	ø 78 ø 82 ø 120 ø 80	з: 73

40	ø 32 ø 100 ø 86	ø 71 ø 84 ø 110 ø 100	з: 61
41	з: 120 з: 120 ø 97	з: 170 ø 75 з: 170 ø 140	ø 56
42	з: 86 ø 90 ø 110	ø 96 ø71 ø 100 ø 72	ø 61
43	з: 59 з: 160 з: 130	з: 140 з: 110 - з: 110	ø 67
44	з: 130 ø 99 з: 160	ø 120 з: 110 - з: 130	ø 80
45	ø 51 ø 77 ø 60	з: 71 ø 80 з: 92 ø 60	ø 60
46	з: 22 ø 74 ø 120	з: 98 -	з: 64
47	з: 140 ø 69 ø 41	з: 93 з: 160 з: 76 з: 120	з: 65
48	ø 33 ø 34 ø 38	ø 100 з: 130 ø 71 з: 160	ø 43
49	ø 75 ø 91 ø 63	ø 83 ø 110 ø 53 ø 73	ø 44
50	ø 47 ø 55 ø 72	- - - -	з: 60
51	з: 140 з: 180 з: 170	з: 130 з: 140 - з: 160	ø 37
52	з: 120 ø 99 ø 91	з: 61 з: 120 з: 130 з: 120	з: 120
53	з: 100 з: 99	з: 100 з: 91	з: 87

	з: 110	з: 82 -	
54	ø 67 ø 61 ø 72	ø 79 ø 53 ø 51 ø 74	ø 63
55	з: 130 ø 81 з: 110	з: 140 з: 190 з: 140 з:120	з: 130
56	ø 60 ø 100 ø 51	ø 99 з: 160 з: 150 з: 140	ø 37
57	ø 65 ø 54 ø 68	ø 70 ø 70 ø 63 ø 85	ø 63
58	з: 99 з: 100 з: 94	- з: 110 з: 140 з: 94	з: 63
59	з: 94 ø 74 з: 120	з: 99 з: 120 з: 76 ø 57	з: 65
60	ø 97 ø 94 ø49	ø 84 ø 83 ø 88 ø 51	ø 81
61	ø 91 ø 100 ø 110	ø 96 ø 100 ø 110 ø 94	з: 86
62	ø 61 ø 51 ø 58	з: 120 ø 88 з: 78 ø 100	ø 38
63	з: 88 з: 94 з: 120	з: 180 з: 120 з: 160 з: 160	ø 80

APPENDIX 10

The Informants' Rendition of Weak Forms: Sound and Duration in Milliseconds

	and	were	was	as	at	to	of	should
1	0.069 ə 010 æ 0.13 æ: 014 æ:	0.064 ə	0.094 ɒ 0.15 ɔ: 0.13 ɔ:	0.096 æ 0.16 æ	0.089 æ	0.059 ʊ	0.14 ɔ:	0.12 u:
2	0059 ə 011 æ 0075 ə 013 æ:	0058 ə	012 ɔ: 012 ɔ: 011 ɔ:	012 æ 0081 æ	0091 æ	0045 ʊ	0089 ɒ	0091 ʊ
3	0086 æ 0067 ə 0092 æ 013 æ	010 e	0094 ɒ 011 ɒ 015 ɒ	021 æ: 019 æ:	013 æ:	0040 ə	088 ɒ	0060 u
4	0064 ə 0079 ə 0099 æ 012 æ	0098 e	011 ɒ 017 ɔ: 013 ɔ:	012 æ: 017 æ:	0078 æ	0078 ʊ	0092 ɒ	0060 ʊ
5	0079 ə 0075 ə 0094 æ 011 æ	010 e	015 ɔ: 013 ɒ 0068 ɒ	0093 æ: 0079 æ	0071 æ	0035 ʊ	0076 ɒ	0061 ʊ
6	021 æ: 0085 æ 014 æ 0092 æ	010 e	0074 ɒ 0078 ɒ 0088 ɒ	010 æ 018 æ:	0076 æ	011 u:	013 ɔ:	0058 ʊ
7	0059 ə 0053 ə 0060 æ 0067 æ	0044 e	011 ɔ: 0045 ɒ 0067 ɒ	011 æ 010 æ	010 æ	0023 ə	0036 ɒ	0065 ʊ
8	0070 æ 011 æ 0097 æ 011 æ	0063 e	0076 ɒ 0057 ə 015 ɔ:	012 æ 010 æ	010 æ	0047 ʊ	0084 ɒ	0086 u:
9	0087 æ 0063 æ 011 æ 010 æ	0076 e	013 ɔ: 0088 ɒ 012 ɔ:	012 æ 013 æ	0086 æ	0065 ʊ	013 ɒ	0030 ʊ
10	010 æ 0074 ə 014 æ: 0079 ə	0094 e:	010 ɒ - 011 ɔ:	015 æ: 015 æ:	0096 æ	015 u:	018 ɔ:	0065 ʊ
11	0070 ə 0070 ə 0061 ə 010 æ	0045 e	011 ɒ 0079 ɒ 0070 ɒ	014 æ 0063 ə	0097 æ	0036 ʊ	0035 ɒ	0099 ʊ
12	0054 ə 015 æ 010 æ	0093 e:	014 ɔ: 0054 ɒ 0061 ɒ	017 æ: 018 æ:	0069 ə	0032 ə	0057 ɒ	0089 ʊ

	0080 æ							
13	013 æ: 022 æ: 095 æ 025 æ:	015 e:	010 ɔ: 0096 ɒ 0082 ɒ	018 æ: 013 æ	010 æ	-	011 ɒ	0048 ʊ
14	0066 ə 013 æ: 011 æ: 0087 ə	0065 e	0090 ɒ 0080 ɒ 0068 ɒ	015 æ: 016 æ:	0088 æ	016 u:	017 ɔ:	0065 ʊ
15	0091 ə 0060 ə 0051 ə 010 æ	0073 e	0068 ɒ 0052 ɒ 0068 ɒ	012 æ: 015 æ:	0077 ə	0040 ə	0094 ɒ	0040 ʊ
16	0072 ə 0064 ə 0091 æ 0082 æ	0077 e	0078 ɒ 010 ɔ: 0079 ɒ	010 æ 010 æ	0073 æ	0032 ə	0062 ɒ	0031 ʊ
17	0077 ə 0080 æ 011 æ 017 æ:	0069 e	011 ɔ: 010 ɔ: 012 ɔ:	017 æ: 014 æ:	012 æ:	0075 u:	0090 ɒ	012 u:
18	010 æ 016 æ: 015 æ: 0093 æ	015 e:	011 ɔ: 012 ɔ: 0085 ɒ	019 æ: 016 æ:	015 æ:	0095 ʊ	010 ɒ	014 u:
19	0066 ə 0082 æ 0077 ə 0081 ə	0085 e:	0085 ɒ 012 ɔ: 011 ɔ:	0080 æ 010 æ	0080 æ	0034 ə	0077 ɒ	0041 ʊ
20	0086 ə 012 æ: 012 æ: 016 æ:	011 e:	012 ɔ: 010 ɔ: 013 ɔ:	018 æ: 012 æ:	010 æ	053 ʊ	0090 ɒ	0072 ʊ
21	012 æ: 014 æ: 013 æ: 0083 æ	0032 e	011 ɔ: 013 ɔ: 015 ɔ:	016 æ: 015 æ:	0088 æ	015 u:	011 ɒ	0051 ʊ
22	0061 ə 0067 ə 015 æ: 0088 æ	0041 e	0060 ɒ 0046 ɒ 0065 ɒ	0074 æ 0079 æ	0078 æ	0036 ʊ	0054 ɒ	0047 ʊ
23	011 ə 0058 ə 010 æ: 011 æ:	011 e	010 ɒ 016 ɔ: 013 ɔ:	017 æ 018 æ	010 æ:	0067 ʊ	0098 ɒ	0070 ʊ
24	0093 ə 0075 ə 0083 ə 0060 ə	0041 e	0099 ɒ 011 ɔ: 0069 ɒ	015 æ: 010 æ	0092 æ	030 ʊ	010 ɔ:	0073 ʊ
25	0093 æ 011 æ: 011 æ: 015 æ:	013 e:	011 ɔ: 010 ɔ: 014 ɔ:	012 æ: 015 æ:	087 æ	0082 u:	0068 ɒ	0070 ʊ
26	012 æ	011 e	0081 ɒ	011 æ	0090 æ	0040 ʊ	010 ɔ:	012 u:

	0083 æ 011 æ 0090 æ		0099 ɒ 0072 ɒ	0097 æ				
27	0099 æ 0097 æ 0093 æ 0093 æ	0087 e	012 ɔː 0054 ə 016 ɔː	011 æː 011 æː	010 æ	0062 ʊ	020 ɔː	0050 ʊ
28	010 æ 016 æː 014 æː 0096 æː	013 eː	016 ɔː 016 ɔː 011 ɒ	012 æː 015 æː	011 æː	016 uː	023 ɒ	0099 uː
29	0077 ə 0080 æ 0098 æ 0087 æ	0097 e	0097 ɒ 0097 ɒ 012 ɔː	012 æː 0085 æ	0092 æ	0060 ʊ	0092 ɒ	0079 ʊ
30	012 æː 0089 æ 012 æː 010 æ	0051 e	016 ɔː 013 ɔː 013 ɔː	013 æː 013 æː	010 æ	0056 ʊ	013 ɔː	0068 ʊ
31	0077 æ 0080 æ 0078 æ 0086 æ	0058 e	0086 ɒ 013 ɔː 0073 ɒ	031 æː 010 æ	0081 æ	012 uː	0093 ɔː	010 uː
32	0091 æ 0093 æ 012 æː 0086 æ	0043 e	0071 ɒ 0093 ɔː 0079 ɒ	012 æː 013 æː	010 æ	0040 ʊ	0063 ɒ	0080 ʊ
33	012 æː 013 æː 015 æː 014 æː	013 eː	010 ɔː 014 ɔː 020 ɔː	020 æː 017 æː	ɒ11 æ	011 uː	012 ɔː	0052 ʊ
34	013 æː 0097 æ 016 æː 010 æ	0077 eː	0075 ɒ 0086 ɒ 0077 ɒ	016 æː 012 æː	010 æ	0058 ʊ	014 ɔː	0055 ʊ
35	012 æ 015 æː 013 æː 011 æ	012 e	010 ɔː 012 ɔː 0073 ɒ	015 æː 014 æː	015 æː	022 uː	013 ɔː	0086 ʊ
36	0073 ə 0097 ə 0090 ə 0088 ə	0080 e	010 ɔː 0068 ɒ 011 ɔː	0099 æ 011 æː	011 æː	0045 ə	0084 ɒ	0049 ʊ
37	010 ə 021 æː 011 æ 0086 ə	0037 ə	016 ɔː 012 ɔː 011 ɔː	015 æː 013 æː	011 æ	0037 ə	0084 ɒ	0060 ʊ
38	0087 ə 0073 æ 0074 æ 0082 æ	0065 e	0065 ɒ 0074 ɒ 0060 ɒ	011 æ 0085 æ	0083 æ	0072 ʊ	0064 ɒ	0090 uː
39	011 æ 0060 ə 0057 ə	0043 e	0055 ɒ 0082 ɒ 0080 ɒ	012 æː 0098 æ	011 æ	0041 ʊ	0063 ɒ	0038 ʊ

	0061 ə							
40	0082 ə 010 æ 015 æː 010 æ	0096 e	010 ɔː 010 ɔː 014 ɔː	020 æː 021 æː	012 æː	0052 ʊ	011 ɔː	0082 ʊ
41	011 æ 015 æː 014 æː 017 æː	0094 e	013 ɔː 0060 ɒ 0059 ɒ	013 æː 0099 æ	015 æː	0043 ʊ	0074 ɒ	0080 ʊ
42	0061 ə 013 æː 011 æː 012 æː	0084 e	010 ɔː 010 ɔː 011 ɔː	013 æː 014 æː	0099 æ	0082 ʊ	010 ɔː	0051 ʊ
43	010 æː 010 æː 013 æː 0098 æ	010 eː	010 ɔː 0098 ɔː 010 ɔː	010 æː 0093 æ	0086 æ	0048 ə	0089 ɒ	0038 ʊ
44	0072 ə 011 æː 012 æː 0075 ə	010 eː	015 ɔː 0088 ɒ 012 ɔː	015 æː 020 æː	0066 æ	0056 ʊ	012 ɔː	0088 uː
45	0080 ə 014 æː 012 æː 0048 ə	0056 e	0061 ɒ 0064 ɒ 0078 ɒ	011 æ 0062 ə	0079 æ	0032 ʊ	0059 ɒ	0036 ʊ
46	0081 ə 0045 ə 0083 ə 0087 æ	0056 e	010 ɒ 010 ɒ 010 ɒ	0087 æ 010 æ	0099 æ	023 ə	0067 ɒ	0047 ʊ
47	0069 ə 015 æː 0089 æ 0080 æ	0028 ə	0091 ɒ 0084 ɒ 0091 ɒ	0098 æ 010 æ	0064 æ	0032 ʊ	014 ɔː	0028 ʊ
48	010 æ 0093 æ 019 æː 0087 æ	0062 e	010 ɔː 0066 ɒ 010 ɒ	019 æː 017 æː	0096 æ	0028 ʊ	011 ɔː	0047 ʊ
49	0097 æ 0077 æ 0096 æ 011 æ	0056 e	0032 ɒ 010 ɒ 013 ɔː	013 æː 015 æː	011 æː	0075 ʊ	010 ɔː	014 uː
50	014 æː 013 æː 015 æː 017 æː	0065 e	0054 ɒ 012 ɔː 010 ɒ	013 æː 010 æ	0090 æ	010 uː	0097 ɒ	0065 ʊ
51	017 æː 016 æː 014 æː 014 æː	0055 e	010 ɔː 0065 ɒ 012 ɔː	013 æː 015 æː	017 æː	0030 ʊ	020 ɔː	0061 ʊ
52	010 æ 0091 æ 0075 æ 0090 æ	0077 e	010 ɔː 010 ɔː 010 ɔː	010 æ 013 æː	0070 ə	0036 ʊ	010 ɔː	0059 ʊ
53	0062 ə	0029 ə	0084 ɒ	012 æː	0073 æ	0046 ʊ	0070 ɒ	0078 ʊ

	0073 æ 0073 æ 019 æ:		0056 ɒ 0068 ɒ	0065 æ				
54	0068 ə 0083 æ 010 æ 0067 ə	0065 e	011 ɔ: 0081 ɒ 0040 ɒ	0088 æ 0093 æ	0072 æ	0045 ʊ	0065 ɒ	0076 u:
55	0071 æ 0070 æ 0061 æ 013 æ:	0045 e	0065 ɒ 0078 ɒ 0078 ɒ	013 æ: 011 æ:	011 æ:	0044 ʊ	010 ɔ:	0053 ʊ
56	010 æ: 0092 æ 011 æ: 010 æ:	0070 e	012 ɔ: 0053 ɒ 012 ɔ:	014 æ: 019 æ:	0072 æ	0044 ʊ	010 ɔ:	0068 ʊ
57	012 æ: 011 æ: 015 æ: 011 æ:	0068 e:	014 ɔ: 010 ɔ: 013 ɔ:	014 æ: 015 æ:	0074 æ	0044 ʊ	016 ɔ:	0054 ʊ
58	0076 ə 0072 ə 0061 ə 0073 æ	0049 e	012 ɔ: 0060 ɒ 010 ɔ:	017 æ: 0088 æ	0092 æ	0044 ə	0092 ɔ:	0078 ʊ
59	010 æ: 015 æ: 0094 æ 010 æ	0060 e	011 ɔ: 016 ɔ: 014 ɔ:	022 æ: 017 æ:	0067 æ	0087 ʊ	011 ɔ:	0078 ʊ
60	011 æ: 0067 æ 010 æ: 0070 æ	0073 e:	010 ɔ: 0068 ɒ 0097 ɔ:	0096 æ 0088 æ	012 æ:	0040 ʊ	0061 ɒ	0068 ʊ
61	0083 æ 0087 æ 015 æ: 0096 æ	010 e:	016 ɔ: 014 ɔ: 0087 ɒ	013 æ: 010 æ	0094 æ	015 u:	015 ɔ:	0049 ʊ
62	0067 ə 0068 ə 0076 ə 0060 ə	0072 e:	0083 ɒ 0078 ɒ 014 ɔ:	013 æ: 014 æ:	010 æ	0042 ʊ	0049 ɒ	0060 ʊ
63	010 æ 014 æ: 0083 æ 0096 æ	0063 e:	010 ɔ: 0099 ɒ 0087 ɒ	010 æ 013 æ:	0056 æ	0053 ʊ	0081 ɒ	010 u:

APPENDIX 11

The Informants Pronunciation of the Word 'Attempt'

Word	Informants' Pronunciation	Duration of 1st Syllable (ms)		Duration of 2nd Syllable (ms)	
		Vowel /ə/	Syllable	Vowel /e/	Syllable
/əˈtempt/	/əˈtempt/	0.04	0.04	0.09	0.35
	/əˈtempt/	0.06	0.06	0.13	0.63
	/ˈætempt/	0.09	0.09	0.16	0.53
	/əˈtempt/	0.08	0.8	0.12	0.49
	/əˈtempt/	0.03	0.03	0.12	0.48
	/əˈtempt/	0.04	0.04	0.16	0.62
	/əˈtempt/	0.04	0.04	0.11	0.54
	/əˈtempt/	0.05	0.05	0.11	0.42
	/ˈætempt/	0.09	0.09	0.10	0.49
	/ˈætempt/	0.12	0.12	0.12	0.44
	/əˈtempt/	0.05	0.05	0.15	0.60
	/əˈtemptə/	0.04	0.04	0.11	0.54
	/ˈætempt/	0.11	0.11	0.13	0.50
	/əˈtempt/	0.03	0.03	0.13	0.53
	/ˈæ:təmpt/	0.15	0.15	0.11	0.43
	/əˈtempt/	0.04	0.04	0.11	0.49
	/əˈtemp/	0.08	0.08	0.10	0.47
	/əˈtempt/	0.06	0.06	0.12	0.55
	/əˈtempt/	0.02	0.02	0.12	0.43
	/əˈtempt/	0.08	0.08	0.13	0.55
	/əˈtempt/	0.05	0.05	0.14	0.53
	/ˈætempt/	0.11	0.11	0.14	0.55
	/əˈtem/	0.05	0.05	0.12	0.34
	/ˈæ:tempt/	0.12	0.12	0.06	0.36
	/ˈæ:tempt/	0.09	0.09	0.10	0.38
	/æˈtempt/	0.07	0.07	0.11	0.56
	/əˈtempt/	0.06	0.06	0.13	0.53
	/æˈtempt/	0.07	0.07	0.13	0.51
	/əˈtempt/	0.06	0.06	0.11	0.49
	/ˈætempt/	0.08	0.08	0.13	0.51
	/əˈtemθ/	0.04	0.04	0.14	0.49
	/əˈtempt/	0.07	0.07	0.12	0.48
	/əˈtempt/	0.07	0.07	0.14	0.57
	/ ɜˈtempt/	0.05	0.05	0.08	0.36
	/ æˈtempt/	0.08	0.08	0.11	0.53

	/ **æ:**ˈ**te**mpt/	0.11	0.11	0.08	0.41
	/**ə**ˈ**te**mpt/	0.04	0.04	0.10	0.47
	/**ə**ˈ**te**mt/	0.05	0.05	0.10	0.50
	/**ə**ˈ**te**mpt/	0.04	0.04	0.18	0.56
	/ˈj**æ:te**mpt/	0.07	0.15	0.11	0.49
	/**ə**ˈ**te**mpt/	0.03	0.03	0.12	0.47
	/ˈ**æte**mt/	0.12	0.12	0.15	0.57
	/ˈ**æte**mt/	0.08	0.08	0.09	0.41
	/əˈ**te**mt/	0.04	0.04	0.13	0.43
	/əˈ**te**mptə/	0.02	0.02	0.13	0.58
	/əˈ**te**mpt/	0.02	0.02	0.13	0.57
	/ˈ**te**mpt/	-	-	0.14	0.44
	/əˈ**te**mpt/	0.04	0.04	0.16	0.53
	/ˈ**æ**:**te**mpt/	0.07	0.07	0.08	0.46
	/ˈæt**e**mpt/	0.11	0.11	0.13	0.61
	/əˈ**te**mpt/	0.06	0.06	0.11	0.46
	/ˈæt**e**mpt/	0.06	0.06	0.10	0.51
	/əˈ**te**mt/	0.05	0.05	0.16	0.64
	/əˈ**te**mpt/	0.05	0.05	0.13	0.63
	/ˈæt**e**mpt/	0.09	0.09	0.09	0.54
	/əˈ**te**mpt/	0.05	0.05	0.13	0.44
	/əˈ**te**mpt/	0.04	0.04	0.14	0.70
	/əˈ**te**mptə/	0.04	0.04	0.10	0.43
	/əˈ**te**mptə/	0.08	0.08	0.14	0.52
	/ˈæt**e**mpt/	0.06	0.06	0.13	0.40
	/**ə**ˈ**te**mpt/	0.05	0.05	0.10	0.60
	/**ə**ˈ**te**mpt/	0.03	0.03	0.10	0.52
	/ˈ**æte**mt/	0.11	0.11	0.11	0.55
	Mean	**72**	**77**	**111**	**504**

APPENDIX 12

The Informants Pronunciation of the Word 'Confess'

Word	Informants' Pronunciation	Duration of 1st Syllable (ms)		Duration of 1st Syllable (ms)	
		Vowel /ə/	Syllable	Vowel /e/	Syllable
/kənˈfes/	/kənˈfes/	0.03	0.12	0.18	0.61
	/kənˈfes/	0.05	0.13	0.12	0.29
	/ˈkɔ̃fe:s/	0.08	0.13	0.17	0.49
	/kənˈfes/	0.05	0.13	0.09	0.30
	/kənˈfes/	0.05	0.13	0.13	0.44
	/kənˈfes/	0.05	0.14	0.15	0.39
	/kənˈfes/	0.06	0.11	0.17	0.44
	/kənˈfe:s/	0.02	0.17	0.14	0.35
	/ˈkænfe:s/	0.11	0.18	0.15	0.36
	/ˈkæ:nfs/	0.10	0.29	-	-
	/kənˈfes/	0.04	0.11	0.17	0.33
	/kənˈfes/	0.05	0.13	0.12	0.30
	/ˈkɔ̃fe:s/	0.09	0.15	0.15	0.50
	/kənˈfi:s/	0.08	0.12	0.16	0.44
	/ˈkænfe:s/	0.7	0.19	0.17	0.51
	/kənˈfes/	0.06	0.15	0.12	0.35
	/kənˈfes/	0.02	0.12	0.14	0.41
	/kənˈfes/	0.09	0.16	0.11	0.29
	/kənˈfes/	0.03	0.11	0.09	0.28
	/kənˈfes/	0.05	0.13	0.13	0.39
	/kənˈfes/	0.06	0.14	0.08	0.43
	/ˈkɒnfəs/	0.09	0.18	0.11	0.48
	/ˈkɒnfes/	0.10	0.18	0.11	0.40
	/ˈkɔ̃fəs/	0.11	0.14	0.08	0.33
	/ˈkɒnfesə/	0.05	0.10	0.11	0.44
	/kənˈfi:s/	0.07	0.14	0.18	0.53
	/ˈkɒnfesə/	0.07	0.17	0.13	0.56
	/kənˈfes/	0.09	0.15	0.16	0.36
	/ˈkɔ̃fesə/	0.11	0.16	0.14	0.62
	/kənˈfes/	0.02	0.15	0.15	0.37
	/ˈkɔ̃fi:sə/	0.12	0.16	0.11	0.89
	/kənˈfes/	0.05	0.10	0.16	0.38
	/ˈkɔ̃fes/	0.10	0.13	0.12	0.50
	/ˈkənfez/	0.03	0.09	0.14	0.32
	/ˈkɒnfes/	0.08	0.20	0.12	0.43

	/ˈkɒnfes/	0.10	0.16	0.12	0.42
	/ˈkənfeːs/	0.05	0.12	0.16	0.45
	/ˈkənfesə/	0.03	0.13	0.15	0.53
	/ˈkənfeːs/	0.05	0.12	0.24	0.53
	/ˈkənfiːs/	0.05	0.13	0.11	0.41
	/ˈkɒːfəs/	0.12	0.15	0.05	0.24
	/ˈkənfesə/	0.09	0.18	0.14	0.54
	/ˈkɒnfes/	0.07	0.13	0.13	0.42
	/ˈkɒnfes/	0.09	0.17	0.11	0.28
	/ˈkɔ̃feːsə/	0.08	0.11	0.18	0.53
	/kənfeːsə/	0.06	0.13	0.15	0.56
	/ˈkənfeːs/	0.04	0.09	0.19	0.37
	/ˈkɔ̃fs/	0.25	0.58	-	-
	/ˈkɒnfeːs/	0.07	0.17	0.13	0.37
	/ˈkɒnfiːs/	0.09	0.19	0.10	0.43
	/ˈkənfeːs/	0.06	0.14	0.17	0.45
	/ˈkɒnfəs/	0.08	0.17	0.03	0.19
	/kənˈfeːs/	0.05	0.17	0.14	0.40
	/kɒnˈfeːsə/	0.09	0.17	0.11	0.45
	/kənˈfeːs/	0.06	0.14	0.11	0.27
	/kɒnˈfeːs/	0.06	0.13	0.15	0.32
	/kɔ̃ˈfesə/	0.11	0.14	0.10	0.47
	/kənˈfiːsə/	0.03	0.10	0.15	0.47
	/kɒnˈfeːs/	0.07	0.15	0.18	0.45
	/kɒnˈfiːs/	0.10	0.16	0.07	0.29
	/ˈkænfəsə/	0.08	0.18	0.04	0.52
	/ˈkænfəs/	0.07	0.14	0.03	0.14
	/kɒnˈfeːs/	0.06	0.14	0.11	0.30
	Mean	**86**	**152**	**100**	**414**

APPENDIX 13

Vowels Substituting Schwa and their Durations per Individual

Grey Column = Correct Pronunciation

	W**i**nd	C**on**sidred	Str**on**ger	**O**bliged	**A**ttempt	C**on**fess	S**u**cceeded	**O**ther
1		29 ə	66 ɒ 71 ɒ 91 ɔ:					97 ɒ
2		64 æ	129 ð 82 ɒ 136 ð	70 ɒ				117 ɔ:
3		68 ɒ	110 ɒ 138 ð 75 ɒ		89 æ	57 ɒ	56 ʌ	147 ɔ:
4			170 ɔ: 150 ɔ: 150 ɔ:	94 ɒ	120 æ			146 æ:
5		41 ɒ	130 ɔ: 160 ð 110 ð	76 ɒ	1 æ	96 ð	60 ʌ	111 ɒ
6		38 æ	180 ð 150 ð 180 ð	56 ɒ	42 æ	92 ɒ	54 ʌ	137 ɔ:
7			180 ð 140 ð 180 ð					129 ɒ
8		59 æ	130 ɔ: 92 ɒ 110 ɔ:					180 ʌ
9		100 ð	200 ð 190 ð 110 ɒ	53 ɒ		240 ð		157 ɔ:
10		48 ɒ	140 ɔ: 120 ɒ 140 ɔ:	63 ɒ		51 ɒ	58 ʌ	63 æ:
11			72 ɒ 87 ɒ 87 ɒ					76 æ:
12		80 æ:	110 ɒ 99 ɒ 100 ɒ					101 ɔ:
13		94 æ	110 ɒ	62 ɒ	74 æ			73 æ:

			95 ɒ 97 ɒ					
14	120 aɪ 120 aɪ 140 aɪ 150 aɪ	76 æ	95 ɒ 100 ɒ 120 ɔ:			120 ð̃	63 ʌ	130 ɔ:
15			93 ɒ 81 ɒ 140 ð̃	71 ɒ				81 æ:
16		100 ð̃	140 ð̃ 160 ð̃ 130 ð̃					63 ɒ
17			180 ð̃ 160 ð̃ 190 ð̃	82 ɒ			39 ʌ	142 æ:
18		92 æ:	86 ɒ 84 ɒ 140 ɔ:					119 æ:
19		49 æ	160 ð̃ 130 ð̃ 110 ð̃	58 ɒ				94 æ:
20		100 æ:	100 ɒ 98 ɒ 160 ð̃	71 ɒ	96 ɑ:	110 æ		157 æ:
21		58 æ	130 ɔ: 150 ɔ: 120 ɔ:	78 ɒ	92 æ			139 æ:
22		50 æ	87 ɒ 62 ɒ 78 ɒ	80 ɒ		60 ɒ		85 æ:
23	140 aɪ 200 aɪ 190 aɪ 160 aɪ	43 æ	95 ɒ 100 ɒ 130 ɔ:		120 ɑ:	130 ð̃		126 æ:
24			100 ɒ 100 ɒ 91 ɒ					98 æ:
25			120 ɒ 10° ɔ: 120 ɔ:					131 æ:
26		77 ɒ	240 ð̃ 220 ð̃ 160 ð̃	100 ɒ	110 æ		51 ʌ	147 ɔ:

27		47 æ	100 ɒ 86 ɒ 74 ɒ				56 ʌ	92 æ:
28	150 aɪ 190 aɪ 170 aɪ 170 aɪ	100 ɒ	100 ɒ 140 ɔ: 110 ɒ	88 ɒ	140 ɑ:	66 æ		205 ɔ:
29	130 aɪ 150 aɪ 150 aɪ 87 aɪ	72 æ	66 ɒ 70 ɒ 100 ɒ	30 ɒ			56 ʌ	82 ɒ
30			79 ɒ 120 ɔ: 110 ɔ:	72 ɒ	85 æ			139 æ:
31		76 æ	76 ɒ 100 ɒ 99 ɒ					101 æ:
32	130 aɪ 130 aɪ 140 aɪ 130 aɪ	71 æ	60 ɒ 90 ɒ 120 ɔ̃	63 ɒ				85 æ:
33			110 ɒ 95 ɒ 120 ɒ	63 ɒ				163 æ:
34		49 ɒ	160 ɔ̃ 160 ɔ̃ 160 ɔ̃			60 ɒ	79 ʌ	87 æ:
35		85 ɒ	88 ɒ 68 ɒ 100 ɒ	59 ɒ	130 ɑ:	120 ɒ	68 ʌ	138 æ:
36		54 æ	120 ɒ 130 ɔ: 120 ɔ:			78 æ		135 æ:
37	83 aɪ 140 aɪ 150 aɪ 120 aɪ	64 ɒ	130 ɔ: 95 ɒ 100 ɒ		100 ɑ:	79 ɒ	50 ʌ	221 ɔ:
38		66 ɒ	100 ɒ 69 ɒ 82 ɒ	37 ɒ	89 æ	54 ɒ		127 æ:
39	110 aɪ 110 aɪ 110 aɪ	57 æ	90 ɒ 130 ɒ 79 ɒ		79 æ			128 æ:

	130 aɪ							
40		93 ɒ	160 ð 120 ɒ 110 ɒ	66 ɒ	68 æ	87 ɒ		146 ɔ:
41		83 ɒ	110 ɒ 73 ɒ 73 ɒ		71 æ			95 ʌ
42		74 ɒ	75 ɒ 88 ɒ 84 ɒ	60 ɒ	68 æ	81 ɒ		95 ʌ
43		23 ɒ	100 ɒ 72 ɒ 67 ɒ		89 æ			82 ʌ
44		49 æ	100 ɒ 130 ɒ 110 ɒ			59 ɒ	64 ʌ	200 ɔ:
45			97 ɒ 78 ɒ 120 ɔ:					92 ɔ:
46		41 ɒ	140 ð 100 ɒ 81 ɒ	38 ɒ	90 æ	67 ɒ	65 ʌ	119 ɒ
47		69 æ	140 ɔ: 90 ɒ 110 ɒ		71 æ	74 ɒ		175 ɔ:
48		88 ɒ	95 ɒ 100 ɒ 90 ɒ	110 ɒ			38 ʌ	108 ʌ
49		72 ɒ	81 ɒ 110 ɒ 150 ɔ:	63 ɒ	80 æ	82 ɒ	30 ʌ	125 ʌ
50	160 aɪ 190 aɪ 72 aɪ 160 aɪ	76 ɒ	170 ð 190 ð 120 ɒ	72 ɒ	130 ɑ:	67 ɒ	73 ʌ	137 ʌ
51		47 ɒ	170 ð 150 ð 170 ð	78 ɒ	110 ɑ:	67 ɒ		188 ʌ
52			97 ɒ 62 ɒ 73 ɒ					89 æ:
53			84 ɒ 100 ɒ					78 æ:

			96 ɒ					
54		72 ɒ	130 ɔ̃ 120 ɔ̃ 140 ɔ̃	63 ɒ		71 ɒ	70 ʌ	148 ʌ
55		64 æ	190 ɔ̃ 180 ɔ̃ 160 ɔ̃					170 ɔ:
56		66 æ	100 ɒ 90 ɒ 120 ɒ			73 ɒ		174 ɔ:
57		45 ɒ	100 ɒ 100 ɒ 97 ɒ			79 ɒ		139 ɔ:
58		60 æ	100 ɒ 99 ɒ 97 ɒ					130 ɔ:
59		46 ɒ	110 ɒ 110 ɒ 100 ɒ	67 ɒ	85 æ	68 ɒ		154 ʌ
60		66 ɒ	110 ɒ 90 ɒ 110 ɒ	72 ɒ	63 æ	77 ɒ	60 ʌ	126 ʌ
61	140 aɪ 190 aɪ 180 aɪ 140 aɪ	72 æ	110 ɒ 85 ɒ 96 ɒ	60 ɒ		87 ɒ		89 ʌ
62		58 æ	96 ɒ 94 ɒ 90 ɒ			77 ɒ		90 ʌ
63		77 ɒ	90 ɒ 90 ɒ 100 ɒ		110 æ	45 ɒ		123 ɔ:

APPENDIX 14

Syllabus of 'Oral Expression' and 'Phonetics' (French Version)

Semestre : 1

UE: Unité Fondamentale 1

Matière 2 : Compréhension et Expression Orale 1
Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*
Connaissances préalables recommandées
Compréhension

- développer chez l'étudiant des facultés d'écoute et d'hiérarchisation des contenus

- reconnaitre des intonations pour réagir

- construire le sens d'un message oral

- adopter une attitude d'écoute sélective pour repérer une information

- comprendre un vocabulaire fréquent en rapport avec des situations de la vie courante.

Expression

- interagir dans différentes situations de la vie courante.

- prendre part à une discussion

- donner et demander des informations

- prendre part à des échanges brefs.

Contenu de la matière :

Types d'activité

Compréhension
- écouter des messages audio
- sélectionner et hiérarchiser des informations
- identifier des voix

Expression

- exercices d'élocution
- présenter son point de vue, s'exprimer sur ses sentiments
- réagir à des situations
- répondre à des questions
- résumer, synthétiser, reformuler

- poser des questions pour se renseigner
- débattre à propos de sujets familiers

Contenus

Compréhension

- le rythme
- la pause

- la prosodie
- l'intonation
- les marques de l'énonciation

- le schéma de la communication

Expression

- les actes de parole
- exercice de diction, d'élocution

Mode d'évaluation : Continu et examen

Références : *(Livres et polycopiés, sites internet, etc)*

Semestre: 1
UE : Unité d'Enseignement Fondamentale 2
Matière 2 : Phonétique corrective et articulatoire 1

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Avoir une bonne prononciation de la L1.

Contenu de la matière

Obligatoirement articulé avec celui de l'oral.

Notions d'ordre général relatives au son et à sa production. Travail sur la pronociation **en laboratoire de langue :** Prononciation des sons de la langue : Ecouter et Prononcer correctement les sons (enregistrement) : **enseignement pratique** en laboratoire de langue

- La phonétique en tant que discipline : presentaion simple d'initiation,
- articulatoire : les organes de production des sons,
- L'alphabet, les voyelles et les consonnes de la langue étudiée,
- Production des consonnes : décrire et classer les consonnes,
- Production des voyelles et des semi-voyelles : écrire et classer les voyelles et les semi-voyelles,
- Les phonèmes de la langue d'étude,
- La correction des fautes d'intonation, de rythme, et de phonèmes : nasalisés, consonnantique, etc., selon la langue,
- Intonation, rythme, accentuation selon la langue.

Mode d'évaluation : Continu et examen

Références *(Livres et polycopiés, sites internet, etc)* :

Semestre: 2
UE: Unité d'Enseignement Fondamentale 1
Matière 2 : Compréhension et Expression Orale 2

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Compréhension
-Saisir l'essentiel de messages simples et clairs
-parler spontanément (exemple : prendre part à une discussion sans préparation préalable)
-comprendre des expressions
-comprendre l'essentiel de messages audio et vidéo sur des sujets d'actualité.
Expression
-interagir dans des situations de communication sur des sujets d'actualité -s'exprimer en continu pour exposer et développer brièvement une idée et aborder des sujets d'actualité en utilisant des phrases simples et cohérentes
-prendre part spontanément à une conversation sur des sujets familiers et d'intérêt personnel.

Contenu de la matière :

Types d'activité

Compréhension
- écouter des émissions radiophoniques et télévisuelles
- formuler des hypothèses de sens.

Expression
- s'adresser à un auditoire de façon adaptée

Contenus

Compréhension
- les registres de langue
- les expressions idiomatiques

Expression
- annonces
- exposés
- débit
- registre de langue

Mode d'évaluation : Continu et examen

Semestre: 2
UE: Unité d'Enseignement Fondamentale 2
Matière 2 : Phonétique corrective et articulatoire 2

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Avoir une bonne prononciation en L1

Contenu de la matière: Suite du S1

Obligatoirement articulé avec celui de l'oral.

Notions d'ordre général relatives au son et à sa production. Travail sur la pronociation **en laboratoire de langue :** Prononciation des sons de la langue : Ecouter et Prononcer correctement les sons (enregistrement) : **enseignement pratique** en laboratoire de langue

- La phonétique en tant que discipline : presentaion simple d'initiation,
- articulatoire : les organes de production des sons,
- L'alphabet, les voyelles et les consonnes de la langue étudiée,
- Production des consonnes : décrire et classer les consonnes,
- Production des voyelles et des semi-voyelles : cécrire et classer les voyelles et les semi-voyelles,
- Les phonèmes de la langue d'étude,
- La correction des fautes d'intonation, de rythme, et de phonèmes : nasalisés, consonnantique, etc., selon la langue,
- Intonation, rythme, accentuation selon la langue.

Mode d'évaluation : Continu et examen

Références *(Livres et polycopiés, sites internet, etc)* :

Semestre: 3
UE: Unité d'Enseignement Fondamentale 1
Matière 2 : Compréhension et Expression Orale 3

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Compréhension
-comprendre des messages longs et variés
-saisir le contenu d'un échange verbal (thème, principaux arguments, enjeux, …etc.)

Expression

-produire des messages longs et variés -
produire des échanges verbaux en interaction -
défendre son opinion
-s'exprimer

Contenu de la matière :

Types d'activité

Compréhension
- écoute de conférences
- écoute d'allocutions de personnalités politiques, académiques, …etc.

Expression
- scènes mimées
- l'exposé
- le débat
- Défendre une thèse
- l'entretien
- la table ronde

Contenus

Compréhension
- Saynètes
- sketch
- monologues
- des pièces de théâtre
- discours académiques

Expression
- annonces
- Exposés

- débit
- registre de langue

Mode d'évaluation: Continu et examen.

Références *(Livres et polycopiés, sites internet, etc)* :

Semestre: 3
UE: Unité d'Enseignement Fondamentale 2
Matière 2 : Phonétique corrective et articulatoire 3

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées (*descriptif succinct des connaissances requises pour pouvoir suivre cet enseignement – Maximum 2 lignes)*

Contenu de la matière: Suite du S2

Obligatoirement articulé avec celui de l'oral.

Notions d'ordre général relatives au son et à sa production. Travail sur la pronociation **en laboratoire de langue :** Prononciation des sons de la langue : Ecouter et Prononcer correctement les sons (enregistrement) : **enseignement pratique** en laboratoire de langue

- La phonétique en tant que discipline : presentaion simple d'initiation,
- articulatoire : les organes de production des sons,
- L'alphabet, les voyelles et les consonnes de la langue étudiée,
- Production des consonnes : décrire et classer les consonnes,
- Production des voyelles et des semi-voyelles : écrire et classer les voyelles et les semi-voyelles,
- Les phonèmes de la langue d'étude,
- La correction des fautes d'intonation, de rythme, et de phonèmes : nasalisés, consonnantique, etc., selon la langue,
- Intonation, rythme, accentuation selon la langue.

Mode d'évaluation: Continu et examen

Références *(Livres et polycopiés, sites internet, etc)*

Semestre: 4
UE: Unité d'Enseignement Fondamentale 1
Matière 1: Compréhension et Expression orale 4

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Compréhension
- comprendre des messages longs et variés
- saisir le contenu d'un échange verbal (thème, principaux arguments, enjeux, …etc.)

Expression
- produire des messages longs et variés
- produire des échanges verbaux en interaction
- défendre son opinion
- s'exprimer

Contenu de la matière :

Types d'activité

Compréhension
- écoute de conférences
- écoute d'allocutions de personnalités politiques, académiques, …etc.

Expression
- scènes mimées
- l'exposé
- le débat
- Défendre une thèse
- l'entretien
- la table ronde

Contenus

Compréhension
- Saynètes
- sketch
- monologues
- des pièces de théâtre
- discours académiques

Expression
- annonces

- exposés
- débit
- registre de langue

Mode d'évaluation: Continu et examen

Références *(Livres et polycopiés, sites internet, etc)* :

Semestre: 4
UE: Unité d'Enseignement Fondamentale 2
Matière 2: Phonétique corrective et articulatoire 4

Objectifs de l'enseignement (*Décrire ce que l'étudiant est censé avoir acquis comme compétences après le succès à cette matière – maximum 3 lignes).*

Connaissances préalables recommandées

Avoir des connaissances de la discipline, prononcer correctement**.**

Contenu de la matière

Enseignement en relation avec la pratique de la langue d'étude et le module d'oral

- Phonétique articulatoire : distinguer les organes de production des sons de la langue étudiée. Schémas détaillé de l'appareil phonatoire.

- Initiation à la transcription phonétique des sons de la langue étudiée : transcription selon L'Alphabet Phonétique International.

- Définir dans une visée pratique les aspects principaux de la prosodie : trait suprasegmental, accent, Intonation, rythme…

- Définir dans une visée pratique l'accentuation : groupe de souffle, groupe rythmique, groupe accentuel, accent tonique, accent d'insistance, accent prosodique

- Définir dans une visée pratique l'intonation : hauteur, intensité, durée, débit, mélodie, interrogation, assertion.

Mode d'évaluation: Continu et examen.

Références *(Livres et polycopiés, sites internet, etc)* :

APPENDIX 15

Transcripts of the Interview

First Year Oral Expression

Teacher 1

Interviewer: How do you teach OE in both the classroom and laboratory?

Interviewee: Concerning OE, I used different things: vocabulary activities, role- play conversations, idioms, etc. Every session I use a different method. I think students need a lot of vocabulary terms so I focused a lot on that point, you can download some books to help you: Test your Vocabulary (1 to 5)

Interviewer: What about the lab session?

Interviewee: I have been teaching in the lab for 3 years now. At the beginning, students used to hear short conversations and they performed them, and sometimes I used to do some listening comprehension; for example, they listen to a dialogue and they are asked to write down names of people or the places or negative or affirmative statements. Am, in the second semester and once they get used to listening I use another method: they listen to an English song and they fill in the gaps to write down the lyrics. I also make them watch an English animation with English subtitles and then we discuss it together.

Interviewer: Ok, what about pronunciation, do you devote some targeted activities to teach the segmental and suprasegmental aspects of pronunciation?

Interviewee: Am, I rather focus on how to make students acquire new vocabulary. I seldom refer to the aspects of pronunciation.

Interviewer: Ok, thank you

Teacher 2 (wrote down the answers)

Q1. How do you teach OE in the classroom and laboratory?

A1. In the classroom, it is most about activities where the learners can work in groups or pairs and can move around the classroom practicing what they have already been introduced to in the lab through listening to audios and watching videos and dealing with the related vocabulary.

Q2. Do you teach pronunciation in OE module?

A2. Pronunciation is always integrated in all lessons especially when introducing new words. It is also dealt with when the students are speaking, I correct their mistakes when they finish (I take notes, I don't interrupt).

Teacher 3 (wrote down the answers)

Q1. How do you teach OE in both, the classroom and lab?

A1. First, it is worth mentioning that I have never been teaching OE in labs, but only classrooms. In those latter I used to teach this module focusing on the speaking skill and on the listening skill sometimes. Regarding the overall aim of this module which has to do with developing the learners' communicative skills and oral proficiency, a variety of activities, methods and tools are involved. Most of the time we introduce a topic which should be debatable and interesting for the learners. Their curiosity arises and they express their points of view on the selected topic. Here we encourage fluency on at the expense of accuracy. Topics are usually discussed following one of those techniques:

Talks and class discussions, debates, simulations and role plays, presentations and interviews

However, we have also used our own technologies and tools (esp. the slide projector, the computer, the loud-speaker, the Internet …) to present some movies, role-plays and drama, videoconferences, live talks and chats, etc. The aim has been to break the routine in the OE class and gain the learners' interest in what takes place in the classroom.

Q2. Do you devote some time for teaching the segmental and suprasegmental aspects of pronunciation? If yes, how?

A2. As I detect some pronunciation mistakes or errors related to learners' spoken language, I give feedback on that issue. This is the same case when I introduce some new lexical items which might not be clear for the learners.

Teacher 4 (notes taking)

Interviewer: Would you please tell me about the way you teach OE in the classroom and laboratory?

Interviewee: In the lab session, I usually make the students listen to audio materials or watch short movies and then ask comprehension questions and deal with the new vocabulary. In the classroom session, we generally do speaking activities based on what have been dealt with in the listening session; we mostly do conversations and role plays.

Interviewer: What about pronunciation, Do you deal with some targeted activities to teach the aspects of pronunciation?

Interviewee: I rarely give them feedback on pronunciation mistakes in order not to interrupt the flow of their ideas while presenting. Also, I never used targeted activities to teach aspects of pronunciation, this is dealt with in phonetics, I assume.

Teacher 5

Interviewer: My question is about the way you teach Oral Expression, am in both the classroom and laboratory.

Interviewee: I teach only in the lab.

Interviewer: Don't you have a session in the classroom

Interviewee: Yes, during, all my sessions take place in the lab, and during all the sessions I make them listen to something and then we start speaking about what we have listened to and we do some activities.

Interviewer: Ok, what about those activities, what are the techniques you use

Interviewee: I use a book, a textbook: Cambridge real listening and speaking and I follow what the book says, I don't invent anything.

Interviewer: Ok, so you do have a syllabus to follow.

Interviewee: Yes

Interviewer: Ok, do you devote some time to teach pronunciation?

Interviewee: Yes, yes

Interviewer: Am in what way?

Interviewee: Whenever I find the opportunity to talk about things that concern pronunciation, I do it. For example, I talk about vowels, I insist on that because I know that people in Algeria, they have learned French first, so they bring the French vowels, they use them in English and they think that this is going to work that way and I know that if we improve our pronunciation of the vowels all our pronunciation is going to greatly improve this is why I insist on how to produce vowels in received pronunciation. Sometimes I talk about other things, sometimes the activities in the book require us to talk about the intonation for example in questions and sometimes they require us to talk about stress and whenever I find the opportunity to talk about these things I deal with.

Interviewer: Am ok, thank you

Second Year Oral Expression

Teacher 6

Interviewer: How do you teach OE in both the classroom and Lab?

Interviewee: In the class I teach students how to speak and build their vocabulary in which I include speaking activities, vocabulary building activities and games. In the lab, I usually make them listen to native speakers.

Interviewer: Do you use the Lab equipment?

Interviewee: Yes, sometimes

Interviewer: Would you tell me how?

Interviewee: Am, I used to use my pc and the speakers in the last two years. Now I use the lab equipment in which I have a computer that controls the students' computers and by means of the students' headphones and the microphone I have in my headphone, I can make students listen to anything I want.

Interviewer: Ok, what about pronunciation, do you devote some time to teach it in the 'OE' module?

Interviewee: Yes, I used to teach them first how to articulate the sounds with their corresponding symbols then i make them read dialogues in which they have to focus on pronunciation. In another activity i ask them to read transcribed sentences to make sure they know the phonetic symbols of the sounds

Interviewer: Ok, thank you

Teacher 7

Interviewer: Would you tell me a little bit about the way you teach OE in both the classroom and lab?

Interviewee: I always rely on the lab session first as I try to give my students the proper language (vocabulary, language functions) they need to use in the classroom. I use the audio visual materials, however, sometimes I use only the audio materials (the headphones) to allow learners to focus on pronunciation and vocabulary and not be distracted by visual cues.

Interviewer: What about pronunciation, do you teach it?

Interviewee: Am I only touch on the pronunciation of new words, extracted from audio materials. I also discuss the students' pronunciation mistakes as a feedback after their presentations.

Teacher 8

Interviewer: Would you, please, tell me how do you teach OR in both the classroom and laboratory?

Interviewee: I usually rely much more on role plays and simulation activities in order to prepare the students to use the proper language of daily life situations. This also gives the students the opportunity to develop their fluency. I usually do not use the laboratory equipment; I rather prefer teaching students how to build their fluency by targeted activities.

Interviewer: Ok, what about pronunciation, do you devote some time to teach the different segmental and suprasegmental aspects of pronunciation?

Interviewee: Except for the feedback I always give after the presentations, I never used a specific activity.

Interviewer: Ok, thank you

Teacher 9 (wrote down the answers)

Q1. How do you teach OE in both the classroom and laboratory?

A1. I teach only in the classroom, so students do more speaking than listening (a variety of games, role plays, class debates, vocabulary-building, etc).

Q2. Do you devote some time to teach pronunciation?

A2. I absolutely teach pronunciation in OE, I do enunciation activities such as reading dialogues.

Teacher 10

Interviewer: Would you, please, tell me about the way you teach OE in the classroom and laboratory?

Interviewee: In classroom, we used to have some discussions on different topics that the students choose and prepare at home, topics like Facebook, technology, shopping, and reading. In lab, we used to listen to conversations that I choose myself, some educational ones or on any given topic, and we used to watch short moral movies that I choose also

Interviewer: Ok, what about pronunciation, do you teach it?

Interviewee: I have never taught pronunciation because I think that phonetics could do better in this. I prefer to develop their speaking skills by pushing them to say more and learn less.

Interviewer: Thank you

Third Year Oral Expression

Teacher 11

Interviewer: Would you, please, tell me how do you teach OE in both sessions, the classroom and laboratory?

Interviewee: Am, I mostly use speaking activities, I mean, some debates, classroom presentations and discussion to work on their speaking skills.

Interviewer: What about listening activities, I believe you do have a laboratory session?

Interviewer: Am, both sessions are scheduled in a classroom, I tried to use my own PC and audio materials but it was not really promising as the classroom was overloaded, you know, background noise, am, it was better for me to use speaking activities than listening activities.

Interviewer: Do you devote some time for teaching pronunciation, I mean, segmental and suprasegmental aspects?

Interviewee: Listen, for third year students, I think that if I do pronunciation activities students will feel bored and lose interest that is why I focus on speaking activities. Of course, I'm not saying that they do not need training in pronunciation (the pronunciation of some students, if not the majority, is far beyond the average).

Interviewer: What about if the students are introduced to new words, do you discuss first their pronunciations?

Interviewee: Exactly, I always discuss the way new words are pronounced and, by the way, I usually write down the students' mistakes they commit while presenting and a great deal of my feedback is devoted to pronunciation mistakes.

Teacher 12

Interviewer: How did you use to teach Oral Expression?

Interviewee: As a main of fact, the course is divided into two parts, one as i said is an ordinary lecture, the second is supposed to be listening comprehension. But, as you know labs are …

Interviewer: Out of order

Interviewee: Yes, out of order so in fact we have no listening comprehension.

Interviewer: Ok, what about in the classroom, you could have used your speakers, your own devices

Interviewee: I, I always believe that this is not listening. Am listening requires you know a personal contact between the student and teacher, a personal book, ok, and this is not possible in the classroom, so I decided to cancel listening comprehension simply. I tried to focus on oral activities in the classroom

Interviewer: Their communication skills

Interviewee: Yea, yea, in the form of debates, discussions, reports and the rest, am and role plays sometimes

Interviewer: Ok, my second question is about pronunciation, did you devote some time to teach pronunciation?

Interviewee: Yea, yea, each time, each time I noticed mispronunciation I try to include that in my session

Interviewer: Ok, so is it explicitly or implicitly am …

Interviewee: Am both, depending on the type of mistakes. But I give importance to pronunciation, at least I tried too. Because it is important, even essential

Interviewer: Of course.

Interviewer: So, can you please tell me what are the kind of activities you used to teach targeted pronunciation, let's say the sounds,

Interviewee: In fact, it was mainly during the course of discussions, as I said, each time I noticed any mistake, I came back to the mistake, try to ask the others participate, correct and if they were not able to correct I tried to give them something about theory.

Interviewer: So, it's like feedback and from this point you introduce them to the theory

Interviewer: exactly, but it was not a course as such; no, it was a part of the activity.

Interviewer: Ok, thank you so much

Teacher 13

Interviewer: My question is about the way you teach Oral Expression, am in both the classroom and the lab.

Interviewee: We don't use the lab, the most important activity I suggest most of the time is am oral activities when there is a production, ok. We have some materials, a listening material that we use but they are used as just as a kind of support, right, for debates and conversations

in the classroom. So, we are dividing the activities into two main or three let's say three main activities in the class. There is the presentation, ok, so students are asked to choose a topic first of all and then they prepare themselves and then they come, they present the topic. They have from 5 to 10 minutes to present the topic and then when they finish, there is a debate. Ok, so people, the audience, the class can ask questions, they can add some more information if they have. The other activities can be about explaining popular quotes, crosswords, designing a TV show like the talk and Oprah,

Interviewer: Am ok, but what about listening? You said something about it

Interviewee: Listening, am, most of the time I used to do this, but you know with the problem of equipment. We are teaching in the lab but at the same time we don't have the equipment. So we cannot actually have a listening class. So, what I used to do is to give them some movie for example to watch, ok a movie, some famous movie like the American sniper, and we use them usually as a support for classroom debate. We used to use also job hunting with different interviews, different questions and things like that.

Interviewer: So, you much more focus on the use of language in context

Interviewee: Exactly

Interviewer: What about pronunciation, do you devote some time to teach pronunciation?

Interviewee: Honestly, never

Interviewer: Never, what is that. So, do you feel like it's not your concern to teach pronunciation because they have a specific module for that which is phonetics?

Interviewee: Exactly, exactly, this is it, because for me, actually, no it is a little boring you know, when you are teaching oral expression, it's oral expression, you are here to express yourself, according to different topics, issues that we are facing. And nowadays we don't have only one English, no, we are dealing with academic English but we don't have only one English, we have different Englishes. Indeed, when you go to India, you have one English,

when you go to Africa there is another English, the pronunciation is different but the most important is that you are able to give a message, to convey a message to people, people can understand you, they know what you are talking about. This is what I am insisting on in the oral expression session.

Interviewer: Especially in third year. Probably if you were teaching first year you would have done this

Interviewee: Yes, yes, first year they are more working on their receptive skills, not productive skills, but now, third year, I think it's high time that they start you know using the language, and feeling at ease when using the language.

Interviewer: What about if you students commit mistakes let's say whenever they present their topics they discuss in the classroom, do you discuss this in your feedback?

Interviewee: Yea, yea, when I give the feedback, I let them finish and then I give the feedback, it includes pronunciation mistakes and sometimes it may not include them but if it is a word that is really, you know, if it is a big mistake that you know we cannot avoid, yea, of course you include it, otherwise no.

Interviewer: Ok, thank you

RÉSUMÉ

Les genres rythmiques dans la prononciation des langues ont été matière à grand débat pour déterminer s'ils se manifestent en une dichotomie discrète entre langues accentuelles et langues syllabiques ou plutôt en un continuum entre les deux. Selon la nouvelle approche pour étudier le rythme de la parole, le fait que le dialecte arabe algérien et l'anglais appartiennent au même genre rythmique n'implique pas nécessairement que les apprenants algériens de l'anglais en tant que langue étrangère produiront de façon correcte les patterns rythmiques de celle-ci. En effet, leur performance est plutôt subordonnée à leur interlangue, qui est influencée par la phonologie des langues antérieurement apprises. La présente recherche a pour objectif de situer le rythme de l'interlangue des étudiants algériens apprenant l'anglais en troisième année licence, à l'Université des Frères Mentouri à Constantine et d'examiner le rôle de l'interférence linguistique dans le rythme de cette interlangue. L'hypothèse émise est que le rythme de la parole des apprenants serait influencé par l'interférence des langues précédemment apprises. En outre, le rythme de l'interlangue, qui en résulte, serait un mélange de rythme des langues à isochronie syllabique et celui des langues à isochronie accentuelle. Afin de vérifier la première hypothèse, une analyse des erreurs de réduction vocalique, structure syllabique et accent, commises par les informateurs, a été effectuée. Concernant la deuxième hypothèse, un corpus d'enregistrement des informateurs a été acoustiquement analysé à l'aide de Praat, un logiciel universel pour l'analyse de la parole, afin de mesurer les paramètres rythmiques %V et ΔC. Les résultats obtenus ont confirmé les deux hypothèses. Les patrons rythmiques réalisés par les informateurs sont principalement affectés par leur seconde langue, le Français, et largement par une prononciation 'orthographique'. De même, les corrélats calculés dans cette étude, %V et ΔC, montrent que le rythme de l'interlangue des apprenants investigués tend à être plutôt 'mixte', groupant le paramètre ΔC d'une langue à isochronie accentuelle avec celui d'une langue à isochronie syllabique, à savoir le %V. Sur la base des résultats obtenus, un programme a été suggéré pour enseigner les différents aspects du rythme de la parole au niveau lexique et syntaxique, dans les deux modules de phonétique et d'expression orale.

Mots-clés: rythme d'interlangue, les paramètres de rythme:% V et ΔV, prononciation écrite.

ملخص

لقد أثار التصنيف الإيقاعي للّغات جدلا كبيرا عمّا إذا كان يجب أن يقسّم إلى ايقاع ثنائي بين لغات ايقاعية النبرة و اخرى مقطعية او بالأحرى تصنيفها عبر تسلسل ايقاعي مستمر. حسب المنهاج الجديد المتعلق بالنبرة الصوتية، فانّ انتماء 'الدارجة العربية الجزائرية و اللّغة الانجليزبة الى نفس الايقاع النبري لا يعني بالضرورة انّ الطلبة الجزائريين الذين يتعلمون الإنجليزية كلغة أجنبية سيحققون النمادج الإيقاعية الصّحيحة للغة الانجليزية حيث انّ تحقيق هذه الاخيرة يرتبط في الواقع باللّغة البينية المحصّلة التي غالبا ما تكون متأثرة بفونولوجيا اللّغات التي سبق تعلمها من قبل الطلبة. ولهذا، يهدف هذا البحث الى تصنيف النبرة الصوتية للّغة البينية للطلبة الجزائريين الذين يدرسون الانجليزية في السنة الثالثة في جامعة الاخوة منتوري بقسنطينة. كما يهدف الى معرفة الدور الذي تلعبه ظاهرة التداخل اللّغوي في تشكيل الايقاع اللّفظي لهذه اللّغة البينية. بناءا على ذلك، افترضنا انّ مظاهر مكونات النبرة الصوتية للطلبة المعنيين تتأثربالتداخل اللغوي بين الانجليزية والأنظمة اللّغوية المعروفة سابقا. و في نفس السياق، قمنا بافتراض أنّ الايقاع اللّفظي لّلغة البينية المحصّلة يكون عبارة عن مزيج بين إيقاع اللّغات النبرية و المقطعية. من أجل التّحقق من مدى صحة الفرضية الأولى، تمّ الإعتماد على منهج تحليل الأخطاء المرتكبة من طرف المُخبرين عند تحقيقهم لتخفيض حرف العلّة، تركيبة المقطع اللّفظي والشّدة. أمّا فيما يتعلق بالفرضية الثانية، إعتمدنا التّحليل السّمعي لمجموعة من تسجيلات الطلبة، الذي تم إنجازه عن طريق البرنامج العالمي لتحليل الصوت 'برات'، من أجل حساب عوامل النّغمة الصّوتية V%و ΔC . و لقد أثبتت النتائج المتحصل عليها صحة الفرضيتين. حيث أنّ النّمادج الإيقاعية للنّبرة الصّوتية للّغة البينية المحصّلة غالبا ما تكون متأثرة باللّغة الثانية، ألا و هي الفرنسية، وهي متأثرة بدرجة كبيرة باللّفظ الكتابي. كما أسفر حساب عوامل النغمة الصوتية V%و ΔC على أنّ الإيقاع النبري الخاص باللّغة البينية للمخبرين في هذه الدراسة تكون بالأحرى هجينة، إذ تجمع بين ΔCاللّغات الإيقاعية النبرة و V%اللّغات المقطعية. و انطلاقا من النتائج المتحصل عليها، تمّ اقتراح منهاج دراسي لتلقين الجوانب المختلفة للإيقاع النبري سواء على مستوى 'الكلمة' أو 'الجملة' في تدريس علم الصوتيات و التعبير الشفهي.

الكلمات المفتاحية: النغمة الصوتية للغة البينية ، عوامل النغمة الصوتية ΔC و V%، النطق المقروء