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The Arabic, French and English Vocalic Systems: Their Positive and Negative Transfer by First Year University Students of English

Thesis submitted to the department of foreign languages in candidancy for the degree of "Doctorat es Sciences" in Applied Linguistics.

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To my lifelong friend and husband

To my parents

To my tribe

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ABSTRACT

The aim of this research is to identify the causes of distortions in the pronunciation of English vowels made by first year students at Mohamed Khider University of Biskra. This study, which is of an "effect to cause" type, has a behaviourist approach, and an error analysis follows a contrastive analysis which describes then compares the vocalic systems of Arabic – Dialectal Arabic and Modern Standard Arabic – French and English to identify the areas of difficulty.

Being confronted, as a teacher, with almost the same errors throughout long teaching years, our eagerness to know more about the causes of errors became stronger and stronger. Our research's aim is to answer five main questions :

- Are students 'errors a consequence of L1, L2, L3, L4 differences ?
- Do students 'errors derive from inadequate learning strategies ?
- Do students 'errors come from the learning teaching environment ?
- Do students 'errors come from the impact of the spelling of French ?
- How to eradicate these errors ? or at least how to decrease their number ?

Pilot tests were first organized to select the vocalic distortions which seemed the most interesting. They were followed by final tests built almost on the same pattern. The students were recorded. The test battery included spontaneous discussion, loud reading and oral reproduction of recorded words. The collected data is then transcribed into the international phonetic alphabet and studied. The sounds retained are those presenting a high frequency of occurrence and the sounds distorted because of misleading graphemes (mainly due to the French script system). Once the presentation of the vocalic systems done, the nature, number and frequency of learners' errors are set in tables and then analysed. Acoustic spectograms of the distortions are displayed to support the results of this research. Suggestions to ameliorate the teaching methods and programmes are proposed at the end of this work.

LIST OF PHONETIC SYMBOLS AND SIGNS

VOWELS

/ i:/ front close vowel as in < see >.

/ ɪ / front half close voyel as in < sit >.

/e/ front voyel between half close and half open as in < bed >.

/ɛ/ front half-open vowel as in French < père >.

/æ/ front vowel between open and half-open as in <cat>.

(/a/ front open vowel as in French <patte>.)

/ə/ short central voyel between half-close and half-open as in <alone> or half-open as in < doctor >.

/3:/ long central vowel between half-close and half-open as in < girl >.

/ ʌ / central open vowel as in < but >.

/ɑ / back open vowel as in <car>

/ɒ/ back open rounded vowel as in < dog >.

/ɔ:/ back rounded vowel between half-open and half-close positions as in < saw >.

/ ʊ / back rounded half-close vowel as in < good >.

/u:/ back rouded close vowel as in < fool >.

/o/ back rounded half-close vowel as in french < eau >.

/y/ front rounded close vowel as in French < rue >.

/aɪ / closing diphthong as in < nice >.

/eɪ / closing diphthong as in <say >.

/ɔɪ/ closing diphthong as in <boy>.

/ ə ʊ / closing diphthong as in < no >.

/ aʊ / closing diphthong as in < cow >.

/ ɛə/ centring diphthong as in < chair >.

/ ɪə/ centring diphthong as in < dear >.

/ ʊə/ centring diphthong as in < poor >.

/i/ front close vowel (spread) as in < *lit*>.

/y/ front close vowel (rounded) as in < *une*>.

/e/ front half-close vowel as in < *été*> .

/ɛ/ front half-open vowel as in < *aide*>, <*père*>.

/a/ front open vowel as in < *avoir*>.

/ **ø** / front half-close vowel (rounded) as in < *eux* >.

/ə/ central vowel as in < *le*>.

/œ/ front half-open vowel (rounded) as in < *seul* >.

/ɑ/ back open vowel as in < pâte >.

/o/ back half-close vowel (rounded) as in <*eau* >.

/ ɔ/ back half- open vowel (rounded) as in < *sol* >.

/u/ back close vowel (rounded) as in < *doux* >.

/ɛ̃/ front, open, nasalised vowel as in <main>, <pin>, <peinture>.

/œ̃/ central, open, nasalised vowel as in <un>.

/ɑ̃ / back, open, nasalised vowel as in <an>, <tante>, <tente>.

/ ɔ̃/ back, half-close, nasalised vowel as in <on>, <oncle>.

CONSONANTS

/p/ fortis, bilabial, plosive.

/b/ lenis,bilabial,plosive.

/t/ fortis,alveolar,plosive.

/d/ lenis,alveolar,plosive.

/k/ fortis,velar,plosive.

/g/ lenis,velar,plosive.

/f/ fortis,velar,plosive.

/v/ lenis,labio-dental,fricative.

/ θ / fortis,dental,fricative.

/ð/ lenis,fricative,dentale.

/s/ fortis,alveolar,fricative.

/z/ lenis,alveolar,fricative.

/ʃ/ fortis,palato-alveolar,fricative.

/ʒ/ lenis,palato-alveolar,fricative.

/h/ fortis,glottal,fricative.

/t/ fortis,palato-alveolar,affricate

/d/ lenis,palato-alveolar,affricate

/m/ lenis,bilabial,nasal.

/n/ lenis,alveolar,nasal.

/ŋ/ lenis, velar,nasal

/l/ lenis,alveola,lateral.

/w/ lenis,bilabial,semivowel.

/j/ lenis,palatal,semi-voyel.

/r/ English lenis,post-alveolar,frictionless-continuant.

/r/ Arabic lenis,dental,trill.

/ tʃ/ fortis, dental, affricate.

/R/ lenis,velar,fricative.

/ɲ / lenis, palatal, nasal.

/x/ fortis,uvular,fricative.

/ɣ/ lenis,uvular, fricative.

/ħ/ fortis,pharyngeal,fricative.

/ʕ/ lenis,pharyngeal,fricative.

/q/ fortis,uvular,stop(emphatic).

Diacritics

~ nasalisation.

• emphatic consonant.

: length mark of vowels.

t̪ Dental articulation (for example /t/).

' Main accentual stress on following syllable.

/ / phonemic transcription.

[ ] phonetic transcription.

< > spelling

LIST OF SPECTROGRAMS

LIST OF GRAPHS

LIST OF TABLES

LIST OF DIAGRAMS

LIST OF TRANSPARENTS

LIST OF ABBREVIATIONS

C.A.: Contrastive Analysis

Csec: cycle per second

E.A.: Error Analysis

I.L.: Interlanguage

I.P.A: International phonetic alphabet.

L1: Dialectal Arabic.

L2: Standard Arabic.

L3: French.

L4: English.

Lab: Laboratory.

R.P.: Received pronunciation.

S.L.A.: Second Language Acquisition

S.R: stimulus-response

V: Vowel

CONTENTS

CHAPTER I

INTRODUCTION

INTRODUCTION

1. RATIONALE

1. 1. The reasons which led to this research

After having spent long years teaching phonetics in different universities and being constantly confronted with mistakes in pronunciation, I thought that instead of limiting my role to the mere correction of the distortions, it would be far more interesting to think about the causes of these distortions. Thus, we decided to answer questions becoming preoccupying:

- Are students ’errors a consequence of L1, L2, L3, L4 differences ?
- Do students ’errors derive from inadequate learning strategies ?
- Do students ’errors come from the learning / teaching environment ?
- Do students ’errors come from the impact of the spelling of French ?
- How to eradicate these errors ? or at least how to decrease their number ?

First observations gave birh to a previous research concerning the realisation of particular sounds – mainly consonants – and the strong desire to go further in investigation led to this work. This thesis, based on a phonetic contrastive analysis, is devoted to the study of the vocalic systems existing in the linguistic background of graduating students – first year students – and the influence these systems have on each other. A particular attention is paid to the influence of spelling on pronunciation. The aim of this study is therefore to identify then to explain students ‘errors in order to improve the efficiency of the teaching methods applied in Algerian university.

1. 2. Description of the environment under concern

The population's mother tongue is dialectal Arabic. The students whose mother-tongue is tamazight are not concerned by this research as we do not have the necessary knowledge of their language. Later, once they are six years old, Modern Standard Arabic is learnt at school.

French is learnt from the third year in the primary school as a first foreign language, but it is already present in their environment because more or less used by their elders even irregulary and sporadically in their speech.

English is the second foreign language they learn after French since the first year in the"Middle school ".

The transfer from French is likely to be very important because it is the first language which uses the Latin alphabet and which the students are in contact with. As both languages, French and English, share the same script system, the learners will also be tempted to apply the French phonological rules to English.

For the present investigation, the students were submitted to pilot tests then to formal tests built on the same pattern: recordings of spontaneous discussions, loud reading and oral reproduction of decontextualised words.

This population was chosen because the first part of the phonetic syllabus, taught in the university during the first year, is devoted to segmental phonetics and to vowels in particular.

This research followed a Contrastive Analysis procedure which passes through four steps:

- The vocalic systems of the different languages existing in the linguistic background are described. This phase is of a great help to predict the areas of difficulty (i.e. the errors expected to occur).
- The items of L1, L2, L3, L4 which may cause difficulty are identified.
- A contrast of these items is made.
- Through this contrast, the areas of difficulty may be predicted (i.e. the errors expected to occur).

The corpus gathered from the recordings was treated and led us to an error analysis, articulatory and acoustic.

Finally, and in the light of this study, a series of pedagogical solutions, appropriate material and training technics are proposed to reduce the number of distortions and to help learners, even adults, to acquire a nativelike pronunciation.

1. 3. The choice of a model of pronunciation

In this study the variety of English referred to as the "norm" is R.P (Received Pronunciation) because it is the variety which is supposed to be taught in Algeria for two main reasons:

- The first of these is that most Algerian students who go abroad to English speaking countries for their post-graduate studies go to Great–Britain, the United-States of America coming in the second position. For these students, who need to

understand and be understood, a certain degree of intelligibility is required, and R.P still remains the most widely understood variety of English, even if nowadays it is contested because it is used by a very small proportion of the English speaking community. Away from standard written English, differences between the varieties of spoken English are considerable.

> Speakers of R.P. are becoming increasingly aware of the fact that their type of pronunciation is one which is used by only a very small part of the English speaking world. (Gimson, 1980; p 90)

The influence of the American model of pronunciation is increasing due to U.S films, T.V programmes, songs...

- The second reason is that in Algeria, in the period following the independence, the teachers of English were of a very wide range of nationalities: English, American, French, Algerians, Indians and Pakistanis were found in a very high proportion. For these latter, the variety of English is of restricted intelligibility for anyone who is not familiar with their type of pronunciation. It was therefore absolutely necessary to choose one model to guarantee a continuity in the teaching of pronunciation throughout middle, secondary and higher education.

For all the phonetic transcriptions, the symbols used are those introduced by A.C Gimson in his *Introduction to the Pronunciation of English* (1980) because they show the vowel qualities more accurately.

2. METHODOLOGY

This research is born from an observation of vowel distortions made by students (fresh men) followed by the desire to look back in time for possible causes. This type of research is of "effect-to-cause" kind and may be defined as an ex post facto research.

> Kerlinger (1970) has defined "ex post facto research" more formally as that in which the independent variable or variables have already occured and in which the researcher starts with the observation of a dependant variable or variables. She then studies the independent variable or variables in retrospect for their possible relationship to, and effects on, the dependent variable or variables. (L. Cohen, L. Manion and K. Morrisson, 2005; p 205).

In our work and on the basis of this examination, this co-relational or causal study will allow us to propose some recommendations which, we think, are more appropriate. Once the errors identified and described, it will be possible to find out if the distortions are due to inadequate techniques or learning strategies imposed by the immediate environment of the learners, that means overcrowded groups, under-trained teachers, inappropriate syllabuses.

2.1.Pilot tests

The foundations of this research were laid with pilot tests to increase the efficiency of the formal ones. This step is of great importance to organise and to make the right decisions about the selection of the sounds to be studied.

All the sounds are not equally distorted, and the ones which are going to be retained are those which are the most strongly and the most frequently distorted disturbing thereby the communication or because the cause of the distortions was very significant.

2.1.1 Description of the population

The population subjected to the pilot test is composed of first year university students of English according to a random sampling. No particular group was targeted and one hundred names of students were taken blindly from the whole list in the first days of the academic year far before having an idea about the academic level of the students.

2.1.2 Description of the tests

The pilot test battery included:

- Spontaneous discussion: students were asked about the reasons they were studying English, how they saw their future.
- Loud reading: a text, where all the English vocalic sounds were present, was proposed to students.
- Oral reproduction of recorded words: students had to listen to pre-recorded words from the text and words containing different sounds represented by the same spelling.

The students were recorded one by one, in an empty classroom, during the different activities, in the only presence of the teacher who was manipulating the

recorder and guiding the test. The recordings were effected thanks to a numerical recorder of P.M.D 670 Marantz type.

Unfortunately, a problem arose when we wanted to make an acoustic analysis of the data in order to support the auditory analyses: the recordings were unworkable because of too much back-ground noise. We thought that all precautions had been taken – such as planning the recordings by the end of the afternoon which was a very calm period of the day – but it was not enough. The classrooms were not isolated from the outside noises, and the importance of a noise which was not even noticed because belonging to our immediate environment was increased to an unexpected degree, and spoiled the recording.

2.2. Formal tests

The formal tests followed almost the pattern of the pretests, of course slight changes were made to be more efficient and to avoid the mistakes of the pilot tests.

2.2. 1. Identification of the population

Initially one hundred students were volunteers to be recorded; but when the recordings started, only 54 of them (36 girls and 18 boys) came, and during the following days two other boys gave up.

The list was checked to see if all the academic levels of first year students were present and at equal proportions (1/3 good, 1/3 average, 1/3 weak).

2.2.2. Description of the tests

This time, the recordings were made in the recording-studio in Mohamed Khider university for better and more reliable results. They took place in June and the weather was very hot (about 50°C in the recording booth).

- The length of the first activity – spontaneous discussion – was appreciably shortened and the students, sweating, were not eager to talk.
- Then a list of words was presented to students who were asked to read them out loud and the decision to focus on the length of the vowels and some particular graphemes was not arbitatry. The words were chosen according to the findings obtained with the pilot tests based on our own auditory perception.
- As a last activity, the students were asked to listen to the same words recorded – according to R.P – and to repeat them.

Before going into the booth, they had to fill up a form with their full name, date and place of birth, the place they were coming from to get some further information about their linguistic background. A number was given to each student and this number precedes each recording.

2.3. Processing the collected data

All the recordings were then entirely transcribed into the International Phonetic Alphabet. I.P.A. was created by Paul Passy, Edward Sievers and Henry Sweet by the end of the 19th century. A sound in a given language is represented by a particular symbol which represents one given sound even if the spelling is different

in different words. Thus the symbol /ʃ/ represents the voiceless palato-alveolar, fricative produced in: pressure, sure, shoe, efficient, operation. A particular attention being paid to the vowels under concern in this research.

For the oral reproduction, only the deviant pronunciations are mentioned and the correct ones are not reported.

The different realisations were counted and set into statistical tables and graphs.

Once the auditory analysis was over, it was completed by an acoustic analysis whose first goal was to confirm our findings. This analysis is necessary to show, through the measurements of formants, that the different realisations were real and not only sounds perceived by the ear of a listener. P Ladefoged(2003) reported: "When Daniel Jones, the greatest phonetician of the first part of the twentieth century, was setting out on a fieldwork trip, a reporter asked him, *' Professor Jones, what instruments are you taking with you ?'* He pointed to his ears and said *'only these'*. There is no doubt that the ultimate authority in all phonetic questions is the human ear. But nowadays instrumental aids can often illuminate particular points, acting like a magnifying glass when we need to distiguish between two similar sounds." (Ladefoged, P (ed.),2003; p 27)

To make the spectrograms of the sounds transferred into the computer, the Praat software was used.

In the first step, a spectrogram of the whole word was made then the vowel was extracted: when doing that, a particular attention was paid not to include a part of the consonant preceding or following the vowel.

The vocalic sounds of this research have been retained according to their high degree of frequency, mainly due to the influence of the script system shared with French.

CHAPTER I

CONTRASTIVE ANALYSIS

ERROR ANALYSIS

TRANSFER THEORY

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CONTRASTIVE ANALYSIS – ERROR ANALYSIS – TRANSFER THEORY

INTRODUCTION

Comparison is inherent in human beings. When man discovers or learns something new, he cannot prevent himself from comparing it to what he already knows. Spontaneously he is going to notice the differences as well as the similarities. It took a while before this science has been called contrastive analysis.

I.1. Development of Linguistic Comparative Studies

I.1.1. Comparative historical linguistics

By the end of the eighteenth century, Friedrich Wolf, a German linguist (1759-1824) was at the origin of a new scientific discipline called "Philology" consisting in analysing a language and comparing it with another one. First these studies focused on written texts and for almost one hundred years on texts written in Greek and Latin, specially with some interest for literary, history and culture in general. Different texts from different periods were compared. Wolf, in his *Prolegomena ad Homerum* (1795) put forward that the *Iliad* had not been written by a single writer "Homerus" but by different poets at different periods.

I.1.2. Comparative philology

The ninteenth century saw the birth of "comparative philology" with Franz Bopp another German linguist (1791 – 1867) who compared Sanskrit with German, Greek, Latin, in his publication " *über das conjugationsystem der*

Sanskritsprache". On the opposite of what was done before, this new science was then dealing with a greater number of languages which were compared. In fact, Franz Bopp was not the first to state the similarities between certain languages. W. Jones, an English orientalist dead in 1794, had done it before. But Bopp went further when explaining features of a particular language through features belonging to another one. The work of other eminent linguists such as Jacob Grimm (1785 – 1863), August Pott (1802 – 1887), Friedrich Max Müller (1823 – 1900) contributed to the development of comparative studies during the first period of Indo-European linguistics. For the comparativists, the languages having in common enough features may be grouped into types. This approach – the linguistic typology allowed a classification of these languages according to their present day characteristics. They may be related to a proto-language thanks to an attempt to reconstruct the different stages of their evolution. Thus it was demonstrated that all the romance languages – French, Spanich, Italian, Portuguese, Rumanian – take their origin from the "Vulgar" Latin. For the Germanic languages, a mother language was not available the same way Latin was for Romance languages, but through a comparison of Ghotic, old Norse, old English, old high German and a study of their evolution a Proto-Germanic was established. Jacob Grimm, with the help of the Danish philologist Rasmus Rask, was the first to put forward a systematic explanation of how Germanic and other Indo-European languages have derived from the proto-language. This explanation is known as "Grimm's Law" or "Rask's – Grimm's rule".

By the end of the nineteenth century, many changes occurred. The American scholar William Duright Whitney (1827 – 1894) with *Life and Growth of*

Language (1875) and "Language and its study" (1876) initiated this new period. Written texts were no longer the only object to be studied and the spoken language acquired importance as well. Sanskrit which was so far considered as the ancestor of the European languages was put on aside. The new philology was wanted to be as rigorous as possible. Every thing theoretically possible,has to be proved by sufficient evidence.

He was followed by the Neo-grammarians, a German school of linguists at the university of Leipzig. One of their main hypothesis is about the regularity of sound change. Among the linguists often referred to as Neo-grammarians are cited Karl Bruggmann (1849 – 1919), August Leskien (1840 – 1916), Herman Osthoff (1847 – 1909), Eduard Sievers (1850 – 1932), Herman Paul (1846 – 1921), Berthold Delbrück (1842 – 1922), Karl Verner (1846 – 1896). They contributed a lot towards "Historical Phonetics" and they described a great deal of phonetic laws about language sound changes. Verner completed Grimm's law giving an explanation to the exceptions mentioned in the rule.

I.1.3. Structuralism

Ferdinand de Saussure, a Swiss linguist (1875 – 1913) considered as one of the fathers of modern linguistics, went to the University of Leipzig and joined the group of Neo-grammarians. Two years later, he published, in 1879, "*Dissertation on the Primitive Vowel System in Indo-European languages*". The "*Course in General Linguistics*" was published after his death, in 1916 by his students Charles Bailly and Albert Sechehaye on the basis of notes taken from the lectures he gave in Geneva. He defined the language as a system of differential and

interrelated elements called "*signs*". He introduced the concept of "*Langue et Parole*" - "*Langue*" being the whole set of signs used by a particular community and "*Parole*" the actual use of linguistic signs in a given context – and the concept of "*synchrony*" and "*diachrony*" - "*synchrony*" being only concerned with states of a language in a given period of time and "*diachrony*" with the historical processes of linguistic change. De Saussure had a great impact on the development of linguistic theory in the first half of the twentieth century in Europe and in America as well.

In Europe, N. Troubetzkoy (1890–1938) and R. Jakobson (1896-1982) from the Prague School were leading a first current with the *Course of Phonological Theory*. In the Copenhagen School, Louis Hjelmslev (1899-1965) gave a new interpretation of linguistics from a structualist theoretical point of view.

In America L. Bloomfield (1887 – 1949) led this new trend of thought known as "*structuralism*". It was immediately followed by the Post-Bloomfieldian structuralism with E. Nida (1914 – 2011), B. Block, G. L. Trager, C. Hockett (1916 – 2000), Z. Harris (1909 – 1992) and N. Chomsky (1928).

I.2. The Birth of Contrastive Analysis

Until the beginning of the 20th century, the aim of comparative philology, a branch of historical linguistics, was to find common features shared by different languages. This procedure allowed linguists to establish links between languages either to sort them into different types – *typological linguistics* – or to determine

their origin and attempt to reconstruct a proto-language. The name of *contrastive analysis* has been given to this branch of comparative linguistics around the second half of the twentieth century. Like *typological linguistics*, *contrastive linguistics* compares languages synchronically to explore the similarities and dissimilarities between them, giving a particular importance to the study of differences. C.A. is a practice-oriented approach which aim was to assist in language teaching. It was based on the behaviourism theory developed by B. F. Skinner (1904 – 1990) who was influenced by I. Pavlov's and J. Watson's works and the American structuralist Linguistics. For him "*Language*" was a "*system*" and *second language learning* a question of habit formation which may be reinforced or impeded by existing habits. The "*Audio-lingual method*", a teaching method based on this theory and relying on observation and repetition had been used to develop the verbal communication skills of the American soldiers who were sent over the world during the Second World War. Among several prominent linguists such as H. Sweet (1845 – 1912), H. Palmer (1877 – 1949), O. Jespersen (1860 – 1943) who saw the impact of the mother tongue when learning a foreign language C. C. Fries declared in "Teaching and Learning English as a Foreign Language" (1945): "*The most effective materials (for foreign language teaching) are based upon a scientific description of the language of the learner*" (quoted by S. N. Sridhar in J. Fisiak 1981, p 209). Other works of C. Fries may be cited:

1952: *Fries American English Series for the study of English as a Foreign Language* – Book one – Boston: Health.

1957: *The Structure of English: An introduction to the Construction of English Sentences* – London – Longmans Green.

1958: *An Intensive Course in English. English Pattern Practices : Establishing the Patterns as Habits*. University of Michigan, with the contribution of R. Lado and the English Language Institute staff. C. Fries was the director of the English Language Institute at the University of Michigan, the first of its kind in the United States. For him, the student learning a foreign language must learn structures.

R. Lado (1915 – 1995), a disciple of Fries, and following the theories of Bloomfield, is considered as one of the founders of modern contrastive linguistics. Strongly involved in improving language teaching materials, he wrote *Linguistics Across Cultures, Applied Linguistics for Language Teachers*, in the preface of which he claimed: *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 culture of the student.* Then in the first chapter (p.2) he says: *In the comparison between native and foreign languages lies the key to ease or difficulty in foreign language learning those elements that are different will be difficult.*

Expected to identify the areas of potential difficulty, C.A. would make the design of language courses more efficient. The elements in the native language (or first language) which are similar to those in the target language (or foreign language) are going to facilitate learning. It is positive transfer. The elements in the first language which are different will cause difficulty. It is negative transfer or "*interference*". C.A., as claimed by Lado, has the ability to predict the learner's difficulties caused by the interference of the learner native language system. This is what Wardhaugh called the strong version of C.A.

One reason Lado was so interested in improving language teaching materials is that his parents were Spanish immigrants who went back home as he was too young to learn English. Later when he decided to return to the United States he was confronted to the difficulties met by an adult when learning a foreign language.

I.3. The Nature of Contrastive Analysis

If C.A. is considered as a branch of linguistics it should be interesting to identify the type of approach this linguistic enterprise has.

I.3.1. The main approaches to linguistics

- A linguist may study languages as individual entities or the object of his enquiry may be a one and only system shared by all human beings. Sampson calls the former a *particularist* and the latter a *generalist.*
- Some linguists are involved in the study of one particular language identifying the main feature giving this language its particularity and making it different from the other languages.
- Other linguists, despite the fact that they admit the individuality of each language, think that common features exist. They compare the languages and classify them into types. It is *the comparative typological linguistics.* This approach is synchronic because grouping languages according to features in a given period of time, while in philology, when attempting to reconstruct a proto language for a group of languages, the approach is diachronic.
- A third approach consists in studying a language either in a synchronic way (concerned with the language state in a particular time), or in a diachronic

way concerned with the evolution of the language. As seen above "*synchrony*" and "*diachrony*" are two notions introduced by De Saussure.

I.3.2. The nature of C. A. as a linguistic enterprise

C. A. is defined by C. James (1980, p.3)

> As a hybrid linguistic enterprise aimed at producing inverted (i.e. contrastive, not comparative) two valued typologies (a C.A. is always concerned with a pair of languages) and founded on the assumption that languages can be compared.

As a matter of fact, a contrastivist is interested neither in a single language – by language we mean here a given language spoken by a particular community – nor in language universals. If he gives a synchronic description of a language, or a part of a language, it is to compare it with another one, and to identify on the one hand the shared elements, and on the other hand the differences between these languages.

I.3.3. Contrastive Analysis as a branch of "*Applied Linguistics*"

Contrastive Analysis is usually defined as a branch of "*Applied Linguistics*". But what is "*Applied Linguistics*"? On the one hand many linguists did not consider it as a "*true*" science putting forward different reasons. One of them is given byP. Corder:

> The application of linguistic knowledge to some object – or applied linguistics, as its name implies – is an activity. It is not a theoretical study. It makes use of theoretical studies. The applied linguist is a consumer, or user, not a producer of theories. (C.James, 1980, p. 6)

Politzer's conviction that it is "*a way of using linguistic conceptualization to define and solve pedagogical problems*", is close to P. Coder's. For the transformational linguists, N. Chomsky and his followers, linguistic theory cannot solve pedagogical problems. For them, structures of languages are infinite, so how is it possible to categorize infinite structures? The theory of these pure linguists is based on "*universals*". By "*universals*", they mean a mental construct, common to all languages, derived by researchers whereas "*typological universals*" are common features observable in different languages.

On the other hand, Malmberg states that applied linguistics should be considered as a science apart from other ones and not just a technology based on "*pure linguistics*". C. James, sharing the same opinion, asserts that C.A. is a distinctive science and does not lie only in "*pure linguistics*" but also in other scientific disciplines: psychology and sociology. Fisiak (1981, p. 2) distinguishes two main types of contrastive linguistics: theoretical contrastive linguistics and applied contrastive linguistics.

> Theoretical contrastive studies do not investigate how a given category present in language A is presented in language B. Instead, they look for the realization of a universal category X in both A and B.

Applied contrastive linguistics is related to language teaching: starting from the findings of theoretical contrastive studies, it may identify an area of difficulty when learning L2 if a universal category X is not represented in the surface structure of L1.

I.4. The predictive power of C.A.

The strongest formulation of contrastive analysis claim is found in Lado's "*Linguistics across cultures*": all the errors made when learning L2 are due to a negative transfer from L1. Old habits of L1 affect the acquisition of new ones. Thus the interference (i.e. the negative transfer) of the learner native language system is the main obstacle to second language learning. The greater the differences between elements of L1 and L2, the greater the difficulty to learn L2 will be. Describing, comparing and analysing the elements of both languages lead to the prediction of the difficulties. This systematic analysis provides teachers with practical instructional materials. The predictive power of C.A. is of a great reliability in phonetics because it deals with close systems with a limited number of sounds which can be compared in an exhaustive way. This power of prediction is also due to the fact that pronunciation is a psychomotor area and it mainly depends on muscular coordination

> In early stages of second language acquisition, learners produce the sounds of a foreign language acquisition in fairly consistent patterns largely because pronunciation is a psychomotor skill and its reliance on muscular coordination is a factor of more predictable interference. (Brown, 1987, p. 161)

Following Lado's theory, it has been confirmed by scholars and linguists through different works that learning difficulty and differences between L1 and L2 are directly related. Nevertheless J. Whitman and Jackson in their studies proved that difficulty may also come from a relative similarity: when items from L1 are close – but not identical – to items from L2, there may be confusion.

> The second languages that we may be least likely to master satisfactorily are those which are either the closest to, or the most distant from our mother tongue. The first because we really never need to make the journey at all, and the second because the journey is too long ever to complete. (P. Corder, 1978, p.11)

According to Wardhaugh, a weak version of C.A. exists and consists in diagnosing errors made by learners. The analyst observes and identifies the errors due to L1 without first conducting a Contrastive Analysis which is in this case an "*a posteriori*" explanation of sources of errors.

C.A. reaches the summit of its popularity in the fifty's when structural linguistics and behavioural psychology were dominant. Nevertheless it was object to criticism at different levels:

- The prediction of errors was not always true. Errors which were expected to occur did not, and those which were not likely to occur did.
- The learner, his environment, the way he was taught were not given sufficient importance.
- According to N. Chomsky, the leader of transformational linguistics, "*language* " is not "*un système où tout se tient*" as said De Saussure, and the structures of languages are infinite. So, how is it possible to compare languages?

Behaviourist psychology in language learning was rejected, and Chomsky severely critized Skimner's "*Verbal Behavior*". P. Corder in "*The significance of Learner's Errors*" (1967) gave a new direction to Error Analysis. The focus was no

more on "*Teaching*" as before in C.A., but on "*learning*", through cognitive psychology.

I.5. Error Analysis

The 1960's saw the emergence of a new paradigm: the cognitivism Behaviourism has been supplanted by cognitive psychology; and in the shade of this theory, new sciences were born and among them "Psycholinguistics".

I.5.1. Learners 'errors

- For psycholinguists, interference of L1 cannot be the only cause of errors and other factors have to be taken into consideration: the learner's environment, what he is taught and how he is taught, his motivation.
- Learners 'errors are no more considered deviances which must be eradicated but as a series of "*approximative systems*" developed by the learner in his quest of mastering the target language, and as "*evidence of strategies of learning*" (Corder – 1967). These "*approximative systems*" are referred to as "*Errors*" and not as "*mistakes*" – deviances produced by the learner because of a particular situation. The first ones are defined as "*competence errors*" while the seconds as "*performance errors*". "Errors" which are due to a lack of effort on the part of the learner, or a lack of explanation on the part of the teacher, or a lack of practice are not considered as true errors and are not analysed.

Errors are sorted into four types:

- Errors of omission: an element which should be present is omitted.

- Errors of addition: elements not expected are present.
- Errors of selection: the chosen item is wrong.
- Errors of ordering: the items are correct but not in the right order.

Error analysis is a branch of applied linguistics which studies errors made by second language learners. Error analysis is different from transfer analysis in that the first one compares the learner's errors with the target language norm whereas the second one compares them with the first language. This discipline may have two objectives, one pedagogical and another more theoretical.

- The theoretical justification claims that

> A study of learner's errors is part of the systematic study of the learners 'language which is itself necessary to an understanding of the process of second language acquisition. (P. Corder, 1980, p.1)

If we want to eradicate learners 'errors, we must first know the reasons why an error has been produced, and the application of E. A. shows itself precious in second language teaching.

I.5.2. Error Analysis and *Interlanguage*

The theoretical aim of error analysis is to investigate the language learning process. To find out the nature of these psychological processes, E. A. describes the learner's knowledge of the target language during the progression of his learning. The errors are a natural result of the learning process and will necessarily be made because of the learning strategies used by the learner to achieve his or her objective which is the mastery of the foreign language. The attention of the linguist is focused on this

emerging linguistic system situated between the native language or L1 and the foreign language to be learned or L2, and called "*Interlanguage*". *Interlanguage* is based on the theory that there is a "*psychological structure latent in the brain*" which is activated when learning a new language. Uriel Weinreich formulated this concept taken again by Selinker 19 years later.

> Selinker makes it clear that he regards the interlanguage system as the product of a psycholinguistic process of interaction between two linguistic systems, those of the mother tongue and the target language. (S. P. Corder, 1981, p.87)

Interlanguage is a diachronic study in the sense that the object of its enquiry is how a monolingual progressively learns to become bilingual.

I.6. Language transfer and fossilization

I.6.1. Positive and negative transfer

The influence of the first language on the second language is known as "*language transfer*". The concept of "*transfer*" originates in behaviourist psychology.

When the same item is present in both languages (i.e. native language and foreign language) there will be no difficulty for the learner to produce the correct item in L2. This is what is known as positive transfer. If the learner is aware of the similarity of L1 and L2 a great positive transfer is going to take place. But the learner must be cautious when dealing with apparently similar items which are in fact different in meaning: the "*false friends*" for example the words "*corps*" and "*corpse*"; the former means "*body*" in French and the latter means "*dead body*" in English.

When the items are different in L1 and L2, the language transfer from L1 becomes a source of errors, and is called "*negative transfer*" or interference. "*Negative transfer*" may also occur when the learner who wants to say something in L2 does not know yet – or has forgotten – how to say it. He or she is going back to his or her L1 linguistic competence. This cognitivist alternative to L1 transfer – the ignorance hypothesis – was proposed by Newmark and Reibel in order to explain L2 learners 'errors.

I.6.2. Fossilization

It is a stage during second language acquisition, whatever the age of the learner is. It refers to forms of L1 that become encased in a learner's interlanguage and that cannot be changed by special attention or practice of the target language.

> Fossilizable linguistic phenomena are linguistic items, rules and subsystems which speakers of a particular native language will tend to keep in their interlanguage relative to a particular target language, no matter what the age of the learner or amount of explanation or instruction he receives in the target language. (Selinker, 1972, p.215)

According to Selinker, only 5% of the learners can overcome I.L. Fossilization. If so, we wonder why the majority of learners cannot. Is it because they do not want to? Or is it because they think that the way they communicate is comprehensible enough?

I.7. Error analysis and Second Language Acquisition

Error analysis and the study of *interlanguage* is of a great help to Second Language Acquisition. By "*second"* is meant all the foreign languages learned in addition to the native language and the term "acquisition" is used to insist on the

subconscious aspect of the learning process which is almost similar to the process followed by children when acquiring their native language, and a large number of studies made in the United States of America show that the Interlanguage of young children learning a second language was similar to that of children acquiring the same language as a mother tongue.

Second Language Acquisition is a part of applied linguistics closely related to psychology, cognitive psychology and education because of the interdisciplinary nature of S.L.A. many theories have been proposed.

I.7.1. S.L.A. development

The history of S.L.A. started with P. Corder's "*The significance of learners 'errors*" (1967) and L. Selinker's "*Interlanguage*" (1972) and during the whole decade their ideas prevailed, rejecting behaviourist theories in language acquisition.

I.7.2. The Input Hypothesis

The 80's saw a new paradigm introduced by S. Krashen. The *input hypothesis* is in fact the name given to a set of different hypothesis. His theory consists of five main hypothesis:

- The acquisition-learning hypothesis (the most important one).
- The monitor hypothesis.
- The natural Order hypothesis.
- The input hypothesis.
- The Affective Filter hypothesis.

I.7.2.1. The Acquisition-learning hypothesis

According to Krashen two ways allow learners to achieve second language performance:

Acquisition which is a subconscious process of which the individual is not aware. The learner or acquirer does not realize that he is getting a new knowledge. An interaction in the target language is required and the learner is not concentrated in the form of his utterances but in the communicative act.

Learning is a conscious process like the one in formal settings such as schools. The learner is aware of a new knowledge of the language usually presented in the form of "rules". This process involves error correction and is less effective than acquisition.

I.7.2.2. The Monitor hypothesis

This hypothesis explains the relationship between acquisition and learning, the acquisition system being the utterance initiator, the learning system being used to correct deviations from "normal" speech.

I.7.2.3. The Natural Order Hypothesis

It puts forth that in the acquisition process some grammatical rules acquired earlier than others, following a natural order independently of age, linguistic background, condition of exposure.

I.7.2.4. The Input Hypothesis

It explains how a learner acquires a second language. Input refers to the previously acquired linguistic competence + new knowledge of language structures that the acquirer should be ready to receive (Out-put being the learner's attempt to

produce the target language norm). P. Corder sees a danger in using this computer terminology: “we do not control the learner as we do a computer, we do not control the input, we do not control the operations performed on the data, and we have only the sketchiest picture of what the output is.

I.7.2.5. The Affective Filter hypothesis

Variables such as motivation, self-confidence, anxiety have an impact on second language acquisition. They may facilitate language acquisition or impede it.

CONCLUSION

The 1990’s and 2000’s saw the birth of a great number of theories among them "sociocultural theory", but the ones based on N. Chomsky’s "universal grammar" and psychological approaches such as "skill acquisition theory" and "connectionism" remain the most important. However, in phonetics, methods based on behaviourist theories, such as Skinner’s stimulus-response theory, are still used, and learners are trained through a system of reinforcement.

CHAPTER II

THE VOCALIC SYSTEMS

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INTRODUCTION

When an Algerian child of about twelve years old starts learning English in middle school, he or she is in a state of diglossia: two different varieties of Arabic (dialectal and Standard Arabic) are used according to well defined social situations. Fergusson (1959) described diglossia as:

> A relatively stable language situation in which,in addition to the primary dialects of the language (which may include a standard or regional standards)there is a very divergent, highly codified (often grammatically more complex) superposed variety, the vehicle of a large and respected body of written literature , either of an earlier or in another speech community, which is learned largely by formal education and is used for most written and formal spoken purposes but is not used by any sector of the community for ordinary conversation.

What is referred to as Standard Arabic, the high variety of the language, is in fact a contemporary standard Arabic, a modernized version of classical Arabic which is the norm in use in all Arabic speaking countries today. The young pupil learns standard Arabic in a formal setting that means at school.This high variety of Arabic is used in schools, in mosques,on radio and TV programmes, in situations where preparation is possible but it is not the usual means of communication used in the every day life.

The learner has already been in contact with a first foreign language which is French. French is taught in a formal setting from the third year of primary school -the case where English is chosen as a first foreign language is very rare- but this is not his first contact with the language. For historical reasons, the child is already familiar with French and even if he does not speak it fluently, his speech is interlarded with French words.

In this chapter, the vowels of each language are displayed with a particular focus on their articulatory and acoustic features. When compared, their differences as well as their similarities are of great help in elaborating appropriate teaching strategies.

II.1. The vocalic sounds in Modern Standard Arabic

Traditionally , and in comparison with French and English , Arabic is said to be « poor » in vowels. But when going deeper in the study of the vocalic system we can see that the range of vowel sounds is wider than what is represented visually. Standard Arabic counts three short pure vowels (*harakat*) with three corresponding long vowels.

II.1.1. Short vowels

- /a/ An open central vowel represented in writing by the diacritic ◌َ above the consonant and called *"fatha"*.
- /i/ A close front vowel- represented by the same mark this time below the consonant ◌ِ and called *"kesra"*.
- /u/ A close back vowel represented by the diacritic ◌ُ above the consonant and called *"damma"*.

These names are given according to an articulatory feature: the position of the lips.

Fatha means open lips, *kesra* means spread lips, *damma* means rounded lips.

These vowels are shown in the famous triangle found in all the descriptions of the Arabic language.

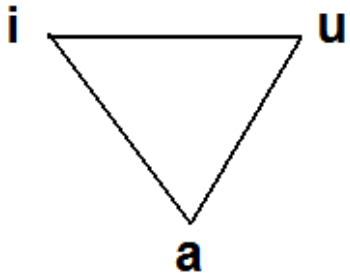


Diagram 1 – The Arabic short vowels

II.1.1.1. Articulatory features of short vowels

	Front	**Back**	**central**	**open**	**close**	**spread**	**rounded**
/ i /	+	-	-	-	+	+	-
/ u /	-	+	-	-	+	-	+
/ a /	-	-	+	+	-	-	-

Table 1 – Articulatory features of Arabic short vowels

In this table, the distinctive features are displayed .

The terms "front", "back","central",refer to the part of the tongue involved in the articulation. "Open","close" refer to the degree of raising of the tongue: "open" meaning that the tongue is in the low position and “close” meaning that it is in the high position. “Spread” and “rounded” describe the kind of aperture formed by the lips.

Thus / a / is an open vowel produced with a part of the tongue nearer to front than to back in the lowest position (the rest position) – the lips are naturally open.

/ i / is a front close vowel pronounced with spread lips – the tongue is tense –

/ u / is a back close vowel articulated with a lip rounding – the tongue is contracted and retracted towards the back .

The articulatory effort is not the same for these three vowels because they involve different face muscles. The grammarians classified / a / / i / / u / according to two features called *"Khiffa"* (lightness) and *"Thiqal"* (heaviness) – These features refer to the importance of the articulatory effort provided during the articulation and to the number of face muscles controlling the movements of the organs of speech. So, / a / is the lightest vowel because it requires a less articulatory effort. For / i / a greater muscular effort has to be provided and / i / is classified as a "heavy" vowel.

The vowel / u / is considered as a yet heavier vowel because it needs an articulatory activity on the part of the different muscles greater than for / i /.

This may explain the very high frequency of occurences of / a /, 59%, followed by / i /, 20,4% and / u /, 19,8%. These numbers are given by J. Cantineau (1960; p. 192).

Thus, the Arabic learner, not used to provide a great effort when pronouncing vowels, is obliged to follow a more intensive training to be able to pronounce correctly the wide range of vowels of the different languages he is going to learn. These vowels, which are not always represented in spelling, may show considerable variation in their realizations.These variations in quality, which cannot be considered as different

phonemes because the meaning of the word is the same whatever the vocalic sound used , are due to different factors:

- different geographical areas.
- different consonants adjacent to the vowel.

II.1.1.2. The short vowels and their variations

Variations of / a /

In Algeria /a/ is realised /ɛ/. This phenomenon may be found in other arabic speaking countries and is known as *"el imala"*. The position of the tongue for this open wowel is moving towards the close position and /a/ may be realised as /ɛ/ and even as /e/ the cardinal vowel number two. But the pronunciation of /a/ may be affected by an adjacent particular consonant.

When preceded or followed by an emphatic consonant (*mufakhama*; ص, ض, ط, ظ) the point of articulation is drawn backwards and /a/ is pronounced /ɑ/.

The same phenomenon is observed when /a/ is adjacent to a uvular, pharyngeal or laryngeal consonant.

eg: "قريب " /*q*ɑriːb/ *"close*" or "*near*"

"دعم " /d̪ ɛʕʕɑmɛ/ *"to support*"

"نهر " /nɑhr/ *"river"*

In certain words, the consonants < ل > and < ر > may be "emphatic" and have the same effect on an adjacent /a/.

" الله "/ɑllɑh/ "*God* " and "غادر" / ɣɑːdɑrɑ/ *"he left*"

In the morpheme < ال > in the word < الشمس > / ə ʃ əms/ - *the sun*-, / a / is obscured and reduced to /ə / a very short central vowel accompanied by the elision of the consonant < ل > /əʃʃɛms / and the gemination of the adjacent consonant. This phonological rule is found in all the words starting with the consonants called *"shamsya"* (ن٠ل٠ ش٠س٠ ط٠ظ٠ ض٠ص٠ ز٠ر٠ ذ٠ د٠ ث٠ ت٠).

Variations of /u/

The pronunciation of /u/ is also affected when following an emphatic consonant or a guttural consonant

eg: "ظهور " /ðohu:r/ *apparition*

"عصفور" /ʕoṣfu:r/ bird

"صعود " /ṣoʕu:d/ Ascension

" ضحى" / ḍoħɑ/ Morning

" القرآن " /əlqorʔɑ:n/ The Coran

The back of the tongue is lowered to the half close position and /u/ is performed /o/

Variation of /i/

For /i/ the tongue is again lowered from the close position to the half close position.The sound is nearer to the cardinal vowel number two (the front vowel /e/ of <thé> when following the same consonnants).

eg: "ظِل "/ðel/ *Shadow* – "طِب "/ṭeb/*medecine* – "صِراع " / ṣera:ʕ/*fight* – " ضِلع "/ḍelʕ/ *rib* – "قِرد" /qerd/*monkey* – " قِناع " /qenɛ:ʕ/mask

II.1.1.3. Acoustic features of the Arabic short vowels

In the upper part of the speech apparatus, there are three cavities which act as resonators for the vibrations of the vocal cords: the pharyngeal cavity, the oral chamber - which are the most important ones - and the nasal cavity which may be added to them.

Each cavity has its own resonance called fundamental and represented by F_0. But because of a changing shape due to the different positions of the tongue,the lips and the soft palate, it is going to amplify a zone of frequencies.This area is called "formant".

The lowest sound in the wave is called fundamental or F_0.The other formants F1,F2,F3… are the harmonics .

The vowels are characterised by several formants. The most important ones are F1 and F2. F2 refers to the part of the tongue used in the articulation.

When F2 is high and relatively far from F1 we are dealing with front vowels when F2 is relatively low and close to F1 we are in presence of back vowels.

In acoustic phonetics, the former are said to be diffuse and the latter compact.

In spectrograms the formants are represented by dark strips.

When articulating vowels – and certain consonants as well – the vocal cords vibrate.

As in any vibration the vibrating part moves from a point A to a point B, then to C and back to A, and this movement is reapeated during a period of time .In acoustic phonetics, the distance from A to A' is called a cycle, frequency being the number of cycles per second.(cps)

An hertz –HZ- represents 1 cycle/second (this term refers to Heinrich Hertz, the german physicist who defined this unit of measurement.)

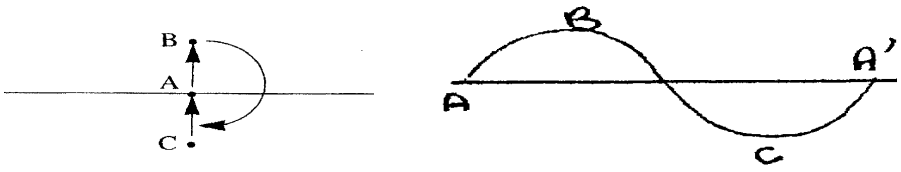


Diagram 2 A sound wave

ABCA' = one cycle AB = amplitude

This regular variation has the shape of a sine wave. When producing sounds ,the greater the amplitude (the distance A B), the louder the sound is . And the higher the frequency, the higher the sound is.The human speech apparatus produces complex sounds, and the French mathematician J. Fourier proved that any complex sound can be decomposed in a series of simple sounds . Thus we have no more a sine wave but a superimposition of sine waves.

	F1	**F2**	**F3**
/ a /	655	1621	2555
/ u /	470	1228	2387
/ i /	499	2086	2741

Table 2 – Acoustic features of the Arabic short vowels

(From A. Alioua : " A phonetic and morpho-phonologic study of litteral Arabic vowels and diphthongs", Doctoral thesis, 1987 ; p.126)

II.1.2. Long vowels

II.1.2.1. Representations of long vowels in spelling

To these short vowels, *" harakat "*, correspond three long vowels / a: / / i: / /u:/. Their length is twice the duration of short vowels. They are called in Arabic *"huruf el mad"*. This term *"huruf"*, plural of *"harf"*, meaning consonant or character, is associated with a vocalic element because in spelling the length mark is represented by a consonant, a character following a short vowel – the representation in spelling of a short vowel being optional –.

/ a: / is written ◌َ *(fetha)* followed by < ا > as in "صِراع " / ṣera:ʕ/ *competition.*

/ i :/ is written ◌ِ *(kesra)* followed by < ـيـ > when medial as in "قريب" /qari:b/ *close* and <ي > when final as in "نادي " /nedi:/ *club.*

/ u: / is written ◌ُ *(demma)* followed by < و > as in "عصفور" / ʕoṣfu :r/ *bird.*

II.1.2.2. Variation of long vowels

Variation of / a : /

" فارغ " / f ɛ:r ɑ ʕ / *empty*

" غادر " /ʀ ɑ: d ɑ r ɑ / *he went away*

The quality of the variants are similar to those of short / a /, the difference being only in quantity

Variation of / i : / and / u : /

Unlike the corresponding short vowels the influence of the surrounding consonants is weaker. The tongue is mantained in the close position during the articulation of these sounds.

"صوف "/ s ʊ : f / *wool*

"فضول "/ f u d ʊ : l / *curiosity*

" طوفا ن " / t ʊ : f ɛ : n / *typhoon*

II.1.3. Diphthongs

All the studies agree about the fact that there are two diphthongs in standard Arabic. They may be described as glides where the starting point is the open vowel /a/ and the second element the close vowels / i / or / ʊ /.

Here again for the first element we find the same variants we have in the short vowel /a/.

/ eɪ / in "بيت" / beit /*home* and / ɑ ɪ/ in " صيف " / s ɑ ɪ f / *summer* where / eɪ / is pronounced / ɑ ɪ/ because of " ص ", an emphatic consonant.

/ eʊ / is found in in the variety of standard Arabic spoken in Algeria: "زوج" /zeʊʒ/ *pair*. / ɑ ʊ/ being the pronunciation of the phoneme adjacent to an emphatic , a guttural consonant or the trill /r /: " صوت " / s ɑ ʊ t/ *voice*. "قوس" /qɑʊs/ *arch.*

II.2. Vocalic sounds in dialectal Arabic

II.2.1. Short vowels

As far as phonetics is concerned, dialectal and modern standard Arabic cannot be considered as opposing languages in the traditional sense of the term because they belong to the same linguistic family. Almost all the sounds existing in Standard Arabic also exist in colloquial Arabic and it is particularly true for the vowels and their variations. It has to be noticed that in the minimal pair /mɛʔ/ *water* and /mɑʔ/ *mom*, / ɛ / and /ɑ / are no more variants. They are opposed, giving to these words with a same consonantal frame two different meanings. Thus we have a range of five short vowels in dialectal Arabic :

Two front vowels :

- the close vowel / i / in / bilɛl/ *Bilal*
- the half open vowel /ɛ/ in /lɛlɛ / *madam, lady*

Two back vowels :

- the open vowel /ɑ / in /bɑɣlɛ/ *mule*
- the close vowel /u/ in /dunjɛ/ *Dounia*

One central vowel : /ə/ in /məftɛħ / *key*

II.2.2. Long vowels

Relatively long vowels correspond to the short front and back vowels seen above.

/i :/ in / ʒi:b/ *bring*

/ɛ :/ in /gɛ:l/ *he said*

/ɑ : / in /rɑ:ħ/ *he went away*

/u :/ in /lju:m/ *today*

II.2.3. Dialectal Arabic diphthongs

The two glides /eɪ/ and /aʊ/ existing in Standard Arabic are found again in colloquial Arabic :

/eɪ/ in /leɪl/ (*night),* and /ɑʊ/ in /rɑʊda/ *wheel*

Two others lengthen this list :

/ ɑɪ/ in / *ṣ*ɑɪf / *summer*

/eʊ/ in /leʊxor /*the other one*

The starting point of / ɑɪ/ may be considered as the result of a progressive assimilation due to the emphatic /ṣ/

The diphthongs /eɪ/ and /ɑɪ/ may be realised as /i:/ (/li:l/ for *night,* /*ṣ*i:f/ for *summer*), the diphthongs /aʊ/ and /eʊ/ as /u:/ (/ru:da/ for *wheel,* /lu:xor / for *the other one)* . The pronunciation / lɛxor / may also be heard .

II.2.4. Quantity

length of vowels is very important in Standard Arabic, length or quantity being a distinctive feature.

The short vowel /a/ or / ɑ / is opposed to the long vowel /a:/ or / ɑ:/ in pair of words such as :

- ✓ "طلب" /*ṭ*ɑləb/ *demand , request* and " طالب " /*ṭ*ɑ:leb/ *student*

- ✓ "علم" /ʕaləm/ *flag* and "عالم"/ʕa:ləm / *world.*
- ✓ "عمل"/ ʕaməl/ work and " عامل " /ʕa: məl / *worker*

And we see that according to whether the vowel . – here in the first syllable- is short or long, the word is given a different meaning .

The diphthongs are equivalent in length to pure long vowels that means twice the length of a short vowel .

II.3. The French vocalic system

The French vocalic system counts 16 vowels – twelve are oral and four are nasalised –. Nasalised is more appropriate than "nasal" because in fact a small amount of air is expelled through the nose during the articulation , the other part escapes through the oral cavity .

II.3.1.The oral vowels

II.3.1.1. Articulatory features

We count five front vowels.

- /i/ in < *lit*> - *il-lit-joli.* It is articuled with the real front of the tongue raised in the close position. The lips are spread (cardinal vowel n°1 in Daniel Jones diagram).
- /y/ *une , lune,pointu* .It is articulated with the front of the tongue raised in the close position.The lips are rounded .
- /e/ *été , mélange ,thé* . It is pronounced with the front part of the tongue raised in the half –close position. The lips are slightly spread (it is the cardinal vowel n°2 in the diagram of Daniel Jones).

- / ɛ/ *aide , elle , raide , belle , mai* . The front of the tongue is in the half –open position (cardinal vowel n°3 in Daniel Jones diagram) and the lips are very slightly spread. Its variations : When belonging to an unaccented syllable followed by a stressed syllable containing a close vowel it is realised as the close vowel /e/ : *aide* / ɛd/ *aider* /ede/ ; *aile* /ɛl/ *ailé* /ele/, (Léon, P.L 2007, 5th ed. *Phonétisme et prononciations du français*, p.117)
- /a/ *avoir , lave , la* . The front of the tongue is in the open position . The lips are naturally open (cardinal vowel n°4 in Daniel Jones diagram).

A central vowel

- / ə / in "*le*": the definite article (the). A part of the tongue between the front and the centre is raised between the half-close and half -open positions. The lips are slightly rounded.

Two centralized vowels :

- / ø / This front vowel is articulated with a part of tongue nearer to centre than to front, raised in the half-close position.The lips are rounded. It is found in "*eux*" (them) ,"*deux*" (*two*) ," *heureux*" (happy).
- / œ / as in "*seul*" (alone) .

  In the following minimal pair /œ/is opposed to /ø/ "jeune" (*young*) "jeûne" (*fast*). A part of the tongue nearer to centre than to real front is in the half-open position . The lips are slightly rounded.

The spelling <eu > is usually pronounced /ø/ in a syllable of the type CV (an open syllable) as in "*veut*" (wants) and /œ/ in CVC type syllable as in "*veulent*" (they want)

Nevertheless certain exceptions must be mentioned: in a CVC syllable if the final consonant is /z/, the tongue is raised higher and <eu> is pronounced /ø/: "creux" /krø/ "creuse" /krøz/. Nevertheless this realisation is not found in all the varieties of French: /œ/ is particularly heard in the variety used in North Africa.

Four back vowels :

- /ɑ/ as in "*pâte*" (dough) . This vowel is articulated with the back of the tongue in the fully open position with lips naturally open . It is the cardinal vowel n°5 in the vowel scale of Daniel Jones .
- /o/ for this vowel the back of the tongue is in the half-close position and the articulation is accompanied by a medium lip rounding . The sound is found in words such as *"eau*" /o/ (water),"*sot*" /so/ (silly),"*pot*" /po/,(pot). It is the cardinal vowel n°7 .
- / ɔ / This vowel is the realisation of the vowel cited above when occuring in a CVC type, such as in the words : "*sol*" /s ɔ l / (floor), "*vol*" /v ɔ l / (flight), "*pote*" /p ɔ t / (friend).We hear again /o/ in "*jaune*"/ ʒon/ (yellow) and because of a regressive assimilation due to the consonant /z/, <o> is pronounced /o/ in "*ose*" /oz/ (*dare*). But, again, this assimilation does not occur in the variety of French spoken in North Africa where / ʒɔn/ and /ɔz/ are heard. /ɔ/ is articulated with the back of the tongue in the half-open position with more slightly rounded lips .
- /u/ as in "*doux*" /du/ (smooth). The back of the tongue is in the close position. The lips are closely rounded. This back vowel is the cardinal vowel n°8 in Daniel Jones Diagram.

In French there is no opposition short/long vowels but the vowel may be longer when accented.

II.3.1.2. Acoustic features

	F1	F2	F3
i	250	2250	2980
e	420	2050	2630
ɛ	590	1770	2580
a	760	1450	2590
ə	570	1560	2560
u	290	750	2300
o	360	770	2530
ɔ	520	1070	2510
ɑ	710	1230	2700
y	250	1750	2160
Φ	350	1350	2250
œ	500	1330	2370

Table 3 – Acoustic features of French oral vowels (male speaker)

II.3.2. The nasalised vowels

French counts four nasalised vowels corresponding to four oral vowels. During their articulations the soft palate ,which was raised for all the oral vowels, is lowered so that a part of the air expelled escapes through the nasal cavity.

II.3.2.1. Articulatory features

- /ɛ̃/ in " *intérieur* " / ɛ̃teʀjœr/ (inside) , " *vingt* " /vɛ̃/ (twenty) , " *ceinture* " /sɛ̃tyr/ (belt), " *étain* " /etɛ̃/ (tin). It is articulated with a part of the tongue more retracted towards the centre than for /ɛ/ the corresponding oral vowel. The tongue is raised slightly below the half open position and the lips are naturally open.

- /œ̃/ in " *un* " / œ̃/ (one), " *lundi* " /lœ̃dI/ (Monday), " *embrun* " /ɑ̃brœ̃/ (spray).The central part of the tongue more retracted towards the back is raised below the half open position with a slight lip rounding. It corresponds to the oral vowel /œ/. Nowadays /œ̃/ is more and more performed as /ɛ̃/ .
- /ɑ̃ / in " *antérieur* " / ɑ̃teʀjœʀ/ (former) , " *tante* " /tɑ̃ t/ (aunt) , "*temps* " /tɑ̃ / (weather,time), " *chantant* " / ʃɑ̃tɑ̃ / (singing). The real back of the tongue is in the fully open position. The point of articulation being more retracted than that of /ɑ/, the corresponding oral vowel. The mouth is wide open and the lips neutrally spread.

❖ / õ/ in " *ongle* " /õgl/ (nail), " *blonde* " /blõd/ (fair-haired), " *rond* " /rõ/ (rounded). The back of the tongue is just below the half close position (for the corresponding back vowel, the tongue is in the half close position). We have a medium lip rounding.

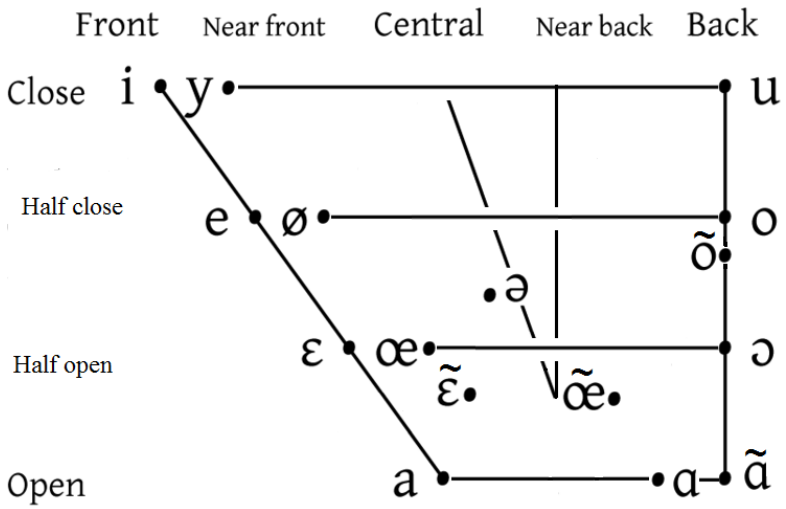


Diagram 3 - Oral and nasalised French vowels

II.3.2.2. Acoustic features:

Table 4 - Acoustic features of french nasalised vowels

	F1	F2	F3
ɛ̃	600	1470	2770
œ̃	500	1280	2660
ɑ̃	580	1090	2960
õ	450	690	2940

Once we have described the French vocalic system we may say that most of the vowels are front vowels and give a clear resonance to this language .

In front of this wide range of vowels, we can imagine the difficulty an Arabic speaking learner, studying foreign languages, has to face and the effort he or she has to provide for new articulatory habits.

All the vowels described belong to the Norm and the different varieties of French are not taken into account .

II.4. The English vocalic system

In RP the vocalic system is made up of twenty vowels wich may be classified as follows :

- ✓ 7 short pure vowels : /ɪ, e , æ , ɒ, ʊ, ə, ʌ /
- ✓ 5 long pure vowels : / i :, ɑ:, ɔ:, u: , ɜ: /
- ✓ 5 closing diphthongs : / eɪ , aɪ , ɔɪ, əʊ , ɑʊ /
- ✓ centring diphthongs: / ɪə , ɛə , ʊə /

The pure vowels may be classified according to quantity and thus ,be identified as short or long vowels (a diphthong is equivalent in length to a pure long vowel) . But in English, an opposition between two vowels is not based only on length.The vocalic quality is different. In our study the classification retained is the one based on the part of the tongue involved in the articulation .

All the English vowels are oral , the soft palate being raised during their articulations.

II.4.1. Articulatory features of vowels

II.4.1.1. Front vowels

There are four front vowels :

- /*i*: / "see" /si:/ ," be" /bi:/ , "sea" /si:/ , "piece" /pi:s/, "key" /ki:/, "receive" /rɪ'si:v/ , "machine" /mə'ʃi:n/. The front of the tongue is slightly below and behind the close front position.The rims making a firm contact with the upper molars. The lips are spread.
- /ɪ/ in "*sit*" /sɪt/, "*symbol*"/'sɪmbəl/ , "*pretty*" /'prɪtɪ/, "*ladies*" /'leɪdɪz/, "*village*" /'vɪlɪdʒ/ , "*build*" /bɪld/, "*business*" /'bɪznɪs/, "*women*" /'wɪmɪn/. A part of the tongue retracted towards the centre is raised, and the rims of the tongue make a light contact with the upper molars. The lips are slightly spread .
- /e/ in "*set*" /set/ , "*breath*" /breθ / , "*many*" /'menɪ/ , "*said* " /sed/ , "*friend*" /frend/. For /e/ the front of the tongue is raised between the half close and half-open positions . A light contact is made between the side rims and the upper molars . The lips may be naturally open or slightly spread.
- /æ/ in "*sat*" /sæt/, "*plait*" /plæt/. The front of tongue is raised below the half open position . A very light contact is made between the side rims and the back upper molars . The lips are naturally open .

II.4.1.2. Central vowels

There are three central vowels :

- / ʌ / in " *sun* " /sʌn/ , " *son* " /sʌn/ , " *country* " /'kʌntrɪ/ , " *blood* "/blʌd/ , " *does* " /dʌz/. For this short vowel / ʌ / the centre of the tongue is raised above the open position , the lips being neutrally open. There is no contact between the tongue and the upper molars.

- / ə / in " *alone* " /ə'ləʊn/, " *suppose* " /sə'pəʊz/, " *woman* " /'wʊmən/, " *oblige* " /ə'blaɪdʒ/, " *possible* " /'pɒsəbl/, " *particular* " /pə'tɪkjʊlə/ and the weak form of the indefinite article " a" /ə/.It is articulated with the central part of the tongue raised between the half open and half close positions when the vowel is non final as in the examples given above. In the words " *moth<u>er</u>" /'*mʌðə/ , " *doct<u>or</u>* " /'dɒktə/, " *particul<u>ar</u>* " /pə'tɪkjʊlə/ , "*col<u>our</u>* " /'kʌlə/. The vowel is final and the tongue is in the half open position or a little bit lower.The lips are neutrally open . This short vowel occurs in unaccented syllables.

- / **3**: / in " *bird* " /b**3**:d/, " *heard* " /h**3**:d/, " *her* " /h**3**:/, " *fur* " / f**3**:/, " *word* " /w**3**:d/, « *journey* » /'dʒ**3**:nɪ/. During the articulation of this long R.P vowel the centre of the tongue is raised between the half-close and half-open positions with neutrally open lips .

II.4.1.3. Back vowels

There are five back vowels :

- /ɑː/ in "*father"* /ˈfɑːðə/ , *"branch" /b*rɑːntʃ/ , " *cart"* kɑː*t/ , " heart" /*h ɑː*t/* , *"clerck"* /klɑːk/ , *"aunt*" / ɑːnt/ . For this long vowel ,the mouth is wide open and the back of the tongue is in the fully open position . There is no contact between the rims and the upper molars . The lips are neutrally open.
- /ɒ/ in "*spot"* /spɒt/, *"what"* /wɒt/, *" yacht"* /jɒt/, *"cough"* /kɒf/ , *" knowledge "* /ˈnɒlɪdʒ/, *"because* " /bɪˈkɒz/. This short vowel is also articulated with a considerable separation of the jaws. the back of the tongue is in the open-position with no contact with the upper molars. the lips are slightly rounded.
- /ɔː/ in "*cord"* /kɔːd/, *"jaw"* /dʒɔ*ː/, "bought"*/bɔːt/, *"daughter"* / ˈdɔːtə/ , *"water"* /ˈwɔː*tə/, "more"* /mɔ*ː(r)/, "door"* /dɔː(r)/, *"board"* /bɔːd/, *"four* " /fɔː(r)/. This long vowel is articulated with the back of the tongue raised between the half-close and half-open positions . There is no contact between the rims and the upper molars . The lips have a medium rounding .
- /ʊ/ in "*put"* /pʊt/ *," wolf"* /wʊlf/ , *"good"* /gʊd/ , *"could*" /kʊd/. This short vowel is articulated with a part of the tongue between the centre and the back, raised above the half-close position. The rims make a slight contact with the upper molars . The lips are closely rounded.
- /uː/ in "*food"* /fuːd/ , *"lose"* /luːz/ , *"group"* /gruːp/ , *"rude"* /ruːd/ , *"juice"* /dʒuːs/ , *"chew"* /tʃuː/ , *"shoe*" /ʃuː/ . The back of the tongue is almost in the close position for this R.P long vowel .There is a slight contact between the rims and the upper molars . The lips are closely rounded.

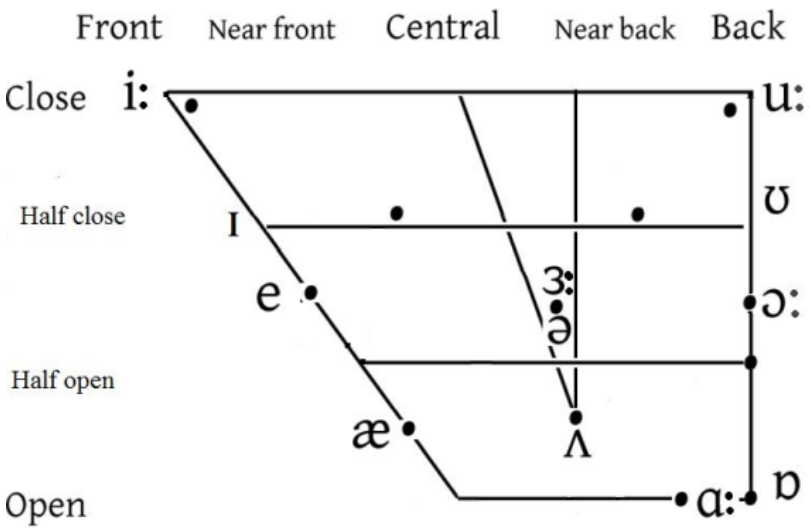


Diagram 4 -The English pure vowels.

II.4.2. Articulatory features of diphthongs

There are two categories of diphthongs : five closing diphthongs and three centring diphthongs.

These terms are used because of the second element of the diphthong, point in the direction of which the glide is made.Most of stress and length associated with the diphthong is concentrated on the first element.

II.4.2.1. Closing diphthongs

- / eɪ/ in " *make* " /meɪk/ , " *day* " /deɪ/ , " *rain* " /reɪn/ , " *eight* " /eɪt/ , " *they* " /ðeɪ/ , « *great* » /greɪt/. For this glide the front of the tongue is first between the half open and half close positions then it moves upwards above the half close position. The lips are slightly spread.
- / aɪ/ in " *nice* " /naɪs/ , " *my*" /maɪ/ , " *light* " /laɪt/ , " *height*"/haɪt/ , " *pie* " /paɪ/ , " *either* " /'aɪðə/, " *eye* " /eɪ/ , " *bye* "/baɪ/. The starting point of this glide is a front open vowel then the tongue moves to articulate the front half-close vowel /ɪ/. The opening formed by the lips changes : they are first naturally open for /a/ then slightly spread for /ɪ/.
- / ɔɪ/ in " *toy*" /tɔɪ/, " *soil*" /sɔɪl/, " *voice*" /vɔɪs/. For the articulation of the first element of this glide, the back part of the tongue is in the half-open position. Then there is a movement of the front of the tongue towards the half close position accompanied by a movement of jaws. The opening of the lips changes from rounded to neutrally open .

- / əʊ/ in *" home"* /həʊm/, *" so"* /səʊ/ , *" road"* /rəʊd/ , *" toe"* /təʊ/ , *"know"* /nəʊ/ , *" though"* /ðəʊ/. First the centre of the tongue is between the half open and half close positions to articulate the starting point of this glide. Then the back of the tongue moves towards the half-close position for the second element /ʊ/ . This glide is accompanied by a closing movement of the jaw with a change in the opening of the lips from neutral to rounded.
- / ɑʊ/ in " *house"* /hɑʊs/, *" town"* /tɑʊn/. For the articulation of the first element of this diphthong a part of the tongue advanced from true back is in the open position then moves towards the half-close position with a shift towards the centre. The lip opening changes from neutral to slyghtly rounded.

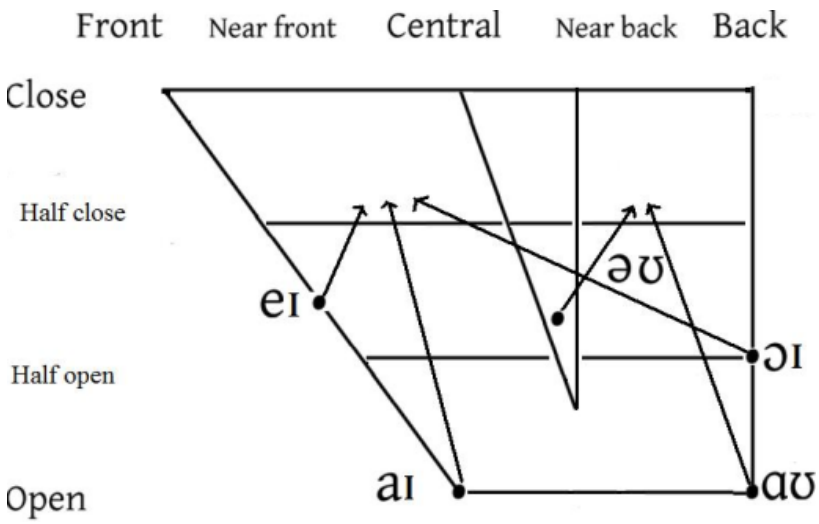


Diagram 5 - The English closing diphthongs

II.4.2.2. Centring diphthongs

- /ɪə/ in " *deer* "/dɪə/ , " *dear* " /dɪə/ , " *here* "/hɪə/ , " *idea* " /'aɪdɪə/ , " *museum* "/'mju :zɪəm/ , " *pierce* "/pɪəs/ , " *theological* " /θɪə'lɒdʒɪkəl/. For the first element /ɪ/ the front of the tongue (close to centre) is raised just above the half-close position . Then there is a glide towards the centre and towards the half-open position. The lips are slightly spread for /ɪ/ then neutrally open for /ə/.
- /ɛə/ in "*dare*"/dɛə/ , "*chair*"/ʧɛə/ , "*wear*"/wɛə/. The starting point of this glide is the cardinal vowel n°3. The front of the tongue is in the half open position. The lips are neutrally open.
- /ʊə/ in "poor"/pʊə/, "sure"/ʃʊə/, "tour"/tʊə/. During the first part of the glide a part of the tongue nearer to centre than to real back is raised just above the half close position.Then it moves to a central half open position.The lip opening changes: the slight rounding associated with the starting point moves to a neutral spreading.

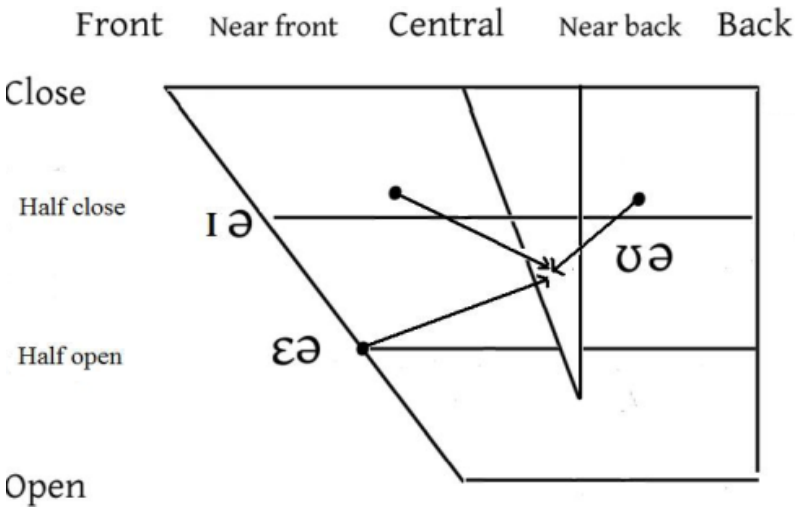


Diagram 6 – The English centring diphthongs

II.4.3. Acoustic features

	F1	F2	F3
/i :/	280	2620	3380
/ɪ/	360	2220	2960
/e/	600	2060	2840
/æ/	800	1760	2500
/ʌ/	760	1320	2500
/ɑ :/	740	1180	2640
/ɒ/	560	920	2560
/ɔ :/	480	760	2620
/ʊ/	380	940	2300
/u :/	320	920	2200
/ɜ :/	560	1480	2520

Table 5 – Acoustic features of English pure vowels

II.5. CONTRASTIVE ANALYSIS

Through these descriptions, we see clearly that the smallest number of vocalic elements belongs to the Arabic system : three short vowels, three long vowels, their variants and two diphthongs. All the vowels are oral.

In French, twelve oral vowels and four nasalised vowels can be counted. Among them, ten are front vowels.

In English, the system is composed of twelve oral vowels and eight diphthongs, all of them are oral.

When learning French and English, the learner is confronted to more developed vocalic systems. The Arabic speaking students are likely to have difficulty with the pronunciation of vowels because of articulatory habits and because of different kinds of negative transfer.

Eventhough it is not the main concern of this research, some kinds of negative transfer from Arabic towards French seem interesting to be mentioned. In Arabic the tongue has merely two positions : the close position and the open one as shown in the diagrams. In French and in English, there are many intermediate positions. So, it is expected from the learner to put all the vowels up towards the close position or pull them down towards the open position. The word "étudiant" is pronounced /itidjɑ̃/ instead of /etydjɑ̃/ (the pronunciation /ytydjɑ̃/ may be heard). The word "monde" is pronounced /m ɑ̃ d/ instead of /m o d/ for the same reason.

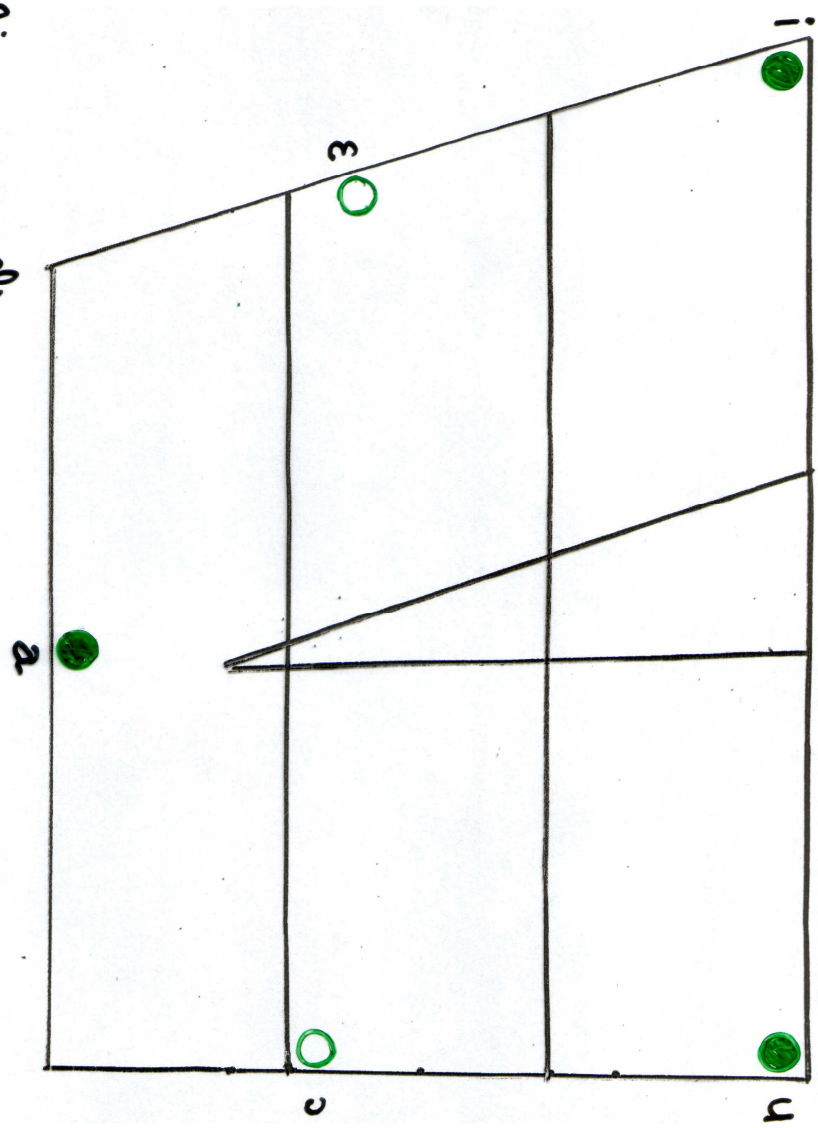
In Arabic, the central part of the tongue is hardlyever involved (in the Dialectal Arabic /ə/ in the word /fendʒel/ meaning "cup") whereas, it is used twice in French (for /ə/ in "le" and /œ̃/ in "un") and three times in English (for /ə/ in "alone", for /ɜ:/ in "earn", for /ʌ/ in "burn").

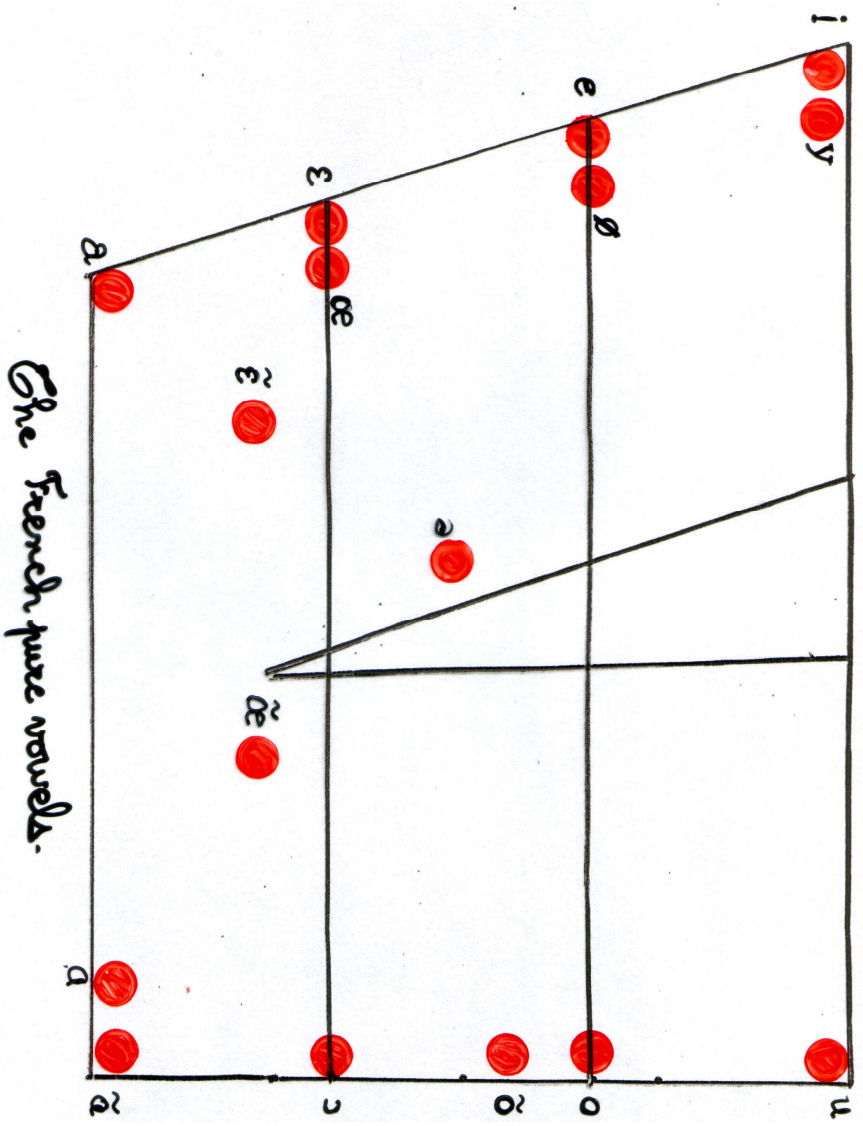
In Arabic, the articulatory feature "rounded" is never associated with a front vowel ; that is why the word "utiliser" is often pronounced /itilizi/ instead of /ytilize/.

The French /a/ is often pronounced /ɑ/ by the Arabis speaker, /ɑ/ being the most open vowel in his system. Thus the word "Algérie " is often pronounced /aldʒeʻri/ or /aldʒiʻre/ instead of /alʒeʻri/.

In Arabic and in English all the vowels are oral so a positive transfer from the native language is normally expected. But in French, we have four nasalized vowels represented in spelling by a vowel plus the nasal consonant <n>. in English, the same spelling corresponds to a phonetic sequence V + /n/. in this case, the spelling of French, associated with a nasalization may have a strong impact on the pronunciation of the English sequence <vowel + n>. Moreover, according to the "input hypothesis" of Krashen is represented by "i + 1" (see Chapter 1) : i refers to the previously acquired linguistic competence and " + 1" to the new knowledge of the target language the acquirer should be ready to receive. If we acquire languages in a linear order – 1, 2, 3, …- Dialectal Arabic is n° 1, Modern Standard Arabic n° 2, French n° 3 and English n° 4. For first year students of English "i" represents n° 3 and refers to the previously acquired linguistic competence, thus the transfer may occur from L3 to L4 and may inhibit the positive transfer from L1.

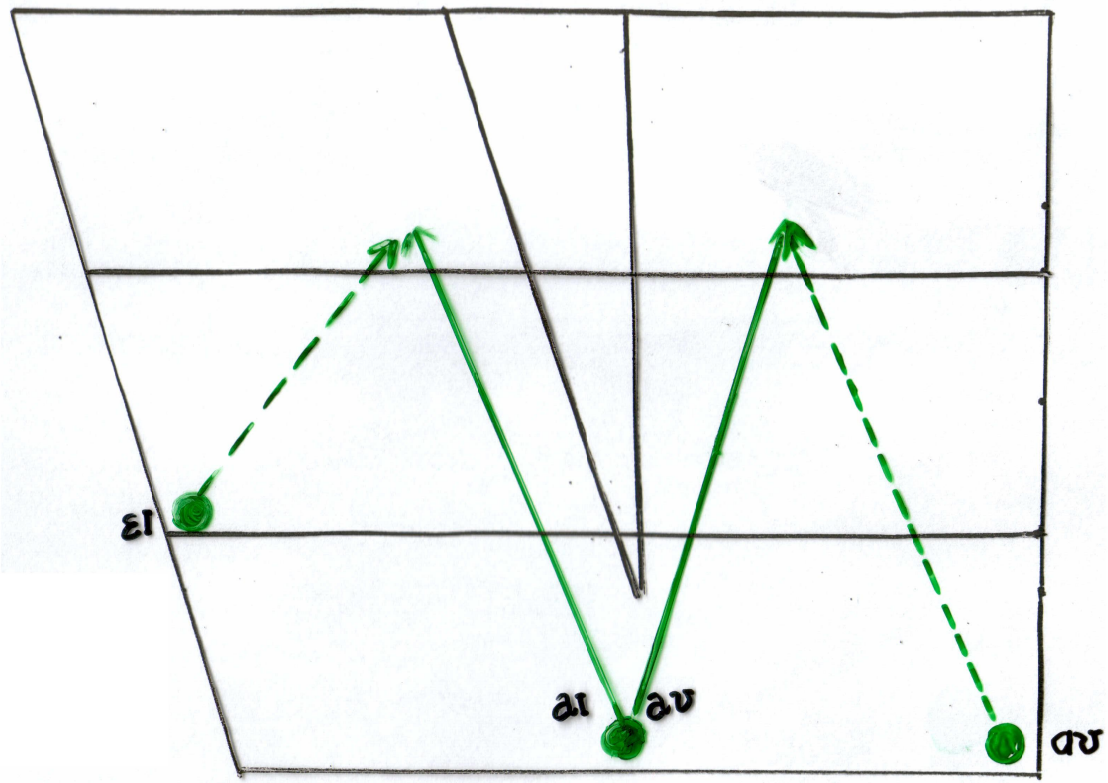
The Arabic pure vowels-





The French pure vowels.

The English pure vowels
ɑ:
ɒ
ɔ:
ʊ
u:
ʌ
ə
ɜ:
e
æ
ɪ
i:



The Arabic closing diphthongs -

The English closing diphthongs

CONCLUSION

Once the description of the vocalic systems are put side by side, we have to be aware of the risk of making wrong predictions about the errors and the form of errors: a vocalic sound is likely to be distorted or not perceived by the learner because it is missing in his mother tongue. But seeing closer, we may find out that it is similar to a variant vowel and the teacher should take some advantage from this fact. Let us take as an example the vowel /e/ of "bed". We may think that the Arabic speaking students will have some difficulties in pronouncing it but it may be compared with the variant of the Arabic /a/ found in "أبي " *(father)*, /ebi:/ or /ɛbi:/. Certain distortions are nevertheless likely to be made sometimes because of a lack of training of the organs -specially the tongue and the lips- not used to move the right way to produce a given sound. The predictive capacity of contrastive analysis is all the more questionable because four languages are interfering and sometimes the way these laguages influence each other may be amazing and not easily predictable: considering the sequence V+/n/ which exists in L1 (dialectal Arabic) and L2 (Standard Arabic), we may think that our learners would not have any problem with this realisation in L4 (English). But this would be underestimating the importance of L3 (French) where the visual representation of the sequence V+/n/ corresponds to the representation of the French nasalised vowels /ɛ̃/, /ɑ̃/, /œ̃/ and /õ/.

CHAPTER III

ERROR ANALYSIS

CHAPTER III

ERROR ANALYSIS

INTRODUCTION

Once the different vocalic systems have been described, a particular attention will be paid to the learners' errors in the present chapter. Their nature, number and frequency are displayed in tables which are followed by graphs showing that this frequency changes according to the tests the learners were subjected to. In the comments, an attempt is made to determine their cause and the findings are compared in order to see to what extent C.A. can be predictive. Spectrograms of the distortions (first in the whole word then in isolation) are given to comfirm the nature of the distortion perceived by the ear. Spectrograms of some French vowels and their acoustic features are shown to allow and make the comparison easier. When a sound is not pronounced by a student, it is represented by a dash (-) in the tables.

III.1. Vowel + /n/

As seen in the contrastive analysis of L1 and L2 - that is to say dialectal Arabic and standard Arabic there is no nasalised vowels and it was very hard for children to pronounce them when starting to learn French. We personally observed that even children of about three or four years, who had no idea at all about the spelling of French, said /bɔn'dʒur/ for "bonjour" instead of /bõ'ʒur/. The children perceive the nasalisation but are not yet able to produce it. Few years later, the influence of French is very strong because French is the first language, using the same spelling system as English (Latin characters), the learner is in contact with. The same children are going to realise the

sequence V+/n/ as a nasalised vowel and this despite the lack of nasalised vowels in Arabic.

III.1.1. V+/n/ initial

In our study, the sequence v+/n/ initial occurs in <unusual> and <information> which are simple words and familiar to the students because very often used. We think that it is the reason why the number of distortions is rather low.

III.1.2. V+/n/ medial

The selected words are:*" London ", " linguistics ", " prevent ", " fantastic ", " sense ", " appearance ".*

III.1.3. V+/n/ final

"upon", " London", "cotton", "information", "electrician".

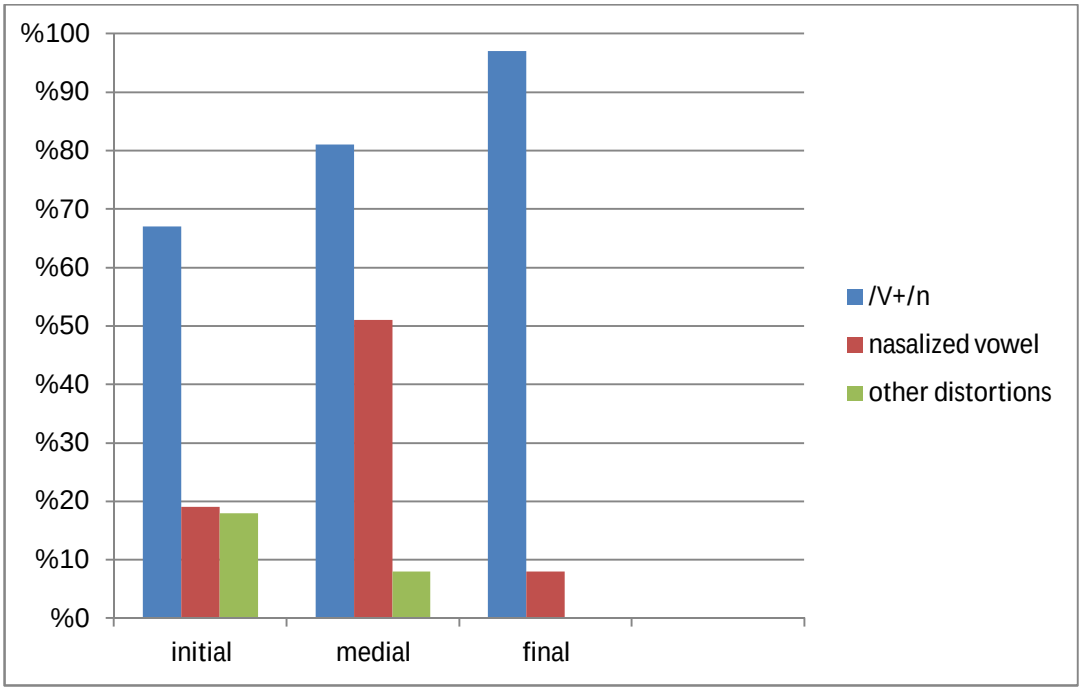
In this position the sequence v+/n/ is correctly pronounced and the few distortions (3%) are found in words whose spelling is identical to the one of French words. These distortions disappear totally in the oral reproduction when the subject imitates the pronunciation heard.

III.1.4. Realisations of the sequence vowel + /n/

III.1.4.1. Loud reading

		V+/n/	Nasal	___	CVC
V+/n/	Initial (104)	67 (64%)	19 (18%)	6(6%)	12 (12%)
	Medial (312)	253 (81%)	51 (16%)	4 (1%)	4 (1%)
	Final (260)	252 (97%)	8 (3%)	/	/

Table 6 – The sequence vowel + /n/. Number and rate of distortions in loud reading

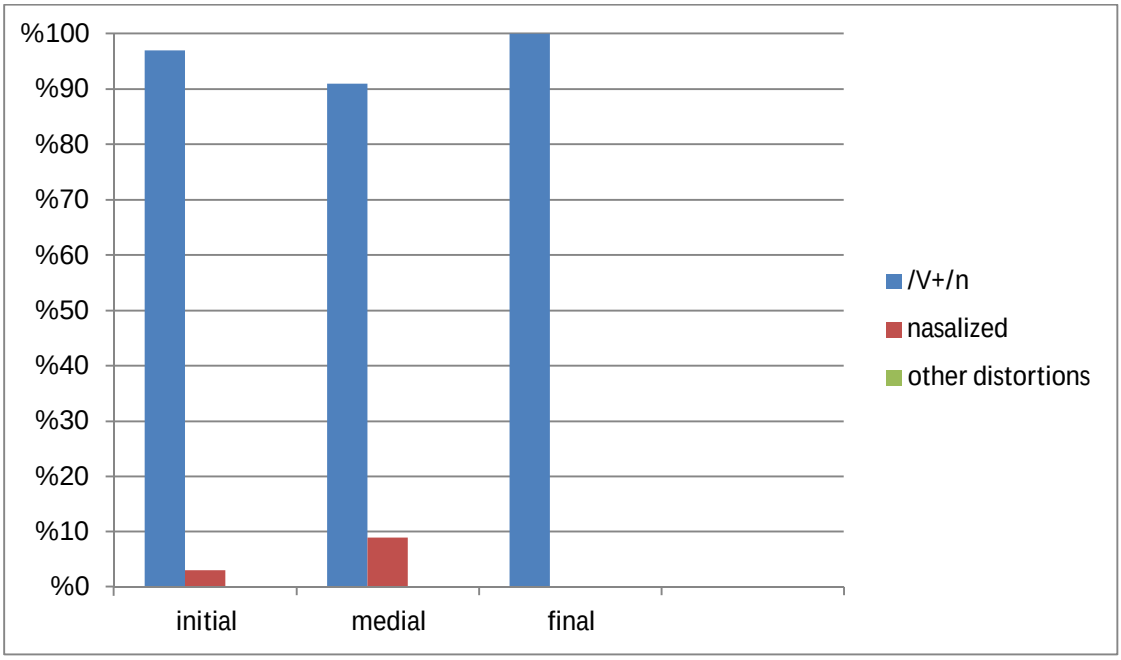


Graph 1- rate of distortions in loud reading (V+/n/)

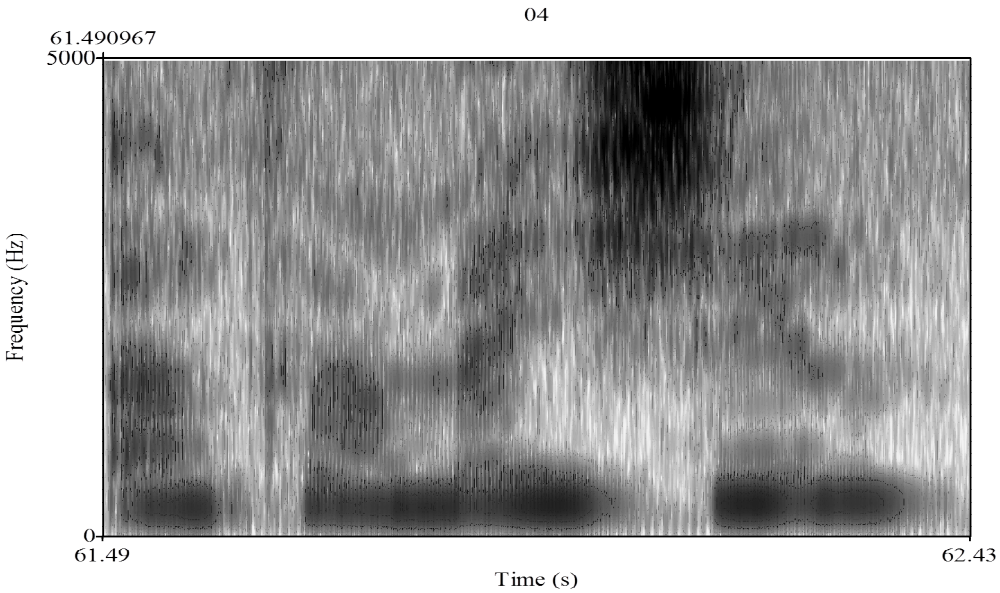
III.1.4.2. Oral reproduction

V+/n/		V+/n/	nasal	-	CVC
	Initial (104)	102 (97%)	2 (3%)	/	/
	Medial (312)	285 (91%)	27 (9%)	/	/
	Final (260)	260 (100%)	/	/	/

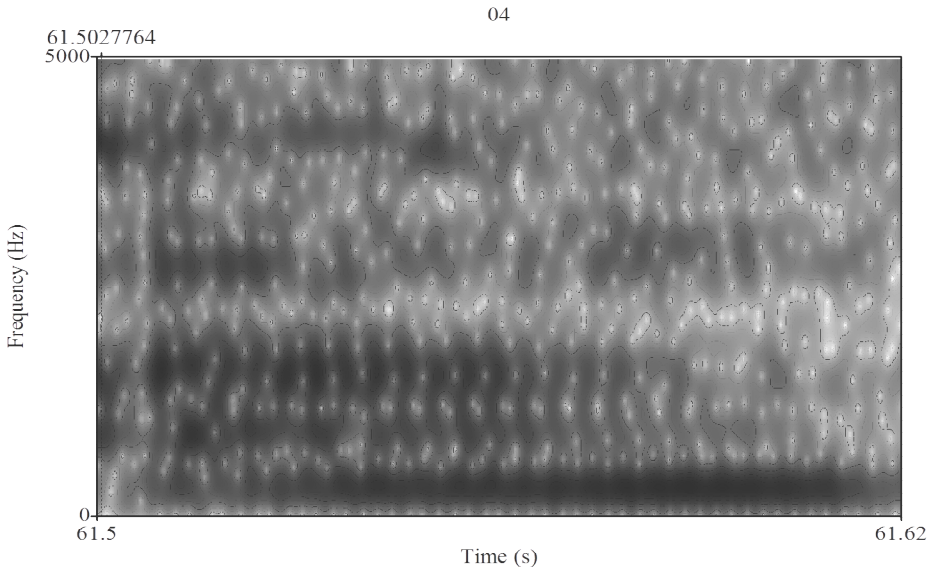
Table 7 - The sequence vowel + /n/. Number and rate of distortions in oral reproduction



Graph 2 - rate of distortions in oral reproduction (V+/n/)

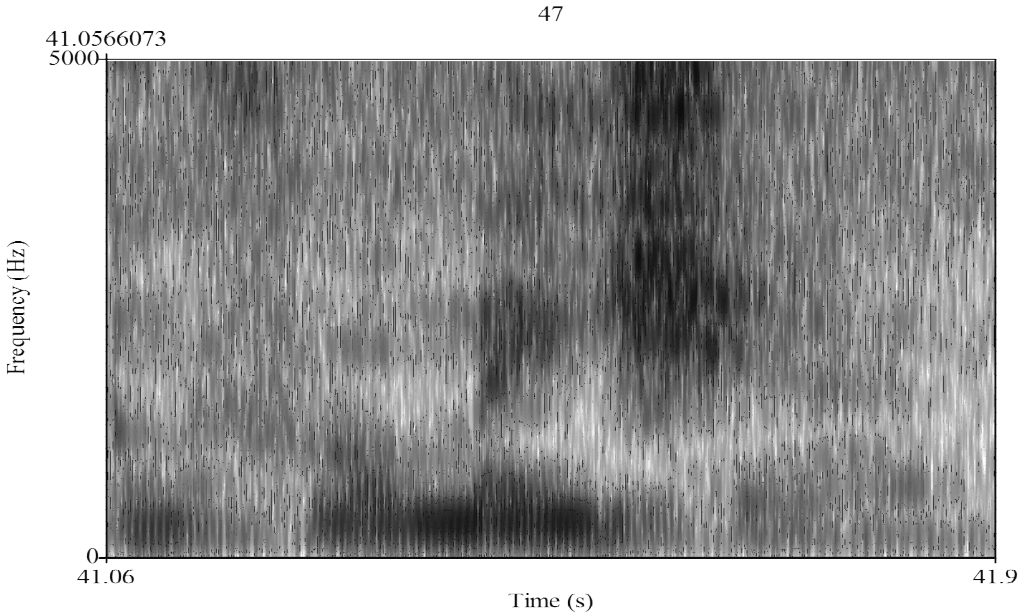


Spectrogram 1: The word " information" said by a female speaker (n° 04)

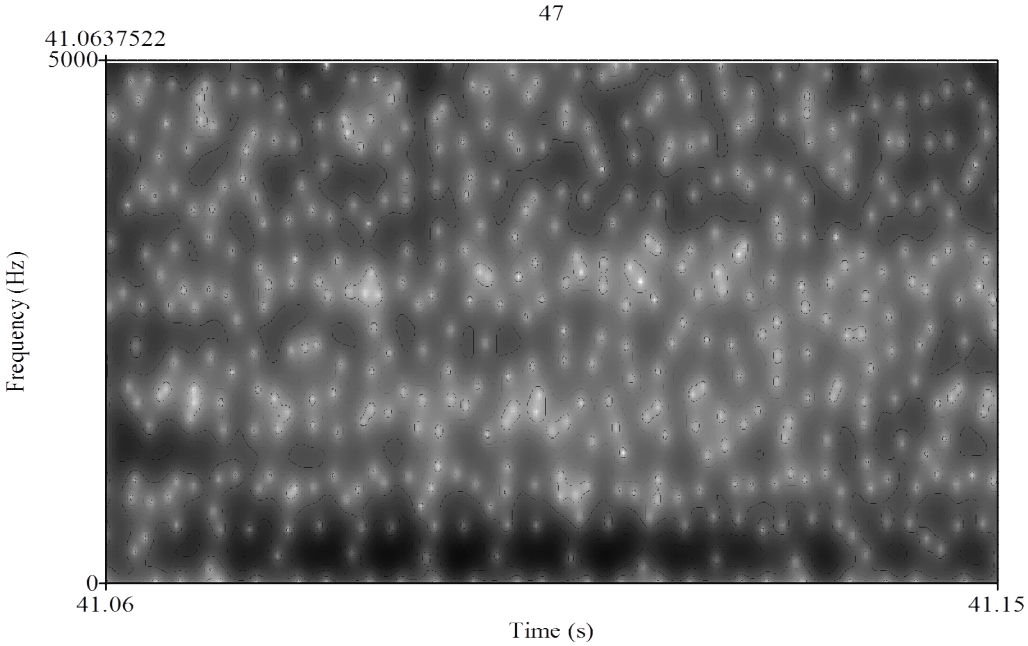


Spectrogram 2: The sequence <in> in "information" by a female speaker (n° 04) realised as /ɛ̃/

F1 : 732 F2 : 1556 F3: 2787

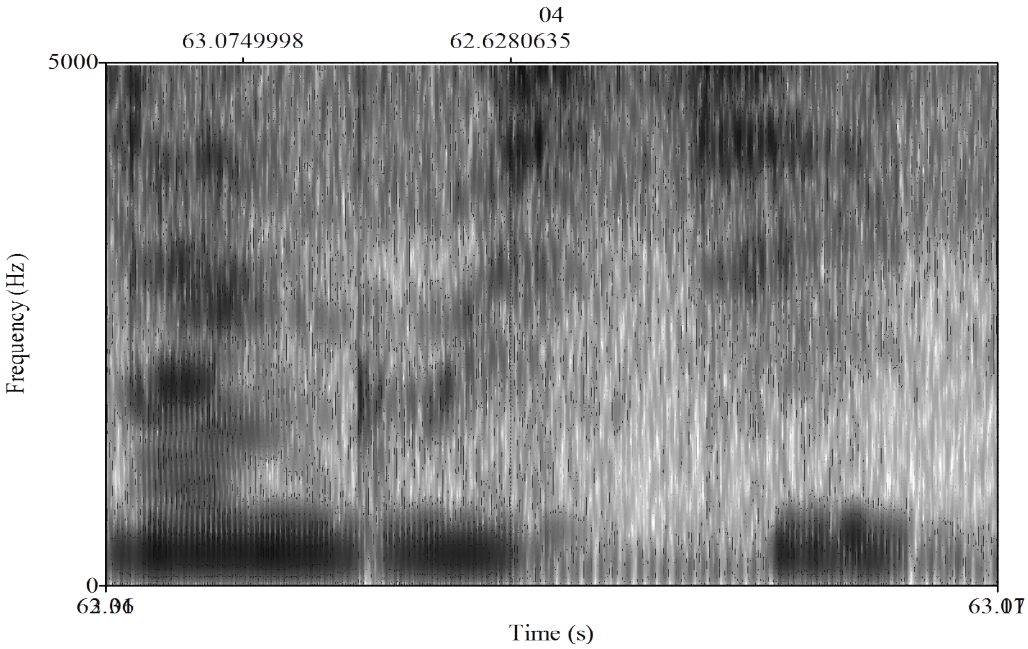


Spectrogram 3: The word " information" said by a male speaker (n° 47)

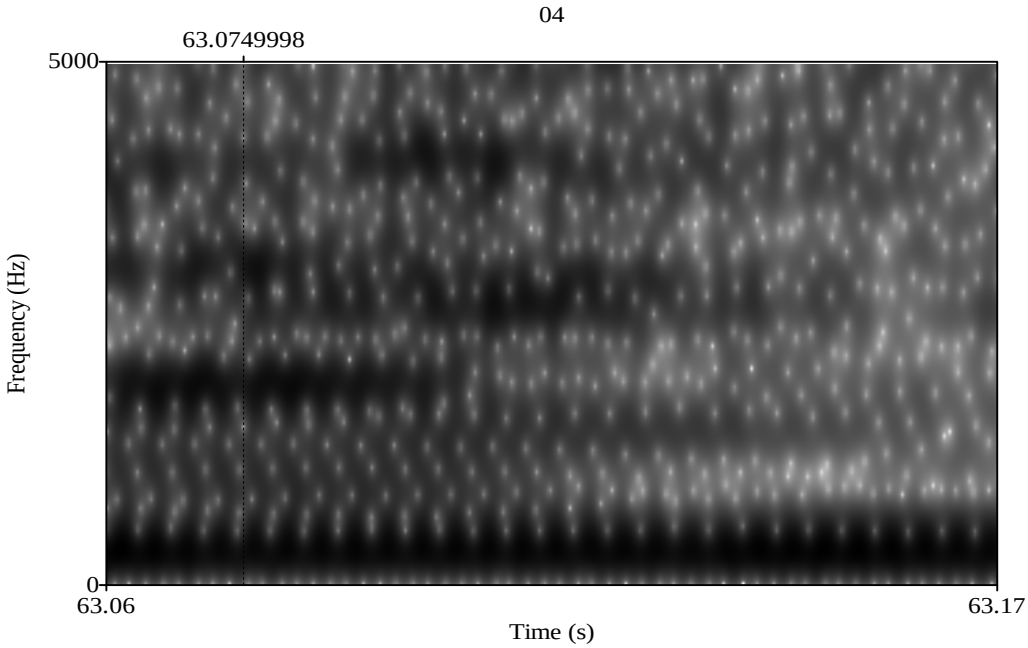


Spectrogram 4: The sequence <in> in "information"said by a male speaker (n° 47) realised as /ɛ̃/

F1: 616 F2: 1508 F3: 2687



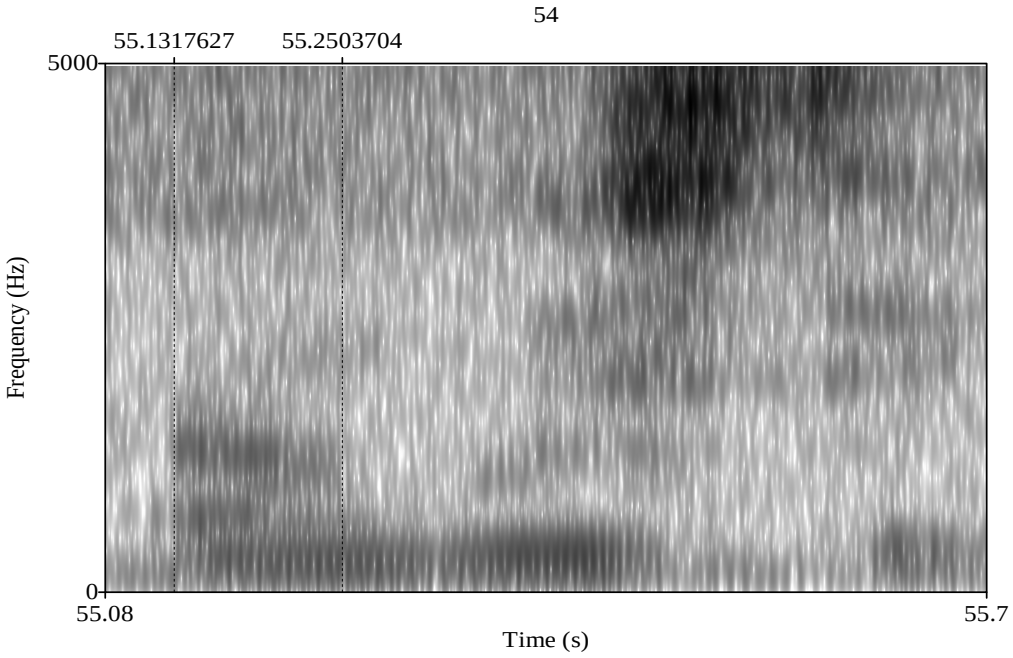
Spectrogram 5 : The word "linguistics" said by a female speaker (n° 04)



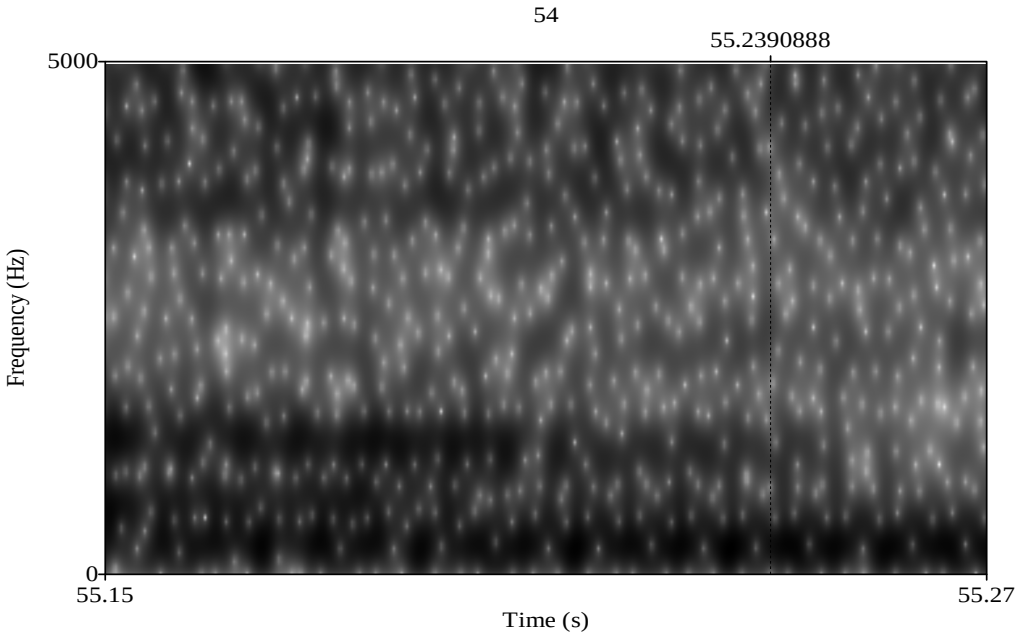
Spectrogram 6: The sequence <in> in "linguistics"said by a female speaker (n° 04)

realised as /ɛ̃/

F1: 521 F2: 1954 F3: 2910



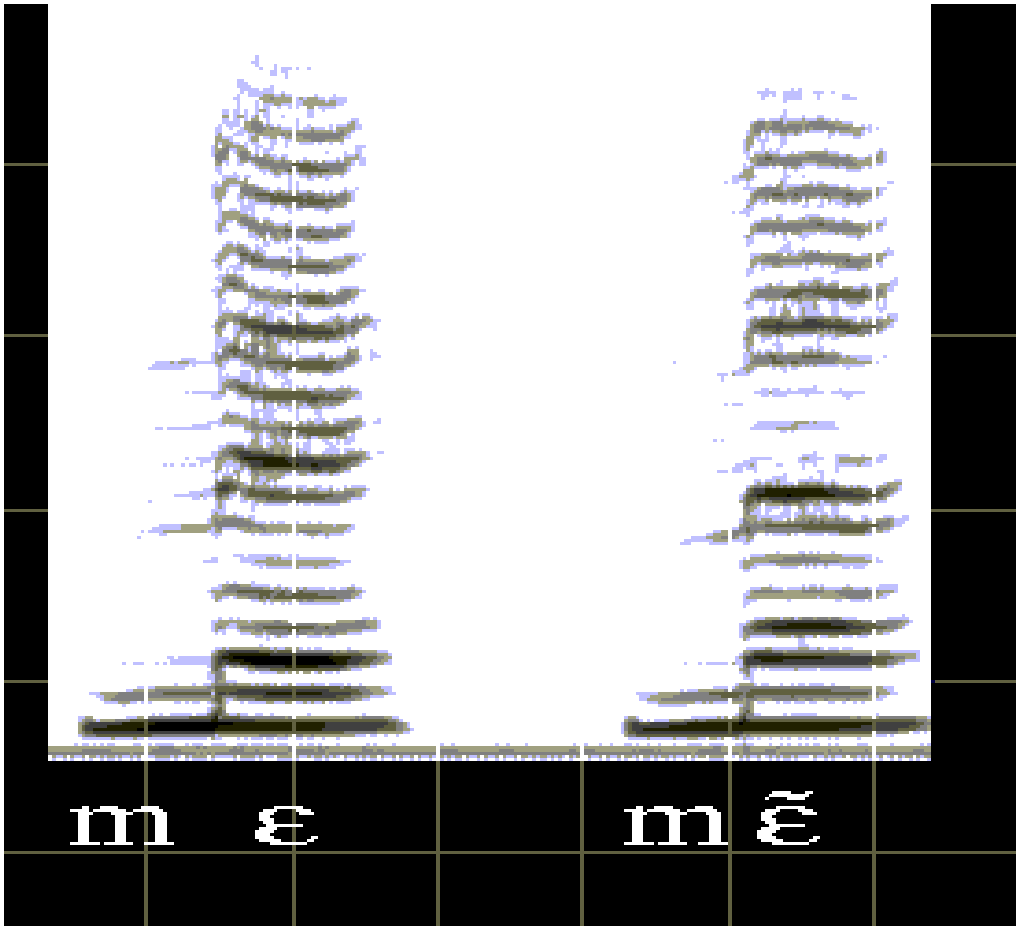
Spectrogram 7 : The word "linguistics" said by a male speaker (n° 54)



Spectrogram 8: The sequence <in> in "linguistics"said by a male speaker (n° 54)

realised as /ɛ̃/

F1: 616 F2: 1445 F3: 2623



Spectrogram 9: The French nazalised vowel / ɛ̃ / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

As shown above in table 6, the distortions' rate of the sequence "vowel + <n>" is relatively low but the interference is present. The formants of the French vowel / ɛ̃ / and the formants of the sequence produced by about 15% of the students are similar when initial or medial.

	F1	F2	F3
French vowel /ɛ̃/	600	1470	2770
Spectrogram 2 <in> in "information"	732	1556	2787
Spectrogram 4 <in> in "information"	616	1508	2687
Spectrogram 6 <in> in "linguistics"	521	1954	2910
Spectrogram 8 <in> in "linguistics"	616	1445	2623

III.2. Realisation of < er > in 'perform'

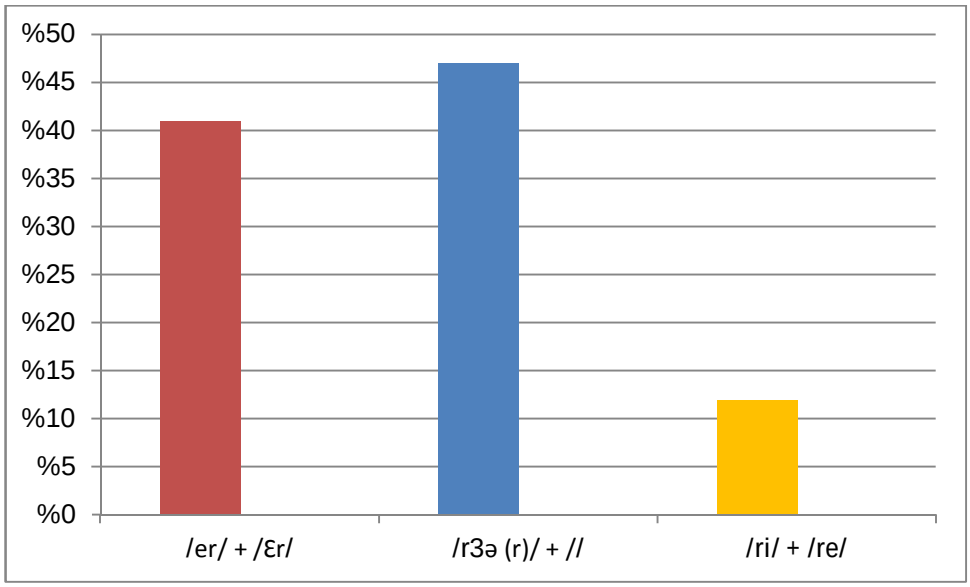
The pronunciation of the word "perform" is another striking proof of the negative transfer of French. 41% of the students probably saw in this word the french word "performant" and we know that the letter < e > is pronounced /ɛ/ or /e/ of "bed" when followed by two consonants.

Once again the number of distortions is considerably reduced when a model of pronunciation is provided and 92% of the participants pronounced the sequence /ə/

III.2.1. Loud reading

	/er/	/ɛr/	/ə (r)/	/ɜr/	/ri/	/re/
Perform (52)	17 (31%)	5 (10%)	18 (35%)	6 (12%)	3 (6%)	3 (6%)

Table 8 – The sequence <er>. Number and rate of distortions in loud reading

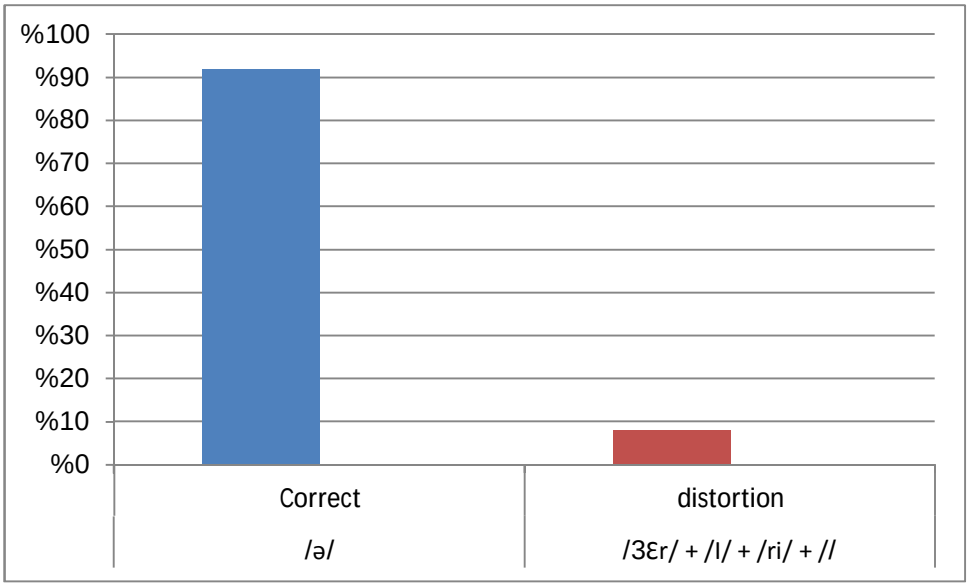


Graph 3 - rate of distortions in loud reading (<e + r>)

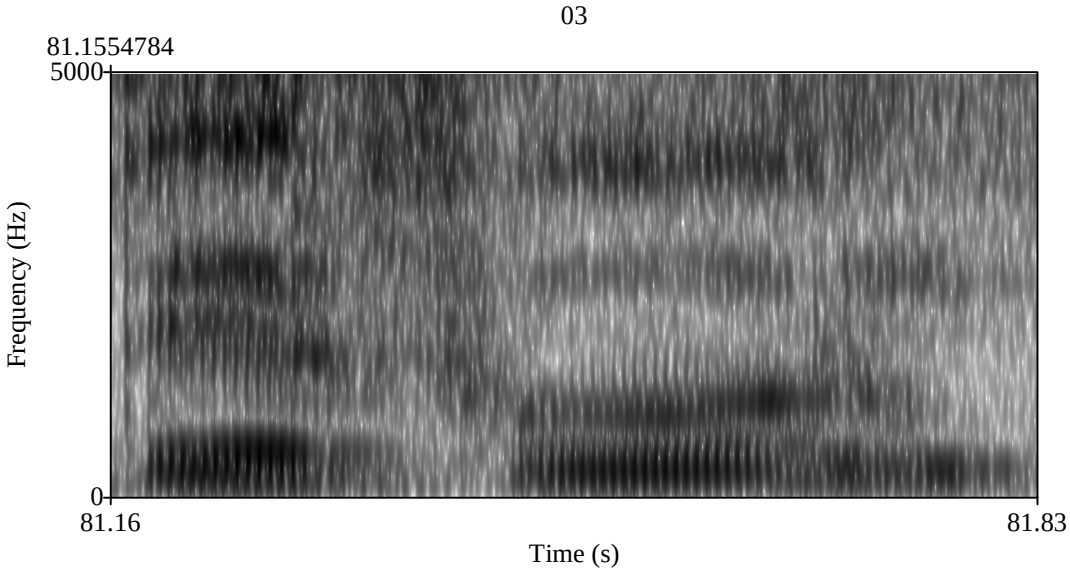
III.2.2. Oral reproduction

	/ə/	/ɛr/	/ɪ/	/ri/	/ɜ/
Perform	48 92%	1 2%	1 2%	1 2%	1 2%

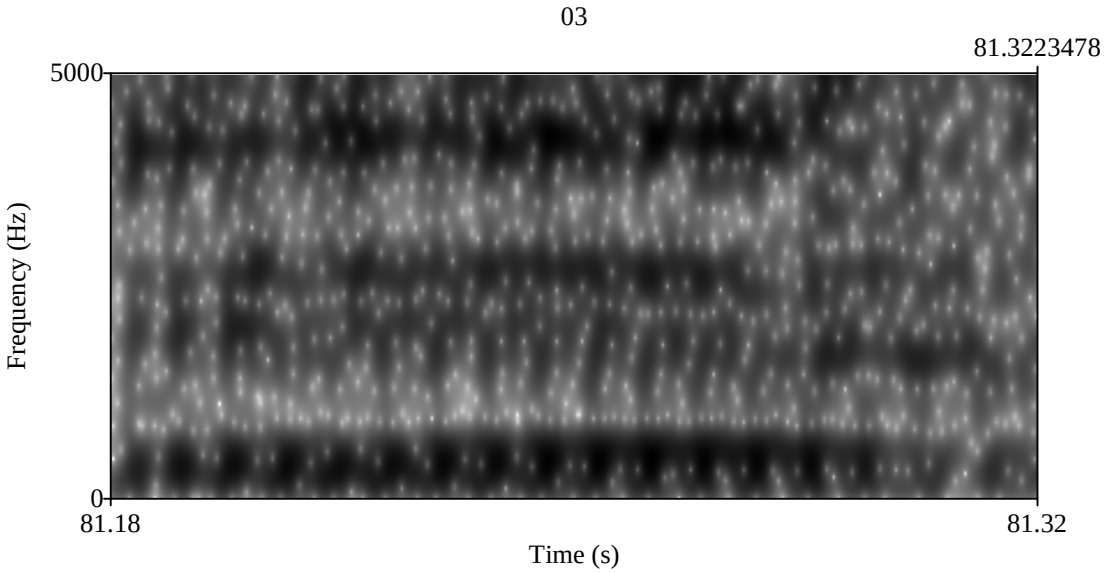
Table 9 – The sequence <er>. Number and rate of distortions in oral reproduction



Graph 4 - rate of distortions in oral reproduction (<e + r>)



Spectrogram 10 : The word "perform" said by a male speaker (n° 03)



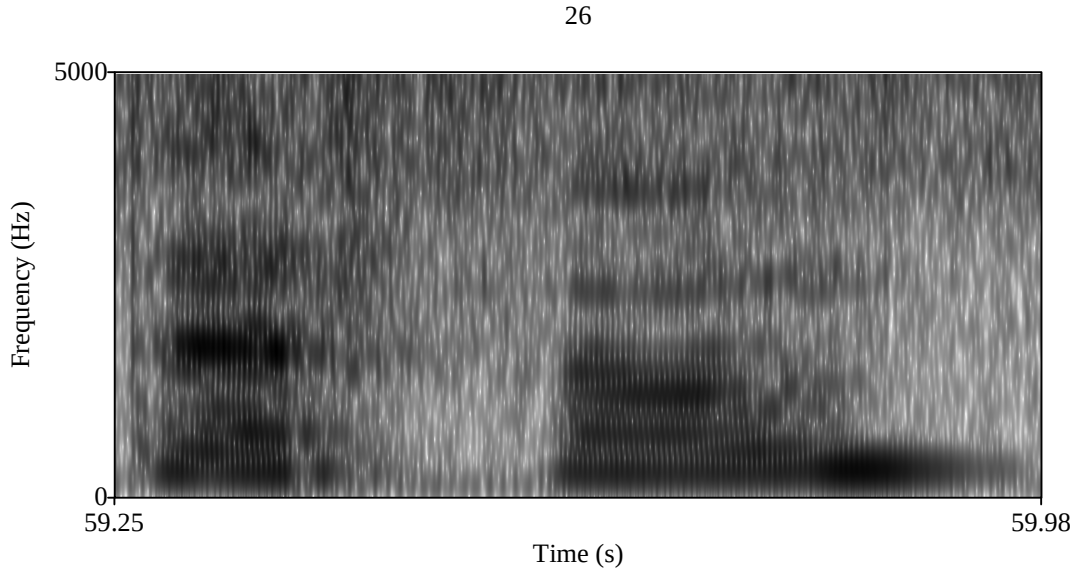
Spectrogram 11 : The sequence <er> in "perform" said by a male speaker(n° 3)

realised as /ɛr/

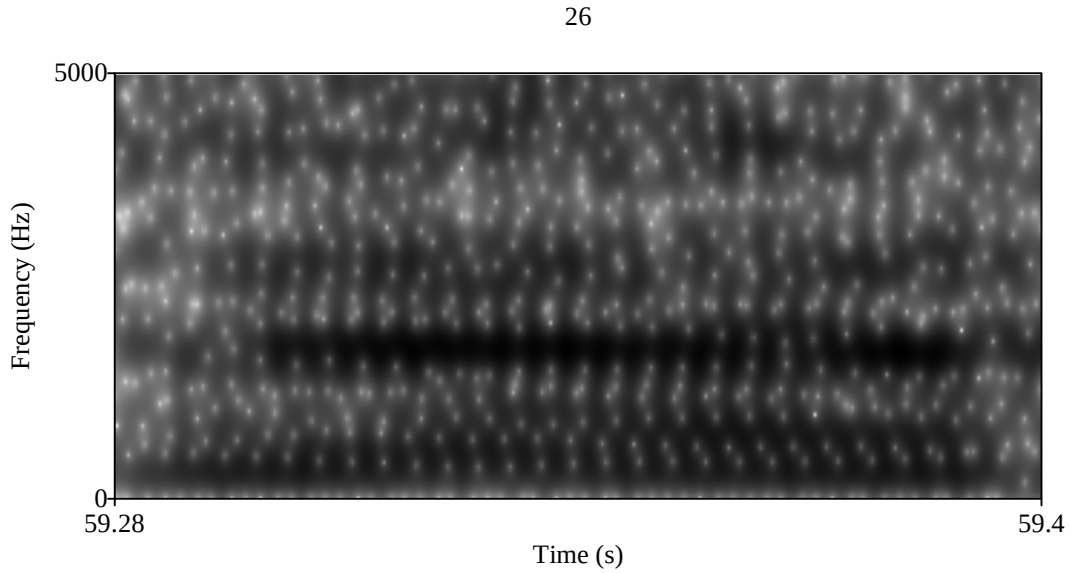
F1 : 520

F2 : 1795

F3 : 2687



Spectrogram 12: The word "perform" said by a female speaker(n° 26)



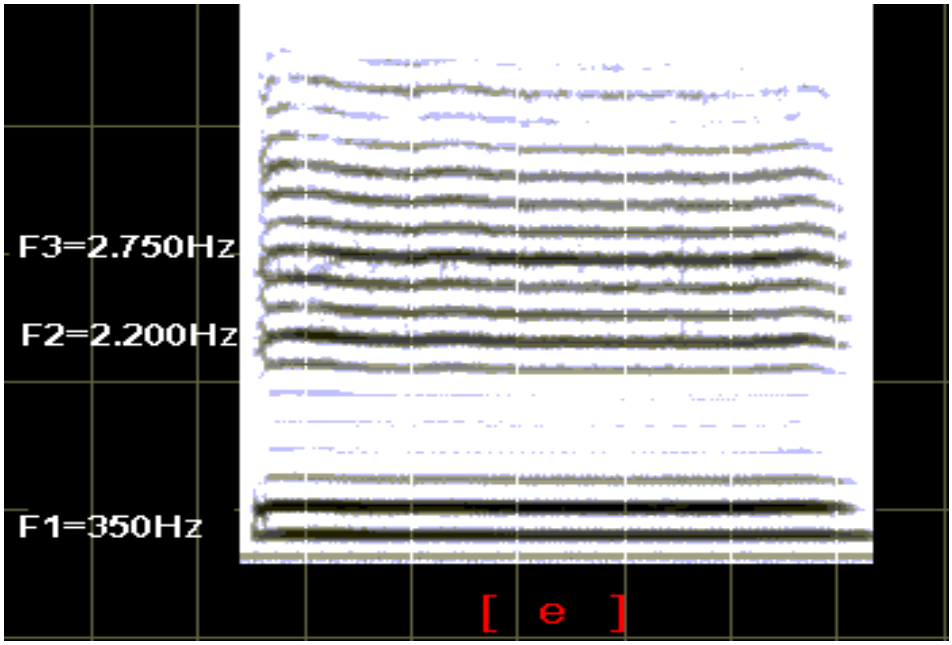
Spectrogram 13: The sequence <er> in "perform" said by a female speaker

(n°26) realised as /er/

F1 : 520

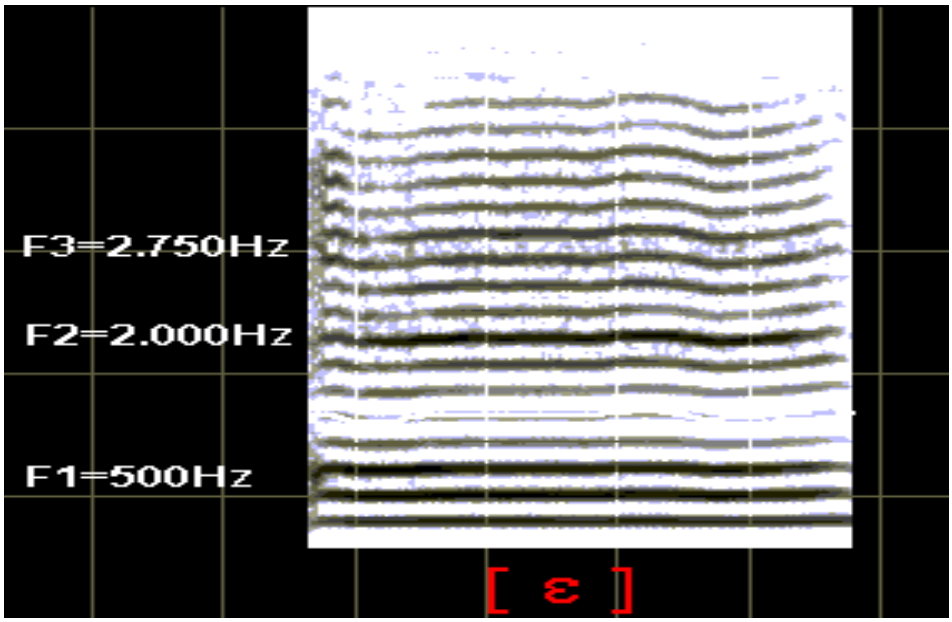
F2 : 1763

F3 : 2750



Spectrogram 14 : The French front vowel / e / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm



Spectrogram 15 : The French front vowel / ɛ / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

III.3. Realisations of the grapheme <i>

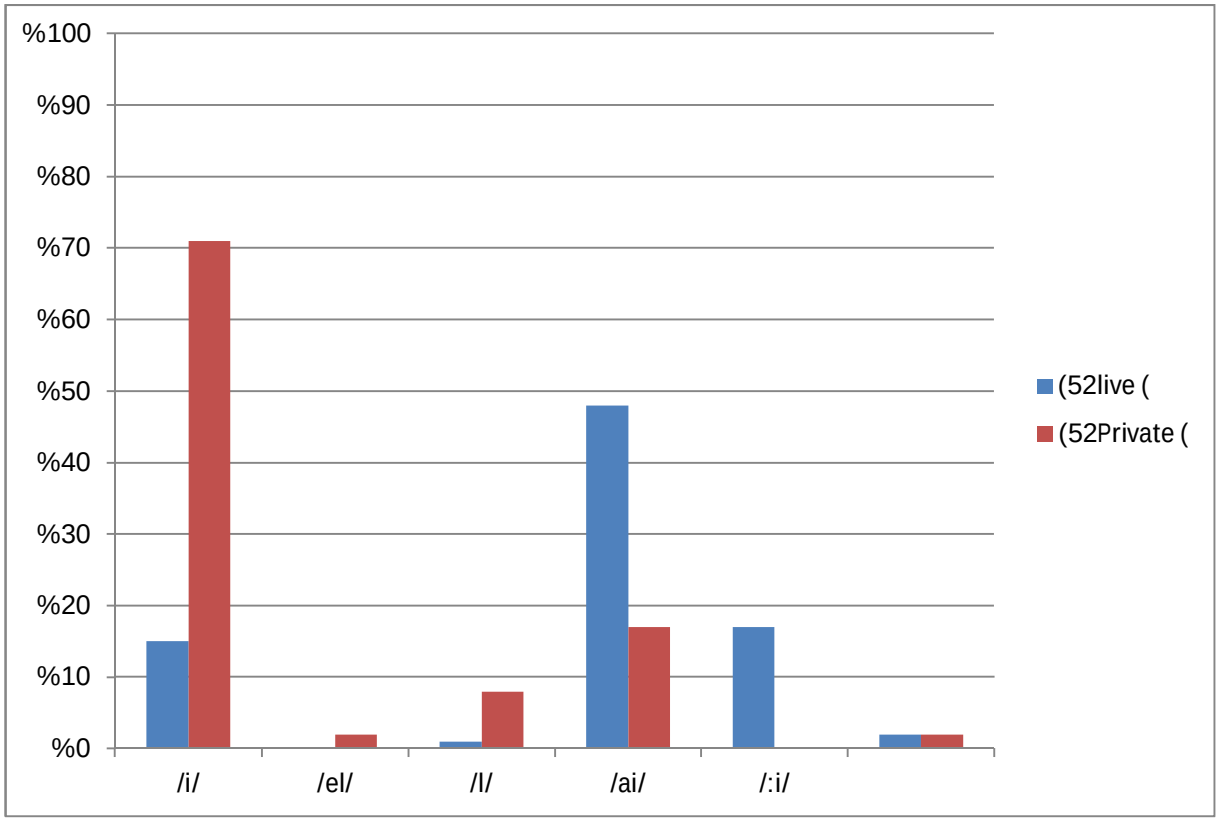
In the word "*live*" the vowel is pronounced /i/ (23%) and /i:/ (6%). This pronunciation may be due to the influence of the spelling or to a slight deviance from the norme /ɪ/ - a more open vowel /e/ or /ɛ/-.

In "*private*" the rate of distortions is eloquent: 79%, < i > is pronounced /i/ (71%) or /ɪ/ (8%), and the influence of French unquestionable (the grapheme <i> is pronounced /i/ in French. When the participants reproduce the words after having been exposed to the RP pronunciation, we note a slump in the number of distortions and even a total disappearance of the distortions.

III.3.1. Loud reading

	/i/	/eɪ/	/ɪ/	/ai/	/i :/	
Live (52)	8 (15%)		9 (1%)	25 (48%)	9 (17%)	1 (2%)
Private (52)	37 (71%)	1 (2%)	4 (8%)	9 (17%)		1 (2%)

Table 10 - <i>. Number and rate of distortions in loud reading

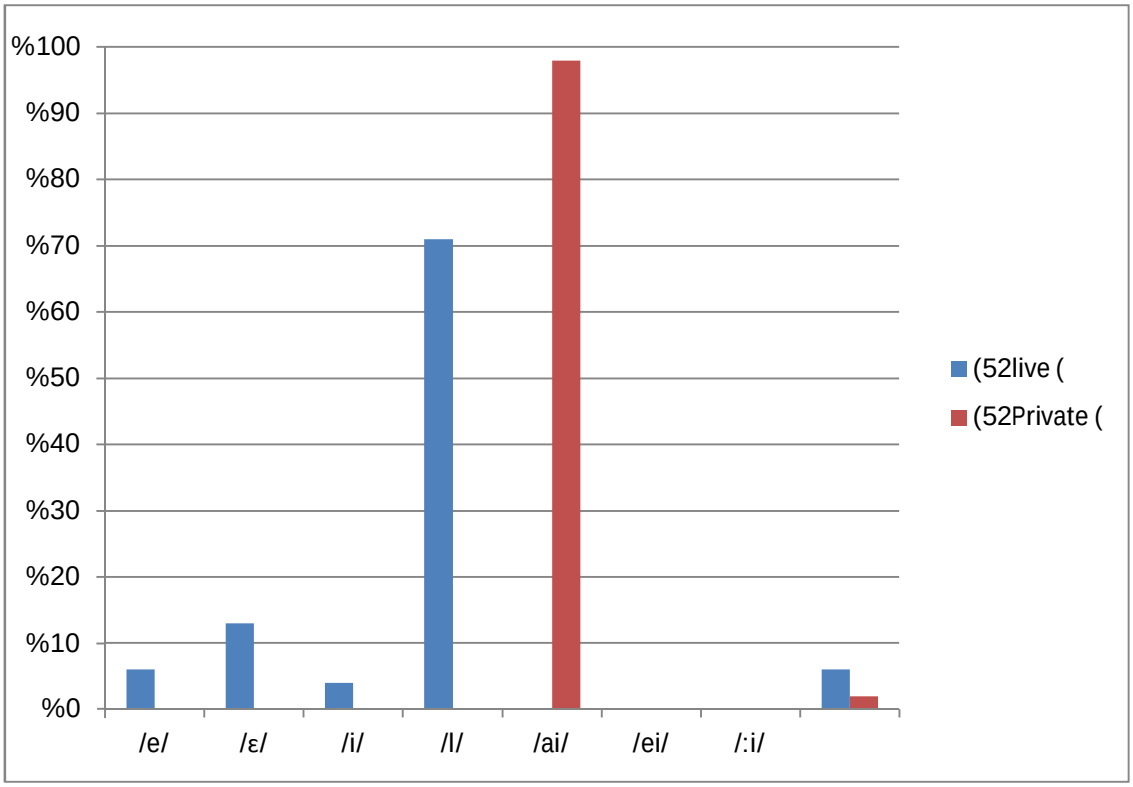


Graph 5 - rate of distortions in loud reading (< i >)

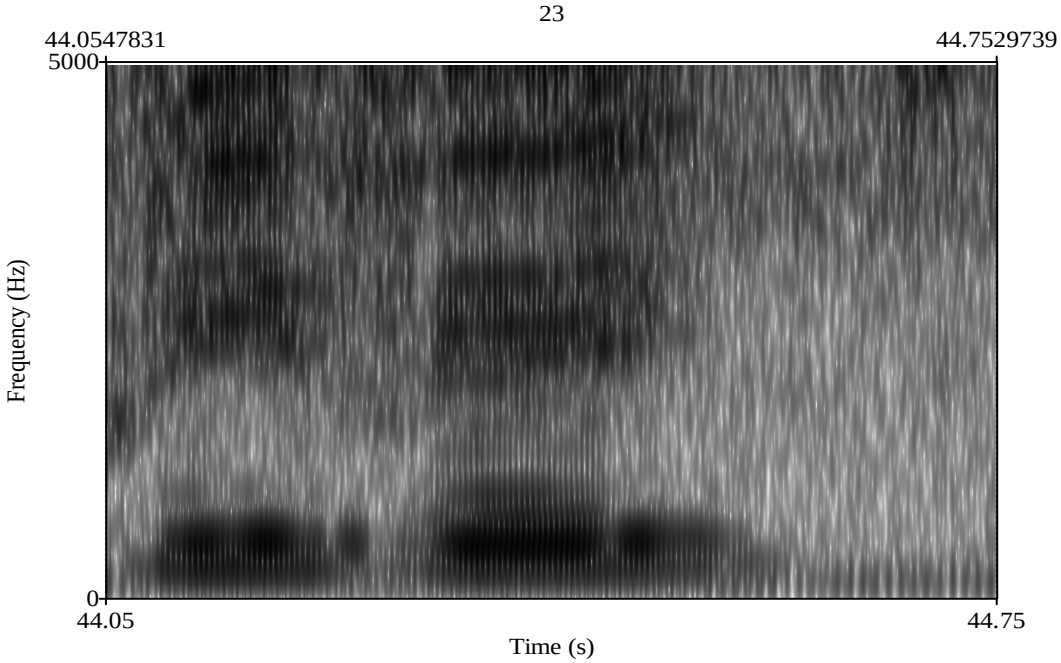
III.3.2. Oral reproduction

	e/ɛ	/i/	/ɪ/	/ai/	/ei/	/i:/	-
Live(52)	3 (6%) / 7(13%)	2 (4%)	37 (71%)				3 (6%)
Private(52)				51 (98%)			1 (2%)

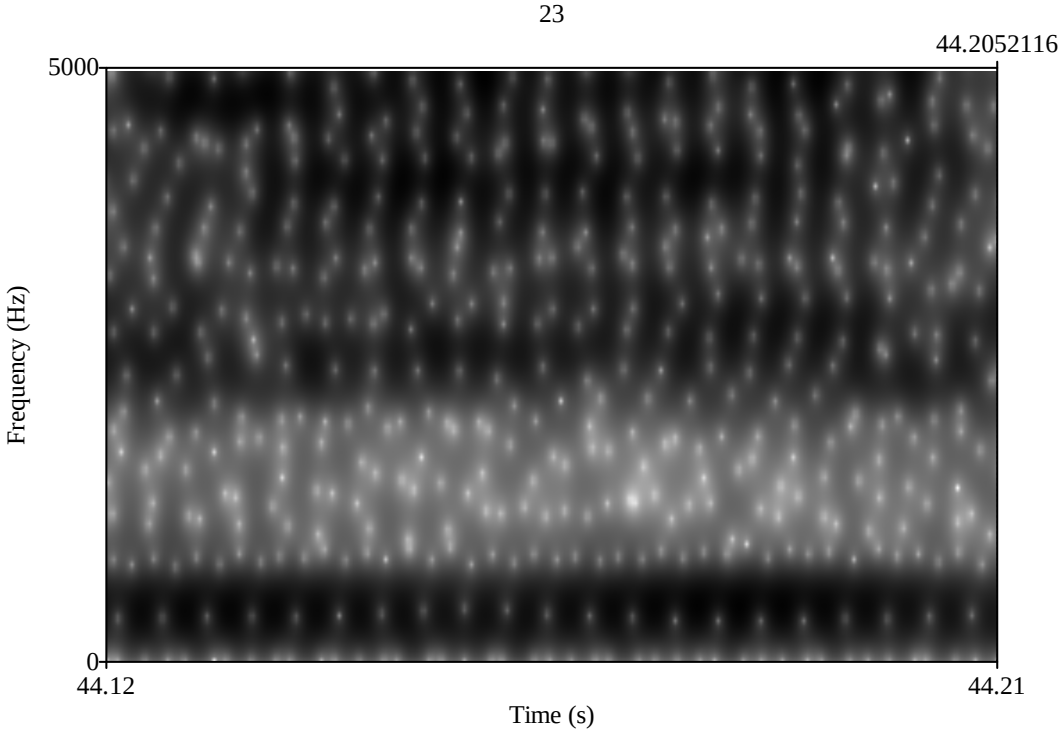
Table 11 - <i>. Number and rate of distortions in oral reproduction



Graph 6 - rate of distortions in oral reproduction (< i >)

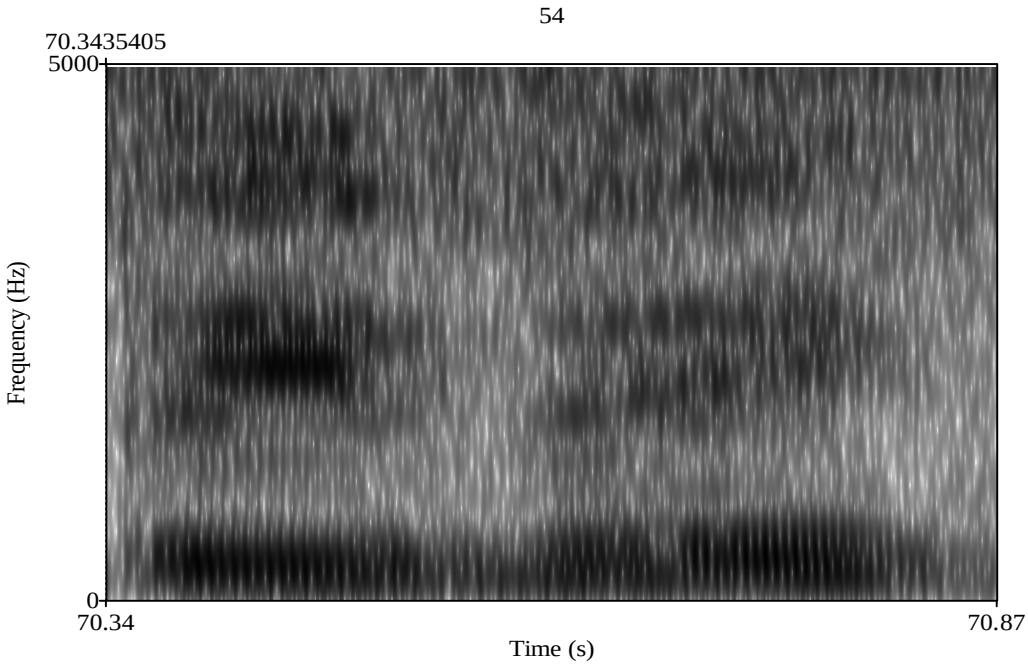


Spectrogram 16: The word "private" said by a female speaker (n° 23)

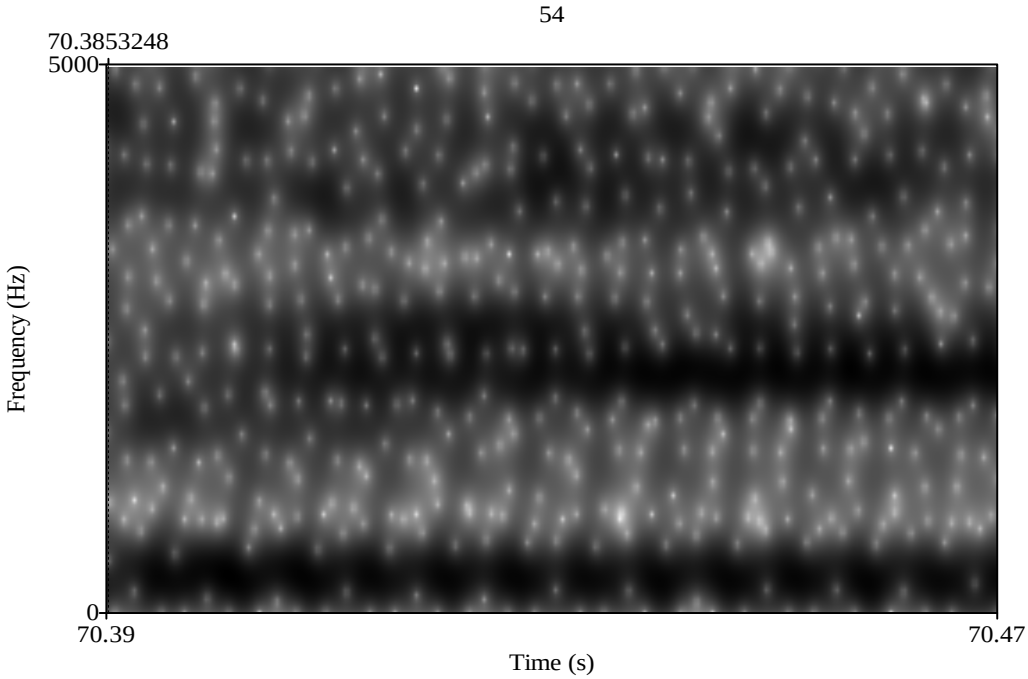


Spectrogram 17 <i>in "private" said by a female speaker(n°23) realised as/i/

F1: 298 F2: 2300 F3: 3069

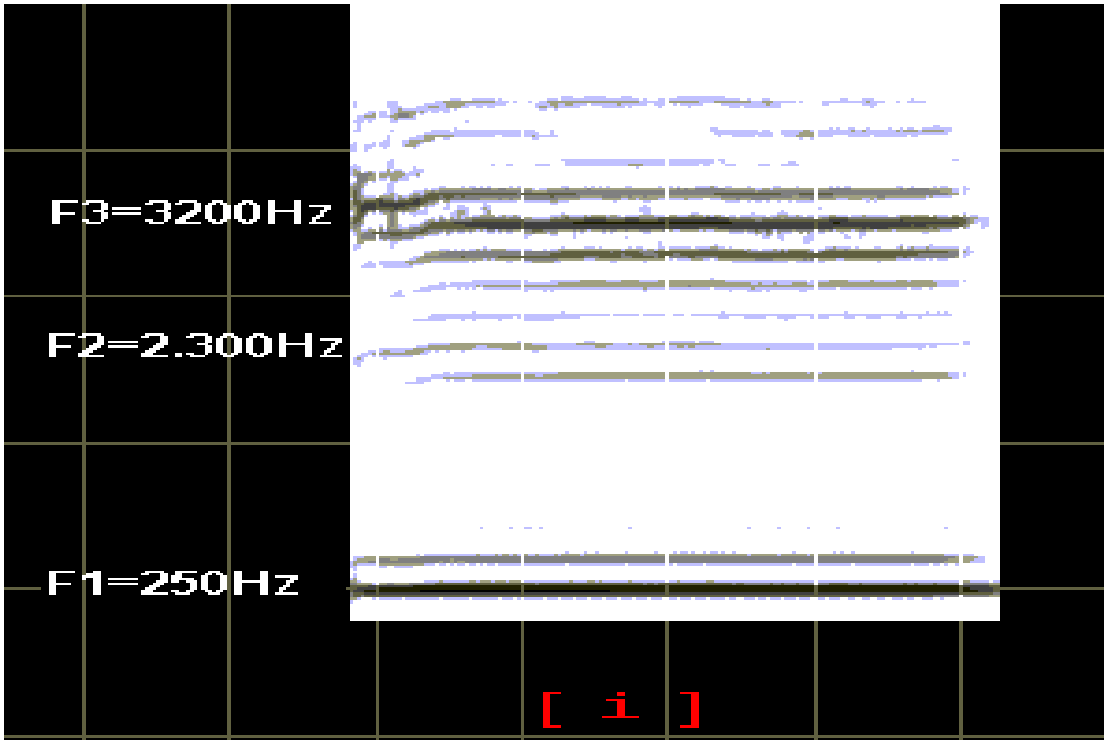


Spectrogram 18 : The word "private" said by a male speaker (n° 54)



Spectrogram 19 <i> in "private" said by a male speaker (n° 54) realised as/i/

F1: 298 F2: 2273 F3: 3278



Spectrogram 20 : The French oral vowel / i / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

Spectrogram 19 clearly shows that the grapheme <i> in the word "private" is pronounced /i/ and not /ai/. The formants of this vowel are almost the same in spectrogram n° 20 which represents the French oral vowel /i/. As displayed in table 10, the rate of this distortion is 71% and puts forward the interference with French.

	F1	F2	F3
French front vowel /i/ of "lit"	250	2300	3200
Spectrogram 19 <i> in"private"	298	2273	3278

III.4. Realisation of the grapheme <a>

III.4.1. When initial

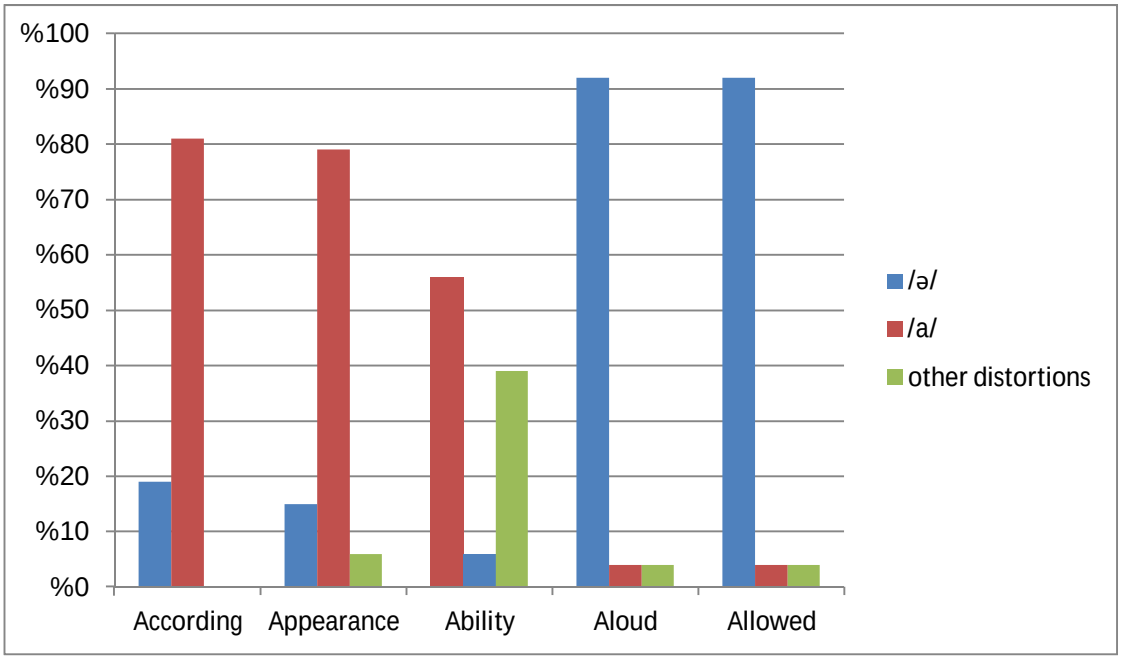
- In the words "*according*", "*appearance*", *"ability*", very few students pronounced it correctly – that means / ə /.
- Most of them pronounced it /a / (81% for "*according*", 79% for "*appearance*" and 56% for "*ability*"). The influence of French is here indeniable.
- For "*ability*" the diphtong /ei / represented 27% of the realisations probably because of the pronunciation of "*able*" /eɪbl / (the word from which it is derived)
- On the contrary for "*aloud*" and "*allowed*" the right sound is heard in 92% of the cases. Perhaps because these words are very frequent and the students familiar with them since the beginning of their studies.

The results of the oral reproduction following the listening to the recorded words are amazing.

The appropriate sound /ə/ was produced in 90% per cent of the utterances and more.

	/a/	/ə/	/ɒ/	/eɪ/	/ɛɪ/	/aɪ/	/æ/	/ɛ/	--
According(52)	42 81%	10 19%							
Appearance(52)	41 79%	8 15%	2 4%						1 2%
Ability(52)	29 56%	3 6%		14 27%	1 2%	1 2%	2 4%	1 2%	1 2%
Aloud(52)	2 4%	48 92%	1 2%						1 2%
Allowed(52)	2 4%	48 92%	1 2%						1 2%

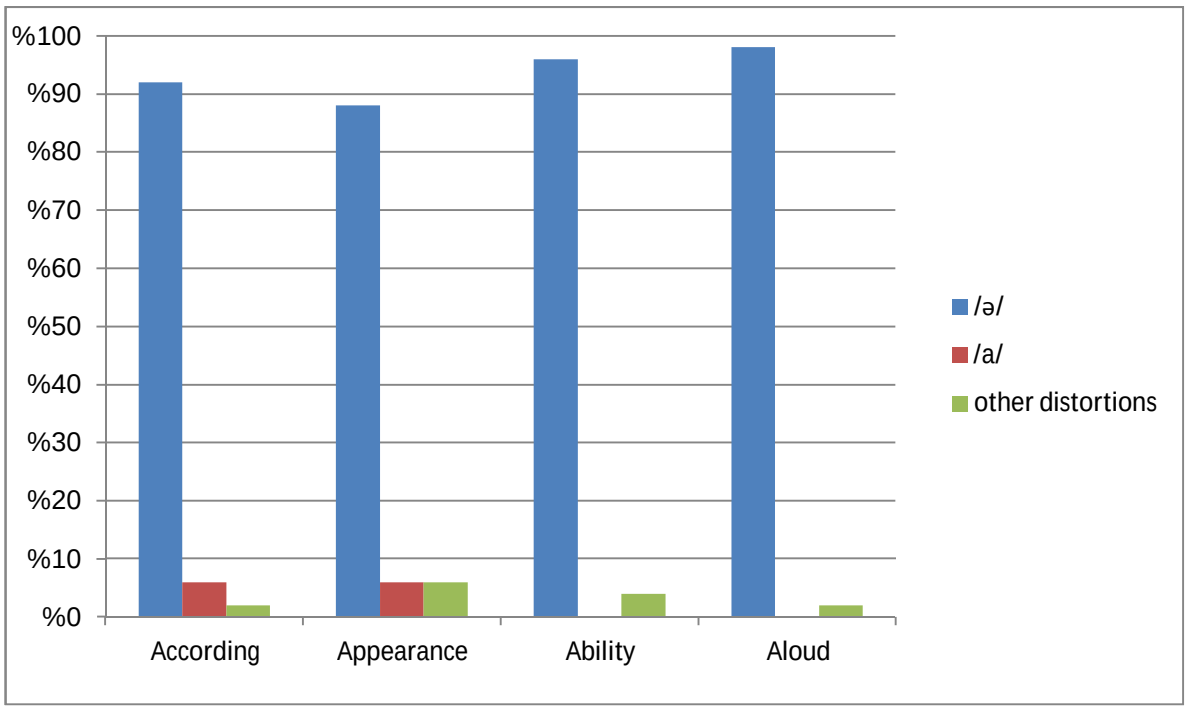
Table 12 - <a> initial. Number and rate of distortions in loud reading.



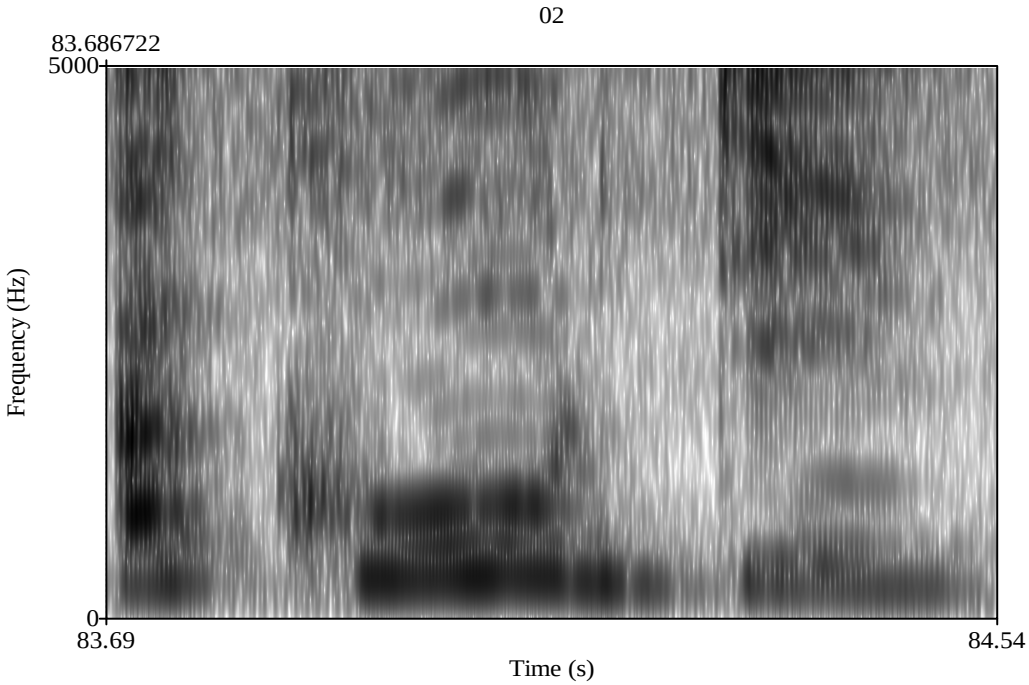
Graph 7 - rate of distortions in loud reading (< a > initial)

	/a/	/ə/	/ɒ/	/ɪ/	/ɛɪ/	/aɪ/	/æ/	/ɛ/	--
According(52)	3 6%	48 92%	1 2%						
Appearance(52)	3 6%	46 88%		1 2%					2 4%
Ability(52)		50 96%		1 2%					1 2%
Aloud(52)		51 98%							1 2%
Allowed(52)		51 98%							1 2%

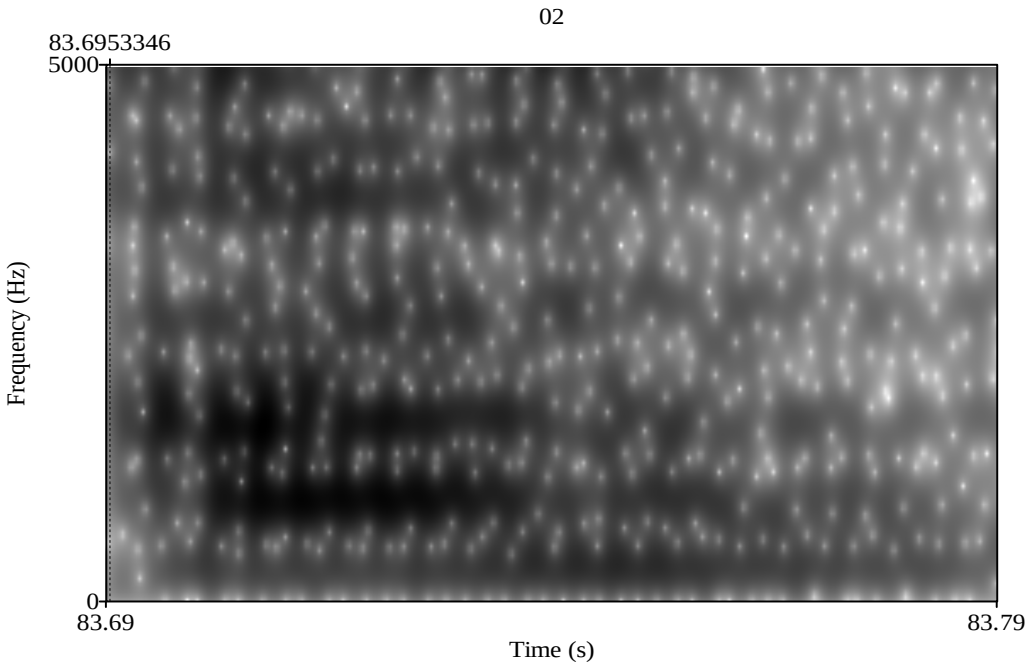
Table 13 - <a> initial. Number and rate of distortions in Oral reproduction.



Graph 8 - rate of distortions in oral reproduction (< a > initial)

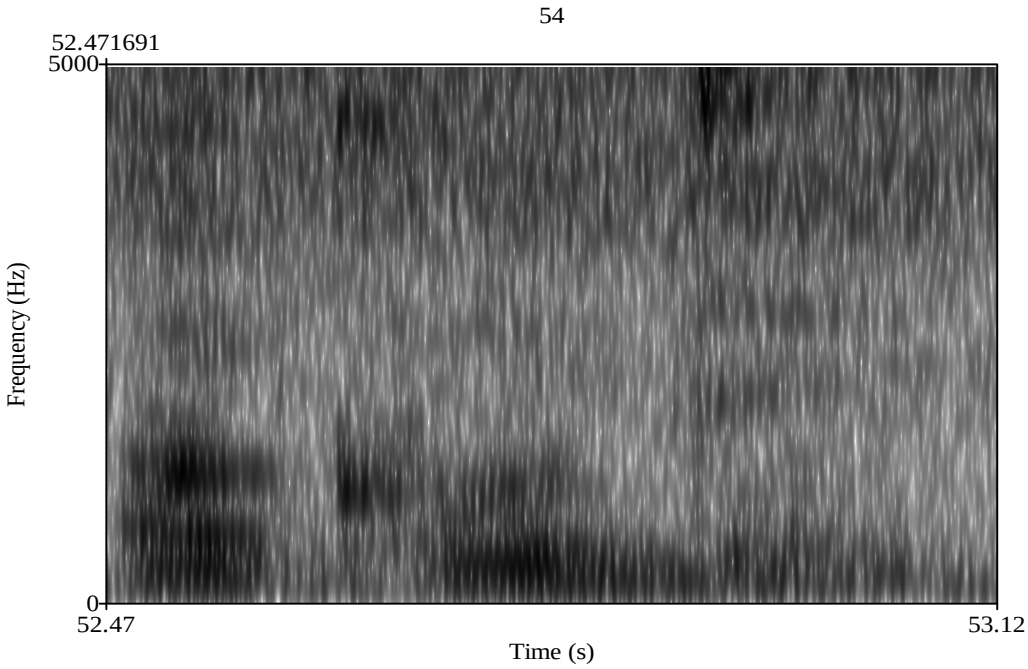


Spectrogram 21 : The word " according" said by a female speaker (n° 02)

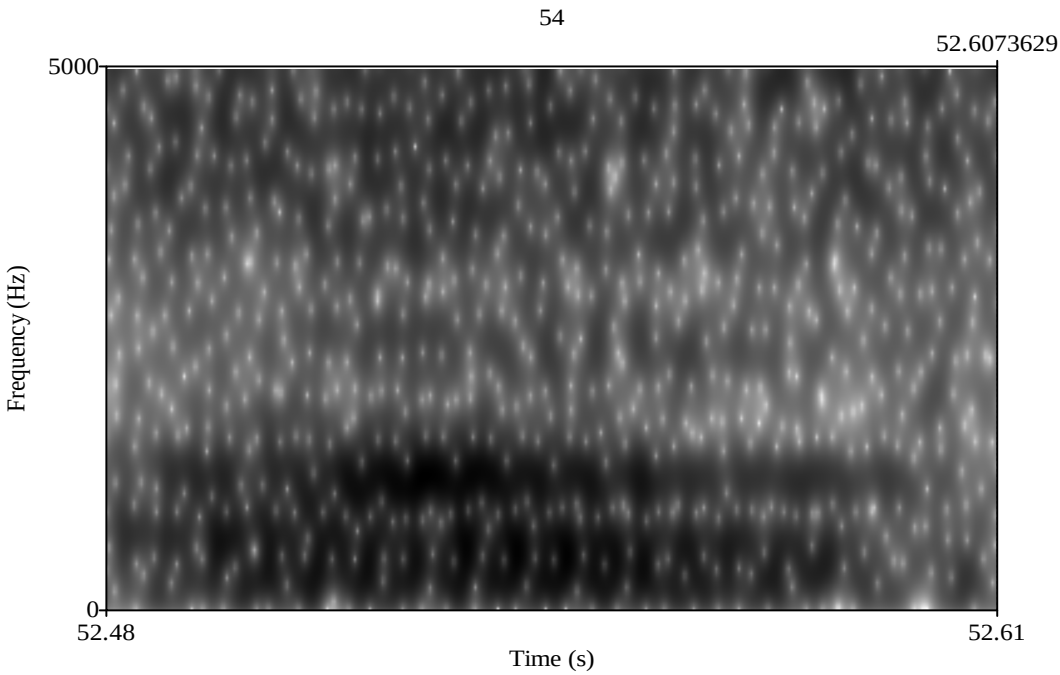


Spectrogram 22 : The vowel <a> in "according" said by a female speaker (n°02) realised as /eɪ/

F1: 871 F2: 1668 F3: 2623



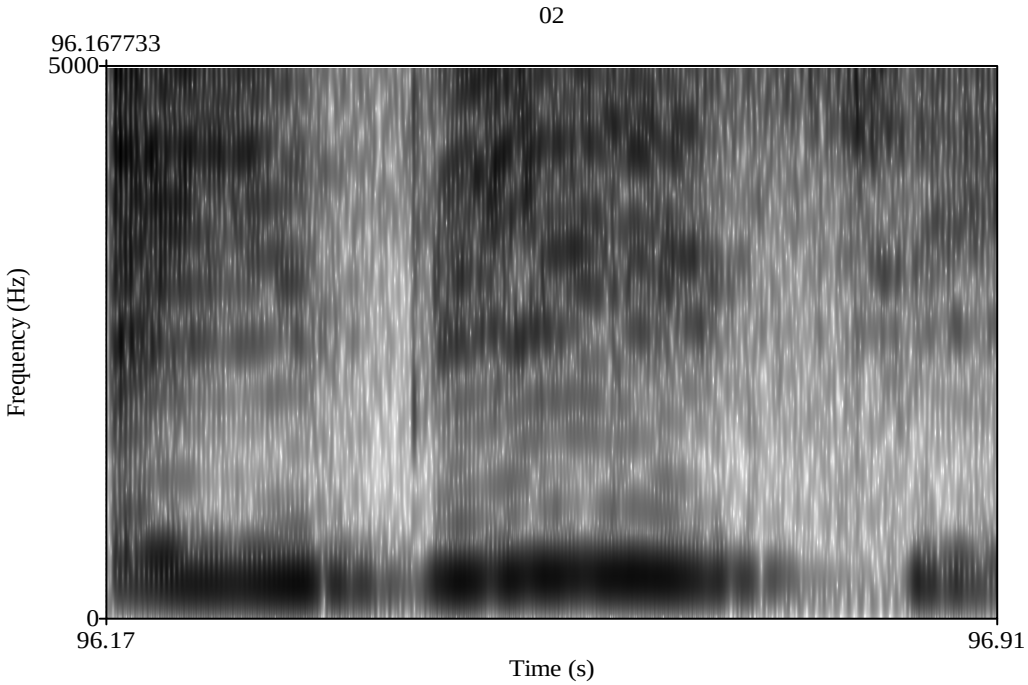
Spectrogram 23 : The word " according" said by a male speaker (n° 54)



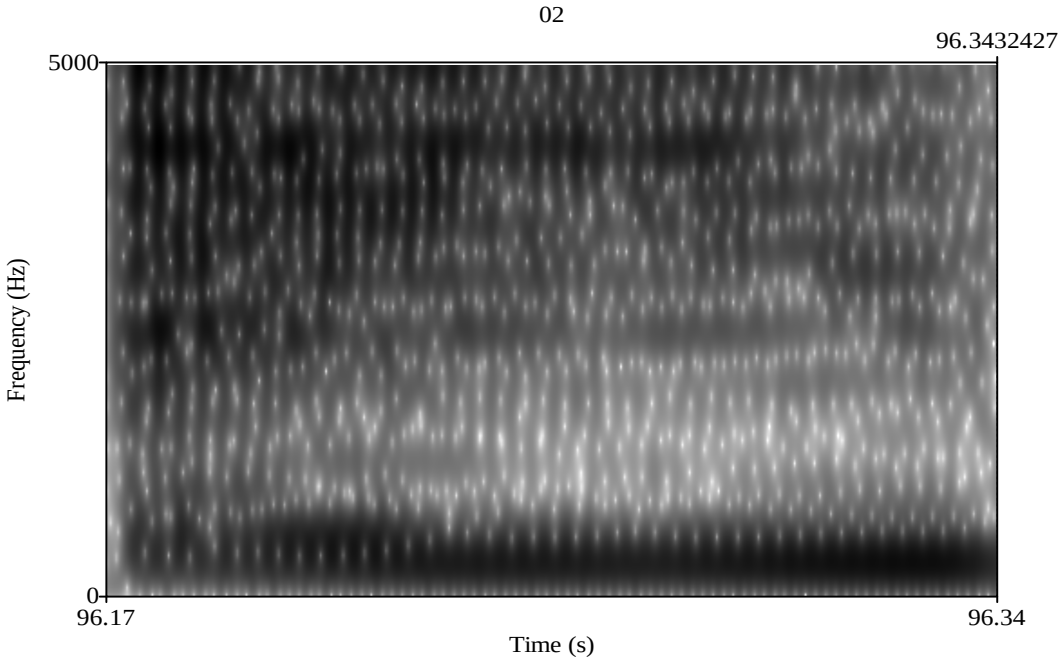
Spectrogram 24 : The graph <a> in "according" said by a male speaker (n°54)

realised as /ɑ/

F1: 712 F2: 1222 F3: 2782



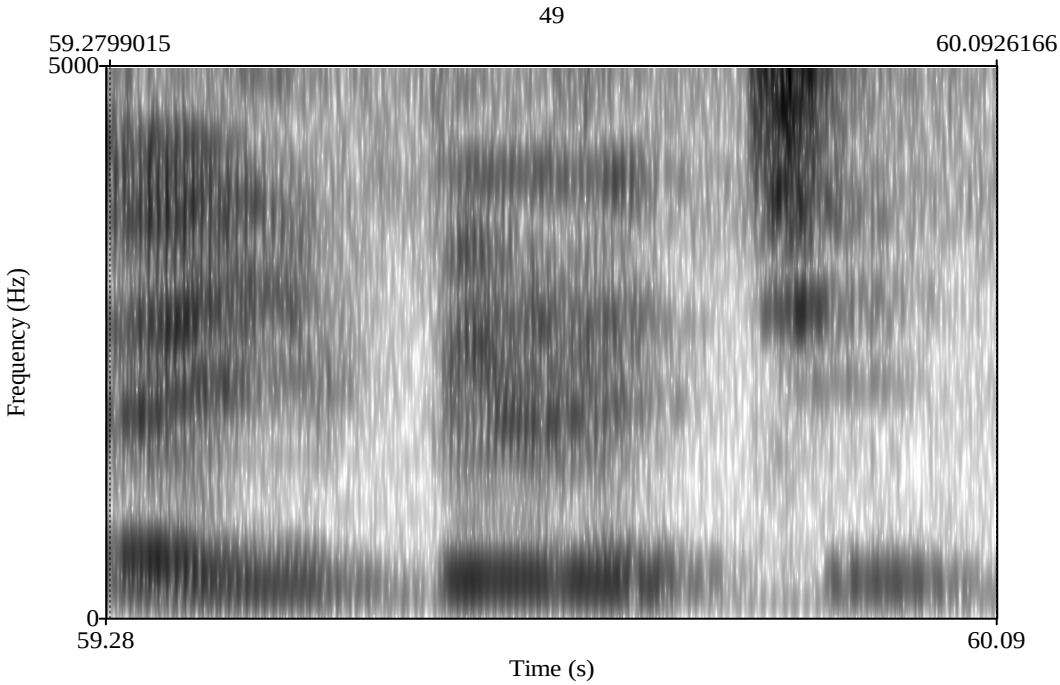
Spectrogram 25 : The word " ability" said by a female speaker (n° 02)



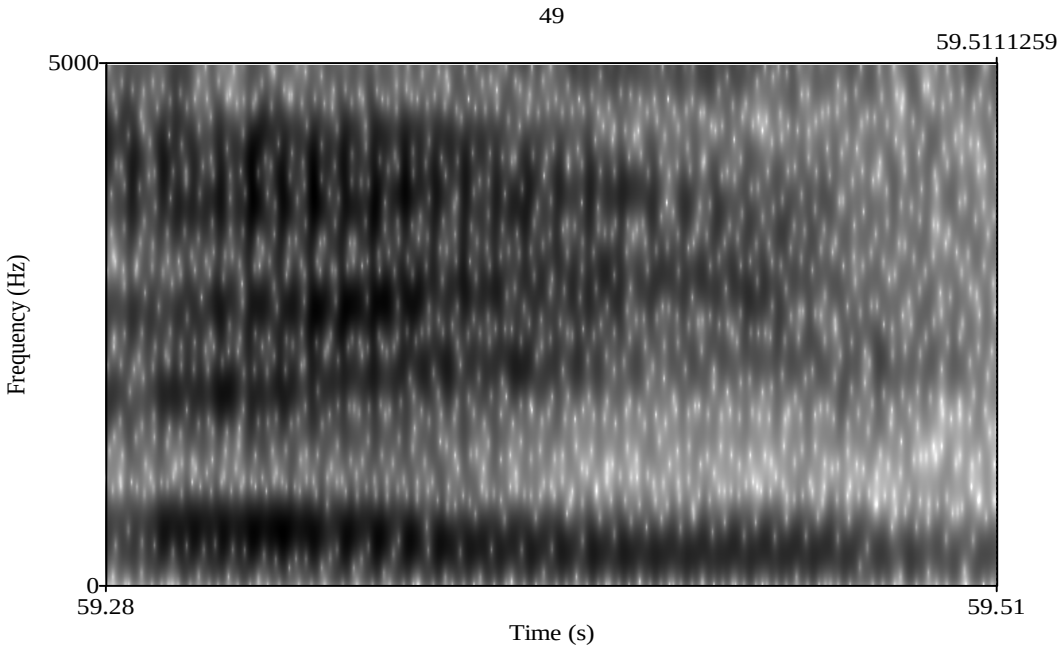
Spectrogram 26: The graph <a> in "ability" said by a female speaker (n°02)

realised as /ɑ/

F1: 489 F2: 2336 F3: 2941



Spectrogram 27 : The word " ability" said by a male speaker (n° 49)



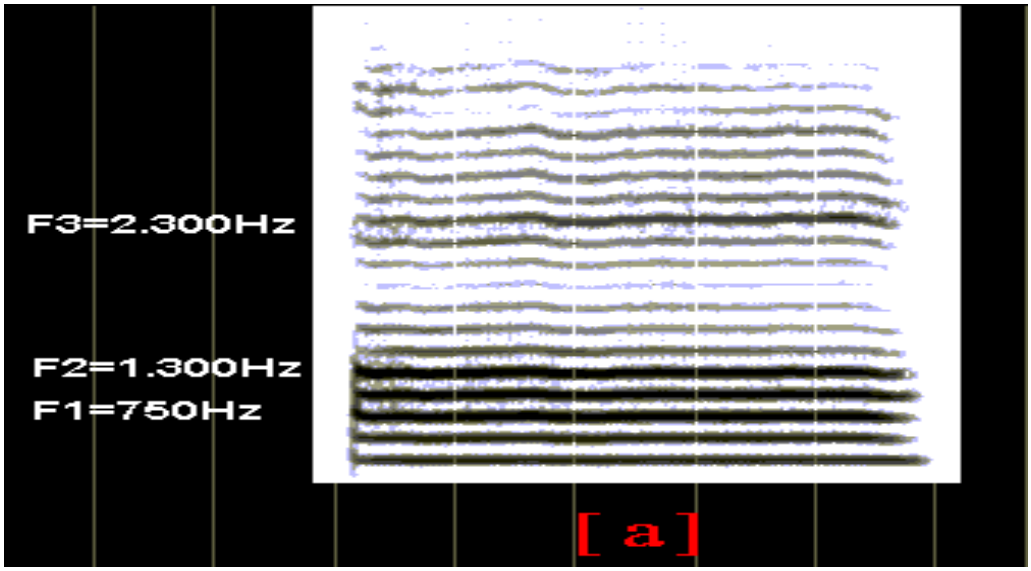
Spectrogram 28 : The graph <a> in "ability" said by a male speaker (n° 49)

realised as /eɪ/

First part	Second part
F1 : 467 F2 : 1817 F3 : 2736	F1 : 300 F2 : 2000 F3 : 3000

27% of the students pronounced the grapheme <ɑ> in "*ability*" /eɪ/, and in spectrogram 28 the glide is visible. The first part shows a strong vocalic element followed a weaker sound and a change in formants.

	F1	F2	F3
First part	467	1817	2736
/e/	600	2060	2840
Second part	300	2000	3000
/i/	360	2220	2960



Spectrogram 29 : The oral front vowel / a / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

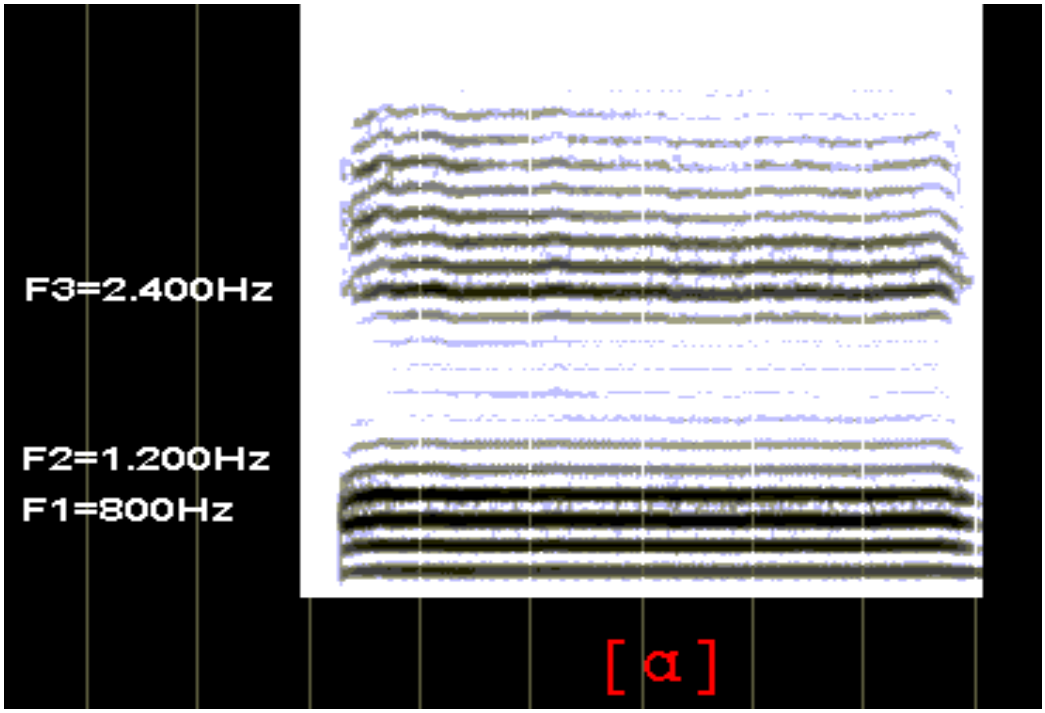
Among the different spectrograms, spectrogram n° 24 compared with spectrogram n° 30 which shows the formants of the French back vowel /ɑ/, seems quite interesting.

	F1	F2	F3
<a> in "*according*"	712	1222	2782
<a> in "*pas*"	800	1200	2400

It brings out two negative transfers :

- The grapheme <ɑ> is pronounced /ɑ/ and not /a/ because of French spelling.
- It is not pronunced as /a/ the front open vowel because in Arabic there is no front vowel /a/. Thus, an Arabic speacker very often produces a retracted open vowel.

In table n° 12 which shows the number and rate of distortions in loud reading, the realisation of the vowel as /a/ reaches 81%. The acoustic description reveals its great precision and we see that the back vowel is not always perceived by the ear which is nevertheless a precious tool for a phonetician.



Spectrogram 30 : The oral back vowel / ɑ / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

III.4.2. When medial

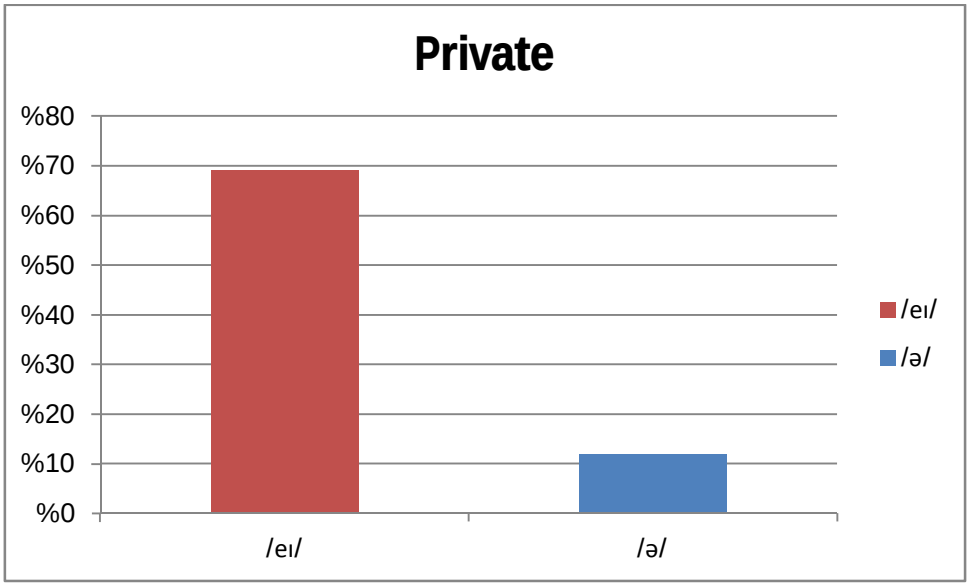
- In "*private*" <a > was pronounced / ə / only in 12% of the utterances.
- The vowel /a / was heard only once in the word "private".
- In most cases (69%) /eɪ / was heard, surely because of the over generalisation of the rule governing the pronunciation of the words ending with <ate>.
- In "*care*" it was pronounced /a/ or /ɑ/ in 14% of the utterances.
- /ɛə/ was heard 32 times (62%)
- It has to be mentionned that no distortion at all was noted in "*information*" because of its frequency of occurrence.

In "*fantastic*" the realisations of the second grapheme < a> showed a high degree of acceptability. ❖

Almost all the distortions disappeared with the oral reproduction.

	/eɪ/	/a/		/ə/	/e/	/ɪ/	/æ/	/aɪ/	/i/	/ɛə/	/ɪə/	/ɛ/	/ɜ/	/əʊ/	---
Information(52)	52 100%														
Fantastic(52)		43 83%		1 2%	3 6%	1 2%	3 6%								1 2%
Private(52)	36 69%	1 2%		6 12%	1 2%	2 4%		4 8%	1 2%						1 2%
Care(52)	2 4%	/a/ 1 2%	/ɑ/ 6 12%					1 2%	3 6%	32 62%	3 6%	1 2%	1 2%	1 2%	1 2%

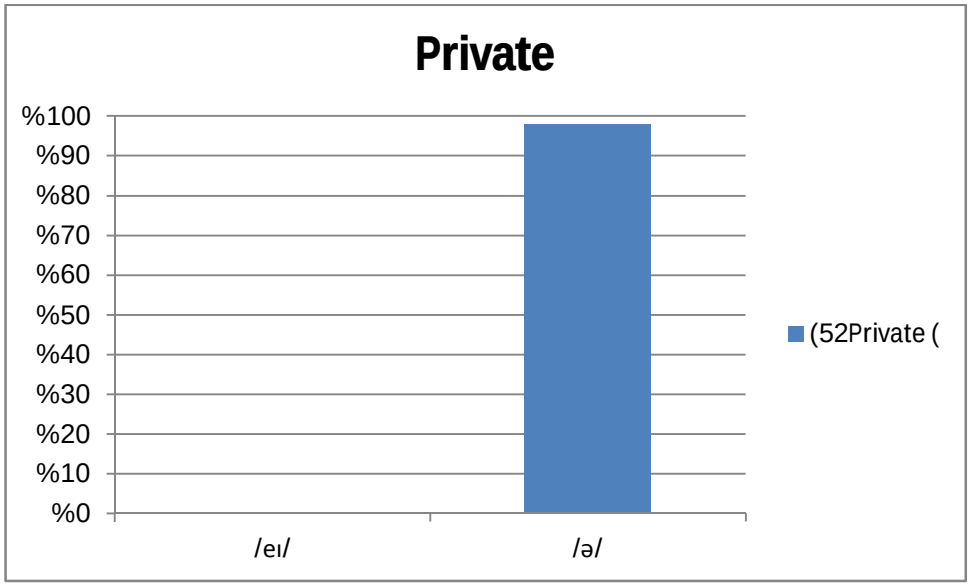
Table 14 - <a> medial. Number and rate of distortions in Loud reading



Graph 9 - rate of distortions in loud reading (< a > medial)

	/eɪ/	/a/		/ə/	/e/	/ɪ/	/æ/	/aɪ/	/i/	/ɛə/	/ɪə/	/ɛ/	/ɜ/	/əʊ/	---
Information(52)	52 100%														
Fantastic(52)							51 98%								1 2%
Private(52)				51 98%											1 2%
Care(52)		/a/	/ɑ/							50 96%		1 2%			1 2%

Table 15 - <a> medial. Number and rate of distortions in Oral reproduction

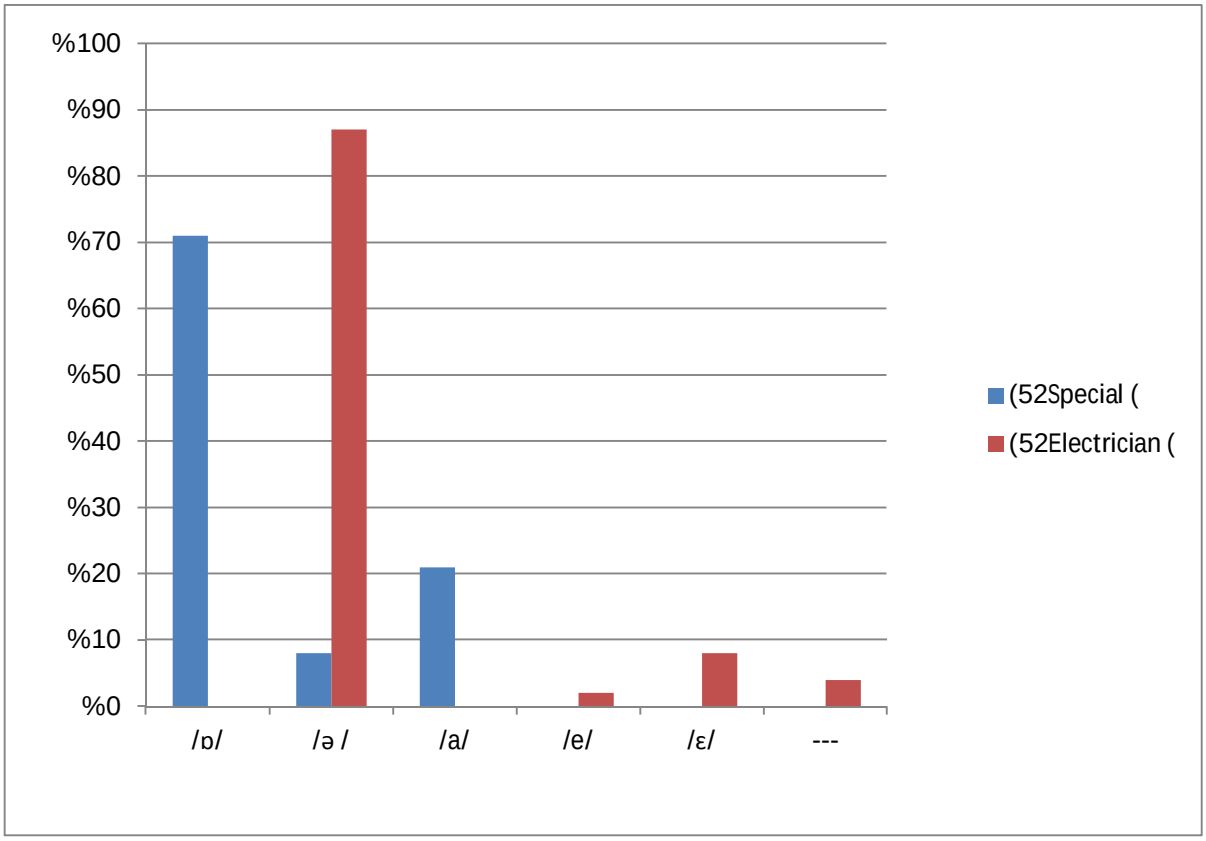


Graph 10 - rate of distortions in oral reproduction (< a > medial)

III.4.3. Realisation of the endings <ial>, < ian>

	/ɒ/	/ ə/	/a/	/e/	/ɛ/	---
Special(52)	37 71%	4 8%	11 21%			
Electrician(52)		45 87%		1 2%	4 8%	2 4%

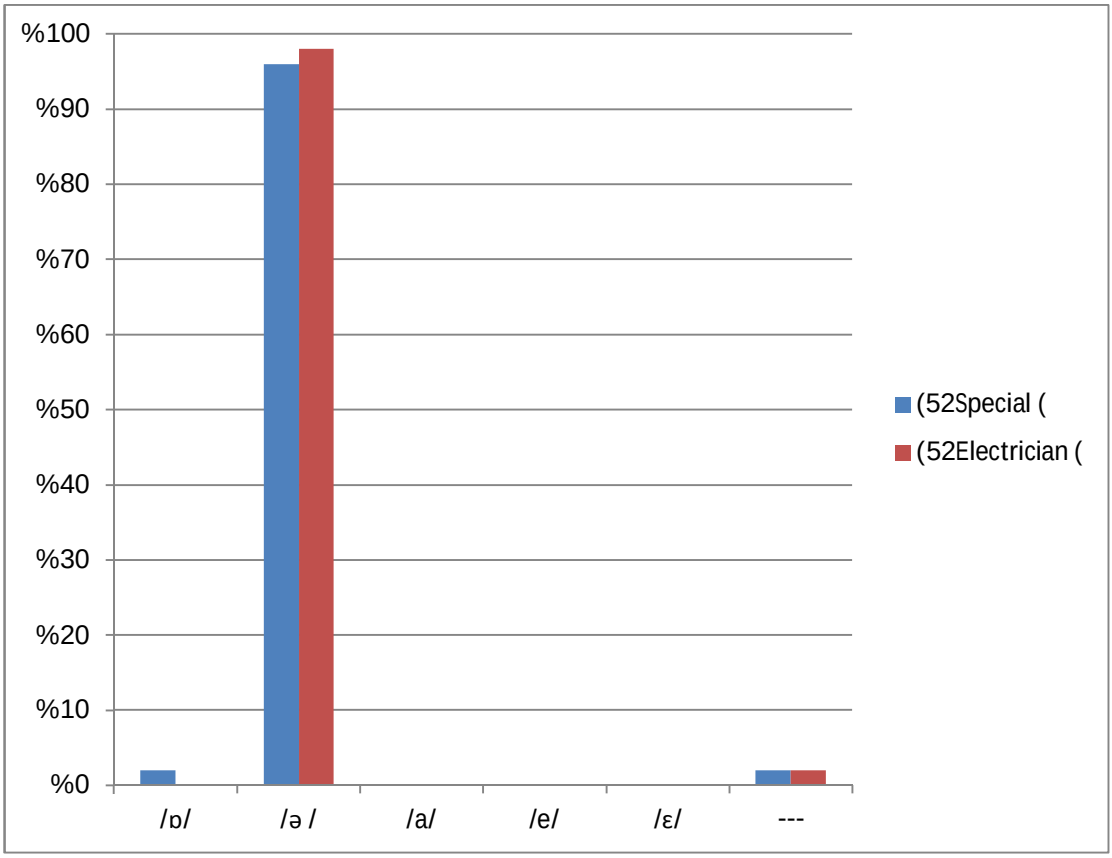
Table 16 - <a> in the endings <ial>, <ian>. Number and rate of distortions in loud reading



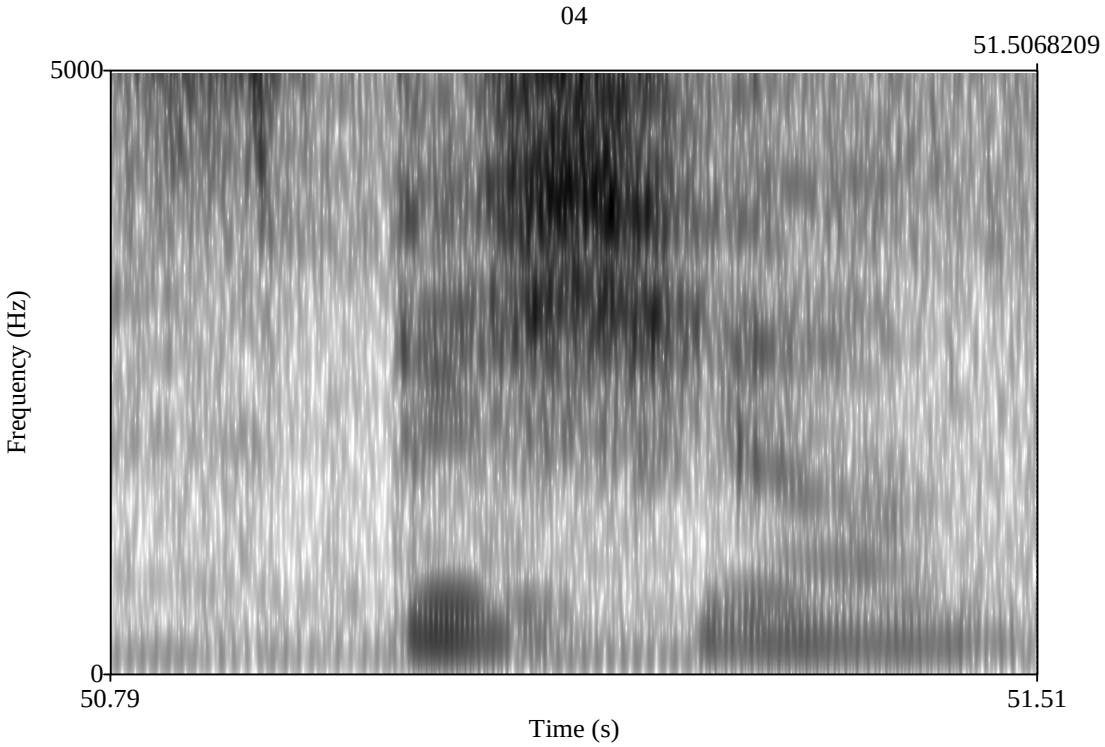
Graph 11 - rate of distortions of < a > in loud reading (<ial>, <ian>)

	/ɒ/	/ ə/	/a/	/e/	/ɛ/	---
Special (52)	1 2%	50 96%				1 2%
Electrician (52)		51 98%				1 2%

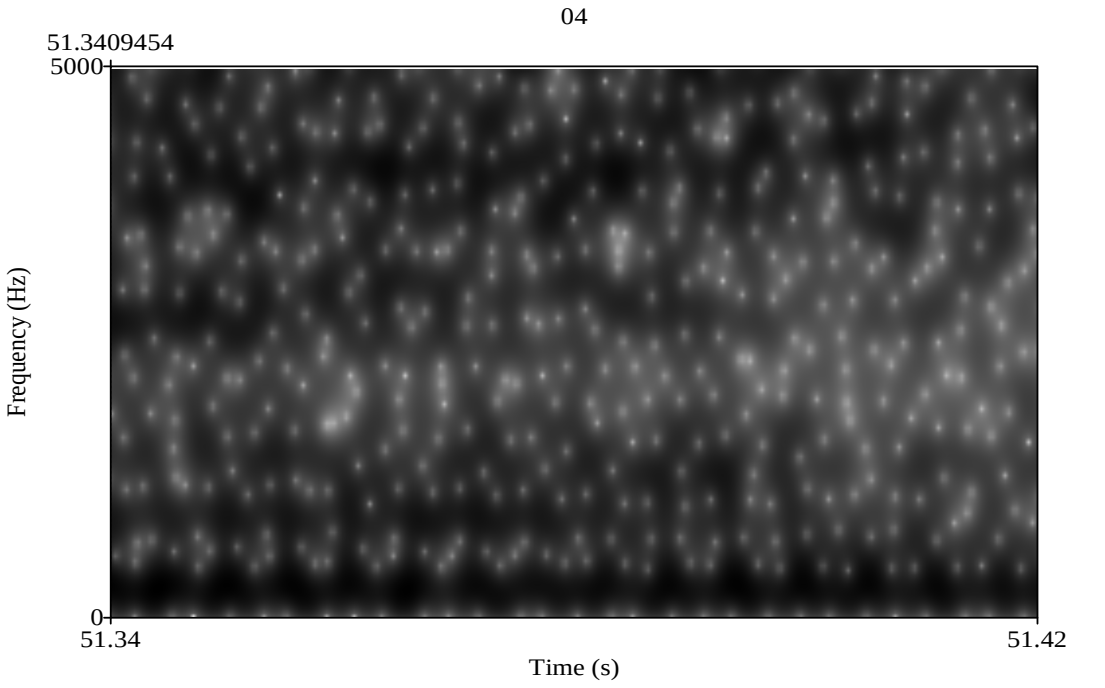
Table 17 - <a> in the endings <ial>, <ian>. Number and rate of distortions in Oral reproduction



Graph 12 - rate of distortions of < a > in oral reproduction (<ial>, <ian>)

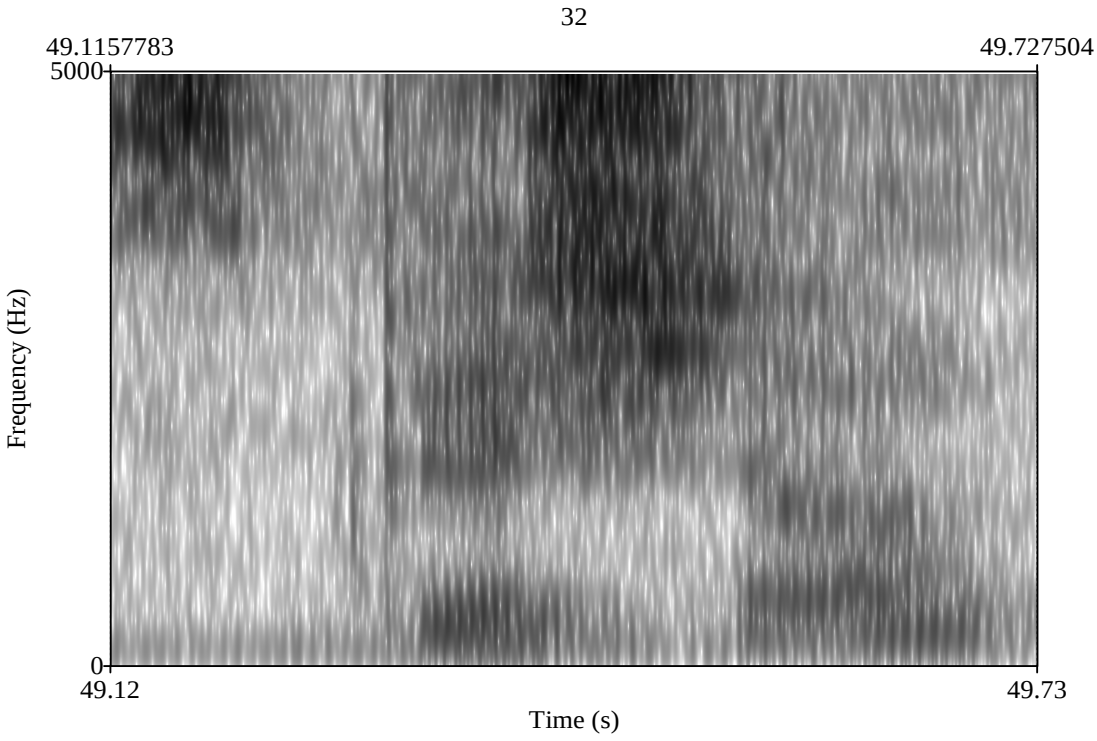


Spectrogram 31 : The word "special" said by a female speaker (n° 04)

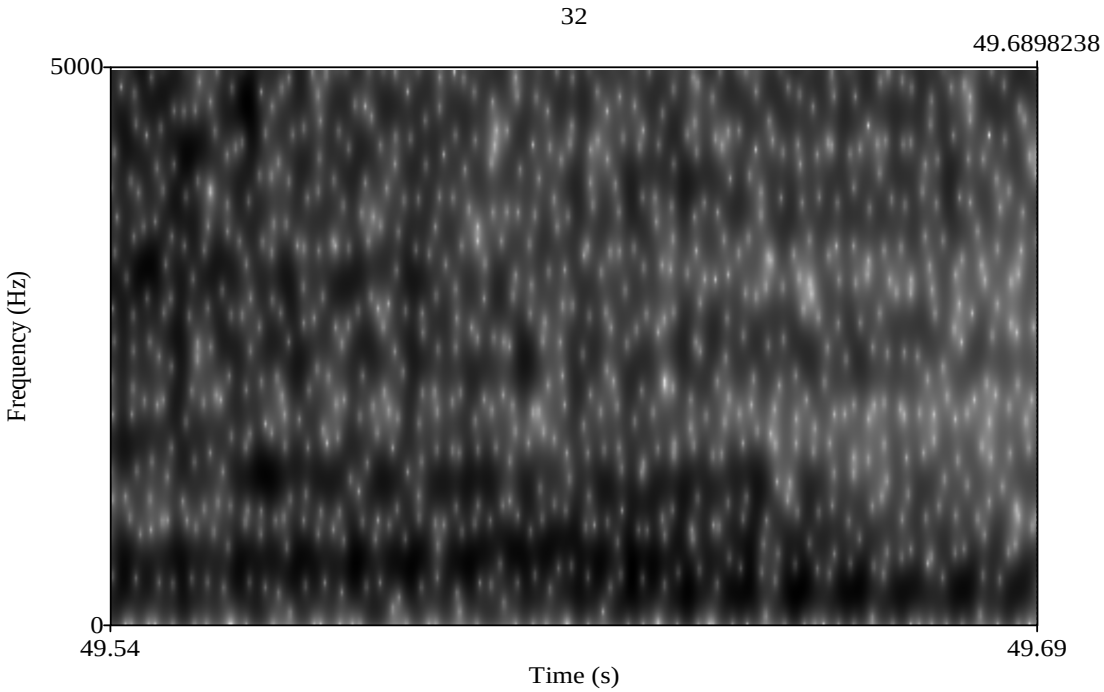


Spectrogram 32 : The graph <a> in "special" said by a female speaker (n°04)

realised as /a/



Spectrogram 33 : The word "special" said by a male speaker (n°32)



Spectrogram 34 : The graph <a> in "special" said by a male speaker (n°32)

realised as /a/

III.5. Realisation of the grapheme <u>

III.5.1. When initial

❖ For initial <u> in "*uniform*" we have 50% of the realisations as /ɪ/ or /y/, 42% of the realisations as /ju/ or /jʊ/.Once again the influence of French is obvious when we know that the French phoneme /y/ is very often realised as /ɪ/ or /i/ by Arabic speakers (the feature "rounded lips " never been associated with a close front vowel).

❖ For <u> in "*university*" – more frequently used and heard – the sequences /ju/ and /jʊ/ represent 61% of the utterances versus 37% as /ɪ/ or /y/.

❖ In "*upon*" only 3 students out of 52 pronounce it /ə/ (6%). <u> is said /ʌ/ by 22 students out of 52 (42%).

34% of the realisations may be explained by the confusion between "*upon*" and "open" (<u> pronounced as /ɔ/ or /əʊ/).

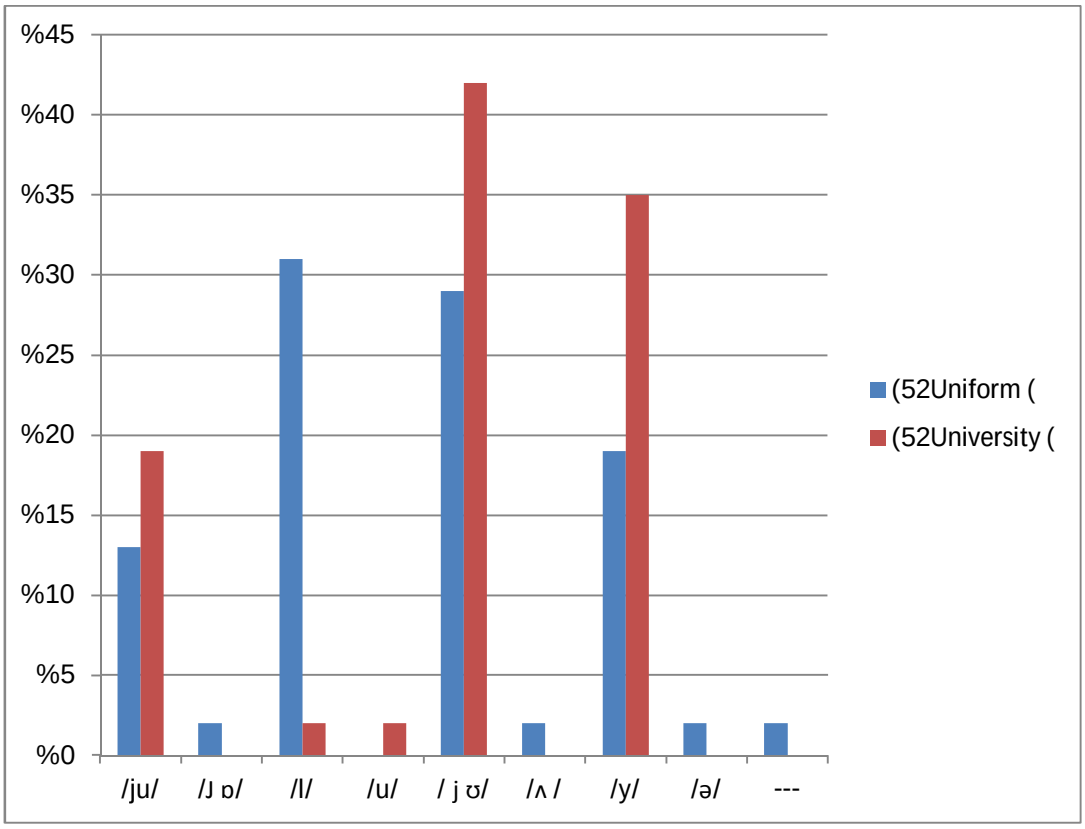
❖ In "*unusual*", /ju/ or /jʊ/ is heard by analogy with university (18% of the cases).

26% of the distortions - / y / or / ɪ /- are due to the influence of French.

39% of the realisations are correct (/ʌ / or /ə/).

	/ju/	/j ɒ/	/l/	/u/	/j ʊ /	/ ʌ/	/y/	/ə/	---
Uniform (52)	7 13%	1 2%	16 31%		15 29%	1 2%	10 19%	1 2%	1 2%
University (52)	10 19%		1 2%	1 2%	22 42%		18 35%		

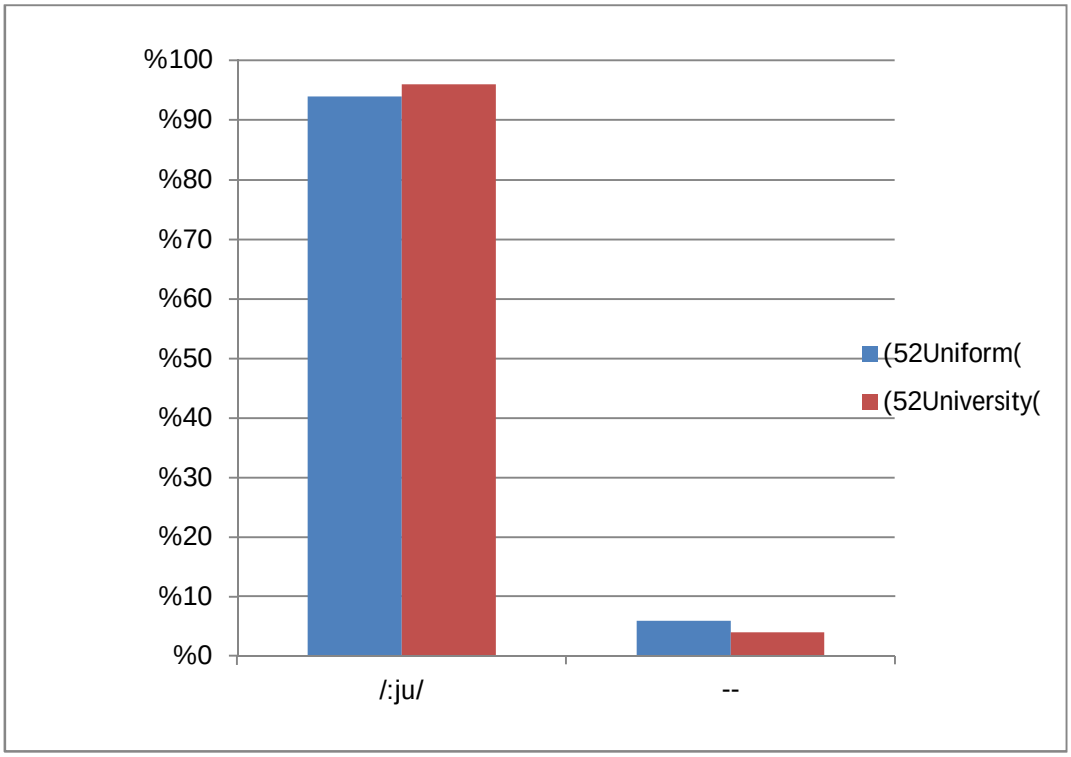
Table 18 - <u> initial. Number and rate of distortions in loud reading



Graph 13 - rate of distortions in loud reading (< u > initial)

	/ju:/	--
Uniform (52)	49 94%	3 6%
University (52)	50 96%	2 4%

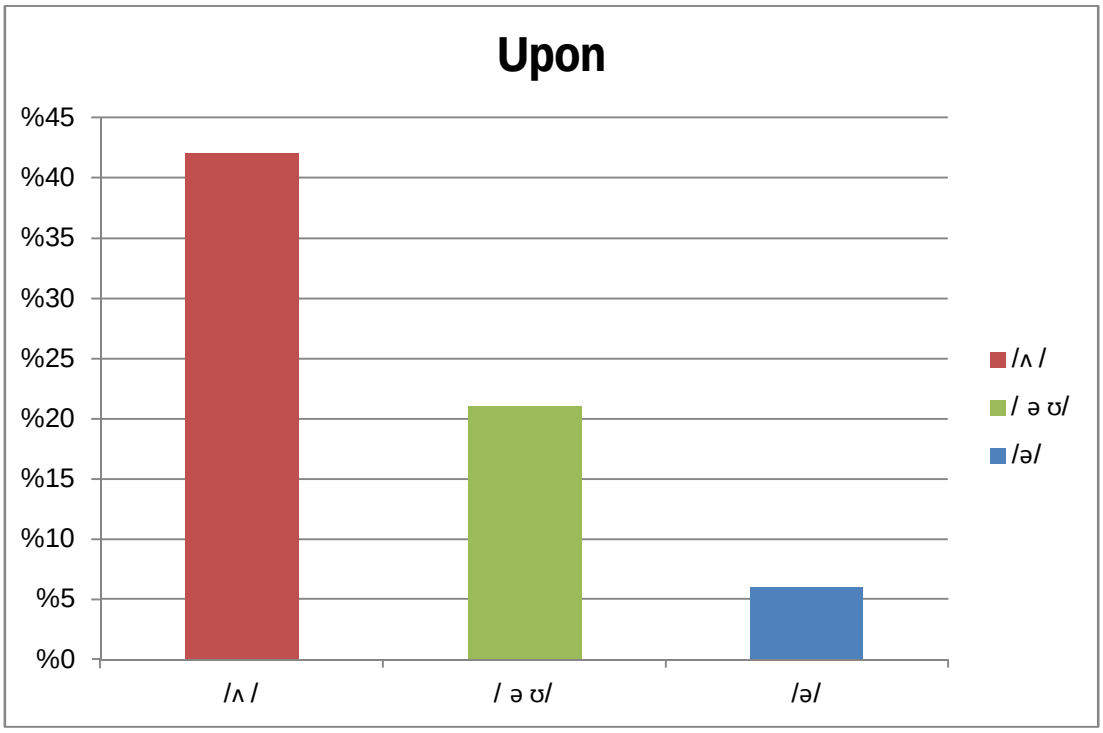
Table 19 - <u> initial. Number and rate of distortions in oral reproduction



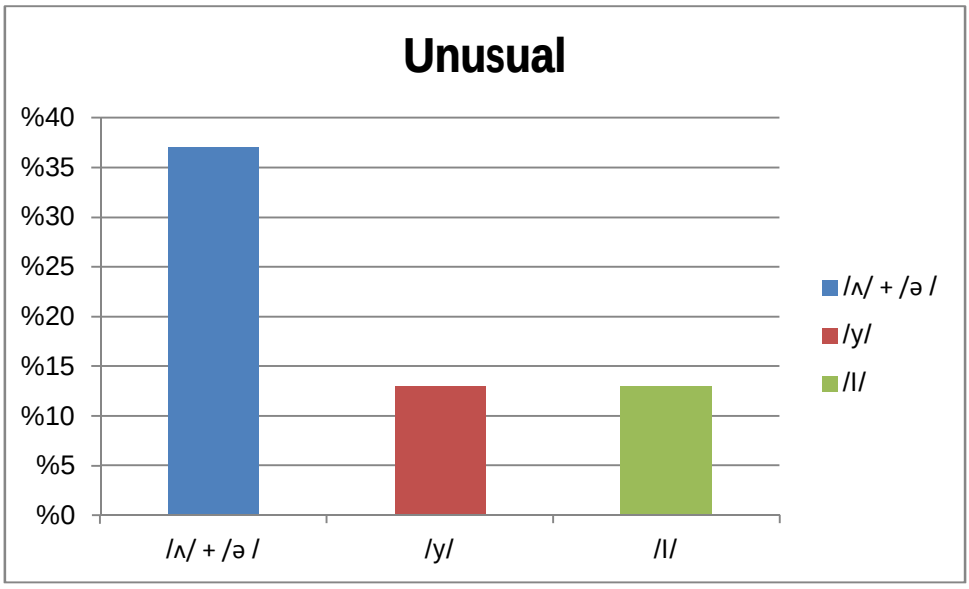
Graph 14 - rate of distortions in oral reproduction (< u > initial)

	/jɒ/	/ ʌ/	/ə/	/ju/	/jy/	/y/	/ei/	/j ʊ/	/ɔ/	/ɪ/	/e/	/ə ʊ /	/a/	---
Upon(52)		22 42%	3 6%			1 2%	3 6%	2 4%	7 13%			11 21%	2 4%	1 2%
Unusual(52)	2 4%	16 31%	3 6%	4 8%	1 2%	7 13%		5 10%		7 13%	1 2%			6 12%

Table 20 - <u> initial in "upon" and "unusual" Number and rate of distortions in loud reading



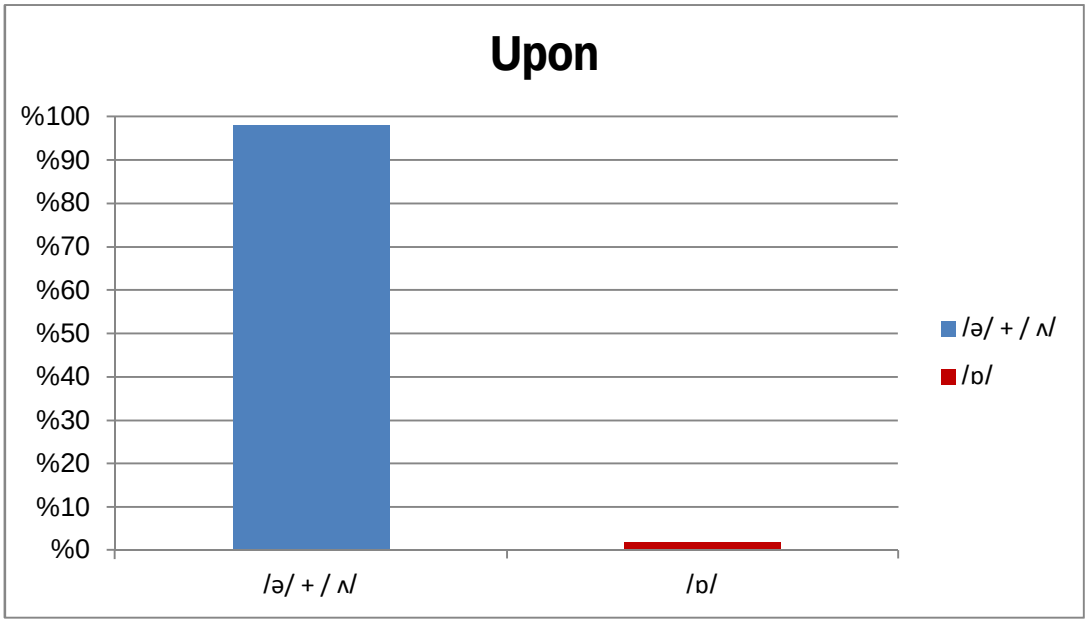
Graph 15 - rate of distortions in loud reading (< u > initial)



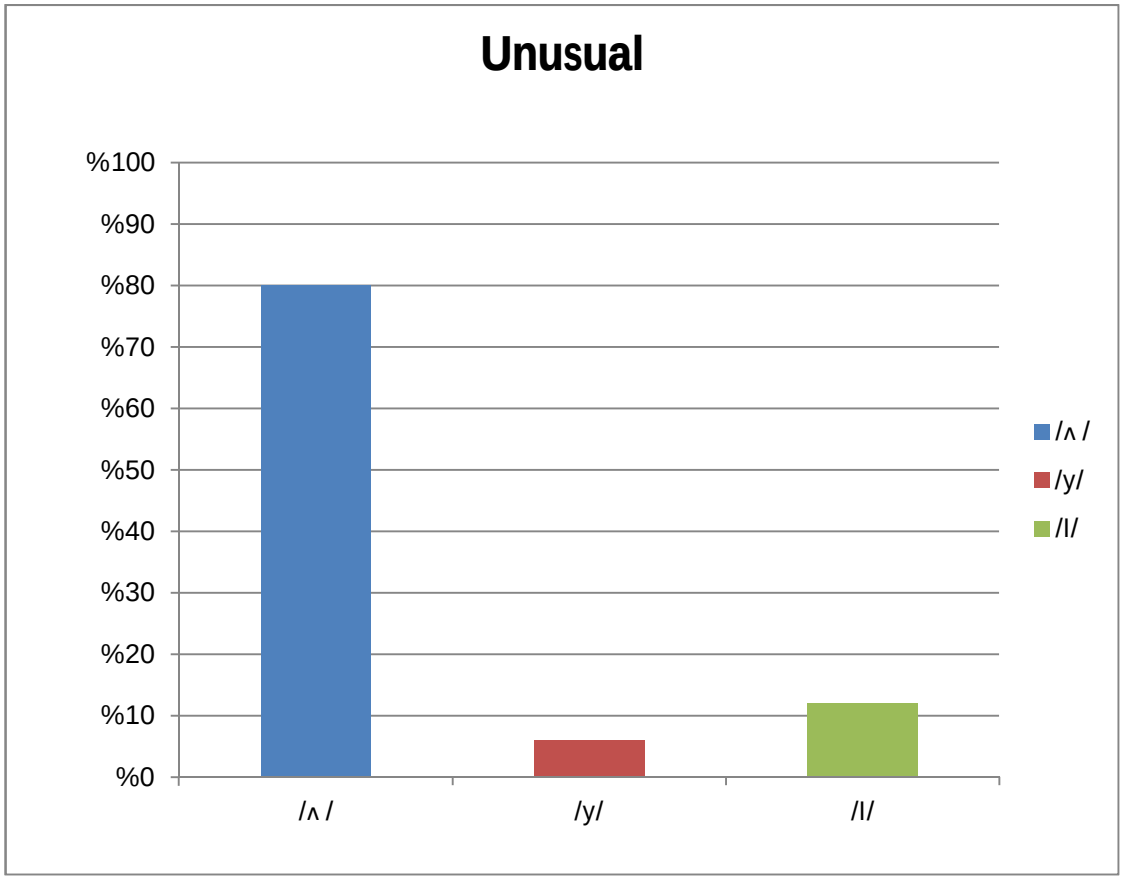
Graph 16 - rate of distortions in loud reading (< u > initial)

	/y/	/ɒ/	/ə/	/ ʌ/	/ɪ/	---
Upon(52)		1 2%	50 96%	1 2%		
Unusual(52)	3 6%			42 80%	6 12%	1 2%

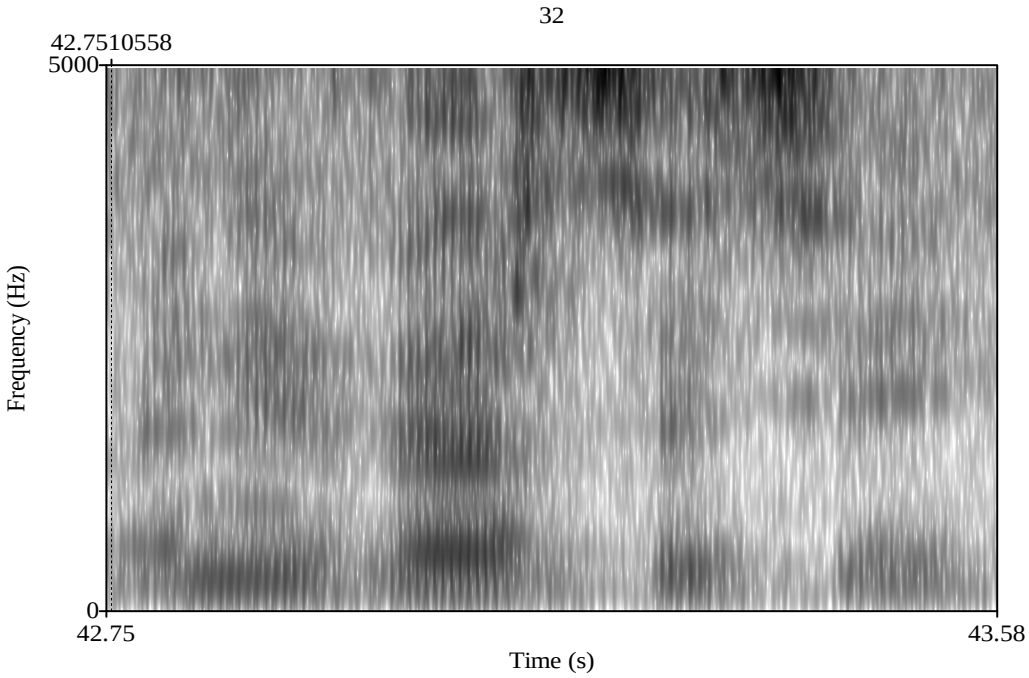
Table 21 - <u> initial in "upon" and "unusual" Number and rate of distortions in oral reproduction



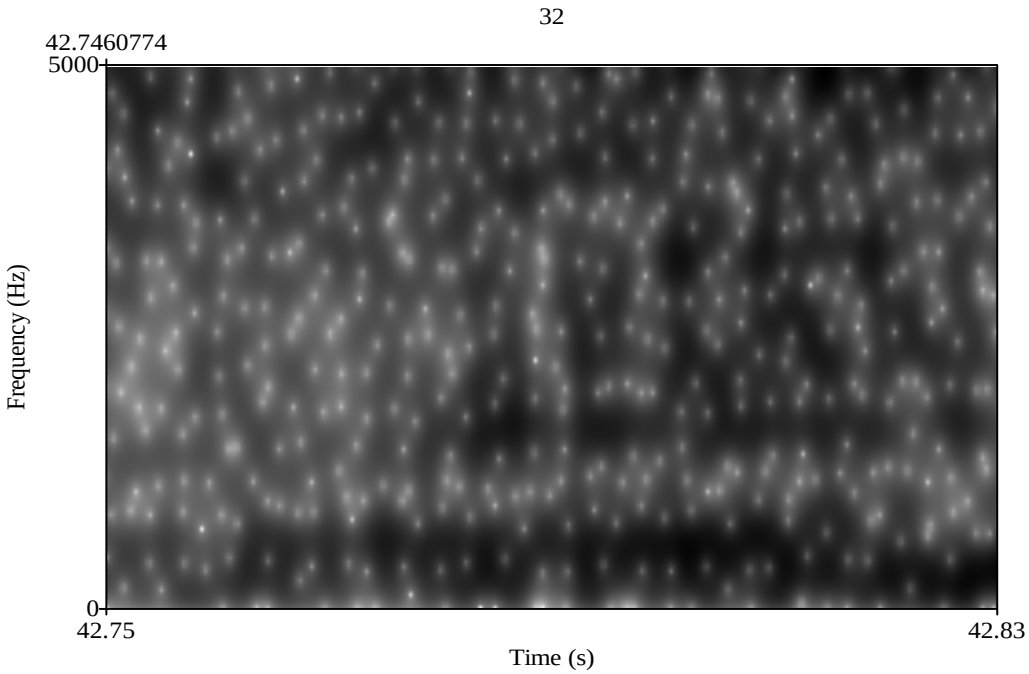
Graph 17 - rate of distortions in oral reproduction (< u > initial)



Graph 18 - rate of distortions in oral reproduction (< u > initial)



Spectrogram 35 : The word "university" said by a male speaker (n°32)



Spectrogram 36 <u> in "university" said by a male speaker (n°32) realised as /y/

F1: 266 F2: 1668 F3: 2304

III.5.2. When medial

- In "*let us* " most of the productions are correct (85%) with 6% of distortions as / ju /. 2% as / ɪ / and 2% as / u /.

  The number of interferences is here very low, " *us* " being a familiar word used since middle school.

- In " *unusual* " the influence of French is stronger.

  (16% of / y / and 16% of / i / or / ɪ /).

  The acceptable realisations represent about 30%.

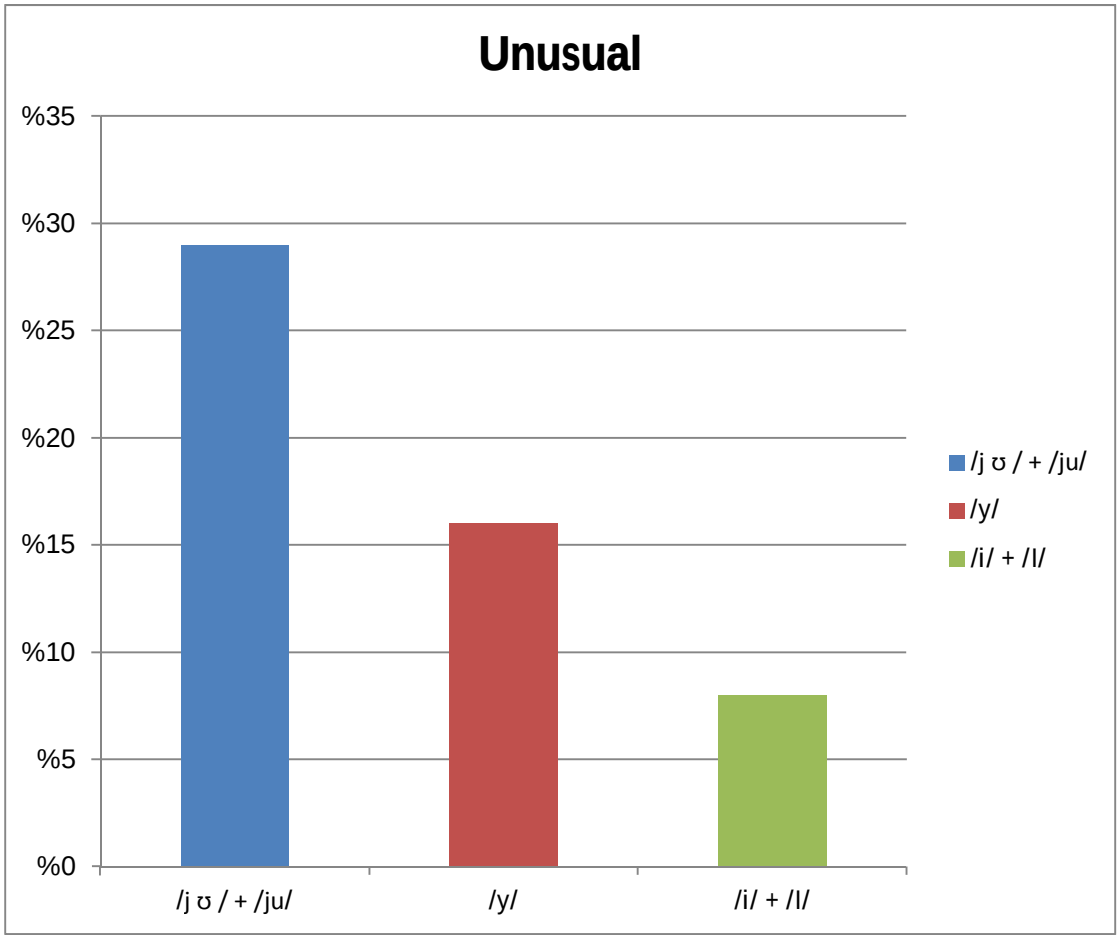
  In the oral reproduction the articulatory problems disappear, nevertheless the problem linked to duration remains.

  We find 51 short vowels and 50 long vowels.

  In the oral reproduction most of the distortions are erased and the appropriate sound is produced in 94% and 96% of the words .

	/ ʌ/	/a/	/æ/	/y/	/i/	/j ʊ /	/ju/	/ʊ /	/u/	/ɪ/	/jɒ/	/jy/	--
Let us(52)	44 85%	2 4%	1 2%		1 2%		3 6%		1 2%				
Unusual(104)				17 16%	4 4%	20 19%	10 10%	12 12%	9 9%	4 4%	2 2%	1 1%	25 24%

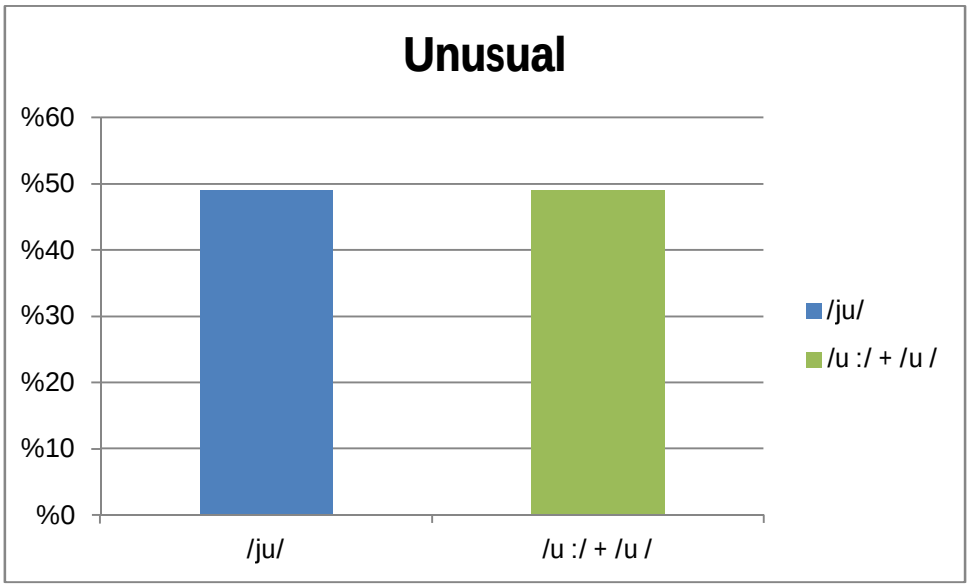
Table 22 - <u> medial in "let us" and "unusual".Number and rate of distortions in loud reading



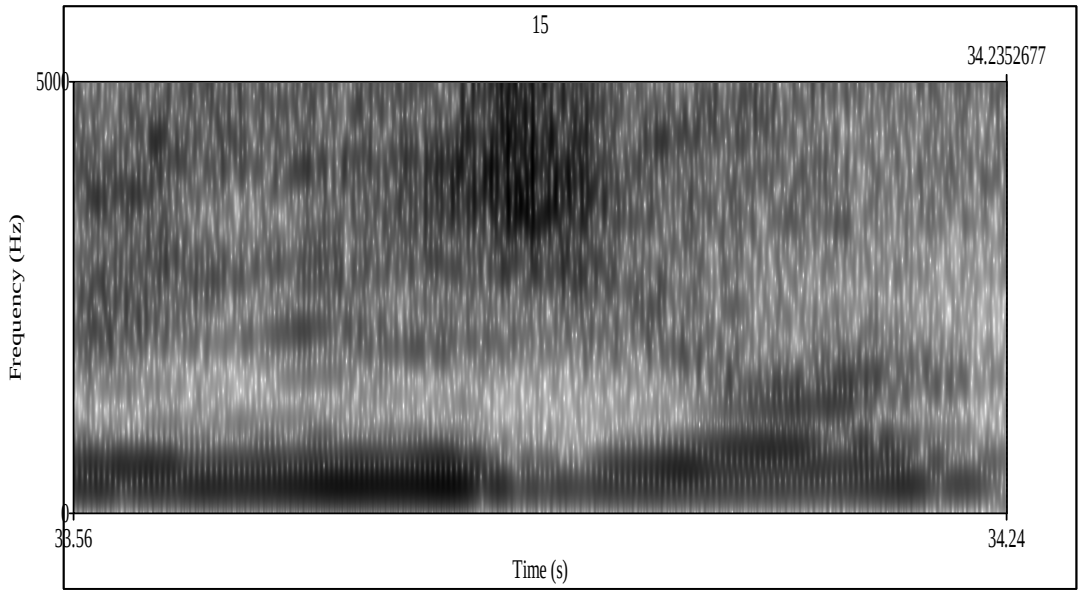
Graph 19 - rate of distortions in loud reading (< u > medial)

	/ ʌ/	/ju/	/ u:/	/u/	---
Let us(52)	51 98%				1 2%
Unusual(104)		51 49%	50 48%	1 1%	2 2%

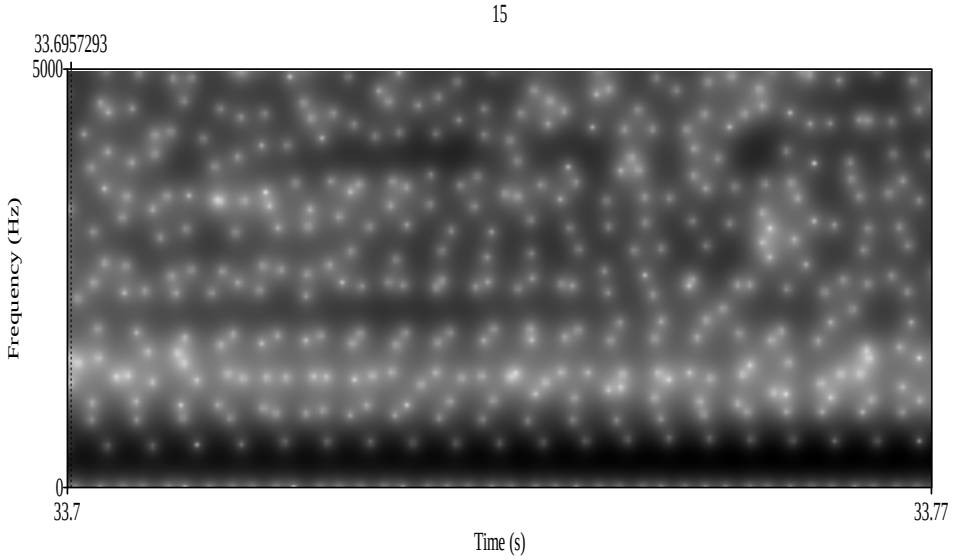
Table 23 - <u> medial in "let us" and "unusual".Number and rate of distortions in oral reproduction



Graph 20 - rate of distortions in oral reproduction (< u > medial)

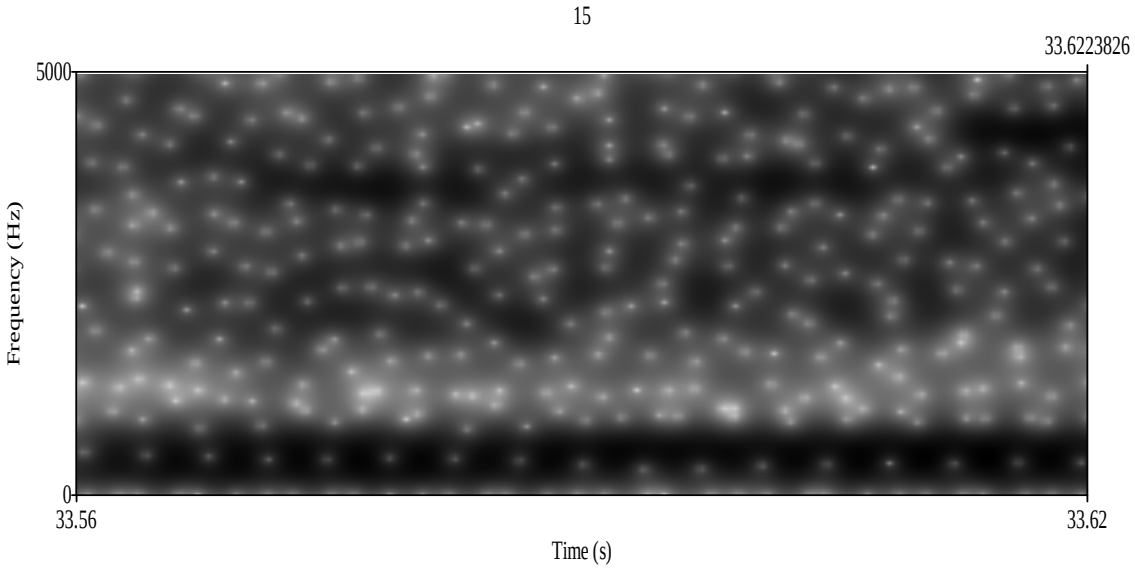


Spectrogram 37: The word "unusual" said by a female speaker (n°15)



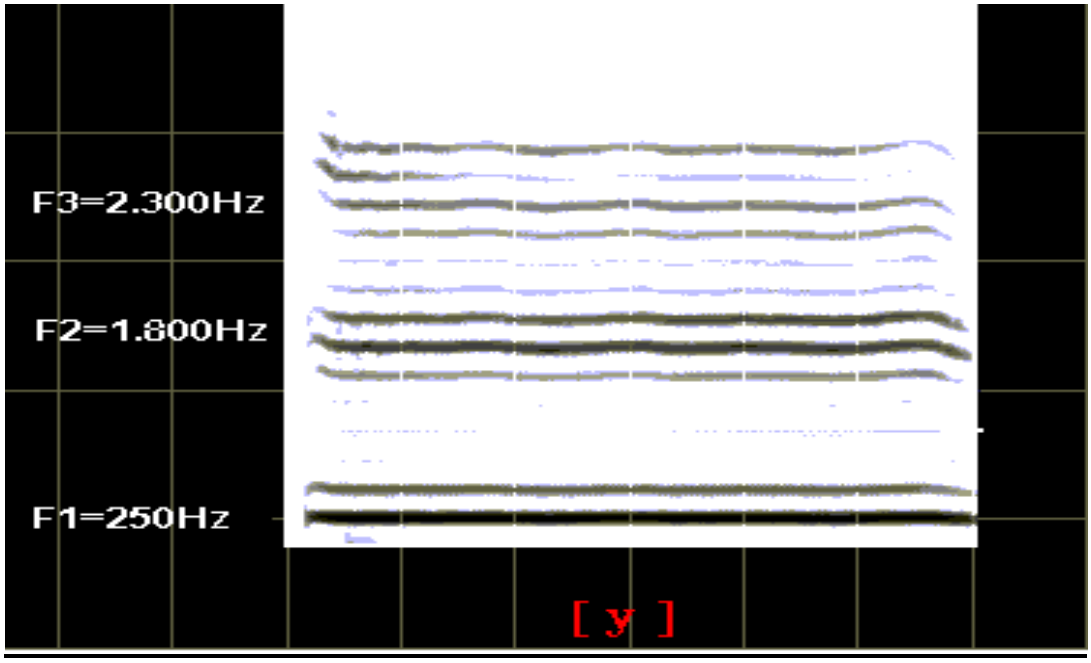
Spectrogram 38 <u> in "un**u**sual" said by a female speaker (n°15) realised as /y/

F1: 266 F2: 2000 F3: 2750



Spectrogram 39 <u> in "unus**u**al" said by a female speaker (n°15) realised as /y/

F1: 300 F2: 1900 F3: 2900



Spectrogram 40 : The oral front vowel /y / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

Spectrograms n° 38 and n° 42 show the pronunciation of <u> in "university" and in "unusual". The formants are those of a front vowel nearer to /y/ than to a corresponding back vowel (F2 is far from F1).

Table 18 shows a relatively high number of distortions (35%). Despite the fact the word "university" is familiar to the students, the negative transfer due to spelling remains rather strong.

	F1	F2	F3
<u> in "university" n° 38	266	1668	2304
<u> in"unusual" n° 42	266	2000	2750
The French front vowel	250	1800	2300

III.6. Realisation of the digraph < ea >

The number of distortions was expected because seven different sounds are associated with it.

In " *leave* " no particular difficulty was recorded and almost 90% of the pronunciations are acceptable, the problem remaining in the duration of the vowel.

In " *bread* " – despite the fact that it is a word introduced very early in the studies - <ea > , in reading is associated with /i:/ , the first sound associated with the grapheme . 58% of /i:/ versus 38% of /e/.

In *" breath*" obviously the distortion /i:/ is due to a confusion between " *breath*" /breθ/ and " *breathe* " /bri:ð/.

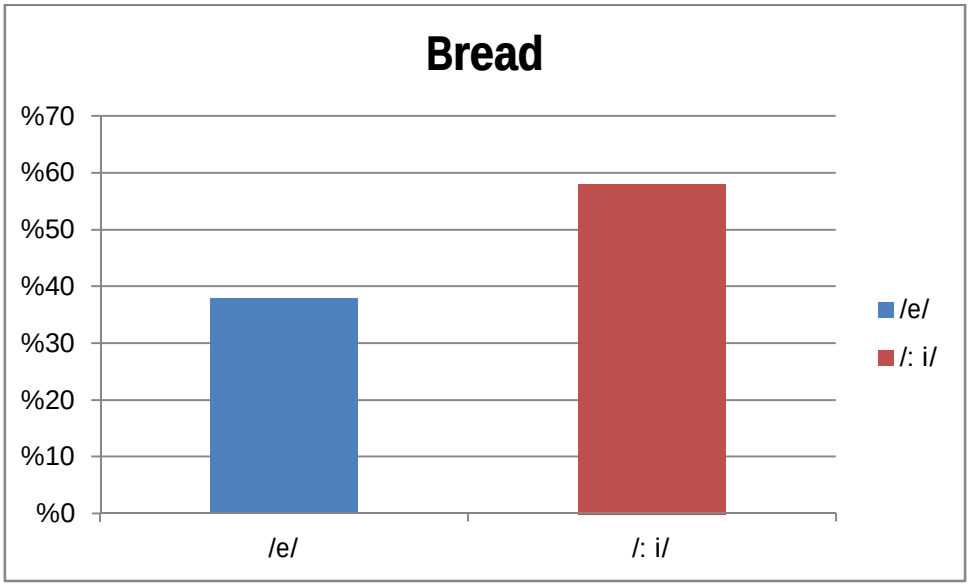
In " *appearance* " more than 80% of the realisations as /i/ or /i:/ versus only 2% as / ɪ ə /.

Again it may be explained by the fact that the sound /i:/ is usually associated with <ea>. It may also be due to a lack of training in the articulation of the glide.

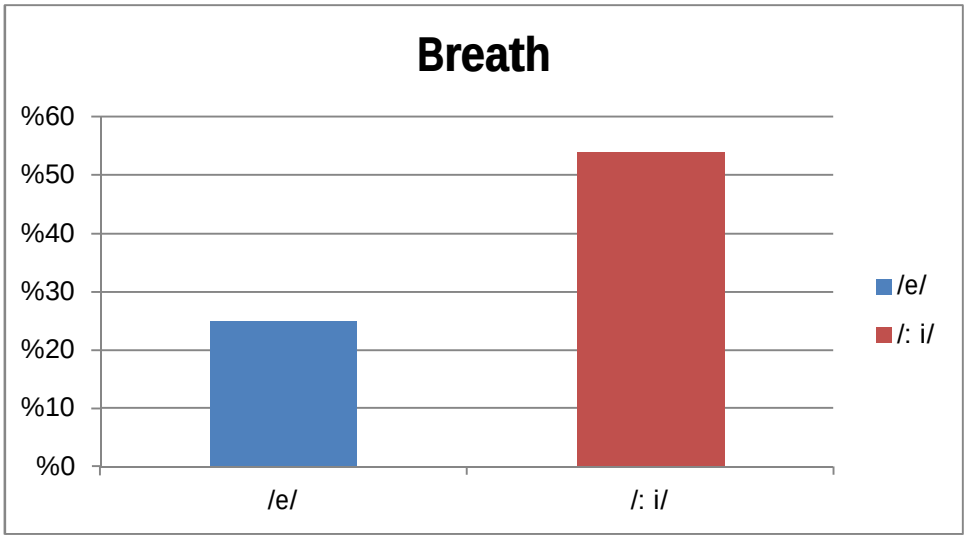
As expected, a remarkable improvement in the pronunciation of <ea> is noticed in the oral reproduction.

	/ei/	/a/	/ə/	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	/ɜ/	---
Leave(52)					3 6%	1 2%	9 17%		37 71%	1 2%	1 2%		
Bread(52)				20 38%					27 52%		1 2%	4 8%	
Breath(52)	1 2%			13 25%			5 10%		28 54%			5 10%	
Appearance(52)		2 4%	2 4%	2 4%	7 13%		36 69%			1 2%			2 4%

Table 24 - <ea>.Number and rate of distortions in loud reading



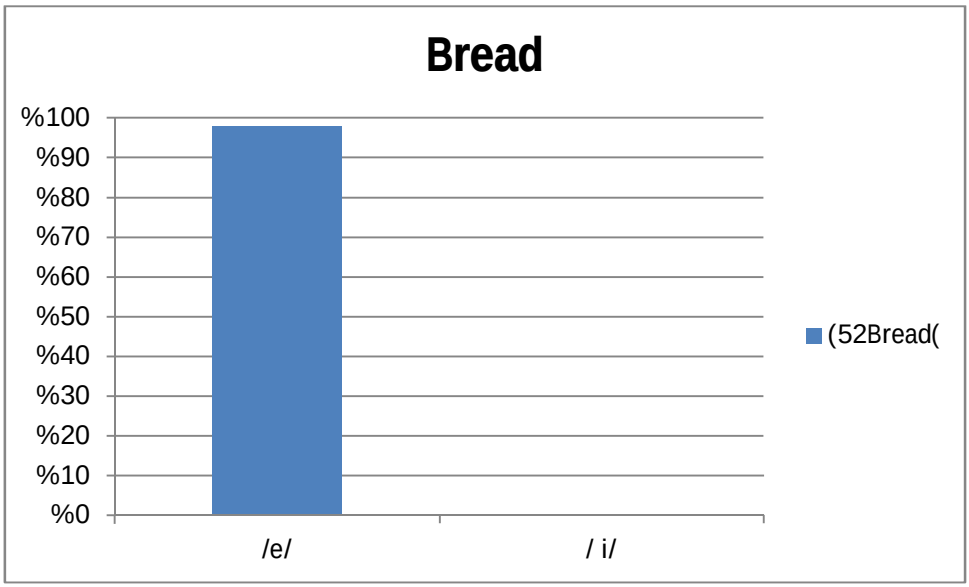
Graph 21 - rate of distortions in loud reading (<ea>)



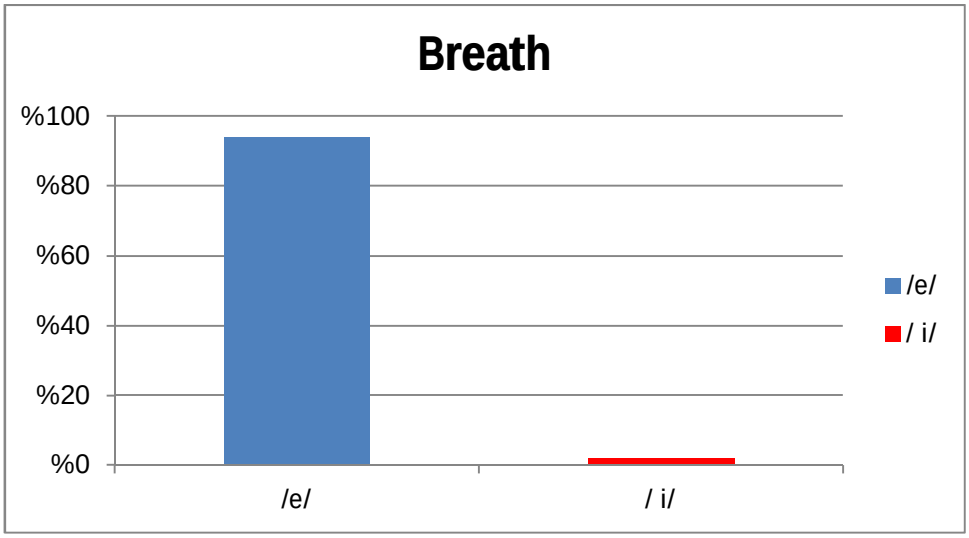
Graph 22 - rate of distortions in loud reading (<ea>)

	/ei/	/a/	/ə/	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	/ɜ/	---
Leave(52)				1 2%			1 2%		47 90%				3 6%
Bread(52)				51 98%									1 2%
Breath(52)				49 94%			1 2%						2 4%
Appearance(52)										51 98%			1 2%

Table 25 - <ea>.Number and rate of distortions in oral reproduction



Graph 23 - rate of distortions in oral reproduction (<ea>)



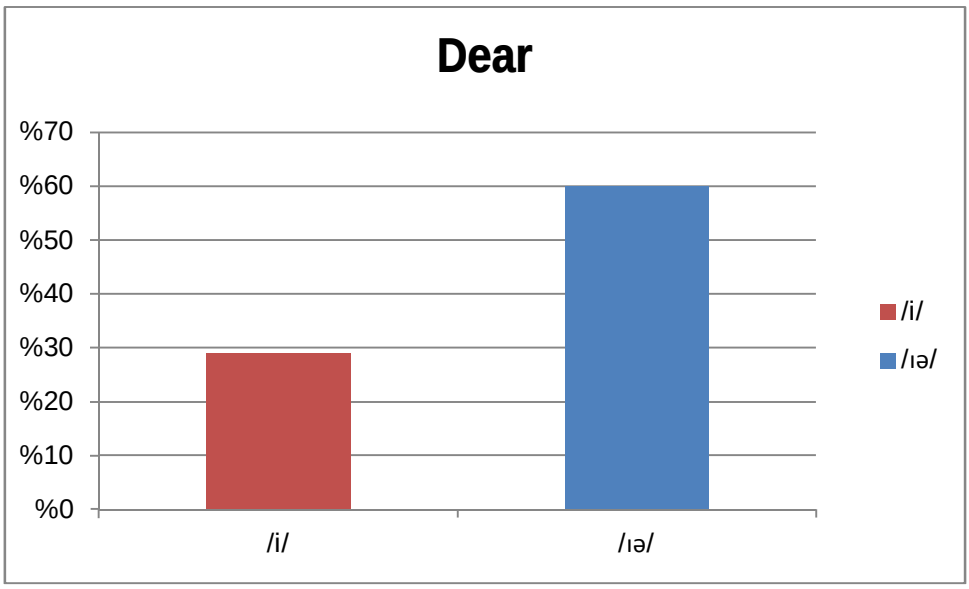
Graph 24 - rate of distortions in oral reproduction (<ea>)

III.7. Realisation of the digraph <ea> + <r>

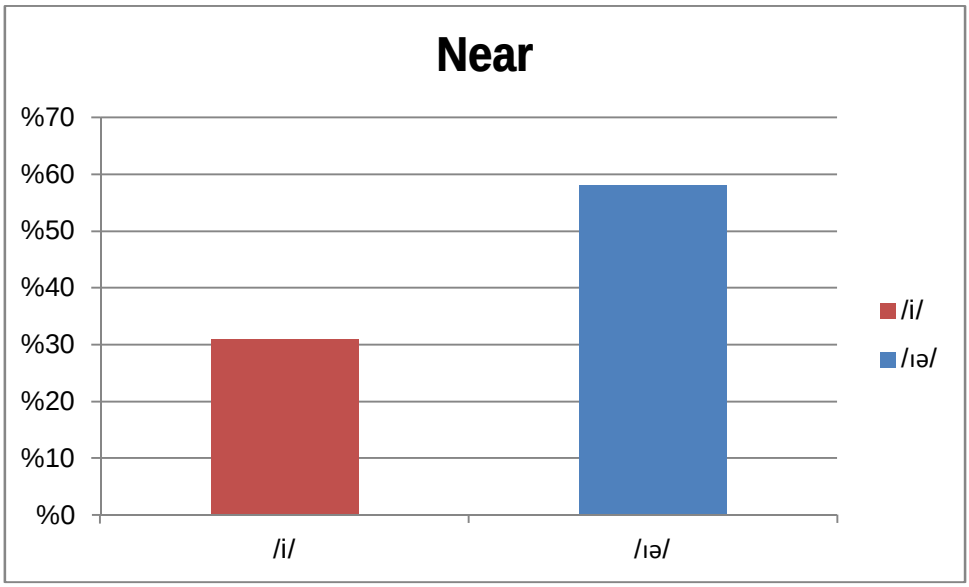
For "dear" and "near" we have a rather high number of good performances, 60% /ɪə/ for "dear" and 58% for "near". The realisations /i/, 29% for "dear" and 31% for near, are probably due to a lack of training in the pronunciation of diphtongs.

	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	---
Dear(52)		2 4%		15 29%	1 2%		31 60%	2 4%	1 2%
Near(52)	1 2%	2 4%		16 31%		1 2%	30 58%	1 2%	1 2%

Table 26 - <ear>.Number and rate of distortions in loud reading



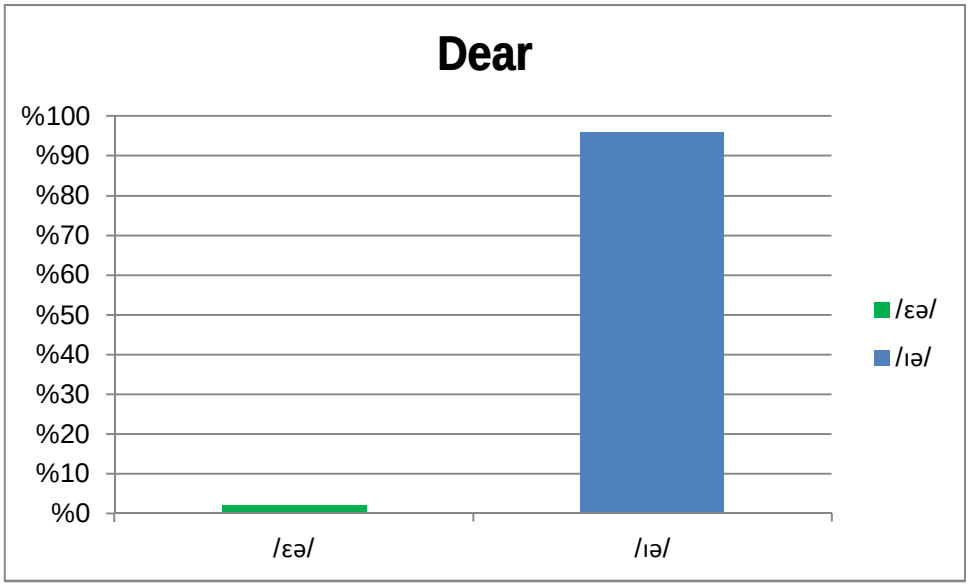
Graph 25 - rate of distortions in loud reading (<ea> + <r>)



Graph 26 - rate of distortions in loud reading (<ea> + <r>)

	/ei/	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	/ɜ/	/ɪe/	---
Dear(52)						1 2%		50 96%				1 2%
Near(52)								51 98%				1 2%

Table 27 - <ear>.Number and rate of distortions in oral reproduction



Graph 27 - rate of distortions in oral reproduction (<ea> + <r>)

III.8. Realisation of the digraph <ai>

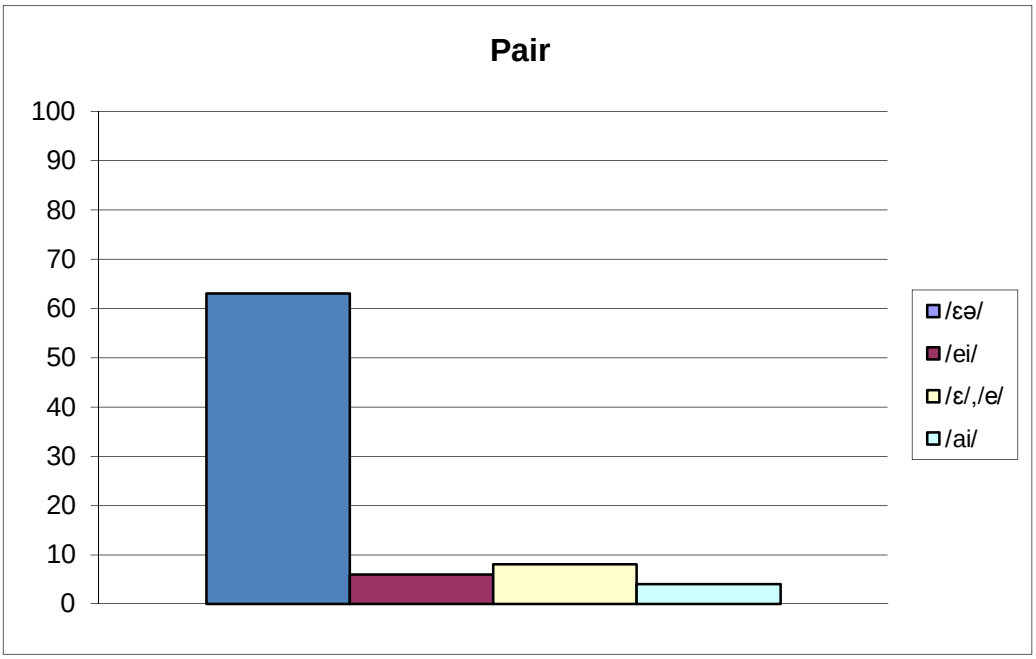
The lowest rate of distortions in the articulation of this digraph, is linked to the small number of sounds associated with it (two: /eɪ/ or / ɛə/ when the digraph is followed by <r>).

In " *pair* ", /ɛə/ represented 63% of the realisations. 6% of the students having no clue about the phonological rule cited above pronounced it /ei/. 8% of the students pronounced it /e/ or /ɛ/, this may be due to the influence of French (<ai> in French is always pronounced /e/ or /ɛ/).

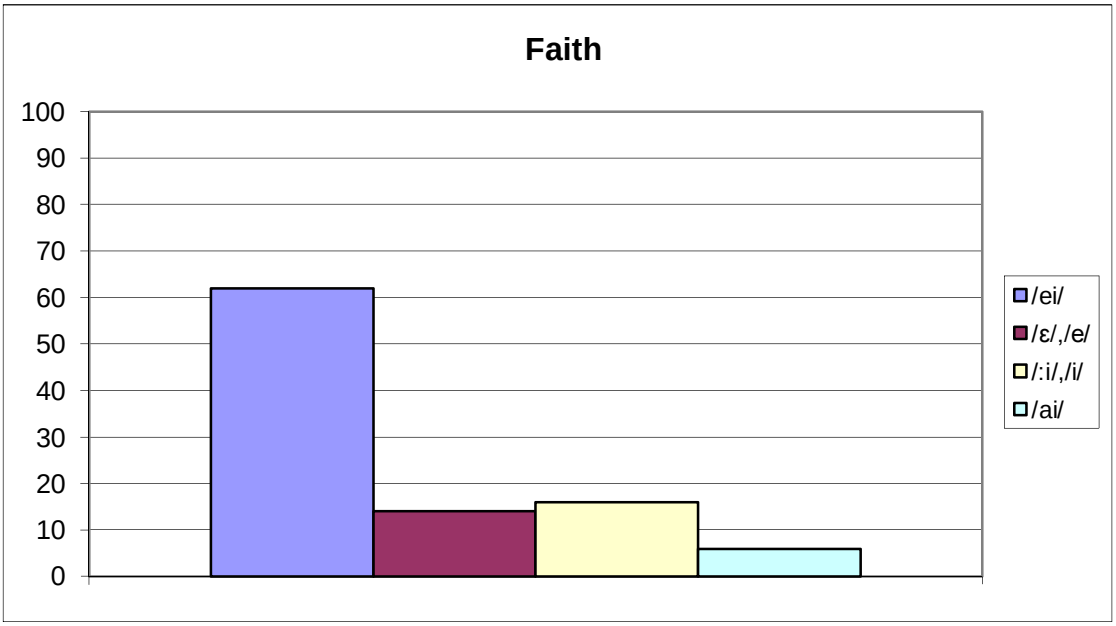
In " *faith* ", /ei/ represented 62% of the realisations .This rate increases with the oral reproduction. 14% of the students pronounced it /e/ or /ɛ/, for the same reasons suggested before (the influence of French).

	/ei/	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	/ɜ/	/ɪe/	---
Pair(52)	3 6%	3 6%	1 2%	2 4%	1 2%	33 63%		4 8%	1 2%	2 4%	1 2%	1 2%
Faith(52)	32 62%	5 10%	1 2%	3 6%	5 10%		3 6%		2 4%			1 2%

Table 28 - <ai>.Number and rate of distortions in loud reading



Graph 28 - rate of distortions in loud reading (<ai>)

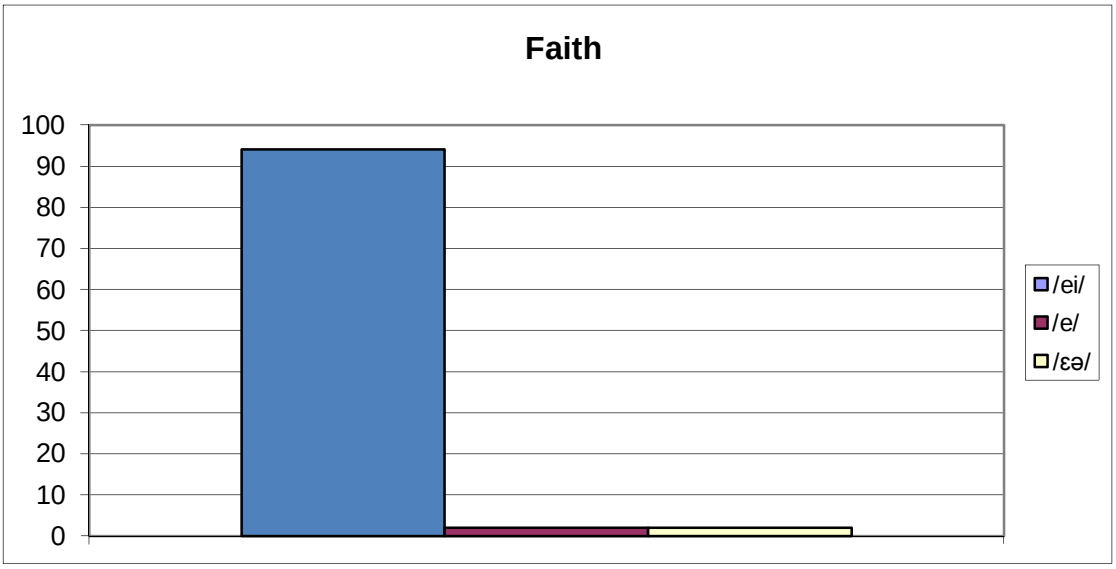


Graph 29 - rate of distortions in loud reading (<ai>)

	/ei/	/e/	/ɪ/	/ai/	/i/	/ɛə/	/i:/	/ɪə/	/ɛ/	/ɜ/	/ɪe/	---
Pair(52)						50 96%				1 2%		1 2%
Faith(52)	49 94%	1 2%				1 2%						1 2%

Table 29 - <ai>.Number and rate of distortions in oral reproduction

Graph 30 - rate of distortions in oral reproduction (<ai>)



Graph 31 - rate of distortions in oral reproduction (<ai>)

III.9. Realisations of the digraphs <ow>, < ou>, < oi>

These digraphs are the most frequent ones in English and they have a very wide range of realisations (see chapter 5) that is why the distortions are so numerous.

III.9.1. The digraph <ow>

III.9.1.1. When initial

During the pre-tests students had no difficulty with these digraphs when initial.

< ow > initial is pronounced /əʊ/ except in "owl" and "owlish" where it is pronounced /aʊ/.

III.9.1.2. When medial

In this particular position the number of distortions is amazing.

< ow > in "allowed" : /əʊ/ represents most of the deviations (62%).

The correct phoneme /a ʊ / represents only 21% of the realizations, despite the fact that this word is supposed to be known by students because it is introduced when dealing with modals.

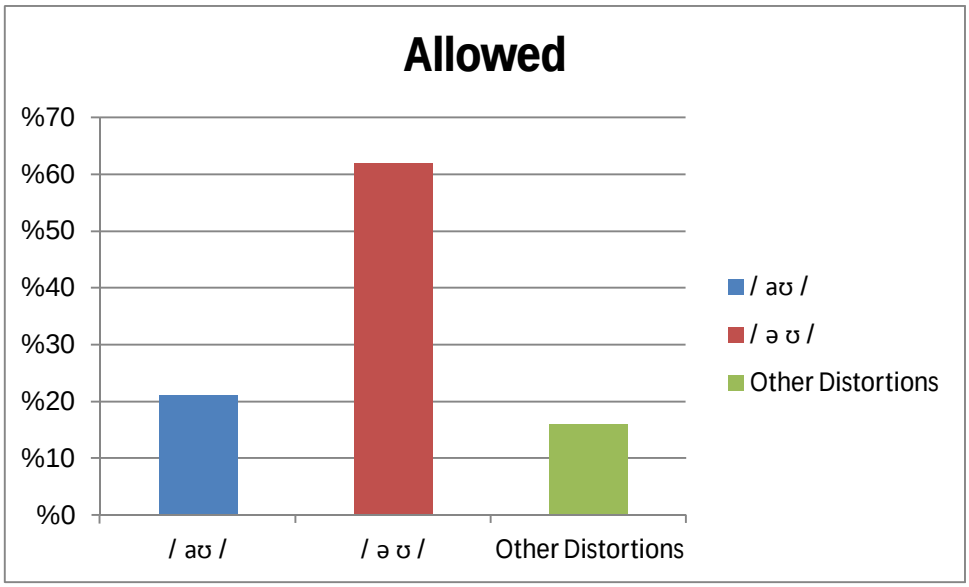
III.9.1.3. When final

In " *low* " : /əʊ/ is heard 25 times (48%). / o / , / ɔ / , / ɔ: / are produced in 12 ❖ occurrences (23%) probably because of the influence of spelling ,< o > being pronounced / ɔ / or / o / in French .

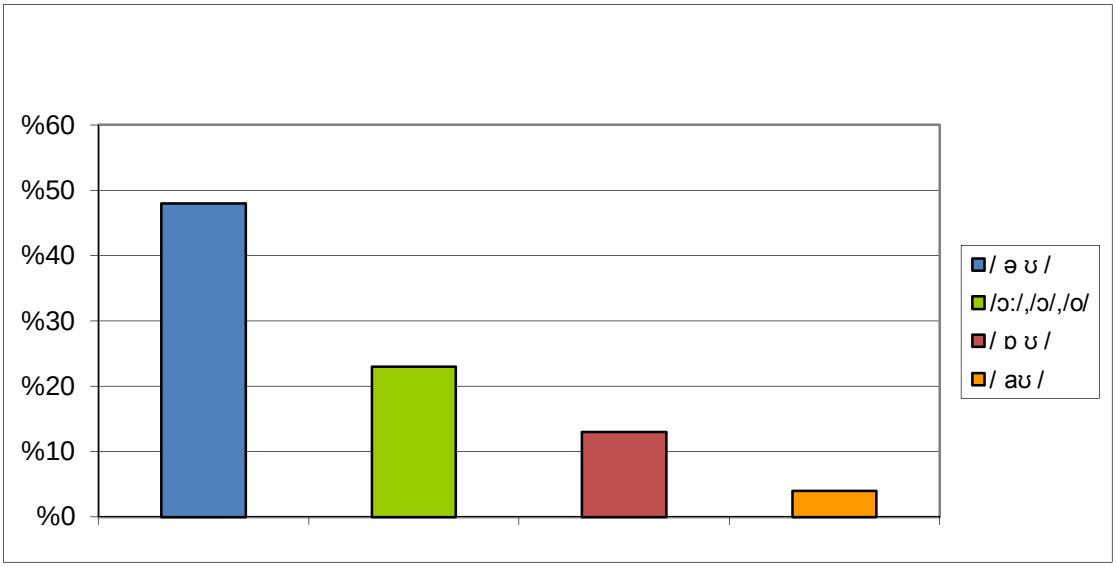
	/ɔ:/	/ɔʊ/	/aʊ/	/əʊ/	/ɔ/	/ɒʊ/	/eʊ/	/o/	/ɔɪ/	/u:/	/ɔwə/	/ʊ/	-

Allowed(52)	1 2%		10 20 %	33 62 %	1 2 %	3 6%			1 2%	1 2%		1 2%	1 2 %
Low(52)	9 18 %	5 10 %	6 12 %	24 48 %	2 4 %	2 4%	1 2%	1 2 %			1 2%		1 2 %

Table 30 - <ow> .Number and rate of distortions in loud reading



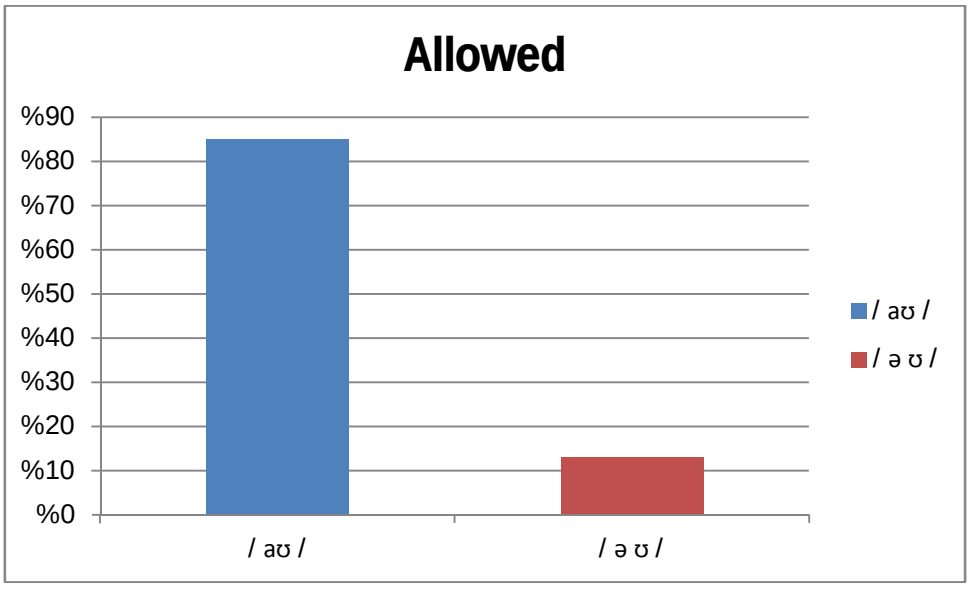
Graph 32 - rate of distortions in loud reading (<ow>)



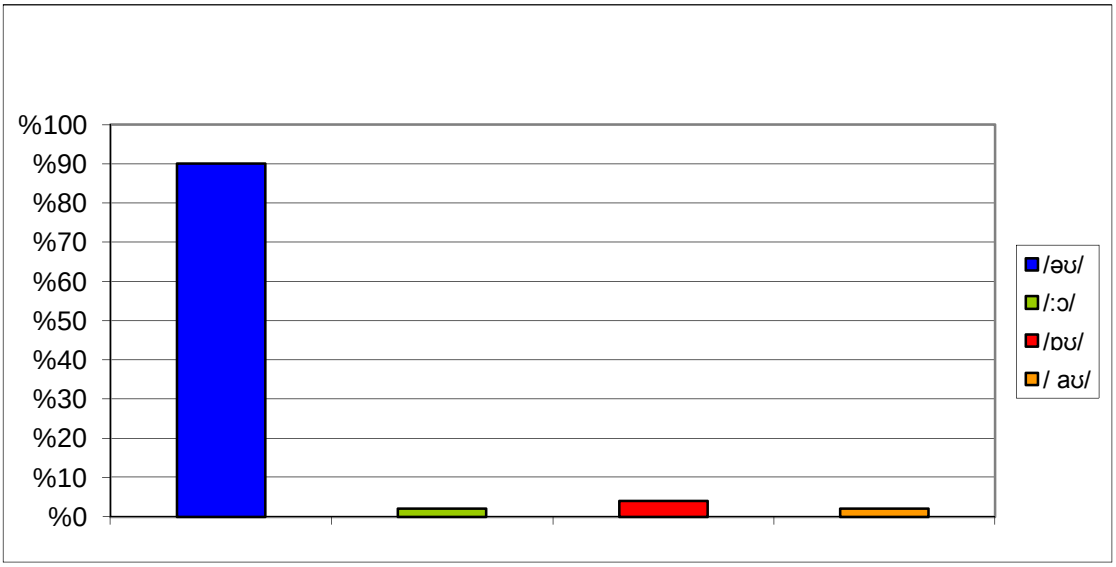
Graph 33 - rate of distortions in loud reading (<ow> when final)

	/ aʊ /	/ ə ʊ /	/ ɒ ʊ /	/ɔ:/	-
Allowed(52)	44 85%	7 13%			1 2%
Low(52)	1 2%	47 90%	2 4%	1 2%	1 2%

Table 31 - <ow> .Number and rate of distortions in oral reproduction



Graph 34 - rate of distortions in oral reproduction (<ow>)



Graph 35 - rate of distortions in oral reproduction (<ow> when final)

III.9.2. The digraph <ou>

III.9.2.1. When initial

< ou > initial is pronounced /au/ in almost all the words (except "ought").

III.9.2.2. When medial

- <ou> : in "*aloud*", the glide /əʊ/ is heard in 60% of the utterances and /aʊ/ in only 25% of utterances .

- In " *pour* " the pronunciations /pu:r/ and /pur/ (60%) are meaningful : the first reason is that the English word "*pour* " shares the same spelling with the french preposition "pour" and the second is that the grapheme <ou> in French is pronounced /u/.

- In "*tour*" the same phenomenon is observed. In 62% of the utterances /u:/ or /u/ is heard. Two words with an identical spelling exist in both English and French.

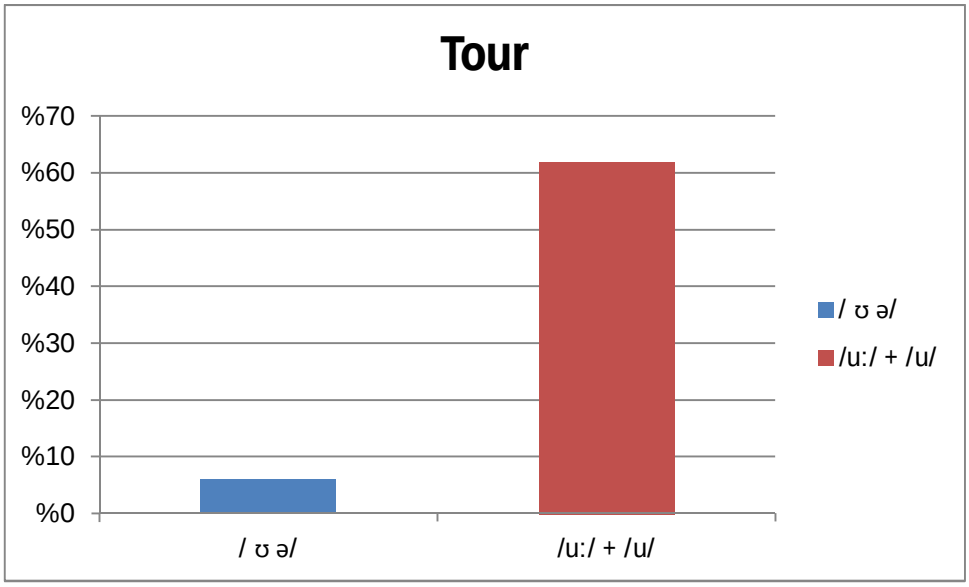
- The digraph <ou> in the ending <ous>:

  Once more, the negative transfer of French spelling is revealed: only 10 students out of 52 (19%) pronounced this digraph /ə/. The other 81% pronounced it /ɒ/ or /ʊ/.

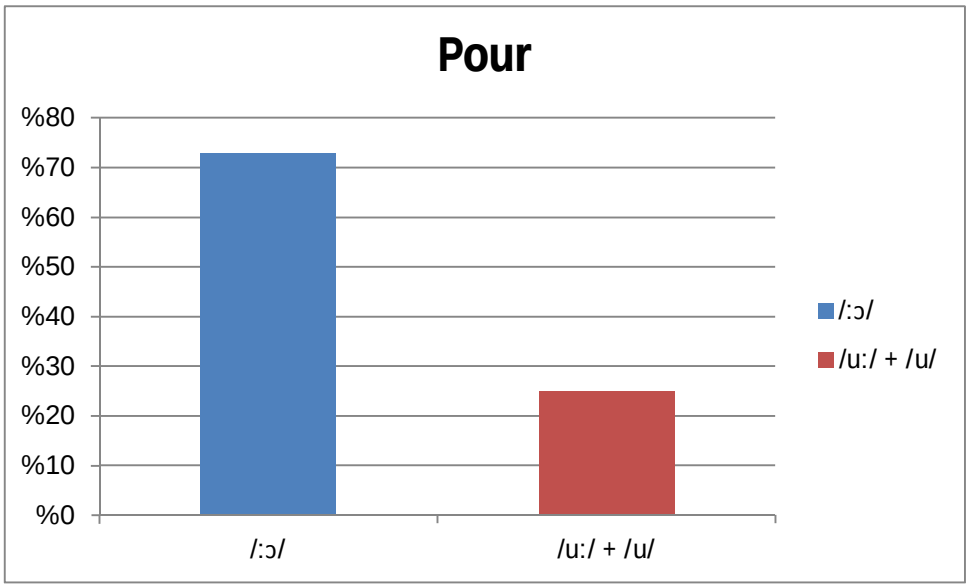
- A flagrant improvement of the students is recorded in the oral reproduction.

	/ ə ʊ /	/ aʊ /	/ ɒ ʊ /	/ʊ ə /	/ ɔ ʊ ə /	/ɔː/	/uː/	/ ʊ /	/u/	/ɔ/	/ a ʊ ə /	/ə/	/ɒ/	---
Aloud(52)	31 60 %	13 25 %	2 4 %			1 2%	1 2%		1 2%	2 4 %				1 2 %
Pour(52)		2 4%		4 8 %		8 15 %	17 33 %	1 2%	14 27 %	4 8 %				2 4 %
Tour(52)		1 2%		3 6 %	2 4 %	7 13 %	16 31 %	1 2%	16 31 %	4 8 %	1 2 %			1 2 %
Tremendous (52)								23 45 %				10 19 %	18 35 %	1 2 %

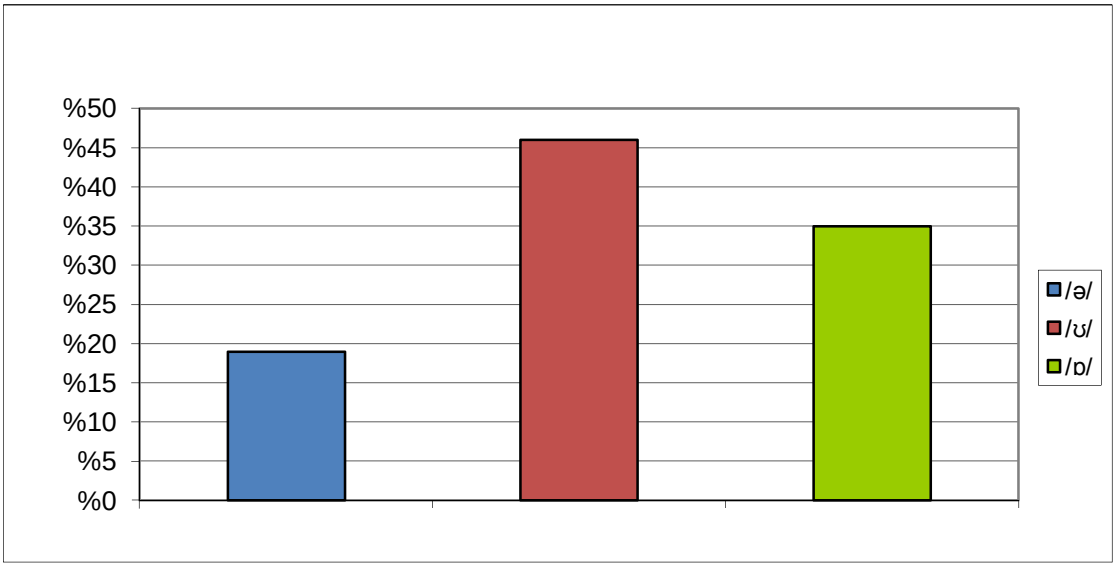
Table 32 - <ou>.Number and rate of distortions in Loud reading



Graph 36 - rate of distortions in loud reading (<ou>)



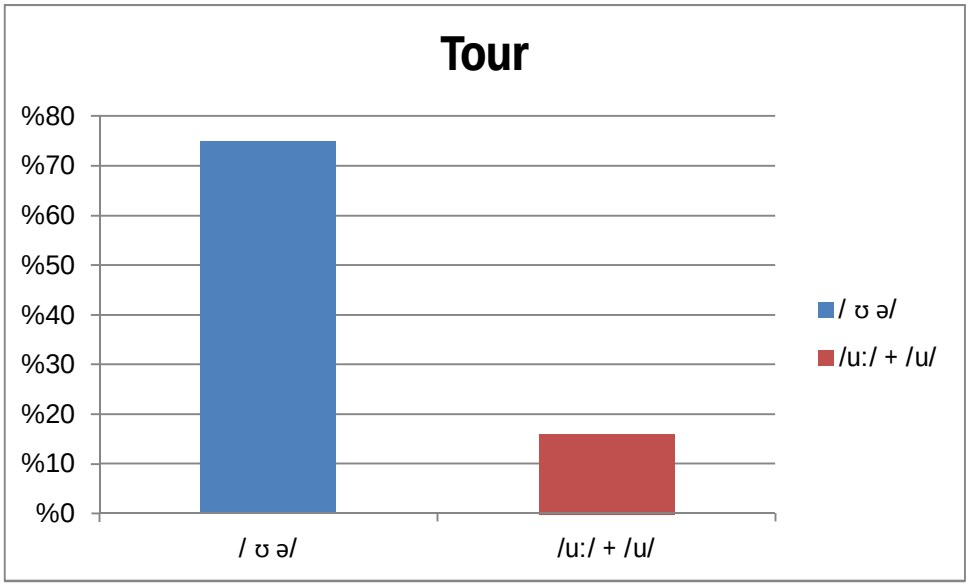
Graph 37 - rate of distortions in loud reading (<ou>)



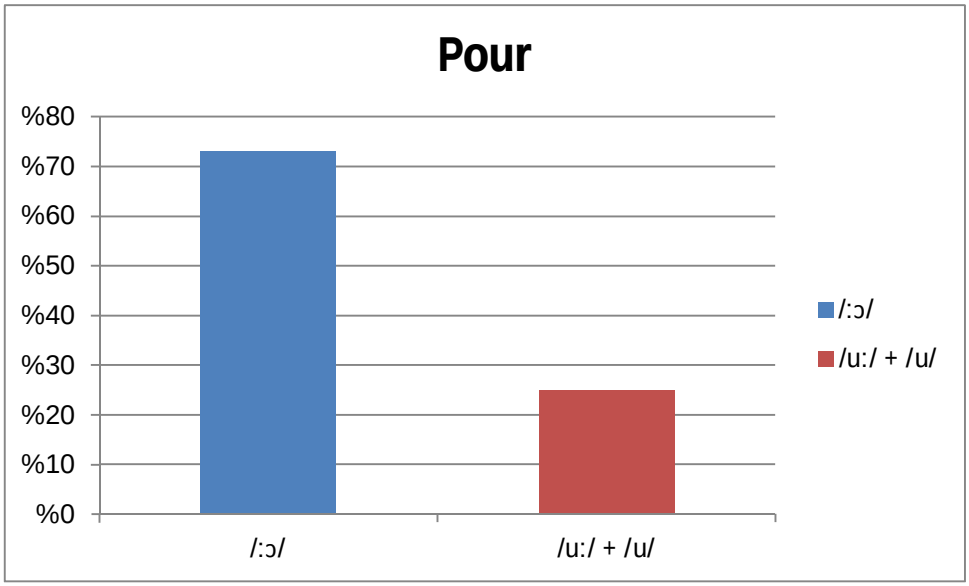
Graph 38 - rate of distortions in loud reading (<ous>)

	/ aʊ /	/ʊ ə /	/ ə ʊ /	/ɔ:/	/u/	/u:/	/3/	/ə/	/ ʌ /	---
Aloud(52)	41 79%		10 19%							1 2%
Pour(52)				38 73%	6 12%	7 13%				1 2%
Tour(52)		39 75%		3 6%	3 6%	5 10%	1 2%			1 2%
Tremendous(52)								47 90%	4 8%	1 2%

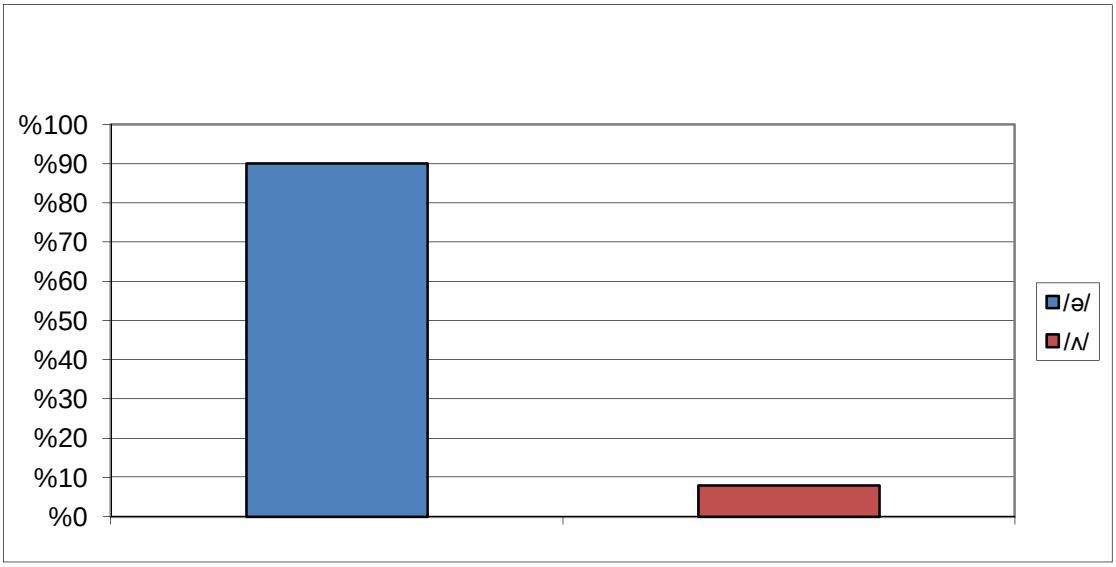
Table 33- <ou>.Number and rate of distortions in oral reproduction



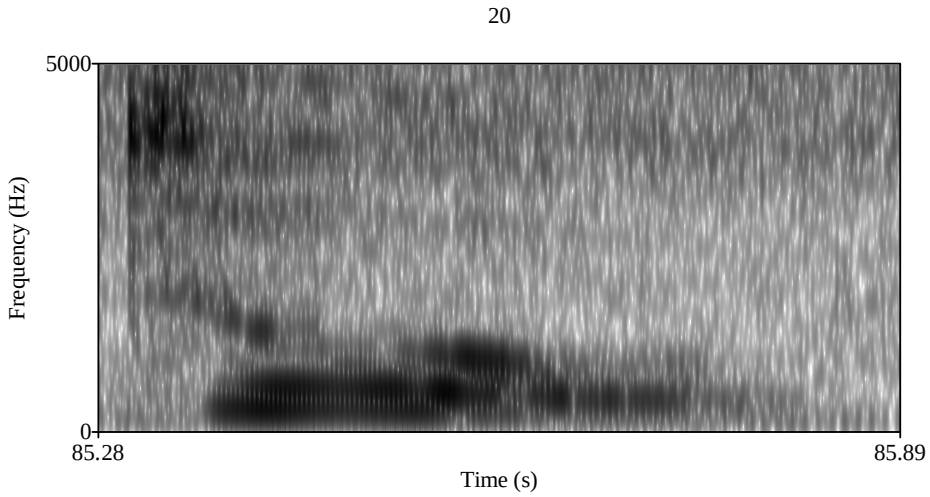
Graph 39 - rate of distortions in oral reproduction (<ou>)



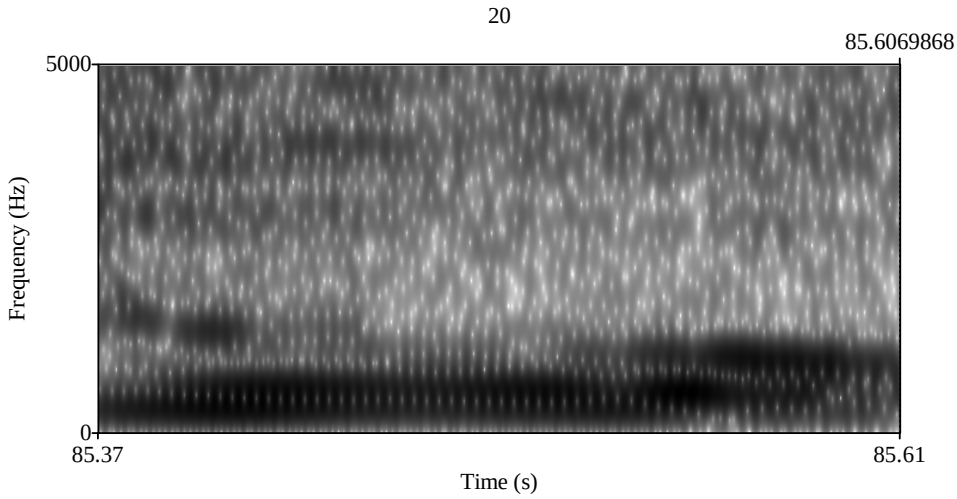
Graph 40 - rate of distortions in oral reproduction (<ou>)



Graph 41 - rate of distortions in oral reproduction (<ous>)



Spectrogram 41 : The word "tour" said by a female speaker(n° 20)

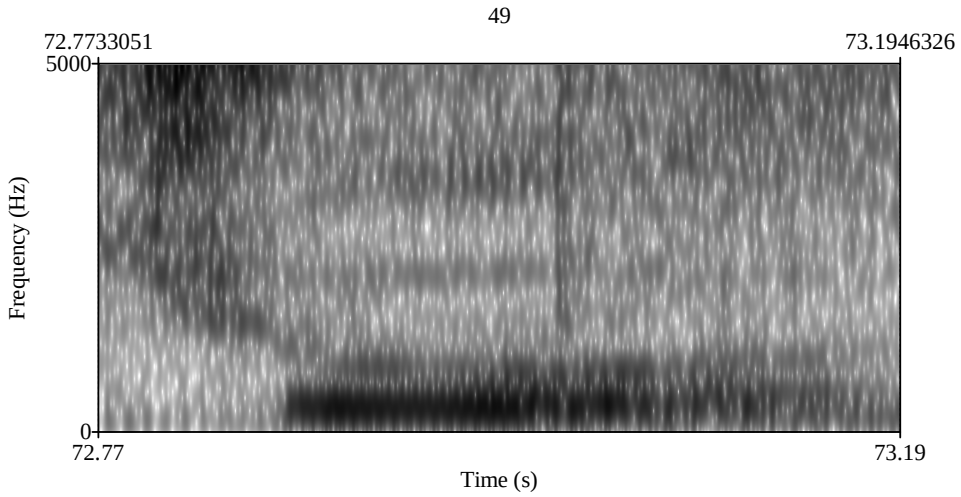


Spectrogram 42 <ou> in "tour" said by a female speaker (n° 20) realised as /u/

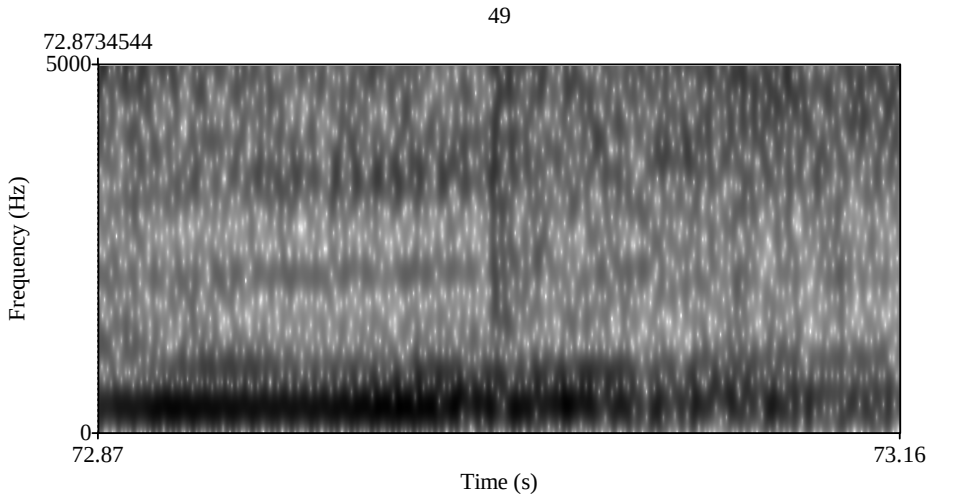
F1: 298

F2: 903

F3: 3000



Spectrogram 43 : The word "tour" said by a male speaker(n° 49)

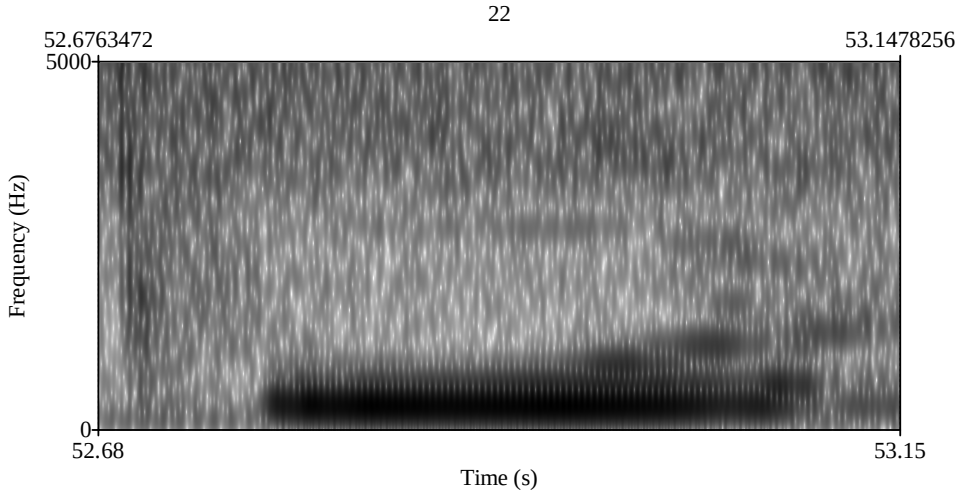


Spectrogram 44 <ou> in "tour" said by a male speaker(n° 49) realised as /u/

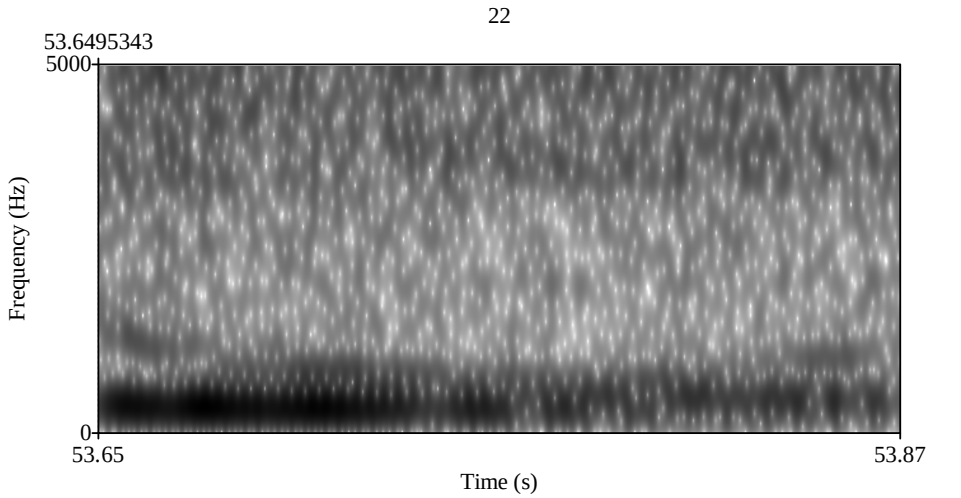
F1: 298

F2: 903

F3: 2082



Spectrogram 45 : The word "pour" said by a female speaker(n° 22)

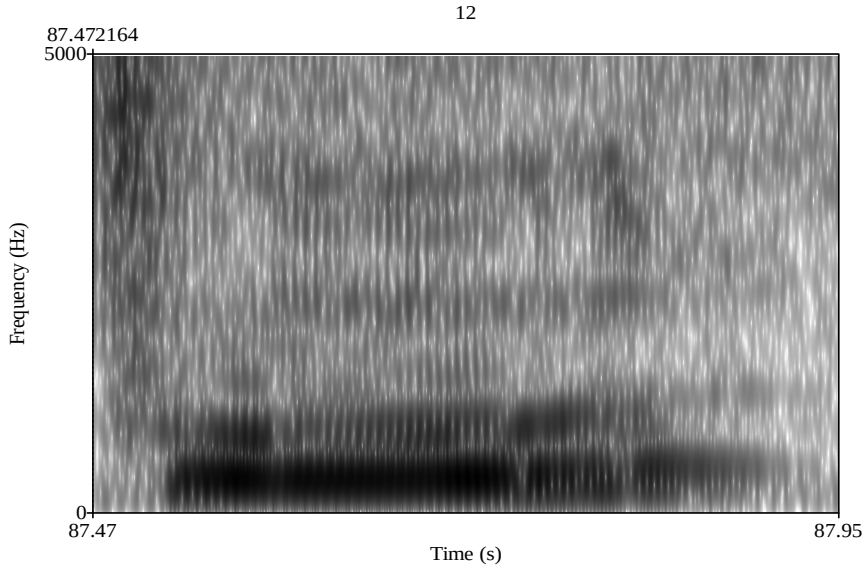


Spectrogram 46 <ou> in "pour" said by a female speaker(n° 22) realised as /u/

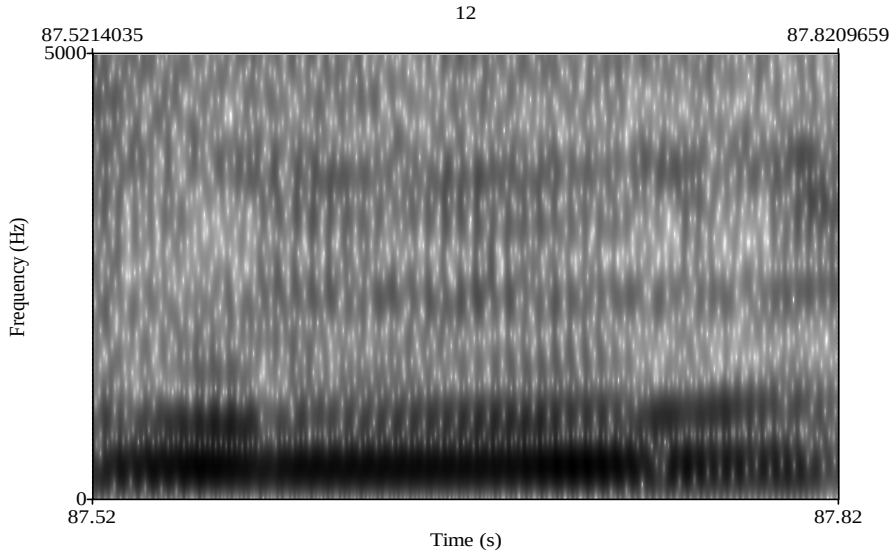
F1: 298

F2: 807

F3: 2687



Spectrogram 47 : The word "pour" said by a male speake(r n° 12)

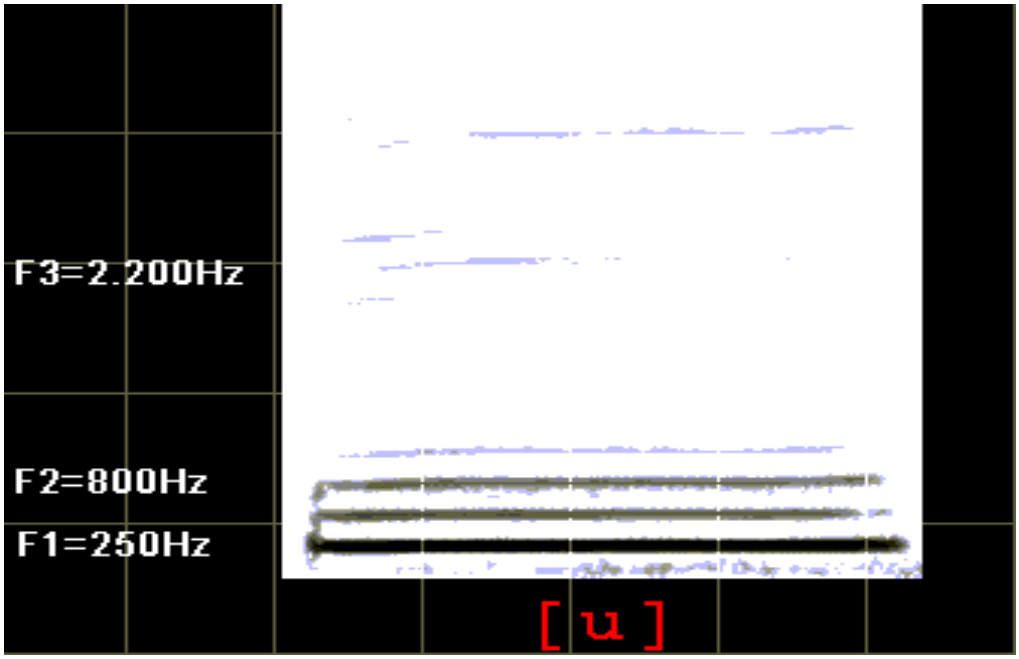


Spectrogram 48 <ou> in "pour" said by a male speaker(n° 12) realised as /u/

F1: 290

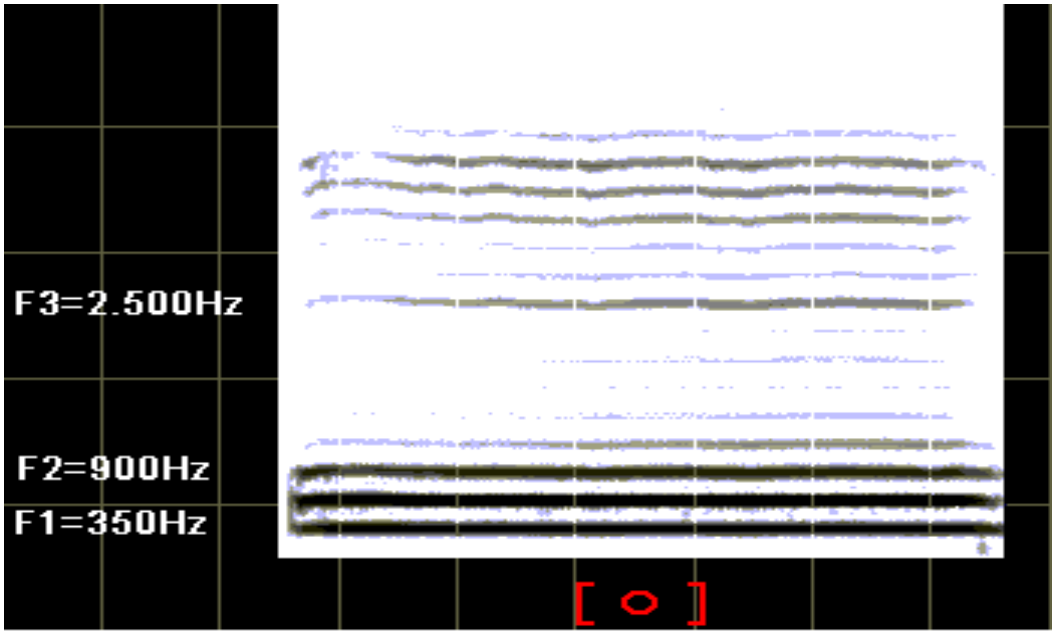
F2: 883

F3: 2345



Spectrogram 49 : The oral back vowel / u / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm



Spectrogram 50 : The oral back vowel / o / (Landercy and Renards, 1981, *Phonétique et Prosodie du Français*)

http://courseweb.edteched.uottawa.ca/phonetique/pages/phonetique/tableau_acou_voy.htm

Through the spectrograms showing the acoustic features of the vowels pronounced by the students (spectrograms 54 – 55), we can notice that their formants are closer to the ones of the french vowel /u/ (spectrogram 57).

	F1	F2	F3
<ou> in "pour" n° 54	298	807	2687
n° 56	290	883	2345
French back vowel /u/	450	800	2200

In Table 32 /u/ and /u:/ represent the highest number of occurrence and the influence of spelling. The negative transfer from L3 to L4 is confirmed.

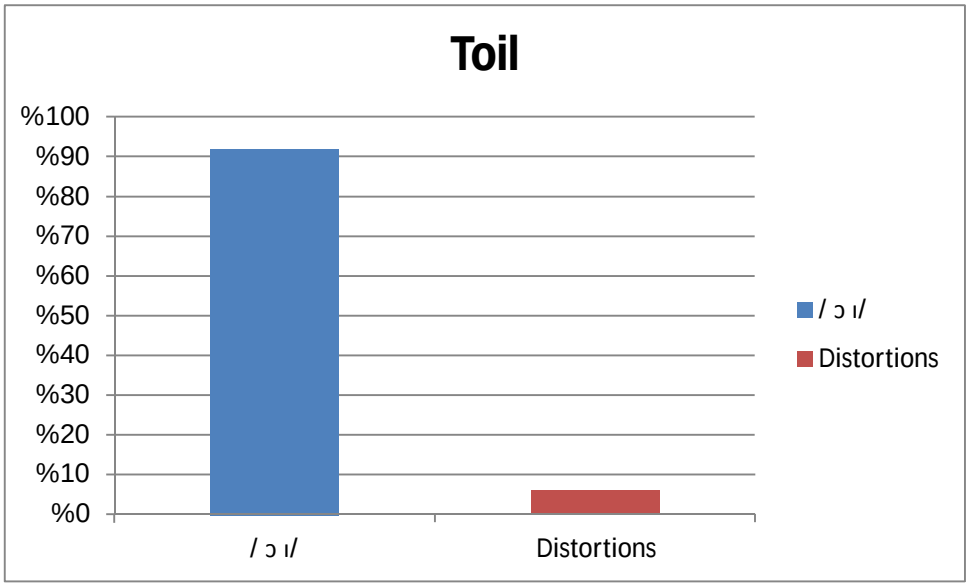
III.9.3. The digraph < oi >

There is no difficulty to pronounce this grapheme because it has only one corresponding sound- glide /ɔɪ/. In this research, 92% of the students pronounced it correctly . This high rate of correct pronunciation may also be explained by the correspondence between spelling and sound.

The exceptions constituted by words of French origin such as " *coiffeur* ", "*repertoire* ", where < oi > is pronounced /wa:/ had no influence on the pronunciation of trainees perhaps because not yet known by them.

	/ɔ ɪ /	/ aʊ /	/ ə ʊ /	/ɔ:/	---
Toil(52)	48 92%	1 2%	1 2%	1 2%	1 2%

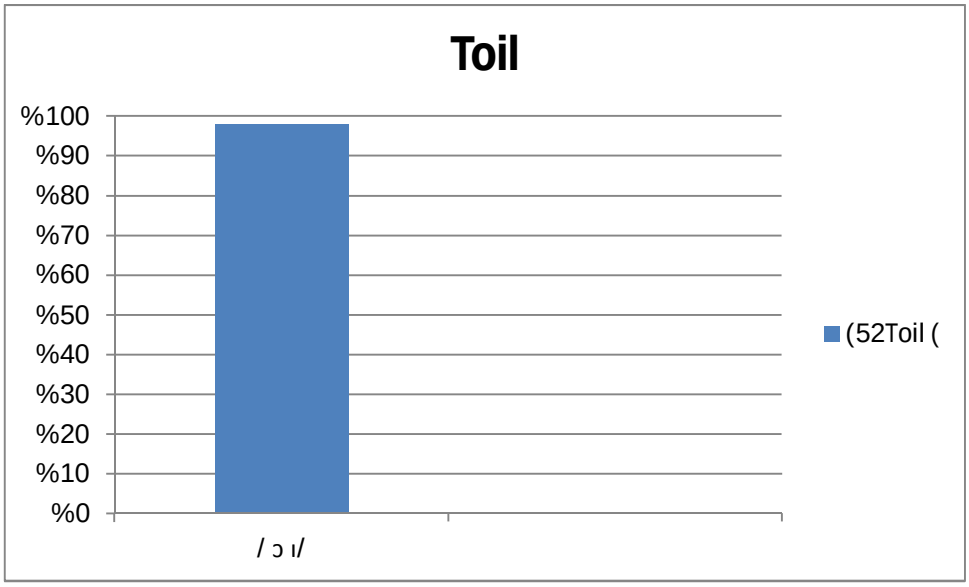
Table 34 - <oi>.Number and rate of distortions in loud reading



Graph 42 - rate of distortions in loud reading (<oi>)

	/ɔ ɪ /	---
Toil(52)	51 98%	1 2%

Table 35 - <oi>.Number and rate of distortions in oral reproduction



Graph 43 - rate of distortions in oral reproduction (<oi>)

III.10. Long vowels versus short vowels

Throughout this research, the duration of vowels attracted our attention and in order to check if the appropriate length was associated with the vowels produced, a pair of words " *leave ", " live* ", illustrating the opposition long / short vowels, was proposed for reading.

From this analysis were excluded the participants who missed a word while reading or repeating it, and those who gave an unexpected pronunciation.

Knowing that the approximate length is about 18 csecs for /ɪ/ followed by a lenis fricative and 36 csecs for /i:/ followed by a lenis fricative. It stands out that vowel duration is not mastered by the students. As shown in the tables 36 and 37, more than 80% of the durations were wrong. The performance of 16% of the students shows an opposition long/short vowels close to the norm. For another 16% the oppositon is perceived (the length of a long vowel is twice the length of a short one), but the duration of each vowel is rather far from the norm. For the remaining 68% the two vowels are performed with almost the same length and sometimes <i> being longer than <ea>.

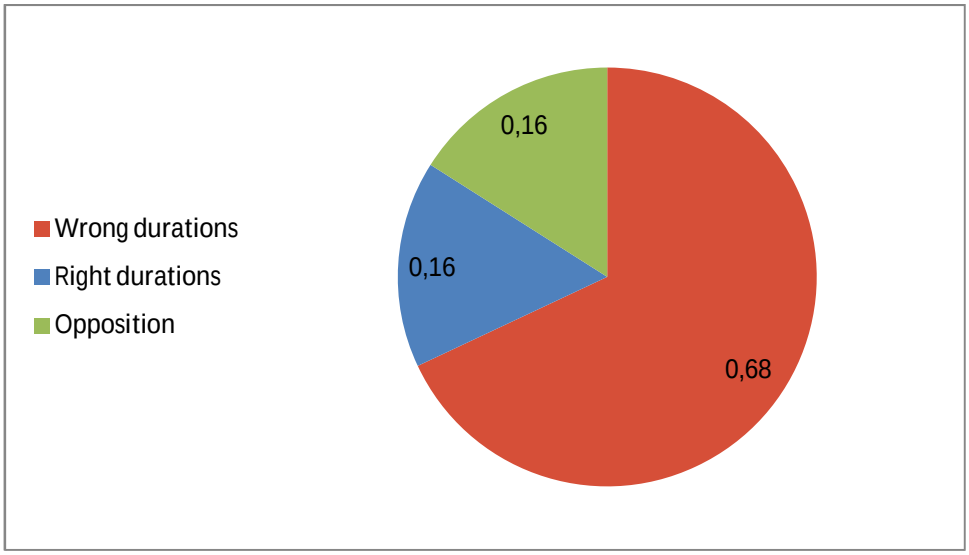
Things are totally different in the oral reproduction where the rate of right durations reaches 76% (tables 38 and 39).

Male speakers		
student N°	duration of /i:/in "leave" (ms)	duration of /ɪ/ in "live"(ms)
3	206,86	209,311
17	244,234	242,084
54	320,846	130,683
7	332,724	116,094
50	247,931	155,609
27	288,115	160,869
38	186,904	143,995
12	414,759	235,12

Table 36 - The duration of vowels in the minimal pair *"leave/live"* in loud reading (male speakers).

Female speakers		
student N°	duration of /i:/in "leave"(ms)	duration of /ɪ/ in "live"(ms)
53	225,193	202,095
36	256,666	216,176
15	241,083	201,634
44	254,839	275,604
51	215,615	170,79
52	177,78	102,377
22	291,715	208,327
11	195,512	232,155
6	214,02	132,837
46	290,496	205,347
43	232,665	201,028
2	192,622	153,244
45	266,094	272,009
4	256,856	197,047
18	202,733	340,473
20	319,57	189,174
10	189,978	84,313

Table 37 - The duration of vowels in the minimal pair *"leave/live"* in loud reading (female speakers)



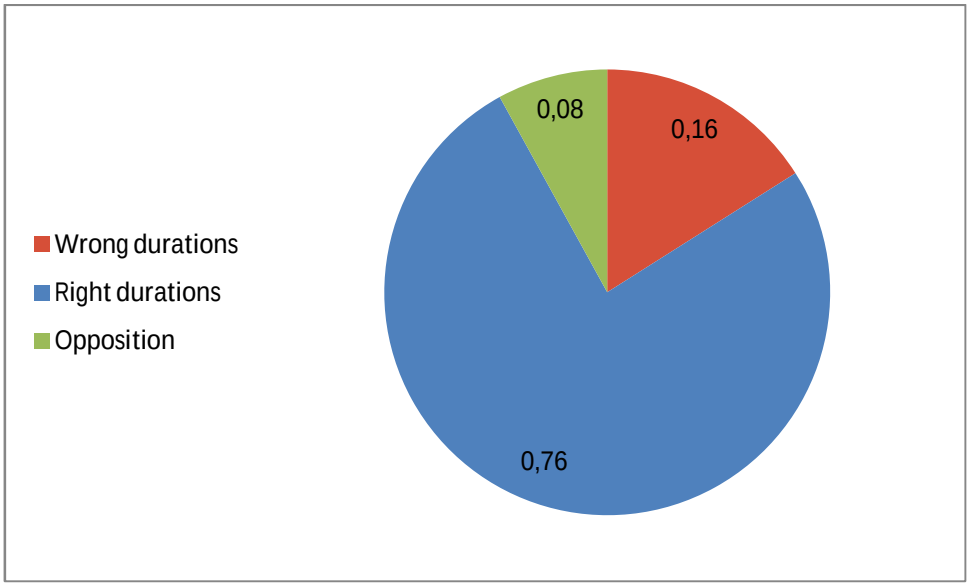
Graph 44 - Opposition long/short vowels in loud reading

Male speakers		
student N°	duration of /i:/in "leave" (ms)	duration of /ɪ/ in "live"(ms)
3	331,74	128,4
17	304,513	130,38
54	436,091	121,173
7	356,074	157,324
50	215,221	143,505
27	298,184	243,886
38	334,168	181,253
12	381,209	172,75

Table 38 - The duration of vowels in the minimal pair *"leave/live"* in oral reproduction (male speakers)

Female speakers		
student N°	duration of /i:/in "leave"(ms)	duration of /ɪ/ in "live"(ms)
53	267,515	168,847
36	302,978	167,067
15	298,998	147,975
44	342,549	228,395
51	331,981	178,064
52	309,922	156,579
22	312,402	205,215
11	230,428	165,104
6	351,467	180,023
46	344,891	164,186
43	302,226	176,276
2	355,123	162,987
45	298,047	152,25
4	371,004	138,562
18	328,267	154,086
20	390,491	163,386
10	340,575	149,372

Table 39 - The duration of vowels in the minimal pair *"leave/live"* in oral reproduction (female speakers).



Graph 45 - Opposition long/short vowels in oral reproduction

CONCLUSION

This error analysis reveals different types of distortions:

- Distortions may be due to a lack of training. The learner has to acquire new articulatory habits to produce sounds which do not exist in L1.
- Learners ‘errors are not always predictable. Contrastive Analysis alone is not sufficient to explain all the errors. Other factors such as psychology, must be taken into consideration.
- Distortions may be due to spelling (the interference with the pronunciation of French is very important).

- Distortions due to a wrong association sound / spelling. The rate of distortions is very important when the English grapheme has many possible pronunciations.

- Vowels are not given the right length despite the fact that in the mother tongue of the students, the opposition short/long vowel exists.

CHAPTER IV

PEDAGOGICAL IMPLICATIONS

CHAPTER IV

PEDAGOGICAL IMPLICATIONS

INTRODUCTION

All the distortions noticed through the whole teaching period in general and during the experiment in particular are not due to a physical handicap of the learners but the reasons are various, and if we want to reach our goal that means to lead trainees to get a good pronunciation when speaking English, we must intervene at different levels.

First of all, we have to improve the training of students who are future teachers. The changes must occur in the training programmes proposed in the university.

When speaking about teachers training, I remember a group of students from a grammar school who came to me and asked for help. They had an exercise about intonation -segmental and suprasegmental phonetics being now introduced during the first form –and they had to say if the intonation associated with the tag question was of a rising or a falling type .Their teacher asked them to do the exercise at home without any recorded support, and obviously ignoring that both types were likely to be used according to whether the speaker was expecting an answer (when using a rising intonation) or not (when using a falling intonation). This story is not linked with the topic of this research –that means the vocalic systems – but it reveals the lacks in the training of teachers.

Teachers training starts at the university and to achieve a better training, three things have to be done:

-To use an appropriate equipment which is the language laboratory.

-To adapt the teaching methods to the specificity of the learners.

-To modify the official syllabus and make it fit our objectives.

IV.1. The language laboratory

IV.1.1. Program to apply

The language lab gives the opportunity to each student to listen and to be exposed to the language he or she is learning first and then to practice this language because through the various exercises the trainee is going to improve his or her oral production. All the students belonging to one group work at the same time, and this opportunity is not given to students of a traditional class where time devoted to the session is not sufficient to let them all participate.

This input is of a great value when learning a foreign language in a country where this language is used in a sporadic way – heard but not always spoken– and in a very limited setting, the class room.

The student, isolated in his booth, may repeat sounds, words, sentences, record his own production and if necessary, correct it after having compared it with the original recording.

As far as the module of phonetics is concerned the role of the language lab is essential and we cannot do without.

The practical exercises proposed should correspond to the objectives of the programme taught through the six semesters:

- ❖ The first two semesters being devoted to segmental phonetics – the articulations of vowels and consonants – the corresponding recordings should present the different sounds in isolation, then in words. And in this step, exercises about minimal pairs should be quite interesting. Lastly, sentences with words containing the sounds in question are presented.
- ❖ The third semester is about word stress.

- ❖ The fourth semester deals with the main cases of assimilation.

- ❖ During the fifth semester, the student studies in detail the different types of intonation, and here, listening to native speakers conversations is very important and necessary.

- ❖ The six and last semester dealing with R.P–the official variety which is supposed to be taught – and General American, it seems once more necessary for students to be exposed to these varieties.

All these exercises will have the best effect if done first without any written support.

IV.1.2. Complementary activity

The role of the language lab may be completed by another activity this time individual.

Students may be provided with a room equipped with computers or audio file readers, and according to the individual needs and level, each learner will be oriented by his teacher towards the appropriate recording. But this activity is not compulsory, it

is free and the teacher is not present to supervise it. If any problem ,a tutor may be called for help.We had the opportunity to see that this space devoted to a free listening activity was available in Grenoble University and in many other european universities, and we hope that such a place will be offered to our students very soon.

In theory this infrastructure exists in our university but unfortunately it is not possible to work in the right way because of three main reasons:

- The labs are rather old, very often out of order and the teacher has to face these situations without the help of a trained lab technician.

- The number of qualified teachers able to organize and supervise this activity is not sufficient.

- The huge number of students: the largest number of seats available in a lab is about thirty and the number of students per group is about sixty and sometimes it may reach eighty (for the year 2010 – 2011).

Great efforts to change things are provided even if we are aware that it is not within our ability to change certain factors.

IV.2. Adapted teaching methods

As it was said in the introduction, when an Algerian pupil starts learning English, he already speaks dialectal Arabic, standard Arabic and more or less French. The negative transfer towards English is not going to be a simple addition of the negative transfer of an Arabic speaker learning English, and the negative transfer of a French speaker learning English. The situation is far more complex. The distortions may come from the sounds of the mother tongue or from another foreign language learned before as it is the case here.

A positive transfer from L1 towards L3 may be inhibited by a negative transfer from L2 (the sequence V+/n/ in Arabic and English and nasalized vowels in French). In our case French is going to have a great influence because it is the first indo-european language the learners are in contact with and when discovering English – a language with an alphabetic script system similar to that of French– they will have a tendency to apply the French phonological rules when speaking English . In addition to that, the students' pronunciation of French is, in fact, deviant from the norm because of the lack of well trained teachers.

Nevertheless, a positive transfer must not be forgotten and advantage should be taken of this situation. A rich linguistic background should be considered as a treasure and never as a handicap.

In this research the main interferences may be classified into two different categories: the first kind is due to articulatory habits, the second one happens when a sound is produced by the speaker as an other sound already present in the background

of the speaker because sharing the same visual representation in writing (<i> in "private").

IV.2.1. Distortions due to articulatory habits

As seen in chapter II, Arabic – dialectal or standard – is the language in the environment of the student with the smallest number of vowels and when producing vocalic sounds the speaker of Arabic has just to perform a limited number of movements of the tongue associated with another limited number of positions of the lips. This may explain why when confronted to the wider range of vowels of the other languages the untrained learner , unable to move rapidly his organs , to change their positions to produce the right sound , is going to produce one single sound for all the vowels of the utterance, eg : the French word *" utiliser "* may be pronounced /itilisi/ instead of /ytilize/.

This deviant pronunciation may also be explained by the fact that in the Arabic vocalic system the features close " front " and " rounded " are never associated so the speaker of Arabic may not perceive this sound and he is going to produce the only close front vowel internalized in his own system: /i/. The final front half-close vowel /e/ is assimilated to the close front vowel /i/. In English the word " *very* " /'verɪ / may be pronounced /'vɪrɪ / for the same reasons. The word " ridiculous " pronounced /r ɪ'dɪkɪlɪs / is another example.

Another interesting example in French is given with the misleading pronunciation of the word "*peugeot* " /biʒu/ instead of /*p*œʒo/. All the vowels between the half close and half open positions are drawn either towards the close or the open

position. The initial consonant is performed as a lenis, bilabial, plosive because no fortis counterpart exists.

IV.2.2. Distortions due to spelling

When dealing with the distortions due to spelling, the first case which draws our attention is the sequence < V+n >. It is quite interesting to see how an Arabic speaking learner perceives and produces this sequence.

When starting learning French, the first foreign language studied in primary school, the young child not yet familiar with nasalized vowels pronounces the sequence <V+n> V + /n/ : an oral vowel followed by the nasal consonant /n/ representing the nasalisation perceived by the learner, all the Arabic vowels being oral.

Going further in our investigation, about three year old children are asked to say "bonjour" (*good morning*) and all of them say /bɔnʒuʀ/ .Through this experiment Polivanov's theory is confirmed :

> Les phonèmes et les autres représentations phonologiques élémentaires de notre langue maternelle se trouvent si étroitement liés avec notre activité perceptive que , même en percevant des mots (ou phrases) d'une langue avec un système phonologique tout different , nous sommes enclins à décomposer ces mots en des représentations phonologiques propres à notre langue maternelle
>
> (Polivanov E. (1931): La perception des sons d'une langue étrangère .*Travaux du cercle linguistique de Prague* , p.4)

But when our students are dealing with English, this theory is erased and specially for words having the same spelling as in French, the process is inhibited. The

positive transfer expected from Arabic is stopped because of the negative transfer of French. In this research this case is illustrated by the word "*linguistics*" said /lɛ̃ 'gwɪstɪks / instead of / lɪŋ'gwɪstɪks /(table 6,spectrograms 6 and 8). Other cases where the distortions are due to spelling are shown in this work:

- < a > in *"according*" with 81% of distortions (the grapheme is pronounced/a/ as shown in table 12).
- <ou > in "*pour* " and "*tour* " : / u: / and /u / represent about 60% of the distortions. The same thing is observed in "*neighbour*" where < ou > is realised as /u: / , /u / , / ʊ / , / ɔ/ , / ɔ: / , / ɒ / in 61% of the utterances (table 32 and spectrograms 50, 52, 54, 56).
- < i > in "*private* " with 79% of distortions it is pronounced /i / or /ɪ / (table 10).

IV.3. proposed Teaching methods

IV.3.1. Practical exercises proposed to trainees when dealing with segmental phonetics :

In the lab, the teacher must first introduce the sound studied in isolation with the symbol representing it, transcription being thus softly put into use. At this particular moment, the teacher should point out the differences, as well as the similarities, with possible sounds existing in the languages already known by the learners. He may intoduce the front vowel /e/ found in "*bed*" and "*ten*" and point out that it is found in the word "أبي" /ebi:/. At the same time, he will set aside a possible confusion between the French pronunciation of the grapheme <e> and the phonetic symbol /e/.

This stage is very important for the trainees because it helps them to get aware of all these features and they are going to identify the sound no more through the prism of their internalized sound system, but according to a new sharper perception.

The articulatory features already given in a previous lecture may facilitate the acquisition of new articulatory habits. The teacher may help them by making fresh in their minds the position of the articulating organs.

The first exercises are based on listening and without any written support to avoid the influence of writing on pronunciation and thus to reduce the number of distortions due to spelling. The sound /i/ - which exist in Arabic in "ريف"/ri:f/ meaning countryside – is illustrated by a series of words of different spellings as in : *"sea"," teeth", "seize", "piece"*.

In a first time the learners are asked to listen to monosyllabic words containing the sound studied. Then they are asked to listen and repeat the words.

After that, they will be exposed to minimal pairs : that means two words with the same consonantal frame but with a different vowel already studied, such as ease /i :z/ and as /æ z/. It will be interesting to oppose the long vowel /i:/ to the short vowel /ɪ/ because this opposition exists in Arabic too and then it may be opposed to other vowels like in : "*seat*" /si:t/ - "*sit*" /s ɪ t/

"*seat*" /si:t/ - "*sort*" /sɔ:/

Of course, these exercises may be adjusted to suit the learners needs.

This exercise is very good for an Arabic speaker who is not familiar with such a wide range of vocalic sounds. And it is doubly interesting because it makes the

perception sharper and it develops the articulatory capacity of the learner when she or he is asked to repeat. Through such an exercise, the importance of a correct and accurate pronunciation is shown.

To end this series of exercises, the trainee is exposed to longer utterances. She or he is asked to listen and repeat whole sentences, such as "*she's keeping the sheep*". Once the performance is considered satisfactory, a written support is provided.

Now the trainee has the opportunity to read, to record his own oral reproduction and to compare it with the recorded pattern of the tape.

During the second semester, this set of activities will be completed by exercises of transcription .Once the symbols of all the English phonemes are presented, the student will be asked to transcribe the sentences heard using the international phonetic alphabet (I.P.A).

This step leads to speak about the phonetic transcription.

IV.3.2. Phonetic transcription

IV.3.2.1. Why teaching transcription?

When teaching pronunciation, transcription is inescapable despite certain lacks.To mention two examples in vowels, in the French word "*thé"*, the vocalic element is represented by the symbol /e/ which represents at the same time the more open vowel found in the English word "*bed"*. With the symbols representing diphthongs -/e ɪ /, /a ɪ /…- nothing tells us that most stress and length associated with the diphthong is concentrated on the first element, the second one being weakly sounded.

In consonants, /r/ represents the voiced , post alveolar , frictionless continuant in English and the voiced , alveolar roll, in Italian and Arabic.Transcription is very useful because English spelling is not phonetic and there is no one -to-one correspondence between sound and spelling .This fact is illustrated by the famous word "*ghoti"* created by George Bernard Shaw (Gerald Kelly 2007; p.122) to represent the word "*fish*", the sequence < gh > is pronounced /f /in "*enough"* / ɪ 'n ʌ f /, the grapheme < o > is pronounced / ɪ / in "*women"* /'w ɪ m ɪ n / and the sequence < ti > is pronounced /ʃ / in "*transcription*" /trɑ:ns'kr ɪp ʃ n/.

In English only 26 letters are available to represent 44 sounds. Different sounds may be represented by one letter or a groupe of letters and different letters or groups of letters may be pronounced the same way. As far as vowels are concerned only 5vowel letters are used in writing whereas 20 different sounds are produced when speaking.

The grapheme < ɑ > is pronounced / æ/ in "*cat*" , / ə/ in "a boy" , / ɑ:/ in "*father"*, /e/ in "*many*", /eɪ/ in "*ace*" on the other hand .The sound / ə/ is the pronunciation of < ɑ > in" *according*," of < er > in "*mother"*, of < or > in "*doctor"*, of < u > in" *suppose*", of < i > in" *possible*", of < our > in "*neighbour "*.

Usually, students do not like transcription, and very often, as noticed through the exams given, this part of the programme is neglected, it is felt as an extra system they have to acquire with many difficulties to overcome. This amalgam and the difficulties are accented by the fact that many phonetic symbols are borrowed from the alphabet of European languages .Very often, when the central vowels / ə/ or /ɜ:/ are heard, they are transcribed /e/ (because of the influence of French). In consonants, the sound /k/ may be transcribed /c/ and /ks/ /x/.

Thus, very few students really master transcription at the end of their training, and the task of the teacher is to convince the learners about the importance of transcription and this for two major reasons:

- A student who knows the phonetic symbols does not need the help of somebody else when confronted to a new word, a dictionary being sufficient. She or he is able to improve her or his pronunciation without the help of somebody else.

- Now that phonetics has been introduced in the teaching programmes of middle schools and secondary schools teachers should be able to teach transcription to pupils.

IV.3.2.2. How to teach transcription?

The first thing the teacher has to do is to clearly explain that a phonetic transcription is not a script system despite the number of symbols already used as letters in writing , but just a means to compensate for the lack of relationship between sound and spelling in English and in all the other languages spoken in the world . The gap between the spoken form and the written form of the language is due to the many changes the languages were subjected to through centuries, and IPA tanscription is more reliable than the written form because giving us information about the actual pronunciation of today. IPA transcription must be introduced step by step from the easier to the harder so that the learner will not be frightened away.

The following is a proposition of practical exercises done in a language lab or even in a class- room:

- The learner has to draw the symbol of the vowel heard in a monosyllabic word.
- Later, the trainee is given a list of monosyllabic words and she or he may be asked to sort them below the symbol of the shared sound. The teacher will choose the words according to the particular difficulties met by the learners.
- Then, the trainee is asked to transcribe whole words. It goes without saying that we can come to this step only when all the phonetic symbols have been introduced.
- Finally, she or he is asked to transcribe whole sentences. To vary the exercises, we can go the other way and give a transcription of words

or sentences and the student is asked to find the spelling of the word or sentences.

IV.4. Adapted syllabus

IV.4.1. The official syllabus

Articulatory phonetics is taught an hour and half per week and the syllabus which is supposed to be taught is as follows:

1st semester

Introduction

- speech and writing
- The speech chain
- The speech mechanism (organs of speech)

Vowels

- definition
- categories
- description of the articulations + representation on Daniel Jones diagram + practical exercises in lab

Diphthongs

- definition
- categories

- description of the articulation + representation on Daniel Jones diagram + practical exercises in lab

2nd semester

- Rewiew of vowels and diphthongs
- The consonants : definition
- Description of articulations (place and manner of articulation)
- An introduction to suprasegmental features : stress and intonation
- Weak forms of function words

3rd semester

Articulatory phonetics . part III

- Review of place and manner of articulation of consonants
- Detailed study of English consonants : allophony
- consonantal cluster:
    - Initial
    - Final

The word in connected speech .

- Linking
- Ellision
- Assimilation
- junction

4th semester

Stress and intonation

- The study of stress and rythm
- Word - stress
- Degrees of stress
- Word - stress patterns
- Sentence – stress and rythm
- An introduction to the study of intonation
- Basic intonation patterns
- Attitudinal function of intonation

5th semester

Stress and intonation

- The concept of suprasegmentals
- A review of weak forms of function words
- Rules of sentence stress
- A detailed study on intonation patterns :
    - The notion of accent (or sentence stress)
    - Realization of primary accent
    - Types of nucleus : falling nuclei, rising nuclei, falling-rising nuclei
    - Realization of secondary accent
    - Multi-nuclear patterns
    - The domains of phonetics :
        - Acoustic phonetics

- Pedagogical phonology
- Auditory phonetics

6th semester

Pedagogical phonetics

- Use of phonetics in the training of teachers
- Importance of phonetics in language teaching
- Easiness versus difficulty of language
- Teaching pronunciation
- Phonetic transcription
- American versus English pronunciation

Teaching the segmentals of English

- Perception
- Performance
- Various types of drills

Teaching the supra-segmentals

- Perception
- Performance
- Various types of drills

Correcting pronunciation mistakes

- Various methods with case studies

The testing of pronunciation

- Testing the segmentals
- Testing the supra-segmentals

Laboratory teaching

- Monitoring (students are taught how to use a language lab)
- Drills for the language lab. (to be devised and taped by the students them selves)

This programme is followed all over the country with very slight changes from one university to another. Vowels and diphthongs are taught during the first semester and when introducing the sound with the corresponding symbol a list of words is given for each sound to represent the different spellings which may be found. The students find themselves in front of a sound with different spellings or a particular letter with different possible pronunciations. Establishing a relationship between sound and spelling or spelling and sound is very difficult. And it is all the more difficult because, as soon as we start English studies, it is usually said and repeated by teachers – as well as great phoneticians – that there is a lack of relationship between sound and spelling. A .C Gimson *(1980)* wrote in his "*Introduction to the Pronunciation of English* " - which remains a precious support when dealing with phonetics and an easy to read book - : "…the obvious lack of consistent relationship between sound and spelling.". He added: "…written English is often an inadequate and misleading representation of the spoken language of today. » (A.C Gimson : An introduction to the pronunciation of English, London, Edward Arnold, 1980, p.4)

J.C Wells wrote in the introduction of the Longman Pronunciation Dictionary of 1990 : " Knowing the ortography of a word does not enable one to predict its

pronunciation ". Such a view can only increase the feeling of being helpless in front of this problem.

IV.4.2. Additional syllabus

Contrary to all expectations, different surveys have proved that the pronunciation of 80 % of the English words may be predicted when of course knowing the underlying rules. And this is why a part devoted to the study of these rules must be added to the syllabus already applied, as proposed by the French linguist Alain Deschamps in his book " De l'écrit à l'oral et de l'oral à l'écrit." (1994). These rules, even if they are not the key to pronounce correctly all the English words, are going to considerably reduce the distortions and specially those due to spelling.

The modification of the syllabus is made easier today with the adoption of the L.M.D system because each university is free to propose its own syllabus.

Before starting dealing with these rules, we have to make sure that students are aware that length is not a distinctive feature in French vowels, but it is a distinctive feature in English vowels the same way it is for Arabic vowels.

The opposition short / long vowels may be illustrated in English by the minimal pair "*leave*" / "*live*" (/l i : v/ ; / lɪv /) and in Arabic by the minimal pair طالب / طلب (/tɑləb/ ; /tɑːləb/) "*request" / "student"*.

Diphthongs are equivalent in length to pure long vowels and the expression "long vowel" may refer to a pure long vowel and to a diphthong as well.

We have also to make sure that when speaking, students are aware that a part of the word (sound or syllable) is pronounced with a greater energy and higher pitch (the notion of stress is supposed to be aquired since the middle school).

IV.4.2.1. Rules governing the pronounciation of a single letter

IV.4.2.1.1. In monosyllabic words

The letter is pronounced as a short vowel:

- When it is situated between two consonants in monosyllabic words such as " *lad* " / læd / - " *dud* " /dʌd / - " *dot* " / dɒt / - " *bit* " /bɪt / - " *mat* " /mæt /, the vowel letter is pronounced according to the sound usually associated with that letter.
- When it is followed by one final consonant or more.

  " *sit* " / sɪt / - " *cling* " /klɪŋ / - " *six* " / sɪks / (here a single consonant letter represents two consonantal sounds).

  " *bed* " / bed / - "*egg* " / eg / - " *end* " / end / - " *tap* " /t æp / - " *apt* " / æpt / - " *up* " / ʌp / - "*dull* " / dʌl / - " *hung* " / hʌ ŋ / - " *off* " / of / - " *opt* " / opt /.

The letter is pronounced as a long vowel (a pure long vowel or a diphthong).

- When an < e > is added after the final consonant.

  " *lade* " /leɪd /, " *mate* "/meɪt /, " *dude*" / dju:d /, " *dote* " / dəʊt /, "*bite* " /baɪt /

Versus bit, lad, mat, dot, dud seen above and in other words such as " *nice*" / naɪs /, "*fine*" / faɪn /, "*ace* " / eɪs /," *tame* " / teɪm /.

Some exceptions must be noted: "live", "give"…

- When < r > is following the vowel letter such as in " *car* " /kɑ:/ - " *arm* " /ɑ:m / - " *her* " / h3: / - " *first* " / f3:st / - "*burn* " /b3:n/ - "*torn* " /t ɔ:n/ .

Notice that when < r > is introduced after the vowel letter the sound is a long central or back vowel.

"Fist" / fɪst / and *"first"* / f3:st /

"He" /hɪ/ and *"her"* / h3: /

"At " / æt / and *"art"* / ɑ:t /

"Bun" /bʌn / and *"burn"* /b3:n/

"Ton" /tʌn / and *"torn"* / t ɔ:n/

This characteristic may be compared with the behaviour of the Arabic consonant /r / which may behave as an emphatic consonant and draw the adjacent vowel backwards.

"Exept"," personality", "pharmaceutic", "corporation".

- When the vowel letter is final or followed by a final letter < e >.

"He"/ hi: / when stressed or said in isolation, *"by"* /baɪ /, *" true"* / tru: /, *"do"* / du: /, *"so"* /saʊ /.

IV.4.2.1.2. In polysyllabic words

IV.4.2.1.2.1. Stress and the pronuciation of the vocalic element

In derived polysyllabic words with a suffix the placement of stress may affect the pronunciation of a vowel in the root word eg :

" *Invite* " / ɪnvaɪt / " *invitation* " / ɪnvɪteɪ ʃn / (Alain Deschamps,op. cit; p. 190)

The diphthong in the second syllable is realised as a short vowel because of the stress shift.

IV.4.2.1.2.2. Difficulties met by students in the production of the short vowel /ə /

Because of its high frequency it is worth spending a little time to explain to the trainees that this sound -considered as weak – only occurs in in unstressed syllables , insisting on the different spellings they can meet

/ ə / may be initial, medial, or final in a word :" *according* " / əˈk ɔ:dɪ ŋ /

"*suppose*" /s əpəʊz / "*-final* " /faɪnal / - "*mother*" /mʌ ðə /

"*doctor*" /dʌkt ə / - "*produce*" /pr ədju:s /.

IV.4.2.1.2.3. Elision of a vowel letter

Certain vowel letters are elided :" *interest*" /ɪntrɪst / -" *comfortable*" /ˈkʌmft əbəl / - " *Wednesday*" /ˈwenzdɪ / - " *secretary*" /ˈsekratrɪ: /.

Derived words such as regular past-tenses or past participles of verbs are another example illustrating the elision of the vowel in the ending <ed> :

"*finished* " /fɪnɪʃt / - "*explained*" / ɪkˈspleɪnd / (exept for verbs ending with < t > or < d > ; *"add", "added"* / ˈ ædɪd / , " *fit" " fitted"* /fɪtɪd / where the vowel is maintened .

IV.4.2.2. The pronunciation of digraphs

For digraphs, clues more than rules, are given to help pronunciation.

Digraphs are classified here according to their frequency of occurrences and then the sounds associated with the digraph are given from the most to the least common. Exeptions are mentionned where necessary.

IV.4.2.2.1. The most frequent digraphs

The six following digraphs are the most frequent ones and they represent 75% of the total number of digraphs in English

❖ < ou /ow>

This combination of letters presents the hightest frequency of occurrence and the biggest number of possible pronunciations.

- <ou > < ow > is pronounced / aʊ / in " *loud* ","*pound* ", "*cow* ", "*how*", "*now* " .
- < ou > is pronounced / u: / in " *group* ", " *soup* ", " *youth* ".
- <ought > is pronounced / ɔ:t / in " *ought* ", " *fought* ","*thought*", " *brought* ".
- < oul + c > is pronounced / ə ʊ / + consonant in "*mould* " , "*shoulder*" but in " *could* " ," *would* " , "*should* " it is pronounced / ʊd / .
- < ow > is pronounced / ə ʊ / in " *low* ", "*slow* ", " *throw* ", "*snow* ".
- The spelling <ough > shows a great number of pronunciations :

  / ʌ f/ as in "*enough*", "*rough*", "*tough*"

  /a ʊ / as "*bough* " , " *plough* " .

/ə ʊ / as in " *though* ", " *dough* ".

/ɒf / as in " *cough* ".

/u: / as in "*through* " .

- <our > is pronounced /aʊə / in "*hour* ", "*flour* " .

  / ʊ ə / in " *tour* ", and / ɔ: / in "*four* " , " *pour*".

Unexpected pronunciations of the spelling <ou > in very usual words must be mentioned to students :

/ ʌ / in *"young " , " country " , " southern* " .

/ ə / in word endings such as in *"concious " , "neighbour* " .

❖ The spelling <eɑ >

- Usually pronounced /i: / as in "*sea " , "peace " , "mean* " .
- It may be pronounced / e / in" *head " , " breath " , "dead* " .
- It is pronounced / ɪ ə / in " *dear " , " ear " , " tear* " (noun)
- It is pronouced / ɛ ə / in *"bear " , "tear* " (verb)
- When followed by < r +c > it is in pronounced /ɜ:/ " *learn", "earn*" but / ɑ: / in *"heart ", "hearth "* .

❖ The digraph <ai /ay >

It is pronounced /eɪ / in *"fail " , "paint " , " main " , "say " , "play"* .

- but /æ / in " *plait "* .
- and / e / in "*said "*
- when <ai > is followed by < r > it is realised as the diphtong /ɛə/ :"*chair" ,"fair".*

❖ The digraph <oo >

- It may be pronounced /u: / in " *moon* " , *"food* " , *"soon* " , *"room"*.
- It is reduced to / ʊ / in words such as *"* good " , "wood " , "wool" , "*foot*" , and in words where <woo > is followed by <k > as in "*cook* " , *"shook*" " , "*took* ".

Exceptions : < oo > is pronounced /u:/ in " *snook"*…

/ə ʊ / in *"brooch"*

/ ʌ / in *"blood"* , *"flood"*

- When <oo> is followed by <r > the diphthong / ʊ ə/ or the long vowel may be heard as in *"poor"*.

❖ The digraph <ee >

- The long front vowel /i: / is associated with this spelling in "*feel"* , *"sweet"* , *"free"* .
- There is only one exception : *"breeches* " /br ɪtʃɪz /
- When followed by < r > it gives /ɪə/ in "*beer " , " deer* " .

❖ The digraph <eu /ew >

- /(j)u: / in "*lieu* " , *"lieutenant " , "new* " , *"few* " ,*"bleu " , "screw*".
- exceptions : /j ʊ ə / in "*liqueur "* And /ə ʊ/ in *"sew"*.

IV.4.2.2.2. The less frequent digraphs

❖ **<au /aw >**

- <au /aw > is pronounced / ɔ: / in *"august"* , *"cause"* , *"clause* " , *"caught"* , *"lawn", "jaw "* .
- / ə ʊ / in words borrowed from French such as : "*aubergine* ", "*causerie"* *"chauffeur "* , *"chauvinism "* , *" faubourg* " .
- / ɑ**:**/ in "*aunt "* , *" laugh "* .
- / ɒ/ in *"because" "cauliflower", "sausage* ".

❖ **< oi /oy >**

- This digraph is pronounced / ɔɪ/ and this diphthong is the only one whose origin is not an earlier pure vowel.

  The sound is found in words such as "*oil "* , *"toil "* , *"boy "* ,*"toy"*.

- In words such as *"repertoire*" , the sound is /wɑ:/.

❖ **< oa >**

- The sound normally associated with the digraphs is / ə ʊ / as in *"boat", "road ", "reproach"*.
- When followed by < r > the long vowel / ɔ:/ is heard in " *roar ","board",* "*aboard"*.

Exception *: "broad " , "abroad " ," broaden* " are pronounced with / ɔ: / .

❖ **< ei /ey >**

- This spelling is pronounced /eɪ / in *"weight " , "grey" ,"obey " , "convey" , "they"* .

  But

  . /i: / in *"key ", "receipt* ".

  . /aɪ/ in *"height " "eye* ", " *neither ".*

  . /e/ in "*leisure ".*

  . In the spelling <ei +c +e >, <ei > is pronounced /ɜə/ in "*their* "

  . but /ɪ ə/ in "*weird ".*

❖ **< ie>**

The first sound associated with this sequence of letters is

- /i:/ as in *"achieve "* , in *"chief " , "niece " , piece " , "relief " ,"thief".*
- But in "*friend* " the digraph is pronounced /e/ .
- In *"sieve "* the digraph is pronounced / ɪ /
- <ie +r > gives / ɪ ə/ such as in "*pier " , "pierce " , "cavalier "* .

IV.4.2.2.3 Diagraphs of very low frequency

❖ **< ae >**

- is pronounced /i:/ in *" caesure " , "encyclopaedical* " .
- / e ɪ / in "*gaelic* "
- / e / in *"haemorrhage " , "haemorroid* "

- **<ae + r >** is pronounced / ɛ ə / in "*aerial " ," aeroplane "* .
- exception **<ae + r >** is pronounced / ɪ ə / in " *diaeresis "* .

❖ **< oe >**

- The close front vowel /i:/ is associated with this digraph in "*fœtus*", "*eosophagus "*
- But we pronounce it / ʌ / in "*does* "

❖ **<ui > /uy /**

- . Realized as a glide / ʊ ɪ/ in the words : *"ruin " , "bruin " " fluid* "
- . pronounced as /(j)u: / in "*fruit " , "juice " , "suit "* .
- . In words such as *"buy " ,"build " , "guilty* " < u > is silent.

❖ **< eo >**

- The sequence <eo > is pronounced / e / in *" leopard " , " jeopardy "* .
- / i: / in "*people "* .

❖ **The digraph <ao >**

It may have four different pronunciations.

- /a ʊ / in *"maoism* "
- / e ɪ / in "*gaol* "
- / ə / in "*curacao* "
- / ɛ ə / in "aorist " .

CONCLUSION

CONCLUSION

This research allowed us to realize that many distortions can be avoided thanks to adequate and well conceived strategies. It revealed the great influence of French because it shares the same script system as English. This influence can be reduced if some precautions are taken:

- The use of language laboratory: native speakers recordings providing trainees with a reliable model of pronunciation.

  A particular attention should thus be paid to their own pronunciations which are going to be taken in turn as a model by pupils in middle and secondary schools.

- The use of IPA through exercises of transcription.
- The rearrangement of the programme by introducing rules rendering predictable the pronunciation of the majority of new words.

The introduction of rules governing the pronunciation of graphemes and Daniel Jones diagramme come together.Thus the trainees are given the opportunity to have a better pronunciat

When dealing with this part of the programme it would be appropriate to remind them that the words not obeying these rules are usual words and that grammatical words represent about 25% of the irregular words - that means words already known by students .

This research has clearly shed light on the main causes of the distortions made by Algerian students learning English and more exactly first year students of English in the university of Biskra. Thanks to our study the questions which were the starting point of our investigation found an answer.

Students used to pronounce a limited number of vowels and they have to face the vast number of vowels belonging to French and English. Students' errors are thus due to old articulatory habits transferred to the target language. Such distortions are already noticed when learning French: the French word "pure" is pronounced /piʀ/ instead of /pyr/ because for a speaker of Arabic the articulatory feature "front" is exclusively associated with the feature "spread".

When learning L4 most of the distortions are due to the strong impact of L3, the French sounds being associated with the graphemes used in English. The pronunciation of the grapheme <u> in the word "university" is a very good example among many other ones: it is pronounced /y/ instead of /ju:/ because of the influence of French. Moreover, some participants realise it as /i/. The negative transfer from L1 and L2 to L3 is added to the negative transfer from L3 to L4. All this is accented by the fact that the positive transfer from L1 and L2 is inhibited by the transfer from L3 and is less important than expected. The learning / teaching environment is not favourable to improve the learner skills and appropriate teaching strategies have to be used. The influence of spelling will be considerably reduced if the written support of the recordings is provided at the end of the activity, the visual contact being thus following the oral drills. To help trainees to achieve the best pronunciation possible, some conditions have to be provided. Adapted teaching methods are more useful than

adopted ones (Specific teaching strategies which are partially based on positive transfer and which take into account the students' linguistic background).

An intensive use of language labs will allow, in a first step, mechanichal drilling based on the behaviourist approach (Skinner'Stimulus-response Theory). "Listen and Repeat" exercises according to native-speakers recordings are appropriate for students dealing with segmental phonetics.So they learn how to move their organs – mainly the tongue and the lips – in the right way.This activity improves not only their articulatory performance but their perceptive skill as well. Of course, further in the syllabus a particular emphasis will be laid upon the suprasegmental features in connected speech.

This intensive practical training has to be completed by teaching underlying rules governing the pronunciation of the most usual graphemes. For the learner it is a precious tool to predict the pronunciation of a lot of words and avoid a great number of distortions.

The students and the teachers as well should be aware of the wealth of their linguistic environment. Their linguistic background is not only a handicap, a tank full of negative transfers. Positive transfers also exist and are worth being exploited. This intensive practical training has to be completed by teaching rules governing the pronunciation of the most usual graphemes.

Based on these findings, elaboration of teaching methods would be an interesting enterprise undertaken by researchers. Recently, this opportunity has been provided to university teachers by the Ministry of Higher Education: research units are, indeed, an excellent setting for this task.

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APPENDIXES

Participant N° 1

WORD	Loud reading	Oral reproduction
Leave	/liːv/	
Live	/lɑɪv/	
Uniform	/juni'fɔːrm/	
University	/junɪ'vɜːrsɪtɪ/	
Neighbour	/'nɑɪfɔːr/	
Let us	/letsʌz/	
Upon	/'ʌpɑn/	
Special	/'spesɑl/	
Perform	/pɛr'fɔːrm/	
Bread	/briːd/	
London	/'lɔndɔn/	
Cotton	/'kɔtɑn/	
Breath	/briːθ/	
According	/ɑ'kɔːrdɪŋ/	
Information	/ɛ̃fɔːr'meɪʃɑn/	
Linguistics	/ɛ̃gwɪ'stɪks/	
Unusual	/'junyzɒl/	
Prevent	/prɪ'vent/	
Sense	/sens/	
Fantastic	/'fæntæstɪk/	
Electrician	/elek'trɪʃɑn/	
Appearance	/ɑ'pɪrɑns/	
Private	/prɪ'veɪt/	
Ability	/'ɛbɪlɪtɪ/	
Pair	/pɛɑ/	
Faith	/feɪθ/	
Care	/kɛɑ/	
Aloud	/ɑ'lɔːd/	
Allowed	/ɑ'lɒwɑd/	
Dear	/dɪɑr/	
Near	/nɪɑr/	
Toil	/tɔɪl/	
Low	/lɔː/	
Pour	/puːr/	
Tour	/tuːr/	
Tremendous	/'trɪmendʊs/	