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PRONUNCIATION DEVIATIONS IN THE SPEECH OF THE MALIAN ENGLISH DEPARTMENT STUDENTS AT THE FACULTY OF THE SCIENCE OF LANGUAGES

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Résumé

L'article traite la question des déviances phonologiques dans le langage des étudiants du Département d'Anglais. L'objectif principal de cet article est de déterminer les écarts de prononciation et les influences translinguistiques (statut L2 et psychotypologie) chez les apprenants maliens de l'anglais, en particulier les étudiants du Département d'Anglais. L'étude a été menée auprès de 18 apprenants maliens d'anglais inscrits en première année de cours d'anglais à la Faculté des Lettres, des Langues et des Sciences du Langage. Ce sont des apprenants L3 d'anglais. En ce qui concerne les mesures acoustiques, le logiciel Praat développé par Boersma et Weenink (2011) et le logiciel plot développé par Casali (2008) ont été utilisés pour collecter et analyser les données de cette recherche. Les résultats de l'étude révèlent, même si l'on croyait qu'une tâche parlée accomplie dans ces circonstances serait moins sujette aux influences translinguistiques, que les élèves apprenaient la langue cible depuis au moins six ans auparavant et que les mots présélectionnés leur semblaient familiers. Ils indiquent également que les répondants présentaient de graves écarts de prononciation par rapport à la langue cible influencés principalement par le français, la L2, la langue étrangère et typologiquement proche de l'anglais. Sur la base d'une analyse critique des interférences dont ils ont fait preuve, cela nous amène à recommander, en accord avec Kirshner (2007), Gilbert (2004) et Sacko (2013) que les enseignants maliens d'anglais dans les lycées accordent beaucoup plus d'intérêt à l'enseignement de la phonologie de l'Anglais comme moyen efficace de promouvoir la prononciation.

Mots clés : *Influence interlinguistique (CLI), Acquisition d'une langue seconde (SLA), Acquisition d'une troisième langue (TLA), Langue étrangère, Langue cible*.

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Abstract

The paper addresses the issue of pronunciation deviations in the speech of the Malian English department students. The main aim of this paper is to determine the pronunciation deviations and cross-linguistic influences (L2 Status and Psychotypology) in the Malian Learners of English, especially the English department students. The study was conducted on 18 Malian learners of English attending the first year of English course at the Faculty of the Science of Languages. They are L3 learners of English. As far as the acoustic measurements are concerned, the Praat software developed by Boersma and Weenink (2011) and the plot software developed by Casali (2008) were used to collect and analyze the research data. The results of the study revealed, though it was believed that a spoken task accomplished in these circumstances would be less prone to cross-linguistic influences, that the students had been learning the target language for at least six years before, and that the pre-selected words sound familiar to them. They also indicated that the respondents exhibited serious pronunciation deviations from the target language influenced mainly by French, the L2, the foreign and typologically close language to

English. Based on a critical analysis of the interferences they demonstrated, this leads us to recommend, in accordance with Kirshner (2007), Gilbert (2004) and Sacko (2013) that the Malian English teachers in grammar schools should give much more interest in teaching English Phonology as an efficient way to promote pronunciation.

Keywords: Cross Linguistic Influence (CLI), Second Language Acquisition (SLA) , Third Language Acquisition (TLA),Foreign Language, Target Language.

Introduction

The world counts more than 6000 languages and no two languages are alike, due to language specific (Chomsky). Due to globalization, travel, music, business, job-related mobility, the development of new technologies and academic curricula, speakers of different languages are in perpetual contact in everyday life; and acquire languages other than their native one. Some of this acquisition is done consciously, in a classroom situation or unconsciously in a naturalistic way (Ellis 1994). Given these reasons, one can observe different types of English: English of the natives (UK -US), English inherited from colonization creating varieties of English in countries like Ghana, Nigeria or other Commonwealth countries and English for specific purposes in countries where pronunciation shifts from British English to American English as is the case in Mali.

At an academic level, the situation arose interests in educationists and linguists to explore factors contributing to influence in the acquisition of non-native languages on account of prior knowledge. Based on the contrast between first Language (L1) and the target language (TL), a first theory, contrastive analysis, claimed that distances between the two languages account for similarities and dissimilarities of their linguistic codes; hence the notion of transfers (positive and negative). But, because this theory failed to explain the sources of all errors, a second theory, EA which was theorized pointing out two additional types of errors. But still those factors stayed within reasonable bounds to explain the default states of human linguistic competence in the acquisition of a new language.

Then on, mentalists, based on psycholinguistic perspectives, warned that many situations (internal and external) account for the language activation mode especially in multilinguals, hence the concept of Cross-linguistic Influence (CLI) in Third Language Acquisition (TLA). These influences are studied depending on various linguistic contexts in accordance with questions related to language learning. Among all linguistic explored fields in the domain of acquisition, phonology remains the least investigated so far. To date, only a handful of studies have dealt with L3 Phonetics and Phonology (e.g : Hammarberg 98 ; Flynn et al. 2004, De Angelis, Sacko 2013, Wrembel 2015.)

The skills of listening and comprehension are related to pronunciation, and departure from the norm can affect understanding of the message conveyed. It is true that there exists dialectal variation in language use, but a description of the vowel inventory of English is far from trivial. English spoken across regions, nations and countries differs. As an example, the phoneme inventory of General American English (GA) does not match the standard British English vowel inventory (i.e. the BBC or Received Pronunciation (RP)). Research in second language acquisition (SLA) reveals that a native speaker of a given language has a level of skill which a second language learner can hardly achieve. Although this seems arguable in other linguistic domains (i.e. grammar), it remains true from the pronunciation viewpoint for most of the cases.

Our observation is that many studies in TLA are concerned more with the learning of sentence structures, vocabulary and writing. As a consequence, teaching pronunciation was relegated to a second order priority. However, Kirchner (2007) argued that speech rather than writing should be regarded as more central to human language, in that we learn to speak long before we learn to read and write; and spoken language has been used long before writing and reading developed.

Among all aspects of language use (i.e. speaking/listening, reading/writing), pronunciation is observed as the only one which resists the native–like norm. This phenomenon is attributable

either to social contexts (i.e.language distance), or psycholinguistic perspectives ((Bialystok and Hakuta, 1994; Cenoz, 2003; De Angelis, 2007; Altmann and Kabak, 2010).

In a non-native language, learners perceive identical sounds of the target language in terms of one of the previous knowledge they have been exposed to before. As a result, they combine systems of both due to allophonic variations and differences in phonotactic patterns between languages (Weinreich, 1953; Boaz (1889) cited in Richards, 1980; Odlin, 1989). That is, in learning a non-native language (NNL), the habit of previous knowledge can either facilitate or impede language learning tasks. Research studies reveal that, apart from some individual implications (motivation) and sameness (i.e. language relatedness), no new language can be learnt in isolation without the influence of the native language. That is, in any language use, phonological features display an important role in language learning because any mispronounced sound can impinge in a big way on perception and consequently on the intelligibility of the utterance.

Due to language specific, each language presents peculiar characteristics and certainly, no two of them have the same sound structures, differing in tone systems, number of consonants or vowels, syllable structures or phonological distributions. As an example, wherever Bamanankan is a tone language, English is a stress-timed language. And when paired vowels in French, the official language, can be produced in a single vowel sound 'ou' [u], 'aie' [ɛ], in Bamanankan each vowel is pronounced, whereas in English a sole vowel can result in two sounds 'bite' [baɪt]. Moreover, any local language, French and English may share /i/ and /a/ from an articulatory point of view, but no two cognates would have the same acoustic characteristics across the three languages. In English, one particular vowel can have different pronunciations, just because of its syllabic structure. As an illustration, the spelling "a" in *"cake"*-[keik] differs in pronunciation from that in "*cat*"-[kæt], "*care*"-[keə] or *"car"*-[kɑː]…

These facts contribute to difficulties in learning English. But, still we do not intend to carry on a comparative study between the sound systems of these languages.

In the context of English as a third language, pronunciation should be regarded as one of the most important part of the structure of a word to prevent foreign learners from serious pronunciation deviations. As distinct from many languages, English pronunciation is unique because of the inconsistent rules between its spelling and sound systems. In English, vowels can be reduced in unstressed syllables and should be approached with particular care. As Roach (2003, p.1) points out, 'it is particularly important to think of English pronunciation in terms of phonemes rather than letters of the alphabet', while Malian learners are used to a speaking rule totally different. Due to ignorance or unawareness of the English pronunciation rules, the lack of communicative opportunities, Malian learners seem to take English sound systems for granted as natural as the pronunciation rules of their L1 and/or L2. Consequently, many English learners pay less attention to dissimilarities between the sound systems of their L1/L2 and English. Unawareness of this peculiarity of the English language can lead to pronunciation deviations, especially, when in the L1, letters are pronounced as they are spelt.

In plain words, the sound systems in language play the most important role in communication; and foreign language learners must address proper interest in sound-specifics of the target language, to develop a full communicative competence.

Malian learners of English entering the university, very often face problems understanding the target language (perception) or making themselves understood (production). Consequently, the learners are judged unintelligent or stubborn by people in their academic environment. This is due to a complex of factors, the most noticeable of which is that their L1 and English phonological systems strongly differ. On the other hand, the situation involves a second language (French) which is the official language inherited from colonization and the

medium of instruction. French has a powerful influence on local languages, and any linguistic issue is to be observed and studied with regard to it.

In Mali, English is learnt as a foreign language for at least six academic years, starting from the seventh grade to the secondary school. There, learning focuses on the English grammar and reading-comprehension only, and learners receive no specific Phonetic/Phonological class. So, they are not aware of the pronunciation distance between English and their prior knowledge (i.e. their L1 and French); and when they use English dictionaries, they are concerned with the word meanings rather than their pronunciation. Consequently, a strong interference of their previous knowledge is perceived in their speech. If native-like pronunciation is possible by training speech neuro-motors (Macaro, 2004), it must be noted that these students are not fortunate, because they start learning English after the age of puberty, have no contact with native speakers, and don't use it in the home. In most cases, their parents and most of their fellows do not speak foreign languages. That is, both French and English are learnt for a rather instrumental purpose. The learners face difficulties to follow the teachers because they tend to resort on their prior knowledge to understand, lack enough opportunities to take parts in class activities or fear ridicule. These variables can act as barriers which would limit their pronunciation skills of the new language.

Moreover, teachers are trained in different English countries and the English language which is taught, generally, exhibits various pronunciations as teachers make use of the variety of the English similar to what they know. These situations can also affect the learners' pronunciation of English. Given that multilingualism is on the increase, there is a constant need for setting standards in order to measure the success or failure of our learners in relation to the appropriate model. In view of expected pronunciation differences in non-native varieties of a language, we are concerned with investigating the extent of trends in Malian learners of English. These learners have an L1, and they learn French as a second and official language and then

learn English as a third language. That is, the field of investigation is more complex in that our population is multilingual. The goal of this study is to highlight the English pronunciation trends in the speech of Malian learners of English and factors contributing to them.

To attain the main objective of the study, the following research questions are thus formulated to guide: What is the pronunciation trend of Malian learners of English vowels? What factors contribute to the trends?

Moreover, the significance of the study lies on the fact that it seeks to shed additional light on the advancements in research on third language phonological acquisition and contribute to the development of this field as well as to language acquisition research in a broader sense and involve decision makers, educationists and students as well, to address more interest in pronunciation.

As MacMahon (2002) points out 'for contrastive purposes, what we need is an approach which allows vowel qualities to be expressed as relative rather than absolute values' (p.75). Therefore, this study derives insights from acoustic analysis, based on Contrastive Analysis (CA) and CLI to highlight, describe, and explain the pronunciation trends of our students. Many experimental studies used acoustic analyses to highlight phonetic differences in second language acquisition; and given, there are many factors that can facilitate or downplay the learning of the target language, CLI and multilingual behavior offer opportunities to examine and explain the contrasts between the acoustic cognates obtained and that of the native speakers of English. Pedagogic orientation of teaching a non-native language suggests that teachers should focus on predicted areas of difficulty given points of similarities and differences between native and non-native languages. The process is believed to facilitate pedagogical development and result in efficient learning. According to this theory, namely the Contrastive Analysis (CA), many non-native deviations are due to interference from the native language. The theory claims that it is possible, in learning a new

language, to predict problems of learning L2 due to dissimilarities between L1 and L2. The argument is that similar events between prior language and TL would help acquisition or learning of TL whereas dissimilar events or experience could cause difficulties. The list of problems established is considered as the list of hypothetical difficulties that should be checked against the actual speech of learners. Through descriptions and interlingual comparisons between the learner's prior knowledge and the target language it becomes possible to state the list of linguistic differences.

With regard to phonology which concerns our study, the contrastive analysis hypothesis remains a viable theory to explain the 'deviations' with respect to distances between either L1 or L2 and L3, as it is the concern of the present study. Ultimately, the paper is divided into two major parts: methodology and results and discussion.

1-Methodology

This is a descriptive study which focuses on identifying deviancies in the English monophthongs of our learners entering the university; but because of the status of French as second language, its typological closeness to English and learners' linguistic awareness, we have to examine the implication of French in the research.

1.1. Selection of the Subjects:

The population is Malian English Learners at first level irrespective of their L1 who are expected to become either English teachers or NGO's employees. We chose eighteen learners of English composed of nine males and nine females who have comparatively the same academic backgrounds and belong to the same age group. All have studied in French (L2) through their training from twelve to fifteen (12 - 15) years and started learning English at the same level from fundamental school. As mentioned earlier in Chapter One, all Malian students

attend English classes from the 7th form. Each respondent has come through the (LLT), Language Stream at lycée, (grammar school).

1.2. Equipment

Different materials were used to conduct the research. At First, we used the Praat software installed on a HP-G62 Notebook computer equipped with an adjustable frequency headphone - Bingle B600, to record our respondents' pronunciation. Because of the total absence of a real phonetic laboratory, a less noisy room was chosen for recordings. The subjects read the texts and their pronunciations were directly recorded on the computer using the Praat software program package developed by Boersma and Weenink. The recording was digitized with 16 bites resolution using 41.100Hz sampling rate. Recording was mono.

 A text consisted of a word list of 82 words used in a career sentence "I say ….again" based on similar and dissimilar sounds and orthography between the languages involved (L2 and L3). This was done to assess the effect of L2 and learners' linguistic awareness in learning L3. Because, if psychotypology is influential in SLA, it should at the phonological level, be linked to learners' linguistic awareness, i.e. their previous knowledge in learning L3.

1.3 Data Collection:

Before the recording started, the text was submitted to each respondent for about five minutes to read aloud once in order to reinforce confidence in his/her pronunciation. No hint was given to help him/her pronounce difficult or unknown words or correct the errors they had made.

1.3.1 Acoustic Measurements:

In experimental phonetics, there is agreement that the vowel quality can be quantified with precision and validity by measuring the center frequencies of acoustic signals. To be able

to identify and describe the trends in the English pronunciation of our respondents and support our argumentations, we used acoustic measurements that are the most scientific and reliable methods to track speech signals and spotlight deviancies on vowel space.

Ladefoged, (1993) explains how the articulatory descriptions of vowels are related to their formant frequencies:

> The traditional articulatory descriptions of vowels are related to the formant frequencies. We can see that the first formant frequency increases as a speaker moves from the high vowel in 'heed' to the low vowel in "had" and that it decreases as the speaker goes from the low vowel in "hood" to a high vowel in "who'd". The first formant, therefore, is inversely related to vowel height. We can also see that the second formant frequency decreases as a speaker goes from the front vowel in "heed" to the back vowel in "who'd". But the correlation between the second formant frequency and the degree of backness of a vowel is not as good as that between the first formant frequency and the vowel height. The second formant frequency decreases continually through the series of vowels [ɑ, ɔ, ʊ, u] even through the third and fourth of these vowels are not fully back. There is a better correlation between the degree of backness and the distance between the first two formants, which are far apart in front vowels and close together in back vowels. Furthermore, the distance between the two formants decreases in the front vowels, a fact that fits the traditional articulatory descriptions that show these vowels on a slanting line with [i] being more front than [æ]. The degree of lip rounding also affects the frequencies of the formants. In general, as sounds become more rounded, the frequencies of the higher formants decrease. But the situation is complicated in that the effect is greater in the third formant for front vowels, and in the second formant for back vowels (p. 196).

It is clear from the explanation above that in any vowel quality, the first two formant frequency values are the most important.

To achieve this end, eleven English monophthongs are selected to form the body of our research looking into similar and dissimilar sound systems of L2 and L3, to pinpoint, describe and explain phonetic deviations in the English learners' speech. All the English monophthongs (i.e. [iː, ɪ, uː, ʊ, ɛ, ɜː, æ, ɑː, ʌ, ɔː, ɒ])except the schwa [ə]were involved to form the body of our

research looking into similar and dissimilar sound systems of L2 and L3, to pinpoint, describe and explain phonetic deviations in the English learners' speech.
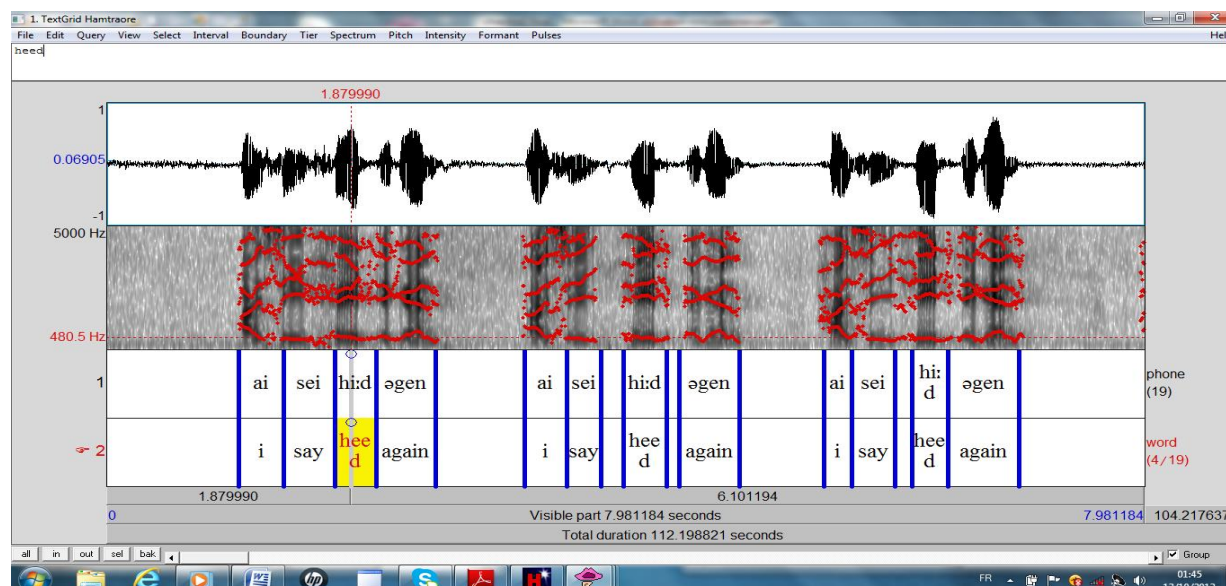

Figure 3.1 Waveform and spectrogram of a respondent. 'I say heed again' three times. The point in time at which the formant values were measured is indicated on the spectrograms with the vertical line in the first 'heed'.

The text was examined in the speech of18 respondents (9 males and 9 females) to determine the possible influence of French and respondents psychotypological awareness.

Each sound was then segmented and annotated to texgrid using three tiers. The first tier called actphone (actual phone) represents the transcription at the auditory level. This transcription is done using the IPA symbols. The second tier represents the orthography and the third tier, targphone represents the target phone using RP transcription symbols.

The F1 and F2 values according to each sound in either respondent are measured and collected. So in measuring our vowels, the first two formants of each target sound in all respondents were sampled by visual inspection of the middle dark and steady portions of the vowel. Formants were automatically tracked and manually checked for accuracy. Males' vocal tract is longer than females' vocal box. As a result, the pitch level of a female voice is 10 to 15% higher than a male voice Cox (2002). To reduce this biological constraint, the spectrogram

for females was adjusted to 5500Hz whereas in males, it is set at 5000Hz. Then, the mean values of F1 and F2' (i.e. F1 and the difference of F1-F2) were calculated and plotted on the Bark scale. The acoustic cues are pinpointed and the description is reported according to the vertical and horizontal parametric variations.

In all, sounds are examined qualitatively through FPlot, the formant plot software of vowels developed by Casali (2008).

2-Results and Discussion

This section explores the results of data collected from 18 respondents (9 males and 9 females). All respondents were subjected to reading a list of words consisting of monosyllabic and polysyllabic words regardless of the consonantal environment.

At first, the description is done by plotting paired vowels that are thought to be in the centre of confusion in the speech of the respondents. They are [iː-ɪ; ʊ-uː; ɛ-ɜː; æ-ɑː-ʌ and ɒ-ɔː].

2.1 Paired [ɪ] and [iː]:

Tense and lax high front vowels are distributed from the high front to the mid-open and even central areas of the vowel space. A good deal of "i" is produced high front in between 400Hz and 300Hz on the vertical axis. The average formant values of lax [ɪ] are 365Hz on the vertical axis and 1881Hz on the horizontal axis, while the tense front [iː] in monosyllabic words is located at 362Hz on the vertical axis and 1948Hz on the horizontal axis. As for the tense high front vowel in *"species' and "fever"*, the average value of F1 is observed at 404Hz on the vertical axis and 1690Hz on the horizontal axis. That is most of the speakers pronounce *"species"* as /spɜsiːz/ or /spɛsiːz/ and *"fever"* as /fɜvɚ/.
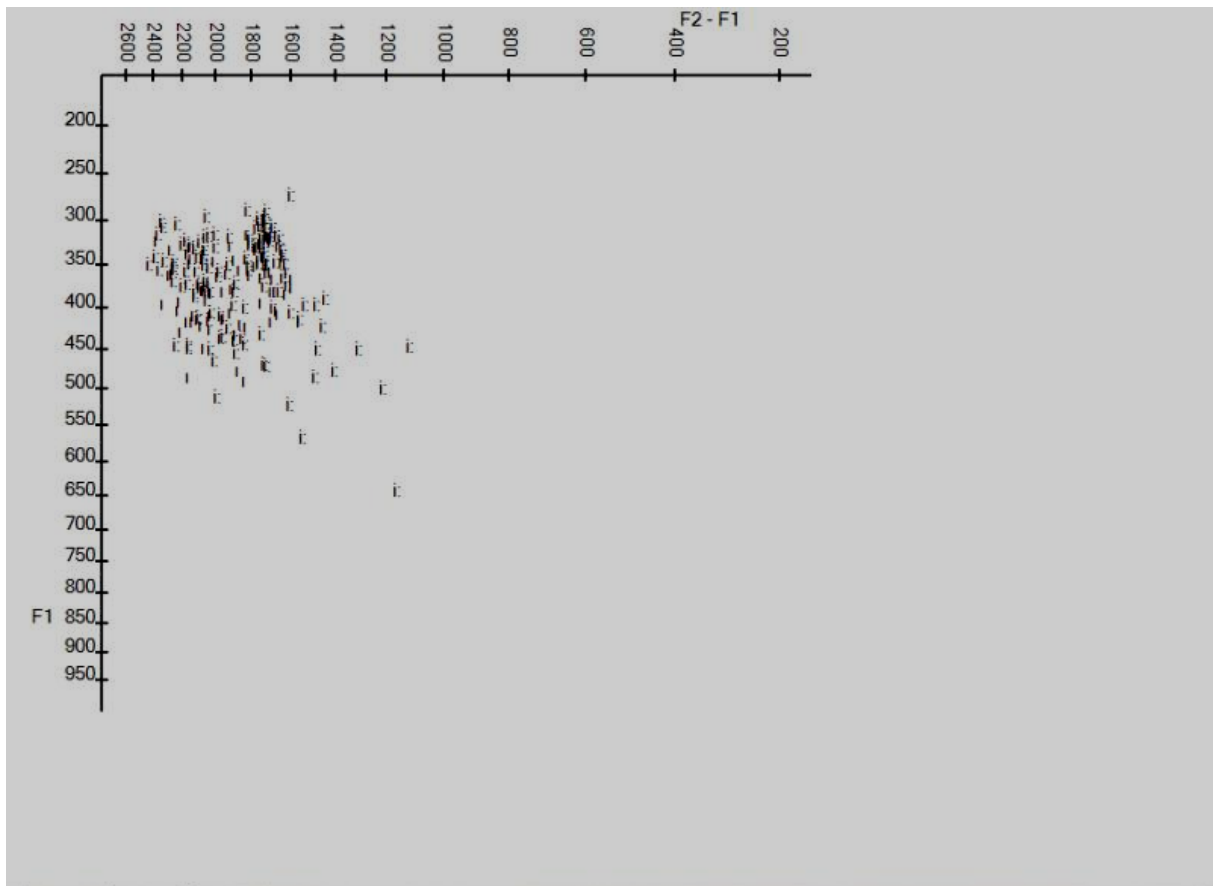
Figure 4.2.1. Scatter plot of learners' F1/F2-F1 in the pronunciation of paired /i/

2.2. Paired [ʊ] and [uː]:

The lax high back rounded vowel is produced at about the high-mid back region of the vowel space. However the tense [uː] is pronounced high back rounded in *"who'd", "use", "loose"* at 386Hz on the vertical axis and 648Hz on the horizontal axis while the same vowel sound is produced at 379Hz on the vertical and 1225Hz on the horizontal in *'dune", "June" "suit" "juice", "fruit", "gratitude" and "student'*. The awkward pronunciation of these vowels are perceived as [ɥɪ] in *"juice", "suit"* and *"fruit"*, [y] in *"fruit", "dune", "June" or "gratitude"*. The lax[ʊ] in *"soot", "good", "book" and "hood"* merges with the tense[uː] at 413Hz on the vertical axis and 569Hz on the horizontal axis.
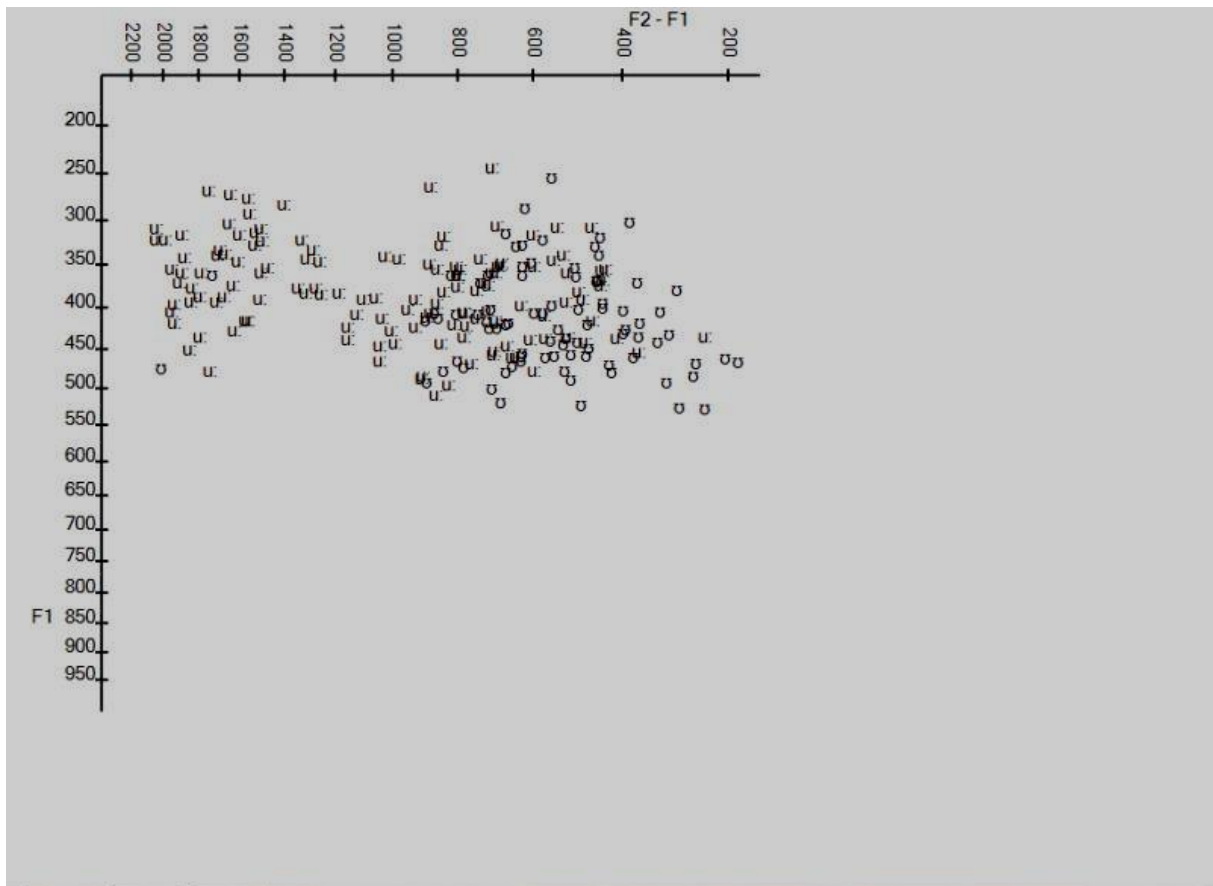
Figure 4.2.2 Scatter plot of learners' F/-F2-F1 in the pronunciation of paired /u/.

2.3 Paired [ɛ] and [ɜ:]:

The strong concentration of the front mid unrounded [ɛ] is observed front mid-open. But [ɛ] is also spotted in the mid close region of the vowel space in the realization of this vowel in bi- and polysyllabic word like *"very', "pressure", "possessive", "measure", "session" or "letter"*. The mean values of this vowel sound are 489Hz for F1 and 1558Hz for F2' whereas in monosyllabic words *"head, bed, death' '* the F1 value is 573Hz and F2' 1352Hz. Not many of the informants are able to pronounce pCV3 [ɛ] in these environments. They prefer the tense front high-mid in the pronunciation of English [ɛ] in polysyllabic words. The central tense [ɜ:] is pronounced at 583Hz on the vertical axis and 1058Hz on the horizontal axis in *"heard"*, *"verse", "surge", "commerce"*, whereas in *"work', "word", "world" and "worse'*, it is substituted for the mid back rounded [ɔ] at 562Hz on the vertical axis and at 623Hz on the horizontal axis.
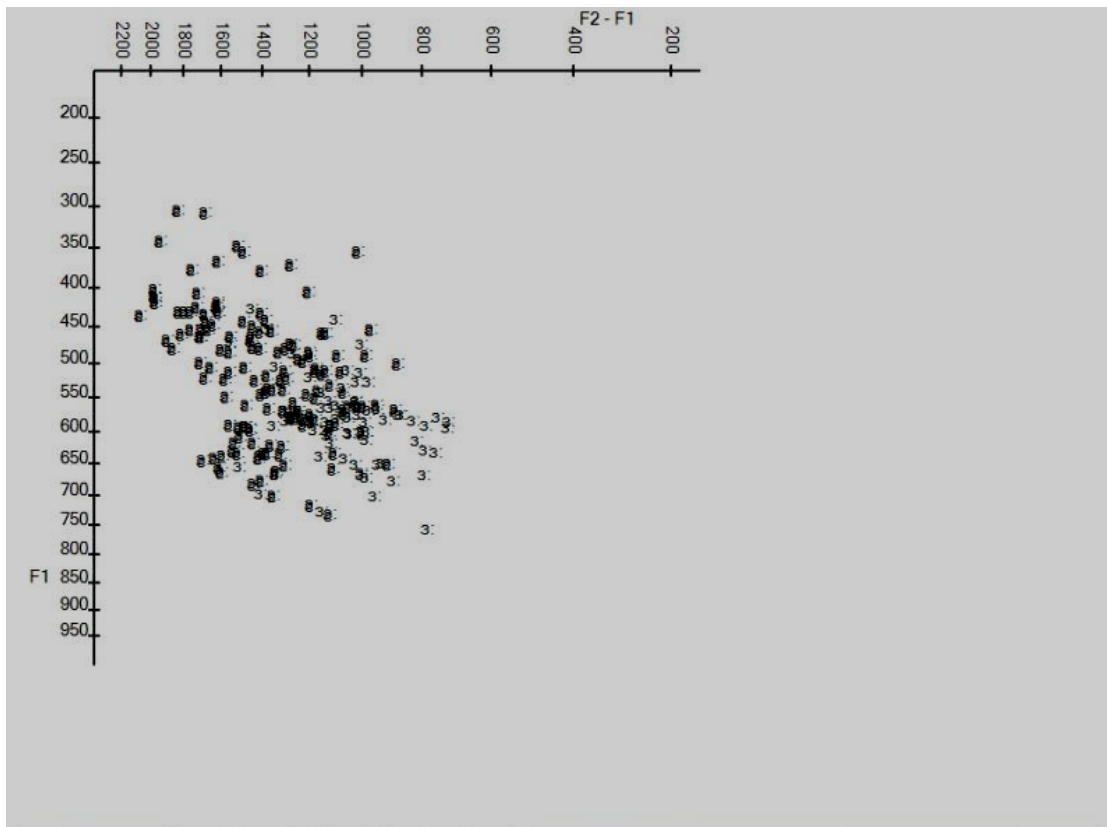
Figure 4.2.3 Scatter plot of learners' F/-F2-F1 in the pronunciation of paired /e/

4.2.4 Paired [æ] [ʌ] and [ɑː]:

The low front open [æ] is produced either mid-open or central open and merges with its tense cognate [ɑː] where both vowels and the central open [ʌ] as well, are strongly concentrated. No constancy is observed in the pronunciation of these three vowels.

[æ] is pronounced front mid in *"thank", "cat" "carry",* and [a] in *"had", "bad", , "mat", "matter" "van", "fan".*[ʌ] is pronounced either [ʌ], [a] or [ɔ] in *"cut", "sun"* and *"son".* BEL seem to be aware of the tenseness of [ɑ] in the words it is concerned with.
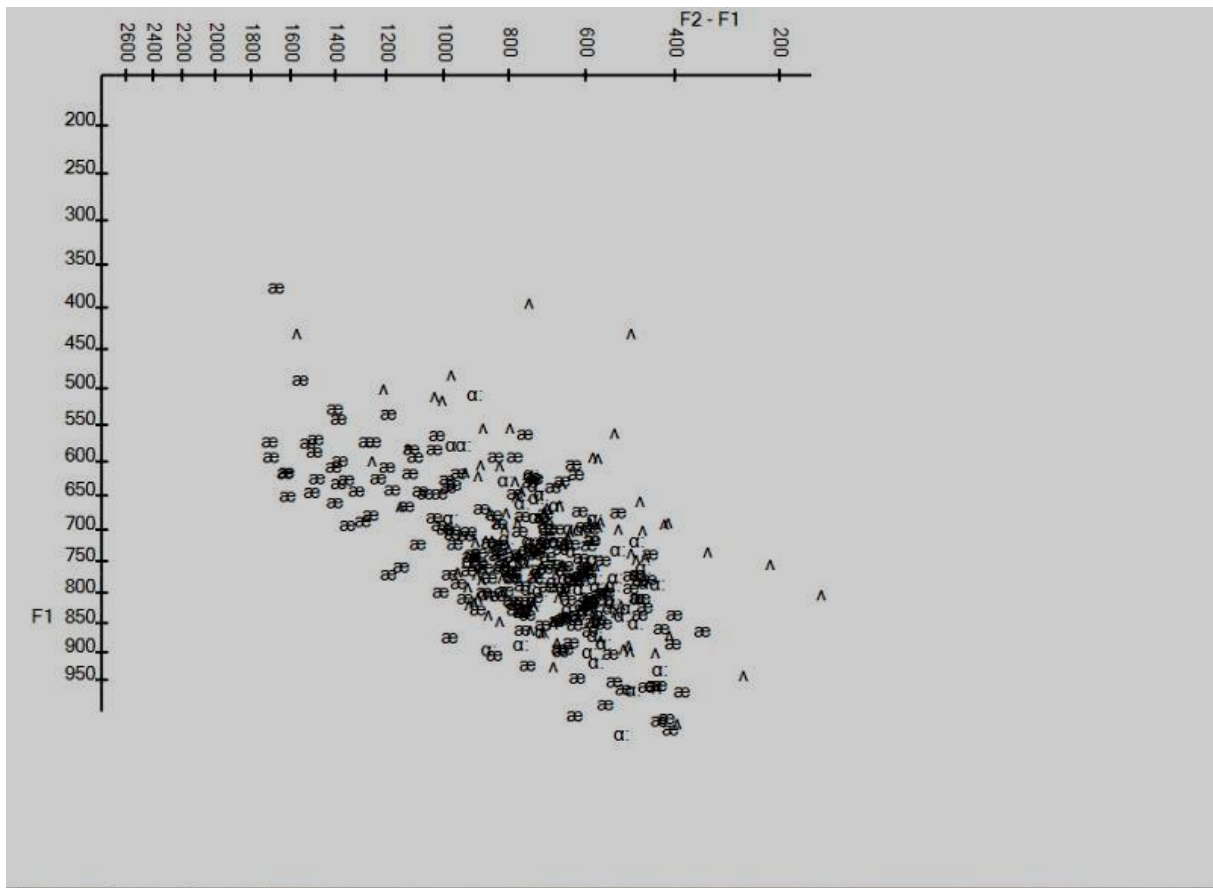
Figure 4.2.4 scatter plot of learners' F1/F2-F1 in the pronunciation of [æ, ʌ and ɑː]

4.2.5 Paired [ɒ] and [ɔː]:

Different qualities of vowel sounds are perceived in the realization of the lid back vowels in the speech of BEL. [ɒ] is pronounced /a/ or /ɑ/ by most speakers in words like *"concert", "commerce", "what", "quality"*, or *'position', "possessive"* whereas /o/ is unstressed in these two latter.

However the weighted distribution of [ɒ / ɔː] is observed in the mid open back rounded area of the vowel space.

Figure 4.2.5 Scatter plot of learners' F1/F2-F1 in wordlist in the pronunciation of paired /o/.

Conclusion

In the light of the discussion of the findings, we can say that our informants were relatively homogeneous with respect to age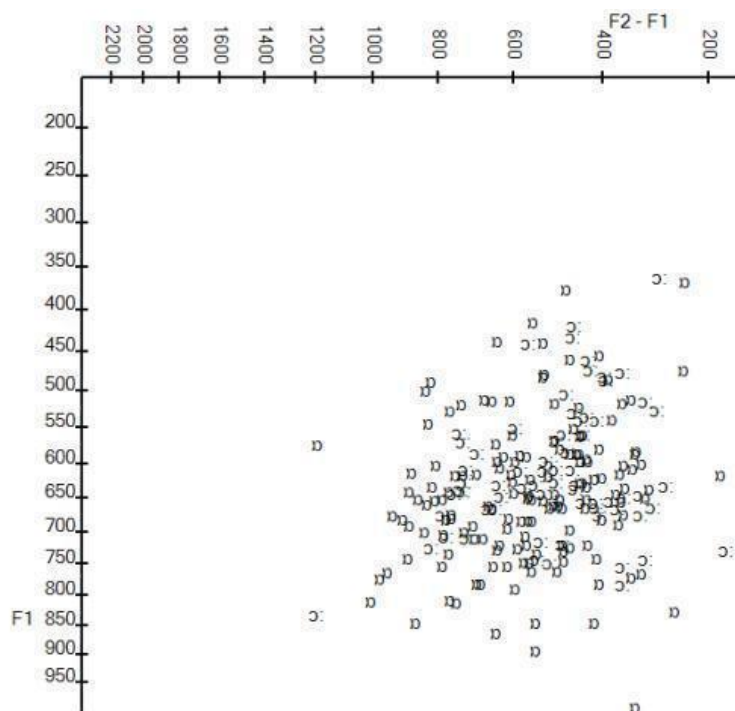 and level of education. The normalized vowel formant frequency data in this study were generally successful. Pronunciation remains a crucial but least explored area in TLA. More research studies on the domain, especially in an African context, are needed in order to shed light on acquisition processes in SLA and L3 and cross linguistic factors they involve. In the TLA literature, L2 is indicated as the language that contributes to CLI due especially to the learners' psychotypological awareness. The present study supports earlier findings conducted so far, in third language acquisition. The obvious transfer from L2 does not exclude the influence of L1 on L2. Traces of both previously known languages (L1 – L2) are perceptible in the sound systems of the informants' L3 due to the age factor and lieu of

residence. The findings of the current study show that learners' pronunciation is corrupted by the lexical and spelling closeness between L2 and L3.

In other words, we can say that the respondents exhibited serious pronunciation deviations from the target language influenced mainly by French, the L2. Based on a critical analysis of the interferences we demonstrated in this paper, we thus find it axiomatic to recommend to Malian English teachers in grammar schools the need to give a particular importance to the teaching of English Phonology because we believe that it may be one of the most efficient ways to promote good pronunciation of English in Mali, especially at the University of Letters and Human Sciences of Bamako.

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