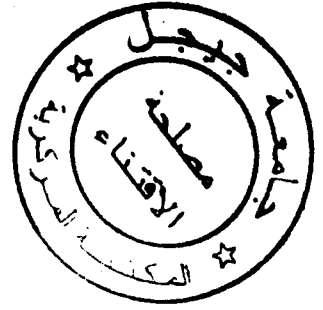


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لا يباع



**This thesis is dedicated**

**to my brothers and sister;**

**to the three ladies in my life:**

**Selina and the future, my wife Nadia  
for her love and unrelenting support  
and encouragement, my mother who  
believed in education and suffered  
hardship;**

**and to the memory of my father and  
people like him whose sacrifice made it all  
possible.**

**THE INTELLIGIBILITY OF ALGERIAN  
SPEAKERS OF ENGLISH:  
A PHONETIC/PHONOLOGICAL STUDY**

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## ABSTRACT

In studying intelligibility we aimed at finding out both how successful our speaker sample managed to be in communicating orally in English and at setting up the major phonetic/phonological features that hampered this communication process.

The interlocutors involved Algerians as speakers and the British as listeners. Both speakers and informants were educated. 24 advanced Algerian speakers of English and an R.P. speaker each recorded a sample of free speech, a reading passage and a number of isolated words and sentences. These different materials were allocated to five separate experiments for each Algerian subject and the native control. 240 British informants, allocated in groups of ten to particular speakers, took part in an experimental session using dictation and multiple-choice methods for the collection of responses. In addition, the material recorded by the native speaker served as a control test and allowed the elimination of 36 informants who did not obtain the required score.

To discover the level of communicative success for the Algerian subjects as well as the native, we devised a number of scoring procedures for the various experiments. We then converted the correct number of responses into percentages for individual speakers including the R.P. subject. In the overall score means (average over all experiments) we obtained about 80% for the Algerians and 99% for the native. However, we used EXP.A (free speech) as the major criterion for our assessment and discovered that the mean scores for the Algerians and the native were about 84% and 100% respectively. As for the different experiments, the speakers performed better in experiments which contained more redundant information (i.e. free discourse) than when redundancy was reduced (i.e. single words).

The phonetic analysis of the errors that led to unintelligibility in both free speech and the reading passage indicated seven error-categories and among these, segmental (and in particular vocalic) substitutions and incorrect rhythmic patterns proved most detrimental to successful communication.

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**"The essence of language is human activity  
-activity on the part of one individual to make  
himself understood by another, and activity on  
the part of that other to understand what was  
on the mind of the first".**

**-Jespersen, 1924.**

## INTRODUCTION

This study aims to provide answers to the following practical questions:

- (1) How intelligible are advanced Algerian speakers (mainly secondary school teachers) of English to British listeners?
- (2) What are the major phonetic/phonological features of these speakers' speech that lead to communication breakdown?

From the above two questions, the reader will understand that we are mainly concerned with spoken language and also with two distinct interlocutors: Algerians as speakers and British as listeners.

Our aim is not to investigate the international intelligibility of the English spoken by one group of Algerian speakers. Such a study would necessitate listeners from various national groups (i.e. native and non-native).

Restricting our choice to the British only was dictated by the standards fixed by Algerian syllabus designers. Annexe II: Contenu des Modules de la Licence d'Enseignement de Langue Anglaise (1983: 2) which sets out the syllabus content for the BA in English for teacher trainees, sets six objectives for the 'oral expression' course and the first of these expects the student to:

"Reproduce 'models' of speech with accurate pronunciation -accuracy of sounds, intonation, stress, etc, in everyday spoken English."

When these same students finish their university studies and embark on a teaching career in secondary schools they read Programmes Anglais (1981: 3) which states the following:

"... il est le modèle auquel l'élève se réfère constamment pour écouter, comprendre et pour parler avec une prononciation correcte."

Syllabus designers as well as the recruiting body of teachers (i.e. the Ministry) both require pronunciation accuracy on the part of the model teacher. Accuracy implies that the non-native achieves the native speaker's productive performance.

In assessing the Algerian speaker's intelligibility to native (in this case British) subjects, one fulfills two aims simultaneously; that is, one measures their actual performance on the one hand, and finds out whether the accuracy required by the different Algerian institutions is achieved on the other. In this sense, the present study falls within the scope suggested by Ayodele (1983: 9) who observes:

"With the need to learn one another's languages, the need to continue to measure the intelligibility levels of foreigners' language too is very high, not merely for academic interest, but to help teachers and learners to be aware of short-comings and areas where improvements are necessary."

Wigdorsky-Vogelsang (1978: 88-89) correlates accuracy with intelligibility and argues that the traditional aim of language learning/teaching has been 'accuracy' and thus intelligibility, at the expense of 'fluency' which he equates with comprehensibility.

A number of writers make a distinction between the two concepts of intelligibility and comprehensibility (Leipp, 1970: 344). These distinctions take into account the two ends of the comprehension process: the physical end and the meaning end. Processing at the physical level is equivalent to the identification of the surface structure of an utterance and represents 'intelligibility'. 'Comprehensibility' is equated with the meaning end of the comprehension process which constructs an interpretation, and thus deep structure, of an utterance.

We believe that language is the communication of meaningful messages and that it becomes intelligible when these are understood.

Intelligibility is therefore a feature of the communication process. In the present work, we use both intelligibility and comprehensibility interchangeably because our test materials measured lower level comprehension (cf. EXP.C which assessed only segmental accuracy) as well as higher level comprehension (cf. EXP.A which determined the comprehension of real-life discourse). Furthermore, we adhere to the definition of 'intelligibility' by Olsson (1977: 5) who states:

"A linguistic message is considered to be intelligible when it is comprehended by a receiver in the sense intended by the speaker. By comprehension I mean here that a receiver can distinguish the message from other possible alternatives. Degree of intelligibility indicates the likelihood that an utterance will be interpreted in its intended sense."

Nelson (1983: 63) believes the above definition problematic because he thinks that:

"the 'sense intended' is in fact in the mind of the researcher, and there might be room for discrepancy between Olsson's apprehension of the provided stimuli and the informant's. The listener was meant to search for the intended sense on the basis of little or no context."

Nelson's criticism can hold only in view of the type of test material used by Olsson (cf. sub-section III. 4. 3.). But with real-life discourse the 'intended sense' can only be one on the part of the listener (except in cases such as puns). In addition, the whole idea behind intelligibility studies has been to investigate how successful the communication of the 'intended sense' is to particular listeners.

The present study consists of nine chapters. In Chapter I, we consider the language situation and the role of English in Algeria. The majority of educated Algerians are bilingual in Arabic and French and for this reason Chapter II includes the major phonetic and phonological aspects of these two languages and of R.P.; the content of which serves

two purposes: to provide a basis for the preparation of test-materials and provide possible explanations for certain errors later on.

The third chapter contains a review of the literature related to the present investigation and includes sections on methods of assessing intelligibility, interdialectal intelligibility, factors affecting comprehension and previous studies on the intelligibility of English.

Chapter IV is concerned with the construction of test-materials, the Algerian speakers' personal and educational background and a detailed account of the recordings. The data collected consists of samples of free speech, a reading passage, isolated words and sentences.

The editing of the above materials and the preparation of the experimental tapes are the subject of Chapter V. Further, after a preliminary test, 240 British subjects, allocated in groups of 10 to particular speakers, take part in an experimental session using dictation and multiple-choice methods. The informants' personal and educational background is also examined. Every session includes a control test spoken by a native R.P. speaker to validate the experiment and serve as a norm against which the Algerians' performance is compared.

Chapter VI deals with the different scoring procedures, intelligibility results and their statistical analysis and interpretation.

Chapter VII contains a phonetic description of each speaker's errors that have led to unintelligibility. As throughout this thesis, we use the IPA symbols for this phonetic analysis which allowed us to determine seven major error-categories that are fully discussed in Chapter VIII.

The final chapter provides some concluding remarks and considers the possible practical applications of the results.

THE LINGUISTIC SITUATION AND THE ROLE OF ENGLISH IN ALGERIA

I. 0. INTRODUCTION

Many countries have come to realise the importance of foreign languages for international cooperation. Algeria is not an exception. Further, this country belongs to the group of newly independent nations which seek to recover their own identity and in this sense shares with them the problem of designing the appropriate language policy. In the present chapter, the role of English in Algeria is discussed against a background of the whole national language policy of this country.

I. 1. HISTORICAL BACKGROUND

Algeria is part of North Africa or the 'Maghrib'<sup>1</sup> which in Arabic means 'west'. It is bounded by the Mediterranean Sea in the North, Mauritania, Mali and Niger in the South, Morocco in the West and Tunisia and Libya in the East.

Its strategic geographical position made Algeria a corridor for successive conquerors who included the Phoenicians, Romans, Vandals, Byzantines, Arabs, Turks and French in that order. In addition, the first invaders found the original settlers of the region: the Berbers<sup>2</sup> who had their own language and traditions.

The various invasions have led to a linguistic situation marked by high degree of multilingualism and multibilingualism. However, only three of the afore-mentioned invaders made any significant impact on the linguistic state of the region.

First, the Berbers whose language used to cover the entire area still remain in a number of mountainous places despite all the subsequent conquerors . Second, with the advent of Islam the spread and development of Arabic (i.e. Arabization) at the expense of Berber, nearly annihilated the latter<sup>3</sup>. Third, the French colonisation in 1830 brought with it a systematic destruction of any previously established educational system which had been the institution for spreading the Arabic language. In 1834 a French military general noted that "nearly all the Arabs can read and write; in each village, there are two schools" (quoted in Horne, 1987: 29). According to Gordon (1978: 151) literacy in Arabic was around 40-50 percent in 1830. By the time of independence and after 132 years of colonialism, only 300.000 people out of 10 million could read classical Arabic. What is more, in 1938 a law was passed making Arabic a foreign language in Algeria (Grandguillaume, 1983: 96). This systematic policy of deculturation led naturally to independent Algeria's desire to recover the national identity (language and culture) through a certain language policy and education.

Before discussing language policy and language education in Algeria, it is important to remember that the three major influences discussed above have led to the co-existence of the following languages: Arabic, Berber and French. Algerian Arabic is spoken by the vast majority of the population estimated at 20 million. About 2 1/2 million speak the various Berber languages: Kabyle by 2 million, Shawia by 150.000 and Tamashek by 10.000<sup>4</sup>. French is spoken by the few of European descent who remained in the country after independence and also by many educated Algerians.



## I. 2. LANGUAGE POLICY AND LANGUAGE EDUCATION IN ALGERIA

After independence in 1962, it was to be expected that an Arabic-speaking country with the longest history of domination by another culture and language, would embark on a decisive policy of reconquering Algeria's identity.

### I. 2. 1. 'ARABIZATION'

The choice of a national language (in our case Classical Arabic) is part of the continuous national development and emancipation initiated by political independence in the vast majority of newly-born nations. For Algeria, the result would lead French to become a foreign language and see it eradicated from the educational system (where it will no longer be the language of instruction), the administration (where it will no longer serve as the tool of communication with the public) and the environment (e.g. Arabic will replace French as the broadcasting medium for radio and television)

For our present purposes, it is worth reviewing the educational system in Algeria which this newly independent country took as its primary target for its language policy.

### I. 2. 2. ALGERIAN EDUCATIONAL SYSTEM

The high rate of illiteracy (about 90%) prompted planners to develop the educational system. Over a 25 year span the results have been impressive. In 1962-63, 777.636 pupils attended primary schools but by 1970 their number reached 1.851.416 (Khalloufi Sellam, 1983: 44) and at the present time the number stands at five million. If we add up children in secondary schools and students in higher education the final total becomes 5.610.000 (Chabane, 1987: 5-6).

A policy of 'Algerianisation' was also established and concerned syllabus content (e.g. since Algeria is no longer 'partie de la France', children start learning the history of Algeria instead of that of France which preached 'nos ancêtres les Gaulois'), the unification of a national syllabus and the staff who were trained to take charge and replace foreign technical assistance.

#### I. 2. 2. 1. THE PLACE OF LANGUAGES IN THE EDUCATIONAL SYSTEM

The educational system inherited from the colonial period consisted of the three following levels of schooling:

- primary school
- middle school
- secondary school

At the primary level which lasts 6 years, the first two years are completely arabized. In the third form French is introduced as a foreign language and remains so for the subsequent forms. During these 4 years pupils are given 8 hours of French per week and 16 of Classical Arabic.

Middle schools which cover the first four years of the secondary cycle are to be merged with primary schools in a new reform ('Ecole Fondamentale') to give nine consecutive years for the first educational cycle. At the end of the Fundamental School, the child is oriented either to 'Arabised' or 'Bilingual' (i.e. French and Classical Arabic) section depending on her/his past performance in either languages.

At the secondary school level the 'Bilingual' section provides scientific and technical subjects in French. In the 'Arabised' section all these subjects are taught in Arabic.

At the university level, most scientific and technical subjects (Medicine, Mathematics, Computer Science, etc.) are catered for in

French. The Social Sciences have been gradually Arabized since 1981.

In reality, therefore, the systematic use of the national language in all fields of study is far from complete and this is mainly due to the lack of specialists in the field.

It appears from what we have discussed so far that the choice of Arabic is irreversible. Nevertheless, one must acknowledge that the kind of Arabic adopted as a national language is questionable. The purists trained mainly in the Middle East considered Algerian Arabic a 'perverted' and 'degraded' form of Classical Arabic and therefore the former must give way to the latter. This attitude tends to ignore and at the same time disapprove of the vitality of Algerian dialects of Arabic. These have proved their capacity to meet modern time requirements by borrowing a great deal (mainly from French). Strangely enough this very feature has been the target of the purists who see it as a sign of degradation.

One must stress the fact that the vast majority of Algerians speak Algerian Arabic. Before going to school around the age of six the child already possesses a proficiency in this language. Classical Arabic is in effect a foreign language and the lack of tolerance towards the local dialects may only produce a negative result on the normal development of children.

Moreover, due to 'diglossia' Classical Arabic and Algerian Arabic have always been in complementary distribution; that is, where one is used (e.g. in the mosque), the other is not (e.g. Algerian Arabic functions as the sole means by which people interact in everyday-life). The foregoing diglossic situation cannot transform Classical Arabic into a tool of communication in informal settings because of people's attitudes towards it.

## I. 2. 2. 2. THE ROLE OF ENGLISH IN ALGERIA

The national policy on foreign languages is outlined in the National Charter ('Charte Nationale') as follows:

"La connaissance de langues de culture ... nous faciliterait la constante communication avec le monde extérieur, c'est à dire, les sciences et les techniques modernes et l'esprit créateur dans sa dimension universelle la plus féconde."  
(Quoted in Programmes Anglais, 1981: 1)

The learning of a foreign language is thus viewed as a means of acquiring the latest know-how in technology and science. English being the first international language and vehicle of much of what goes on in modern times obviously is, after French, the most important foreign language. Furthermore, English is so popular that 9 out of 10 children choose it as their second compulsory foreign language.

The Algerian child takes English (compulsory subject) at the start of the third year in Middle School and by the time s/he reaches the 'Baccalauréat' s/he will have at least five years of learning English. With the Fundamental School, the learning of English is extended to six years by the time of 'Baccalauréat'.

In Middle or Fundamental schools, children receive 4 hours per week tuition and in secondary schools the amount varies depending on the field of study (e.g. 5 hours each for the first and second years and 4 hours for the third year in the Arts sections; in the Science sections, pupils have 3 hours each for the first and second years and 2 hours for the final year).

At university level, English is provided as a service language in almost all institutes (Medicine, Economics, Biology, Law, Arabic Language and Literature, etc.). Those students who wish to specialize in English after passing their 'Baccalauréat' can join the English section which is part of the Department of Anglo-Saxon and Slav Languages. Up to 1983,

the student had to fulfill one requirement which consisted of the mark (12/20) obtained for English in his Baccalauréat exam. The student then attended the BA course in English for language teachers which lasted six semesters (three years).

TABLE 1

SYLLABUS FOR THE BA IN ENGLISH UP TO 1983

SEMESTER	SUBJECTS	NO. OF HOURS/WEEK
1 & 2	Listening comprehension	6
	Oral expression	6
	Practical phonetics	4
	Written expression	4
3	Listening comprehension	6
	Oral expression	6
	Written expression	4
	Linguistics	6
	British and U.S. civilization	2
	British and U.S. literature	4
4	Listening comprehension	6
	Oral expression	6
	Written expression	4
	Linguistics	6
	British and U.S. civilization	2
	British and U.S. literature	4
5	Listening comprehension	6
	Oral expression	6
	Written expression	4
	Linguistics	6
	African civilization	2
	African literature	6
6	Listening comprehension	6
	Oral expression	6
	Written expression	4
	Linguistics	6
	Educational technology	2
	British and U.S. civilization	2
	British and U.S. literature	6

Since 1983, however, the syllabus has been redesigned. First, instead of lasting one semester the subjects lasted a whole year. Moreover, the length of studies for the BA has been extended to four years. The major subjects taught in English for both the three-year and the four-year degrees with the number of hours per week are shown in Table 1 and Table 2 respectively.

TABLE 2  
SYLLABUS FOR THE BA IN ENGLISH SINCE 1983

YEAR	SUBJECTS	NO. OF HOURS/WEEK
1	Grammar	4
	Oral expression	4
	Phonetics	2
	Written expression	6
	Introduction to linguistics	1
2	General linguistics	2
	Oral expression	3
	Written expression	3
	Grammar	2
	Phonetics	2
	British civilization	2
	U.S. civilization	2
	British literature	2
U.S. literature	2	
3	Phonetics	1
	Oral expression	2
	British civilisation	2
	U.S. civilisation	2
	British literature	2
	U.S. literature	2
	Literature of the Third World	2
	Linguistics	2
4	Literature seminar	3
	Civilisation seminar	3
	Linguistics seminar	3
	Education technology	2

I. 3. SUMMARY

The need for a national language after 132 years of total deculturation was among the priorities of the Algerian nation just after independence. While Arabic was implemented especially in schools, circumstances dictated that French had to remain. Therefore, a kind of 'bilingualism of necessity' exists. The role of English in Algeria serves the country's aspirations to be a modern nation, and in teaching it, stress is placed on communication and the development of skills for that purpose.

## NOTES TO CHAPTER I

- 1 Literally it means the 'land of the setting sun'.
- 2 The old name 'Barbary' is derived from the Berber people.
- 3 In Tunisia, for example, the Berber language has completely disappeared.
- 4 Kabyle people come mainly from the mountains on the north coast East of Algiers. Shawia belongs to the Aurès region situated slightly to the South and East. Deep in the South in the Sahara Desert the Tuaregs speak Tamashek.



## CHAPTER II

### THE MAJOR PHONETIC AND PHONOLOGICAL ASPECTS OF R.P., FRENCH AND ARABIC

#### II. 0. INTRODUCTION

In this chapter we present the major phonetic and phonological features of R.P., Algerian French (henceforth French) and Western Algerian Arabic (henceforth Arabic).

Considering the purpose of the present research, the approach is almost entirely along the line of the classical (traditional) phonemic approach. However, in a number of cases we do mention certain theoretical and analytical arguments that represent alternatives to the classical phonemic approach. Moreover, the phonetic descriptions are mainly articulatory and/or auditory.

Further, the importance of this chapter is twofold:

- (1) to help predict areas of difficulty for the Algerian speakers of English; and
- (2) to explain certain errors that led to intelligibility breakdown between the Algerian speakers and the British informants.

The major aspects considered in this chapter include: consonants, vowels, syllable structure, phonological processes, lexical-stress, rhythmic patterns and intonational meaning. Each of the afore-mentioned aspects is first defined and then examined in the three languages.

#### II. 1. CONSONANTS AND VOWELS

It is surprising how terms so basic as 'consonant' and 'vowel' have proved particularly difficult to differentiate. The difficulty arises

when one needs to distinguish between the category of sounds traditionally called 'semi vowels' such as [j], [ɥ], [w] and the vowels [i], [y], [u] respectively. In fact, when articulatory criteria are taken into account the sounds within each of the following pairs are almost identical: [i]-[j], [y]-[ɥ] and [u]-[w]. The classification of the above sounds as either consonants or vowels is not based on their articulatory characteristics but on functional grounds and their respective positions in the syllable structure.

The confusion resulting from an attempt to conflate phonetic and linguistic categories led phoneticians to create new terms to allow for the distinction (e.g. cf. Pike, 1943 and Gimson, 1980). To dispose of this confusion between consonant and vowel, Catford (1977: 165-166) considers 'time' as an articulatory parameter to distinguish between members of the pairs [i]-[j], [y]-[ɥ] and [u]-[w]. According to him [i], [y] and [u] have a longer duration than [j], [ɥ] and [w] respectively.

#### (1) THE CONSONANTS OF R.P.

##### a- THE CONSONANT PHONEMES OF R.P.

For the purpose of the present study the investigator has chosen the analysis which comprises 24 consonantal phonemes (Gimson, 1980: 151; O'Connor, 1973: 129).

Apart from /h/, /ŋ/, /r/, /w/ and /j/ all the other consonants occur in the onset and coda in a syllable structure. /ŋ/ on the other hand occurs only syllable-finally while /h/, /r/, /w/ and /j/ occur only syllable-initially.

##### b- ARTICULATORY DESCRIPTION OF R.P. CONSONANTS

In the description and classification of R.P. consonants one needs six manners of articulation and nine points of articulation. As far as voicing is concerned 15 consonants (i.e. /b, d, g, dʒ, v, ð, z, ʒ, m, n, ŋ,

l, r, w, j/) are voiced and the rest voiceless (i.e. /p, t, k, tʃ, f, θ, s, ʃ, h/). We have plotted all 24 consonants on the chart in Table 3.

In R.P., however, voicing does not always operate. The distinction on the basis of voicing between members of the pairs /p-b/, /t-d/, /k-g/, /tʃ-dʒ/, /f-v/, /θ-ð/, /s-z/, /ʃ-ʒ/ does not stand especially when the so-called voiced segments occur initially after a pause or a voiceless consonant, or finally before a pause or a voiceless consonant. To distinguish between the above pairs one needs to refer to the feature of breath and muscular effort needed in their articulation. Hence, consonants that need more force and energy are called 'fortis' (i.e. /p, t, k, tʃ, f, θ, s, ʃ/) and those produced with weaker energy and breath force are called 'lenis' (i.e. /b, d, g, dʒ, v, ð, z, ʒ/).

The remaining part of this section considers sets of R.P. consonantal phonemes in turn based on a similar manner of articulation and the major allophonic variants for each phoneme are discussed.

R.P. plosives are articulated at three points of articulation: bilabial for /p,b/, alveolar for /t,d/ and velar for /k,g/. R.P. has thus 6 plosive consonants.

The major remarks on R.P. plosives concern mainly the fortis set. In opposition to French and Arabic, the fortis plosives in R.P. are accompanied by aspiration during their release. Acoustically, aspiration is an aperiodic sound which occurs during the period between the release of the closure and the onset of voicing. In auditory terms, it is similar to a weak fricative segment. This interval or delay is designated as voice onset time (VOT).

There are, however, degrees of aspiration which depend on the plosive in the syllable, the surrounding sounds and the presence or absence of stress. For example in ['pʰɔ:] ('pour'), the initial-position plosive is strongly aspirated because of its position in the syllable and

it is stressed; /t/ in [stɔ:] ('store') is completely unaspirated because it follows /s/.

As far as affricates are concerned R.P. has two: /tʃ/ and /dʒ/. For practical purposes however it is useful to also include /tr/ and /dr/. Some authorities refute the phonemic status of these affricates and treat them as bi-phonemic, that is, each one consists of a sequence of two independent phonemes.

/tʃ/ and /dʒ/ are articulated at the palato-alveolar region while /tr/ and /dr/ are post-alveolars. /tʃ/ and /dʒ/ occur in both onsets and codas in syllable structures, while /tr/ and /dr/ occur only syllable-initially. As already mentioned /dʒ/ is not voiced all the time.

R.P. speakers make use of five points of articulation to produce the nine fricatives: labiodental for /f,v/, dental for /θ,ð/, alveolar for /s,z/, and palato-alveolar for /ʃ,ʒ/. Among these fricatives five are fortis (i.e. /f, θ, s, ʃ, h/) and four lenis (i.e. /v, ð, z, ʒ/). As with lenis plosives and affricates the lenis fricatives are not always fully voiced.

Finally, one should point out the presence of /θ, ð/ and /h/ in English and the likelihood that these dental and the glottal fricative articulations could present some difficulty to the Algerian learner/speaker of English.

R.P. nasals share the same places of articulation as the plosives: bilabial for /m/, alveolar for /n/ and velar for /ŋ/. These three R.P. nasal sounds are all voiced.

Points of special noteworthiness concerning R.P. nasals include the place of articulation of /n/ which is alveolar and the presence of /ŋ/ as a distinctive phoneme in contrast with others.

We find only one lateral consonant in R.P. which is voiced and articulated at the alveolar ridge. The realisation of R.P. /l/ varies

according to its distribution. Hence, before vowels or /j/ it has quite a different realisation from that in other environments; e.g. [lɛt] ('let'), [fɛt] ('felt'). The lateral sound is 'clear' before a vowel or /j/ and 'dark' elsewhere. A dark [ɫ] has in addition to the primary articulation at the alveolar ridge, a simultaneous raising of the back of the tongue towards the soft palate (i.e. velarization).

As for approximants R.P. makes use of a combination labial-velar place of articulation to produce /w/; it also makes use of the post-alveolar point for /r/ as well as the palatal area for /j/.

Among the three approximant phonemes in R.P. /r/ is worth singling out because of its articulation [ʀ] which is found neither in French nor Arabic<sup>1</sup>.

## (2) THE CONSONANTS OF FRENCH

### a- THE CONSONANT PHONEMES OF FRENCH

The consonant system of Algerian French deviates in a few areas from that of standard Parisian accent. The consonant inventory of the latter consists of 20 phonemes (MacCarthy, 1975: 85; Malmberg, 1968: 84; Armstrong, 1932: 88). The deviations from standard Parisian consonants occur at the phonetic level. The only consonantal phoneme that is lacking in Algerian French is /ɲ/ which is almost always replaced by the sequence /nj/<sup>2</sup>.

Except for /q/ and /w/ all the other consonants occur in both onset and coda in syllable structure. /j/ is the only approximant that occurs in the coda as in /pɛj/ ('salary'). As far as the onset is concerned none of the three are found in initial position; /w/ and /j/ are always in second position and /q/ in second or third position in a cluster as in e.g. /pjø/ ('pious'), /ʒwɛ/ ('joined'), /plqi/ ('rain').

TABLE 3

CONSONANT CHART FOR ENGLISH, FRENCH AND ARABIC

	LABIO-		DENTAL		ALVEOLAR		ALVEOLAR		PALATO-		POST-	
	BILABIAL	DENTAL	DENTAL	ALVEOLAR	ALVEOLAR	ALVEOLAR	PALATAL	PALATAL	VELAR	UVULAR	PHARYNGEAL	GLOTTAL
<u>ENGLISH</u>												
PLOSIVE	p	b		t	d				k	g		
AFFRICATE						tʃ	dʒ					
FRICATIVE		f	v	θ	ð	s	z					h
NASAL	m					n				ŋ		
LATERAL						l						
FLAP												
APPROXIMANT	w						r	j				
<u>FRENCH</u>												
PLOSIVE	p	b		t	d				k	g		
AFFRICATE												
FRICATIVE		f	v			s	z	ʃ	ʒ			
NASAL						n						
LATERAL						l						
FLAP												
APPROXIMANT	w							j				
<u>ARABIC</u>												
PLOSIVE	p	b		t	d				k	g	q	ʔ
AFFRICATE								tʃ	dʒ			
FRICATIVE		f	v			s	z	ʃ	ʒ			
NASAL						n						
LATERAL						l						
FLAP												
APPROXIMANT	w							j				

## b- ARTICULATORY DESCRIPTION OF FRENCH CONSONANTS

The description and classification of French consonants require six manners of articulation and seven points of articulation. In terms of voicing 13 consonants (i.e. /b, d, g, v, z, ʒ, m, n, l, r, j, ɥ, w/) are voiced and six voiceless (i.e. /p, t, k, f, s, ʃ/). We have also included in the chart in Table 3 all the French consonants. Unlike R.P. all voiced consonants in French are fully voiced except of course in cases of assimilation.

In the next section we consider each mode of articulation in turn and for each individual class of phonemes we only examine those salient features that deviate from Parisian French and which could also hinder the pronunciation of English.

For the production of French plosives the articulators come into contact at three points of articulation: bilabial for /p,b/, dental for /t,d/ and velar for /k,g/. Out of these six plosives we have half voiceless (i.e. /p, t, k/) and half voiced (i.e. /b, d, g/). Unlike R.P. the voiceless plosives are never aspirated and the onset of voicing for the following vowel starts simultaneously with the release of the closure.

The other difference with R.P. concerns the actual place of articulation of /t/ and /d/ which is dental in French. There is a tendency, however, among a large number of female Algerian speakers to produce affricated /t/ and /d/ (sometimes complete affricates) before the close front vowels /i, y/ as well as /j/ and /ɥ/. Moreover, /t/ and /d/ become retracted and have an almost palato-alveolar place of articulation<sup>3</sup>; e.g. [tʃymaɖʒi] ('you told me').

/t/ may also have an affricated [tʃ] realisation among women (in this case it is alveolar) who transfer it from certain Arabic dialects which carry prestige - namely the Tlemcen variety. The Arabic accents of Nédroma in the west (Guella, 1983) and that of the region around

Béchar (South-west of Algeria) use mainly an alveolar affricated /t/.

Another influence of Arabic on French comes from the interference of emphatic consonants. Some Algerian speakers would use [t̤] and [d̤] for French /t/ and /d/ respectively (Dekkak, 1979: 44; Aouad-Elmentfakh, 1980: 78) as in e.g. [t̤d̤pi] ('carpet'), [d̤d̤ma:ʒ] ('it's a shame').

The French fricative system is much less complex than that of R.P.. Nevertheless, as we shall see later this lack is made up for by the richness of the Arabic consonant system in general and the fricative sub-system in particular. One needs, however, to mention the notable absence of dental /θ/ and /ð/ as well as the glottal /h/.

The first characteristic of the French nasal system concerns the absence of velar /ŋ/. In the Parisian accent [ŋ] can occur as a realisation of /n/ due to the influence of the following /g/ as in e.g. [paʁkiŋ] ('car park') (cf. Malmberg, 1968: 106).

As to the French lateral /l/ two remarks need to be made regarding its realisation. First, it has a dental place of articulation unlike R.P. /l/ which is alveolar. Second, /l/ in French has a 'clear' quality in all contexts.

Of the four approximants /ɥ, w, r, j/, /ɥ/ is the one lacking in English. /r/ has varied realisations depending on the sex of the speaker, degrees of bilingualism, attitudes towards interlocutor, context and subject-matter. In general, the following two complementary variants exist: the uvular approximant [ʁ] and the dental flap [r̥].

### (3) THE CONSONANTS OF ARABIC

#### a- THE CONSONANT PHONEMES OF ARABIC

Algerian Arabic like most other varieties of Arabic has a very complex consonant system which consists of 33 consonantal phonemes.



We need to make a number of observations on eight consonants namely /p, g, q, ʔ, tʃ, dʒ, v, ɣ/. First, the existence of /p/ and /v/ in Algerian Arabic comes from the influence that results from the contact of Arabic with French. These two sounds occur exclusively with French loan-words which have not undergone total assimilation into the Arabic system. Second, the case of /g/ and /q/ is problematic. Although minimal pairs exist where the two can exhibit their separate phonemic identity, they do however tend to be in free variation in a number of cases. Third, /ʔ, tʃ, dʒ, ɣ/ do not occur a great deal and have thus a low functional load.

Out of the 33 consonants only /ʔ/, /tʃ/ and /dʒ/ do not occur in both onset and coda in Arabic syllable structure. These only occur in the onset.

#### b- ARTICULATORY DESCRIPTION OF ARABIC CONSONANTS

The description of Arabic consonants requires seven manners of articulation and ten points of articulation. In addition, we have 13 voiceless (i.e. /p, t, ʈ, k, q, tʃ, f, s, ʃ, x, h, ʔ/) and 20 voiced consonants (i.e. /b, d, ɗ, g, dʒ, v, z, ʒ, ʁ, ʕ, fi, m, n, l, ɣ, r, ʕ, w, j/. As in cases of French, the voiced consonants are voiced throughout unless they undergo the assimilation process of voice. All 33 consonants have been plotted on the consonant chart in Table 3.

Before describing the major characteristics of Arabic consonantal phonemes, it is necessary to clarify the articulatory feature that is shared by the following /ʈ, ɗ, ʒ, ʕ, ɣ, ʕ/. These phonemes have been traditionally called 'emphatics' as opposed to their plain counterparts. After Lehn (1963)<sup>4</sup> who proposes a detailed articulatory description of emphatics, one can state that these involve two simultaneous secondary articulations: velarization and pharyngealization with the former being obligatory and the latter also important, but not of prime importance to

emphasis as is velarization. In this sense it is more appropriate to call these sounds 'emphatics' since neither velarization nor pharyngealization alone is a satisfactory term (Benhallam, 1980: 89-90).

The major property of emphatics is their influence on the neighbouring sounds. They tend to spread emphasis to contiguous segments within a whole syllable or even a whole word. This spreading phenomenon has led people to wonder whether there was any justification in locating 'emphasis' in one segment and to suggest a prosodic treatment of this feature.

The influence on the contiguous segments makes plain consonants become emphatics and vowels opener and centralised. We shall see later that coarticulation due to emphatics results in various qualities for vowels in Arabic.

Finally, due to the raising of the back of the tongue and the retraction of the root towards the back wall of the pharynx the tip (and/or blade) of tongue makes contact (or narrow or wide approximation) with the alveolar ridge instead of the back part of the upper teeth. Hence, all emphatics have an alveolar place of articulation.

In the remaining part of this section each manner of articulation is viewed in turn and the salient features of the individual sounds discussed.

The Arabic plosive system is a complex one. The articulators come into contact at six points of articulation: bilabial for /p,b/, dental for /t,d/, alveolar for /t,ḏ/, velar for /k,g/, uvular for /q/ and glottal for /ʔ/. Henceforth, Arabic has ten plosives six of which (i.e. /p, t, t, k, q, ʔ/ are voiceless and four voiced (i.e. /b, d, ḏ, g/).

In common with French, /t/ and /d/ have a dental place of articulation, the voiceless plosives are never aspirated and the onset of voicing for the following vowel starts with the release of the closure.

As for affricates, the existence of /tʃ/ and /dʒ/ in the consonant system in Arabic facilitates their pronunciation in English. The only pitfall concerns the voicing of /dʒ/ which is not always totally voiced in R.P. but is voiced throughout in Arabic.

The most complex consonant sub-system in Arabic is the fricative one. It contains up to 13 phonemes produced at six points of articulation: labio-dental for /f,v/, alveolar for /s,s,z,s/, palato-alveolar for /ʃ,ʒ/, velar for /x,ɣ/, pharyngeal for /ħ,ʕ/ and glottal /ħ/. In spite of this complexity, however, it lacks the dental /θ,ð/ and glottal /h/.

Unlike R.P., Arabic has a two-consonant system for the nasal sub-system. In addition, /n/ has a dental place of articulation. One of the allophonic realisations of /n/ when followed by the velar /k,g/ and uvular /q/ is a uvular [ŋ] as in e.g. ['zəŋqə] ('street'), ['ŋgʷlɪ] ('let's say').

Arabic has two lateral sounds: one plain [l] and the other emphatic [ɭ]. While the former has a dental place of articulation the latter is alveolar.

The two 'r' sounds, that is the emphatic and the non-emphatic are flaps and pronounced [ɾ] and [r] respectively. In very rapid speech and when /r/ occurs in the coda and in absolute-final position it is realized as a post-alveolar approximant as in e.g. [mɐɾ] ('bitter'), [dɐɾ] ('he did').

As far as approximants are concerned, the labio-velar /w/ and palatal /j/ are similar to their English counterparts. The post-alveolar approximant does not exist as a distinctive unit in Arabic, but as we have just seen above [ɻ] does occur in special circumstances.

#### (4) THE VOWELS OF R.P.

##### a- THE VOWEL PHONEMES OF R.P.

For the purpose of the present study, the author considered it more appropriate to adhere to that analysis of R.P. vowels proposed by Gimson (1980). Although the Gimson analysis lacks economy of categories it does, however, provide "a good deal of explicit information in the notation about the phonetic realization of the phonemes (especially the relation of quality and quantity), and takes some account of the R.P. speaker's own feelings as to the distinctive vowel counters which he uses" (Gimson, 1980: 100). Moreover, a Gimson-type solution is most widely used among learners and teachers of English.

R.P. has 20 vocalic phonemes which can be divided into 12 relatively pure vowels (i.e. with constant qualities) and 8 diphthongs (i.e. with gliding qualities). One can further subdivide the pure vowels into two categories: five long or tense (/i:, a:, ɔ:, u:, ɜ:/) and seven short or lax (/ɪ, e, æ, ʌ, ɒ, ʊ, ə/).

The diphthongs can be further subdivided according to the quality of their second element as follows:

##### i- closing diphthongs:

- 3 glides towards /ɪ/: /eɪ, aɪ, ɔɪ/
- 2 glides towards /ʊ/: /aʊ, əʊ/

##### ii) centring diphthongs:

- 3 glides towards /ə/: /ɪə, eə, uə/

Within the short vowel sub-system /ə/ never occurs in stressed syllables. Moreover, the lax vowels never occur in open stressed syllables. /ə/, /ɪ/ and /ʊ/ occur in open but unstressed syllables as in /'sɪtə/ ('sitter'), /'sɪtɪ/ ('city') and /'ɑ:gju/ ('argue'). On the other hand tense vowels and diphthongs may occur in stressed open syllables.

## b- PHONETIC DESCRIPTION OF R.P. VOWELS

The so-called 'long' vowels and diphthongs are in their nature longer than the 'short' ones. Nevertheless, one needs to consider the phonetic context in which a vowel occurs in order to decide upon length. Hence, a short vowel closed by a lenis consonant as in /bid/ may be longer ([bi:d]) than a long vowel closed by a fortis consonant as in /bi:t/ ([bi:t]). In general, long vowels and diphthongs may be lengthened when they occur in open syllables or syllables closed by a lenis consonant.

R.P. vowels do not only vary in duration but in quality as well. For example, 'dark' [ɫ] has a noticeable effect on the preceding vowel which becomes diphthongized. This influence is more noticeable with /i:/+[ɫ] and /u:/+[ɫ] as in [fi:əɫ] ('feel') and [fu:əɫ] ('fool') respectively.

The quality of /ə/ tends to vary depending on the type of syllable it happens to occur in. In a closed syllable /ə/ has the quality of a central between half-close and half-open vowel as in [ə'baʊt] ('about'), but in open syllables it has the quality of a central between half-open and open vowel as in ['betə] ('better'). In the vicinity of velar consonants, /ə/ has a half-close tongue height as in ['lɒŋə'gəʊ] ('long ago').

In the remaining part of this section each vocalic as well as diphthongal sound is briefly described in articulatory and auditory terms.

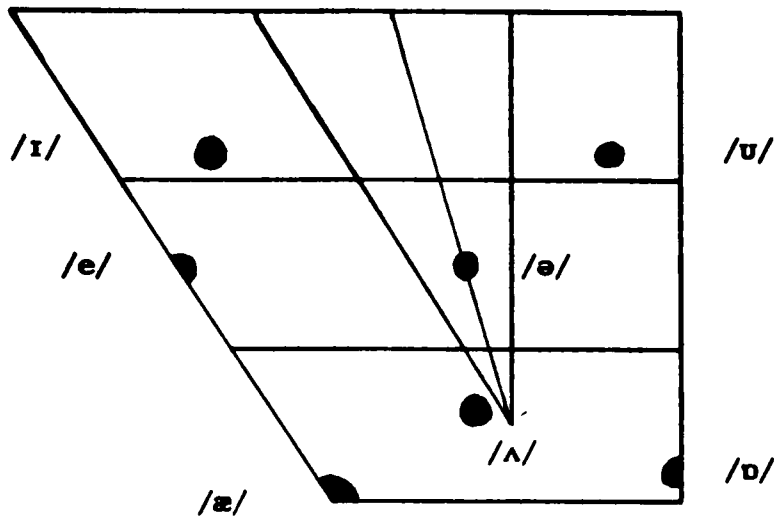
### i- SHORT VOWELS

We have plotted all short vowels on the vowel diagram in Fig. 1.

For the vowel /ɪ/ the front of the tongue slightly retracted is raised to just above half-close position with the lips loosely spread. The quality is that of a retracted and raised cardinal No.2 [ɨ].

**FIG. 1**

**R.P. SHORT VOWELS**



The front of the tongue is raised between half-close and half-open for the vowel /e/ which has slightly spread lips. The quality is between cardinal vowels No.2 and No.3 [e].

To produce /æ/, R.P. speakers raise the tongue front to fully open with lips neutrally open. It has the quality of cardinal No.4 [a].

The articulation of /ʌ/ necessitates the centre of tongue raised between half-open and fully open with neutral lips. The quality is that of a retracted and raised cardinal No.4 [ə].

For /ɒ/ the back of the tongue is raised just above fully open with slightly open lip-rounding. It has the quality of a slightly raised secondary cardinal No.13 [ɔ].

In the articulation of /ʊ/ the part of the tongue nearer the centre is raised to just above half-close with a loosely rounded lip-shape. The quality is that of a centralized and raised cardinal No.7 [ø].

For the schwa vowel the centre of the tongue is raised to a position between half-close and half-open with neutral lips. However, we already noted that the type of syllable (open or closed) and adjacent consonants (velars in particular) influence the quality of /ə/.

## ii- PURE LONG VOWELS

Fig. 2 represents the vowel diagram with all the long pure vowels plotted.

In the articulation of /i:/ a slightly retracted front of tongue is raised just below fully close with spread lips. The quality is that of a slightly retracted and opener cardinal No.1 [i]. /i:/ may be diphthongal [iɪ] especially in open syllables.

For /ɑ:/ the part of the tongue between the back and the centre assumes a fully open position with the lips neutrally open. It has the quality of a centralised cardinal No.5 [ɒ].

To articulate /ɔ:/ speakers raise the back of the tongue between half-close and half-open with a fairly rounded lip-shape. It has the quality of a vowel between cardinal No.6 and cardinal No.7 [ɔ].

/u:/ has an advanced back of tongue raised just below fully close with moderately rounded lips. The quality is that of a centralized and slightly opener cardinal No.8 [ʊ]. This vowel may be diphthongal with the quality [ʊu] in open syllables. Nowadays many younger R.P. speakers use a much more centralised quality, approaching [ɯ]. A good number of speakers also dispense with lip rounding and have a quality more or less like [ɪ].

/ɜ:/ is produced with the centre of the tongue raised between half-close and half-open with a neutral lip-shape.

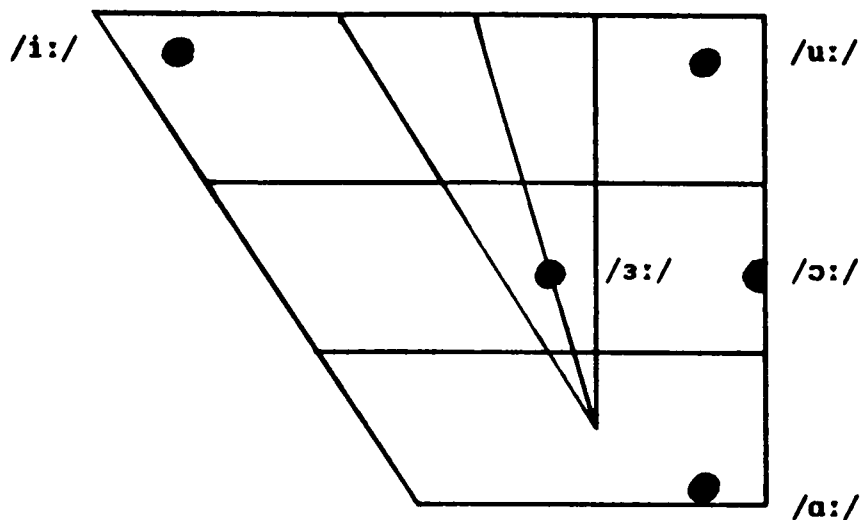
## iii- DIPHTHONGS

We have plotted the closing and centring diphthongs on the vowel charts in Fig. 3 and Fig. 4 respectively.

For the articulation of the closing diphthong /eɪ/ the starting point begins just below the half-close front position and glides towards the position for R.P. /ɪ/.

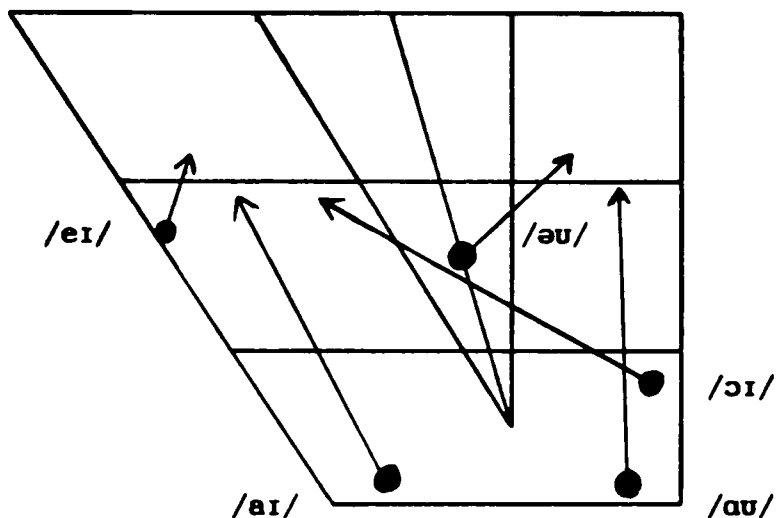
**FIG. 2**

**R.P. PURE LONG VOWELS**



**FIG. 3**

**R.P. CLOSING DIPHTHONGS**



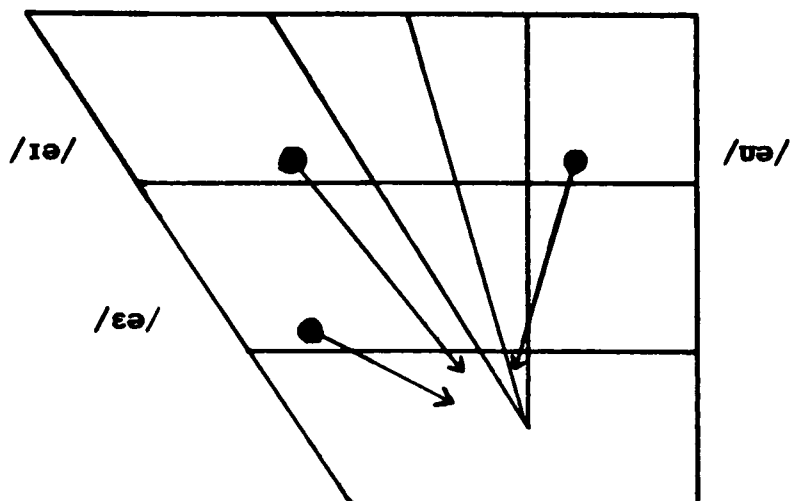
In articulating /aɪ/ the first element has the front of tongue in the nearly fully open position then the tongue glides towards the position for /ɪ/.

The vowel position for the beginning of /ɔɪ/ has the back of the tongue raised just below half-open. The tongue then moves in the direction of /ɪ/.



**FIG. 4**

**R.P. CENTRING DIPHTHONGS**



The tongue position for the first part of /əʊ/ is central and mid-way between half-close and half-open. Then the tongue moves towards R.P. /u/ which may or may not be rounded.

In the production of /aʊ/ the starting point begins at a fully open position between the centre and the back of the tongue which then moves towards /u/ which may or may not be rounded.

For the articulation of the centring diphthong /ɪə/ the tongue starts moving from a retracted front and just above half-close position to the position of R.P. /ə/.

The glide for /ɛə/ begins from a slightly retracted front and half-open tongue position and moves to /ə/.

The first element of /ʊə/ has the back part of the tongue nearer the centre raised just above half-close; then the tongue moves towards /ə/. However, this vowel has a low functional load and many R.P. speakers use /ɔ:/ instead.

## (5) THE VOWELS OF FRENCH

### a- THE VOWEL PHONEMES OF FRENCH

Compared with the standard Parisian vowel system which consists of 16 contrastive units (Armstrong, 1932; MacCarthy, 1975, Malmberg, 1968), Algerian French has a less complex one. The vocalic phonemes of standard Parisian contains 12 oral (i.e. / i, e, ε, a, ɑ, ɔ, o, u, ə, y, ø, œ/) and four nasalised vowels (i.e. /ɛ̃, ɑ̃, ɔ̃, œ̃/). In Algerian French a number of the above 16 vocalic units have been dropped or merged into single phonemes. Hence, the distinction between /e/ and /ε/ (e.g. 'été' vs. 'était') does not exist in Algerian French. The distinction /a/ vs. /ɑ/ has also been dropped. These two pairs of vowel phonemes have been replaced by what is commonly known as 'e moyen' and 'a moyen' respectively. Moreover, Algerian French does not make use of the /ɛ̃/-/œ̃/ contrast<sup>5</sup> and uses /ɛ̃/ for both instead. Therefore, the inventory contains only 13 vowels instead of the 16 of Modern standard Parisian.

### b- PHONETIC DESCRIPTION OF FRENCH VOWELS

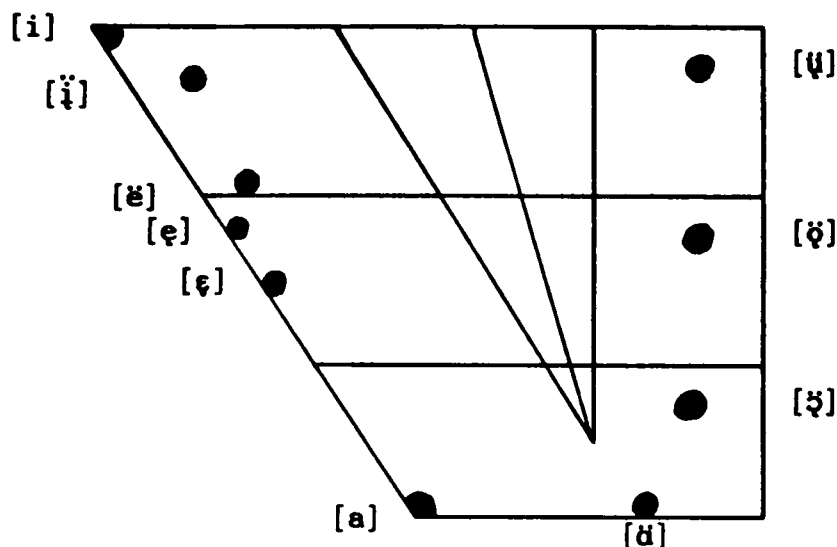
In general, nearly all vowels in Algerian French tend to have opener and retracted/centralised variants. A further articulatory characteristic specific to these vowels concerns the amount of lip rounding and protrusion. It appears (Dekkak, 1979: 58) that those vowels with rounded lips receive "much less rounding and protrusion".

Quantity is not phonemic and is usually conditioned by the phonetic context. For example, all vowels that occur syllable word-finally in an utterance and closed by either /r/ or a voiced fricative or a voiced plosive are lengthened. In other words, the rules that govern vowel length tend to be similar to those of standard French (cf. MacCarthy, 1975: 59-61, for the conditions that affect vowel lengthening in Parisian French).

In the rest of the present section each Algerian French vowel is considered in turn and described with its major allophonic variants and their phonetic environments. The vowel diagrams in Fig. 5 <sup>and</sup> Fig. 6 represent the auditory space covered by the French vowel phonemes.

FIG. 5

VARIANTS OF FRENCH /i, e, a, ɔ, u/



/i/ has a variant that is front and fully close with spread lips (of about the same quality as cardinal No.1 [i]) and which occurs in formal settings (e.g. reading) and is, therefore, stylistically bound. In relaxed settings, however, speakers produce an Algerian Arabic-like quality [i̥] which is an opener and retracted front vowel with spread lips (quality of a retracted and opener cardinal No.1, e.g. /lqi/ ('him') is pronounced [lqi] in formal style and as [lqi̥] in an informal one.

Since /e/ and /ɛ/ have merged in Algerian French, the most common variety one hears among speakers is a front vowel between half-close and half-open with open spread lips (quality halfway between cardinals No.2 and No.3. However, a close look at the words 'été' ('summer') and 'était' ('was') both pronounced [ɛ̃] reveals that in

closed syllables speakers use a closer variety while they keep the opener variety for open syllables.

The 'a moyen' has two major allophonic variants. A centralised back open vowel with open lips [ɔ̃] (quality of centralised cardinal No.5) occurs in the environment of emphatic consonants (i.e. transfer from Arabic) or after the labio-velar approximant; e.g. [sɔ̃lɔ̃] ('sitting room'), [ʃwɔ̃] ('choice'). The second variant a front open vowel with neutral open lips (quality of cardinal No.4 [a]) occurs elsewhere; e.g. [pa] ('not'), [pa:ɔ̃] ('paste').

Algerian French /o/ is a centralised back vowel below half-close with loosely rounded lips (quality of a centralised and opener cardinal No.7). This vowel occurs in e.g. [bɔ̃] ('handsome'), [mɔ̃nɛ] ('change'). One must note the total absence of the standard Parisian quality [o] (similar to cardinal No.7 with closely rounded lips) in Algerian French.

Algerian French /ɔ/ has the quality of a centralised back vowel below half-open with rounded lips (same as the Parisian one which has the quality of a centralised and opener cardinal No.6 [ɔ̃]) as in e.g. [kɔ̃m] ('like'), [nɔ̃bɔ̃] ('noble'). In addition, Algerian speakers of French use this quality in a number of words which in standard Parisian have [o] as in e.g. [vɔ̃:z] ('rose'), [ɔ̃:ɔ̃x] ('other').

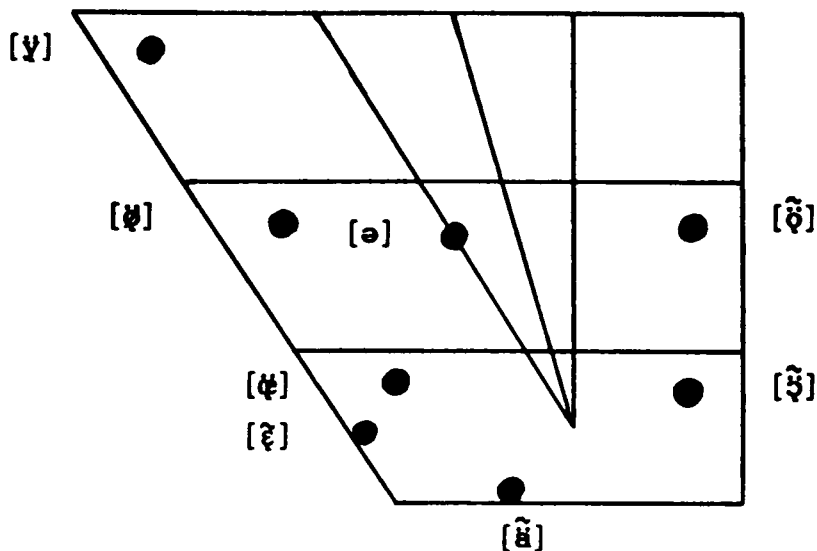
The most common realisation of /u/ in Algerian French involves a centralised back vowel below close with spread lips [ɔ̃] (quality of a centralised and opener cardinal No.8). As for lip-rounding, it has a protrusion but less marked than that of Parisian /u/. This vowel occurs in e.g. [vɔ̃:z] ('red'), [mɔ̃] ('soft').

Algerian French /y/ has the same tongue position as in Parisian French; that is, a retracted front vowel below close (quality of a retracted and opener secondary cardinal No.9 [y]). However, this vowel has less lip-rounding than its Parisian counterpart. Words with /y/

include e.g. [bʏ] ('bubble'), [ʏziŋ] ('factory').

FIG. 6

FRENCH NASALISED VOWELS AND /y, ø, œ, ə/



The quality of Algerian French /ø/ varies from that of the Parisian one in two ways: (1) Parisian /ø/ has the front of the tongue raised below half-close with slightly rounded lips (quality of a retracted and opener secondary cardinal No.10 [ø]). In Algerian French on the other hand /ø/ is slightly opener and with less lip protrusion; this vowel occurs in e.g. [pø] ('not enough'), [dø] ('two'). In a large number of cases, nonetheless, speakers drop even this slight lip-rounding and because /ø/ is opener, perceptually it gets confused with /ə/ as in the two examples: [ʒə] ('game') and [ʒəvə] ('I want'). (2) If we look at the three words [pæʔ̃:z] ('afraid'), [æʔ̃:z] ('heureuse') and [ma]æʔ̃:z] ('unhappy'), we find that /ø/ is realised as [ø̃:] before [z] and as [ə] elsewhere. In fact, when /ø/ occurs before /z/ Algerians replace it by an opener variety related to the phoneme /œ/⁶. Hence, all the following words have [ø̃] instead of [ø]: [mã̃]ø̃:z] ('liar'), [pjø̃:z] ('pious'), [kxø̃:z] ('hollow').

In the realisation of /œ/ the quality is almost identical to the standard Parisian one. For its production Algerians raise a retracted tongue front just below half-open with open rounded lips (quality of a retracted and open secondary cardinal No.11 [ɥ]). As already mentioned /œ/ occurs in certain lexical items which normally have /ø/ in Parisian French as well as in all words which normally contain /œ/ in the Parisian accent as in e.g. [sœ] ('alone'), [œ:v] ('hour').

For the articulation of /ə/ speakers raise the front part of the centre of the tongue to the position between half-close and half-open. The difference between the production of /ə/ and its Parisian counterpart lies in the degree of lip-rounding; that is, Algerian French /ə/ has, as in the case of R.P. schwa, no marked protrusion of the lips. /ə/ occurs in e.g. [lə] ('the'), [zə] ('I').

We have already seen how Algerian speakers tend to substitute /ə/ for /ø/. This confusion results, in part, from the far more open and retracted /ø/ which makes the auditory space between it and /ə/ very narrow (cf. Fig. 6) and also from the absence of marked lip-rounding. These articulatory characteristics have probably led to both vowels being interchanged.

It has been noted at the beginning of this section that /ɛ̃/-/œ̃/ opposition does not exist in Algerian French which makes mainly use of /ɛ̃/ for both<sup>7</sup>. For example, the members of the two following word pairs are homophonous: [bœ̃]-[bœ̃] ('shoot of tree'-'dark'); [dœ̃fœ̃]-[dœ̃fœ̃] ('the ends'-'deceased'). As far as the articulation of /ɛ̃/ is concerned, it is the front of tongue which is raised between half-open and fully open with open spread lips (quality between cardinals No.11 and No.12 [ɛ̃]). The soft palate is lowered so air escapes through both the nasal and oral cavities.

The distinction between /ã/ and /ɔ̃/ does not always operate in the system of a large number of Algerian speakers even among some highly educated subjects. When people do distinguish between /ã/ and /ɔ̃/ the qualities are different from those of Parisian French. /ã/ is realised as a retracted fully open front nasalised vowel with neutral lips (quality of a retracted nasalised cardinal No.4 [ã̠]). On the other hand, /ɔ̃/ is much more open and centralised than in Parisian French and has the quality of a centralised back vowel just below half-open with open rounded lips (quality of a centralised and open cardinal No.6 [ɔ̃]). For both [ã̠] and [ɔ̃] the soft palate is lowered to let air escape simultaneously through both nasal and oral cavities. This small group of speakers keep the following pairs separate: [vã̠]-[vɔ̃] ('wind'-'they go'); [sã̠]-[sɔ̃] ('without'-'his'); [bã̠]-[bɔ̃] ('white'-'fair'). The vast majority of speakers do not keep the opposition in the above pairs of words and pronounce all of them with the same vowel [ã̠].

## (6) THE VOWELS OF ARABIC

### a- THE VOWEL PHONEMES OF ARABIC

In standard Arabic and a large number of modern dialects of Arabic (especially the Middle Eastern varieties), there exist three long and three short vowel phonemes represented by /i:/, /a:/, /u:/ and /i/, /a/, /u/ respectively (e.g. cf. Beeston, 1970: 16-17). The Maghribi dialects of Arabic still possess the traditional three long vowels (cf. Sayed, 1981: 31) but as for the short varieties, a complex situation exists (Dechicha, 1978: 22-23). The status of the short vowels in Algerian Arabic, for instance, is not clear and this has led to different analysts to propose different inventories. Hence, both Aouad-Elmentfakh (1980: 64) and Grand'Henry (1972: 17-18) established four significant vowel phonemes while Guella (1983: 49) and Dechicha (1978: 35-36)

considered seven. Another study (MaYri, 1981: 72-84) distinguishes between six 'native' (i.e. Arabic proper) and seven 'loan' (i.e. vowels within French loan words which have not been completely assimilated into Algerian Arabic) vowels. The same state of affairs prevails in Moroccan Arabic (the closest dialect to Western Algerian Arabic) where, for example, Sayed (1981: 31) considers eight vowel phonemes which consist of five short and three long.

For the purpose of the present study we adhere to the analysis put forward by Dechicha (1978) who considered the three long vowels /i:/, /a:/, /u:/ and the four short vowels /i/, /a/, /u/ and /ə/.

As far as the distribution of these phonemes is concerned, it is worth mentioning that short vowels occur in both stressed and unstressed syllables whereas long vowels occur only in stressed syllables. Moreover, one can never find long vowels in word-final open syllables.

#### b- PHONETIC DESCRIPTION OF ARABIC VOWELS

Quality variations occur with all the vowel phonemes. Vowel quality tends to be affected by the neighbouring consonants and particularly the velars (fricatives only), uvulars, pharyngeals and emphatics.

As for quantity, it is interesting to mention the measurements obtained by Dechicha (1978: 93-100) who found that vowels in open syllables or syllables closed by a voiced consonant were longer than vowels which occurred in closed syllables or those closed by a voiceless consonant.

In the remaining part of the present section we consider the distribution of the major allophones for each vowel phoneme and then each allophonic variant is described in articulatory as well as auditory terms. In addition, we have plotted the variants of long vowels in



Fig. 7 and those of short vowels in Fig. 8 and Fig. 9.

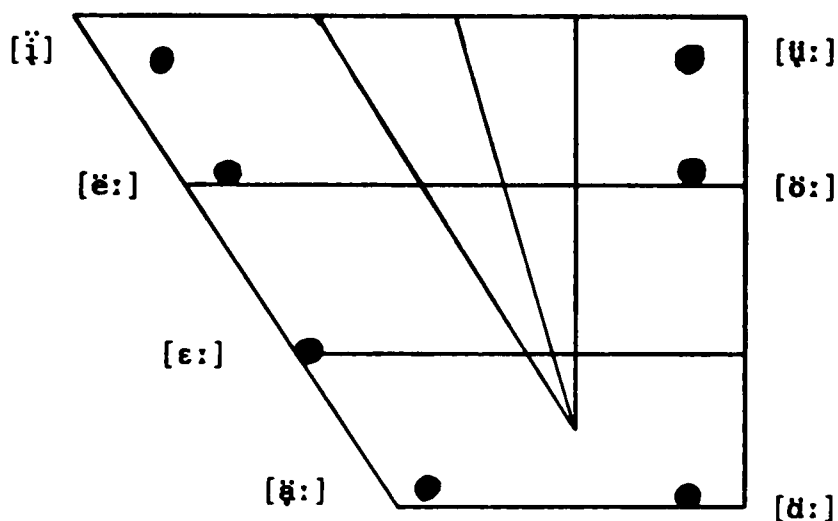
Two major allophones occur for /i:/. A retracted front and half-close vowel with spread lips (quality of a retracted cardinal No.2 [ɤ:]) occurs next to velar fricative, pharyngeals and emphatic consonants as in e.g. [xɤ:r] ('riches'), [mɤ:h] ('good'), [tɤ:r] ('bird').

In all other environments we have a retracted and below close front vowel with spread lips (quality of a retracted and slightly open cardinal No.1 [i:]) as in e.g. [rɪ:f] ('feathers'), [ʎi:] ('night').

[ɛ:], [ɤ:] and [ä:] represent the major allophonic variants of /a:/. In the context of emphatics a centralised fully open back vowel with neutral open lips occurs (quality of a centralised cardinal vowel No.5) [ü:] as in e.g. [dä:r] ('house'), [täd:b] ('it's cooked').

FIG. 7

VARIANTS OF ARABIC /i:/, /a:/ and /u:/



In the vicinity of velar fricatives and pharyngeals the variant [ɤ:] occurs which has the quality of a retracted and slightly close cardinal No.4. In articulatory terms, a retracted front tongue is raised just above fully open with open lips. e.g. [vɤ:r] ('hole'), [qɤ:ʔ] ('bottom').

[ɛ:] occurs elsewhere and has the quality of a long cardinal No.3. It is articulated with the front of tongue raised to half-open with open spread lips. [ʒɛ:ɫ] ('she came'), [mɛ:ɫ] ('money').

The two typical allophonic variants of /u:/ are [ʊ:] and [ø:]. [ø:] which occurs next to velar fricative, uvular and emphatic consonants is a centralised half-close back vowel with rounded lips. It has the quality of centralised cardinal No.7, e.g. [məs'ʊð:x] ('skinned'), [fʰqð:r] ('chopper'), [sø:f] ('wool').

[ʊ:] occurs elsewhere and has the quality of a centralised and open cardinal No.8. It is articulated with the back of tongue raised below fully close with rounded lips. e.g. [ɲʒʊ:m] ('star'), [məh'ʊ:] ('open').

Short /i/ has the following two major allophones: [i] and [ɨ]. [ɨ] occurs in the environment of velar fricatives, uvular, pharyngeal and emphatic consonants. It is a retracted half-close front vowel with lightly spread lips and has the quality of a retracted cardinal No.2, e.g. ['mvr̥fɛ] ('spoon'), [ɲq̥ɨ] ('clean'), ['m̥h̥r̥q̥ɛ] ('fireworks'), ['b̥ɨd̥] ('white').

Elsewhere, occurs [i] which is a retracted vowel between close and half-close with spread lips (quality of a retracted and open cardinal No.1), e.g. ['tʃi̯ɲɛ] ('orange'), ['f̥i̯fɛ] ('recovery').

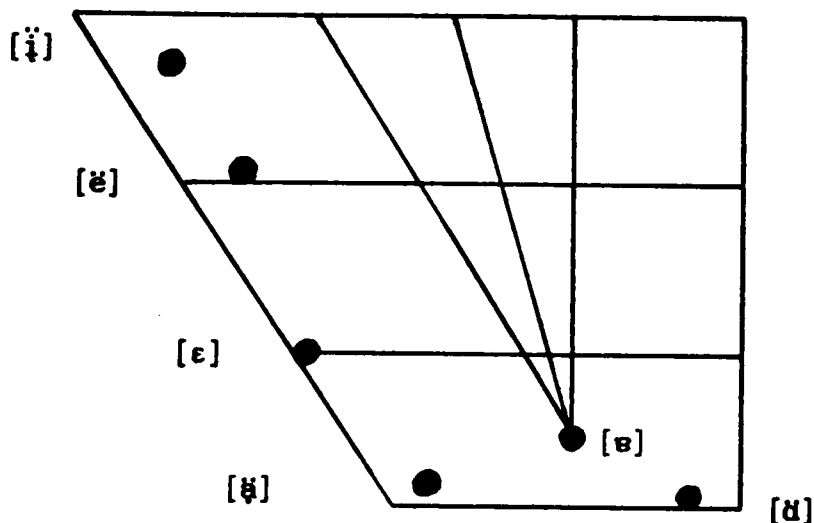
/a/ has 4 major allophonic variants. In the vicinity of emphatic consonants occurs [ɑ] which has the quality of centralised cardinal No.5. It is articulated with the back of tongue slightly advanced and raised to fully open and with an open lip shape. e.g. [st̥d̥h] ('terrace'), [b̥ɑd̥] ('he recovered').

The second allophone is [ä] and occurs next to velar fricatives, uvular and pharyngeal consonants. The articulation involves the front of the tongue retracted and raised to just above fully open with open

spread lips. It has the quality of a retracted and slightly close cardinal No.4, e.g. ['rə̀]bət] ('she defeated'), ['qə̀]b] ('my heart'), ['hə̀]s] ('clay').

FIG. 8

VARIANTS OF ARABIC /i/ AND /a/



The third allophone [ə] occurs in open syllables only and next to all consonants except emphatics. In the production of [ə] the centre of the tongue is raised between half-open and fully open with neutral lips. e.g. [nəs] ('women'), ['kə]m] ('a word').

The final allophonic variant [ɛ] occurs elsewhere. It has the quality of cardinal vowel No.3. It is articulated with the front raised to half-open with open spread lips. e.g. ['b]ɛd] ('my country'), ['h]kɛs] ('story').

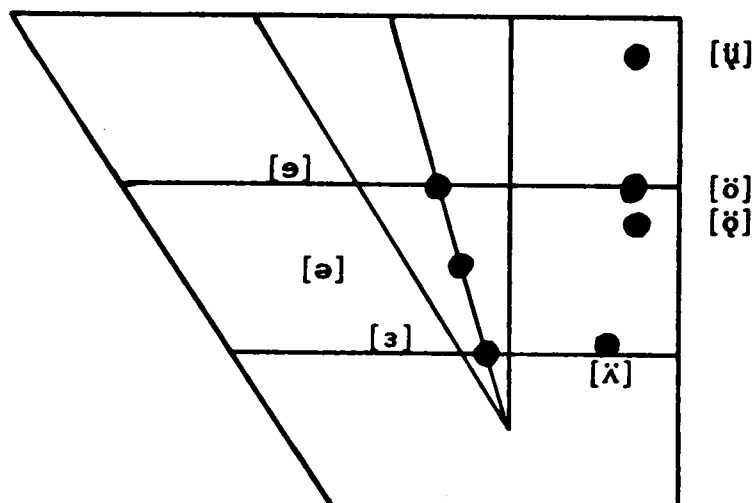
/ə/ has the following 4 major allophones: [ä], [ɜ], [ə] and [ə]. [ä] has the quality of a centralised secondary cardinal No.14. This variant which occurs in the environment of uvular, pharyngeal and emphatic consonants is articulated with an advanced back of tongue raised to a half-open position with neutral lips. e.g. [qä]lb] ('heart'), [t]ä]s] ('he went up'), [wsä]t] ('he arrived').

Next to velar fricatives /ə/ has the quality of a central half-open vowel with neutral lips [ɜ]. e.g. [xɜ] ('vinegar'), ['vɜd̪ə] ('tomorrow').

If /ə/ occurs in an unstressed syllable with the structure C-C, it is realized as [ə] which is a central between half-close and half-open vowel with neutral lips. e.g. ['ʒɛ:bəɟ] ('she brought'), ['ʃɛ:fəɟ] ('she saw').

FIG. 9

VARIANTS OF ARABIC /ə/ AND /u/



Finally, the allophone [ə] occurs elsewhere (in stressed positions) and is articulated with the centre of tongue raised to half-close with neutral lips. e.g. ['jəp̪d̪i] ('my hand'), [mɛɟk] ('property').

Short /u/ has three major allophonic variants. First, [ø] which occurs only next to emphatics is articulated with an advanced back of tongue raised to just below half-close with loosely open rounded lips. It has the quality of a centralised and open cardinal No.7, e.g. [xø] ('he got paid'), [qøɟ] ('match-stick').

The next variant has the quality of a centralised cardinal No.7 and occurs in the vicinity of velar fricatives, uvular and pharyngeal consonants. In articulatory terms [ø] has an advanced back of tongue

raised to half-close with open lip-rounding. e.g. ['vörbɛ] ('sieve'), ['xöbzə] ('loaf of bread'), ['bōʃə] ('a fish').

The final allophone [ɥ] occurs elsewhere. It is articulated with the back of tongue slightly advanced and raised to a position just below fully close with rounded lips. It has the quality of a centralised and open cardinal No.8, e.g. ['bʏŋjə] ('a fist'), ['kʏrsj] ('chair').

## II. 2. SYLLABLE STRUCTURE

Before dealing with the syllable structure of the three languages in question, one needs to discuss what in fact a syllable is. Attempts to define the syllable fall into two major categories: those which view the syllable from a phonetic viewpoint and, hence, look for a universal definition and those which view it from a functional and therefore specific point of view based on the structure of the language in question.

Concerning the physical definition Ladefoged (1982: 219) states simply that "there is no agreed phonetic definition of a syllable". There have been, however, two major approaches to a phonetic definition of a syllable: the 'prominence theory' which considers syllabicity as a property of the sounds (cf. Ladefoged, 1982: 221) and the 'pulse theory' which regards syllabicity as a feature produced by the speaker (cf. Abercrombie, 1967: 35). Nevertheless, both attempts at defining physically a syllable have not proved entirely satisfactory.

According to Gimson (1980: 57) the syllable is "more usefully defined in linguistic terms, i.e. with reference to the structure of one particular language rather than in general, phonetic terms with universal application". A phonological definition is language specific and tackled from a structural viewpoint. For example, O'Connor (1973: 200) defines the English syllable as "a unit containing one and only one

vowel either alone or surrounded by consonants in certain numbers and certain surroundings". Similarly, in French the syllable also has a vowel with optional consonants in its onset and/or coda. Arabic, however, has a syllable structure which has to include at least one consonant in the onset.

In the next section we examine the syllable structure as well as the phonotactics of R.P., French and Arabic.

## (2) SYLLABLE STRUCTURE OF R.P.

As mentioned in the last sub-section a syllable in English consists of a vowel (symbolised by -V-) with or without accompanying consonants (symbolised by -C-) preceding and/or following it. The monosyllabic words 'I' /aɪ/, 'spray' /spreɪ/ and 'sixths' /sɪksθs/ have the syllable structure V, CCCV and CVCCCC respectively. Thus, the vowel (which is obligatory) may be preceded by up to three consonants and followed by up to four consonants within the same syllable. The word 'strengths' when pronounced /strenkθs/ has the syllable structure CCCVCCCC which represents the maximum possible clusters in both onset and coda. We can summarise the English syllable structure in the following abbreviated formula:  $C_0^3VC_0^4$ . The subscript  $C_0$  in both onset and coda denotes the minimum number of consecutive consonants that must be present; thus,  $C_0$  stands for zero or more consonants that must occur. Superscripts indicate the maximum number of consecutive consonants that may occur: for instance  $C^3$  and  $C^4$  indicate that not more than three and four consonants respectively may occur.

Clustering in both onset and coda is subject to certain phonotactic constraints. For instance, if three consonants occur in the onset the first one must be /s/ and the second can only be one of the three fortis plosives /p, t, k/. If the onset consists of one single C, the velar nasal /ŋ/ for example will never take that position. In the

coda and in a cluster of three consonants the last one can only be one of the following: /s, t, z, d, θ/. Further, non-syllabic /m/ and /n/ can only be preceded by /l/ in the coda.

The nucleus of a syllable is not always a vowel in R.P. and a lateral or nasal sound and occasionally /r/ can sometimes function as the centre of the syllable without an intervening vowel and called 'syllabic'. The most common are /l/ and /n/ as in e.g. ['bɒl̩], ['sʌdn̩].

In normal discourse the frequency of occurrence of closed syllables represents 60% of all English syllables. This idiosyncrasy tends to make English native speakers anticipate the position of the consonant/s in the coda while articulating the vowel (Rivers, 1975: 145).

## (2) SYLLABLE STRUCTURE OF FRENCH

As in the case of R.P., a French syllable consists of a vowel as in /o/ ('water') with or without accompanying consonants preceding and/or following it as in /drwat/ ('straight') and /tekst/ ('text'). Compared to English, French does not have syllabic consonants and only a vowel can occupy the centre of a syllable. We can symbolise the French syllable structure with the following abbreviated formula: C}VC}

The clusters in both onset and coda have to obey certain phonotactic constraints. For example, of all the six plosives only /g/ cannot occur initially in a three-consonant cluster in the onset. Moreover, /w/ would never occur initially in a cluster.

Carton (1974: 78) states that "c'est une caractéristique du Français que de préférer une syllabe libre ou ouverte". This observation shows a sharp contrast with English which prefers closed syllables<sup>8</sup>. Ihebuzor (1982: 157) quotes Léon and Léon (1968)<sup>9</sup> stating that the proportion of open syllables in French corresponds to 80%. Among the different types of syllable, the structure CV represents 54.9% (Carton, 1974: 78). The preference for open syllables compels speakers

of French while producing the vowel not to anticipate (as opposed to English) the articulation of the consonants that occur in the coda. For example, the following words and phrase: 'quel', 'offre', 'a-t-on', 'faite', 'à', 'vos', 'amis' can all be marked as follows: /kɛl-ɔfr-atɔ̃-fɛt-a-voʒ-ami/. In the transcription the dashes stand for the boundaries between words. However, in normal speech these words lose their boundaries because the consonants that follow each vowel are attached to the vowel of the next syllable and become part of its onset. Hence, the words in the preceding sentence have in fact their boundaries re-allocated in the following fashion: /kɛ-lɔ-fra-tɔ̃-fɛ-ta-vo-za-mi/.

### (3) SYLLABLE STRUCTURE OF ARABIC

A syllable in (probably all varieties of) Arabic consists of a vowel which must be preceded by at least one consonant. It may or may not have extra consonants in the onset while having consonants in the coda is optional as in /la/ ('no'), /ʃtkat/ (she complained), (/ma-/) /kdəbtʃ/ ('I didn't-lie'). In Algerian Arabic as in the Moroccan dialect and English, /l/ and /n/ can be syllabic as in /'tɪndəm/ ('you regret') and /'tɪlfu/ ('take him away'). We can represent the Arabic syllable structure by the following abbreviated formula: C<sub>1</sub>VC<sub>2</sub>.

Two observations, however, need to be made concerning the above syllable structure. First of all, in cases where no apparent consonant occurs before the vowel one must insert a glottal stop as in /'ʔaʒi/ ('come!') and /'ʔila/ ('to'). Secondly, a coda of the form -CCC occurs only with verb phrases negated by placing /ma-/ immediately before the verb and /-ʃ/ (represented by the last C in the cluster) immediately after the verb with its different suffixal markers as in e.g. /kdəb/ ('he lied'), /kdəbt/ ('I lied'), /ma-kdəbtʃ/ ('I didn't lie').



Among the constraints<sup>10</sup> on the syllable structure in Arabic one can mention the following: first, CC represents the most common cluster in both onset and coda. Nevertheless, CC- (in onset) allows far more combinations and remains the most frequent. As a matter of fact, except for the velar and pharyngeal fricatives /x,χ,h,ʕ/ which cannot be geminated, any consonant can occur with any other including itself. While a cluster of two in the coda remains common it is less frequent than a two-consonant cluster in the onset. MaYri (1981: 92-93) provides all the possible CC clusters in both onset and coda in an Arabic syllable.

As for the type of syllable that Algerian Arabic (or any North African variety) favours there is, unfortunately, no study that one can refer to. However, if one considers the Middle Eastern varieties for a tentative comparison with French and English, it is interesting to mention Razook (1983: 38) who has discovered that in Iraqi Arabic open syllables correspond to about 52% of the whole data he analysed.

## II. 3. PHONOLOGICAL PROCESSES

A number of phonological processes occur in language to allow for the 'principle of least effort'. This principle involves articulatory simplification to permit an economy of effort on the part of the speaker (Wells, 1982: 94; Abercrombie, 1967: 135). The simplification of articulatory postures is achieved by inserting, deleting or changing sounds without, however, tampering with the effectiveness of communication. The different simplifying processes tend to have nonetheless one aim: the speaker's attempt to produce more 'natural' sounds or structures. For example, the labio-dentals [f] and [v] are more natural and therefore easier than dentals [θ] and [ð]<sup>11</sup> as are the syllable structures CV and CVC which are the simplest and the next

simplest respectively. One can find, for instance, CV in all languages and children acquire it first in their language acquisition (Wells, 1982: 95-96; Razook, 1983: 33-34).

Certain processes are solely concerned with reducing complex consonant clusters especially in languages like R.P. which have a complex syllable structure. These phonological processes also apply to consonant sequences across syllable boundaries. The major processes involved in minimising articulatory complexities occur frequently in connected rapid speech and include assimilation, elision and epenthesis.

Assimilation is the process whereby a sound assimilates to another; that is, it becomes similar to it. This process can be 'regressive', 'progressive' and 'coalescent' and involves changes in voicing, place of articulation and manner of articulation. The elision process concerns the omission of sounds within words or over word boundaries as well as the omission of whole syllables or even words. The third process epenthesis involves the insertion of an extra sound (consonant or vowel) within a sequence.

#### (1) PHONOLOGICAL PROCESSES IN R.P.

In R.P. we have mainly regressive and coalescent assimilation of place of articulation. The most vulnerable sounds are the alveolar consonants which show a great deal of instability especially word-finally as in e.g. /ðætka:/ → /ðækka:/ ('that car'); /tenbedz/ → /tembedz/ ('ten beds'); /ðɪsɜː/ → /ðɪfjɜː/ ('this year'); /dɪdju/ → /dɪdʒu/ ('did you?').

For assimilation of voice we must point out that in R.P. only voiced sounds can be assimilated to voiceless ones or silence and become therefore voiceless<sup>12</sup> as in e.g. /əvkoːs/ → /əfkoːs/ ('of course'); /wɪðθæŋks/ → /wɪθθæŋks/ ('with thanks').

Assimilation of nasality is one type of assimilation of manner of articulation. This however occurs in a few exceptional cases involving

mainly the alveolar sounds when adjacent to the negative 'nt' /n(t)/ (Gimson, 1980: 292). In this case the consonant assimilates to the homorganic nasal sound as in e.g. /gʊdnju:z/→/gʊnnju:z/ ('good news').

As far as segmental elision is concerned, speakers elide vowels and particularly /ə/ and /ɪ/ as in e.g. /pə'li:s/→/'pli:s/ ('police'); /kə'rekt/→/'krekt/ ('correct'); /fə'tɒgrəfi/→/'ftɒgrəfi/ ('photography'); /aɪfədəv'θɔ:t 'səʊ/→/aɪfdv'θɔ:t'səʊ/<sup>13</sup> ('I should have thought so').

The elision of consonants occurs both within words and at word boundaries as in e.g. /fækt/→/fæks/ ('facts'); /'hændbæg/→/'hænbæg/ ('handbag'); /ɔ:l'redi/→/ɔ:'redi/ ('already'); /'lɑ:st'sʌmə/→/'lɑ:s'sʌmə/ ('last summer').

In rapid conversational speech speakers elide certain unstressed syllables especially when next to /r/ or in an environment involving a cluster of /r/ segments as in e.g. /'laɪbrəri/→/'laɪbrɪ/ ('library'); /'lɪtrəri/→/'lɪtrɪ/ ('literary'). In addition, words like auxiliaries and subject pronouns can be elided when they occur in one sentence-type, namely 'yes-no' questions as in e.g. 'Are you coming?'→'Coming?'; 'Would you like to come along?'→'Like to come along?'. The last type of elision does not affect the effectiveness of communication because of the intonation tunes which make the occurrence of the omitted words redundant.

In R.P. between the close vowels /i:/ and /u:/ and a following [ɪ] speakers insert an epenthetic [ə] which serves as a transitional segment between two articulatory postures as in e.g. /fi:l/→[fi:əɪ] ('feel'); /fu:l/→[fu:əɪ] ('fool').

Among epenthetic consonants we can mention the linking 'r' and the intrusive 'r' as in e.g. /'ɑ:ftərə'waɪl/ ('after a while'); /'drɔ:ɪŋ/ ('drawing'). In addition, when sequences of vowels (including diphthongs) occur and the first vocalic segment is or ends in /i:/ or

/ɪ/, speakers insert a linking [j] between the two vowels as in e.g. [aɪj'æm] ('I am'); [ðɪj'end] ('the end'). If on the other hand the first vowel of the sequence is or ends in /u:/ or /u/, a linking [w] is inserted as in e.g. ['tu:w'æplz] ('two apples'); [tʊw'i:t] ('to eat') (O'Connor, 1967: 128-129).

Finally, an epenthetic consonant can result from the adjustments that organs of speech have to make in producing sequences of sounds. For instance, a common pronunciation of the word 'mince' includes an epenthetic [t] (between /n/ and /s/) which results from the timing in the articulatory movements (Wells, 1982: 95).

## (2) PHONOLOGICAL PROCESSES IN FRENCH

In contrast with R.P. which permits a large number of assimilations of place, French rarely makes use of this type of segment modification. However, /t/ and /d/ when followed by /ʃ/ and /ʒ/ become alveolar instead of dental as in e.g. [kauʃʃu]→[kautʃu] ('rubber'); [aɔʒɛkʃif]→[aɔʒɛkʃif] ('adjective') (MacCarthy, 1975: 20). In addition, /z/ followed by /ʒ/ becomes [ʒ] as in e.g. 'quinz' juin' ('15th June) pronounced [kɛ̃ʒʒyɛ̃] (Carton, 1974: 86).

In French the most common assimilation of manner of articulation involves nasality. This typical French phenomenon concerns the substitution of oral sounds (mainly voiced plosives) with a homorganic nasal in very rapid speech as in e.g. /ɛ̃dmi/→[ɛ̃nmi] ('one half'); /ynlɔ̃gɛr/→[ynlɔ̃gɛʁ] ('a long war').

For assimilation of voice which represents the most common type of assimilation in French, we find in contrast with R.P. the possibility for a consonantal segment to become voiceless if voiced and voiced if voiceless as in e.g. /mɛdsɛ̃/→[mɛdʃɛ̃] ('doctor'); /sɑkɔpɔm/→[sɑkɔpɔm] ('bag of apples'); /yngutɔ/→[ynguɔdo] ('drop of water').

Speakers usually delete the vowels /ə/ and /i/ in very specific conditions. /ə/ is readily elided in the structure /CəCV-/ as in e.g. /fənɛtʁ/→/fnɛtʁ/ ('window'); /səmɛn/→/smɛn/ ('week')<sup>14</sup>. Further, words like /lə/ ('the'), /sə/ ('this'), /mə/ ('me') and /nə/ ('not')<sup>15</sup> which have a single consonant plus /ə/ in their structure usually have their vowel deleted as in e.g. /tuləmʒd/→/tulmʒd/ ('everybody'); /ɛsəkilɛ/→/ɛskilɛ/ ('does he know?'). Speakers delete /i/ when it occurs in the conjunction 'si' ('if') when immediately followed by 'il' ('he') or 'ils' ('they') as in e.g. /siilvø/→/silvø/ ('if he wants'); /silja/→/silja/ ('if there is').

Unlike R.P. French rarely allows the omission of consonants. However, in rapid speech /r/ in the structure /-CrCC-/ can be elided as in e.g. /katgrɑ̃li/→/katgrɑ̃li/ ('four large beds'); /purɛtrbjɛ/→/purɛtrbjɛ/ ('to be fine').

Speakers rarely make syllable elisions in French and when they do, the syllables tend to contain /ə/ as in e.g. /ladədə/→/ladə/ ('in here'); /parsəkə/→/paskə/ ('because'). As for word elision, Algerian speakers of French tend to omit the 'yes-no' question phrase 'est-ce que' as in e.g. 'Est-ce qu'il est venu?'→'Il est venu?' ('has he come'); 'Est-ce que tu veux le prendre?'→'Tu veux le prendre?' (do you want to take it?). As in the case of R.P. the use of a rising tune makes up for the omission of the phrase.

The most common type of epenthesis involves consonant insertion better known as 'liaison' and occurs between two words with the second one beginning with a vowel. This 'liaison' can be of three different sorts: 'obligatory' as in e.g. /mɔ̃/+/ami/→/mɔ̃nami/ ('my friend'), /le/+/ɑ̃fɑ̃/→/lezɑ̃fɑ̃/ ('the children'); 'optional' as in e.g. /ʒəvø/+/iale/→/ʒəvø(z)iale/ ('I want to go there'); /ilfo/+/avwardykuraʒ/→/ilfo(t)avwardykuraʒ/ ('one must have courage'); and 'forbidden' as in

e.g. /ʕ/+/ero/→/ʕero/ ('a hero'); /de/+/jct/→/dejct/ ('yachts').

### (3) PHONOLOGICAL PROCESSES IN ARABIC

The consonant that most readily assimilates to the place of articulation of the following consonantal segment is /n/. This dental nasal can either become bilabial when followed by a bilabial consonant or velar if followed by a velar/uvular one as in e.g. /man'baħf/→[mɛm'bɔħf] ('it didn't bark'); /'ngulu/→['ngɔɟu] ('let's say').

For assimilation of manner of articulation, /l/ and /n/ readily assimilate and become entirely similar to the following consonant when they represent the definite article or preposition (prefixed to indefinite nouns) and the first person singular/plural pronoun respectively. This process produces a geminated consonant as in /ʔəl/+/'ɛɪdɑ/→/'ɛɪdɑ/ ('to Réda'); /ʔəl/+/ħəm/→/llħəm/ ('the meat'); /n/+/'suħu/→/'ɛsuħu/ ('we go'); /n/+/'ləmu/→/'lləmu/ ('shall I pick it up?').

Unlike R.P. and like French, Arabic allows both assimilations of voice; that is, modifications from voiced to voiceless and from voiceless to voiced as in e.g. /ʔbəd/+/ti/→[ʔbɛd̥ti] ('you pulled'); /bə'laʕ/+/ta/→[bə'ɫɔʕtə] ('I closed it'); /maʕ/+/ʔaħi/→[mɛʕʔɔħi] ('how did he catch it?'); /kas/+/zi:t/→[kɛsɔz̥i:t̥] ('a glass of oil').

In comparison with Classical Arabic, Algerian Arabic has a complex syllable structure which has resulted from historical elisions; for example, the lexical items 'city' and 'book' are pronounced in Classical Arabic as /'balad/ and /ki'ta:b/ respectively, and as /'blad/ and /'kta:b/ in Algerian Arabic. In present-day colloquial speech the vowel of the adverb /fi/ ('in') tends to be dropped as in e.g. /fi/+/'da:ri/→/'fda:ri/ ('in my house'); /fi/+/'bali/→/'fbali/ ('in my mind').

Within consonant elision /ʔ/ is most readily omitted. First, speakers omit it in any sequence involving a word beginning with /ʔ/ plus a vowel and immediately following another word ending with a consonant as in e.g. /səb'ʕi:n/+/'ʔalf/→/səb'ʕi:n'alf/ ('seventeen thousand'); /'tɲaf/+/'ʕi'ba:ri/→/'tɲafi'ba:ri/ ('twelve needles'). If a close vowel /i/ or /u/ precedes a word-initial /ʔ/, the glottal stop is omitted and replaced by an epenthetic [j] and [w] respectively as e.g. /'bənti/+/'ʔana/→/'bənti'j'ana/ ('my daughter'); /'ʒabu/+/'ʔal'fi:n/→/'ʒabu'wal'fi:n/ ('they brought two thousand').

Syllable elisions involve only the definite article /ʔəl/ ('the') when pronounced very rapidly as in e.g. /'həlʔəl'ba:b/→/'həl'ba:b/ ('open the door'). As for word elisions, speakers omit particularly the interrogative word (equivalent to French 'est-ce que') in 'yes-no' questions as in e.g. /ˌwaf\_ʒa/→/ˌʒa/ ('has he come?'); /ˌwaf\_təmfi/→/ˌtəmfi/ ('are you going?').

While R.P. uses consonant elision to simplify consonant clusters or sequences, Arabic makes use of vowel epenthesis and the most common is /ə/ which occurs to break complex and alien phonotactic constructions as in e.g. /ma'ʃəftʃ/+/'wladəfi/→/ma'ʃəftʃə'wladəfi/ ('I haven't seen his children'); /'mart/+/'ʕli/→/'martə'ʕli/ ('Ali's wife').

#### II. 4. LEXICAL-STRESS

In the past, the word 'stress' meant different things to different people depending of course on what features they include in it. In the present study stress is equated with 'prominence' and, therefore, used in a general way. Moreover, stress is also used in a traditional manner where it is part of the polysyllabic word and also of a sentence; hence, one talks about 'word-stress' (or 'lexical-stress') and 'sentence stress' (or 'sentence accent' or 'focal accent'). The former refers to that

syllable of a polysyllabic word which is marked for heavier stress than the others in the mental lexicon (Cutler and Isard, 1980: 247); the latter refers to "features of accentuation that are in many ways comparable with those found in the polysyllabic word" (Gimson, 1980: 251) but which allocates greater prominence to one word than to others in connected speech. One could, therefore, think of lexical-stress as comprising the potential for sentence accent (Lehiste, 1970: 150; Gimson, 1980: 251). Finally, the present researcher makes use of the term 'stress' ('stress-as-rhythm') to account for stress-timed rhythm as compared with syllable-timed rhythm (cf. sub-section II. 5. 1.).

Prominence involves a complex of interdependent prosodic features that operate either individually or collectively depending on the language concerned and on whether one considers it from the point of view of production or that of perception. Scholars tend to agree upon at least 3 primary cues (i.e. length, loudness and pitch) and a number of secondary ones (we will only consider quality) for defining prominence. From one language to another the relative importance of one of these prosodic features or the other varies and this in part accounts for the difficulty of defining the word 'stress' (Fry, 1958: 128).

Different languages assign stress to words differently. Some languages like French and Arabic have a fixed lexical-stress (i.e. tied to a particular syllable) and others like English have a free lexical-stress (i.e. unpredictable). The freedom of stress in English results in its potential to function as a factor capable of distinguishing between pairs of words (hence, phonemic function) such as 'August' vs. 'august' and 'insult' (noun) vs. 'insult' (verb) and, therefore linguistically significant because "it is an essential part of word-shape" (O'Connor, 1973: 194).



The fore-mentioned distinctive function of lexical-stress does not operate in either French or Arabic due to the fact that stress in these languages is fixed. Nevertheless, this type of stress has a delimitative function because for instance "if I know that words generally begin with a stressed syllable in Finnish, my ear will easily segment the stream of speech into words" (Cruttenden, 1986: 18). Stress in French delimits a word-group instead of an isolated word in connected speech. That is, it "serves to divide the speech chain into units; stress has an organizing or articulating function" (Lehiste, 1970: 147). It follows, then, that stress in French being a boundary marker is the mark of a sentence instead of a word (cf. Faure, 1968: 17).

(1) LEXICAL-STRESS IN R.P.

Scholars interested in English lexical-stress can be divided into those who believe that stress is predictable by rule (Chomsky and Halle, 1968; Halle and Keyser, 1971; Cruttenden, 1986) and those who, having in mind the non-native learner, think that there are no rules (Jones, 1975; O'Connor, 1967; Gimson, 1980). In short, the two views express the belief of whether or not stress should be marked in the mental lexicon.

Chomsky and Halle (1968) introduce a formal framework for generating lexical-stress in English. They tried to set up rules that have a greater generalizing capacity and at the single word level they provide 3 phonologically conditioned rules. These include: Main Stress Rule (MSR), Alternating Stress Rule (ASR) and Stress Adjustment Rule (SAR). To include items above the single word, Chomsky and Halle introduce the Compound Stress Rule (CSR) for compounds and the Nuclear Stress Rule (NSR) to account for higher constituents.

No other approach has ever matched the descriptive detail of the generative approach to lexical-stress assignment. The method, nonetheless, has weaknesses and the rules are of little use "because of

(1) the partly abstract representations to which they apply, (2) their complexity and (3) their inapplicability to a great number of words" (Razook, 1983: 128). Furthermore, the 'psychological reality' of the rules for lexical-stress assignment does not permit their application whenever a polysyllabic word is involved (Cutler and Isard, 1980: 250). Speakers, however, do have general knowledge of the stress patterns of their language (e.g. they can assign stress to new derivations or nonsense words by analogy to other lexical items they already know). According to Cutler (1984: 78) "there is adequate evidence that in the process of language production, stress patterns are not assigned to each word by application of general rules, but are retrieved along with the rest of the pronunciation".

As a summary, and in relation to lexical-stress assignment in English one cannot say at the present state of knowledge which of the two above-mentioned views is correct.

## (2) LEXICAL-STRESS IN FRENCH

Lexical-stress patterns in French are less complicated than in English and Arabic. In French, stress falls on the last syllable of a word in isolation<sup>16</sup>. For example, the items 'bonbon', 'déplorable', 'généralement', 'sensationnel' all receive stress on their last syllable and this type of pronunciation is considered 'unemphatic' (Armstrong, 1932: 132; MacCarthy, 1975: 24). 'Emphatic' stress, on the other hand, can be assigned elsewhere (usually on the first syllable) in the word and serves as a signal for making the whole word stand out for affective and emotional purposes. However, as Fudge (1984: 13) remarks stress shifts of this kind occur in many cases without involving the fore-named purposes and he further exemplifies "in such phrases as 'l'année dernière', 'last year', stress most often falls on the first syllable of année even when there is no emphasis on the phrase".

One must, however, realise that in French the word has "little reality as a phonetic entity" (MacCarthy, 1975: 23). The word depends on the overall phonetic shape of the entire utterance in which it occurs. This explains why the stress pattern of a word in the citation form differs considerably from that in a longer unit. As a result, stress in French is better viewed as the property of the sentence rather than the word and as already mentioned, has a delimitative function within the group (Carton, 1974: 99).

### (3) LEXICAL-STRESS IN ARABIC

In Arabic one can allocate stress to words on the basis of a few general rules. However, before stating these rules one must emphasize the fact that stress allocation is contingent upon the syllable structure and, in particular, length tends to attract syllable prominence in Algerian Arabic (Grand'Henry, 1972: 32; Dechicha, 1978: 18; Guella, 1983: 70-73; Aouad-Elmentfakh, 1980: 70-71).

The following general rules predict stress for the majority of words<sup>17</sup> in Algerian Arabic:

Rule 1: assign stress to the syllable bearing the long vowel as in e.g. /məh'lu:l/ ('open'); /'hi:la/ ('a trick'); /qəb'lu:ħa/ ('they accepted her'); /təf'fa:ħa/ ('an apple').

Rule 2: if no long vowel occurs in the word, assign stress to the penultimate syllable as in e.g. /'kursi/ ('chair'); /'qəħwa/ ('coffee'); /mə'qabra/ ('cemetery'); /mə'salħa/ ('broom').

## II. 5. RHYTHM AND RHYTHMIC PATTERNS

Abercrombie (1965a: 17) believes that rhythm in language results from the combination of the system of 'chest-pulses' (responsible for the production of syllables) and the system of 'stress-pulses' (responsible for the production of stress). Rhythm is also viewed as

'isochronous' which means "the recurrence of similar events at similar intervals" (Shen and Peterson, 1962: 5).

Languages, however, co-ordinate the 2 above-mentioned systems differently. Following Pike (1945: 34), languages which make the syllable recur periodically are classified as 'syllable-timed' while those which make stress recur at equal intervals as 'stress-timed'. Abercrombie (1967: 97) regards all languages as having either of these two rhythmic patterns and he goes on to classify French as syllable-timed and Arabic and English as stress-timed.

French involves the least controversy as to its rhythm-type. A consensus has been reached by authorities as to the syllabic-timing of French rhythm. This unanimity does not apply in the case of a large number of languages and a large amount of controversy surrounds the notion of isochrony in languages. In the case of English, for example, two extreme views prevail: one finds support for an isochronous rhythm (e.g. Abercrombie, 1965b<sup>18</sup>) and also its total rejection (e.g. Crystal, 1969<sup>19</sup>). The reason for this scepticism arose from the lack of experimental evidence to support isochronicity. In general, no one-to-one relationship exists between the perceived effect and the measurable isochronism<sup>20</sup> (Roach, 1982). In reality, the physically and therefore objectively unequal and different intervals are 'forced' by the ear to sound 'approximately even' or 'more or less regular' (Garner, 1985: 71). In other words, isochronism is not absolute and listeners tend to perceive regularity where it does not exist. Isochrony, thus, is a perceptual effect unrelated to actual production and is "auditory and subjective" (Roach, 1982: 78).

One needs, however, to mention that under certain favourable conditions speech becomes isochronous. For instance, in English the oratory mode of speech or the practice drills for foreign learners

represent cases of regular rhythm. Isochronicity is, thus, specific to particular styles of speaking<sup>21</sup> and Roach (1983: 104) suggests a compromise for English and states that depending on stylistic variations, people speak very 'rhythmically' at times and 'arhythmically' at others.

The classification of Arabic rhythm does not gather a general consensus among authorities in the field. To begin with, Helliel (1977: 56) classifies the Middle Eastern varieties of Arabic (i.e. Jordanian, Egyptian, Syrian, Iraqi, etc.) as stress-timed and the Maghribi varieties (i.e. Algerian, Moroccan, Tunisian) as syllable-timed<sup>22</sup>. In 1984 an Iraqi Postgraduate student in the Phonetics Department (University College London), who unknowingly shared Helliel's opinion, told the present author that whenever Algerians had spoken Classical Arabic to communicate with him he felt that they had a French accent. This belief could be explained by a preconceived attitude based on the knowledge that the Maghribi varieties (and in particular the Algerian ones) are impregnated by French borrowings due to language contact. This attitude can also find an answer in the knowledge that a large number of educated Algerians (who are likely to speak Classical Arabic) also speak French<sup>23</sup>.

Helliel refers to Cantineau (1960) to support the above distinction. According to Cantineau (1960: 121), in the Maghribi dialects all the syllables have become of comparable duration because of the disappearance of the so-called 'short' vowels (i.e. absence of phonological quantity) which allow quantitative rhythm. The present researcher shares the view that, for example, Algerian Arabic does not distinguish on the basis of length vowel phonemes with the same quality. He does not, however, believe that length has altogether disappeared. As already mentioned long vowels do exist in Algerian Arabic and in the two examples /'ma:t/ ('he died') and /'ma:tət/ ('she

died') the vowel /a:/ in the second word is auditorily long but not as long as /a:/ in the first word and this is because of the extra unstressed syllable.

It would have been ideal for the sake of phonetic theory and practical considerations that Helliel's classification could hold. Unfortunately, even within the Middle Eastern varieties (categorised as stress-timed by Helliel) authorities do not agree. Nasr (1955: 74) classifies Lebanese Arabic as syllable-timed where "each syllable is given its due amount of stress and time in pronouncing it". Moreover, Razook (1983: 89) thinks that Iraqi Arabic "has a tendency towards syllable-timing".

To sum up, one can state that the evidence has shown that first, no clear cut division exists between the so-called stress-timed languages (such as English and Arabic) and syllable-timed languages (such as French); second, isochrony is not absolute and the only explanation for hearing it is based on auditory and subjective criteria; and third, even in the classification of one single language (Arabic in the present case) conflicting views exist.

#### (1) MAJOR CHARACTERISTICS OF R.P. RHYTHM

The major feature of R.P. rhythm that the non-native needs mastering relates to the reduction or lengthening of syllables which could probably account for hearing stress-timing<sup>24</sup>. Ladefoged (1982: 109-110) mentions a number of processes that help sustain rhythmicity in English<sup>25</sup> which include:

- i- to avoid too many stresses close together, words which otherwise are stressed are left unstressed. In (a) below all the words normally receive stress when in isolation but when they occur in connected speech as in (b) some of them are unstressed.

e.g. (a) 'Peter's, 'older, 'sister, 'carried, 'Michael.

(b) 'Peter's older 'sister carried 'Michael.

ii- as a result of i-, polysyllabic words with a variable stress pattern may have one syllable stressed in one context as in (a) below and another syllable in another context as in (b) below.

e.g. (a) She's Japa'nese.

(b) It's a 'Japanese 'camera.

iii- to keep interstress intervals equal, vowel lengths are reduced to "minimize the variation in the length of words" (p.110). Hence, the vowel /əʊ/ in 'know' is longer than /əʊ/ in 'knowing' and much longer than /əʊ/ in 'knowingly'.

As mentioned earlier, R.P. rhythm involves vowel reduction. This effect tends to maintain and give the impression of isochrony in English. To help this effect R.P. makes extensive use of weak forms of functional words in connected speech. When unstressed these words undergo changes in their constituent sounds in terms of quality and quantity. Gimson (1980: 261) mentions the following processes involved in the weakening of functional words:

- sounds undergo reductions in their durations;
- vowels have their qualities obscured towards /ə, ɪ, ʊ/;
- elision of vowels and consonants.

Moreover, a number of principles govern the stress distribution within a rhythmic group. First, in 'normal' stressing, certain words are more likely to receive stress than others. This principle based on 'word category' allocates stress to 'content' words (i.e. words whose role in the semantic weight of the whole group makes them important) which comprise: nouns, certain pronouns (demonstrative, possessive, indefinite as subject, interrogative), determiners, adjectives, main verbs,

certain auxiliaries, certain adverbs (manner, place, time, frequency) and interjections. Typically unstressed lexical items include 'function' words and consist of certain pronouns (personal, reflexive, reciprocal, indefinite as object, relative), certain determiners (possessive, relative, articles, partitives), certain auxiliaries, adverbs (degree, relative), prepositions and conjunctions (Couper-Kuhlen, 1986: 35-37).

A second principle mentioned in the processes suggested by Ladefoged involves the alternation of stressed words to sustain rhythmicity. However, this principle of alternation is closely linked with speech tempo. According to Couper-Kuhlen (1986: 38) "as a rule, the faster the rate of delivery, the further apart in terms of number of intervening syllables the stresses may be. Conversely, the slower the rate of delivery, the closer together the stresses come".

A further principle involves the speaker's selection within a choice of possible patterns to convey certain 'expressive' attitudes.

## (2) MAJOR CHARACTERISTICS OF ARABIC RHYTHM

Although research needs to be carried out to describe and classify the rhythm of Algerian Arabic, it appears to the present author who relies on his auditory and subjective judgement that Algerian Arabic is not entirely stress-timed nor entirely syllable-timed. Conditions where rhythm tends to be auditorily stress-timed<sup>26</sup>, e.g. /'bʕətli'xa:li'brija'mlangliz/ ('my uncle sent me a letter from England').

Even under the above favourable conditions, however, the unstressed syllables are in no way reduced or compressed to the same degree as in English. Unfortunately, because of the lack of experimental evidence on the rhythm of Algerian Arabic, one cannot discuss the extent to which syllable compression takes place. If one considers the work on Egyptian Arabic by Helliel (1977)<sup>27</sup> we find that compression occurs and is related to the syllable structure. What is



more, compression becomes significant when one moves "from 1 to 2 and from 2 to 3 syllable units ... But it decreases when we move from 3 to 4 and nearly vanishes from 4 to 5 syllable units" (Helliell, 1977: 485).

### (3) MAJOR CHARACTERISTICS OF FRENCH RHYTHM

French rhythm is characterised by a regular succession of fairly equal syllables (Carton, 1974: 132). Hence, French does not compress any syllable for the sake of rhythmic equality which appears a feature of stress-based rhythm. In the sentence 'c'est absolument fantastique' all the syllables have more or less equal length and in order to produce identical length, speakers tend to equalize the durations of vowels.

## II. 6. INTONATIONAL MEANING

According to Cruttenden (1986: 9) "intonation involves the occurrence of recurring pitch patterns, each of which is used with a set of relatively consistent meanings, either on single words or on groups of words of varying length". First, Cruttenden mentions the term 'pitch' which relates to the perceptual effect that results from the fundamental frequency. Second, each pitch pattern has a more or less intrinsic meaning that can be in contrast with another pattern. However, one must be cautious when dealing with intonational meaning because it "is contextually constrained" (Cutler and Isard, 1980: 263); consequently, one can talk about the functions of intonation. Finally, Cruttenden also mentions the domain of a pitch pattern which represents the basic structural unit of intonation that we shall call word-group.

The three major meanings conveyed by intonation can be labelled as grammatical, attitudinal and discorsal. First of all, intonation can convey grammatical meanings and involve: (1) nucleus placement within a word-group, (2) the way intonation divides the flow of speech into word-groups which can affect the intended meaning, (3) certain

sentence-types<sup>28</sup> are correlated with specific intonation contours.

Intonation can also convey attitudinal meaning (Malmberg, 1968: 156; O'Connor and Arnold, 1973: 4). Hence, in uttering a stretch of speech the subject can provide information about her/his state of mind and emotions; s/he, then, can be happy, excited, pleased, sad, reserved, ironic, cheerful, friendly, and so forth.

Finally, intonation can express a discursual meaning like, for instance, inviting an interlocutor to make a contribution to the exchange. According to Brazil et al. (1980: 11), intonation choices "carry information about the structure of the interaction, the relationship between and the discourse function of individual utterances, the interactional 'given-ness' and 'newness' of information and the state of convergence and divergence of the participants". This type of intonational description is concerned with 'discourse', a term which refers to the structure and organisation of linguistic units beyond the sentence with 'interaction' being the largest.

## II. 6. 1. GRAMMATICAL MEANINGS

### II. 6. 1. 1. NUCLEUS PLACEMENT

In their attempt to produce speech, speakers highlight a given piece of utterance for the sake of the listener. This phenomenon called 'focussing' can be achieved through a number of ways in different languages. To fix the attention of a listener on a particular portion of an utterance, languages use intonational, lexical or grammatical means or a combination of any of these.

In the case of the three languages we are concerned with, all use intonational devices for focus with the other means being more or less important depending on the language. Through intonation, focus can be achieved thanks to a particular placement of the nucleus within a

word-group. In phonetic terms, the nucleus represents the last accented syllable in a word-group whereas semantically speaking, it marks the syntactic constituent with the greatest informational content in the word-group. This important constituent corresponds to either of the following:

a- the lexical item representing (the end of) 'new' information.

In this 'all-new' or 'out-of-the-blue' type of sentence the nucleus falls on the last content word. Any 'old' information is precluded from the scope of focus.

b- the lexical item that expresses some kind of 'contrastivity'.

In this case any grammatical or non-final content word can be the scope of focus. Contrastive nucleus placement represents a special case of focussing on a specific piece of 'old' information and depends partly on pragmatic contextual factors.

#### (1) NUCLEUS PLACEMENT IN R.P.

Nucleus placement is the major means of achieving focus in R.P..

The assignment of the nucleus in English can be carried out as follows:

i- focus the last content word in 'all-new' utterances. This represents the 'neutral' position of the nucleus called also 'end-focus' (Quirk et al., 1972: 938). It is, in some way, a kind of "decontextualised norm" (Cruttenden, 1986: 95). The following example could be produced 'out-of-the-blue': e.g. Albert Camus was born in ALGIERS.

ii- in 'marked' or 'old information' utterances, highlight any grammatical or non-final content word when the final content word has already been supplied by context and, hence, become 'old' information as in (a) below, and/or when some 'contrast' exists as in (b) and (c) below.

e.g. (a) [Who was born in Algiers?]

Albert CaMUS was (born in Algiers).

(b) [Albert Camus was buried in Algiers, wasn't he?]

NO|he was BORN in Algiers.

(c) [Albert Camus wasn't born in Algiers, was he?]

NO|he WAS (born in Algiers).

One can, therefore, conclude that within the boundaries of a word-group, the nucleus is free and mobile in R.P. and can be placed on any lexical item. Furthermore, in order to account for the principle of nucleus placement in R.P., one must consider syntactic, semantic and pragmatic (contextual or discourse-related) factors (Cutler and Isard, 1980: 255).

## (2) NUCLEUS PLACEMENT IN FRENCH

We mentioned earlier on that the word in French has no accentual pattern of its own and depends on the accentual shape of the utterance it belongs to. As a result of this function, the occurrence of the nucleus in French has a delimitative role and serves as a mark of the end of the word-group.

The nucleus in French falls on the last syllable and is in a sense end-focus. It has not the mobility of R.P. nuclear syllable but makes use of a specific type of focussing for highlighting earlier and non-final words. To achieve it speakers divide the sentence into a series of short word-groups. Consequently, there are on average far less lexical items in a word-group in French than in R.P. (Cruttenden, 1986: 146).

e.g. Il est parti|hier soir|avec sa famille|dans le train|de  
Manchester|à Londres.

(Cruttenden, 1986: 147)

The exceptions to the rule of assigning the nucleus to the last syllable in French word-groups include, for instance, reporting clauses, vocatives and adverbials of time and place as in,

e.g. Je pars à LONDRES le jeudi.

Apart from the nucleus falling on the final syllable (with the exception of the fore-named cases), French uses what has traditionally been called 'accent d'insistence' as in e.g. C'est absolument ridiCULE, where the nucleus is still the last syllable of the word-group, but the first syllable of 'absolument' carries high pitch with or without extra duration and loudness. This tendency is a distinct feature of Algerian speakers of French who give the impression of being 'insistent'. As a matter of fact, a number of speakers would consistently place the nucleus on the first syllable of the word-group instead of the last.

### (3) NUCLEUS PLACEMENT IN ARABIC

Some languages use variations in word-order instead of nucleus movement as a means of highlighting a piece of an utterance. Further, "it is almost always the case that languages which use nucleus movement also use word-order variation, even if only infrequently (like English) whereas the reverse is not true" (Cruttenden, 1986: 150).

Algerian Arabic makes use of word-order variation as well as nucleus shifting for focus. In describing the intonational (mainly nucleus placement) features of one variety of Western Algerian Arabic, Guella (1983: 74-75) provides ample evidence of nucleus movement as a result of some kind of contrastivity.

The least marked word-orders in Arabic are VSO (i.e. Verb Subject Object) and SVO with the nucleus assigned to the object as the neutral position of focus. Hence, Arabic nuclear prominence is end-focus.

VSO order e.g. (a) /fraʕami`ḍḍa:r/ ('my uncle bought the HOUSE')

SVO order e.g. (b) /ʕamiʕra`ḍḍa:r/ ('my uncle bought the HOUSE')

The other possible word-orders represent marked nucleus placement and involve some kind of contrast.

OVS order e.g. (c) /ʊdɑ:rfrɑfɪ`ʃəmi/ ('my UNCLE bought the house')  
 OSV order e.g. (d) /ʊdɑ:rʃəmi`frɑfɪ/ ('my uncle BOUGHT the house').

If, however, one takes the unmarked examples (a) or (b) and uses nucleus movement as a result of focus, the same highlighting can more or less be achieved as in

- e.g. [/wɒfkɑ:jən/] [( 'what happened? ')]  
 /ʃəmi`frɑ`ʊdɑ:r/ ('my uncle bought the HOUSE')
- e.g. [/ʃə`mækbaʃə`ʊdɑ:r/] [( 'did your uncle sell the house? ')]  
 /`lɑ|ʃəmi`frɑ`ʊdɑ:r/ ('NO|my uncle BOUGHT the house')
- e.g. [/ʃə`mɛtəkfrætə`ʊdɑ:r/] [( 'did your aunt buy the house? ')]  
 /`lɑ|`ʃəmi`frɑ`ʊdɑ:r/ ('NO|my UNCLE bought the house')

## II. 6. 1. 2. INTONATION AND SENTENCE-TYPES

### (1) IN R.P.

In English it has been customary to allocate certain tunes to specific sentence-types. Hence, neutral statements, wh-questions, commands and interjections have a falling intonation contour as in

- e.g. I 'went `yesterday.  
 'What did you `do?  
 'Close the `window.  
 'How `wonderful!

A rising pitch pattern, on the other hand, has been associated with yes-no questions, requests and listing or incomplete groups as in

- e.g. Are you 'coming to `morrow?  
 'Don't `put your `feet on the `sofa.  
 'When I `saw her|she 'ran a`way.

It is worth mentioning at this stage the effect of intonation when it divides sentences into different numbers of word-groups (i.e. tonality). In the following examples, the contrast in each pair is carried out through the number of word-groups for each case:

- e.g. I don't KNOW| vs. I DON'T|NO.  
 e.g. she washed and fed the BABY| vs. she WASHED|and fed the  
 BABY.

## (2) IN FRENCH

French like many other languages has certain tunes that are associated with certain sentence-types. Therefore, straightforward statements, wh-questions and commands all have a falling intonation pattern.

e.g. C'est trop fatigant.

Quand reviens-tu?

Ouvrez la fenêtre!

In general, a rising tune accompanies yes-no questions, subordinate clauses and incomplete groups.

e.g. Vous vous portez bien?

Dès que je suis arrivé, ...

Je cours après lui ...

French also uses tonality to break up sentences for the sake of achieving different meanings.

e.g. Mon père diSAIT|mon frère est maLIN.

Mon PERE|disait mon FRERE|est maLIN.

## (3) IN ARABIC

As in the case of English and French, certain sentence-types tend to be associated with certain tunes. Hence, definite statements, wh-questions, commands and interjections are associated with a falling tune.

e.g. /mfɪtəl`ba:rəh/ ('I went yesterday')

/ʃhalkə`ħəstɪ/ ('how much did you pay for it?')

/bəlaʃəl\_ba:b/ ('close the door')

/ki`bnina/ ('how tasty!')

The rising tune in Arabic is associated with yes-no questions, listing and incomplete groups.

e.g. /təmʃi\_mʃa:ja/ ('do you want to go with me?')

/ʃrɪnalba\_tɑ:tələ\_ʃnəbwə`tfɪna/ ('we bought potatoes, grapes  
and oranges')

/ki\_ʃafətɪnɪ|`ħarbət/ ('when she saw me|she ran away')

Arabic also makes use of tonality as a device for making meaning differences as the following pair:

- e.g. /xaligal|ʒədikbi:r/ ('my uncle said my grandfather is old')  
/xali|galʒədi|kbi:r/ ('my grandfather said my uncle is old')

## II. 6. 2. ATTITUDINAL AND DISCOURSAL MEANINGS

Before considering the attitudinal and discorsal meanings expressed by intonation in the three languages, one needs to stress the fact that, apart from English, studies on these intonational aspects for many other languages (including Arabic and French) are scarce. Most studies tend to allocate the pitch contours to certain functional sentence-types. Furthermore, it may be the case that not all languages use intonation for expressing attitudinal meanings and as Cruttenden (1986: 10) has put it "the suspicion exists that an alignment of tunes with sentence-types is merely the easy way to investigate intonation and often more sophisticated attitudinal and discorsal uses remain undocumented".

### (1) IN R.P.

To illustrate the extent to which R.P. uses intonation to express attitude one can refer to the following pair of statements:

- e.g. (a) I 'don't 'lend my 'books to `anybody.  
(b) I ↘don't 'lend my 'books to `anybody.

In (a), the speaker confesses that s/he lends her/his books to no one whereas in (b) one expects 'but I ...'. In other words, in (b) the speaker implies that the number of people to whom s/he would lend her/his books is restricted.

Discorsal differentiation of meaning can be exemplified with tag questions as in:

- e.g. (c) It wasn't `good|`was it?  
(d) It wasn't `good|,was it?



Both (c) and (d) expect the listener to answer by 'no' but (c) expects that answer much more strongly than (d).

### (2) IN FRENCH

As a reply, for instance, to some previous suggestion (e.g. 'nous pouvons prendre le train') a speaker could say the following with a rising tune: e.g. 'Ce n'est pas bête'. In the above example the implication conveyed involves the speaker's acknowledgement with some reservation and illustrates the attitudinal expression of intonation.

### (3) IN ARABIC

An illustration of attitudinal meaning conveyed by Arabic intonation can be shown through the use of the rise-fall in the utterance: /<sup>^</sup>ʒi:t/ ('you have come'). The speaker uses the rise-fall to indicate her/his surprise. An appropriate context would be that the speaker has already warned or asked the listener (e.g. a child) not to come.

## II. 7. SUMMARY

We have seen that at the segmental level, R.P. has a very complex vowel system in comparison with French and particularly Arabic. On the other hand, the Arabic consonant system proved the most complex of the three.

As for syllable structure, English syllable has the most complex structure of the three and this could probably explain why this language allows for more phonological processes such as consonant assimilations and elisions. However, these processes occur in the three languages with one particular process being more exploited in one language than in the others.

We also mentioned that lexical-stress was free in R.P. and fixed in French and Arabic. While more or less straightforward rules can be

applied in the last two languages, it was difficult to set up rules for R.P. A difficulty also arose in the classification of Arabic as either syllable-based or stress-based. In addition, it was mentioned that French had a syllable-timed rhythm and R.P. a stress-timed one. R.P. manages to keep regular intervals between stresses by the use of a number of features the most notable of which is syllable duration. In the other two languages speakers do not compress syllables.

R.P. achieves focus thanks to nucleus movement mainly while Arabic uses both nuclear shifting and word-order. French, on the other hand, uses a totally different process and its speakers divide an utterance into a series of short word-groups to achieve highlighting. In general, all three languages use falling and rising intonational patterns with more or less the same sentence-types and all three use intonation to convey attitudinal meaning.

## NOTES TO CHAPTER II

- 1 Arabic, however, has a variant of /r/ realised as [ʁ] in very rapid speech when it occurs in absolute-final position in a syllable.
- 2 The replacement of /ɲ/ by /nj/ seems to take place in Parisian French as well (Malmberg, 1968: 106-107). Carton (1974: 61) referring to 'certain phonologists' and their treatment of /ɲ/ states: "on peut analyser ce son comme une variante de /nj/".
- 3 The pronunciation [tʃ] and [dʒ] does occur with some male Algerian speakers (Aouad-Elmentfakh, 1980: 79). It is, however, very common with male 'pied noirs' (people of European descent who had lived in Algeria up to 1962 and whose greatest majority has settled in France since then) speakers and as an illustration one can mention the popular singer Enrico Macias.
- 4 Lehn (1963: 30-31) whose description of emphasis is thorough, states that it is "the co-occurrence of the first and one or more others of the following articulatory features: (1) slight retraction, lateral spreading, and concavity of the tongue and raising of its back (more or less similar to what has been called velarization), (2) faucal and pharyngeal constriction (pharyngealization), (3) slight lip protrusion or rounding (labialization) and (4) increased tension of the entire oral and pharyngeal musculature resulting in the emphatics being noticeably more fortis than the plain segments ... of the features listed above, the first two are probably the most consistently prominent for all segments in all environments."
- 5 The standard Parisian accent does not maintain the contrast as well (cf. Malmberg, 1968: 70).
- 6 The situation, however, is not so straightforward. Words which in Parisian French normally contain /ø/ have /œ/ in Algerian French

and are not covered by this rule; e.g. the item 'émeute' ('riot') is pronounced [emɔt] (cf. Dekkak, 1979: 69).

7 Aouad-Elmentfakh (1980: 77) states that "/ɛ̃/ and /œ̃/ appear to have clearly merged into a single phoneme /ɛ̃/ in the case of those bilinguals who have a low education". Dekkak (1979: 72), on the other hand, believes the two phonemes exist (with their respective tongue positions) but are confused only because of the lack of lip-rounding for /œ̃/. Unfortunately, these two claims which basically recognise the existence of /ɛ̃/-/œ̃/ are far removed from reality. There is no doubt in the mind of the present researcher that even among highly educated bilinguals /ɛ̃/ appears to be the only variety used. The speakers who do keep the /ɛ̃/-/œ̃/ opposition are either trying to sound affected or (former) immigrants living in France.

8 By contrast, Rivers (1975: 146) thinks that "only 24% of French syllables are closed".

9 Léon, P. and Léon, M. (1968) Introduction à la Phonétique Corrective. Hachette/Larousse. The present researcher did not have direct access to this work.

10 For a more thorough discussion on the constraints imposed on the syllable structure of Algerian Arabic cf. MaYri (1981: 90-99). Sayed (1981: 35-37) also considers a number of constraints on the syllable structure of Moroccan Arabic.

11 In acquiring language, children tend to replace the difficult sounds [θ] and [ð] by [f] and [v] respectively (Wells, 1982: 96).

12 Abercrombie (1967: 136) mentions Educated Scots' speech as the only exception among all English varieties. Scottish speakers assimilate a voiceless consonant to a voiced one.

- 13 In the form /aɪfdv'θɔ:t'səu/, it is more likely that /fdv/ undergo regressive assimilation of voice and become /aɪftf'θɔ:t'səu/.
- 14 These elisions give rise to two-consonant clusters which are most favoured in French. /ə/ deletion operates as long as these words (i.e. 'fenêtre', 'semaine') are preceded by a vowel. If the preceding sound is a consonant, speakers do not omit /ə/ as in e.g. /sɛ̃kfənɛtr/ ('five windows') - /duzɛmɛn/ ('twelve weeks').
- 15 Other words in this category include 'te', 'se', 'je', 'de', 'que' and prefixes comprising 'e' in the spelling like 're-' /rə/.
- 16 Faure (1968) mentions an artificial case of a word occurring in isolation; he mentions the instance when one keeps repeating a word while looking it up in a dictionary.
- 17 Certain syntactic constructions automatically assign stress to one particular syllable (cf. Guella, 1983: 72-73).
- 18 Abercrombie (1965b: 28) states: "English utterances may be considered as being divided by the isochronous beat of the stress pulse into feet of (approximately) even length".
- 19 Crystal (1969: 162) maintains that "careful measurement plus elementary statistics shows such regularity to be the exception, not the rule".
- 20 Cf. Garner (1985: 66-72), for a brief review of the studies on the measurement of isochronicity.
- 21 In Egyptian Arabic, Helliel (1977) found that children rhymes presented favourable conditions for isochronism.
- 22 Helliel (1977: 56) even explains the lack of mutual intelligibility between the Middle Eastern and the North African varieties to be due to their separate rhythmic patterns: i.e. stress-timed for the former and syllable-timed for the latter.

- 23 The present researcher believes, although not based on any empirical evidence, that one also has to look at the segmental level as well as at the syllable structure to distinguish between the Middle Eastern and Maghribi varieties. Helliel (1977: 483) himself found that isochrony depended on syllable structure and the quality of the constituent segments. In addition, Algerian Arabic has a relatively complex syllable structure and is unlikely to be syllable-timed (Roach, 1982: 78).
- 24 Cruttenden (1986: 25) suggests: "It may be that the reduction in the lengths of syllables merely produces the perceptual impression of stress-timing".
- 25 Nevertheless, Ladefoged (1982: 110) also acknowledges that this 'conspiracy' to sustain a regular rhythm is not powerful enough to override all the irregularities that result from variations in the number and type of unstressed syllables.
- 26 One, nevertheless, has to keep in mind O'Connor's following remark: "Just because a language has stress as part of its make-up it does not necessarily have a stress-based rhythm, as in English or Russian" (1973: 239).
- 27 Studies on the rhythm of languages are few and far between, and to the best knowledge of the present researcher, Helliel (1977) seems to be the only thorough experimental investigation on the rhythm of Arabic. Razook (1983: 92) mentions studying the rhythm of Iraqi Arabic but never hints at the type of instrumental analysis (spectrographic or other) he used.
- 28 Cruttenden (1986: 157) considers a sentence-type "to involve a pairing of a typical use with a typical syntactic form in a language".

## CHAPTER III

### REVIEW OF RELATED LITERATURE

#### III. 0. INTRODUCTION

The wealth of literature on intelligibility proves the importance of the subject. It has been the concern of varied fields of research such as, for example, communication engineering, audiometry, dialectology, second and foreign language learning/teaching, to name but just a few.

The amount of work due to interest and diversity of fields of study makes it quite impossible to review all that has been published on intelligibility. The present author, however, has tried to include as much related materials as possible. These have been divided into four separate sections dealing with methods of assessing intelligibility, interdialectal intelligibility, factors that affect intelligibility and previous studies on the intelligibility of English respectively.

#### III. 1. METHODS FOR ASSESSING INTELLIGIBILITY

Methods for measuring speech intelligibility have been designed by researchers in a variety of subjects and for different purposes. The most common approach involves two stages: the first stage concerns the elicitation and recording of speech data from the speaker through reading word-lists, sentence-lists, texts or producing free speech. Secondly, intelligibility testing also involves the reaction of informants to the recorded stimulus by either repeating, writing down or ticking what they have heard and understood.

The following section reviews the major methods used to collect responses from informants. All intelligibility studies based on empirical data have applied one of the two elicitation techniques (or a combination

of both) that Quirk and Svartvik (1966) and Greenbaum and Quirk (1970) referred to as 'Performance' tests and 'Judgement' tests. A Performance test consists of operation tests and completion tests; whereas in an operation task the informants are required to perform some alteration in a given sentence, in a completion task, the informants need to effect some addition to a given sentence. On the other hand, a Judgement test, considered complementary to the Performance one, is in fact a task requiring the informants to give an evaluative judgement on an utterance or stretch of connected discourse along a rating scale.

In the rest of the present section a number of Performance (henceforth objective) and Judgement (henceforth subjective) testing techniques used previously in intelligibility studies are reviewed.

### III. 1. 1. WORD-LISTS AND SENTENCE-LISTS

A method with a long history in speech intelligibility has made use of words in isolation. The rationale behind this technique relates to the speaker's ability to pronounce a word distinctly and accurately and the evaluation of an informant (native or non-native) on this ability by either orally repeating it or writing it down. Word-lists have helped extensively in the assessment of a complete communications system. In this sense, intelligibility is considered as an 'asemantic' concept (Black, 1961: 87), using a different yardstick for its measurement. Denes and Pinson (1963: 164) summarise, as follows, what happens in a typical recognition experiment using word-lists:

"a set of words is spoken and a listener, or group of listeners, is asked to write down, repeat or otherwise respond to the test items. We count the words correctly recognized and this number, expressed as a percentage of the total number of words spoken, is taken as a measure of intelligibility."



The above-mentioned type of assessment sometimes referred to as an 'articulation test' gives a result, or percentage representing the correctly identified fraction of the intended words, called an 'articulation score'<sup>1</sup>. Articulation tests were primarily designed to rate the quality of communication systems. Investigators have also applied them in speech therapy research (Fry, 1961; Higgs, 1970).

Beside word-lists, researchers also made use of material from other levels of language in articulation tests: selected speech sounds as well as syllables (Fry, 1947; Fletcher and Steinberg, 1929) have served as test batteries. Nevertheless, word-articulation (or word-lists) tests are by far the most widely used methods found in the literature on speech intelligibility. The lists tend to contain only monosyllabic content words capable of conveying meaning and therefore important to the message. Moreover, to be in the list, the word must have a high frequency of occurrence in the language it belongs to (Fry, 1947). Some researchers have used word-lists that are 'phonemically balanced' (PB) while others have employed lists with 'phonemic equalization' (i.e. the occurrence of phonemes in one list should be in proportion with each one of the remaining lists).

One could, however, question the reliability of techniques using words in isolation. First of all, this method introduces an element of artificiality because it is far removed from the speech of everyday life; that is, people rarely, if at all, speak in isolated words. Secondly, a speaker's distinct and accurate pronunciation of a word in isolation does not necessarily mean that it is a good predictor of her/his intelligibility in higher levels of language such as isolated sentences, passages or connected discourse. It is a well known fact that, due to redundancy, a sentence for example, is comprehensible even though some individual words have been wrongly pronounced.

Recognising the artificiality of tests using isolated words, researchers have used another type of material which shares features with everyday discourse. As Fry (1961: 198) states:

"sentence tests are on the whole nearer to the speech material that the patient has to deal with every day, and are thus preferable in principle."

Fry (1947) mentions two types of sentences: 'connected-sentences' (i.e. sentences sharing both some situational and linguistic context as in a reading passage or free discourse) and 'isolated-sentences'. Furthermore, each one of the above units must contain a number of content (key) words and the intelligibility score is calculated on the percentage of key words correctly received by the informant. Articles and most (but not all) function words are usually less important to the fundamental content of a sentence than nouns and verbs (the importance of adjectives and adverbs depends on particular utterances). However, what is important is that the test designer must define, in advance, what the important words are. For each sentence, key words are chosen from lists of common usage to avoid involving the informant's linguistic competence which varies with individuals (Harris, 1965: 825).

The sentence material used in the measurement of intelligibility is varied and depends on the field of investigation. It is worth mentioning, at this stage, an interesting type of sentence test devised by Irvine (1974) to investigate the "efficiency of communication systems under adverse conditions" (Irvine, 1977: 309). Irvine called this technique 'Answer in Sentence' (AIS) and made an attempt to use it with native and non-native subjects to evaluate their performance in English (1977). The foregoing technique consists of test material of the following type (Irvine, 1974: 783): e.g. "What is the colour of the yellow motor car?". This kind of stimulus sentence requires the informant to give single-word responses. Therefore, the AIS test is nothing more

than a test for eliciting words in isolation. Thus, the rationale behind this method could be seriously challenged in the light of the argument that this test is merely a test of how accurate words in isolation are pronounced and that it involves artificiality.

### III. 1. 2. MULTIPLE-CHOICE

The multiple-choice technique is a further method for gathering responses. The procedure makes use of a stimulus and a number (three or more) of responses which contain only one correct answer with all the others being credible distractors.

In assessing comprehension, the multiple-choice test has proved a useful tool for collecting responses. This type of test presents a number of advantages. First, it is objective, easy to mark and less time consuming. Second, it has an advantage over other tests (for <sup>example</sup> dictation and cloze procedure) because it does not favour informants with high linguistic competence; the choices are provided by the investigator and not the informants. Finally, dictation especially involves an unlimited number of alternative choices and, therefore, additional strain on the informants; whereas the multiple-choice answer form limits choices, specifies the possible responses and gives all informants an equal chance (Black, 1957; Black and Haagen, 1963).

Nevertheless, the construction of a multiple-choice test presents a number of difficulties. Most importantly, it is difficult to find good distractors and it is also time consuming. A further disadvantage concerns the informants who may gamble when choosing the correct answer; therefore, they rely on chance which is not a good measure for quantifying the results.

### III. 1. 3. THE CLOZE PROCEDURE

Cloze procedure as well as dictation are methods of assessing a subject's performance in a given task. These tests are 'indirect' in the sense that they call upon tasks which are artificial and, therefore, do not occur in actual language situations (Van Els et al., 1984: 326-327).

Cloze tests were originally introduced in the fifties to measure both the readability of passages of prose for native speakers and their reading skills. The typical cloze test ('random' cloze) consists of deleting every nth (usually fifth, sixth, or seventh) word from a written or spoken passage (Alderson, 1979). In the 'rational' cloze, the test designer decides upon the words to be omitted. With written texts blanks represent the deleted words, while white noise or silence stand for the deleted words in spoken passages. Subjects undertaking the test have to fill in the missing words. Considering what takes place in a cloze test situation, Oller (1973: 114) asserts:

"On the basis of incomplete information, the subject is required to project a word to fill in a blank and thereby complete a sequence. In doing so, both the so called 'productive' (or 'active') and 'receptive' (or 'passive') skills of language must be utilized. The information provided in the cloze test allows the student by analysis to synthesize a greater whole. At the same time, the synthesis or projection may become part of the next analysis required to produce a subsequent synthesis."

The subject's success in predicting the right word relies upon her/his competence in the language used. Bhatia (1972: 47) mentions three types of clues used by testees in a cloze procedure situation. He considers: "structure, semantic, and approach". Quoting Cohen<sup>2</sup>, Van Els et al. (1984: 327) consider that in a cloze test situation the testee uses "linguistic knowledge, textual knowledge and knowledge of the world" in order to restore an incomplete text.

Furthermore, the cloze task necessitates a suitable scoring procedure. The two most frequent methods are the 'exact word method' and the 'acceptable word method'<sup>3</sup>. The former being more objective, counts only the actual word deleted from the original passage, while the latter accepts a word which is contextually appropriate (Oller et al., 1972; Alderson, 1979; Van Els et al., 1984).

A number of studies have pointed out the shortcomings of the cloze procedure. In relation to intelligibility, one can quote Bhatia (1972: 48):

"The use of a cloze test restricts comprehension task to the recall or recovery of a few structural and lexical items which may not always be important in conveying the meaning of an utterance."

The deletion of every nth word does not necessarily allow one to discover the items that lead to a breakdown in communication. The main concern of the investigator is obviously to locate the words or phrases that cause unintelligibility and not deal with those which may be unimportant to the meaning - for example, the deletion of structural words in an experiment on comprehension is more or less fruitless because of the relatively unimportant contribution of these words to comprehension. Moreover, as Wilcox (1978) found out, intelligibility scores tend to be significantly higher (8-30 points) with a cloze test than with a multiple-choice test.

### III. 1. 4. DICTATION

The dictation has a long history as a device for measuring aural comprehension. However, a number of authorities have advanced criticisms about dictation as testing procedure. As an example, one could cite Lado (1961: 34) who remarks:

"It hardly tests the aural perception of the examiner's pronunciation, because the words can in many cases be identified by context ... The student is less likely to hear the sounds incorrectly in the slow reading of the words which is necessary for dictation."

The major criticism made against dictation concerns the absence of linguistic 'selectivity'; that is, it does not measure the traditional discrete points (e.g. phonology, grammar, lexicon) the way more objective tests do in an isolative and analytical manner. Oller (1971), on the contrary, considers this lack of selectivity as an advantage and as further evidence that the dictation is a good measure of overall language proficiency.

From the theoretical point of view, the dictation is more likely to produce a complete "sampling of the integrative skills involved in the understanding of complex English structures" (Oller, 1971: 257). Oller (1971: 258) further observes:

"It is indeed true that language cannot be successfully explained apart from its use as a medium of communication, it would follow that analytical tests of language competence which remove linguistic units from the meaningful contexts in which they occur are apt to be less valid than integrative tests which are more relevant to communication skills. Certainly dictation, which requires the perception of meaningful speech, falls into the latter category."

In a typical dictation situation, the testee has to reproduce fully in writing an orally presented text chosen from a sample of discourse. Again, as in the case of a cloze task the testee is actively involved in a process of analysis by synthesis (Oller, 1971: 257; Van Els et al., 1984: 329). To allow the subject time for writing, the text is presented into separate meaningful phrases bounded by pauses.

A testee's memory capacity for storing is limited. The memory span also varies from informant to informant and more so with subjects

with varied levels of linguistic competence. One way of solving this drawback is by selecting an informant group with the same linguistic background. Moreover, the restrictions imposed by memory span could be avoided by minimising the length of the utterances to be administered. It is, therefore, necessary to present only sentences which do not exceed a testee's memory span. In this way, one is certain to investigate the subjects' comprehension of a given utterance and not his memory. Harris (1970), for instance, discovered that both sentence length and syntactical complexity increased the difficulty of the test sentences for non-native listeners. Lado (1965), reporting on the results of a previous research study<sup>4</sup>, confirms Harris' conclusion. Further, another interesting result mentioned by Lado concerns the maximum sentence length a subject (native and non-native) is likely to remember and accurately reproduce immediately after one hearing. Hence, Lado (1965: 127) sums up:

"The memory span of these 62 subjects was consistently shorter in the foreign language. The average memory span without a failure was 15.7 words in the native language and only 9.2 in the foreign one, a difference of 6.5 words."

Nevertheless, one needs to remember that language as a means of communication is highly redundant and redundancy enhances intelligibility. The administration of a spoken text into units will necessarily affect the natural flow of language, introduce a high level of artificiality and weaken redundancy as Ayodele (1983: 12) remarks:

"The smaller the unit of utterance, the less its degree of redundancy becomes, and consequently the less its chance of being accurately deciphered. On the other hand, however, any investigator wishing to minimize this problem by presenting longer units of utterances runs the risk of taxing the memory span of the indirect subjects<sup>5</sup> and thus obtaining correspondingly inaccurate responses."

It is, therefore, clear that in dividing a text into units, one has to consider a suitable length which does not diminish redundancy and also does not overload the informants' memory span.

While the dictation has traditionally been used as a language proficiency test involving a target language and a learner, not so many studies have employed it as a measure of mutual intelligibility. Among the exceptions, Brodkey (1972) defends dictation as a valid tool for discriminating between listeners (native as well as non-native) with varying degrees of English proficiency. Savignon (1982: 45) also confirms the latter position and states:

"The fact that educated native speakers perform well on dictation tests is further evidence of the validity of the task"

As for scoring a dictation, there are two major methods: the exact word scoring and a scoring based on the evaluation of meaningful phrases. In the first procedure, to receive credit the testee must reproduce the exact word as it occurs in the original text (Van Els et al., 1984: 329). It appears that Wigdorsky-Vogelsang (1978: 32) who makes a distinction between intelligibility and comprehensibility (cf. sub-section III. 4. 4.) and who also used this scoring procedure for his dictation task, claims that because pauses are not long enough to allow the listeners to choose between the competing interpretations, dictation "is mainly concerned with intelligibility, or decoding, to the virtual exclusion of comprehension proper".

The second alternative for scoring dictation takes into account the conveyance of meaning; a text is divided into 'chunks' (Savignon, 1982) or 'thought-groups' (Brodkey, 1972) which serve as scoring units. Therefore, word-for-word accuracy is rejected on behalf of whether communication, and hence comprehension (which Wigdorsky-Vogelsang thinks dictation cannot measure), has taken place or not. Brodkey, for



example, considers each dictation line to contain one or two identifiable 'thoughts' that are signalled by some key words or phrases. In scoring French dictation, Savignon (1982: 33) suggests an interesting method for measuring comprehension. To evaluate chunks or meaningful phrases, she suggests three criteria: 'exact word' (EW), 'phonetic similarity' (PS) and 'conveyance of meaning' (CM).

All in all, it appears that dictation, as a measure of intelligibility is more productive, and therefore, more powerful than the cloze procedure because one expects the testees to reconstruct all the details of the dictated text and not simply every nth word. Hence, through dictation, the informant is likely to pinpoint the exact place or places where unintelligibility occurs.

### III. 1. 5. SUBJECTIVE ASSESSMENTS

A number of sociolinguistic experimental studies concerned with informants' evaluational reactions to an individual's speech seem to suggest that these evaluations depend considerably upon the listeners' attitudes toward the language, social class and ethnic group membership of that individual. In these studies, listeners presented with minimal cues (only the speaker's recorded voice without any visual cues) consistently identified the speaker's social status and ethnicity. However, judging speakers with minimal cues appears to influence the judges' decision who finally resort to stereotypes held about majority and minority groups (Lambert et al., 1960; Anisfeld et al., 1962). For example, Lambert et al. (1960) discovered that bilingual Canadian subjects were differently rated and that these ratings depended upon whether the subjects spoke English or French and also on the languages spoken by the raters.

Psychological factors involved in identifying the ethnic group of speakers are also mentioned by Eisenstein and Hopper (1983). Those authors report Richard Tucker's suggestion that "negative associations with particular ethnic group factors and their speech can interfere with comprehension" (p.48). Akere (1979: 89), for example, while admitting that a number of African speakers lack the appropriate use of prosodic features of English which tend to impede the intelligibility of their speech, recognizes also that:

"There is, however, a tendency among the British public to over-react to foreign accents of English by almost deliberately 'blocking off' fairly intelligible speech."

Akere's data further suggests that the more 'near-native' the African speaker's accent is, the more favourable the British informants' attitudinal reactions are and the less near-native, the less favourable (p.92). Similarly, Palmer (1973: 42), quoting Richards<sup>6</sup>, suggests:

"If a foreign speaker deviates very far from the grammatical and/or phonological norms of the English-speaking community, he may elicit unfavourable reactions"

In an attempt to carry out an investigation similar to the sociolinguists' but with non-native speakers' speech samples, Palmer (1973) tried, in a preliminary study, to make use of subjective evaluations and how they relate to actual linguistic data. In one task, the investigator asked the raters to identify the speakers' first language and the geographical area they came from. The results for this task seem to refute the sociolinguists' findings since the judges were unsuccessful and, thus, prove that the raters did not turn to stereotypes.

Interesting but varied results have been obtained by Giles (1970) in his evaluative assessments of both native and foreign accents. The author used 177 subjects (pupils from South-West England and South

Wales) to assess, along a rating scale, the 'aesthetic', 'communicative' and 'status' contents of a number of vocally presented native and non-native accents of English (RP, Affected RP, North American, French, South Welsh, Irish, Yorkshire, Somerset, Indian, Birmingham, Cockney, Italian). The aesthetic dimension relates to how pleasant-unpleasant each accent was perceived by the subjects. The communicative aspect, on the other hand, intended to elicit responses on how comfortable-uncomfortable (and therefore introducing the concept of intelligibility) the subjects felt with the various accents. Finally, by status content the author meant the prestige that subjects associated with particular accents. The results show that RP fared most favourably with regard to the three dimensions and occupied the first position in each. What is most surprising, however, is the rating of the French accent which held third position for both aesthetic and communicative contents and second for status content. The French accent scored better than the regional ones but scored less than only RP in aesthetic content, RP and North American in communicative content and RP and Affected RP in status content. The Birmingham accent was allocated the lowest ranking in both the aesthetic and status contents and the next to last in communicative content.

Giles' findings suggest that foreign accents do lead to favourable reactions from native raters and, therefore, contradict what was proposed earlier. The studies that have been mentioned so far are just part of a large body of literature concerned with people's reactions and attitudes to the spoken language of others. The different results, however, have shown a considerable variation into the level of un/favourableness of attitudes toward others' spoken varieties.

Furthermore, Palmer's major intention was to "investigate the relationship between the natives' subjective judgements of non-native

speech samples and linguistic (and extralinguistic) cues which affected those judgements" (p.42). The linguistic cues that the author analysed involved: the exact use of stress and intonation, pronunciation accuracy, type and number of hesitation phenomena, syntactical errors and complexity. Since it was a preliminary report, Palmer had not arrived at any conclusions concerning the relationship between the subjective assessment and the objective analysis. However, Bhatia (1972: 49), in his discussion of subjective ratings, says:

"Ratings obtained from such a scale can be correlated with the objective measures of quantification. It is very likely that such measures show a high degree of correlation."

Quirk and Svartvik (1966) found a high correlation between objective (Operation) and subjective (Judgement) testing. Carroll (1963) used a ten-point scale to investigate the factors that contribute to intelligibility between three non-native speakers and sixteen judges with varying degrees of phonetic training. Carroll proved the reliability of this evaluating method. Moreover, Tiffen (1974) reported that the relationship between the subjective and objective ratings had shown a high intercorrelation coefficient of .95. He thus concludes that the "subjective grading of speakers is a satisfactory form of assessment" (p.187). In other words, these judgements presuppose that a subjective assessment of intelligibility corresponds to the informants' comprehension of the test-material.

Nevertheless, one can dispute the above assumption for a number of reasons. First, this kind of assessment necessarily leads informants to make judgements that are influenced by certain idiosyncracies. For example, Gorosch (1973: 150) suggests that certain categories of judges tend to have 'fixation areas'; that is, teachers (owing to such factors as familiarity with and exposure to non-native speakers), being aware of and having the ability to anticipate learners' mistakes, are likely to rate

foreign speakers more rigorously. Gorosch also proves that marked differences exist between the evaluations made by teachers and those made by non-teachers. Hence, he further adds: "non-teachers assessments are unpredictable and erratic" (p.151). Gunterman (1978) has arrived at the same results and argues that native evaluators do not react evenly to the same deviant utterances. She thus comments:

"It is probable that native listeners react more negatively to some errors than to others, and that they find some more humorous than others." (p.252)

Furthermore, Piazza (1980) observes that the mode of administration of the test material has an effect on the assessment. That is, "all error types are more comprehensible when presented in written rather than spoken form" (p.424).

While a number of researchers consider that a subjective assessment has proved reliable, others (Ladefoged, 1970; Ekong, 1980; Brown and Yule, 1983) believe it to be "unreliable and liable to substantial variation" (Brown and Yule, 1983: 104).

All subjective measurement techniques use rating scales that vary in both form and content. The size of these testing devices vary generally between two to three-point scale (Lado, 1961: 79-80) and five-point scale categories (Bhatia, 1972: 49; Richards and Swaffield, 1959: 84; Oller et al., 1972: 9; Piazza, 1980: 423).

Finally, an interesting method based on the listening effort required for comprehension was devised by Richards and Swaffield (1959) to assess the quality of a communication link (telephone line). The method, called Opinion Assessment Scale Based on Effort, has been successively applied in the rating of non-native varieties of English (Bansal, 1966; Tiffen, 1974; Ekong, 1980) and contains the following (Richards and Swaffield, 1959: 84):

- A- Complete relaxation possible: no effort required
- B- Attention necessary: no appreciable effort required
- C- Moderate effort required
- D- Considerable effort required
- E- No meaning understood with any feasible effort

The grades A, B, C, D and E corresponded to the numerical values 4, 3, 2, 1 and 0 respectively (p. 84). The authors considered the mean score of 2.5 (i.e. the boundary between classes B and C) as the effort threshold. In adapting it for the study of Nigerian English, Tiffen converted the foregoing grades as follows: A = 10, B = 8, C = 6, D = 4, E = 2.

The numerous studies that have used subjective rating techniques, have rarely argued that these techniques should be applied on their own. To be fruitful, therefore, these methods should be used alongside objective measures.

### III. 2. INTERDIALECTAL INTELLIGIBILITY

Language variation exists and is determined by both social and geographical criteria; the ethnicity of the speaker as well as his age, sex and speech-styles are the basis of social dialects. On the other hand, regional dialects consist of variants resulting from geographical spread. Interdialectal intelligibility testing has been applied mainly to areal variants. The aim has been to discover whether comprehension occurs between a number of dialects and/or languages.

From the outset, interdialectal intelligibility research does not appear to fall within the scope of the present work. Research on cross-dialect comprehension has been carried out mainly to tackle the distinction between dialect and language (a situation which has given rise to a great deal of controversy). This problem of dialect vs. language is in fact comparable to the question of 'variety vs. distinct

language' in the context of English nowadays. The spread of English has led to the existence of native and well established non-native varieties. The status of each one of these varieties (native or non-native), as a mere dialect or a separate language, parallels the old distinction: dialect vs. language. Hence, one can realise the extent to which interdialectal intelligibility studies are related to the present investigation. Moreover, previous studies on dialect comprehension do provide fieldworkers with a number of methodological and descriptive accounts that have a bearing on our research.

Since they were first proposed by Voegelin and Harris (1951), interdialectal intelligibility studies have drawn a great deal of attention from a number of linguists (typologists, sociolinguists and dialectologists) who have sometimes arrived at conflicting results.

### III. 2. 1. THE VOEGELIN AND HARRIS' APPROACH

According to Voegelin and Harris (1951: 322), the collection of field work data, in anthropological linguistics, can be obtained in two ways: 'texts' and 'eliciting'. Texts were defined as "records of what native speakers say in their own language in words of their own choice". Eliciting, on the other hand, is a technique, used by the researcher, in which the speaker is not free to make his own choice of words and short utterances, but this choice is made for him by the investigator.

Voegelin and Harris pioneered the gathering of intelligibility data for tackling the perennial problem concerning the distinction between language and dialect. The authors suggested four methods, two of which meant to test intelligibility: 'ask the informant' and 'test the informant'. The first consisted in presenting questions to the informants asking about the differences and similarities between a number of dialects. This method relied on the subject's perceptual

judgement and, therefore, did not account for the linguistic data.

The 'test the informant' approach assessed the subject's comprehension of oral data to investigate the degree to which individuals from community A could understand spoken utterances by subjects from community B. The procedure was as follows: the investigator recorded informants from the first community telling a tale. The narrative was then divided into units 'at junctures or near junctures' and the same speaker translated each unit into English. The researcher presented this spoken material to separate members of another community. Each subject listened to each unit and translated what he had understood into English. The translations from both communities were then compared to measure intelligibility and discover where it had broken down.

Voegelin and Harris found that intelligibility could be 'reciprocal' as well as 'non-reciprocal'. In other words, community A and B understood each other and therefore this was a case of reciprocal intelligibility. On the other hand, non-reciprocal intelligibility existed when community A understood community B which in turn did not understand A. In the last case, mutual intelligibility was not equal in both directions.

The authors also found the existence of 'neighbour' and mutual intelligibility. The first instance results from extensive exposure of a community to the language of another and involving a learning process. Whereas mutual intelligibility stems from genetically related languages.

The Voegelin and Harris' study was followed by their students using mainly the 'test the informant' method with a number of American Indian languages. Hickerson, Turner and Hickerson (1952) were the first to repeat the 'test the informant' approach and included certain refinements especially in the subject matter of the narrative as well as



the test material. Pierce (1952) made a further development of Voegelin and Harris' method ('test the informant') and carried out a study to determine the relationships between four speech communities. Biggs (1957) also conducted experiments with the 'test the informant' method to show the relative distance of six American Indian languages. Olmsted (1954), on the other hand, chose the 'ask the informant' method to investigate a reported case of non-reciprocal intelligibility (two American languages).

It is obvious from the above studies that their authors have not been interested in the phenomenon of intelligibility. They rather view it as a tool for discovering relationships between languages that are genetically related and further subdividing them into more closely related subgroups. Nevertheless, it has been claimed that these methods (especially the 'test the informant' method) are capable of measuring intelligibility. It has never been explained, however, why intelligibility or lack of it occurs. This shortcoming led Wolff (1959) to make severe criticisms about the Voegelin and Harris' method.

### III. 2. 2. WOLFF'S CRITIQUE

Wolff (1959) argues that several factors affect the test and make it unreliable. Following are Wolff's points:

- All studies on interdialectal intelligibility have depended solely on translation into a third language (i.e. English). As a result, the method tends to measure translation as a skill as well as the informant's proficiency in English and not intelligibility. Moreover, idiosyncratic characteristics that dictate individuals' behaviour could lead to situations where a subject cannot or will not accept translation. An effective testing method should consider only informants who are free

from any resistance to translation.

- In areas with high degree of bilingualism, one should account for both intelligibility as a result of linguistic similarity and intelligibility due to language learning. The ideal situation would be that no learning (through personal experience) of the non-native variety takes place before the test.
- Dialect distance testing can prove unproductive with the phenomenon of non-reciprocal intelligibility. In such a case, more than linguistic similarity is needed to decide whether transfer of communication takes place. Mutual intelligibility and/or linguistic similarity are sometimes not sufficient for grouping or distinguishing between languages or dialects. Wolff argues that for establishing this distinction, one must consider sociological factors based on economic, political conditions and inter-ethnic attitudes. These subjective considerations depend upon a desire for social unity or autonomy.

Obviously, these claims have far-reaching consequences on the definition of a language or speech community. In defining a speech community one needs social-psychological criteria. Therefore, a speech community is defined as a group of people who believe and think of themselves as speaking the same language. In other words, the definition is based on 'beliefs' and not language. These beliefs are spread evenly in a speech community whose "speakers share a set of social attitudes towards language" (Labov, 1970: 74). As a result all members of a community agree upon some sort of 'norm'. Every speaker has internalised an ideal form of the language (e.g. members of a community sharing the same norm are generally in agreement on standard and non-standard features of their language) and "social

attitudes towards language are extremely uniform throughout a speech community" (Labov, 1970: 74).

Studies on intelligibility that followed Wolff's took into consideration his criticisms when preparing tests for the measurement of interdialectal communication.

### III. 2. 3. SUBSEQUENT DEVELOPMENTS

To investigate dialect intelligibility in Japan, Yamagiwa (1967) presented pre-recorded samples of speech from ten areas to university graduates who listened to the material and wrote down the translation of what they had understood into modern standard Japanese. Yamagiwa found that his informants associated the most intelligible dialect with the high level of the socio-cultural and economic development of its regional base as well as with prior contact with it through the media. The prestigious dialect of Kyoto, associated with the foregoing characteristics proved the most intelligible and least difficult. As Wolff has suggested, the Japanese case provides experimental evidence on intelligibility being a function of societal relationships as well as a learning process through exposure.

The Summer Institute of Linguistics (SIL) in Mexico (Bradley, 1968; Kirk, 1970; Casad, 1974) has developed a method, for practical purposes, to find the language or languages which could serve the communicative and educational needs of a number of communities. The SIL method for measuring dialect intelligibility claims to avoid the defects Wolff has objected to. The authors, however, recognize the limits of their testing method which cannot handle certain phenomena. The tests are simply used to "reflect how well members of one speech community understand the speech of members of a different community. It gives no direct answers to the causes for such intelligibility." (Kirk, 1970: 208).

The SIL method has also attempted to give a value for the communication threshold; that is the percentage at which communication is still adequate between a pair of dialects. The authors suggest a 75% threshold but also argue that it can differ depending on the area investigated, linguistic and sociological factors that influence intelligibility. It is no wonder that researchers have, in the past, avoided suggesting values at which intelligibility breaks down when one considers all the factors involved.

Bender and Cooper (1971) attempted to explore intelligibility resulting from linguistic similarity between related languages in Ethiopia. They conducted an investigation to test the hypothesis that interlingual correspondence of basic vocabulary as well as root and affix morphemes and a combination of both morphemes, were good predictors of mutual intelligibility. In addition to these linguistic variables, they also made use of a non-linguistic measure: geographical distance.

Bender and Cooper observed that basic vocabulary and root morpheme correspondences correlated with intelligibility. They also discovered that basic vocabulary correspondence correlated with geographical proximity and intelligibility as well.

Kashoki's (1977) investigation intended to repeat Bender and Cooper's technique and discover the degree of comprehension between seven Zambian languages by subjects with no previous exposure to these languages. Kashoki chose basic vocabulary and a combination of root and grammatical morphemes as well as geographical distance as variables to be correlated with cross-language intelligibility. Since the subjects were also tested on their native language, the first finding showed that intelligibility was almost always perfect in that language. Kashoki's other results proved that geographical proximity was not a reliable measure for mutual intelligibility. While all the languages

explored by Bender and Cooper showed reciprocal intelligibility, it was not always the case in the Zambian context.

Dialect intelligibility for Hameyer (1979) was used to describe the adult speaker's competence and, therefore, answer questions about linguistic theory. To achieve his goal, he utilized 'performance data' to investigate the German speaker's knowledge about dialects. Hameyer's main claim is that interdialectal intelligibility depends on the internalized set of phonological rules and their possible derivations that a subject has acquired and developed in the process of language acquisition. The claim is clearly within the generative dialectology framework involving the views and results of generative phonology which posits that the surface pronunciation of a number of words results directly from the application of phonological rules to underlying representations listed in the lexicon.

To Chambers and Trudgill (1980: 46) generative dialectology "works on the assumption that a single underlying form can be postulated for related dialects, and that these dialects differ in (a) the phonological rules that apply to the underlying forms, and/or (b) the environments in which the rules apply, and/or (c) the order in which the rules apply".

It is a well known fact that speakers understand more dialects than they actually speak. In other words, their 'passive' competence far exceeds their 'active' competence. Moreover, common underlying forms presuppose the knowledge of these by the speaker. The generative phonology argument is that the underlying forms of words are common to all dialects of a language and it is the system of rules which accounts for the difference. The difficulty caused by the difference between the speaker's 'passive' and 'active' competence in non-native dialects appears to throw up one basic difficulty for the

generative model. The cases of imitation resulting in hypercorrections and the failure to acquire a full productive command of another dialect are examples of this difference. Further, why is it easier for a speaker to 'decode' (to proceed from surface to underlying form) than to 'encode' (the opposite direction) if the system of rules which accounts for the surface to underlying form correspondence is available to the same speaker. This difficulty has led a number of authorities to reject underlying forms and their extensions and extrapolations from rules as a model of the native speaker's competence (e.g. cf. Trudgill, 1983).

A further development of the generative approach has followed and polylectal grammars suggested. A polylectal grammar includes many varieties of a given language. These grammars and their justification have been especially associated with the work of C.J. Bailey (Berdan, 1977; Trudgill, 1983).

We have seen that polylectal competence has its limits where production is concerned. Moreover, the comprehension of other dialects also seems to cast doubts on the acceptance of polylectal grammars. Trudgill's (1983) data-based investigation suggests that native English speakers fail to use their passive competence to decide upon the grammaticality of a number of forms that exist in other varieties of British English. The author rather considers that other dialects are best understood when context is available (cf. also Milroy, 1984).

Trudgill argues that a native speaker can understand forms out of context in her/his own dialect. This prompted him to investigate English subjects' comprehension of forms out of context from other dialects. Trudgill gives evidence that there is a lack of comprehension of alien forms occurring in isolation and therefore against the justification for a polylectal competence.

In another study concerned with polylectal grammar and comprehension, Berdan (1977: 28) claims that "grammars of polylectal comprehension may well exist. However, documented cases of comprehension across lects fail to provide sufficient evidence for the polylectal grammar".

Chambers and Trudgill (1980: 51) suggest an alternative for polylectal competence to account for dialect comprehension as follows:

"We should assume instead that speakers simply have increasingly greater difficulties in understanding speakers who have grammars which are increasingly unlike their own, and that comprehension is achieved in a very ad hoc manner, the listener employing all the clues that he can to help overcome the dissimilarities."

Trudgill (1983) provides a number of clues that enhance interdialectal comprehension. He states that listeners rely more heavily on linguistic and extralinguistic context to understand other dialects than they do when understanding their own. He, nevertheless, reports a number of cases where lack of comprehension occurs even with context. Trudgill also considers familiarity with other dialectal forms as well as the 'degree of linguistic difference' between two dialects, to have an influence on intelligibility.

### III. 3. FACTORS AFFECTING INTELLIGIBILITY

Factors that enhance or diminish intelligibility can be categorized roughly into two major classes: first, there are those which are part of the many problems one encounters when trying to account for our capacity to decode speech; second, since the subject of the present study is the intelligibility of non-native speech, one should therefore consider the constraints imposed on the non-native speaker's performance.

### III. 3. 1. FACTORS RELATED TO SPEECH PROCESSING

An attractive and simple model of speech perception involves humans perceiving speech as a succession of single phonetic segments linked together as 'beads on a string'. Each of these individual sounds has its unique acoustic properties that need simply to be decoded. Unfortunately, experimental evidence indicates that we do not perceive speech segment by segment. As a result of a group of experiments, Ladefoged (1967: 162) concludes that "in listening to speech the incoming sensory data is not scanned in units corresponding to the size of isolated speech sounds".

The problems with the identification of speech sounds result from:

i- lack of discreteness and of acoustic invariance

First, speech does not consist of discrete units of sound but of rather a continuous acoustic signal without the illusory breaks or boundaries between phonetic segments, words and sentences that people tend to hear.

Second, the same consonant, for example, has different acoustic cues for its perception as a result of different environments and its position in the syllable structure. Acoustic variability also results from interspeaker variation; that is no two speakers will have the same acoustic pattern for the same segment. The acoustic signal is further varied when one considers different accents, voice qualities and modes of speaking<sup>7</sup>.

ii- high rate of meaningful sound distinctions as well as the quality of the spoken stream

The rate at which phonetic information about segments comes at us is 20 to 30 per second (Lieberman, 1973: 61) and remains quite comprehensible at rates up to 50 segments per second



(Clark and Clark, 1977: 177). Clearly, such rates are too fast for listeners to identify speech sounds one by one.

If we receive phonetic information that is too quick for us to distinguish segments sequentially, so then what is the perceptual unit? Ladefoged (1967) carried out a number of experiments to investigate the physical order of arrival of individual speech sounds. He discovered that listeners had difficulty in determining this order and points out that "the process of decoding information when listening to speech may involve operating on units which are somewhat larger than the duration of a single speech sound" (p.161). Furthermore, Pisoni and Sawusch (1975: 19) assume that the "perceptual mechanism requires information distributed over at least a whole syllable in order to derive minimal information for reliable phonetic interpretation".

Natural spontaneous speech is most of the time sloppy and "more than half the words are unintelligible when taken out of the speech and presented alone" (Clark and Clark, 1977: 177). And yet, in spite of the sloppiness of speech, and even in the most unfavourable conditions, listeners make sense perfectly well of the incoming signal. The 'cocktail party' phenomenon (i.e. people still understand a conversation although other simultaneous and loud exchanges take place around them) further demonstrates the ability to understand what is not always perfectly intelligible.

To be able to understand the processes and factors involved in understanding speech, it is worth considering both the identification of speech sounds in isolation and the perception of connected utterances.

### III. 3. 1. 1. PERCEPTION OF ISOLATED SPEECH SOUNDS

Miller and Nicely (1955) provide substantial evidence as to how people perceive speech sounds (namely consonants) in isolation. They studied the perceptual confusions among the following 16 consonants: /p t k f θ s ʃ b d g v ð z ʒ m n/. Each one of these consonants was inserted into a nonsense syllable with the CV structure (the same vowel [a] was used in all cases). Five informants were asked to identify 16 syllables presented in different conditions (with white noise at different levels of loudness: from very soft to very loud).

Their results show that the amount of confusion of consonants was a function of loudness of speech: that is, the louder the speech the less confusions occurred and the softer the speech, the more confusions occurred. These confusions fell into regular patterns that could generally be describable in terms of the articulatory features of the consonants. Hence, when two consonants shared some articulatory characteristic, they were likely to be confused. The most misidentified sets had almost the same articulation and included the following:

- i- /m/ - /n/
- ii- /f/ - /θ/
- iii- /v/ - /ð/
- iv- /p/ - /t/ - /k/
- v- /d/ - /g/
- vi- /s/ - /ʃ/
- vii- /z/ - /ʒ/

The consonants in each of the above groups have the same manner of articulation and differ only in their place of articulation. Among the consonants that were least likely to be misidentified in noise, the features of voicing and nasality as differentiating articulatory characteristics between a set of consonants proved the least influential. Noise proved slightly more unfavourable to distinguishing manner of articulation and most adverse to determining place of articulation.

Miller and Nicely's results suggest that listeners decode the incoming signal through five channels; i.e. each consonant comes at us into five simultaneous and separate bits. According to Miller and Nicely the five channels and their respective segments include:

channel 1: voicing	[b d g v ð z ʒ m n] vs. [p t k f θ s ʃ]
channel 2: nasality	[m n] vs. the rest
channel 3: stridency	[f θ s ʃ v ð z ʒ] vs. [p t k b d g m n]
channel 4: duration	[s ʃ z ʒ] vs. the rest
channel 5: place of articulation	[p f b v m] vs. [t θ s d ð z n] vs. [k ʃ g ʒ]

Each of the above channels takes in one single bit of information to identify a member of a set of consonants. The listeners' ability to perceive a consonant is the result of the sum of all five bits of information from the different channels. For example, the identification of [t] represents the sum of the following five channels:

- channel 1: voiceless
- channel 2: not nasal
- channel 3: not strident
- channel 4: short duration
- channel 5: middle consonant

According to Clark and Clark (1977: 194-195), the afore-mentioned five channels coincide with single distinctive features or a combination of two. They, therefore, conclude: "The parts of a segment people perceive are with few exceptions the same as the features in a phonetic and phonological analysis of that segment" (p. 195).

Several investigators (e.g. cf. Pisoni and Sawusch, 1975) consider the identification of speech sounds to take place in more or less three progressive stages: auditory stage, phonetic stage and phonological stage. In the first stage, people make a preliminary analysis of the incoming auditory signal and then store the outcome in an 'auditory memory' which is tuned to analyse speech sounds and is, thus, selective. The analysis of the signal looks for the acoustic cues for a

particular sound which are however not always the same in all environments. For example, the acoustic cues for [d] in both [di] and [du] are not similar and depend a great deal on the following vowel.

The different acoustic cues available to the listener can be classified in two categories: context-independent and context-dependent. For instance, in the identification of [s], [z], [ʃ], [ʒ], [tʃ] and [dʒ] one can rely solely on context-independent cues such as the hissing noise. With English plosives Voice Onset Time represents also a context-independent acoustic cue in identifying the fortis from the lenis set. However, for many sounds the identification depends mainly on the neighbouring segments and are, therefore, context-dependent (Clark and Clark, 1977: 197).

In the identification of speech sounds, the phonetic stage is concerned with labelling the individual segments and the order in which they come at us. Despite the variant nature of acoustic cues for segments, the phonetic stage constrains these into discrete categories. This 'categorical' perception can be illustrated with the use of VOT as a cue for differentiating between fortis and lenis plosives in English. For example, a bilabial plosive is heard as [p] if voicing is delayed for about 40 milliseconds but as [b] if delayed for less than 40 milliseconds (Matthei and Roeper, 1983: 49).

After the segments have been sorted out and labelled, they are stored in a phonetic memory which is essential to distinguishing speech sounds and is dependent upon one's experience with the language. Further, according to Clark and Clark (1977: 204) segment labels are "stored in phonetic memory as bundles of distinctive features, and that these features are preserved relatively independently of each other".

During the phonological stage, people categorise phonetic sequences to fit the phonological rules of the language. These rules

also affect what people actually hear.

Nevertheless, the perception of speech sounds is not always as straightforward as discussed above and is usually indirect. The cues involved in the identification of a particular segment do not come into bundles but come distributed over long stretches of speech and are altered when other cues occur. Furthermore, the mapping of acoustic cues onto phonetic segments varies a great deal depending on changes in speakers, situations, intonation and stress.

The solution to the above problem has been provided by a number of theories on speech perception which can be classified into active and passive models. In passive theories of speech perception, the listener simply decodes the input through a series of perceptual 'filters'. In an active model, on the other hand, the listener is acting as a speaker when processing the input. The active model has two basic variants: 'Motor Theory' and 'Analysis-by-Synthesis'. In the Motor Theory the listener infers from what s/he hears as a speaker, but indirectly, i.e. what s/he does with the neural patterns and neural commands to the muscles (hence, referring to articulatory knowledge). The Analysis-by-Synthesis theory is similar to the Motor Theory in that the listener also refers to production. The difference with the Motor Theory lies in the fact that the reference is more acoustic than articulatory and depends on a system of pattern-matching or "pattern-recognition" (Fry, 1970: 35) derived from the listener's past knowledge of the language.

Beside the role of linguistic and articulatory knowledge that is emphasized by the active theories, it is also necessary to add the knowledge of contextual information in decoding speech especially when uttered rapidly. Ladefoged and Broadbent (1957) demonstrated how listeners use contextual cues from other vowels to calibrate a speaker's vocal tract. In their experiment they presented the following

synthesized monosyllabic test words: "bit", "bet", "bat" and "but". Listeners first heard one of six artificially produced versions of an introductory sentence "Please say what this word is" followed by one of the test words. The different versions of the introductory sentence varied in their fundamental frequency and could be taken to be uttered by different speakers; whereas the fundamental frequency for the test words was kept the same. Ladefoged and Broadbent found that for the same test word listeners heard it as a different word (i.e. with a different vowel) depending on the 'subject' who spoke the introductory sentence. These results show that listeners used the introductory sentence to determine the personal qualities of the 'speaker' and adapt their perception to fit these qualities ('normalisation'). Thus, according to Ladefoged and Broadbent (1957: 102), "the linguistic information conveyed by a given vowel is largely dependent on the relations between the frequencies of its formants and the frequencies of the formants of other vowels occurring in the same auditory context".

In this section we have reviewed a number of factors involved in the processing of single speech sounds. As Ladefoged and Broadbent's example has shown, speech sound identification depends on the neighbouring sounds. In addition, speech is interaction and 'makes sense' and does not occur in isolated sounds or syllables. It is, then, important to consider the perception of real speech.

### III. 3. 1. 2. PERCEPTION OF FREE SPEECH

According to Clark and Clark (1977: 220) the different stages involved in identifying isolated sounds are not enough for the perception of free speech. Miller, Heise and Lichten (1951) carried out an investigation into the perception of a number of words (accompanied by different levels of noise) both in isolation and embedded in five-word

long sentences. The researchers discovered that, at all levels of noise, a word was more difficult to understand when heard in isolation than when heard in a sentence. According to Miller, Heise and Lichten (1951: 334) "it is not so much the particular item as the context in which the item occurs that determines its intelligibility".

As mentioned earlier, speech is sloppy and highly unintelligible when taken word by word. In a series of experiments Pollack and Pickett (1963 and 1964) presented to a number of subjects excised words from samples of recorded connected discourse and texts read aloud (at normal and fast rates). On average, listeners identified correctly 47% of the words in connected speech and 55% for the read text. Moreover, with the texts read with a faster rate the intelligibility result fell to 41%. These findings and Miller et al.'s demonstrate how sloppy and incomprehensible speech is when one considers only the segments that constitute it.

#### (1) PERCEPTUAL ILLUSIONS

Because of the unintelligibility of words in the spoken stream, listeners need to 'fill in' the gaps by making use of different means (semantic, syntactic, contextual) to understand the end-product. As Pisoni and Sawusch (1975: 22) put it "the final semantic interpretation may involve information which has no physical correlate". Therefore, the impression of clarity is but an 'illusion'. Warren (1970) conducted an experiment to demonstrate the listeners' 'phonemic restorations' and, hence, their illusory perception. He administered the recorded sentence "the state governors met with their respective legislatures convening in the capital city", with the [s] of the word "legislature" being removed and replaced by a cough, a 1000-hz tone and silence in three separate experiments. In each experiment listeners were asked to report whether they could hear any sound missing and to locate the position of the

cough or tone or silence. With silence the subjects successfully pointed to the missing sound and the place of the gap. However, for the sentences with the cough and tone, all listeners believed no sound was missing and were never accurate as to the location of the exact position of the extraneous noise. The strategies involved in filling in the gaps are constrained by the verbal context in the case of the missing [s] above.

Syntactic and semantic considerations need to be taken into account, as Warren and Warren (1970) have shown by demonstrating that extraneous noises or silent gaps are heard as different phonemes depending on the constraining item in the sentence. The researchers provided listeners with one of the following sentences (with \* representing a loud cough that replaces the missing speech sound):

It was found that the \*eel was on the *axle*.

It was found that the \*eel was on the *shoe*.

It was found that the \*eel was on the *orange*.

It was found that the \*eel was on the *table*.

In the above sentences semantic considerations provided by the word in italics resolve the ambiguity and permits phonemic restoration in each sentence. Therefore, the words 'axle', 'shoes', 'orange' and 'table' each implies a different speech sound and yields the lexical items 'wheel', 'heel', 'peel' and 'meal' respectively. In the words of Warren and Warren (1970: 32) "the listener does experience the appropriate phonemic restoration, apparently by storing the incomplete information until the necessary context is supplied so that the required phoneme can be synthesized". Context operates at different levels and the importance of its influence is stated by Fry (1955: 151-152) as follows:

"Suppose for example that a message is sent to a listener in conditions in which he can recognise about 5% of the words transmitted. If he is now given information about the subject matter of the speech, information which constitutes



a suitable verbal context for the distorted message, and listens to the same speech sequence a second time, he will find the intelligibility very much increased and will understand 60% or 70% of what is sent to him. The physical stimuli which he receives are the same in both hearings, but the effect of contextual information is to convert incomprehensible speech into a message which the listener can understand with relative ease."

According to Catford (1951: 13) context means "the situation as a whole in which any linguistic form which may be considered is set. The context of a linguistic form can be subdivided in various ways, the most obvious distinction being the broad one between *linguistic* and *situational* context". The former consists of the linguistic items and forms that accompany it while the latter involves everything else that have a bearing on the speech-act<sup>8</sup>. Further, before discussing each type of context in detail, it is worth remembering "that context plays a greater role in the intelligibility of the ESL/EFL speaker than in that of native speakers" (Murray, 1982: 11).

## (2) LINGUISTIC CONTEXT

It seems that the experiment by Warren and Warren (1970) above is a good illustration of how linguistic context can contribute to comprehension. According to Black (1952: 415-417) familiar words and words with certain phonotactic combinations and structural characteristics have their intelligibility enhanced. Rubenstein et al. (1959) found that the longer the word (with a structure which contains a large number of phonemes) the higher its intelligibility. Using distributional criteria, Fry (1955) considers that in guessing subjects draw upon their statistical knowledge of the language to reconstruct a message from the raw material. O'Neill (1957) found that words in isolation were less intelligible than when presented in context and "it may be that words have context intelligibility values as well as isolation

intelligibility values" (p.90). Goldman et al. (1980) performed an experiment using test words inserted initially, medially and finally in different sentences. Their results show that context did not help the intelligibility of initial words and concluded "perhaps contextual information is simply not as important to initial words as to later positioned words" (p. 156-157). Recognising the fact that language is more than syntax, semantics and phonology Goldman et al. (1980: 157) remind us that as far as phonology is concerned lexical-stress, rhythm and intonation have a fundamental influence on comprehension.

Clark and Clark (1977: 215-216) consider that in processing spoken language, people listen for rhythm to anticipate what comes next as speech proceeds. Abercrombie (1967: 36) also mentions the considerable dependence on rhythm to make speech intelligible (cf. also Fudge, 1984: 4). Allen (1975: 84) states "speech rhythm functions mainly to organize the information-bearing units into a coherent package, thus permitting speech communication to proceed efficiently".

We noted in sub-section II. 5. 1. that English rhythm is isochronous; that is, stress beats tend to recur at equal intervals of time and to keep these equal, a number of processes occur with the most notable being vowel length variation in the different syllables. What happens, then, when the English rhythmic pattern information is incorrect? A number of researchers have demonstrated that this leads to a failure in the interpretation of the intended message. Of interest to the present study is non-native speakers' faulty timing patterns in English. Garner (1985) carried out an acoustic study of timing patterns in the spoken English of four advanced francophone subjects. He reports that these speakers lengthen unstressed syllables which are normally short (e.g. [ə] has a longer duration), and reduce the long duration of stressed syllables. Garner relates this tendency to

'equalize' vowel lengths to an interference from the syllable-timed rhythm of French.

Garner's subjects ignored the basis of English rhythm (related to syllable duration). Taylor (1981: 220) believes that "syllable duration has a more direct relation to the rhythmic patterns of English ... and to the rhythmic difficulties encountered by non-native speakers of English". This author studied forty nine experienced teachers from twenty three different native languages. Twenty five of these subjects had tremendous problems with rhythm due mainly to their inability to divide their utterances into acceptable sense groups and breath groups which also did not coincide. Further, breath groups were too short and this seems to support the results by McNaught<sup>9</sup> (summarised in Cruz-Ferreira, 1983: 126) who, in his analysis of French learners' English, discovered that they broke up the spoken stream into shorter and therefore more numerous word-groups.

The main body of Taylor's investigation concerns the actual rhythmic patterns of the remaining fifteen speakers who all produced a syllable-timed rhythm. According to Taylor, the lack of a substantial difference between the duration of stressed and unstressed syllables account for these syllable-timed rhythmic patterns. He, therefore, says "if the difference in length between stressed and unstressed syllables is not great enough, the listener interprets this as equality of length for all syllables" (p. 221). Even if a non-native speaker does produce a difference in duration but which is not enough for a native listener to impose an English rhythmic pattern on it, s/he is still heard as having a syllable-timed rhythm. Finally, Taylor concludes his paper by suggesting some further factors which lead to a faulty English rhythm and in addition to vowel duration, he adds lack of weak forms, the language specificity of vowel duration and spelling pronunciation.

Throughout the literature on the occurrence of miscommunication between non-natives and natives in English, difficulty due to rhythm is overwhelmingly supported (cf. Adams, 1979; Tiffen, 1974; Wilkins, 1972; Nelson, 1983 and 1984; Chela de Rodriguez, 1980 and 1983). As far as the source of the problem is concerned, some authors (cf. e.g. Garner, 1985) view it as a negative transfer from the first language while others explain the use of a syllable-timed rhythm as a result of a slow rate of speaking (cf. Major, 1981; Wilkins, 1972).

Another linguistic feature that seems to aid comprehension is the placement of sentence-accent. Terken (1982) provides evidence for the negative effect of inappropriate accentuation on listeners processing native utterances. According to Cohen and Faulkner (1986: 92):

"By bracketing syntactic constituents and indicating the semantic focus and associated presuppositions, stress is effectively pre-processing the message for the listener, and could therefore be of great assistance in compensating for a reduction in processing capacity."

Tiffen (1974) provides an interesting case of non-native inappropriate accentuation that gave rise to a diminution in the capacity of speech processing by native listeners. In the data involving the use of nucleus placement as in,

e.g. `No, `John motored to London  
`No, John `motored to London  
`No, John motored to `London

(from Tiffen, 1974: 240)

Nigerian speakers of English allocated the nucleus to the final syllable in individual utterances 92% of the time. This high score of incorrect nucleus placement has led to an intelligibility breakdown with the British listeners.

Since comprehension depends on a proper rhythm and an appropriate placement of sentence-accent in an utterance, the exact

allocation of stress within a word (i.e. lexical-stress) can play an important part in speech processing (Fudge, 1984: 4). It was mentioned in sub-section II. 4. that at the present state of knowledge, one cannot state categorically whether lexical-stress is derived by rule or is part of the mental lexicon. However, supporters of either of these positions do not disregard the importance of lexical-stress<sup>10</sup>. For example, in the case of misperceptions of words, "it is the stress pattern and usually the nature of the stressed syllable which determines what listeners think they hear" (Cutler, 1984: 79).

When the lexical-stress pattern is incorrect as with the case of non-native speech being processed by native listeners, one finds that natives impose an interpretation based on the produced stress pattern disregarding the segmental information. Examples follow of incorrect lexical-stress placements by Nigerian and Indian speakers respectively and the interpretations given by British native informants:

e.g.	<u>Intended word</u>	<u>Nigerian speaker's pronunciation</u>	<u>Informants' responses</u>
	"interval"	[intə'vel]	"only trouble"
	"normally"	[nɔ'mali]	"no money"
	"secondary"	[sɛ'kandrɪ]	"country"
	"primary"	[prai'marɪ]	"family"

(from Tiffen, 1974: 328-367)

e.g.	<u>Intended word</u>	<u>Indian speaker's pronunciation</u>	<u>Informants' responses</u>
	"suitable"	[su'tɛbl]	"the level"
	"written"	[rɪ'tɛn]	"retain"
	"divisions"	['dɪvɪʒənz]	"regions"
	"Richard"	[rɪ'tʃɑ:rd]	"The child"

(from Bansal, 1969: 151-156)

The above examples support the view that lexical stress pattern identity tends to override segmental information and in the words of Cutler (1984: 80) "can precipitate false recognition, often in defiance of

segmental evidence".

The role of pitch has also an effect on comprehensibility. Thomas (1969) demonstrates that speech which lacks pitch information (i.e. monotonous) has its intelligibility decreased. However, lack of consensus exists as to whether intonation or syntax serve as linguistic cue to perception of meaning of spoken stretches (cf. Cruz-Ferreira, 1983: 111-116). Nevertheless, one cannot ignore the different intonation patterns capable of meaningful variations when imposed on the same syntactic structure. According to Cruz-Ferreira (1983: 114), "information conveyed by intonation is available and perceived at some point in processing".

An incorrect use of intonation patterns by, for example, non-native speakers can produce unintended interpretations from the part of the native listeners (O'Connor and Arnold, 1973: 1-2). The typical intonation pattern for unmarked (neutral) statements in French is a rising head followed by a high falling nuclear tone (MacCarthy, 1975: 30-31; Malmberg, 1968: 159) which in English expresses a 'protesting' attitude (O'Connor and Arnold, 1973: 73). McNaught found a mismatch in the tunes used by French subjects when encoding particular sentences.

A further linguistic feature often mentioned in relation to intelligibility is the location of pauses in an utterance (cf. Richards et al., 1985: 144). In the generation of speech "pausing is as much part of the speaking as the vocal utterance of words itself" (Goldman-Eisler, 1964: 119-120). Moreover, Goldman-Eisler states that on average the proportion of utterance time taken by pausing represents 40 to 50 per cent (1964: 119). Another significant property of hesitation pauses<sup>11</sup> concerns the relation between pausing and information content of the message. Therefore, following Abercrombie (1967: 96) we can say "the

more thought there is behind what one is saying, the less fluent will be the speech". From the point of view of the listener, it seems that hesitant speech signals more creative activity on the part of the speaker; conversely, fluent speech is an indication of less creative activity (hence, more redundant speech) on the part of the speaker. According to Temple (1985: 300): "it could be that native-like hesitations, whether at grammatical boundaries or not, help the decoding process as well as the encoding process".

The pausal phenomenon is one factor, among others, that is a function of fluency<sup>12</sup>. Temple (1985: 298-299) reviews two major studies on the fluency of non-native speakers and mentions the likely negative transfer of a system of pausing from the mother tongue. Pausing is, thus, language specific and a non-native speaker needs an acceptable system of hesitation because "if you put them in the wrong places, you may cause a breakdown in the intelligibility of the communication" (Crystal and Davy, 1975: 5).

### (3) SITUATIONAL CONTEXT

Among the features of situational context that influence intelligibility, only those that relate to the speech produced by non-native speakers are reviewed below. Chaiklin (1955: 165) observes that with the passage of time, a non-native speaker of English becomes more comprehensible. The listener's experience with this speaker provides her/him with a lower 'threshold of intelligibility'<sup>13</sup> (Catford, 1951: 13). Brodkey (1972) considers that prior familiarity with an individual's voice affects listeners' comprehension. Varonis and Gass (1985) argue that the more "shared background" a native and non-native speaker have, the more successful they are in communication. Moreover, they suggest that if interlocutors do not share "a world view or cultural assumptions" or a "cultural context" as Catford (1951: 14)

calls it, they fail to understand each other. Gass and Varonis (1984) considered the following factors when carrying out their experiment: the effects of familiarity (especially with topic), speech in general, non-native accent in particular and a given non-native. Out of these four variables, the authors found that familiarity with topic was the most important for facilitating comprehension. They also found that the other three variables did have a bearing on understanding. Gass and Varonis (1984: 85) define comprehensibility as "a function of at least the variables of pronunciation, grammar, and familiarity interacting in complex ways".

Among the above variables one can include what Abbott (1986: 300) calls "phonetic redundancy" which, for example, can account for the overlapping of consonant and vowel in a spoken stream. In general, a linguistic message contains far more information and cues than are necessary for comprehension. Among redundant information conveyed by syntax, Gimson (1980: 5-6) mentions "grammatical probabilities". So, for example, the demonstrative pronoun 'those' is expected to be followed by the plural in e.g. "those fields", even though the plural mark "s" is not pronounced. According to Shannon and Weaver (1949)<sup>14</sup>, quoted in Abbott (1986) and Aitken (1977), in total 50% of the English language is redundant. Redundancy is defined as "that property of language that allows us to predict missing symbols from the context" (Aitken, 1977: 64). Redundancy is largely provided by the 'rules' of context, both syntactic and semantic.

#### (4) MISPERCEPTIONS AND PERCEPTUAL 'EDITING'

Other perceptual phenomena similar to illusions are misperceptions and perceptual 'editing'. In communicative interactions instances arise when speaker and listener are 'tuned in' to different items and, consequently vary in their interpretations of the intended message. In



the following examples from Garnes and Bond (1975),

Intended

- i- part of it
- ii- it'll be a confusing weekend
- iii- I'm covered with chalk dust

Misperceived

- park of it
- you're confusing weekends
- I'm covered with chocolate

the misperceived bit always shares some phonetic relation with the intended one. In i-, [t] is substituted by [k] which shares the feature of voicelessness with the former. In ii- and iii-, the situation is more complex but it suffices to say, following Garnes and Bond, that the misperceived utterance fits the original syntactically (e.g. ii-) and semantically (e.g. iii-). In ii-, the indefinite article is deleted and a plural marker is supplied to give a syntactically well-formed (misperceived) utterance.

The above examples show, therefore, that in trying to make sense, listeners impose a meaningful percept. This point seems important in view of native subjects listening to (and also speaking with) non-native speakers. It is a well known fact (cf. e.g. Chaiklin, 1955) that when natives of a language interact with non-natives whose proficiency is less than perfect, they respond differently to them than they do to natives (Abunahleh et al., 1982; Long, 1983) by making certain linguistic adjustments (called 'foreigner talk') such as, for example, a slower rate of delivery and fewer reduced vowels (Kelch, 1985). To Arthur et al. (1980), Americans make coordinated modifications in both form and content of discourse to facilitate communication. Kelch (1985: 88) demonstrates that a slow rate of delivery has a positive effect on non-native comprehension whereas syntactic modifications do not necessarily qualify.

Do natives adopt the same strategy when listening to non-natives? Schegloff et al. (1977) report that among adult native speakers corrections are limited in their occurrence and form. They, therefore,

believe that in natural discourse people have a 'dispreference' for corrections. Schegloff et al. (1977: 381), nonetheless, mention the exception adult-child (or in general, native adult vs. 'not-yet-competent' subject) interaction where corrections are not restricted. Prompted by this suggestion, Gaskill (1980) carried out an investigation on whether native speakers use corrections with a non-native speaker in a face-to-face interaction. While the non-native subject made a large number of morphological, phonological, lexical and syntactical errors only a small number of corrections from the part of the natives occurred. Gaskill (1980: 136), thus, concludes "correction is an infrequent and highly restrictive phenomenon".

It appears, then, that natives do not have a preference for what could be best labelled as 'spoken' corrections. In these rare corrections the native listener becomes a speaker and corrects the non-native utterance for the sake of intelligibility. However, we saw earlier on that as a listening subject only, a native actively imposes percepts and, in a sense, corrects the incoming signal to arrive at a meaningful end-product which sometimes is not in accordance with the intended message. Particularly of interest to the present study is the finding by Tiffen (1974) and Bansal (1969) concerning the corrections made by native British listeners through dictation. While Bansal considered these corrections as incorrect and marked them accordingly, Tiffen on the contrary took them as representing perfect intelligibility and gave them full mark. Tiffen's attitude to these corrections is probably more appropriate because they are a sign of the listener's comprehension and, thus, of the speaker's success in communicating. Moreover, it appears that error corrections by natives, though not preferred, do occur.

### III. 3. 1. 3. SPEECH PERCEPTION AS AN ACTIVE PROCESS

In the preceding sections, at least two perceptual phenomena (namely perceptual illusions and misperceptions) were considered and, yet amidst all the adverse conditions "the listener hears something definite, although it does not correspond to what was said" (Garnes and Bond, 1975: 214). In other words, for the sake of 'making sense', listeners tend to force their own interpretation of the message which is not necessarily the intended one. In any communicative interaction the intention is that the speaker wants to be understood and the listener to understand. According to Fry (1970: 32) speech perception is "essentially a process of determining 'what the message must have been'. This factor is so powerful that whenever there is a conflict between what the listener thinks is likely and what actually reaches his ears, it is most frequently the first of these that wins the day". In her/his attempt in sense-making, a listener relies on her/his knowledge of the language as well as on a number of extra-linguistic and extra-grammatical factors when receiving an acoustic signal.

In our discussion of the perception of free speech we have noticed that it is not a passive process. On the contrary, the ability to understand what is normally unintelligible, the phonemic restoration phenomenon and misperceptions are all accounted for by an active process of speech perception. Listeners continuously synthesize words to match the incoming signal and are, at the same time, aided by their knowledge of the system of the language to arrive at a meaningful output. Furthermore, comprehension seems to work from meaning and use toward the speech stream. Meaning and use or the 'utilization' process is described as "the process by which listeners come to an interpretation for a stream of speech ... it also includes the process by which listeners use those interpretations for their intended purpose"

(Clark and Clark, 1977: 84-85).

### III. 4. PREVIOUS STUDIES IN THE INTELLIGIBILITY OF ENGLISH

The massive body of publications on the intelligibility of English<sup>15</sup> falls mainly into two categories: a substantial number simply state a lack of intelligibility between at least two varieties on the basis of their observations without substantiating their remarks with empirical evidence (cf. LePage, 1968; King, 1971; Prator and Robinett, 1972); the second group which is relevant to our purposes, represents studies which involved experimental designs. Quite a number of these studies are discussed in the present section<sup>16</sup>.

Traditionally, English intelligibility studies have been concerned with how natives understand non-natives and/or vice versa. That is, the norm has been almost always the native speaker/listener. The last few years have witnessed a shift in the type of pronunciation model that non-natives need to know and/or learn. The concept of 'international' English has been considered the appropriate norm. This new direction coupled with the need for communicative (rather than linguistic) competence attainment by non-native learners, have led to a boom in investigations of the intelligibility of non-native varieties to speakers of other varieties. Moreover, the need for learners to have at least a receptive knowledge of non-standard native English accents partly explains the changing attitudes.

The different studies on English intelligibility can be categorised on the basis of 'who is speaking to whom'. Therefore, the aim of a study can be the intelligibility of:

- 1- native speakers to native informants; or
- 2- native speakers to non-native informants; or
- 3- native speakers to native and non-native informants; or
- 4- native and non-native speakers to native informants; or

- 5- native and non-native speakers to non-native informants; or
- 6- native and non-native speakers to native and non-native informants; or
- 7- non-native speakers to native informants; or
- 8- non-native speakers to native and non-native informants.

Studies of the 1- category (i.e. native to native) can be best fitted in interdialectal intelligibility discussed in sub-section III. 2.. These can also include Allwood et al. (1968), Harms (1961), Edwards (1979), Trudgill (1979) and Nelson and McRoskey (1978).

In the rest of the present section, only those studies which fall within the categories 2- to 8- mentioned above are discussed. The reader interested in a brief survey of intelligibility publications in various disciplines should consult Smith and Nelson (1985).

#### III. 4. 1. NATIVE TO NON-NATIVE

El-Araby (1972) measured the effect on intelligibility on British trained non-native listeners after a change to the American accent. Two professors (from University of Leeds), one American and the other British recorded the same two passages. Written multiple-choice questions on the content of each text were prepared.

Forty non-native listeners divided into two groups (Group 1 and Group 2) took part in the experiment. Group 1 heard the American then the British speakers and Group 2 the British and then the American in this order respectively. Before listening to a speaker the participants heard the recorded voice of the particular speaker giving instructions. This introduction was meant to make the listeners become familiar with the speaker's voice and style of speaking. After listening to either passage, the informants answered the questions on the sheet provided.

The results show a statistically significant difference for Group 1 in favour of the British accent. Group 2, however, showed the opposite;

that is, they found the American accent slightly more comprehensible and this difference was not in actual of fact statistically significant.

The inconclusive results seem to be the consequence of a number of variables that could have easily been eliminated. Among these negative effects El-Araby mentions the order of presentation of the two accents and the passage. A further undesirable effect came from the listeners' lack of motivation and interest in the performance of the task. Finally, the absence of clear instructions on the aim of the study proved an additional unwarranted variable.

Eisenstein and her colleagues consider that acquiring proficiency in English is a sign of achieving communicative competence. This follows that learners must be capable of understanding the target language in a number of settings among which one can include listening to non-standard dialects. This led Eisenstein and her fellow researchers to measure the ability of adult learners of English with varying degrees of proficiency to understand a number of American English accents.

Eisenstein and Berkowitz (1981) tested 58 adult learners' (half were advanced beginners and half high intermediates) intelligibility of standard English, New Yorkese non-standard and Phillipino accented English.

The test material consisted of a set of sentences and a short paragraph recorded in the three dialects. After listening to each sentence the non-native subjects had to choose one picture out of three that had the closest meaning to the sentence. After hearing the paragraph the same subject responded to five multiple-choice questions on the understanding of the content of the story.

The results of the above two tasks were correlated with the subjective assessment of the three accents as to the ease of comprehension, performed by the non-native subjects prior to

undertaking the two afore-mentioned tasks.

In general, the non-natives reported the standard accent easier to understand than both the non-standard and the foreign accents. This subjective assessment was supported by the sentence and paragraph tasks which consistently provided higher scores for the standard accent over New Yorkese and Phillipino accents. The standard accent was therefore confirmed in its greater ease of comprehension.

The study by Eisenstein and Hopper (1983) used only American native dialects that were likely to be encountered by non-native learners of English living in New York. They recorded six verbal monologues from three speakers each having a standard English, a New Yorkese and a Black English accent. Further, each monologue was accompanied by eight comprehension questions on its content.

Prior to the experimental session, the informants who consisted of 163 subjects whose proficiency in English varied from beginner to advanced, took part in a practice session which allowed them to be familiarized with the task. During the experiment proper the subjects answered in writing the comprehension questions on the particular monologue which they were also asked to rate on a seven-point scale based on ease of comprehension (1 = very easy, 7 = very hard).

The findings show that the three dialects tested differed in relative intelligibility for the adult non-native subjects. Black English was consistently the most difficult and standard English the easiest of the three.

While the two preceding studies involve the receptive competence of adult ESL learners of English, Eisenstein and Verdi (1985) are more concerned with working-class adult learners who in the words of Eisenstein and Hopper (1983: 48) are "those individuals who are in the process of acquiring the non-standard dialect of English spoken by

their neighbours, friends, or fellow workers".

113 working-class adult learners of English were administered the same test material as in Eisenstein and Hopper (1983) with one minor variation. Instead of rating subjectively the three (standard, New Yorkese and Black) dialects on a scale based on ease of comprehension, the listeners judged the speaker's characteristics along scales of friendliness, appearance and job status.

The results show that although these listeners had a considerable exposure to Black English, they nonetheless found it the least intelligible. These findings are similar to those obtained by adult ESL speakers (cf. Eisenstein and Hopper, 1983). As for the adult working-class learners' judgements of the speakers on tape, they closely paralleled the relative intelligibility measured objectively.

The major remark that one may make on these studies concerns the use of (higher) beginners for assessing the relative intelligibility of different native accents. A beginner does not yet totally enjoy the ability to perform such a task. This probably could account for the lack of clarity in the beginners' data in Eisenstein and Berkowitz (1981).

### III. 4. 2. NATIVE TO NATIVE AND NON-NATIVE

Irvine (1977) is mainly concerned with the problems experienced by non-native subjects in understanding spoken English. The researcher administered two experiments, one with a group of fourteen overseas students attending a course in management and the other with a group of twenty non-natives studying English. The investigator further included a group of native speakers to serve as a control.

In each of the above experiments, Irvine made the participants respond to pre-recorded word-lists and sentence-lists (for the latter he



used his own Test AIS method discussed in sub-section III. 1. 1.).

Irvine's results show a significant difference in scores between the native and the non-native speakers. The former consistently scored higher than the latter and their results did not "differ significantly from a perfect score" (Irvine, 1977: 314). The other finding in relation to this study concerns the discrepancy between these overseas students' good comprehension of written English and their poor comprehension of spoken English.

### III. 4. 3. NON-NATIVE TO NATIVE

In 1974 Tiffen carried out an investigation to establish the intelligibility of educated Nigerian English. The present study has great affinities with Tiffen's both in method (e.g. the different ways of collecting informants' responses as well as in the use of a control) and in material (e.g. the different test materials) and it has drawn heavily upon it in these two areas.

In assessing the intelligibility of Nigerian English Tiffen (1974) intended to measure it on the basis of the responses provided by the native British listeners. These responses were meant to exhibit the areas and causes that lead to unintelligibility.

24 first-year university students recorded the test material which contained a sample of free speech, a read-aloud text, a word-list for assessing lexical-stress, and sentence-lists for measuring phonemic accuracy, sentence accent and attitudinal meanings conveyed by intonation. These different materials represent the content of five separate tests designated as follows:

- 1- Test I: Connected Speech
- 2- Test II: Reading Passage
- 3- Test III: Phonemes

4- Test IVA: Stress

5- Test IVB: Intonation

To serve as a 'control' an R.P. speaker recorded a shortened version of the above tests. Further, during the editing of the recorded material, Tiffen divided the individual free speech samples and the reading passages into units equivalent to sense-groups bounded by pauses.

240 British subjects allocated in groups of ten to particular speakers were administered the various tests with the particular Nigerian speakers and the R.P. speaker in that order. In test I and Test II as well as in R.P. speaker's free speech the pauses inserted between the various units allowed the listeners to write these down. As for the remaining tests, the responses were collected through the multiple-choice method. Further, after Test I was taken down as a dictation task the listeners were asked to rate the particular speaker they heard along the Richards and Swaffield Opinion Assessment Scale Based on Effort (cf. sub-section III. 1. 5.). Moreover, the R.P. control ensured that only the best listeners were finally selected. Hence, 18 listeners were rejected because they obtained below the required score.

The scoring of Tests III, IVA and IVB was straightforward. In scoring Test I and Test II, Tiffen considered a unit to be either correct or incorrect depending on whether the meaning was understood or not. As for the subjective rating, the different scales were converted to numerical values (cf. sub-section III. 1. 5).

Tiffen considered Test I as the major criterion for measuring the intelligibility of Nigerian English. The mean intelligibility score of Nigerian English was 64.4% (ranging from 92.7% to 29.9%) while that of the R.P. speaker was 99.4%. So on average the R.P. speaker was more intelligible about 35% of the time.

In this study the different tests correlated highly with each other. In addition, there was also a high intercorrelation coefficient of .95 between the objective (dictation) and the subjective assessments of free speech.

The phonetic analysis of the actual errors that had caused unintelligibility yielded the following four categories: rhythmic/stress errors, segmental errors, phonotactic errors and lexical/syntactic errors. Among the foregoing types of error the rhythmic/stress one proved the most detrimental to intelligibility.

Finally, the different Nigerian speakers used in this investigation came from two ethnic groups: the Hausa from the North and the Yoruba from the South of Nigeria. Tiffen found that more of the Hausa speakers obtained intelligibility scores above average than the Yoruba speakers. This implies that lack of intelligibility was a result from the phonological interference from the mother tongue.

The interest in intelligibility by Olsson (1977) is primarily dictated by the need to construct a hypothetical model for predicting the intelligibility of an utterance. She, thus, states:

"I have hypothesized that the intelligibility of an utterance will depend on the extent to which the intended interpretation will be preferred to alternative interpretations." (p.57)

Olsson devised a framework within which one can measure the different degrees of deviance from the well-formedness of an utterance and therefore exhibit the degree of plausibility of the intended interpretation.

To test the above theoretical assumption, Olsson constructed two test materials: one oral and the other written. The oral test consisted of recorded 'disconnected sentences' containing one or more deviations. These utterances were elicited from 14-year-old Swedish children during

an oral proficiency test. 119 and 92 British informants took part in two separate tests respectively and had to correct and write down any utterance that they thought deviated from normal English usage.

The written test consisted of a continuous written passage of prose in which Olsson inserted a number of errors that 14-year-old Swedish school children had made during a written proficiency test. During the administration of this experiment 672 informants from England, Scotland and the United States were first asked to read the text with the errors in it. Finally, these informants performed a cloze test with the same text.

The analysis of the responses from both tests was carried out in terms of the model suggested earlier. The whole purpose of Olsson's study did not entirely consist of finding out the intelligibility level of her subjects' spoken language, but rather of verifying the model's predictions which were actually corroborated. Further, even with spoken utterances, Olsson's interest lay in setting up the errors due to grammar and vocabulary instead of pronunciation. In actual of fact, the whole study was concerned with the young Swedes' written production.

In a later investigation, Olsson (1984) used exactly the same material of her 1977 written test discussed above. However, while still interested in the Swedes' written production Olsson made use of non-native informants of English.

323 university students from Brazil and Finland (where English has an EFL status) as well as Singapore and Zambia (where English has an ESL status) took part in this study by performing the cloze task.

In conjunction with this study Olsson called upon the results obtained in 1977 and she found that the native (English) listeners were better interpreters than the non-natives. She also discovered that subjects with English as a second language (i.e. Singaporeans and

Zambians/performed better than those with English as a foreign language (i.e. Fins and Brazilians). Olsson found statistically significant differences between the 5 countries which she rank ordered as follows: England - Singapore - Zambia - Finland - Brazil.

Again, Olsson is more interested in intelligibility as a communicative error evaluation process of written production. Her 1977 work led her to find lexical errors being most detrimental to intelligibility.

In order to measure unintelligibility due to segmental phonology Murray (1982) recorded Japanese and Thai speakers of English reading words both in isolation and in carrier sentences. The author then presented the material to native Australian listeners who wrote down what they understood.

Murray's results show that the Japanese were more intelligible than the Thai speakers. As for the phonetic quality of the phonemes, informants had a tendency to confuse voicing and manner of articulation but did not have any problem with place of articulation.

#### III. 4. 4. NON-NATIVE TO NATIVE AND NON-NATIVE

The majority of studies on English intelligibility fall within the present category. The first to be considered is the work on cross-varietal intelligibility of English by Bansal (1966, and an abridged version in 1969) which is probably the first of its kind. The aim of the study was threefold: assess the communicative efficiency of Indian English, determine the features of this English variety that create unintelligibility and finally make suggestions for the enhancement of its efficiency.

Bansal collected samples of free speech of an autobiographical nature as well as three reading passages. He also devised word-lists

containing the R.P. segmental phonemes that posed a problem to Indians. The material also comprised sentence-lists which contained these phonemes as well as consonant clustering, lexical stress, weak forms and intonation. A further 'alternative-choice' word test was added to measure certain 'contrasts' such as functional stress change (e.g. 'absent, adj. vs. ab'sent, v.), that Indians find particularly difficult.

These different test materials were recorded by 24 educated Indians. In addition, four R.P. speakers were recorded to serve as a 'norm' for comparative purposes. 178 informants listened to all the speakers with a number of these informants attending two or even three sittings, which in fact gave a total of 234 listeners. The informants included Americans, Britons, Indians, Nigerians and Germans who took part in the experiments individually or in groups.

Before the final data collection, Bansal tried different methods for collecting the responses for free speech (e.g. 'shadowing'). He finally opted for the division of free speech and the reading passages into 'sense-groups' not exceeding 10 words each. In individual sittings listeners repeated word for word what they had heard from the preceding unit and any misunderstood lexical item was written down and kept as a record by the investigator. With group sessions, however, the informants wrote down the responses.

Any unit, whether sense-group or single word, was either correct or incorrect. Bansal worked out the individual speakers final score as a percentage representing the total number of units correctly decoded. In general, when a speaker (either R.P. or Indian) is listened to by members of his own speech community (R.P. and Indian respectively), s/he is highly intelligible. Moreover, if we take the intelligibility scores obtained by both the Indian and R.P. speakers with R.P. listeners with whom they obtained 70% and 97% respectively, it is clear that on

average, the R.P. speakers proved more intelligible 27% of the time.

It is also worth noting that native listeners (R.P. and Americans) found Indian English more intelligible than those who had English as a foreign language (i.e. Germans) and as a second language (i.e. Nigerians). Moreover, one must mention the Nigerians whose variety of English is well established (as in the case of Indian English) and yet they obtained the lowest results (even lower than the Germans').

Finally, among the likely causes of intelligibility failure, Bansal mentions segmental substitutions, syllable elisions, lexical stress, sentence accent, rhythm and intonation.

Wigdorsky-Vogelsang (1978) carried out an empirical investigation to find out how successful Chileans were in English when decoded by native British listeners on the one hand, and to determine the 'critical' errors that hampered this decoding process on the other.

Fifteen Chilean first-year teacher-trainees from the same university were selected. Each one of these students studied a cartoon and formed a 40-second long story in English while being recorded. Furthermore, the same procedure was used to collect six stories from six R.P. speakers who were to serve as a control. Thus, a total of 21 stories were collected.

Three separate groups of twelve R.P. listeners each were administered the fifteen (Chilean speakers') stories and each reported their responses in one of the following tasks:

- a- 'dictation': each story was divided into short ('semantically unitary') utterances bounded by pauses which allowed the listeners write down what they had heard from each previous utterance. To Wigdorsky-Vogelsang (1978: 32) this task which does not allow long periods of time for other competing interpretations to occur, "is mainly concerned with intelligibility, or decoding, to the virtual exclusion of comprehension proper".

b- 're-phrasing': each story was heard in its original unedited (i.e. without inserted pauses) form and the listeners wrote down in their own words what they had understood of each story. According to Wigdorsky-Vogelsang (1978: 33-34) who makes a distinction between 'intelligibility' and 'comprehensibility', the latter permits "inferencing or hypothetical anticipations" of what is intended by the speaker. Consequently, 're-phrasing' is chiefly a measure of comprehensibility.

c- repeated-dictation: this task is similar to a- (i.e. 'dictation') with the difference that the group of listeners involved heard each story twice and wrote it down twice. The aim of this test was to investigate whether repeating a task had any significant effect on intelligibility.

The same fifteen (Chilean speakers') stories were also administered to ten non-native speakers (2 Japanese, 2 Egyptian, 1 Hebrew, 1 Russian, 1 Malayan, 1 Mandarin, 1 Urdu and 1 Hindi) who rendered what they had heard in both dictation and re-phrasing. The six R.P. stories were heard by ten R.P. listeners who responded through dictation and six who re-phrased what they had heard.

The non-native listeners' results were consistently lower than those obtained by R.P. listeners. What is surprising, however, is the low percent scores obtained when R.P. speakers were heard by R.P. listeners. One would expect a near perfect intelligibility and more so for comprehensibility (cf. Bansal, 1969; Tiffen, 1974). Nonetheless, on average the R.P. speakers were more intelligible 12% of the time.

Further, since non-native listeners were used it would have been worth assessing their intelligibility/comprehensibility with the R.P. speakers. This could have provided a more accurate standard for comparing between the R.P. and non-native listeners' performance in listening to the Chilean speakers.



Wigdorsky-Vogelsang also found that in the repeat-dictation experiment there was no significant difference between the scores obtained for the first (intelligibility = 76.7%) and the second (intelligibility = 75.1%) hearings. That is, there was no positive effect on intelligibility due to practice-effect. As for the errors most detrimental ('critical') to intelligibility, Wigdorsky-Vogelsang found that pronunciation errors were the most critical, followed by semantic errors and then syntactic errors.

Bhatia (1972) was concerned with the intelligibility of Educated Indian English (EIE). For his study, he chose thirty EIE speakers who were recorded talking freely about one of the six topics provided by the researcher.

The researcher divided these thirty samples of free speech evenly into five test sets which he administered to 75 American English (AE) listeners, 50 EIE listeners and 25 other non-native (N-N) listeners. After hearing a speech sample, the participants answered 24 multiple-choice questions on the content of the sample.

The final scores were converted into intelligibility percentages. The mean percent scores obtained by the EIE speakers with the various listeners are as follows:

<u>MEAN % INTELLIGIBILITY OF EIE SPEAKERS</u>	
<u>AE LISTENERS</u>	87.76
<u>EIE LISTENERS</u>	77.86
<u>OTHER N-N LISTENERS</u>	76.92

Bhatia did not in fact find any significant differences between the intelligibility results obtained by the three listener-groups, although the native AE listeners were the better interpreters.

To verify the claim that stress, rhythm and timing had a negative effect on the decoding by native (particularly American English)

listeners of the pronunciation of non-native (particularly Indian) English speakers, Nelson (1984) constructed a study involving two stages. In the first stage, seven Indian English-speaking (IE) and five American English-speaking (AE) subjects read twice seventeen sentences while being recorded. These utterances consisted of contrasted pairs such as the following (note that the underlining is the present author's):

e.g. Speed kills is a well-known maxim.

Speedy kills are a lion's delight.

e.g. Fear is a bad enemy.

Fearful thoughts filled his mind.

(from Nelson, 1984: 150)

In uttering the above sentences, native AE speakers were expected to reduce syllable quantity of the derived words (i.e. 'speedy' and 'fearful') to be more or less equal in time with the base words (i.e. 'speed' and 'fear' respectively). Conversely, Nelson hypothesized that the IE subjects could not produce this difference.

Spectrograms were made and measurements carried out. Nelson (1984: 124) sums up the results as follows:

"For the IE speakers, the ratio of the length of speed to that of speedy was .66; for AE speakers, the ratio was .90. The figures for fear/fearful are more striking: IE--.56; AE--.97. In these examples, the hypothesis is borne out; i.e. the AE speaker reduces the length of time given to the base of the derived word, thus fitting the derived word into very nearly the same time as the base word, while the IE speaker does not."

For the second stage, Nelson attempted to assess the results yielded by the spectrographic analysis by presenting 20 IE pairs of sentences to both native and non-native listeners. Each pair of sentences consisted of two Indian English-speaking subjects who differed in their timing; that is, on the basis of the spectrograms one speaker had a near-native utterance timing while the other did not.

Eighteen native American and seven non-native informants (4 Malaysians, 1 Chinese, 1 Japanese, 1 South African) were asked to judge the relative intelligibility of members of the twenty pairs of sentences. Nelson predicted that for each pair item the speaker who had obtained (in the spectrographic analysis) the nearest timing ratio to that of the American natives was to be judged the most intelligible.

The above prediction was not proven. The informants consistently rated the second speaker in the pair as more intelligible. According to Nelson (1984: 128-131) this result was a consequence of a flaw in the design of the experiment. Due to practice-effect the listeners found the second speaker more intelligible than the first although the physical (spectrographic) evidence shows the opposite.

It is the belief of the present author that, although practice-effect (which could have been remedied by a prior randomizing of the items in the different pairs) is real, it only partly explains the apparently erratic behaviour of listeners. The answer to this result is probably due to the listeners' active processing of speech which constantly imposes interpretations to 'make sense' even when the physical signal indicates otherwise.

Following the study by Tiffen (1974), Ekong (1980) designed an experiment to investigate the international intelligibility of one spoken variety of Nigerian English. While Tiffen's sample of speakers covered a broad range sharing the variable of educational level, Ekong's sample (13 in total) consisted of the 'best' speakers of the variety studied.

Ekong collected from each speaker a one-to-two minute sample of free speech which she later spliced into sense-groups bounded by a pause at either end. She also recorded a similar sample from a speaker with standard Southern British English for comparative purposes.

Seven listeners (1 from Canada, 1 from England, two from the U.S.A, 2 from Nigeria and 1 from Zimbabwe) all living in Nigeria with lengths of stay varying from one week to four years, heard each speech sample and responded by writing exactly what they had perceived. They also rated the individual samples along Richards and Swaffield's Opinion Assessment Scale Based on Effort (cf. sub-section III. 1. 5.).

On the basis of each listener's responses and, therefore, results in both assessments, Ekong worked out an average for each speaker which was then percentaged. The overall score in both tests for the Nigerians and the British was as follows:

	<u>DICTATION TEST (%)</u>	<u>SUBJECTIVE TEST (%)</u>
<u>BRITISH SPEAKER</u>	81	82
<u>NIGERIAN SPEAKERS</u>	82	70

The above results show first, that there was no correlation between the dictation and the subjective tests for at least the Nigerian speakers. This led Ekong (1980: 8) "to question the reliability of the impressionistic test for determining degrees of intelligibility". This finding shows a complete disagreement with Tiffen's. Another major difference with Tiffen's results concerns the level of intelligibility of the Nigerians who were 101% as effective as the native British in the dictation task and 91% as effective in the subjective assessment.

If one looks at the scores obtained in the dictation test by the British (81%) and the Nigerians (82%), one can infer that they were equally intelligible. This is also in total disagreement with Tiffen's results who found the Nigerians to be on average 65% intelligible. A number of reasons can help one anticipate the discrepancies between the two investigations. The major reason lies in the fact that familiarity with the speaker's accent: while Ekong ensured that all her informants had prior contact with Nigerian English, Tiffen's listeners had never

had such a contact. Familiarity with an accent may also account for the different results obtained by the R.P. speaker in Tiffen's case (99%) and Ekong's (81%). For the former only native British informants listened to the R.P. speaker while for the latter the R.P. speaker was judged by subjects with at least four different English varieties.

Probably the difference with Tiffen's study lies with Ekong's aim which involved finding a suitable Nigerian variety that is 'internationally' intelligible (Tiffen restricted it to one national group). Hence, relying on her results Ekong suggests that an internationally intelligible Nigerian English does exist and that it is capable of standing as a model of spoken English for Nigeria.

Another study on the intelligibility of Nigerian English was carried out by Ayodele (1984 and 1985). The aim of this work was twofold: (1) assuming the existence of three varieties of Nigerian English, Ayodele decided to find out the intelligibility of each one of them as assessed by native British and non-native listeners, and (2) to discover the likely causes to the problems facing the speakers of the different varieties.

Samples of free speech were collected from (1) 40 teacher-trainees with a secondary school educational level, (2) 17 educated members of the 'general public' (e.g. people in offices, shops, churches, etc.), and (3) 23 university lecturers and T.V. broadcasters. Thus, a total of 80 Nigerian speakers were listened to by 64 native British sixth formers and 48 non-native speakers of English from the Overseas Education Unit of Leeds University.

The 112 listeners rated the different speakers along a rating scale constructed by Ayodele and called 'Spoken English Assessment Sheet'. This scale comprised the following five areas: pronunciation, stress, intonation, connectivity of utterance/fluency, and overall comprehensibility.

The results obtained through this rating prompted Ayodele to choose, out of the total sample of Nigerians, twelve speakers (six teacher-trainees and six from the rest) among whom one third had the best scores, the other third the middle scores and the last third the worst scores. Each one of these twelve speakers recorded speech samples were divided up and pauses inserted between short stretches of utterances (i.e. phrases, clauses or at natural pauses). Fifteen British listeners took part in this test which involved dictation.

Ayodele considered the results of the rating scale as the major measure of intelligibility for all the Nigerians. The different scores can be summarised as follows:

<u>CATEGORY OF SPEAKERS</u>	<u>% SCORES AWARDED BY BRITISH LISTENERS</u>	<u>% SCORES AWARDED BY N-N LISTENERS</u>	<u>OVERALL MEAN (%)</u>
Teacher-trainees	34.045	38.82	36.44
General public	56.66	56.98	56.82
Lecturers & T.V. broadcasters	77.19	76.47	76.83

The above percent scores and the statistical tests that Ayodele applied, show that significant differences exist between the performances of the three groups of speakers. The difference is even more so between speakers with a low (secondary school) degree of education (i.e. teacher-trainees) and those with a high degree of education (i.e. lecturers and T.V. broadcasters). Ayodele (1985: 35), thus states:

"that there is a positive relationship between speakers length of years of education and the degree of perfection in speaking English."

Due to the uneven number of subjects for each speaker-group (40, 23 and 17 respectively), Ayodele tried to remove the bias by using weighted means. The overall weighted mean for all Nigerian speakers was 56.69% which was almost equal to the score obtained through

dictation with the 12 Nigerian speakers and which was 57.13%. In fact Ayodele (1985: 34) considers this group of 12 as a good representative group for the whole sample.

As with Tiffen's conclusion (based on ethnic differences), Ayodele (1984) found that the performance of the teacher-trainees could be accounted for on the basis of the geographical zones of the country. He thus found a statistically significant difference and superiority of speakers from the far north over those of the central zone as well as the superiority of speakers from the deep south over those from the central zone. Ayodele further mentions stress and intonation as more important for making Nigerian English intelligible than segmental accuracy. He seems to share Tiffen's suggestion that the far north (or Hausa) speakers' high performance over the southern (or Yoruba) speakers can be accounted for by the phonological characteristics of the particular native languages. Ayodele (1984: 37) thinks that because Hausa is partly intonational and partly tonal it gives its speakers an advantage over those who speak natively southern (all tonal) languages when conversing in English.

### III. 4. 5. NATIVE AND NON-NATIVE TO NATIVE

Lane (1963) constructed two experiments to measure speech intelligibility as it is affected by both masking/filtering and foreign accent. The four speakers used had as their mother tongue English, Serbian, Punjabi and Japanese respectively. The non-native subjects had little training in spoken English before coming to the U.S.A three months earlier.

The test material consisted of word-lists read aloud and recorded by all four speakers. Different levels of masking or filtering noise were subsequently introduced into the recording and presented to 24

American undergraduates who wrote down the individual words as they heard them. It is worth mentioning at this stage that Lane's experiment remains within the tradition of 'articulation' testing which is notorious for its artificiality.

Masking led to the diminution of intelligibility for both the native and the non-native speakers. However, the speech of the latter group was about 40% less comprehensible than the native's under all experimental conditions.

The investigation by Rashid (1976) aimed at assessing the intelligibility of British-based Punjabi teachers of English to native British children and analysing the major causes of intelligibility failure.

Nine Punjabi and seven British speakers recorded the test material which comprised free speech, a word-list, a word-list with 'alternative choices', a sentence-list and a story. 54 British school children who had never had any previous contact with Punjabi English-speaking subjects, took part in the experiment.

The results were converted into intelligibility scores. The overall means for the Punjabi and British speakers were 49.0% and 66.5% respectively. However, Rashid considered the sentence-list material test as the major criterion for intelligibility assessment of both groups of speakers. Thus, the mean scores obtained in this test by the Punjabi and British speakers were 45.3% and 70.2% respectively. On average, therefore, the native speaker is more intelligible than the Punjabi about 25% of the time.

It appears to the present author that Rashid's decision to use the results obtained with sentence-list tests and make generalizations on the intelligibility of his speakers is not appropriate. Single sentences are artificial and far removed from what really occurs in real-life interactions. It probably would have been more positive to use the



results for the free speech test or the story-telling test to make these generalizations.

### III. 4. 6. NATIVE AND NON-NATIVE TO NON-NATIVE

Razook (1983) set out to investigate the intelligibility of normal conversational English by Iraqi learners through the use of two tests. Test I consisted of four short dialogues whereas Test II comprised sentences (to measure intrusive [r], weak forms, syllabic consonants, contrastive stress, word elision), short utterances (to test segment elision) and single words (to measure unreleased final plosives, stress-shift with and without vowel quality changes, stress as a distinguishing feature noun/verb and noun-phrase/compound pairs).

The above test materials were recorded by two R.P. speakers and two Iraqi speakers. Razook hypothesized that the materials recorded by the native speakers would be more difficult to understand than those recorded by the non-natives (i.e. Iraqis).

Thirty Iraqi elementary school teachers took part in the experiment which involved the writing down of all responses. The number of correct responses for each listener was converted into a percentage. Razook's results proved his hypothesis and listeners consistently scored higher when listening to an Iraqi than to an R.P. speaker. Further, the average score for all Iraqis was about 39% (the highest and the lowest scores were 59% and 27% respectively).

Another study in the present category was carried out by Smith and Rafiqzad (1979) to compare the degree of intelligibility between educated non-native and educated native varieties of English. Eleven 10-minute samples of speech were collected from 9 speakers from nine different countries<sup>17</sup>. 1386 people scattered around 11 Asian countries<sup>18</sup> took part in the listening sessions. All the participants listened to all

speech samples and completed a cloze test for each one of them. Moreover, all respondents were asked to give a (subjective) estimate of their understanding of particular samples.

One major finding was that the order of difficulty for the 9 speech samples was similar to the different groups of respondents. For example, the researchers were surprised to discover that the native American accent was consistently among the least intelligible especially because Smith and Rafiqzad had expected it to score highly. The most intelligible varieties were those from Sri Lanka, India, Japan and Malaysia in that order. The authors also found that there was a high correlation between the listeners' subjective assessment based on understanding and their objective measurement.

It is unlikely that the same results would be obtained if the sample of respondents were to include different linguistic backgrounds. The use of respondents from the same geographical region (Asia in this case) and the possible linguistic similarities between their respective languages may have a bias towards Asian varieties of English. Probably, the inclusion of other regional varieties (e.g. Africa, Europe, Middle-East, etc.) in their study could have given better answers to Smith and Rafiqzad's questions.

Wilcox (1978) and his colleagues at Nanyang University in Singapore set up an experiment to find out, first which out of four accents of English was the most intelligible to 320 Singaporean students and second, to compare the results of a multiple-choice test and those of a cloze test.

Four native speakers of General American, R.P., Australian and educated Singaporean-Malaysian English each recorded four texts read aloud. The student sample was divided into four groups which were administered one text (with one particular accent) each every week for

four consecutive weeks. Thus, each group listened to all the texts read by the four different speakers. Moreover, in each session the informants performed the multiple-choice test and then the cloze test.

The results show that in general, the Singaporean-Malaysian accent was the most intelligible, with R.P. the second best and the Australian accent in third position. The American accent proved the least comprehensible. Furthermore, there was a significant difference between the intelligibility scores obtained in the multiple-choice test and in the cloze test.

Although Wilcox (1978: 124-125) admits the shortcomings in the way of constructing the tests and tries to review a number of possible factors that had a likely influence, he fails to state that the lack of correlation between the two tests may be due to the order in which they were presented and, therefore due to a (learning) practice-effect. A possible solution to this problem could have been to administer the two tests to two separate but matched groups of informants.

### III. 4. 7. NATIVE AND NON-NATIVE TO NATIVE AND NON-NATIVE

The study carried out by Smith and Bisazza (1982) intended to find out whether any difference in intelligibility exists when native and non-native listeners were exposed to native and non-native spoken English.

One American, one Indian and one Japanese subject each recorded the three versions of the Michigan Test of Aural Comprehension (MTAC). 207 listeners from seven countries<sup>19</sup> were administered the different versions and answered the questions on them. In addition, the listeners also made subjective comments on the three speakers in terms of ease of comprehension, as well as guessed the nationality of these speakers.

Although listeners consistently failed to guess the exact nationality of the speakers, their subjective assessments highly correlated with the objective results obtained with the MTAC. As for the speakers, the American judged as the easiest obtained in fact the highest score, while the Indian speaker assessed subjectively as the most difficult proved so in the objective measurement. As listeners, Americans proved the most powerful interpreters followed by those who came from countries where English had an ESL status. The least effective listeners came from countries where English had an EFL status.

According to Smith and Bisazza, the differential comprehension of Indian versus Japanese English can be explained on the basis of the listeners' greater exposure to Japanese represented by a good proportion of the population in Hawaii where all the listeners lived at the time of the test.

### III. 5. SUMMARY

The literature reviewed in this chapter showed that in intelligibility assessment, researchers used both objective and/or subjective methods to collect responses from informants. The objective methods included dictation, cloze procedure and multiple-choice while subjective assessments involved scales of varying levels and content.

We have also seen that in recording data from speakers, investigators collected 'texts' or free speech samples and/or elicited prepared material such as reading passages, word-lists and sentence-lists.

Interdialectal intelligibility studies provided evidence to prove that linguistic similarity does not automatically lead to mutual intelligibility. Rather, one needs to consider socio-psychological factors as well as contextual cues.

'Context' and linguistic cues are varied and when added together make speech enormously redundant. This, coupled with the listener's active process of decoding speech, renders even unintelligible parts comprehensible.

When native and non-native varieties of English were assessed for their intelligibility, the native variety proved almost always the most effective and obtained perfect or near-perfect intelligibility scores. As listeners also, natives usually displayed more ability to understand both natives and non-natives and proved, therefore, better interpreters.

### NOTES TO CHAPTER III

- 1 Cf. Foulke and Sticht (1969: 53) for two other methods of intelligibility assessment.
- 2 Cohen, A. (1980), Testing Language Ability in the Classroom, Rowley, Mass..
- 3 Two more methods exist called 'clozentropy' and 'multiple-choice' (cf. Brown, 1980).
- 4 Sr. Barbara M. Loe, O.S.B., (1964), Immediate Memory Span in English and Chinese Sentences of Increasing Length, (unpublished M.S. Thesis), Georgetown University.
- 5 Ayodele (1983) considers speakers and listeners as 'direct' and 'indirect' subjects respectively.
- 6 Richards, J.C. (1971), "Error analysis and second language strategies", Language Sciences, Vol. 17, pp. 12-22.
- 7 Examples of different modes of speaking include whispering, talking with a cigarette or food in the mouth.
- 8 In the situational context Catford (1951: 13) includes "the speaker and the hearer themselves, and their relative positions and actions at the moment of utterance (e.g. the speaker's gestures), various objects in the surroundings (or in the 'universe of discourse') and their relations to the speaker and hearer (e.g. whether or not the hearer can see what the speaker is talking about), the hearer's linguistic background and experience, his educational and cultural background, etc."
- 9 McNaught, J. (1978) The Prosodic Competence of a Sample of French Speakers of English, unpublished M.A. dissertation, University of Manchester.

10 The two following quotations show the importance given to lexical stress by the two schools of thought on lexical stress:

"...for knowing where to place stress is part and parcel of what we mean when we say that a person has command of English" (Halle and Keyser, 1971: 3)

"...one would expect that identification of lexical stress pattern would play a large part in word recognition during language comprehension. And indeed it does" (Cutler, 1984: 79)

11 In the analysis of 12 speakers' spontaneous English speech by Maclay and Osgood (1959), four hesitation-types are proposed and defined as follows:

- 'repeats' are defined as repetitions of any stretch without semantic significance; e.g. "I I was very surprised"

- 'false starts' are utterances which are incomplete (as in i-) or self-interrupted (as in ii-)

e.g. i- "I saw a very ..."

ii- "I saw a very big/ a very small boy"

- 'filled pauses' which have voicing as their exponent, e.g. [ɜ:].

- 'unfilled pauses' are manifested by silence or non-phonemic lengthening of phonemes.

12 Leeson (1975) discusses a number of factors in the evaluation of fluent speech. He includes all the parameters of performance which are: phonological, syntactic and semantic accuracy, tempo and control of hesitation devices, intonation, rhythm, sociolinguistic control as well as the capacity to decode.

13 "A hearer's *threshold of intelligibility* may be defined as the point on a rising scale of perfection and/or execution at which a speaker's utterance in a given context becomes completely intelligible for that hearer" (Catford, 1951: 13).

- 14 Shannon, C. E. and Weaver, W. (1949) The Mathematical Theory of Communication (1972 edn.). Urbana, Ill.: University of Illinois Press.
- 15 For the intelligibility of other languages, cf. Ihebuzor (1982) for example, for the intelligibility of Nigerian speakers of French.
- 16 It is worth mentioning at this point the large body of research on the speech intelligibility of certain groups such as for example, 'elderspeak' or the variety spoken to or by the aged (cf. Cohen, 1979; Cohen and Faulkner, 1986) and 'motherese' or the speech of a mother to her baby (cf. Bard and Anderson, 1983; Laver and Bard, 1981).
- 17 The countries were Sri Lanka, India, Japan, Malaysia, Nepal, Korea, The Philippines, United States and Hong Kong.
- 18 The Asian countries included Bangladesh, Republic of China, India, Indonesia, Hong Kong, Japan, Korea, Malaysia, Nepal, The Philippines and Thailand.
- 19 The seven countries were The United States, Hong Kong, Japan, India, Taiwan, The Philippines and Thailand.



## CHAPTER IV

### TEST-MATERIAL, SPEAKERS AND THE RECORDING OF MATERIALS

#### IV. 0. INTRODUCTION

In general, intelligibility studies presuppose the question: "who is intelligible to whom?". It is, therefore, important to define the two populations that are likely to be at either end of the operation. The subject-matter of the present study is devoted to the intelligibility of Algerian speakers to a British audience. However, the following chapter is particularly concerned with everything that is linked, in one way or another, to the speaker and for our purposes the Algerian speaker (cf. Chapter V for everything that is connected with the British informant). We will, therefore, examine the design and content of the material to be elicited by the Algerians whose personal and educational background is also considered. Finally, the different procedures used in the collection of material are discussed and described.

#### IV. 1. DESIGN AND CONTENT OF THE TEST-MATERIAL

##### IV. 1. 1. APPROACH TO THE PROBLEM

Any language variety, including non-native ones, diverges from other varieties to differing degrees. In the case of the Algerian speakers of English, their variety of English is different from R.P.. According to Corder(1973: 226): "the most obvious way in which differences between languages show themselves is in the mutual intelligibility of their speakers"<sup>1</sup>. Hence, the present study intends to investigate the phonetic/phonological differences of the English spoken by advanced Algerian subjects. To perform such a task one, therefore, needs to gather enough data. The collection of this kind of data can be

done in two stages. First, spoken material needs to be collected from advanced Algerian subjects. Second, this raw material, after being properly edited, will be presented to native English informants for their evaluation (cf. Chapter V).

The first task, therefore, is to decide on the material to be recorded by the Algerian speakers at a later stage. But what do we need to record? Since what is similar between native and non-native varieties does not normally lead to any communication breakdown, it is, thus, more productive to consider differences which represent the areas more likely to create miscommunication.

The difference between varieties (or languages) can be discovered by comparative procedures and techniques. The first type of procedure is 'contrastive' (or interlingual) and entails:

"the process of comparing different languages... The languages involved are, in the first place, the mother tongue of the learner and the second language... But it may well be that we should also take into consideration any other languages the learner already knows. This actively yields an account of the differences between L<sub>1</sub> and L<sub>2</sub>." (Corder, 1973: 148)

For the Algerian speaker one could compare Arabic and French with English, since s/he is bilingual in Arabic and French in the first place. As applied to phonological systems, contrastive analysis provides comprehensive descriptions of the sound patterns and distributions of the three languages. These descriptions allow the researcher to predict the areas of the target accent (i.e. R.P.) which are likely to cause problems to the non-native speaker/learner; this results from effects due to a negative native language transfer.

One of the most detailed empirical studies of the negative effects of interference from the native language on the speaker's pronunciation of the non-native language was carried out by Brière (1966). Brière's

test-material consisted of tape-recorded words containing fourteen un-English sounds taken from French, Arabic and Vietnamese languages. These recordings were then administered to 20 American students who listened to and repeated them. The students' responses were recorded and transcribed. Brière set up the difficult sounds in rank order based on the mean number of correct reproductions by the students. The results show that while most of Brière's predictions were confirmed, some were not. For example, a major finding involves [χ] which does not exist in American English but proved easy for the speakers to produce. Therefore, the claim by contrastive analysis which views any difference between say two languages as a source of difficulty for the nonnative speaker is not always self-evident. Furthermore, as far as the phonetic/phonological level across languages is concerned, Corder (1973: 255) concludes:

"It looks, therefore, as if in the present state of linguistic knowledge, between the message and its physical expression in sound, there is a fundamental lack of common categories and relations available for really adequate comparison between two languages."

The second comparative procedure for establishing differences between languages is called 'error analysis'<sup>2</sup>. According to Soudek (1977: 126):

"Parallel to and often overlapping with contrastive analyses are experimental investigations of systematic errors persistently committed in the target language by speakers of a different phonological source system"

The comparison in error analysis does not concern two already known and described languages but rather the 'language' of the non-native learner/speaker (or 'interlanguage') with the target language. Therefore, interlanguage is taken as a language variety in its own right because of the systematicity of the errors produced by the speaker,

hence, following a set of rules.

As far as the present investigation is concerned, the researcher made use of both contrastive analysis and error analysis to construct the test-instrument. The error analysis approach made use of the researcher's experience in teaching Algerian learners and with their mispronunciations (e.g. cf. Benrabah, 1975 and Benrabah, 1985). Moreover, in parts of the material, the investigator made an attempt to test some predictions based on comparative (contrastive) observations derived from the major phonetic/phonological features dealt with in Chapter II.

Tarone (1978: 18) believes interlanguage phonology "to be variable, that is, highly sensitive to shifts in communication situation, speaker mood, etc.". Since the present study is concerned with advanced Algerian speakers' interlanguage phonology one needs to bear in mind Tarone's point. Concerning data collection, Tarone (1978: 18) further remarks:

"It is this writer's opinion that if researchers' results are to be at all applicable to L2 learner speech and speech perception in the classroom and in the real world, an attempt should be made to gather spontaneous speech data. Certainly researchers should avoid the testing of isolated speech segments in artificial settings."

To measure the intelligibility of the Algerians' interlanguage, it is important to consider test material which reflects the normal everyday-life situation for communication through the spoken medium. As a matter of fact, the ideal way for investigating intelligibility is to have both Algerian and British subjects in a face-to-face interaction. This method, however, has the following two disadvantages: 1) for any empirical investigation, one needs a large number of subjects to provide a wider basis for generalizations and practically, this is impossible; 2)

for any probing, one must be able to control the experiment in order to collect, analyse the data and find out results at a later stage.

What is left as a means of data collection involves mechanical recording of speech. Recorded speech, however, does not reproduce the ideal situation for interaction through the spoken medium because recordings do not show all the clues that are normally present in a natural setting. For example, gestures, body movements, lips of speaker, context of situation, etc., which are normally provided in a face-to-face interaction are missing. Despite of all these disadvantages, experiments with recorded material remain the only practical way of conducting investigations such as the present one.

The next important questions relate to where and how the recordings are going to be made. It is a well known fact that locations where real spontaneous speech occurs are poor places for high fidelity recordings. Furthermore, recording in a noise free room in front of a microphone will certainly have an effect on the spontaneity of speech. For the purpose of the present study, however, the last two handicaps are cancelled by other factors such as a good quality recording for later administration to native informants.

The next major aspect of material collection concerns the kind and amount of data to be recorded. It could be enough to take a random sample of natural speech for each speaker from a conversation between two or more subjects. This type of material would not be convenient for the present kind of research and it was considered more appropriate to have a relatively long stretch of speech that is likely to be an independent piece of discourse. The monologue is best suited for the present study.

To be able to control the Algerian speakers' utterances further, it was thought appropriate to include a sample of written material to be

read aloud because most of the subjects do a great deal of reading in the course of their day-to-day occupation as teachers. The major objection<sup>3</sup> to this kind of material relates to the speaker's ability to read; that is, subjects vary a great deal in their reading ability.

Evidence also exists to support the idea of reading being language specific and, hence, a further problem for the non-native speaker (cf. Alderson, 1984). It also appears that 'untrained' readers sound different when speaking freely (Anderson, 1970: 44).

While isolated items such as words in isolation and single sentences<sup>are</sup> an artificial way of collecting and analysing data (cf. Tarone's quotation earlier), they are, however, a productive way of assessing specific levels by allowing the researcher to manipulate certain predictions such as the likely errors that Algerian speakers may make at the segmental level for instance.

#### IV. 1. 2. CONTENT OF TEST-MATERIAL

The test-material to be presented to the Algerian speakers for recording will include a sample of free speech, a written text to be read aloud, a number of carrier sentences for measuring phonemic contrasts, sentence accent, intonational meaning and lexical stress which is also tested with words in isolation.

##### IV. 1. 2. 1. FREE SPEECH SAMPLES

The type of spoken material which is nearest to that used in a real language situation can be obtained by either choosing a topic (or topics) for the speaker beforehand or letting her/him talk about whatever s/he likes. In both cases, however, preference must be given to common and everyday-life situations which are more likely to be within the experience of all speakers.

The freedom of choice has an advantage over the other method in that the speaker can carry on talking without running out of ideas because s/he feels confident and has enough ideas. Nonetheless, individuals are erratic and could easily prove us wrong.

Consequently, it was thought wise to prepare a topic (or a set of topics) to allow speakers to choose from as a last resort. One topic which proved popular among nearly all Algerian subjects concerned a first journey abroad. The major advantage is that this topic encourages the speaker to give a step by step and, hence, structured account of her/his personal experience. Moreover, one's first journey abroad is never forgotten (whether positive or negative) and provides a great deal of information to be narrated. It is also unique and an informant cannot, therefore, predict what comes next.

The topic of a journey proved popular (22 speakers chose it). Furthermore, it was decided that in order to avoid substantial numbers of place names which could be foreign to the British informants, the speakers were asked to talk preferably about a journey to Great Britain. This requirement had the advantage of allowing us measure the speakers' ability to pronounce British names as well as check whether the informants understood them.

The other important advantage of a narrative about a journey abroad concerns the possibility of having almost the same prompting material (mostly questions) ready in case the speaker runs out of ideas and needs help. This is especially relevant because the Algerian subjects were expected to talk for at least five minutes each.

It is important to point out that all speakers were first given the freedom to choose whatever subject they liked and the topic of a journey abroad was the present researcher's suggestion as a last resort.

The different topics for the free speech samples and the speakers who chose them can be listed as follows:

<u>Topic for free speech sample</u>	<u>Speakers' No.</u>
-journey to Great Britain	2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 19, 20, 21, 22, 23.
-journey to France	1, 18, 24.
-job as teacher of English	6.
-choosing to study English at the university	13

#### IV. 1. 2. 2. READING PASSAGE

In a task involving the reading aloud of a written passage, the speaker is no longer free to choose his own words as these are provided by the researcher. This type of exercise allows the experimenter to control his subject and prevent him from making lexical and syntactic mistakes and unwanted pauses and hesitations. In the absence of all these undesirable variables, one is left with only the phonological contrasts to investigate. Furthermore, unlike free speech where the researcher is not sure of collecting all the contrasts from the speaker, in reading the subject produces all that is required of her/him.

Moreover, the passage<sup>4</sup> to be chosen must fulfill the following criteria: it should

- contain about 100 words;
- be written in a colloquial (not slang or literary) style;
- be written in modern English;
- not contain terms too technical or unfamiliar to the native informants;
- contain all R.P. phonemes;
- cover a plain and ordinary subject-matter.

The reading passage finally adopted (cf. Appendix C) was kindly provided by a member of staff from the Phonetics Department



(University College London) and served as a reading passage in the UCL English phonetics examination for foreign students in June 1979.

The text itself contains all R.P. phonemes. Each vocalic and consonantal phoneme is represented below with an illustration from the reading passage.

/i:/ <u>e</u> ven	/p/ <u>p</u> lace
/ɑ:/ <u>a</u> unt	/b/ <u>b</u> oy
/ɔ:/ <u>s</u> aw	/t/ <u>d</u> isturbed
/u:/ <u>m</u> oved	/d/ <u>d</u> own
/ɜ:/ <u>d</u> isturbed	/k/ <u>c</u> ouldn't
/ɪ/ <u>i</u> rritate	/g/ <u>f</u> orgive
/e/ <u>s</u> ettle	/tʃ/ <u>ch</u> anged
/æ/ <u>v</u> anished	/dʒ/ <u>g</u> enuinely
/ʌ/ <u>c</u> ut	/f/ <u>f</u> riends
/ɒ/ <u>t</u> olerance	/v/ <u>v</u> ase
/u/ <u>w</u> oods	/θ/ <u>th</u> ings
/ə/ <u>a</u> way	/ð/ <u>th</u> at
/eɪ/ <u>ch</u> anged	/s/ <u>s</u> till
/aɪ/ <u>q</u> uite	/z/ <u>b</u> usiness
/ɔɪ/ <u>b</u> oy	/ʃ/ <u>s</u> ugar
/əʊ/ <u>h</u> ome	/ʒ/ <u>l</u> eisurely
/aʊ/ <u>d</u> own	/h/ <u>h</u> ome
/ɪə/ <u>r</u> ealised	/m/ <u>m</u> oved
/ɛə/ <u>w</u> here	/n/ <u>a</u> unt
/ʊə/ <u>p</u> oor	/ŋ/ <u>th</u> ings
	/l/ <u>t</u> olerance
	/r/ <u>r</u> ambled
	/j/ <u>u</u> se
	/w/ <u>w</u> oods

#### IV. 1. 2. 3. SENTENCES WITH PHONEMIC CONTRASTS

The aim of the present test is to investigate the real or potential difficulty from the part of the Algerian speaker in mastering certain phonemic contrasts in R.P..

The material for this task was derived from error and contrastive analyses mentioned earlier (cf. sub-section IV. 1. 1.). On the segmental level, vowels and especially lax vowels present most difficulty to the Algerians. Diphthongs can also prove problematic. As far as vocalic quantity is concerned, clipped (or shortened) tense vowels tend to be replaced by lax ones.

Out of all R.P. consonants, the following are the most difficult for Algerians to pronounce accurately [θ, ð, ʒ, ŋ]. In addition, a lack of appropriate aspiration for /p, t, k/ could lead to a misperception by the informants (as /b, d, g/ respectively). Further, R.P. fortis consonants are likely to undergo a process of assimilation of voicing in the vicinity of voiced consonants. Finally, complex consonant clusters are likely to be reduced by the Algerian speakers.

All the segments to be tested are individually embedded in single words that are in their turn included in a carrier sentence. Each sentence will be read by the speaker from a type-written page giving no hint on the part of the sentence that interests us. The different sentences of the test-material<sup>5</sup> are presented below numbered from 1 to 38 and divided into major error categories. The segments tested have their spelling printed in italics although when presented to the speaker they were in normal printing.

i- lax vowels

- |   |             |
|---|-------------|
| 1- Let's all live together.                         | (leave)     |
| 2- This is where I slept.                           | (slipped)   |
| 3- The men will arrive soon.                        | (man)       |
| 4- The room was full of old rags.                   | (rugs)      |
| 5- John will come as soon as he's finished packing. | (parking)   |
| 6- Were there any buds on the tree?.                | (birds)     |
| 7- When you came, I had been wandering.             | (wandering) |
| 8- I saw a piece of cord on the table.              | (cord)      |
| 9- He shouted loudly 'full'                         | (fool)      |
| 10- I enjoyed watching the dancers last night.      | (dances)    |

ii- quality of tense vowels and diphthongs

- 11- Would you like to take the *lead*? (lid)  
12- Which *word* do you want? (ward)  
13- That *hole* is hardly large enough. (hall)  
14- We have to use a different kind of *code*. (cord)  
15- She's got a *pain* in her hand. (pen)  
16- You didn't mention the *beers*. (bees)  
17- We *found* him at the hotel. (phoned)

iii- quantity of tense vowels and diphthongs

- 18- He's drawing a picture of a *sheep*. (ship)  
19- The *first* train leaves at one o'clock. (fast)  
20- Tell *me*, have you got a *heart*? (hut)  
21- The first *man* was short. (shot)  
22- You should *taste* it before. (test)

iv- aspiration of /p, t, k/

- 23- We used to keep the *pills* in that box. (bills)  
24- Did you say '*time*'? (dine)  
25- I thought it was *cold*. (gold)

v- consonants [θ, ð, t, ŋ, ʃ]

- 26- All that the captain wanted was *tanks*. (tanks)  
27- He *thought* for a long time. (fought)  
28- The *southern* wind made the ship move. (sudden)  
29- It's a very long *whale*. (way)  
30- He *rang* when he received the letter. (ran)

vi- voicing of fortis consonants

- 31- Why don't you *try* it? (dry)  
32- That *bet* must have cost you a fortune. (bed)  
33- John broke his *back* again. (bag)  
34- You'll need a longer *rope* than that. (robe)  
35- That *man* has a very large *chin*. (gin)

vii- consonant clusters

- 36- I prepared many *texts*. (tests)  
37- '*Tenths*' did you say? (tests)  
38- The *girls* must come here. (girJ)

Every one of the above carrier sentences contains a key word that might lead to intelligibility breakdown. If the tested segment(s) within the key word is (are) mispronounced, the whole sentence becomes ambiguous and can lead the informants to understand the word between brackets or something else (obviously, the words between brackets on the right-hand side were not provided to the Algerian speakers). This type of sentence is capable of at least a binary choice in the later administration of this experiment to informants (cf. Appendix D).

#### IV. 1. 2. 4. MATERIAL FOR LEXICAL-STRESS

Lexical-stress in R.P. is likely to prove difficult for the Algerian speakers who are used to fixed stressed in French and especially Arabic. It was, thereby, decided to use contrasting pairs of words or phrases to measure the Algerian subjects' ability to handle lexical-stress patterns in English. These words and phrases were presented either in isolation or in carrier sentences.

The first type of contrasting pairs included compounds vs. nominal phrases. The different compounds and noun phrases were embedded into carrier sentences. Notice that single sentences including compounds or nominal phrases can be ambiguous especially if the spelling does not show whether it is a compound.

e.g. i- <u>compound</u>	<u>noun phrase</u>
the White House	the white house
hotplate	hot plate
greenhouse	green house
blackbird	black bird
ii- <u>compound</u>	<u>noun phrase</u>
French teacher	French teacher
woman doctor	woman doctor
passed on	passed on

The compounds and noun phrases in i- are easily distinguishable typographically; that is, in nominal phrases the elements are separated

while compounds are single words; compounds may also have capital letters in their orthography whereas noun phrases do not. In contrast, all instances of *ii-* are typographically similar for both compounds and nominal phrases.

The above complications led the researcher to provide a context for the sentences the speakers were to read. The different sentences in the test material are shown below and numbered from 1 to 4. Further, each test sentence is preceded by a context utterance printed in italics and preceded by R. (i.e. to be uttered by the researcher during the recording sessions).

R. *Where does John live?*

1- He lives in the white house.

R. *Where is the paper he passed the exam with?*

2- This is the paper he passed the exam with.

R. *What did she burn her hand with?*

3- The hotplate burned her hand.

R. *Is there a monkey in that tree?*

4- There is a black bird in that tree.

The second type of contrastive pairs to be considered for the test material belongs to that class of English words which can be distinguished solely by the shift of stress with or without accompanying changes in phonemic quality. This feature distinguishes between the noun/adjective and the verb forms in English.

It was decided to include the following words in the test material numbered from 5 to 10 with the following layout to be presented to the speakers during the recordings:

5- 'insult	or INSult	or noun
6- im'port	or imPORT	or verb
7- trans'fer	or transFER	or verb
8- 'convict	or CONvict	or noun
9- ob'ject	or obJECT	or verb
10- 'export	or EXport	or adjective

The words in 5- and 6-, when contrasted with their counterparts (i.e. in'sult and 'import respectively) need only stress shift, whereas in 7-, 8-, 9- and 10- stress shift is also accompanied by alterations of sound quality.

#### IV. 1. 2. 5. MATERIAL FOR SENTENCE ACCENT AND INTONATIONAL MEANING

Chapter II showed the remarkable similarities between languages in the meanings conveyed by intonation. The Algerian speakers of English should not, hence, be expected to perform badly at this level.

##### (1) SENTENCE ACCENT PLACEMENT

We saw, for instance, that both R.P. and Arabic achieved focus in almost the same manner. It was, however, felt necessary to include some material on the placement of sentence accent to test this assumption.

The content of this type of material consists of contrasts: i.e. shifting the nuclear accent ( within a single word-group) from one word to another for emphatic purposes, taking into account a different context each time. For example, in the sentence 'Mary likes fish', the nucleus can be shifted and fall on any one of the three words that compose the sentence depending on the speaker's intention and the context. For instance, in each of the following the nucleus falls on a different word (which is underlined) because the speaker wants to convey a specific meaning (enclosed between brackets):

- e.g. i- John likes meat (i.e. not fish)
- ii- John likes meat (i.e. he does not hate meat)
- iii- John likes meat (i.e. not Paul)

Moreover, as far as context is concerned each of the above examples can be a response to each of the following questions respectively:

iv- Does John like fish?

v- Does John hate meat?

vi- Does Paul like meat?

The elicitation of the above material (i.e. i- to iii-) needs, therefore, an appropriate context. This was provided by the researcher. Below, numbered from 1 to 12, are the sentences for the test material on sentence accent and each one of them is preceded by a context question printed in italics.

R. *Does Mary like meat?*

1- No, Mary likes fish.

R. *Does John like fish?*

2- No, Mary likes fish.

R. *Does Mary hate fish?*

3- No, Mary likes fish.

R. *Will you swim across the Channel?*

4- No, I'll swim across the river.

R. *Will John swim across the river?*

5- No, I'll swim across the river.

R. *Will you jump across the river?*

6- No, I'll swim across the river.

R. *Is John a brilliant man?*

7- No, John's a brilliant actor.

R. *Is John a lousy actor?*

8- No, John's a brilliant actor.

R. *Is Peter a brilliant actor?*

9- No, John's a brilliant actor.

R. *Did you say open the bedroom window?*

10- No, I said open the bedroom door.

R. *Did you say shut the bedroom door?*

11- No, I said open the bedroom door.

R. *Did you say open the garage door?*

12- No, I said open the bedroom door.

All the above response sentences are contradictions to the assumptions implicit in the questions. It was felt necessary to provide in writing the whole answer for the speakers to avoid short answers

(which were also correct) such as 'Mary does.' as a reply to 'Does John like fish?'.

## (2) INTONATIONAL MEANING

Test material specifically designed to elicit intonational patterns are not simple to set up because as we saw in sub-section II. 6. 1. intonation does not occur out of context and in a given situation more than one possibility may be appropriate. A second aspect of the problem concerns both speakers and informants who are expected to perform role-playing and, thus, acting. Therefore, it shows the artificiality of the situation and the difficulty in getting the most natural patterns.

Nevertheless, the choice of test material is justified by the aim of the present research. It would probably be useless to present a random sample of free speech to the native informant for the purpose of isolating the effects of intonation patterns on intelligibility. Since all the speakers are (or about to be) teachers, the kind of responses to be collected must be similar to those found in a teaching situation. Finally, the type of material to be presented to the speakers is also justified by the need of comparability among the speakers; that is, the same material will be recorded by different speakers and presented to different informants.

The difficulty in collecting data on intonation remains especially since it is not easy to elicit what one wants from speakers (and also informants). A partial solution to the problem can be found by providing accurate 'contextualising statements' within a written dialogue read aloud. The speakers must also be reminded that the contexts are contrastive. It was thought that such useful steps would help the researcher to have a reasonably strict control over speaker and situation for the collection of the appropriate data.



One procedure that is likely to produce the desired effect involves sentence pairs. According to Cruz-Ferreira (1983: 151), "in these sentences, a meaningful difference is brought about by intonational features alone -either by tonality, tonicity or tone, or by a combination of these". The material for the present task will involve mainly tone for differentiating between the members of different sentence pairs.

In the following, each of the sentence pairs is numbered from 1 to 20 and incorporated into a self-contained dialogue between the researcher (R.) and the speaker (S.). During the recordings, speakers were asked to take into account the punctuation marks (e.g. question marks and full stops) and, when applicable, whatever prompting was between brackets (preceding or following the test sentence) without pronouncing it. Finally, the sentence-types tested included statements and statement-questions, wh-questions, yes-no questions, listing and commands and invitations.

i- statements and statement-questions

dialogue 1

R. *You told me that Paul was staying.*

S. Well, that's what he told me.

R. *When did he go?*

1- He went this morning.

dialogue 2

R. *I didn't expect him to go so soon.*

S. Why? What happened?

R. *Paul went this morning.*

2- (Did you say) He went this morning?

dialogue 3

R. *I like listening to his songs.*

3- You like him. (Don't you?)

dialogue 4

R. *Nobody likes John.*

S. I don't.

R. *But I like him.*

4- (Did you say) You like him?

ii- wh-questions

dialogue 5

R. *I'm afraid we're late.*

5- What's the time?

dialogue 6

R. *We must go now.*

S. There is no need to hurry.

R. *What's t...?*

6- (Did you say) What's the time?

dialogue 7

R. *I want you to go to England.*

7- Where (in England)?

dialogue 8

R. *I like travelling a lot.*

S. What's the last country you visited?

R. *I went to S... last year.*

8- Where (did you say)?

iii- yes-no questions

dialogue 9

R. *I go to the swimming pool every day.*

9- D'you like swimming?

dialogue 10

S. D'you like walking?

R. *No.*

S. D'you like running?

R. *No.*

S. D'you like fottball?

R. *No.*

S. D'you like ski-ing?

R. *No.*

10- D'you like swimming?

dialogue 11

R. *D'you remember the film we saw on TV last night?*

11- It's good, isn't it?

dialogue 12

R. *When I went to London, I saw a new film.*

S. What's it called?

R. *Gandhi.*

12- It's good, isn't it?

dialogue 13

R. *Teaching children is fun.*

13- You're a teacher, aren't you?

dialogue 14

R. *In my job you have to do a lot of explaining.*

14- You're a teacher, aren't you?

iv- listing

dialogue 15

R. *You told me you went to three countries.*

15- I went to France, Spain and England.

dialogue 16

R. *Could you tell me just some of the countries you visited.*

16- I went to France, Spain and England (...)

dialogue 17

R. *Did you buy the three items I asked you to?*

17- I got the meat, the bread, the milk.

dialogue 18

S. I bought at least 10 items from the shop.

R. *What have you got?*

18- I got the meat, the bread, the milk (...)

v- command and invitation

dialogue (instructions) 19

R. *How would you say 19 to one of your pupils who is usually late and who knocks at the door.*

19- Come in.

dialogue (instructions) 20

R. *Your friend knocks at the door and you want her to come in.*

20- Come in.

#### IV. 1. 2. 6. MATERIAL FOR THE CONTROL EXPERIMENT

Empirical evidence must be derived from experiments that are valid. The validation of an experiment can be achieved by using a 'control' measure which, in the present case, consists of the native speaker's performance. Besides providing validation, the native subject's results will serve as a measure against which one can compare the non-native speaker's performance. The native speaker possesses a 'functional' knowledge of his first language and "giving the experimental form of a test to native speakers of the language tested permits a partial validation of the test" (Lado, 1961: 75).

As for the content of the control experiment, it was decided to have a shortened version of what the nonnatives had recorded. The R.P. speaker (since there would be only one speaker for all informants) was recorded while talking freely about a journey in Great Britain. The second task involved reading aloud the same passage as the Algerian speakers (cf. sub-section IV. 1. 2. 2.). The final task included a random sample chosen from all the materials for phonemic contrasts, lexical stress, sentence accent and intonational meaning. The items chosen for the final task comprised the following:

##### i- phonemic contrasts

- 1- The men will arrive soon.
- 2- When you came, I had been wondering.
- 3- You didn't mention the beers.
- 4- We used to keep the pills in that box.
- 5- He thought for a long time.
- 6- He rang when he received the letter.
- 7- That bet must have cost you a fortune.
- 8- 'Tenths' did you say?

##### ii- lexical-stress

- 9- He lives in the white house.
- 10- The hotplate burned her hand.
- 11- 'Convict.
- 12- Ob'ject.

iii- sentence accent

13- No, I'll swim across the `river.

14- No, I said `open the bedroom door.

15- No, `I'll swim across the river.

16- No, I said open the `bedroom door

iv- intonational meaning

17- (Did you say) You `like him?

18- ,Where?

19- It's `good, ,isn't it?

20- I went to ,France, ,Spain and `England.

IV. 2. SELECTION AND BACKGROUND OF SPEAKERS

The test material discussed above was presented to a group of Algerian speakers for recording. In the next section, we discuss the criteria for the final selection of these speakers and also their background.

IV. 2. 1. CHOICE OF SPEAKERS

In order to be able to make generalizations about the results to be obtained, one needs a large number of subjects. It was, therefore, decided that 24 speakers would be enough for the purpose of the present study. Moreover, a more reliable control experiment would need one single R.P. speaker to be listened to by the total number of British subjects.

Beside the total number of speaking subjects, one must take into account the characteristics of the speaker population which is a major factor. The choice was finally made on a homogenous group sharing about the same educational and professional background; that is in order to be selected a speaker must be either:

i- a university graduate with (or about to have) a BA in English Studies.

ii- a (or about to be) teacher of English in a secondary school or an assistant of English at the university.

The latter criterion is actually dependent upon the former while the reverse is not true. To be able to teach at this level one must have atleast a BA; yet, this degree (or equivalent) does not necessarily involve a teaching post (e.g. the subject could be a translator, interpreter and so forth).

Before every single recording session, individual speakers were asked to fill in a copy of the sheet on the speaker's background which was later collected by the researcher (cf. Appendix E) for a specimen of this sheet).

#### IV. 2. 2. SPEAKERS' BACKGROUND

##### (1) PERSONAL DETAILS

All speakers wrote down their name and were later given a speaker number (from S.1 to S.24) based on alphabetical order.

##### - Speakers' age

All speakers reported their date of birth; thus the subjects could be allocated to age groups (at the time of the recordings) as follows:

Age between	Speakers' No.
21-25	S.3, S.7, S.21, S.22, S.23
26-30	S.1, S.2, S.4, S.8, S.13, S.14, S.15, S.18, S.19, S.20, S.24,
31-35	S.5, S.6, S.9, S.10, S.11, S.12, S.16, S.17

The youngest and oldest speakers are 22 and 35 years of age respectively and the average age for all the speakers is about 28 years.

##### - Speakers' sex

It was decided that the sample of speakers should include half female (i.e. twelve) and half male subjects. The following shows the allocation of speakers on the basis of their sex.

Sex	Speakers' No.
Female	S.1, S.3, S.5, S.6, S.8, S.9, S.10, S.12, S.14, S.16, S.21, S.22
Male	S.2, S.4, S.7, S.11, S.13, S.15, S.17, S.18, S.19, S.20, S.23, S.24

- Birthplace

21 speakers were born in places scattered around the western part of Algeria and only three were born abroad. These three subjects are listed below with the country of their birthplace and the period they stayed there after their birth:

S.2 : France (5 years)

S.21: Morocco (3 years)

S.22: Morocco (4 years)

- Residence

All speakers lived in Oran (the second largest city in Algeria and situated on the western coast) or nearby localities.

- Nationality

The speakers were all Algerian citizens.

- Occupation

As shown below, the majority of speakers were teachers. One, however, must remember that the graduating (i.e. final year BA) and postgraduate students are prospective teachers.

Occupation	Speakers' No.
university assistants	S.8, S.9, S.10, S.15
secondary school teachers	S.1, S.2, S.3, S.4, S.5, S.6, S.11, S.12, S.14, S.16, S.17, S.18, S.19, S.22, S.23, S.24
graduating (BA final year) students	S.13, S.20, S.21
postgraduate student	S.7

- Years of EFL teaching

The speakers can be further subdivided into those who had between 0 and 2 years and those who had more than 3 years of teaching English as a foreign language. Hence, these subdivisions will include:

years of EFL teaching	Speakers' No.
0-2 years	S.2, S.7, S.13, S.14, S.15, S.16, S.17 S.19, S.20, S.21, S.23, S.24
3+ years	S.1, S.3, S.4, S.5, S.6, S.8, S.9, S.10, S.11, S.12, S.18

- Mother tongue and language(s) spoken at home

The classification of speakers below shows that most speakers use either Algerian Arabic (13 in total) or Algerian Arabic and French (10 in total) at home. Only one speaker (S.16) reported using only French at home. This last subject reported both Algerian French and Arabic as mother tongues while all the others mentioned Algerian Arabic as the one and only mother tongue. In reality, it appears that all speakers are bilingual in Algerian Arabic and French with greater proficiency in the former which should, therefore, be treated as the 'dominant' language. Nevertheless, there are certain skills and, thus functions, that are associated with the two languages. For example, Algerian Arabic cannot be written and is solely spoken whereas French is both spoken and written by these subjects.

Languages spoken at home	Speakers' No.
French	S.16
Algerian Arabic	S.1, S.2, S.4, S.5, S.7, S.10, S.11, S.13, S.17, S.18, S.20, S.23, S.24
Algerian Arabic and French	S.3, S.6, S.8, S.9, S.12, S.14, S.15, S.19 S.21, S.22



- Fluency in other languages

Six speakers (i.e. S1, S.8, S.10, S.12, S.14, S.18) each reported speaking three languages: Algerian Arabic, French and English. The remaining speakers noted a further language in addition to the three just mentioned. Hence S.3 and S.16 spoke Spanish while S.5 spoke Italian and all the rest reported Modern Standard Arabic.

- Visits to English-speaking countries

Five speakers (i.e. S.1, S.6, S.13, S.18, S.24) had never visited any English-speaking country and those who had, had visited the United Kingdom only. As for the lengths of the visits and the respective speaker, they can be summarized in the following fashion:

<6 months	S.3, S.4, S.5, S.7, S.8, S.14, S.15, S.19, S.20, S.21, S.22, S.23
6+ months	S.2, S.9, S.10, S.11, S.12, S.16, S.17

(2) SPEAKERS' EDUCATIONAL BACKGROUND

All 24 speakers attended primary, middle and secondary schools in Algeria and specifically in the western part of the country. Moreover, all subjects attended the University of Oran where they obtained their BA in English Studies. Speaker No.5, however, started her BA in Algiers University and then moved to Oran to complete her degree.

Four speakers had not come directly from secondary schools after their 'Baccalauréat' before registering for a BA in English. Speakers No.2 and No.17 had spent two years in Leicester Polytechnic (United Kingdom) and four years in Manchester University (United Kingdom) respectively before coming to Oran University. S.13 had studied in a specialised institute (National Institute for Mechanical Engineering) for four years while S.20 had spent one year in an institute of education in Oran prior to the beginning of their BA studies.

A look at the details of the speakers' qualifications below shows that they all held the 'Baccalauréat' which is the minimum required to gain access to university and which is awarded after passing the exams at the end of secondary education. The subjects of these 'Baccalauréat' include mainly Arts (i.e. 'Lettres') studies but also Sciences (Speakers Nos. 2, 7, 12, 17), Technology (S.9) and Mathematics (S.13). Speaker No.12 passed her 'Baccalauréat' as early as 1968 whereas speakers No.21 and No.23 were the last among all speakers to pass their qualifying exam to enter university. Speaker No.12 also qualified for the BA as early as 1972. Speakers No.13, No.20 and No. 21 were the latest to gain their degree; in fact, they received their BA three weeks after the recordings took place.

#### SPEAKERS' QUALIFICATIONS

- S.1: Baccalauréat ('Lettres', 1978); BA (1978); C.A.P.E.S\* (1981)
- S.2: Baccalauréat ('Sciences', 1976); BA (1983).
- S.3: Baccalauréat ('Lettres', 1977); BA (1981); C.A.P.E.S (1983).
- S.4: Baccalauréat ('Lettres', 1975); BA (1979).
- S.5: Baccalauréat ('Lettres', 1971); BA (1975).
- S.6: Baccalauréat ('Lettres', 1971); BA (1976).
- S.7: Baccalauréat ('Sciences', 1979); BA (1983).
- S.8: Baccalauréat ('Lettres', 1974); BA (1977); D.E.A (African Literature, 1980).
- S.9: Baccalauréat ('Technique', 1971); BA (1974); D.E.A (British Civilisation, 1978).
- S.10: Baccalauréat ('Lettres', 1971); BA (1974); D.E.A (British Civilisation, 1981).
- S.11: Baccalauréat ('Lettres', 1972); BA (1975); C.A.P.E.S (1976).
- S.12: Baccalauréat ('Sciences', 1968); BA (1972).
- S.13: Baccalauréat ('Mathématiques', 1976; BA (pending January 1984).
- S.14: Baccalauréat ('Lettres', 1977), BA (1982).
- S.15: Baccalauréat ('Lettres', 1977), BA (1981).
- S.16: Baccalauréat ('Lettres', 1972), BA (1976), C.A.P.E.S (1983).
- S.17: Baccalauréat ('Sciences', 1974), BA (1983).
- S.18: Baccalauréat ('Lettres', 1975), BA (1980).

- S.19: Baccalauréat ('Lettres', 1977); BA (1981); C.A.P.E.S (1982).  
 S.20: Baccalauréat ('Lettres', 1978); BA (pending January 1984); P.E.M<sup>Ⓢ</sup> (1980).  
 S.21: Baccalauréat ('Lettres', 1980); BA (pending January 1984).  
 S.22: Baccalauréat ('Lettres', 1979); BA (1982).  
 S.23: Baccalauréat ('Lettres', 1979); BA (1983).  
 S.24: Baccalauréat ('Lettres', 1977); BA (1983).

- \* Abbreviation for 'Certificat d'Aptitude Professionnelle de l'Enseignement Secondaire' which is a professional test for teachers to undergo in order to be officially nominated at their post.  
 # Abbreviation for 'Diplôme d'Etudes Approfondies' which is equivalent to the first postgraduate degree (after the BA).  
 Ⓢ Abbreviation for 'Professeur d'Enseignement Moyen' which is a professional certificate held by teachers in middle schools.

The three speakers who had a postgraduate degree (i.e. D.E.A) were also assistants at the university. Among the two other qualifications reported, the C.A.P.E.S does not count as a degree but as a professional aptitude assessment. Finally, P.E.M is awarded after passing a two-year period training in an institute of education to become teacher in middle school.

All speakers reported starting learning English either at 12-14 years of age or at 15 and older. Hence, they can be classified as follows:

Starting age for learning English	Speakers' No.
12-14 years old	S.5, S.6, S.7, S.11, S.12, S.13, S.14, S.16, S.21, S.22
15+ years old	S.1, S.2, S.3, S.4, S.8, S.9, S.10, S.15, S.17, S.18, S.19, S.20, S.23, S.24

The number of years of learning English (both as a subject and a medium of instruction) varies among speakers and can be summarized in the following fashion:

Years of learning English	Speakers' No.
0-12years	S.3, S.7, S.14, S.15, S.19, S.20, S.21, S.22, S.23, S.24
13-16 years	S.1, S.2, S.4, S.8, S.10, S.13, S.18
17+ years	S.5, S.6, S.9, S.11, S.12, S.16, S.17

As far as the proportion of native English teachers is concerned, all the subjects reported that they had none in middle school. At the secondary level, ten speakers reported having a few natives and the rest had none. About half the staff were native English subjects for all the speakers at university level.

Finally, all speakers reported some phonetic training during their university education and those who visited the United Kingdom acknowledged it had improved their spoken English.

### (3) THE R.P. SPEAKER

The material for the control experiment was recorded by a female R.P. speaker who is a lecturer in Phonetics at University College London.

## IV. 3. RECORDING OF THE MATERIAL

The recording of the material by the Algerian speakers was carried out in Algeria between 25th December 1983 and 11th January 1984 in two cities: Oran and Ghazaouet. The equipment used consisted of a Sanyo stereo cassette recorder, model M7950LG and a Ross Electret condenser microphone, model RE-360. The recordings were made on 90 minutes' BASF Chromoxide cassette tapes. All the recording sessions

took place in private or school rooms free from extraneous noises that might affect the quality of the recordings. The final recorded material was in fact of very high quality. Each session was timed and the total recording time was 8 hours 20 minutes with an average of 20 minutes per session.

Before recording a subject, the researcher who supervised all the recordings, contacted her/him personally at work places such as secondary schools and the university campus. If the person volunteered, s/he was briefed on the task, given a copy of the reading passage to prepare and an appointment was made at a convenient place.

For every single recording session, the speaker sat comfortably at the right distance from the microphone and went through the different procedures described below.

#### (1) RECORDING FREE SPEECH

First, speaker and researcher talked about what the former would like to speak freely about (until stopped). After the topic was chosen the recording started (cf. sub-section IV. 1. 2. 1., for the different topics chosen by the individual speakers). During the recording of free speech, speakers No.3, No.4, No.8, No.9, No.11, No.13, No.15, No.17, No.19, No.20 and No.24 did not need any prompting and spoke non-stop for about five to ten minutes. The amount of prompting with the other speakers varied and consisted entirely of questions asked by the researcher. These questions were:

##### Speaker No.1

1. What happened after you landed? Did you fly again?
2. What did you do when you arrived to Marseille?
3. How long did it take to get to Aix-en-Provence?
4. What happened next? Did you do any sightseeing?
5. How long did you stay there? And did you visit any other places?

**Speaker No.2**

1. How many students were there?
2. Did you stay a long time with this family?

**Speaker No.5**

1. How was your journey?
2. What did you visit in London?

**Speaker No.6**

1. When did you start teaching?
2. How did you get to the university?
3. What do you think is the best way to improve your English?
4. Have you thought of visiting an English-speaking country?

**Speaker No.7**

1. Can you talk about how similar or different to Algeria is Britain?
2. Did you manage to make friends?

**Speaker No. 10**

1. Where did you stay in London?
2. Did you visit any interesting places?
3. Did you manage to make friends?
4. Did you find it difficult to understand and be understood by English people?
5. What did you do after you visited England?

**Speaker No.12**

1. How did you find the pupils?
2. How did you find English people?
3. Did you find it difficult to understand and be understood by English people?
4. Did you visit any interesting places?

**Speaker No.14**

1. Why didn't your brother-in-law wait for you?
2. Did you visit any interesting places?

**Speaker No.16**

1. What else did you do apart from attending the course?
2. Did you manage to make English friends?
3. Was it easy for you to understand and be understood by English people?
4. Was it the only visit you made to England?

**Speaker No.18**

1. What happened on the boat?
2. When you reached France, what did you do?

Speaker No.21

1. Can you talk about your visit to Great Britain?
2. How did you travel?
3. What else did you do?

Speaker No.22

1. Did you visit other interesting places?

Speaker No.23

1. What happened after you arrived to England?
2. Did you go out at night? And did you meet English people?
3. When did you leave London and how did you get back to Algeria?

The amount of material recorded for free speech exceeded what the researcher needed for the experimental tapes.

(2) RECORDING THE READING PASSAGE

Although all speakers had at least 24 hours to prepare the text, they were, nevertheless, given the opportunity to read it silently for as long as needed before being recorded. This ensured further familiarity with the text and gave an equal chance to all speakers whose reading skills were not alike.

Further, the researcher requested the speakers to read in a normal voice without haste. In cases where speakers hesitated or made false starts, they were asked to repeat the whole sentence bounded by a full stop on either side.

(3) RECORDING THE PHONEMIC-CONTRAST ITEMS

Before recording the material on phonemic-contrasts, the speakers read silently all the sentences and were then asked to say smoothly without hesitating each one aloud into the microphone. They were also required to make a short pause after the reading of each sentence.

During the recording itself, if a speaker hesitated or made a false start, s/he was asked to repeat the whole sentence until it was uttered smoothly and fluently.

#### (4) RECORDING THE MATERIAL FOR LEXICAL-STRESS

For the recording of the sentences containing nominal phrases and compounds, both researcher and speaker first practiced the interchange (i.e. researcher's question answered by speaker) for each item.

Finally, speakers were asked to read the words in isolation and produce the correct stress pattern. Out of the three types of stress marking provided (cf. sub-section IV. 1. 2. 4.) all speakers chose the column with the phonetic stress mark as follows:

- 5- 'insult
- 6- im'port
- 7- trans'fer
- 8- 'convict
- 9- ob'ject
- 10- 'export

#### (5) RECORDING THE MATERIAL ON SENTENCE ACCENT PLACEMENT

Before the recording of test sentences, each speaker read the interchanges silently, then a practice session was carried out with the researcher to avoid undue hesitation. When the experimenter was satisfied, the recording took place.

#### (6) RECORDING THE MATERIAL ON INTONATIONAL MEANING

The recordings of this material were preceded by a practice session on the dialogues between the speaker and researcher. As mentioned earlier, the speakers were asked to pay attention to punctuation marks and, in certain cases, prompting (which was not to be pronounced) between brackets.

#### (7) RECORDING THE R.P. SPEAKER

As already mentioned, the R.P. speaker recorded a sample of free speech about a journey to Scotland, read the same passage as the Algerians and a sample of sentences including phonemic contrasts, lexical stress, sentence accent and intonational meaning. Since the R.P. subject



was a professional phonetician, the presentation of the material bore the phonetic marks for lexical stress, sentence accent and tones (cf. sub-section IV. 1. 2. 6.).

#### IV. 4. SUMMARY

The design of test-material for the present study took into account the methods of both contrastive analysis and error analysis.

A number of considerations such as recorded speech, the 'where' and 'how' the recordings were to be made as well as the type of material to be collected have been examined. It was, finally, decided to collect both natural free speech and written material read aloud.

Free speech samples consisted mainly of monologues with the researcher's prompting kept to a minimum. The written material included one reading passage, a number of carrier sentences for testing phonemic contrasts, lexical stress, sentence accent placement and intonational meaning. Single disyllabic words of the type 'insult' were also used to measure the Algerian speakers' ability to deal with English lexical stress.

The sample of speakers recorded represented a homogeneous group sharing mostly the same educational and professional background. An R.P. speaker also recorded a shortened version of what the Algerians produced to serve as a control.

Finally, the different procedures involved in the collection of the whole material were considered.

## NOTES TO CHAPTER IV

- 1 As Corder (1973: 226) himself stresses the point mentioned in sub-section III. 2. 2., mutual intelligibility is a function of more than linguistic similarity, one must also consider the matter of attitudinal perception.
- 2 Corder (1973: 150) distinguishes between error analysis and contrastive analysis as follows: "the latter discovers the differences between the first and second languages and predicts that there will be learning problems; because they are problems the learner will make errors. Error analysis studies the nature of these errors and confirms or refutes the predictions of contrastive analysis.
- 3 Halliday et al. (1964: 91) discuss the different 'situational' roles of both spoken and written mediums and conclude: "In this connection, reading aloud is a special case of written rather than of spoken language".
- 4 It was decided to use only one text because each British informant would listen to only one speaker at a single experimental session. This is one way of ensuring reliability among speakers and informants by avoiding different texts being unbalanced and unequal in difficulty. For example, Tiffen (1974: 82) who used three different reading passages distributed randomly, acknowledged the disadvantages of utilizing more than one single text.
- 5 The different sentences were taken from Byrne, D. and Walsh, G. (1977) Pronunciation Practice- Teacher's Book. Longman (new edition). In a number of cases, the items were slightly altered to suit the purpose of the present study.

## CHAPTER V

### EXPERIMENTAL TAPES, INFORMANTS' BACKGROUND AND ADMINISTRATION OF EXPERIMENT

#### V. O. INTRODUCTION

The data recorded by both the Algerian and R.P. speakers is ready for use. Nevertheless, this material contains a number of superfluous features that need discarding. To achieve an effective material editing one has to consider the nature of the data for each part and thus the manner for setting up the final test instrument. The need for a simple and effective way for investigating intelligibility is required. Hence a number of considerations concerning the construction of the experiment are dealt with in the present chapter.

Further, an intelligibility study involves the question: intelligible to whom? Therefore, a section on the choice of listeners (called informants henceforth) and their background is included.

Finally, the last part of this chapter describes and discusses the administration of the different experiments designed for the present study.

#### V. 1. CONSTRUCTING THE EXPERIMENTAL TAPES

The first step in the construction of the experimental tapes consisted of erasing the researcher's voice from the original cassettes. To that effect, every speaker's material was transferred to a (reel-to-reel) master tape which only contained the Algerian speaker's voice. From the master recording, it became easier to construct the experimental tapes by simply copying the material that had already been chosen.

### V. 1. 1. EXP.A: FREE SPEECH INTO UNITS

The amount of connected discourse data recorded by each speaker far exceeded what one needed and it was necessary to cut it down to a reasonable size. Moreover, for the sake of test reliability, the investigator decided to make all the texts of more or less the same length. Hence the criterion for delimiting the spoken texts involved the total number of words for each text. The number of words for the various samples varied from 370 to 408 with a mean of 391.58 (cf. Appendix A for the free speech samples).

Moreover, by erasing the researcher's voice, the continuity of a number of texts was broken in certain cases because of a sudden switch in topic. For this reason one had to append only the parts which allowed cohesion and a smooth progression within the texts concerned.

Another characteristic of all the edited texts relates to the opening sentence/s of each one of them. Since the first sentence/s tended to introduce the subject-matter of the entire content, each edited sample started from the beginning of the original text. This was meant to provide the informants with some context for the material.

e. g. Speaker No.6: | my degree in English was specially for teaching|

Speaker No.5: | I went to England in February nineteen seventy  
six|

Speaker No.13:| actually I'm a student at the University of Oran|

Speaker No.21:| I'd like to talk about my first experience abroad|  
I always dreamt of visiting Great Britain|

The next step involved dividing each text into units of a length not exceeding 13 words. A 13-word length unit was considered the maximum utterance an informant's memory could cope with. As for the range of unit lengths, they varied from 3 to 13 words with an average of 7.89 words per unit. On the other hand, the number of units per speaker varied from 49 to 50 with an average of 49.63. Table 4 shows the number of words, word-groups and average for each speaker and

overall means.

The researcher divided each text on the basis of sense groups defined by grammatical criteria in cases such as the following:

Speaker No.11: | one of the things I remember best| when I think back of my staying in Scotland| is the night I arrived in Glasgow airport|

Speaker No.16: | and we stopped for an hour in Paris| we took off again from Paris to London Heathrow| where we arrived by three or four o'clock|

However in a large number of cases word-groups boundaries occurred at a pause or hesitation or repetition as with:

Speaker No.1: | then we arrived at Marignane airport at| half past twelve I think|

Speaker No.10: | well honestly speaking he's the only| English person I really talked to and discussed with|

Speaker No.14: | I told him to go to see my sister to tell her| tell her that we had arrived|

This division into units did not present any difficulty for the informants during the subsequent listening sessions. Furthermore, sometimes within one word-group certain speakers repeated certain words. These repetitions and hesitations (i.e. filled pauses) were not inserted into the texts in Appendix A<sup>1</sup>. Examples of these are:

Speaker No.22: | and we had the opportunity of course to ... to visit many places|

Speaker No.12: | so I stayed with ... with an English family|

Another characteristic of the Algerians' free speech concerns the use by a number of speakers of non-English names, place names, abbreviations and titles. These words which are underlined in the respective texts in Appendix A, are the following (between brackets are the speakers who uttered them):

Proper Algerian names:

Hamedi (S.15)

Omar (S.20)

Hakem (S.14)

## Place names

### Algerian towns and Airports

Oran (S.1, S.12, S.13, S.16, S.19, S.21, S.24)  
Algiers (S.2, S.5, S.6, S.9, S.11, S.13, S.17)  
Aïn-Témouchent or Témouchent (S.6)  
Ghazaouet (S.13)  
Es-sénia (S.16)  
Tafraoui (S.19)

### French town and places

Paris (S.16, S.18, S.24)  
Charles-de-Gaulle (S.3, S.19)  
Calais (S.4, S.22)  
Marignane (S.1)  
Saint-Charles (S.1)  
Aix-en-Provence (S.1)  
Belzince (S.1)  
Marseille (S.1, S.18, S.24)  
Lille (S.22)  
Sacré Cœur (S.24)  
Seine (S.24)

### Technical terms and abbreviations

modules: subjects for a university degree (S.13)  
Sonatrach: Algerian national oil company (S.2)  
Touring Club: Algerian travel agency (S.5)  
P.E.M.: teacher in middle school (S.6)  
Lufthansa: German airline (S.11)

### Muslim religious title

Imam (S.5)

Further, the investigator wrote down each speaker's text on a separate sheet of paper with each word-group on a separate line with all the non-English words underlined. Hence, this allowed the investigator to follow simultaneously each unit when spoken from the tape recorder and to be ready to dictate the non-English words to the informants before hearing the word-groups containing them. This text also served as a control for comparison for later analysis and scoring.

Finally, one has to consider the principle for representing each free speech text in ordinary orthography. The rules of normal punctuation apply to written language and not connected discourse. Therefore, in Appendix A, punctuation is avoided and capital letters are used only for proper names. Moreover, paragraphs are delimited by the investigator's original prompting; that is, whenever the researcher asked a question a new paragraph begins. In cases, for example, where no prompting occurred, the whole text stands for one paragraph.

TABLE 4

DIVISION OF SPEAKERS' FREE SPEECH SAMPLES INTO WORD-GROUPS

SPEAKER No.	TOTAL No. OF WORDS	No. OF WORD-GROUPS	AVERAGE No. WORDS PER WORD-GROUP
S.1	395	50	7.90
S.2	408	50	8.16
S.3	396	50	7.92
S.4	370	50	7.40
S.5	387	50	7.74
S.6	391	49	7.98
S.7	382	49	7.80
S.8	395	50	7.90
S.9	387	49	7.90
S.10	398	50	7.96
S.11	408	50	8.16
S.12	404	49	8.24
S.13	397	50	7.94
S.14	374	49	7.63
S.15	405	50	8.10
S.16	401	49	8.18
S.17	399	50	7.98
S.18	387	50	7.74
S.19	384	49	7.84
S.20	395	50	7.90
S.21	373	50	7.46
S.22	389	50	7.78
S.23	396	49	8.08
S.24	377	49	7.69
<b>MEAN</b>	<b>391.58</b>	<b>49.63</b>	<b>7.89</b>

V. 1. 2. EXP.B: READING PASSAGE INTO UNITS

As in the case of Exp.A, the reading passage for each speaker was divided into units based on sense-groups. The text consisted of 137 words divided into 19 units separated by pauses of 2-to-3-seconds in length. In addition, the number of words per word-group varied from 3 to 12 with a mean of 7.2 words per unit (cf. Appendix C for the division of the reading passage into word-groups).

V. 1. 3. EXP.C: PHONEMIC-CONTRAST ITEMS

Immediately after the reading passage, all the sentences involving phonemic-contrasts (38 for each speaker) were added onto the experimental tape with a 2-to-3-seconds' pause between each one of them.

V. 1. 4. EXP.D: LEXICAL-STRESS ITEMS

The present experiment intended to investigate the Algerian speaker's ability to use stress for distinguishing between (1) a verb phrase and a noun phrase and, (2) a verb and a noun. The experimental tape contained the following (with pauses of 2-to-3-seconds between each item):

a) verb phrase/noun phrase distinction

- 1- He lives in the white `house.
- 2- This is the paper he `passed on.
- 3- The `hotplate burned her hand.
- 4- There is a black `bird in that tree.

b) verb/noun distinction

- 5- 'insult (n.)
- 6- im'port (v.)
- 7- trans'fer (v.)
- 8- 'convict (n.)
- 9- ob'ject (v.)
- 10- 'export (n.)



V. 1. 5. EXP.E: SENTENCE ACCENT AND INTONATIONAL MEANING ITEMS

(1) SENTENCE ACCENT

We have seen that during the recording sessions the speakers read both the sentences by answering the investigator's questions in a way that each one permitted the focus on three separate words. For example, in the sentence 'No, Mary likes fish' the speaker was asked to give the following interpretations:

- `No, Mary likes `fish.
- `No, Mary `likes fish.
- `No, `Mary likes fish.

Furthermore, the order in which these sentences were to be presented was essential. Presenting these sentences in the order of the original recording could lead the informants to guess from what immediately precedes. Hence, it was felt necessary to insert, on the experimental tapes, all the sentences in a random manner. The items were finally presented as follows:

- 1- `No, Mary likes `fish.
- 2- `No, I'll `swim across the river.
- 3- `No, John's a `brilliant actor.
- 4- `No, Mary `likes fish.
- 5- `No, I said open the bedroom `door.
- 6- `No, `John's a brilliant actor.
- 7- `No, I'll swim across the `river.
- 8- `No, I said open the `bedroom door.
- 9- `No, `Mary likes fish.
- 10- `No, John's a brilliant `actor.
- 11- `No, I said `open the bedroom door.
- 12- `No, `I'll swim across the river.

As in the preceding experiments, the investigator inserted a 2-to-3-second pause between each sentence.

## (2) INTONATIONAL MEANING

During the recording of material the speakers produced pairs of sentences differing only in their intonational pattern. However, the experimental tape was to contain only one sentence from each pair. Moreover, for the sake of randomization, the order in which the sentences were to be presented differed from the one used in their recording.

- 13- 'You ,like him.
- 14- It's `good, ,isn't it?
- 15- 'What's the `time?
- 16- I 'got the ,meat, the ,bread, the ,milk.
- 17- 'Come ,in.
- 18- D'you 'like ,swimming?
- 19- You're `teacher, `aren't you?
- 20- ,Where?
- 21- He 'went this `morning.
- 22- I 'went to ,France, ,Spain and `England.

### V. 1. 6. THE CONTROL TAPE

The purpose of the control tape was twofold: to assess the native speaker's intelligibility on the one hand and to serve as a means of selecting the ideal listeners.

The content of this tape consisted of a shortened version of what the non-native speakers produced. However, during the pilot test the sessions tended to last longer than planned. It was thus decided to discard the reading passage for the R.P. speaker.

The reasoning behind removing the reading text and not any other part of the test was that it was the only task in common for both the R.P. and Algerian speakers. The content of Exp.A was completely different for all the speakers (R.P. speaker included); as for the items taken from Exp.C, Exp.D and Exp.E the investigator did not intend to

tell the informants that both the native and the non-native speakers' utterances were meant to be identical.

Finally, keeping the reading passage for the R.P. speaker could prove useless because of the practice-effect; that is, the informants could remember a great deal from the non-native speaker reading the same text just a few minutes earlier.

The content of the control tape consisted of two separate parts: Part A and Part B. The first part included the R.P. speaker's free speech text divided into fifteen units. The number of words per word-group ranged from five to ten with an average of 7.26. As in the case of the editing of Exp.A, the same criteria (sense-group or pauses or hesitations) were applied to delimit word-groups. Further, between each unit the investigator inserted a pause of 2-to-3-seconds in length (cf. Appendix F for the division of the native speaker's free speech into word-groups).

On the other hand, the content of Part B comprised ten sentences testing phonemic contrasts, four items for lexical-stress distinction and eight for testing sentence accent and intonational meaning. Furthermore, between each one of these twenty items, the investigator inserted a pause of 2-to-3 seconds in length (cf. Appendix G for the content of Part B).

## V. 2. THE PILOT TEST

As mentioned previously, a pilot test preceded the construction of the final experimental tapes. The purpose of this preliminary investigation was threefold: first, considering that the whole test should not exceed one hour in length, this test helped in delimiting the data. The pilot investigation showed that the entire experiment as intended originally, tended to be far too long and tiring for the informants. One thus had to decide upon what to delete from the material; therefore, and

as mentioned in sub-section V. 1. 6., the reading passage for the R.P. speaker was dropped for the reasons already outlined.

Second, the pilot test also helped in checking whether the layout of the answer sheets was capable of yielding the intended responses. For Exp.A and Exp.B, no informant complained about the length of the word-groups. Most importantly, the answer sheet for Exp.D and Exp.E needed modifications in two ways: on the one hand, the researcher randomized the answers for the sake of test reliability and on the other, the choices for Exp.E (intonational meaning) were entirely altered.

During the pilot study, the test on intonational meaning provided choices based solely on attitudinal labels. In all the sittings and after the administration of the whole experiment the investigator asked the informants whether they had found any part of the experiment difficult to cope with. The majority complained about the 'wording' in the answer sheet for the test on intonational meaning. This led the researcher to use other devices. The original layout, content and presentation for the measurement of intonational meaning was the following:

Instructions: put a cross in the appropriate box to show the speaker's attitude you think she (he) tries to convey.

13- He went this morning

- |  |     |
|--|-----|
| It is a) a definite and complete statement | [ ] |
| b) an incomplete statement                 | [ ] |
| c) a question                              | [ ] |

14- You like him

- |                                      |     |
|--------------------------------------|-----|
| It is a) an incomplete statement     | [ ] |
| b) a question to elicit a repetition | [ ] |
| c) a definite and complete statement | [ ] |

15- What's the time

- |  |     |
|--|-----|
| It is a) a disapproving and resentful question | [ ] |
| b) a matter-of-fact question                   | [ ] |
| c) a question to elicit a repetition           | [ ] |

16- Where?

- It is a) a disapproving and resentful question [ ]  
b) a matter-of-fact question [ ]  
c) a question to elicit a repetition [ ]

17- D'you like swimming?

- It is a) a serious suggestion [ ]  
b) a qualified confirmation [ ]  
c) a question requiring an answer [ ]

18- You're a teacher, aren't you?

- It is a) a full confirmation [ ]  
b) a qualified confirmation [ ]  
c) a question requiring an answer [ ]

19- It's good, isn't it?

- It is a) a full confirmation [ ]  
b) a qualified confirmation [ ]  
c) a question requiring an answer [ ]

20- I got the meat, the bread, the milk.

- It is a) an enumeration that is completed [ ]  
b) a reluctant choice [ ]  
c) an enumeration that is not completed [ ]

21- I went to France, Spain and England.

- It is a) an enumeration that is completed [ ]  
b) a reluctant choice [ ]  
c) an enumeration that is not completed [ ]

22- Come in

- It is a) an invitation [ ]  
b) an order or command [ ]  
c) a request [ ]

Another alteration in this sub-test concerned the number of choices presented to the informant. A forced choice with two answers was later preferred to the three-label choice intended originally. The methodological considerations for such a decision are discussed in sub-section V. 3. 1..

Finally, the third aim of the pilot test attempted to set up a tentative scoring method for each individual experiment and especially for Exp.A and Exp.B. In scoring both free speech texts and the reading

passage, two methods proved possible: one based on the overall number of words wrongly understood by the informants or a method based on the number of word-groups misunderstood. For the final method, a word-group was counted wrong when at least one of its words important to the overall meaning was misunderstood. The latter approach tended to correlate strongly with the informants' subjective rating of free speech. It was decided thus to score free speech and the reading passage on the basis of word-groups.

Fifteen informants divided into groups of three each listened to one out of five speakers (S.2, S.6, S.12, S.16, S.21) chosen at random. Hence, every three informants judged one speaker.

### V. 3. LAYOUT OF THE ANSWER SHEETS

#### V. 3. 1. BACKGROUND

The present study relies heavily on the native listeners' responses which serve as a basis for investigating the Algerian speaker's ability to make herself/himself intelligible in English.

It is therefore essential to give careful thought to the method of collecting informants' answers during the experiment. One must always stress the need for controlling all the factors involved in an experimental task. The most important factor in the present type of experiment relates to the layout of the answer sheets which will eventually dictate the quality of the responses. Moreover, the informants' answers should allow a discussion of the tested hypotheses and predictions. However, the way these responses are obtained depends a great deal on the type of choice provided during the experiment.

Answers can be elicited from two types of tests: closed-choice and open-choice. In a closed-choice experiment the informant is presented

with a finite set of responses from which s/he has to choose only one. On the other hand, an open-choice test provides the judges with an infinite number of possibilities (among these one can include 'none' or 'don't know').

Leech (1970) prefers closed-choice tests; he nevertheless does allow the inclusion of an 'x-category' in order to avoid "wayward or haphazard responses from interfering with the results" (p. 345). Beside 'Yes' and 'No' answers, Leech includes two other choices: 'either Yes or No' and 'neither Yes nor No'. The last two types of responses represent the 'x-category' and intend to direct informants away from a possible polarization of answers towards distinct 'Yes' or 'No' replies.

Nash and Mulac (1980) carried out an experiment with informants choosing between two possibilities; however, they also provided a 'can't tell' category. The authors argue that even when presented with a third category, the subjects' answers tend to favour polarization, with 'can't tell' answers being negligible. Nash and Mulac (1980: 239) point out that "subjects prefer to impose definite, albeit contradictory, interpretations rather than to recognize inherent ambiguity".

According to Cruz-Ferreira (1983), the inclusion of an 'x-category' in a set of answers means that the test is no longer a closed one. This author views this category as a "'dustbin' where every deviation from the standard test procedure can be dumped" (p.156). Cruz-Ferreira favours and indeed uses a closed-choice answering method involving binary decisions.

Leech (1970) considers informant testing for linguistic investigation as hypothesis testing procedures and not as discovery procedures. Since these tests intend to verify a hypothesis within an experimental framework, there is need for controlling all the factors involved whenever possible. Hence, a forced-choice answering

procedure is likely to be more powerful and yield more reliable results.

This method presents a number of advantages and allows the researcher:

- to control the vast number of possibilities, and
- to have an easy way for quantifying the results, and
- to avoid an extra burden on the informants since the range of choices is already decided for them, and
- to save time.

In the present study the researcher intended to apply a closed-choice for Exp.C, Exp.D and Exp.E involving both binary and three-term label choices. However, for reasons discussed in sub-section V. 3. 2. 2., it was decided to use an open-choice procedure with Exp.C.

Moreover, while choices for lexical-stress and intonational meaning items were binary, the researcher also provided a three-term label choice for sentence accent items.

#### V. 3. 2. DETAILS

The author prepared an answer booklet with written instructions and choices for Exp.C, Exp.D and Exp.E. The elicitation of Exp.A and Exp.B was to be carried out as a dictation task. However, after listening to a free speech text informants had to rate it along Richards and Swaffield's five-point scale based on effort (cf. sub-section III. 1. 5.).

##### V. 3. 2. 1. SUBJECTIVE RATING

The informants had to specify the amount of effort required to understand a particular speaker along five choices labelled A, B, C, D and E respectively. Cf. Appendix B for the layout of the answer sheet for informants' subjective rating of speakers.



### V. 3. 2. 2. PHONEMIC-CONTRAST

Originally the investigator intended to provide a binary choice for the present experiment. However, after a preliminary analysis of the data, it was clear that a number of speakers produced an additional mispronunciation that could still make sense with the same carrier sentence and be ambiguous. For example, both speakers No.2 and No.17 pronounced sentence No.27 ('He thought for a long time') as 'He taught for a long time'; sentence No.37 was pronounced ''Dance', did you say?' by speakers No.13 and No.4; speaker No.7 produced 'That bell must have cost you a fortune' for sentence No.32; sentence No.23 was pronounced 'We used to keep the peas in that box' by speaker No.23; speaker No.10 uttered sentence No.8 as 'I saw a piece of card on the table'.

Hence, it proved necessary to include a third category to account for other possible mispronunciations. This third possibility consisted of a blank (represented by a dotted line) on the answer sheet where the informants wrote down what they had actually understood (cf. Appendix D for the layout of the answer sheet for Exp.C)

The argument against a third category in this experiment as a 'dustbin' would not hold because, first the informants had to write down instead of ticking what they heard - a more demanding task. Second, the number of informants who did fill in a blank was insignificant. Out of a possible 9120 responses only 91 different words were reported. Therefore, one could safely argue that as far as this test is concerned these figures support Nash and Mulac's point.

### V. 3. 2. 3. LEXICAL-STRESS

This experiment intended to examine the ability of the Algerian speaker of English to convey the distinction between words on the sole

basis of stress. The noun phrase vs. verb phrase distinction and the noun vs. verb dichotomy were to be presented along a binary choice.

(1) NOUN PHRASE VS. VERB PHRASE

The investigator considered two criteria to construct the answers for the present sub-test: typographical representation (when possible) and paraphrasing. For example, the following binary choice involves both orthography and paraphrasing:

- e.g. i- white `house (i.e. the house which is white)  
ii- `White House (i.e. the house where President Reagan lives)

As for the following instance, the distinction could only be made through paraphrasing:

- e.g. i- `passed on (i.e. the paper he passed the exam with)  
ii- passed `on (i.e. the paper he forwarded)

(2) NOUN VS. VERB

A binary choice accompanied the isolated words during the administration of the present sub-test. The final responses resulted from the informants' opinion during the pilot test. The informants gave their opinion on the following possibilities and the one they thought easier to handle:

- either (1) INsult - inSULT  
or (2) (the) insult (i.e. a noun) - (to) insult (i.e. a verb)

All the informants asked preferred the second alternative which was subsequently used in all the sittings. This method is probably the most suitable for naive informants. In this respect Fry (1958: 130) who administered the same type of word pairs for judgements on stress states:

"It has been found that listeners with no phonetic training, on hearing an isolated word of this type, can judge whether they hear the noun or the verb form and in this way can register whether they hear the stress on the first or second syllable"

One needs also to mention that during the pilot test, it proved fruitful to give orally an example to the informants before starting the present experiment. The word that was subsequently used with all British subjects was 'contrast'.

#### V. 3. 2. 4. SENTENCE ACCENT AND INTONATIONAL MEANING

The answer sheet for Exp.E (cf. Appendix D) consisted of the sentence spoken by the Algerian speaker accompanied by a number of choices for the informant to choose from. Although the answers were presented within a forced-choice test, the actual number of choices for the sentence accent and intonational meaning experiments differed.

##### (1) SENTENCE ACCENT

During the recordings, for each sentence the Algerian speaker had to give three possible answers differing only in nucleus placement. Since the data contained three alternatives for each sentence, the obvious thing was to provide the informants with a three-term label choice. The actual choice represented the three questions that the investigator had asked the Algerian speakers during the recordings. That is to say, every question meant to yield the same sentence with a different nucleus placement.

##### (2) INTONATIONAL MEANING

A binary choice involving two separate meanings accompanied each stimulus sentence for the intonational meaning sub-test. The phrasing of each response was based on one or a combination of four categories suggested by Cruz-Ferreira (1983: 163-164) and labelled 'paraphrase', 'categorization', 'attitudinal judgements' and 'expected answer' respectively. Each of these categories is discussed below.

- 1- 'paraphrase': i.e. describing each meaning (expounded by intonation) in the choice along lexical or syntactical considerations. For example,

**Sentence No.22:** I 'went to ,France, ,Spain and `England.

- Glosses:**
- a) the speaker is stating that these are the only countries s/he visited.
  - b) the speaker implies that he went to other countries as well.

2- 'categorization': i.e. each meaning is based on the function of grammatical categories such as statement or question. Nevertheless, as Cruz-Ferreira argues, this kind of classification is not necessarily straightforward because of "contradictory cues by which the same utterance may be classified into two different categories, taking either its form or its function as criterion for classification" (p. 163). This situation stems from the fact that in English one can find, for instance, declarative statements with interrogative form, questions with declarative form and questions not requiring an answer.

For the present study, the function of these categories has been taken into account and designations such as 'statement' and 'question' are enclosed within a 'descriptive statement'. For example,

**Sentence No.13:** ~You ,like him.

- Glosses:**
- a) the speaker is stating the fact that you like him.
  - b) the speaker is asking whether you like him.

3- 'Attitudinal judgement': i.e. each test item, falling within this category, is accompanied by two sentences including labels such as 'commanding' or 'inviting', to represent the speaker's intended attitude. For example,

**Sentence No.18:** D'you 'like ,swimming?

- Glosses:**
- a) the speaker is asking a simple and neutral question.
  - b) the speaker is asking an insistent question.

4- 'Expected answer': i.e. for this category the choice involves paraphrasing the answers to the tag-questions as in the following case,

**Sentence No.14:** It's `good, ,isn't it?

- Glosses:**
- a) the speaker is asking a question and expects either 'yes' or 'no'.
  - b) the speaker is asking a question and expects the answer 'yes'.

The instructions as well as the full content of Exp.E are given in Appendix D.

#### V. 3. 2. 5. CONTROL EXPERIMENT

As already mentioned, the control experiment is an abridged version of the different experiments with the Algerian speakers. The content consists of two parts (henceforth called Part A and Part B): the first part involves a free speech text to be presented as a dictation exercise. The second part includes extracts from Exp.C, Exp.D and Exp.E. The layout of the answer sheet for this experiment is exactly the same as in sub-sections V. 3. 2. 2., V. 3. 2. 3. and V. 3. 2. 4. (for the full content, cf. Appendix G).

#### V. 4. THE INFORMANTS

We have already seen (cf. sub-section V. 0.) that the investigation of intelligibility entails the question 'intelligible to whom?'. This study, like almost all works on intelligibility, relies heavily on informant testing. In the following section, the choice of informants and their background are discussed.

##### V. 4. 1. CHOICE OF INFORMANTS

For the present study the researcher decided to allocate 10 informants to each Algerian speaker with a final total of 240. As a matter of fact, this total figure represents only the informants finally selected on the basis of their results in the control experiment. In addition, the control led to the rejection of 36 informants (for the scores cf. Appendix I).

The decision to use native British subjects as listeners stemmed from the following considerations:

- as already mentioned in Chapter IV the use of native informants partially validates the experiment.

- since the model that Algerians have aimed at or faced with is native British or American (i.e. pronunciation accuracy), it is thereby interesting to investigate these speakers' performance with a group whose accent has always been their model and target and which also represents the epitome of language performance.

- it is generally agreed that native speakers are superior interpreters<sup>2</sup> of speakers of other varieties of English (Wigdorsky-Vogelsang, 1978: 90; Olsson, 1984: 28). Hence, one is optimizing a factor which has proved to bear influence on intelligibility and one should, therefore, expect optimal understanding.

Furthermore, in the context of the present study 'the native speaker' is mainly defined on the grounds of ethnic origin<sup>3</sup>.

As in the case of the total number of speakers, it was necessary to use a large number of informants for this experiment in order to make it more sensitive and detect the experimental effects. In this respect Robson (1983: 132) argues:

"The effect of the experimental variable (assuming that there is an effect) will add together over subjects, whereas the random error effects ... (which we will never be able to get rid of completely) will tend to cancel each other out as some will be in one direction, some in the other."

Before considering the other criteria for the final selection of the informants, one must mention that all the native subjects kindly volunteered and none of them was paid.

To control further undesirable effects on the experiment, it was thought essential to have, as in the case of the speaker sample, a homogeneous group of informants. Hence, two criteria permitted this homogeneity: language and educational background. The investigator made sure that before taking the experiment, the informants spoke one variety of British English as their mother tongue. Furthermore, these

informants needed to be educated (with a minimum of 'O' or 'A' levels) but not specialists in Phonetics (e.g. postgraduate students in Phonetics) or linguistics. In general, an inexperienced sample of informants would more closely approximate the general population from which our sample was drawn.

At the end of each experimental session, each British subject filled in a copy of the sheet on the informant's background later collected by the researcher (cf. Appendix H for a specimen).

#### V. 4. 2. INFORMANTS' BACKGROUND

##### (1) PERSONAL DETAIL

All the informants wrote down their name and were later allocated an informant number based on alphabetical order.

##### - Informants' age

Each native subject reported her/his exact age. However, in order to find out the number of informants per age group, it is more advantageous to summarize all the different ages as follows:

AGE BETWEEN:	NUMBER OF INFORMANTS
16-20	126
21-25	74
26-30	21
31-35	6
36-40	7
41-45	2
46-50	4

The ideal situation would have been to use the same number of informants for each age group. Unfortunately, only subjects from two major groups volunteered. The above figures show that more than half the total of informants were between 16 and 20 years of age. Moreover, a third of the subjects were between 21 and 25 years of age.

Finally, the youngest and oldest informants were 16 and 50 years old respectively and the average age for all subjects was 22.28 years.

- Informants' sex

All in all, 163 female and 77 male informants took part in the experiment. Again it proved impossible to have the same number for each sex because the female subjects volunteered more readily<sup>4</sup>.

- Birthplace

Almost all informants were born in Great Britain or the Republic of Ireland and only eleven were born abroad. Those born abroad are listed below with their birthplace as well as the period they stayed there after their birth.

- I.14 : Spain (till 4 years of age)
- I.41 : Spain (till 3 years of age)
- I.62 : Gibraltar (till 1 year of age)
- I.64 : Thailand (till 3 years of age)
- I.87 : Burma (till 6 years of age)
- I.118: Germany (till 2 years of age)
- I.123: U.S.A (till 3 years of age)
- I.146: Uruguay (till 6 weeks of age)
- I.185: Kenya (till 2 years of age)
- I.234: Australia (till 3 years of age)
- I.240: Bangladesh (till 6 months of age)

- Residence

Nearly all the informants lived in London and its surroundings. Only 22 subjects studied at Reading University and therefore lived there at the time of the experiment.



**- Nationality**

Apart from seven subjects from the Republic of Ireland, all the other informants were British.

**- Occupation**

The majority of informants were students: 217 in all. Moreover, there were 8 secretaries, 5 teachers, 3 nurses and 1 each for barrister, receptionist/clerk, librarian and technician.

The student population can be divided as follows:

6th formers	Undergraduates	Postgraduate
19	153	45

Within the undergraduate students, 40 studied Speech Therapy, 31 Linguistics, 26 Speech Science, 16 English Language and Literature, 10 French, 5 each Philosophy, Speech and Drama, 3 Psychology, 2 each Genetics, Geography and Zoology, 1 each Biochemistry, Biotechnology, Engineering, German, History, Quantity Surveying, Law, Music, Politics, Scandinavian Studies and Sciences.

For the postgraduate students, 8 were in Physics, 3 each in Philosophy, Geology, Law and Teacher Training, 2 each in Geography, Physiology, Environmental Technology and History and 1 each in Mathematics, Social Work, Theology, Business Studies, Management Science, Rural Politics, Civil Engineering, Robotics, Urban Land Appraisal, Indian Studies, Physical Chemistry, English, Library Studies, Engineering, Medieval History, Soviet Government, Communication Disorder, Public Health Engineering, Mining Engineering, Educational Psychology and Information Technology.

The sixth formers took the experiment in April and were about to sit for their 'A' levels.

**- Informants' accents**

The following represents the different accents spoken and reported by the informants as well as the number of subjects for each variety:

<b><u>ACCENT</u></b>	<b><u>NUMBER OF INFORMANTS</u></b>
R.P.	106
London	35
Northern	31
Southern	20
Midlands	10
Irish	10
Scots	8
Welsh	7
Lancashire	6
North East England	3
Liverpool (Scouse)	2
West Country	2

**- Informants' fluency and knowledge of other languages**

All the informants who reported fluency in other languages also mentioned that it was of a limited kind. The languages, mainly European, included (the figure between brackets represents the number of informants fluent in the particular language): French (31), German (12), Spanish (11), Italian (4), Dutch (2), Portuguese (2), Greek (1), Swedish (1), Welsh (1), Hindi (1), Swahili (1), Norwegian (1), Thai (1) and Polish (1).

From the above figures, one can note that more than two thirds had no fluency in any other language. Moreover, more than half of the total number of informants had no knowledge of any language. However, when informants acknowledged some 'school' knowledge of a language, the most reported one was French followed by German and Spanish. Other languages were also reported such as Arabic (four informants),

Hebrew, Farsi, Swahili, Malaysian, Bengali and several other European languages.

- Previous visits overseas

Apart from those British subjects born abroad (cf. Birthplace above), 56 informants also lived in other countries for shorter or longer (up to 4 years) periods of time. Among these subjects, 27 stayed for a year or less in the following countries: U.S.A., Ceylon, France, Germany, Austria, Australia, Kuwait, Mexico, Portugal, Sweden, Malaysia, Italy, India, Egypt (5 months), Spain and Switzerland.

The following represents all the informants who lived abroad for more than one year with the country and the period they stayed there.

<u>INFORMANT'S No.</u>	<u>COUNTRY</u>	<u>PERIOD</u>
I.223	France	4 years
I.212	France	2 years
I.173	France	3 years
I.13	France	3 1/2 years
I.183	U.S.A.	2 years
I.137	U.S.A.	3 years
I.196	Singapore	2 years
I.149	Singapore	2 years
I.65	Singapore	3 years
I.167	Iran, Malaysia, Singapore	21 months
I.159	Germany	2 years
I.201	Germany	4 years
I.165	Switzerland	2 years
I.48	Switzerland	17 months
I.98	Italy	2 years
I.36	Italy and Spain	3 years
I.214	Holland	4 years
I.62	Bermuda	2 years
I.208	Malta	2 1/2 years
I.197	Kuwait	2 years
I.233	Australia	3 years
I.141	Tanzania and Zambia	3 years
I.237	Zambia	3 years
I.108	Middle East	2 years
I.114	Norway	3 years
I.118	Far East	3 years
I.64	Thailand	4 years
I.181	Spain	3 years
I.81	Cyprus	3 years

As far as Algeria is concerned, none of the informants had ever visited it. Moreover, only one subject stayed for five months in a North

African country (Egypt).

**(2) INFORMANTS' EDUCATIONAL BACKGROUND**

All the informants except four went to primary schools in Great Britain or the Republic of Ireland; only I.197, I.234, I.118 and I.64 attended primary schools in Kuwait, Australia, the Far East and Thailand respectively. However, the foregoing informants attended secondary schools in Great Britain. One informant did part of his secondary schooling in Singapore but nevertheless, attended primary schools in Great Britain.

The following is a summary of the informants' educational background with the number of subjects and their respective educational level:

O-Level	A-Level	University or Professional
15	18	207

**(3) TRAINING IN PHONETICS AND PRIOR CONTACT WITH NON-NATIVE SPEAKERS OF ENGLISH**

The informants who had some training in Phonetics were the undergraduates in Linguistics, Speech Sciences, Speech Therapy and Speech and Drama. All these students attended the first year of their respective degree which provided them with an introductory course in the phonetics and phonology of English. The rest of the informants never had any training in Phonetics or spoken language.

Considering the number of overseas students in British universities, the cosmopolitan nature of London and the free movement of people around the world, it is not surprising to find that all the informants had had some prior contact with English-speaking non-native subjects. However, none of the informants had ever spoken to any

English-speaking Algerian. Only one informant (I.223) acknowledged having conversed with Algerians, but in French while he stayed in France. One must insist on the fact that it was not the investigator's intention to use only informants who had never met Algerian speakers of English. It just happened that the informants for the present study never had such a contact.

#### V. 5. EXPERIMENTAL PROCEDURES AND METHODS

To administer the present experiment, one had first to consider the advantages of both individual and group sessions. While experiments with single informants proved less time consuming during the pilot test, group sessions were finally preferred because of the large number of informants required. Moreover, one has to remember that since the experiment depended solely on volunteers sitting for tests when it suited them best, there was no way for the investigator to influence the number of informants involved. As a matter of fact, the researcher took advantage of any situation where the informant/s volunteered. The following summarizes the size of the groups and their respective number of informants:

No. of informants per experimental session	1	2	3	4	5	6	7	8	9	10
No. of experimental sessions	37	12	10	6	9	2	2	3	0	3

Therefore, the total number of sittings is 84 and the average number of informants per experimental session is 2.86.

Moreover, all the sittings took place in quiet rooms without any extraneous background noise high enough to interfere with comprehension. The sessions were conducted in rooms in University College London (Department of Phonetics and Linguistics), King's College London (Department of English), London School of Speech and Drama,

two university Halls of Residence (one in University of Reading and one in London University) and a few private houses (for a total of 6 sessions). It would have been ideal to have all the sittings in the same room. Unfortunately, due to the large number of informants needed and their willingness to help, it proved impossible to have them all in the same place.

Furthermore, noise-free rooms for the present experiment are highly desirable because the informants listen to pre-recorded material which lacks the cues provided by a face-to-face interaction. For this study all the informants heard the experimental tapes from the same portable cassette-player with a high fidelity reproduction. This cassette/player recorder was a Marantz (Superscope) model CD 330 which gave a very good reproduction of the original recordings.

In group sessions the investigator ensured that informants sat in a semi-circle with each one of them sitting at an equal distance from the tape-recorder. This precaution allowed the researcher to avoid any unnecessary and negative effect due to weak and unclear messages received by certain informants.

The use of headphones was discarded right from the start for two reasons: first, it proved impractical to have in group sittings, several headphones connected to separate tape-recorders. This impracticality was further enhanced by the fact that not all the sessions were held in the same place. Second, headphones could only add an extra burden on the informants who had to cope with fatigue resulting from an already long listening session.

Finally, the investigator made the decision to collect all the responses from the informants in a written form through both dictation (for Exp.A, Exp.B and Part A in the control) and ticking the appropriate choice (for the other experiments). Bansal (1966), for example

considered several methods for collecting informants' responses when listening to a free speech text<sup>5</sup>. Because of their unreliability or impracticality or both, Bansal rejected these methods. Tiffen (1974) objected to the method involving oral responses on the grounds that:

- it suits only experiments with single informants;
- it is not obvious that it will show the parts of an utterance where unintelligibility occurs;
- the method does not provide the researcher with a 'permanent record' for later analysis.

The reader should refer to the next section for the methods used in the present study to collect the informants' responses.

#### V. 6. ADMINISTRATION OF THE EXPERIMENT

In any experimental situation, one should not ignore the fact that all the subjects undergoing a test do not react in the same manner; consequently, some subjects are more erratic than others and their performance varies substantially according to mood and circumstances.

Furthermore, a task such as listening is highly vulnerable to variable behaviour and tends to have "lower stability values" (Ingram, 1977: 16) than a test requiring reading for instance. However, considering the nature and objectives of the present investigation, listening discrimination tests cannot be discarded. The only way to enhance the stability values is by making the experiment as reliable as possible. Hence, one could improve the reliability of the tests to yield an objective interpretation and analysis of the final results, by controlling effectively the variables that might affect the experiment. According to Barker (1971: 43-58)<sup>6</sup> factors that bear various degrees of influence on the outcome of an experiment involving listening fall within one of the following categories:

- i- variables relating to the subject undergoing the experiment: sex, age, personality, motivation and curiosity, interest and

attitudes, binaural hearing, fatigue, intelligence, educational achievement, verbal ability, vocabulary size, experience in listening, organizational ability, reading comprehension, speech training.

ii- variables relating to the speaker's characteristics and qualities: speech rate, fluency, visibility, speaker's credibility, gestures, audibility of speaker.

iv- variables relating to the environment: room ventilation and temperature, language background of informant, informant being an only child, seating arrangement.

Bearing the above-mentioned facts in mind, the researcher ensured that for the present experiment:

- the experimental sessions did not exceed one hour to guard against fatigue-effect;
- the informants were relaxed, at ease and not under pressure;
- the informants took the experiment in a serious manner;
- the cassette-player, being the source of the signal, gave a high fidelity reproduction of the recorded material;
- the experimental sessions took place in quiet rooms without any extraneous background noise high enough to interfere with reception;
- especially in group sittings, informants sat in a semi-circle at equal distance from the cassette-player;
- items which required an unusually long memory span were avoided;
- to avoid practice-effect each informant sat at one and only one session;
- the test material (particularly Exp.A) was colloquial in style and within the informant's linguistic ability; in addition, items which were not part of the informant's cultural background were given beforehand;
- the instructions were standardised, clear and did not prompt too much;
- the informants were allocated to the different speakers randomly.



Among the foregoing variables, some are easily controllable, especially when technical in nature (e.g. time length, cassette-player, etc.) while others (e.g. informants' seriousness, relaxation, etc.) remain difficult to control. The difficulty in managing a number of variables represents further justification for the use of a control test for validating the experiment.

To conduct the experiments, the researcher first contacted personally the prospective informants. He told them that the exercise intended to investigate how successful an Algerian speaker of English could make herself/himself understood by British people. This general introduction was thought sufficient and meant to avoid any thorough prompting. The informants who agreed to volunteer immediately after this contact or at a later stage, underwent all the experiments mentioned in the next section.

As a final note, one needs to mention that in order to have uniformity all the experimental sessions were conducted by only one and the same person (i.e. the author).

(1) EXP.A

After the informants were seated, the investigator handed each one of them some ruled blank sheets of paper (type A4) on which they wrote their name on the top left-hand corner.

To ensure that the instructions given verbally stayed exactly the same for all sessions, the researcher prepared beforehand a standardised set to be read to all informants. These instructions read the following:

- 1- The speaker (a lady or a gentleman) from the tape in front of you is going to talk about ...<sup>7</sup>;
- 2- the whole speech has been divided into sentences;
- 3- after each sentence spoken from the tape, I will press the 'pause' button;
- 4- after I have pressed the 'pause' button, I would like you to

- write down exactly what you have heard and understood;
- 5- each sentence will be played only once;
  - 6- each sentence should be written on a separate line;
  - 7- when you do not understand a word or more, put dashes;
  - 8- would you please ignore hesitations such as [ɜ:], [əm], etc..
  - 9- when you hear within the same sentence a repetition, just ignore it. For example, if I say 'I went to ... I went to the university', I would like you to write only 'I went to the university'.

When the informants heard the instructions and all the queries were cleared up, the experiment started. Moreover, the investigator insisted that there would be no value in copying other informants' responses and that the task required their own individual answers. The researcher's supervision of all experimental sessions made sure that little if any conferring amongst British subjects took place.

The length of pauses between word-units depended on their particular length; time however varied from 8 to 12 seconds for short word-groups and 20 to 25 seconds for the longer ones.

At the end of Exp.A, the researcher handed each informant a copy on subjective rating and asked them to write down their name and read the instructions. These proved sufficient and no other clarifications needed for the informants to make their decision.

Finally, to avoid any subsequent alterations after a second thought, the investigator collected all the answer sheets and handed another ruled A4 blank sheet.

## (2) EXP.B

As in the previous experiment, a set of instructions had been prepared for the investigator to read to the informants during every session. The following instructions were adopted:

- 1- The same speaker is going to read a short passage;
- 2- as in the previous exercise, you will hear sentence by sentence;
- 3- after each sentence, I will press the 'pause' button and you write down what you hear and understand;

4- would you please write each sentence on a separate line.

In addition, since the informants had never heard the text, it was essential to provide some context. Therefore, an extra instruction was added and read the following:

5- all I can tell you about this passage is that its title should be: 'The young boy's return'.

The pauses inserted between word-groups also varied in length. They however lasted from 8 to 9 seconds for short units and from 18 to 20 seconds for longer ones.

Finally, the researcher collected all the answer sheets to prevent any subsequent alterations by the informants. He then handed the booklet containing the choices for the next three experiments.

(3) EXP.C

The informants wrote down their name on the space provided and read the instructions. In cases where informants needed more clarifications, the experiment did not start until all the queries had been cleared away.

While the experiment was proceeding, pauses of 3 to 5 seconds in length were allowed before playing the following stimulus sentence.

(4) EXP.D

The present experiment consists of two sub-tests each of which having different instructions and content. After the informants had read the instructions for the experiment on noun phrase/verb phrase distinctions, the researcher played the stimulus sentences from the cassette-recorder allowing for pauses of 3 to 5 seconds in length.

Next the informants read the instructions for the experiment on verb/noun distinction and the researcher exemplified the case with the word 'contrast'. To make sure that the example would eventually be given during all the sittings in the same manner, the investigator wrote down the following:

'As you may already know, there are in English words like 'contrast' which can be either a verb (pronounced [tə kən'tra:st]) or a noun (pronounced [ə 'kontra:st]). So this exercise involves this type of discrimination.'

The above prompting proved necessary because during the pilot test, a number of informants had some difficulty understanding the task required until given an example (obviously, the word used as an illustration did not belong to the test material).

As in the preceding experiment, the researcher allowed pauses of 3 to 5 seconds in length after each stimulus sentence or word.

(5) EXP.E

The instructions for the sub-test on sentence accent did not need any further comments; the informants found the written instructions satisfactory. On the other hand, for the sub-test on intonational meaning the researcher read the following for all sessions:

'I hope the instructions are clear. All you need to do is tick the meaning you think the speaker will try to convey.'

Finally, informants were allowed 3 to 5 seconds after hearing each stimulus sentence.

The experiment with the Algerian speakers' material ended with all the informants handing the answer booklets to avoid any modifications after second thought. Next, the researcher told the British subjects that the next exercise consisted of a shortened version of what they had just heard produced by a native speaker of English this time. The researcher never divulged the intentions of the control experiment. Each informant wrote down her/his name on the top left-hand corner of a separate ruled A4 sheet of paper.

(6) CONTROL EXPERIMENT

The instructions for Part A were intended to be presented orally and therefore written down in advance to ensure uniformity. These

instructions read as follows:

- (1) The speaker (a lady) is going to talk about a trip to Scotland;
- (2) the whole speech has been divided into sentences;
- (3) after each sentence spoken from the tape, I will press the 'pause' button and I would like you to write down exactly what you have heard and understood;
- (4) each sentence will be played only once;
- (5) write each sentence on a separate line;
- (6) when you do not understand a word or words put dashes;
- (7) would you please ignore hesitations such [ɜ:], [əm], etc..

During the administration of this experiment, the researcher allowed pauses of 8 to 25 seconds in length after each word-group. At the end of Part A, the investigator collected the sheets and handed the answer booklet for Part B experiment and reminded the informants that it was still the same native speaker performing the next task.

Since the same instructions (as in Exp.C, Exp.D. and Exp.E) appeared for Part B, one did not need to clarify any further. Moreover, after hearing each stimulus sentence or word the informants had 3 to 5 seconds to make their choice.

#### V. 7. ORDER OF PRESENTATION

The first remark about the presentation concerns the order of administering the non-native and the native speakers' materials. The administration of the control experiment at the end proved necessary in order to avoid any learning and practice-effect and guessing the non-native speaker's material if it were to follow.

Second, using free speech and reading passage tests first helped the informants to be acquainted with the speaker's vocal idiosyncracies and, therefore, make it easier for them when presented with shorter utterances and isolated words.

Finally, one could argue that experiments that come second tend to get lower scores due to, for instance, fatigue, boredom, etc.. In

administering the non-native speaker's free speech and reading passage first, it allowed the informants to start with the most tiring task (dictation) requiring a great deal of concentration coupled with writing. Furthermore, the multiple-choice experiments coming second permitted the informants to relax by simply ticking and not writing. The latter task served as a good and necessary break before starting dictation again for Part A of the control experiment. As for the R.P. speaker's material coming second and getting lower scores, one only needs to refer to the results which were almost nearly perfect (even the rejected informants obtained high scores).

#### V. 8. TIME

As already mentioned, one had to ensure that no experimental session lasted more than one hour. For this reason, the researcher used a watch during all the sittings to record the exact time at which each session started and finished. None of the sittings lasted more than 57 minutes which was in fact the longest session. The shortest listening experiment lasted 32 minutes and the total time for all the sittings was 66 hours 07 minutes with an average of 47 minutes 14 seconds per session.

#### V. 9. ALLOCATION OF INFORMANTS TO SPEAKERS

The presentation of the different Algerian speakers to informants was based on randomization and not predetermined. The investigator also allocated the informants to particular speakers in a random manner. As the researcher did not have a sample of 240 or more ready to be distributed, say by tossing a coin for example, he allocated the informants as they came along and volunteered. Therefore, any informant could listen to any speaker. The only exception concerned

informants who took the experiment as substitutes to previously rejected subjects. Table 5 represents the allocation of informants to different speakers.

TABLE 5

ALLOCATION OF INFORMANTS TO EACH SPEAKER

SPEAKER'S No.	INFORMANTS' NUMBER									
S.1	I.29	I.30	I.67	I.84	I.154	I.179	I.187	I.206	I.207	I.237
S.2	I.4	I.49	I.64	I.132	I.139	I.163	I.175	I.181	I.189	I.216
S.3	I.18	I.40	I.72	I.96	I.155	I.192	I.196	I.200	I.225	I.239
S.4	I.12	I.35	I.45	I.77	I.120	I.149	I.156	I.183	I.222	I.236
S.5	I.58	I.78	I.85	I.86	I.125	I.143	I.147	I.150	I.158	I.160
S.6	I.33	I.48	I.59	I.63	I.90	I.94	I.102	I.173	I.174	I.240
S.7	I.9	I.43	I.46	I.57	I.76	I.97	I.107	I.145	I.157	I.194
S.8	I.8	I.19	I.37	I.124	I.141	I.152	I.159	I.171	I.195	I.228
S.9	I.15	I.21	I.70	I.74	I.75	I.131	I.153	I.212	I.226	I.227
S.10	I.93	I.119	I.121	I.126	I.138	I.148	I.182	I.186	I.219	I.235
S.11	I.88	I.101	I.127	I.144	I.162	I.169	I.172	I.185	I.223	I.224
S.12	I.5	I.14	I.17	I.36	I.41	I.81	I.98	I.99	I.170	I.230
S.13	I.7	I.20	I.24	I.38	I.42	I.69	I.103	I.167	I.214	I.221
S.14	I.11	I.22	I.44	I.62	I.79	I.80	I.95	I.130	I.165	I.203
S.15	I.31	I.89	I.115	I.129	I.140	I.161	I.168	I.178	I.197	I.218
S.16	I.55	I.66	I.73	I.113	I.123	I.177	I.193	I.233	I.234	I.238
S.17	I.50	I.56	I.82	I.108	I.110	I.114	I.118	I.151	I.176	I.232
S.18	I.1	I.53	I.71	I.87	I.104	I.106	I.112	I.164	I.215	I.229
S.19	I.6	I.13	I.47	I.54	I.68	I.109	I.111	I.146	I.201	I.211
S.20	I.16	I.26	I.51	I.60	I.128	I.142	I.184	I.188	I.190	I.231
S.21	I.2	I.34	I.122	I.135	I.180	I.198	I.199	I.208	I.209	I.210
S.22	I.39	I.65	I.100	I.105	I.116	I.117	I.134	I.191	I.202	I.217
S.23	I.27	I.28	I.52	I.91	I.92	I.166	I.204	I.205	I.213	I.220
S.24	I.3	I.10	I.23	I.25	I.32	I.61	I.83	I.133	I.136	I.137

## V. 10. SUMMARY

The recordings made in Algeria needed editing to be inserted into the final experimental tapes which contained five experiments for each speaker. EXP.A consisted of the Algerian speaker's sample of free speech divided into word-groups bounded by pauses. The reading passage also divided into units constituted the content of EXP.B. EXP.C contained all the carrier sentences for phonemic-contrasts whereas items (carrier sentences and single words) for lexical-stress were allocated to EXP.D. EXP.E included items for sentence accent and intonational meaning. Further, the R.P. speaker's recordings were separated into Part A containing the free speech sample divided up into word-groups and Part B containing the various sentences and isolated words.

After a preliminary test a number of alterations of the material were carried out. This especially helped in laying out the answer sheets for the various experiments. It also decided for the procedure for collecting the data from the informants. Thus, both dictation as well as multiple-choice methods were used.

276 British informants took part in the various listening sessions in groups or individually. Out of this total 36 were rejected on the basis of their performance in the control experiment. The 240 selected informants who shared some educational background were allocated in groups of 10 to particular speakers

Before and during the administration of the different experiments the researcher attempted to control the various factors involved in order to limit or get rid of any negative effects on the experiments.



## NOTES TO CHAPTER V

- 1 During the experimental sessions, the informants were asked to ignore repetitions and hesitations that occurred within single word-groups.
- 2 Brodkey (1972: 203) states: "It is generally assumed that there is little or no significant variation in the native speakers selected to judge or shape the foreigner's performance, and that the foreigner's comprehensibility can be judged equally well by almost any native speaker of the language".
- 3 The definition of the term 'a native speaker' has been a debatable issue. For example, according to Thomas (1984) the concept of mother tongue can be related to a number of matters and in the context of her paper she views the native speaker "as an individual who uses a language with innate-intuitive competence and is one who has acquired the said language during the critical age period" (p. 18).
- 4 There is not a general agreement as to the sex of the informant as a variable affecting intelligibility. In the literature one finds those who found that females are better interpreters than males (e.g. cf. Brodkey, 1972) and those who consider male subjects better than female subjects (e.g. cf. Barker, 1971).
- 5 Bansal's methods can be summarised as follows:
  - after listening to the stimulus test material, the informant gave a signal at the position/s in an utterance where comprehension broke down.
  - after listening to the whole free speech text, informants filled in a questionnaire about the content.
  - the use of some kind of cloze test where the key words were

left blank on the text provided for the informants.

- after listening to portions of the text, the informants gave a subjective rating along the following choice: "(a) not understood at all, (b) understood with some difficulty and effort, (c) understood, but sounded unusual, (d) no unusual features noticed" (1969: 50).

- 'shadowing': while listening to the tape-recorder playing continuously (without any pause), the informant gave a word for word oral response of what he heard "following the speaker very closely and keeping behind only by a word or two" (1969: 50).

6 Foulke and Sticht (1969: 53-60) also review a number of studies on the variables that have an effect on speech comprehension with particular attention paid to accelerated or compressed speech.

7 Since in real-life situations, speakers and listeners are usually helped by contextual cues as well as by what precedes and almost nothing is 'out of the blue', it was felt necessary to prompt the informants on the subject-matter of the particular monologue. With the majority of the Algerian speakers the subject-matter consisted of a trip to Great Britain.

## CHAPTER VI

### PROCEDURES OF SCORING, INTELLIGIBILITY

#### RESULTS AND THEIR INTERPRETATION

##### VI. 0. INTRODUCTION

The analysis of the informants' responses can be carried out through either a detailed phonetic and phonological description and categorization of the items wrongly interpreted and/or a quantitative and objective measurement of these answers. For the present study, the investigator applied both techniques. The first technique constitutes the backbone of the analyses in Chapter VII. The present chapter is concerned with a quantitative analysis of the results and, subsequently, their interpretation.

Evaluating a set of data quantitatively and objectively involves measurements based on numerical information. The numerical scores, in the present work, result from the number of items or messages correctly interpreted by the British subjects. The intelligibility of an utterance (be it a word-group or an isolated word) is represented on a quantitative scale ranging from 0 to 100. To be more precise, a given score corresponds to the percentage of correct responses provided. Further, the Means and Standard Deviations of speaker groups and informant groups are also considered. Finally, the third section of the present chapter deals with the interpretation of the intelligibility results.

##### VI. 1. SCORING METHODS

###### VI. 1. 1. EXP.A

As mentioned in Chapter V (cf. sub-section V. 1. 1), all free speech texts were divided into units of an average length of about eight

words. The word-group served as a scoring unit and could be either correct or incorrect without any partial scores to avoid any inconsistency on the part of the investigator.

However, this method of scoring does not distinguish between the score of a unit with only one key word being unintelligible and the score of the same whole unit (containing possibly more than one key word) being unintelligible. The only alternative to this method consists of subtracting the total number of unintelligible words from the total number of words in the respective free speech text. The reason for rejecting this technique lies in two factors: first, Exp.A intended to investigate a non-native speaker's use of words accompanied by linguistic and contextual cues; second, as stated above (cf. sub-section V. 2.), the scores obtained through this method tended to be very high and did not correlate with the subjective ratings. Conversely, results based on scoring units did not yield the same high scores and tended to correlate better with the subjective assessments.

First, it is necessary to discuss what precisely is meant by 'key words'. As the term indicates, these words should be capable of either enhancing or impeding the intelligibility of a word-group containing them. Words have been traditionally sub-classified into two categories: grammatical (or function) words vs. lexical (or content) words.

It seems, from most previous studies, that lexical words have the foremost bearing on intelligibility and that the influence of grammatical words is redundant. The importance of lexical words over grammatical ones arises from the fact that they are the major vehicles of information in a sentence - in other words, capable of conveying meaning.

Chastain (1980), Guntermann (1978), Politzer (1978), Olsson (1977), among others, who dealt with error gravity and intelligibility argue that deviant grammatical words do not seriously affect comprehension.

Olsson (1977: 47), for instance, states:

"Items within the realm of grammar belong to a more or less closed system. This means that whenever a change is considered, there is a limited number of possibilities to choose from. Items within the realm of lexis, on the contrary, belong to a more or less open system, which means that there is a wide range of alternatives."

In other words, the restricted choice within a category leads one to consider deviations less serious for intelligibility. On the other hand, deviations of words within an open class which allows an infinite number of possibilities, are more serious.

In opposition to this view, Bansal (1969: 59) argues that:

"In a language like English, part of the meaning is conveyed by the so-called 'structural words' that indicate the relationship between other words, and if these words are missed, the rest of the unit cannot be properly understood. Moreover, the inability to understand parts of an utterance distracts the listener and concentration is difficult"

To illustrate Bansal's first point, one can safely state that in spoken English any word (whether lexical or grammatical) is likely to be accented if the context permits it. For example, the sentence 'he is coming to London, not from London' provides an instance where grammatical words are carriers of meaning.

Further, situations exist where certain types of non-native speakers' errors and their sheer number may lead a native interlocutor to refuse to carry on interacting. In this context Ihebuzor (1982: 140) observes:

"...errors may irritate him or her to the extent of diverting the listener's attention away from the message uttered."

One may, therefore, argue that perfect communication should take into account lexical as well as grammatical words. In the present study,

to be counted as a correct unit, the British informant must report by writing all the lexical and grammatical items that are essential to the understanding of the word-group concerned. Consequently, perfect intelligibility presupposes a close copy of the intended message. In a number of cases, however, ad hoc decisions were made to decide on whether an individual word-group had been comprehended or not. Slight deviations which did not affect the original meaning of the unit were considered correct. These comprise, for instance, informants correcting tense for concord or using a different word order (e.g. adverbs, articles) or dropping certain items that are redundant. The following are examples of word-groups scored correctly:

- S.14: |it was really a tiring flight because we waited a long time|
- I.11: |it was a really tiring flight because we'd waited a long time|
- S.13: |it's almost two hundred kilometres far from the university|
- I.103: |it's almost two hundred km from the university|
- S.2: |because I remember that the plane was quite crowded with these students|
- I.49: |because I remember the plane was quite crowded with these students|

The dropping of silence fillers (e.g. you know, well, I mean) did not lead to an incorrect score of the unit containing them. They were, however, considered incorrect when the informants had understood something else which altered the intended meaning of the word-group.

Examples of such incorrect units are:

- S.4: |well they asked me about the goals of my visit|
- I.216: |when they asked me about the goals of my visit|
- S.2: |which was sponsoring my studies in England|
- I.216: |we chose sponsoring my studies in England|
- S.5: |a bus was waiting for them|
- I.85: |a vessel was waiting for them|
- S.16: |we went also to the southern coast|
- I.123: |we went to the ——— coast|

The computation of intelligibility scores for this experiment was based on the number of units correctly understood by individual informants. These scores were then converted into a percentage representing an informant's comprehension of a particular speaker's free speech text. Hence, for example, informant No.88 understood 44 units out of 50 and scored 83% with speaker No.11; with speaker No.16, informant No.233 understood 26 units out of 49 and, thus, scored 53%.

#### VI. 1. 2. EXP.B

The scoring method adopted for this experiment resembles the one used for Exp.A, since as in the latter experiment, the reading passage was divided into word-groups which eventually served as scoring units. Therefore, a unit was either correct or incorrect with no partial scores. The only difference with the method used in Exp.A lies in the fact that no discrepancy with the original passage, no matter how insignificant, was tolerated. The reasons for this decision are twofold: first, the speakers had prepared the passage before they were actually recorded and second, the reading task involves a close reproduction of written material.

An individual result represents a percentage worked out from a score which corresponds to the number of correct units. Any inaccurate or missing word (or words) within a particular unit reported by an informant resulted in the unit being counted incorrect. Thus, for instance, informant No.53 correctly reported 12 units out of 19 and scored 63% with speaker No.18; whereas informant No.26 understood all the units and scored 100% with speaker No.20.

#### VI. 1. 3. EXP.C

If an informant chooses the right alternative, the item will be considered correct and any other choice incorrect. Hence, this scoring

method is simple and does not present any complications.

The whole experiment comprised 38 items representing a 100% intelligibility score. Therefore, informant No.29, for example, who ticked 36 items correctly, scored 95% with speaker No.1.

#### VI. 1. 4. EXP.D

As in the preceding case, scoring the present experiment did not prove difficult since binary choices allow responses to be either correct or incorrect. The scores based on the total number of accurate answers were later converted into percentages. Hence, informants No.114 and No.151 understood two out of ten and seven out of ten items respectively from speaker No.17 and therefore obtained intelligibility results of 20% and 70% respectively.

#### VI. 1. 5. EXP.E

Once again the present experiment gave little difficulty in its scoring because the responses could be either correct or incorrect. The scores, converted into percentages, represent the total number of correct answers made by individual informants. Speaker No.3, for example, conveyed 20 items accurately to informant No.196 and therefore scored 91%.

#### VI. 1. 6. CONTROL EXPERIMENT

The control experiment consisted of Part A and Part B. The first part contained a free speech text divided into word-groups which served as the scoring units. The second part (shortened versions of Exp.C, Exp.D and Exp.E) included 20 items with one being either correct or incorrect. Hence, the same scoring procedures used with the non-native speakers were applied to the control experiment. And as in



the case of the Algerian speakers, all the scores were worked out as percentages for both Part A and Part B.

## VI. 2. INTELLIGIBILITY RESULTS

First of all it must be mentioned that in all computations, the percentages were rounded off to the nearest whole number; that is, fractions between .50 and .99 were raised to the next full mark and fractions of .49 and lower were disregarded.

The different results have been incorporated in the following tables:

- Table 24: Subjective Ratings
- Tables 25a - 25x: Intelligibility Scores for Single Speakers.
- Table 26: Intelligibility Results for the Selected Informants.
- Table 27: Intelligibility Results for the Rejected Informants.

For Tables 25a to 25x we computed the mean and standard deviation for each speaker for the five experiments. The reader is referred to Appendix I for each of the above table/s respectively.

## VI. 3. INTERPRETATION OF THE RESULTS

In the treatment of results, displaying the important features of the data is not sufficient, one also has to interpret this data. In the present section, we put the focus on the evaluation of the intelligibility results. To interpret the large body of numerical information, we use a number of statistical measures in order to draw inferences from this information. Hence, in the following sections we discuss the implications for the informants, speakers and experiments. In addition, the performance of speakers, individually as well as in groups, is evaluated. Finally, the data will help in deciding whether a number of independent variables have any significant effect on the speakers' performance in

the various experiments.

### VI. 3. 1. SIGNIFICANCE OF THE INTELLIGIBILITY RESULTS

#### VI. 3. 1. 1. IMPLICATIONS FOR INFORMANTS

Table 6 shows the means and standard deviations (among informants) obtained for each experiment. The mean score for the five experiments reveals an order of preference on the part of British informants as follows: Exp.E, Exp.A, Exp.B, Exp.C and Exp.D. It is somewhat surprising to find that sentence accent/intonational meaning items (i.e. EXP.E) were rated the highest by far. However, if EXP.E is excluded, it is no longer surprising to note that the mean scores are in descending order with free speech being rated the highest and lexical-stress (i.e. words in isolation) the lowest. Hence, the reading passage was less intelligible than free discourse but more intelligible than phonemic-contrasts which in turn, proved more intelligible than lexical-stress items. It seems, therefore, with the exception of Exp.E that the more an experiment contains redundancy and contextual cues, the higher the informants' rating and thus understanding.

TABLE 6

MEANS AND STANDARD DEVIATIONS (AMONG INFORMANTS) FOR THE FIVE EXPERIMENTS

	EXP.A	EXP.B	EXP.C	EXP.D	EXP.E
$\bar{x}$	83.60	82.85	81.82	62.71	86.98
SD	6.1	8.0	5.0	11.3	5.1

Furthermore, one must point out that EXP.D received significantly lower scores than the rest of the tasks. It therefore follows that there is a possibility that lexical-stress was a major factor in diminishing or enhancing comprehension.

The standard deviations in Table 6, on the other hand, show that high agreement occurred between informants in rating EXP.C, EXP.A, EXP.E and to a lesser extent EXP.B. However, the high value of 11.3 as the standard deviation for EXP.D means that less agreement exists between the informants' scores. In other words, the experiment showing poorest mean performance of the informants also resulted in a wider spread of performance for the same informants.

For the purpose of the present study the investigator intended to select only good informants. The final selection relied upon the number of mistakes made in both parts of the control experiment. To be rejected the informant needs to make more than one mistake over both Part A and Part B. Tables 26 and 27 in Appendix I provide the individual performance for the selected and rejected informants respectively. Table 7 indicates the means and standard deviations for rejected and selected informants in both parts of the experiment and the overall result.

TABLE 7  
MEANS AND STANDARD DEVIATIONS FOR SELECTED AND REJECTED  
INFORMANTS IN BOTH PARTS OF THE CONTROL EXPERIMENT

	n	PART A		PART B		OVERALL SCORE	
		$\bar{X}$ (%)	SD	$\bar{X}$ (%)	SD	$\bar{X}$ (%)	SD
REJECTED INFORMANTS	36	97.33	4.0	88.75	3.7	93.04	2.9
SELECTED INFORMANTS	240	99.65	1.5	98.44	2.3	99.04	1.3

Although an important difference exists between the number of subjects for the selected and rejected groups, one can still make use of group means just to show trends. The selected informants fared equally well in both parts with free speech the most intelligible material. The rejected informants also got high scores in free speech but very low results in Part B mainly due to the following items (the figures between brackets correspond to the total number of times the particular item was misunderstood by the 36 informants):

- Item No.2 (10), item No.5 (3), item No.6 (1), item No.8 (12);
- Item No.9 (5), item No.10 (6), item No.11 (2), item No.12 (1);
- Item No. 13 (17), item No.16 (3), item No.17 (2), item No.18 (16), item No.19 (6), item No.20 (1).

The foregoing list shows four items that presented most difficulty to the informants. These were items No.2 and No.8 which intended to investigate the contrast /ʌ/ vs. /ɒ/ and the cluster /-nθs/ vs. /-ns/ respectively; and items No.13 and No.18 which intended to measure sentence accent and intonational meaning respectively.

Therefore, the control experiment results tend to support what has just been stated about how free speech is by far the most intelligible material in the present study.

Moreover, the overall means for both parts in the control experiment are 99.04% and 93.04% for the selected group and the rejected group respectively. In other words, the selected informants are almost perfect listeners. In addition, Table 7 shows that the standard deviations obtained for the selected informants are always slightly lower than those for the rejected informants. That is to say, the selected subjects tended to show slightly more agreement in their assessment of the R.P. speaker than the rejected ones.

### VI. 3. 1. 2. IMPLICATIONS FOR SPEAKERS

It is important at this stage to consider the variation between the Algerian speakers' scores. Table 8 shows that apart from the results in EXP.D, the speakers' results tend to be high.

One can summarize the different range of scores for the different experiments as follows:

EXPERIMENT	(%) SCORES VARY BETWEEN:	RANGE
EXP.A	91.00 - 75.00	16.0
EXP.B	92.70 - 66.10	26.6
EXP.C	87.30 - 71.90	15.4
EXP.D	87.00 - 39.00	48.0
EXP.E	93.40 - 74.20	19.2

Hence, the low range of scores for EXP.A, EXP.B, EXP.C and EXP.E with their respective means 83.60%, 82.85%, 81.82% and 86.98% prove that the Algerian speakers were successful in making themselves understood in connected speech and reading a passage and also possessed the necessary skills for keeping phonemic distinctions, placing the nucleus in a sentence and conveying meaning through the use of intonation. Nevertheless, the large range and low score in EXP.D suggest the Algerian speakers' inability to handle lexical-stress. It is important to remember that both EXP.D and EXP.E consisted of two parts each. In EXP.D the researcher counted 22.5% (i.e. about a quarter) of incorrect responses divided as follows: 11.92% incorrect stress placement for the noun phrase/verb phrase distinction and 10.58% for noun/verb discrimination. Although both tasks in EXP.D proved difficult for the

**TABLE 8**  
**MEAN SCORES FOR SPEAKERS IN DIFFERENT EXPERIMENTS**

<b>SPEAKER No.</b>	<b>EXP. A (%)</b>	<b>EXP. B (%)</b>	<b>EXP. C (%)</b>	<b>EXP. D (%)</b>	<b>EXP. E (%)</b>
S.1	81.6	87.7	84.8	40	76.2
S.2	78.0	79.3	71.9	39	80.0
S.3	91.0	88.5	83.8	63	90.0
S.4	86.6	76.9	78.0	49	74.2
S.5	86.2	89.3	85.0	62	88.1
S.6	86.3	91.7	84.6	54	93.4
S.7	82.6	66.1	87.3	71	90.7
S.8	83.2	79.9	86.8	68	83.5
S.9	90.8	85.0	77.9	87	90.4
S.10	78.6	85.6	85.8	54	85.4
S.11	83.0	84.7	81.6	82	85.8
S.12	85.4	83.5	82.5	79	88.1
S.13	82.8	91.0	83.5	74	90.9
S.14	80.2	82.4	86.1	57	90.2
S.15	89.4	84.0	79.4	70	92.5
S.16	76.3	91.6	79.3	52	87.7
S.17	80.2	72.7	74.7	54	84.1
S.18	89.2	67.4	75.9	61	91.9
S.19	86.9	77.9	83.5	58	82.2
S.20	83.8	92.7	78.8	76	89.4
S.21	87.6	77.3	82.5	68	86.2
S.22	85.6	80.4	85.7	45	89.4
S.23	75.0	83.5	79.6	68	89.4
S.24	76.1	89.4	84.3	74	87.7
<b>MEAN</b>	<b>83.6</b>	<b>82.85</b>	<b>81.82</b>	<b>62.71</b>	<b>86.98</b>
<b>SD</b>	<b>4.7</b>	<b>7.3</b>	<b>4.1</b>	<b>12.9</b>	<b>4.9</b>

speakers, the placement of stress for distinguishing between a noun phrase and a verb phrase proved slightly more problematic.

As for the results in both parts of EXP.E, the investigator found 2.33% of incorrect responses for sentence accent placement and 5.11% of incorrect responses for the conveyance of meaning through intonation. Though the last two percentages are low (which explain the high success of speakers in EXP.E), it is worth mentioning that the speakers were less successful in conveying meaning through intonation than placing the nucleus in a sentence.

### VI. 3, 1. 3. IMPLICATIONS FOR EXPERIMENTS

Using the semi-interquartile range as a measure for the distribution of scores in the five separate experiments, one discovers that the distribution is skewed for EXP.B and EXP.D (positive skew) and EXP.C and EXP.E (negative skew). The distribution is symmetrical only for EXP.A. The foregoing findings were obtained by applying the formula suggested by Robson (1983: 53).

TABLE 9  
SKEWNESS OF DISTRIBUTIONS

	EXP.A	EXP.B	EXP.C	EXP.D	EXP.E
Q <sub>1</sub>	80.20	79.60	79.05	54.0	84.75
Q <sub>2</sub>	83.50	83.75	83.00	62.5	88.10
Q <sub>3</sub>	86.75	88.90	84.90	72.5	90.30
Q <sub>2</sub> -Q <sub>1</sub>	3.30	4.15	3.95	8.5	3.35
Q <sub>3</sub> -Q <sub>2</sub>	3.25	5.15	1.90	10.0	2.20

As an illustration one can demonstrate the symmetrical distribution of scores for EXP.A. If the scores are arranged in ascending order of size, the point that cuts off the lowest 25% of the cases is called Q<sub>1</sub>, the

first quartile. The point that cuts off the lowest 75% of the cases is called  $Q_3$ , the third quartile. The second quartile or  $Q_2$  is the median which represents the percentage score half-way between the highest and the lowest scores. If one considers the ranges  $Q_2-Q_1$  and  $Q_3-Q_2$ , one discovers  $Q_2-Q_1 \approx Q_3-Q_2$ , that is to say  $3.3 \approx 3.25$  (Table 9 shows the various ranges for the other experiments). Hence, the scores for EXP.A are distributed symmetrically about the mean/median (which are similar; that is the mean = 83.6 and the median = 83.5). Further, there is a positive skew for EXP.B and EXP.D ( $Q_3-Q_2 > Q_2-Q_1$ ) and a negative skew for EXP.C and EXP.E ( $Q_2-Q_1 > Q_3-Q_2$ ).

Therefore, it seems that several factors strongly favour the use of free speech (i.e. EXP.A) as the major criterion for evaluating the Algerian subjects' success in spoken English. Apart from the normal distribution of the results for EXP.A, the content of this experiment (i.e. connected speech) which provides the features closest to what happens in real-life discourse, represents another factor for the choice. Furthermore, the content of EXP.A far exceeded the other experiments in terms of quantity (one third of the total time allocated for each listening session). Finally, all the experiments except EXP.A, were choices made by the investigator to test a number of hypotheses.

Henceforth, for the present study free speech is assumed to be the criterion of fundamental importance in evaluating the Algerian speakers' overall ability in communicating with British subjects. However, it must be borne in mind that the other experiments are valuable in pinpointing specific difficulties which may be missed when considering a particular example of real discourse.

#### VI. 3. 1. 4. INTERCORRELATION BETWEEN EXPERIMENTS

Pearson product-moment correlation coefficients were computed for all pairings of tests. A look at the intercorrelation matrix (Table 10)



shows that no correlations exist between the different experiments, except between EXP.D and EXP.E which gave a coefficient of 0.51. To establish whether this coefficient was statistically significant, a t-test was applied. It was statistically significant at  $p < .005$ .

TABLE 10  
INTERCORRELATION MATRIX

	EXP.B	EXP.C	EXP.D	EXP.E
EXP.A	-0.17	0.00	0.29	0.27
EXP.B			0.10	0.18
EXP.D				0.51

Correlations are meant to indicate whether a given experiment is likely to measure what another experiment does and therefore permit the substitution of one by the other. In the case of the present study, one can argue that lack of correlation proves that each experiment is measuring a specific linguistic level or feature. The significant correlation between EXP.D and EXP.E suggests that there is a certain amount of overlap in what these two tests are measuring. The most obvious explanation for this is that lexical-stress is a necessary element in tackling sentence accent/intonational meaning.

The lack of correlation between most of the experiments could be explained as follows: the different tests behave as if they were independent from each other and therefore measuring specific features and/or the restricted range for the scores obtained by the various speakers which seems a proof that these belong to a very homogeneous group. There is no doubt that the different experiments investigated different linguistic levels and skills. Furthermore, the investigator did ensure that the speakers (as well as the informants) were carefully

selected and also shared more or less the same background.

**TABLE 11**  
**CONVERSION OF SUBJECTIVE RATINGS INTO NUMERICAL SCORES**

S.1	80	60	80	80	80	80	60	80	80	80
S.2	80	80	100	80	100	80	80	80	80	60
S.3	80	80	80	100	100	80	80	80	80	80
S.4	80	80	100	80	80	80	80	80	80	80
S.5	100	100	100	60	80	80	80	80	80	100
S.6	80	80	80	80	80	80	80	80	80	80
S.7	80	60	80	80	80	80	80	80	80	80
S.8	80	80	60	80	80	80	80	60	80	80
S.9	80	100	80	80	100	80	80	80	80	80
S.10	100	80	80	80	80	80	80	60	60	80
S.11	60	80	80	60	80	60	60	80	80	80
S.12	100	80	80	100	100	80	80	60	80	100
S.13	80	80	60	80	80	80	60	80	80	80
S.14	60	80	60	80	80	60	100	60	100	80
S.15	80	80	100	80	80	80	80	80	100	100
S.16	100	80	80	80	80	80	80	80	80	80
S.17	80	80	80	60	80	80	80	80	100	80
S.18	80	80	80	80	80	80	80	80	80	80
S.19	80	100	80	80	80	100	100	80	80	80
S.20	80	80	80	80	80	80	100	80	60	80
S.21	80	80	80	100	80	80	80	100	80	80
S.22	80	80	80	80	80	80	80	60	80	80
S.23	80	80	60	80	80	80	100	80	100	80
S.24	80	80	80	80	80	80	60	60	80	80

**TABLE 12**  
**INDIVIDUAL SPEAKER'S SCORES OBTAINED WITH EACH INFORMANT IN**  
**EXP.A**

S. 1	78	80	76	86	92	86	78	74	88	78
S. 2	84	72	96	86	78	64	84	70	72	74
S. 3	96	88	86	98	94	92	88	90	88	90
S. 4	88	86	88	84	86	86	78	84	96	90
S. 5	94	80	90	84	74	84	86	94	86	90
S. 6	90	86	92	84	80	65	90	92	92	92
S. 7	86	88	88	82	65	71	88	90	88	80
S. 8	74	92	80	84	86	96	88	76	78	78
S. 9	96	96	90	84	98	88	88	94	92	82
S. 10	88	86	80	74	70	82	74	76	74	82
S. 11	88	94	82	80	74	86	74	88	82	82
S. 12	86	88	84	88	86	88	86	78	80	90
S. 13	84	88	78	88	78	84	72	84	86	86
S. 14	74	80	80	84	84	82	82	80	78	78
S. 15	88	92	92	86	94	84	88	92	90	88
S. 16	76	71	80	84	86	76	90	53	67	80
S. 17	80	88	82	74	78	74	76	78	84	88
S. 18	90	82	94	92	96	88	92	82	90	86
S. 19	94	96	84	73	90	86	86	92	80	88
S. 20	88	92	72	82	88	88	80	84	78	86
S. 21	82	90	78	92	92	94	94	92	90	72
S. 22	82	86	88	88	76	84	88	92	82	90
S. 23	80	65	67	71	82	73	88	73	78	73
S. 24	76	88	76	69	82	80	63	76	69	82

**TABLE 13****SPEAKERS' MEAN SCORES IN BOTH MEASURES OF FREE SPEECH**

<b>SPEAKER No.</b>	<b>OBJECTIVE SCORES (%)</b>	<b>SUBJECTIVE SCORES (%)</b>
S.1	81.6	76
S.2	78.0	82
S.3	91.0	84
S.4	86.6	82
S.5	86.2	86
S.6	86.3	80
S.7	82.6	78
S.8	83.2	76
S.9	90.8	84
S.10	78.6	78
S.11	83.0	72
S.12	85.4	86
S.13	82.8	76
S.14	80.2	76
S.15	89.4	86
S.16	76.3	82
S.17	80.2	80
S.18	89.2	80
S.19	86.9	86
S.20	83.8	80
S.21	87.6	84
S.22	85.6	78
S.23	75.0	82
S.24	76.1	76
<b>MEAN</b>	<b>83.6</b>	<b>80.42</b>
<b>SD</b>	<b>4.7</b>	<b>4.0</b>

It is appropriate at this stage to consider whether any correlation exists between the objective and subjective ratings in EXP.A. Table 24 in Appendix I presents the different ratings obtained by each speaker with her/his respective informants. To allow for a correlational design between the two sets of ratings, it was decided to convert the subjective ratings into numerical scores. Hence, each point on the rating scale was allocated an intelligibility percentage as follows:

A = 100%

B = 80%

C = 60%

D = 40%

E = 20%

This is an adaptation of the procedure adopted by Richards and Swaffield in 1959 (cf. sub-section III. 1. 5) and later modified by Tiffen in 1974.

For comparative purposes we have presented one after the other, both the numerical version of Table 24 and the objective scores obtained for EXP.A laid in Table 11 and Table 12 respectively. In addition, we also added Table 13 to be able to compare the mean scores in the subjective and objective assessments of free speech. It is worth mentioning at this stage that no informant gave to any speaker a rating below C (i.e. 60%); the ratings varied between C and A.

A close comparison of individual sets of scores for the same speaker in Table 11 and Table 12 does not show any high correlation. However, when correlating the means over ten informants (cf. Table 13) between the subjective and the objective results the researcher obtained a product-moment correlation coefficient of 0.512. To establish whether this was statistically significant, we applied the t-test which showed the level of significance at  $p = 0.05$ .

The foregoing significant correlation between both subjective and objective scoring of free speech implies that, (1) the scoring method adopted in the evaluation of the informants' objective (i.e. dictation) responses in EXP.A was appropriate and, (2) a subjective assessment of the intelligibility of the population of Algerian speakers of English (from which the sample tested in this study was drawn) could be sufficient and prove therefore less time consuming. Nevertheless, as pointed out earlier on, one needs a large number of subjects to allow a correlation of means over a certain number of informants.

Further, a correlation coefficient of 0.512 is not high enough to argue that free speech of Algerian speakers of English, with comparable background to the sample tested, could be reliably assessed only along a subjective rating scale. It is reasonably realistic to state that both the objective (through a dictation task) and subjective measurements are required in the evaluation of these speakers' intelligibility in free discourse.

### VI. 3. 2. RELIABILITIES

A point critical to the success of the present investigation is whether the phonetically unsophisticated informants could rate the different experiments reliably. As indicated in the Anova Table 14, it is clear that there is absolutely no evidence that differences exist between the informants. The difference is not significant on the basis of the small F value of 0.86.

Moreover, it was mentioned earlier that in the control experiment the intelligibility results for the selected informants did not differ significantly from a perfect score (i.e. 100%). It therefore follows that the informants were good as well as reliable listeners.

**TABLE 14**  
**RELIABILITIES: ANALYSIS OF VARIANCE TABLE**

Source of Variation	Sum of Squares	df	Mean Squares	F	p
Speakers	20247	23	880.3	9.25	<.001
Informants	17747	216	82.16	0.86	n.s.
Experiments	89396	4	22349	235.00	<.001
Error	91004	956			
Total	218394	1199			

It is however not surprising to find differences between experiments as well as speakers. First of all, the Anova Table 14 provides evidence that differences between experiments exist and are significant at  $p < .001$ . The big F value probably results from the relatively low scores obtained for EXP.D (lexical-stress).

The difference between the speakers is also real as shown by the F value of 9.25 and significant at  $p < .001$ . Originally, both informants and speakers were meant to belong to two homogeneous groups. As already mentioned, the informant group proved indeed homogeneous. Hopefully the F value of 9.25 means that differences between speakers are real but it does not necessarily follow that they are great.

### VI. 3. 3. INDIVIDUAL SPEAKER'S PERFORMANCE

At this point it is interesting to compare the individual speaker's performance in EXP.A with the average result as well as to show approximately how far above or below the mean each speaker's result stands.

Table 15 shows the speakers in rank order on the basis of EXP.A and the various scores they obtained in the other experiments as well

as their respective overall average. As mentioned earlier, twelve speakers scored above the mean in EXP.A and were (in rank order): S.3, S.9, S.15, S.18, S.21, S.19, S.4, S.6, S.5, S.22, S.12 and S.20. Moreover, a look at this group's results in the overall average column reveals that the mean is 80.81% while the speakers who failed in EXP.A obtained 78.36% as a group. It is clear indeed that the speakers who succeeded in being comprehensible in free speech were also, on average, the most intelligible over all the experiments (including free speech).

#### VI. 3. 4. GRADING THE SPEAKERS

One other way to translate the relative performance of an individual speaker with respect to others or of comparable groups with others can be performed by allocating the speakers to categories or classes. In rank ordering speakers (Table 15) on the basis of EXP.A, the assumption was that the mean was 83.6% with a standard deviation of 4.7. To allocate speakers to different classes, one can take one standard deviation above and one standard deviation below the mean to delimit two classes: class B and class C. If however, one considers two standard deviations above and two below the mean, one obtains two other categories: class A and class D. Table 16 allocates speakers in rank order to respective categories. Thus, the speakers fall into four classes as follows:

CLASS	RANGE (%)
CLASS A	93.0 - 88.3
CLASS B	88.3 - 83.6
CLASS C	83.6 - 78.9
CLASS D	78.9 - 74.2



**TABLE 15**  
**SPEAKERS IN RANK ORDER BASED ON EXP.A**

<b>RANK</b>	<b>SPEAKER No.</b>	<b>EXP.A (%)</b>	<b>EXP.B (%)</b>	<b>EXP.C (%)</b>	<b>EXP.D (%)</b>	<b>EXP.E (%)</b>	<b>OVERALL AVERAGE (%)</b>
1	S.3	91.0	88.5	83.8	63	90	83.26
2	S.9	90.8	85.0	77.9	87	90.4	86.22
3	S.15	89.4	84.0	79.4	70	92.5	83.06
4	S.18	89.2	67.4	75.9	61	91.9	77.08
5	S.21	87.6	77.3	82.5	68	86.2	80.32
6	S.19	86.9	77.9	83.5	58	82.2	77.70
7	S.4	86.6	76.9	78.0	49	74.12	72.94
8	S.6	86.3	91.7	84.6	54	93.4	82.00
9	S.5	86.2	89.3	85.0	62	88.1	82.12
10	S.22	85.6	80.4	85.7	45	89.4	77.22
11	S.12	85.4	83.5	82.5	79	88.1	83.70
12	S.20	83.8	92.7	78.8	76	89.4	84.14
13	S.8	83.2	79.9	86.8	68	83.5	80.28
14	S.11	83.0	84.7	81.6	82	85.8	83.42
15	S.13	82.8	91.0	83.5	74	90.9	84.44
16	S.7	82.6	66.1	87.3	71	90.7	79.54
17	S.1	81.6	87.7	84.8	40	76.2	74.06
18	S.14	80.2	82.4	86.1	57	90.2	79.18
19	S.17	80.2	72.7	74.7	54	84.1	73.14
20	S.10	78.6	85.6	85.8	54	85.4	77.88
21	S.2	78.0	79.3	71.9	39	80	69.64
22	S.16	76.3	91.6	79.3	52	87.7	77.38
23	S.24	76.1	89.4	84.3	74	87.7	82.30
24	S.23	75.0	83.5	79.6	68	89.4	79.10

<b>MEAN</b>	<b>83.6</b>	<b>82.85</b>	<b>81.82</b>	<b>62.71</b>	<b>86.98</b>	<b>79.59</b>
<b>SD</b>	<b>4.7</b>	<b>7.3</b>	<b>4.1</b>	<b>12.9</b>	<b>4.9</b>	<b>4.2</b>

Hence, speakers in classes A and B performed better than average while those in classes C and D below average. Twelve speakers scored above the mean and represent 50% of the sample while the remaining twelve (or 50%) scored below the mean.

**TABLE 16**  
**GRADING OF SPEAKERS ON THE BASIS OF EXP.A**

CLASS	SPEAKER No. (in rank order)	SCORE (%)	
CLASS A	S.3	91.0	<u>2 SD</u> = 93.0%
	S.9	90.8	
	S.15	89.4	
	S.18	89.2	
CLASS B	S.21	87.6	<u>1 SD</u> = 88.3%
	S.19	86.9	
	S.4	86.6	
	S.6	86.3	
	S.5	86.2	
	S.22	85.6	
	S.12	85.4	
	S.20	83.8	
CLASS C	S.8	83.2	<u>MEAN</u> = 83.6%
	S.11	83.0	
	S.13	82.8	
	S.7	82.6	
	S.1	81.6	
	S.14	80.2	
	S.17	80.2	
CLASS D	S.10	78.6	<u>1 SD</u> = 78.9%
	S.2	78.0	
	S.16	76.3	
	S.24	76.1	
	S.23	75.0	
			<u>2 SD</u> = 74.2%

Moreover, considering the standard deviation of 4.7 one can safely argue that about 95% of Algerian speakers, with comparable background to the sample investigated, are likely to obtain an average intelligibility score between 74% (i.e. two standard deviations below the mean) and 93% (i.e. two standard deviations above the mean).

### VI. 3. 5. RESULTS FOR THE CONTROL EXPERIMENT

The results with the R.P. speaker in the control experiment ensured the selection of 'good' informants on the one hand, and served as a norm for comparing the Algerian speakers' performance with the native speaker on the other.

Concerning the final selection of informants it was mentioned earlier that the control experiment allowed the rejection of 36 informants. In addition, the 240 selected informants' results nearly reached the perfect score (99.65% and 98.44% for Part A and Part B respectively).

It is probably more effective and conclusive to consider the results for free speech of both EXP.A and Part A (of the control) to compare the Algerian speakers with the norm. Hence, the following show how the Algerian speaker's performance measured compared to that of the R.P. speaker:

R.P. speaker	99.65%
Most intelligible Algerian speaker (S.3)	91.00%
Mean intelligibility of Algerian speakers	83.60%
Least intelligible Algerian speaker (S.23)	75.00%

The above provides evidence for an already predictable answer which shows that the R.P. speaker was far more comprehensible to British informants than the Algerian speakers were. The R.P. speaker was 16% more effective than the average Algerian speaker and about 9% more effective than the best Algerian speaker all the time.

The R.P. speaker's results do not differ significantly from a perfect score (i.e. 100%) and represents, therefore, perfect communication. The average Algerian speaker with similar background to the sample tested is about 84% as competent as a native speaker. Furthermore, the most intelligible Algerian speaker is 91% as competent as an R.P. subject, while the least intelligible Algerian speaker of English proves 75% as competent as the native one.

TABLE 17 GROUP MEANS AND STANDARD DEVIATIONS FOR THE NINE VARIABLES

	n	EXP. A			EXP. B			EXP. C			EXP. D			EXP. E		
		$\bar{X}$	S. D.	$\bar{X}$	S. D.	$\bar{X}$	S. D.	$\bar{X}$	S. D.	$\bar{X}$	S. D.	$\bar{X}$	S. D.	$\bar{X}$	S. D.	
Age																
21-25 years	5	84.36	6.1	79.16	8.4	83.78	3.0	63.00	10.5	89.14	1.7					
26-30 years	11	83.44	4.3	82.60	7.4	81.18	4.7	60.55	13.4	85.34	6.5					
31-35 years	8	83.36	4.8	85.51	6.1	81.43	3.9	65.50	14.7	87.88	3.0					
Sex																
Male	12	82.80	4.8	80.47	8.7	79.88	4.2	64.67	12.6	86.57	5.6					
Female	12	84.40	4.6	85.24	4.7	83.70	2.7	60.75	13.5	87.38	4.4					
Occupation																
University <sup>1</sup>	4	85.50	5.7	83.63	2.6	82.48	4.5	69.75	13.5	87.95	4.2					
Sec. Sch. <sup>2</sup>	16	82.98	4.9	82.93	6.9	81.33	4.3	58.56	12.7	86.15	5.5					
Others <sup>3</sup>	4	84.20	2.3	81.78	12.5	83.03	3.5	72.25	3.5	89.30	2.2					
No. langs. spoken																
A, F, B <sup>4</sup>	6	83.03	3.8	81.08	7.2	83.65	4.1	59.83	13.2	85.88	5.7					
A, F, B+ other <sup>5</sup>	18	83.79	5.0	83.44	7.4	81.19	4.0	63.67	13.1	87.34	4.8					
Langs. spoken at home																
A	13	81.82	4.2	82.02	8.9	80.86	4.8	61.85	13.9	85.68	5.7					
A + F	10	86.64	3.4	83.06	4.6	83.28	2.9	64.90	12.3	88.59	3.7					
Years of BFL teaching																
0-2 years	13	81.88	4.7	82.18	7.8	81.28	4.5	62.00	12.0	87.72	3.7					
3+ years	11	85.63	3.9	83.66	6.8	82.43	3.6	63.55	14.5	86.09	6.1					
Years of learning English																
0-12 years	10	83.82	5.4	82.22	7.5	83.10	3.0	65.00	9.4	88.77	2.9					
13-16 years	7	82.86	4.0	81.11	7.9	80.96	6.7	55.00	13.4	83.16	6.8					
17+ years	7	84.03	4.7	85.50	6.6	80.80	3.7	67.14	15.0	88.23	3.0					
Length of visits to the UK																
0 month	5	83.20	5.0	85.44	10.2	82.62	3.8	60.60	14.4	88.02	6.9					
< 6 months	12	84.84	4.3	81.58	7.0	83.04	3.3	62.92	9.2	87.15	5.1					
6 months +	7	81.76	5.1	83.20	5.9	79.10	4.8	63.86	18.5	85.93	3.3					
Starting age learning B.																
12-14 years	10	83.60	3.4	83.80	8.0	83.81	2.4	64.40	12.3	89.05	2.3					
15 + years	14	83.60	5.5	82.18	6.9	80.37	4.5	61.50	13.7	85.49	5.8					

NOTE: <sup>1</sup> University assistants; <sup>2</sup> Secondary school teachers; <sup>3</sup> Graduate students; <sup>4</sup> A=Algerian Arabic, F=French, B=English; <sup>5</sup> Standard Arabic (15), Spanish (2), Italian (1)

### VI. 3. 6. EFFECTS OF INDEPENDENT VARIABLES

A further method for analysing the data obtained consists of allocating the speakers into groups based on a number of independent variables. Thus, the following nine independent variables were considered: age, sex, occupation, number of languages spoken, languages spoken at home, number of years of EFL teaching, lengths of visits to the UK and age at which speakers started learning English.

Moreover, for each variable mean scores and standard deviations were computed speaker by speaker in all five experiments. Table 17 presents group means and standard deviations obtained in the various experiments for these nine independent variables.

Table 17 shows that the highest means fall regularly to speakers who are female, speak more than three languages, use both Algerian Arabic and French at home, have taught EFL for three years or more, have learned English for 17 years or more and have started learning English between 12 and 14 years of age.

Nevertheless, the foregoing trends did not prove that the differences between group means were significant. For this reason we applied tests of significance of difference between the means. We employed two factorial designs as an analytical procedure: a between-subject design and a within-subject one.

Table 18 presents the analysis of variance (Anova) results with EXP.A for the nine independent variables. The dependent variable is all the speakers' intelligibility scores obtained in EXP.A. No significant main effect was obtained for the variables of age, sex, occupation, number of languages spoken and years of learning English; in other words, the above-mentioned variables did not affect the speakers' ability to communicate through free speech. A significant main effect, however, was obtained for one variable: languages spoken at home. This

suggests that this last variable affected the speakers' ability to communicate with the British informants.

**TABLE 18**  
**ANALYSIS OF VARIANCE TABLE (EXP.A)**

Source of Variation	Sum of Squares	df	Mean Squares	F	p
between-groups (age)	3.67	2	1.67	0.071	n.s.
within-groups	495.02	21	23.57		
between-groups (sex)	15.36	1	15.36	0.695	n.s.
within-groups	486.2	22	22.1		
between-groups (occ.)	35.41	2	17.71	0.785	n.s.
within-groups	473.49	21	22.55		
between-groups (n.l.s)	2.6	1	2.6	0.115	n.s.
within-groups	497.2	22	22.6		
between-groups (l.s.h)	129.97	1	129.97	8.647	p<.01
within-groups	315.72	21	15.03		
between-groups (EFL)	78.77	1	78.77	4.15	n.s.
within-groups	417.18	22	18.96		
between-groups (y.l.E)	10.63	2	5.32	0.228	n.s.
within-groups	490.98	21	23.38		
between-groups (UK)	42.95	2	21.48	0.995	n.s.
within-groups	453.39	21	21.59		
between-groups (s.a.E)	0	1	0	0	n.s.
within-groups	497.29	22	22.6		

**NOTE:** occ.: occupation; n.l.s: No. of languages spoken;

l.s.h.: languages spoken at home; EFL: years of EFL teaching;

y.l.E.: years of learning English; UK: lengths of visits to

the UK; s.a.E: starting age of learning English.

**TABLE 19**  
**ANALYSIS OF VARIANCE TABLE (EXP.B)**

Source of Variation	Sum of Squares	df	Mean Squares	F	p
between-groups (age)	125.37	2	62.69	1.207	n.s.
within-groups	1090.31	21	51.92		
between-groups (sex)	136.52	1	136.52	2.8	n.s.
within-groups	1075.58	22	48.89		
between-groups (occ.)	7.12	2	3.56	0.062	n.s.
within-groups	1203.18	21	57.29		
between-groups (n.l.s)	25.06	1	25.06	0.463	n.s.
within-groups	1190	22	54.10		
between-groups (l.s.h)	14.36	1	14.36	0.264	n.s.
within-groups	1140.96	21	54.33		
between-groups (EFL)	6.42	1	6.42	0.119	n.s.
within-groups	1192.48	22	54.20		
between-groups (y.l.E)	85.92	2	42.96	0.79	n.s.
within-groups	1142.07	21	54.38		
between-groups (UK)	52.43	2	26.22	0.473	n.s.
within-groups	1164	21	55.43		
between-groups (s.a.E)	15.31	1	15.31	0.282	n.s.
within-groups	1194	22	54.32		

In the grading of speakers (Table 16) four subjects fell within class A (i.e. category of most intelligible speakers) and five in class D (i.e. category of least intelligible speakers). One needs to mention that

the scores obtained by the two categories show some correlation with the variable that had a significant effect on the speakers' performance in EXP.A.

Out of four speakers in class A, three (S.3, S.9, S.15) spoke both Algerian Arabic and French at home. Only S.18 reported using just Algerian Arabic. Finally, it is worth mentioning that the most intelligible speakers' results (S.3 and S.9) belong to the two highest group means; that is, they spoke Algerian Arabic and French at home.

Class D, on the other hand, includes four speakers out of five who spoke only Algerian Arabic at home and these are: S.2, S.10, S.23 and S.24. The fifth member of class D, S.16, spoke only French at home. It is of interest to mention that the least intelligible speakers (S.24 and S.23) had results which belong to the lowest group means for the variable of languages spoken at home; in other words, both speakers reported speaking only Algerian Arabic at home.

Table 19 presents the analysis of variance results with EXP.B for the same nine independent variables. The dependent variable consists of all the speakers' intelligibility scores in EXP.B. No significant effect was obtained for all the variables; that is to say, these factors did not influence the ability of speakers to read a passage intelligibly.

Table 20 shows the Anova results for EXP.C with the same independent variables. The dependent variable represents all the scores obtained by the speakers in EXP.C. The only significant difference between group means concerns the variable of age at which speakers started learning English. This suggests that out of the nine variables only this one had an influence on the speakers' ability to make accurate distinctions between phonemes.



**TABLE 20**  
**ANALYSIS OF VARIANCE TABLE (EXP.C)**

Source of Variation	Sum of Squares	df	Mean Squares	F	p
between-groups (age)	24.93	2	12.47	0.721	n.s.
within-groups	363.37	21	17.30		
between-groups (sex)	87.55	1	87.55	7.020	p<.025
within-groups	274.23	22	12.47		
between-groups (occ.)	11.43	2	5.72	0.320	n.s.
within-groups	374.00	21	17.85		
between-groups (n.l.s)	27.24	1	27.24	1.684	n.s.
within-groups	356.05	22	16.18		
between-groups (l.s.h)	33.76	1	33.76	2.013	n.s.
within-groups	352.17	21	16.77		
between-groups (BFL)	8.20	1	8.20	0.484	n.s.
within-groups	372.60	22	16.94		
between-groups (y.l.B)	28.84	2	14.42	0.846	n.s.
within-groups	358.08	21	17.05		
between-groups (UK)	74.15	2	37.08	2.466	n.s.
within-groups	315.79	21	15.04		
between-groups (s.s.B)	70.34	1	70.34	4.912	p<.05
within-groups					

**TABLE 21**  
**ANALYSIS OF VARIANCE TABLE (EXP.D)**

Source of Variation	Sum of Squares	df	Mean Squares	F	P
between-groups (age)	114.02	2	57.01	0.319	n.s.
within-groups	3749.23	21	178.54		
between-groups (sex)	92.20	1	92.20	0.541	n.s.
within-groups	3751.11	22	170.51		
between-groups (occ.)	837.85	2	418.93	2.929	n.s.
within-groups	3002.85	21	142.99		
between-groups (n.l.s)	66.36	1	66.36	0.385	n.s.
within-groups	3788.57	22	172.21		
between-groups (l.s.h)	41.21	1	41.21	0.235	n.s.
within-groups	3680.13	21	175.24		
between-groups (EFL)	15.57	1	15.57	0.089	n.s.
within-groups	3830.50	22	174.11		
between-groups (y.l.E)	605.92	2	302.96	1.974	n.s.
within-groups	3222.60	21	153.46		
between-groups (UK)	34.56	2	17.28	0.095	n.s.
within-groups	3813.98	21	181.62		
between-groups (s.a.E)	50.06	1	50.06	0.290	n.s.
within-groups	3801.58	22	172.80		

**TABLE 22**  
**ANALYSIS OF VARIANCE TABLE (EXP. E)**

Source of Variation	Sum of Squares	df	Mean Squares	F	p
between-groups (age)	59.40	2	29.70	1.255	n.s.
within-groups	497.06	21	23.67		
between-groups (sex)	3.93	1	3.93	0.155	n.s.
within-groups	557.92	22	25.36		
between-groups (occ.)	36.31	2	18.16	0.732	n.s.
within-groups	521.19	21	24.82		
between-groups (n.l.s)	9.59	1	9.59	0.381	n.s.
within-groups	554.13	22	25.19		
between-groups (l.s.h)	48.74	1	48.74	1.995	n.s.
within-groups	513.09	21	24.43		
between-groups (EFL)	15.90	1	15.90	0.652	n.s.
within-groups	536	22	24.38		
between-groups (y.l.E)	146.17	2	73.09	3.77	p<.05
within-groups	407.13	21	19.39		
between-groups (UK)	15.21	2	7.61	0.275	n.s.
within-groups	541.89	21	27.71		
between-groups (s.a.E)	75.32	1	75.32	3.417	n.s.
within-groups					

Table 21 presents the Anova results for the same nine independent variables. The dependent variable refers to the scores obtained by the speakers in EXP.D. No variable made any significant difference for the group means.

Table 22 which presents the Anova results for the same nine independent variables with EXP.E shows that no significant difference exists between the means of all the groups except one which relates to the number of years of learning English ( $p < .05$ ). In other words, apart from this variable all the others did not have any effect on the speakers' ability to handle sentence accent and intonational meaning.

#### VI. 4. SUMMARY

When scoring the informants' responses we made one major decision concerning free speech and reading. The word-group served as the scoring unit for EXP.A and EXP.B and Part A in the control. For the other experiments we used a straightforward procedure.

The results converted into intelligibility percentages were calculated for each speaker and informant. In addition, we also computed standard deviations for the individual speakers with their respective informants.

In the interpretation of the results obtained we found that the informants selected proved good and reliable. The different experiments did not show any correlation between them (except between EXP.D and EXP.E). The correlation between the subjective and objective measurements of free speech was actually significant. As for the speakers, we took EXP.A as the criterion for assessing the intelligibility level of the speakers who obtained a mean intelligibility score of about 84%. The most and the least intelligible speakers scored 91% and 75% respectively. In free speech the R.P. speaker scored 99.65% which

represents almost perfect communication.

Finally, we considered nine independent variables for the various experiments and none proved significant for EXP.B and EXP.D. Only one proved significant for each of EXP.A and EXP.E and two for EXP.C.

## CHAPTER VII

### INTELLIGIBILITY BREAKDOWN IN FREE SPEECH AND READING

#### VII. 0. INTRODUCTION

The informants' responses in both EXP.A and EXP.B only pinpoint the utterance or some part of it which has led to the breakdown of communication between the Algerian speakers and the British informants. The responses do not give a straightforward indication of the cause of the failure. If one looks at a sample of responses in both experiments one is likely to notice that cases of lack of correspondence between a speaker's utterance and informants' responses do exist. For example, the following are instances from both experiments:

<u>SPEAKER</u> <u>No.</u>	<u>INTENDED</u> <u>UTTERANCE</u>	<u>SAMPLE OF INFORMANTS'</u> <u>RESPONSES IN EXP.A</u>
1	'it took us half an hour to arrive there'	'because half an hour drive there'
5	'for us sorry because I went'	'for I saw it or I went'
9	'then I reached Edinburgh'	'then I wished Edinburgh'
10	'but boring in the sense that'	'but says that'
11	'I had a bad start'	'I had a best heart'

<u>SPEAKER</u> <u>No.</u>	<u>INTENDED</u> <u>UTTERANCE</u>	<u>SAMPLE OF INFORMANTS'</u> <u>RESPONSES IN EXP.B</u>
8	'genuinely upset'	'genuinely absent'
12	'like the way his aunt kept the sugar in a different place'	'and the way his fishing tackle was in a different place'
17	'some of the woods where he had'	'some of the rooms he had'

Any attempt to readily ascribe the breakdown of communication in the above cases to a straightforward cause would be inaccurate and unreliable. Therefore, there was a need for a reliable method to attribute causes to each error. For the purpose of the present study

the investigator chose to analyse phonetically the actual utterances which had led to unintelligibility and hence draw conclusions on the causes of miscomprehension.

The phonetic analysis of the word or group of words that had caused misunderstanding was carried out through a narrow phonetic transcription of these lexical items in both free speech and the reading passage for each speaker. In Appendix J and Appendix K the unintelligible sections are in the first column presented within the unit they had occurred and underlined. The next column provides all the informants' responses to the mispronounced items and the number of times these responses occurred are in the third column; the fourth column presents the phonetic transcription of the problematic part of each unit and the last column gives the major and likely cause of unintelligibility. The following sample from the spontaneous speech of speaker No.5 serves as an illustration:

<u>UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S</u>	<u>INFORMANTS' RESPONSES</u>	<u>No. OF OCCURRENCES</u>	<u>ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S</u>	<u>LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN</u>
a <u>bus</u> was waiting for them	- a vessel - a —was	4	['ʔəbʌs]	rhythm

While analysing the problematic words and informants' responses, the only task that proved difficult concerned the allocation of a mispronunciation to one major cause of miscomprehension. It is quite legitimate to encounter some difficulty in allocating mispronunciations to major error-types since, in a large number of cases, several other possibilities exist. Mispronunciations usually involve a number of features operating together. Therefore, the major concern evolved around which one of the several causes was the most influential in leading to misunderstanding. For example, speaker No.1 pronounced the word 'police' in free speech as ['pɔljɪs]. It is clear from this example

that mispronunciation is due to two causes: wrong lexical-stress pattern (i.e. the first syllable is stressed instead of the second) and vowel substitutions (i.e. /ə/→[ɔ] and /i:/→[ɪ]). It was finally decided that the incorrect lexical-stress placement accounted for most of the intelligibility breakdown; the reasoning behind this choice is simply that in native English speakers' speech, a shift in lexical-stress usually carries with it vowel alteration (e.g. the noun/verb distinction with the word 'rebel' pronounced either /'rebel/ or /rɪ'bel/). In a very few number of cases allocations to error-categories were not so clear-cut and in this case we allocated the error to a given category and marked it with a star (\*).

We made the above type of decision for cases where no straightforward explanation could be found. However, it must be mentioned that sometimes we did have clear-cut answers. In the next section all the main error-types that operated in both free speech and reading are considered.

## VII. 1. TYPES OF ERRORS THAT LED TO INTELLIGIBILITY BREAKDOWN

When allocating mispronunciations to categories, we found that in free speech twelve types occurred. For the reading passage out of these twelve categories only ten occurred with an extra category (lexical item substitution) made by two speakers. For the rest of the present section we review all the error-types.

### VII. 1. 1. VOWEL SUBSTITUTION

An error was ascribed to vowel substitution when a monophthongal (tense or lax) vocalic segment was mispronounced and usually replaced by another monophthong or, in a few cases, by a diphthong.

e.g. speaker No.13 (free speech): /ɔ:/→[ʊ] 'in order'

speaker No.24 (reading): /ɑ:/→[eɪ] 'volume'



There were, however, cases where allocating a misperception to the present category was not straightforward. Speaker No.2, for instance, pronounced 'and so' (free speech) as [ʔsə] and we had to decide whether it was a vowel substitution or a diphthong one. Finally, we classified it as an error of /ə/ in 'and' and not the diphthong /əu/ of 'so' because out of the three informants who misheard this utterance one heard 'also' which proves /əu/ was less misunderstood than /ə/.

#### VII. 1. 2. VOWEL EPENTHESIS

The present category involves those speakers who insert a vowel usually to avoid complex consonant clusters or sequences within a word or at word boundaries. For example, in their spontaneous speech both speakers No.14 and No.16 mispronounced the word 'surprised' as [sə'pjaɪzəd] and the word 'slang' as [sə'lɛŋ] respectively.

#### VII. 1. 3. DIPHTHONG SUBSTITUTION

Miscomprehensions due to diphthong substitution almost always involve the monophthongization of the glide. In other words, most cases of diphthong substitution involve the replacement of a diphthong by a pure vowel. The researcher could find only three cases of a diphthong being replaced by another diphthong.

e.g. speaker No.14 (free speech): /ɪə/→[ɪ] 'really'

speaker No.10 (reading): /eɪ/→[ɛ] 'way'

It must be mentioned that in one case, in free speech, a speaker (No.2) replaced a triphthong by a monophthong. Since it happened only once and since the diphthong was elided we have taken a fairly arbitrary decision to include this amongst the diphthong substitutions. The item in question is 'our' ('anyway we bought our ticket') mispronounced as [ɜ:]. Note that as to 'our' in present-day R.P.,

speakers produce it as monophthongal (/ɑ:/). So this could be considered simply a vowel substitution.

#### VII. 1. 4. CONSONANT SUBSTITUTION

This category involves errors that resulted from mispronunciations of consonantal segments. Consonant replacements can occur either initially or finally in a syllable structure.

e.g. speaker No.7 (free speech): initial /ð/→[θ] 'that'  
speaker No.20 (reading): final /ŋ/→[ŋ] 'things'

Cases occurred where the allocation of errors to consonant substitutions was less clear-cut. For example, in speaking freely speaker No.2 pronounced 'buses' as ['pʊsɪz] and the choice had to be made between the substitution of /b/ by [p] and the replacement of /ʌ/ by [ɥ]. We finally decided for consonant substitution as the major cause because seven out of ten informants reported the word 'passes' and that the quality of the vowel of the word 'passes' is close to that of 'buses'.

#### VII. 1. 5. CONSONANT EPENTHESIS

As in the case of vowel epenthesis, errors due to consonant epenthesis result from the speakers inserting a consonant in positions where no consonant is needed. This extra segment consisted of either a glottal stop reinforcement usually occurring between two vowels (to avoid a diphthong) or a spelling mispronunciation of silent consonants.

e.g. speaker No.4 (free speech): 'me a' [mɪʔə]  
speaker No.10 (free speech): 'honestly' ['hɒnəsli]  
speaker No.8 (reading): 'grown up' ['grəʊŋʊp]

#### VII. 1. 6. CONSONANT ELISION

A number of speakers refrained from pronouncing one consonantal segment or more and this usually to avoid clusters within a lexical item or more often sequences at word boundaries. As for consonant

substitution, elisions can occur initially or finally in a syllable.

e.g. speaker No.2 (free speech): initial /w/ 'which was' [wɪtʃɔ:z]  
speaker No.19 (reading): final /n/ 'genuinely' ['dʒɛnjʊəlɪ]

#### VII. 1. 7. SYLLABLE ELISION

Beside segmental elisions, namely consonantal, a large number of mispronunciations resulting from elided syllables occurred. Cases of such elision involved syllables with only a vowel or diphthong as well as syllables containing both a vowel or diphthong with accompanying consonants.

e.g. speaker No.1 (free speech): 'okay' [kɛ]  
speaker No.18 (reading): 'said it' [sɛɪ]

#### VII. 1. 8. RESYLLABIFICATION

A number of speakers altered segments by their deletion or insertion (of other features) or a combination of both. Hence, sounds usually lose their acoustic and articulatory identity and lead to the boundaries between syllables to merge and to a new resyllabification. For example, the boundary between [nɔt] and [ɹɔŋ] in speaker No.15's phrase 'not wrong' has moved to the position after [ɔ] of 'not'. This gives rise to an initial-position affricate for the word 'wrong'. This new resyllabification produces the obscuration of certain words which become unintelligible to the native ear.

#### VII. 1. 9. RHYTHM

The English language possesses its own particular rhythmic patterns and it was clear from the start that the Algerian speakers would face difficulties in handling them. The analysis has shown that an important number of mispronunciations due to rhythm took place.

It was, however, necessary to decide upon the criteria for classifying mispronunciations as errors of rhythm. First, in a large number of cases whenever a whole utterance was left blank or misheard by an informant, the case of unintelligibility was almost always the use of incorrect rhythmic patterns. Obviously, and as already stated other features (e.g. vowel substitution, consonant elision, and so on) are also present as in the free speech utterance of speaker No.10 'boring in the sense that' ['boʊə?əðese:s'dʌt]. In this example the influence of the incorrect rhythmic pattern is paramount. Moreover, the error made by speaker No.1 in free speech 'as my' ('as my cousin told me') could be attributed to a vowel substitution error as might be thought after a first glance at the phonetic realisation ['ɔzmaj]. However, the use of a different vowel quality seems to be secondary to the incorrect rhythmic pattern since the grammatical word 'as' has a strong form with a vowel quality not so very different from [ɔ]. This prompted us to classify this error as incorrect rhythm.

#### VII. 1. 10. LEXICAL-STRESS

Whenever a misheard or missed polysyllabic word received its stress on the wrong syllable we considered it as an error of lexical-stress. In cases of mispronunciation of words due to incorrect stress pattern, stress was paramount over other features. An interesting case occurred in the free speech of speaker No.23 and deserves mentioning. When uttering 'and let me tell you how I regretted to leave England', the speaker mispronounced /e/ as [i:] and all the informants understood the intended word. In a later instance the same word occurred with the same speaker ('and because I regretted also the friends I have made') and not one of the ten informants understood it. While in the first occurrence of 'regretted'

the word received stress on the correct syllable (i.e. the second), in the second instance the speaker stressed the first syllable and at the same time elided the second.

#### VII. 1. 11. WRONG CHOICE OF LEXICAL ITEM

In spontaneous speech four speakers used incorrect lexical words. Out of five cases, three words were 'faux amis' and represented direct translations from French while the two remaining lexical items were incorrect lexical choice.

e.g. speaker No.5: 'bad memory' → 'bad souvenir'  
speaker No.12: 'mainly' → 'means'

#### VII. 1. 12. LEXICAL ITEM SUBSTITUTION

In reading two speakers replaced a given word by another.

e.g. speaker No.8: 'but' → 'and'  
speaker No.18: 'she' → 'it'

#### VII. 1. 13. INCORRECT SYNTACTIC CONSTRUCTION

28 cases of miscomprehension due to incorrect grammatical constructions occurred in the spontaneous speech of four speakers. If this type of error is not very substantial one must not ignore a large number of grammatical errors due mainly to tense concord which were usually corrected by the British informants.

e.g. speaker No.2: 'I seen something quite gigantic station like this'  
speaker No.13: 'that fields'

The majority of the above reviewed error-categories occurred in both spontaneous speech and reading. One must not forget also that considering the nature of each of these tasks, certain errors can only occur in free speech (e.g. incorrect syntactic structure, wrong choice of lexical item) or in reading (e.g. lexical item substitution). The above

different error-types will allow us to consider in turn each Algerian speaker's errors in both free speech and reading in the next section.

VII. 2. CAUSES OF INTELLIGIBILITY BREAKDOWN FOR EACH SPEAKER IN BOTH FREE SPEECH AND READING

In the present section each speaker's mispronunciations are mentioned under the appropriate error-category first in free speech and then in reading. Moreover, in both tasks we present the categories in rank order depending on the number of cases reported by the informants and represented by the figures between brackets.

(1) SPEAKER NO.1

FREE SPEECH

a- errors due to rhythm

'of course'	[ 'ʔɔfkɔs ]	(3)
'it took us half an hour to arrive there'	[ tɪtək'ʔs'hɔɪlfɔaʔə tərɔɪv'dɛ: ]	(3)
'with the help of'	[ 'wɪ:ðəhɛlp_ɔf ]	(9)
'as my'	[ 'ʔɪzmaɪ ]	(3)

b- errors due to lexical-stress

'police'	[ 'pɒlɪs ]	(3)
'recuperate'	[ 'rɛkɪpreɪt ]	(3)
'ago only'	[ 'əgəʔɔɪli ]	(6)
'and to <u>visit</u> it <u>also</u> '	[ ɛntu:vɪ'zɪtɪtɒl'so ]	(5)

c- errors due to vowel substitution

/i:/ → [ɪ]	'we'	[ wɪ ]	(4)
/u:/ → [ə]	'two'	[ tɔ ]	(5)
→ [ʊ]	'you'	[ jʊ ]	(3)

d- errors due to syllable elision

'okay'	[ kɛ ]	(5)
'okay'	[ kɛ ]	(5)

e- errors due to consonant substitution

initial /ð/ → [ʔ] 'they' [ʔe] (9)

READING

a- errors due to consonant elision

final /n/ 'then' [ðe:] (9)

b- errors due to lexical-stress

'tolerance' [təʊə'jens] (8)

c- errors due to rhythm

'she had said' ['ʃi:'hedseɪd] (2)

(2) SPEAKER No.2

FREE SPEECH

a- errors due to vowel substitution

/ə/ → [ɪ] 'for us' [fɪrəs] (3)

→ [e] 'and' [en] (5)

→ [ɛ] 'and live' [ɛ'li:v] (4)

'and so' [ɛsə] (3)

/ʌ/ → [ɛ] 'my studies' [mɪ'stɛdɪz] (2)

'in London' [ɪn'lɔŋdɪn] (2)

→ [ɪ] 'instructions' [ɪs'tɪŋkʃənz] (3)

→ [jɪ] 'unusual' [jɪ'nju:ʒəl] (3)

/e/ → [ɔ] 'well' [wɔl] (3)

b- errors due to diphthong substitution

/eɪ/ → [ɛ:] 'plane' [plɛ:n] (3)

→ [ɛ] 'anyway' ['eniweɪ] (5)

/aɪ/ → [ɔ] 'a kind of' [ə'kɪnɔf] (3)

\*/aʊə/ → [ɜ:] 'our' [ɜ:] (4)

c- errors due to vowel epenthesis

'for' [fəə] (9)

**d- errors due to incorrect syntactic construction**

'I seen something quite gigantic station like this' (9)

**e- errors due to consonant substitution**

initial /b/ → [p] 'buses' [ˈpʊsɪz] (7)

**f- errors due to rhythm**

'if you want' [ʔəfjəwɔ̃t] (3)

'something like this in the' [səmfiŋglakdɪsɪŋdɪ] (3)

**g- errors due to consonant elision**

initial /w/ 'which was' [wɪtʃɔːz] (3)

final /s/ 'let's' [lət] (2)

**READING**

**a- errors due to consonant elision**

final /ɹ/ 'some of' [ˈsʌmɔv] (5)

final /s/ 'accidents' [ˈæsɪdɪnt] (3)

final /ld/ 'old leisurely' [ˈʔɔləiʒəli] (9)

**b- errors due to vowel substitution**

/ɹ/ → [ɛ] 'rambled' [ˈrɛbɔld] (6)

/ɑː/ → [eɪ] 'vase' [veɪs] (5)

/ʌ/ → [ɛ] 'grown up' [ˈgɹɔnʌp] (3)

**c- errors due to rhythm**

'old leisurely tolerance' [ˈʔɔləiʒəli  
'tɔləɹəns] (6)

**d- errors due to consonant substitution**

final /v/ → [v] 'have' [hæv] (3)

**e- errors due to diphthong substitution**

/eɪ/ → [ɛ] 'the way' [ðə'weɪ] (2)

**(3) SPEAKER No.3**

**FREE SPEECH**

**a- errors due to consonant substitution**

initial /ʃ/ → [s] 'she' [sɪ] (5)

final /s/ → [z] 'us' [ɔz] (2)



**b- errors due to vowel substitution**

/ə/ → [ɛ]      'a'      [ɛ]      (3)

/e/ → [i]      'very'      ['vɪɹi]      (3)

**c- errors due to consonant epenthesis**

'a'      [ʔə]      (6)

**d- errors due to syllable elision**

'do you'      [dʊ]      (2)

'you're'      [jʊ]      (4)

**e- errors due to lexical-stress**

'whenever'      ['wɛnɛvə]      (3)

**READING**

**a- errors due to vowel substitution**

/æ/ → [ɛ]      'rambled'      ['ræbald]      (5)

/e/ → [ɛ]      'leisurely'      ['leɪʒəli]      (7)

**b- errors due to consonant substitution**

final /n/ → [s] 'genuinely' ['dʒɛnjʊəsli]      (5)

**(4) SPEAKER No.4**

**FREE SPEECH**

**a- errors due to vowel substitution**

/ɑ:/ → [ɛ]      'France'      [frɛs]      (6)

/ʌ/ → [ɔ]      'young'      [jʊŋ]      (5)

→ [ɔ]      'one'      [wʊ]      (4)

**b- errors due to consonant elision**

final /l/      'well'      [wɛ]      (5)

final /d/      'did not'      [dɪnɔt]      (2)

final /t/      'it was'      [ɪwɔz]      (6)

**c- errors due to consonant epenthesis**

'me a'      [mɪʔə]      (5)

'well I'      [welʔɪ]      (3)

**d- errors due to lexical-stress**

'money' [mʌ'ne] (5)

'another' [?'ʌnʌðə] (3)

**e- errors due to diphthong substitution**

/əʊ/ → [o:] 'goals' [go:lz] (3)

/ɛə/ → [ɛ] 'there' [ðɛɹ] (3)

**f- errors due to vowel epenthesis**

'I went' [?'ɪd:'wɛnt] (6)

**g- errors due to syllable elision**

'centre' [?'sɛntɹ] (2)

**READING**

**a- errors due to consonant elision**

final /d/ 'childhood' [?'tʃɪlhʊd] (3)

final /l/ 'rambled' [?'ræbəd] (6)

initial /j/ 'genuinely' [?'dʒenjuəlɪ] (3)

**b- errors due to vowel substitution**

/i:/ → [e] 'he' [fe] (2)

/ɪ/ → [ʔ] 'business' [?'bɪznəs] (3)

/ɑ:/ → [eɪ] 'vase' [veɪz] (4)

**c- errors due to lexical-stress**

'upset' [?'ʌpsɛt] (2)

**(5) SPEAKER No.5**

**FREE SPEECH**

**a- errors due to rhythm**

'a bus was' [?'æbʌs wɔz] (4)

'for us sorry because' [?'fɔ:ʌsɔ:ɪ'bɪkɔz] (5)

'where Cat Stevens was' [wɜ:'kætstɛvəns wɜz] (9)

**b- errors due to vowel substitution**

/ə/ → [ʔ] 'for a week' [fɔ:ʔ'wi:k] (3)

/ʊ/ → [əʃ] 'mosque' [məʃk] (7)

c- errors due to lexical-stress

'because' ['bɪkoʒ] (3)

'forgot' ['fɔrgɔt] (3)

d- errors due to wrong choice of lexical item

'bad memory' → 'bad souvenir' (3)

READING

a- errors due to vowel substitution

/ə/ → [ɔ] 'the' [dɔ] (2)

→ [ɔv] 'of' [ɔv] (3)

/ɑ:/ → [eɪ] 'vase' [veɪz] (2)

b- errors due to rhythm

'he still couldn't quite settle' [hɪ'stɪl:kʊdn't kwaɪt'setl] (4)

c- errors due to consonant substitution

initial /h/ → [f] 'he' [fɛ] (2)

(6) SPEAKER No.6

FREE SPEECH

a- errors due to lexical-stress

'beginning' ['bɪgɪnɪŋ] (7)

'phonetics' ['fənetɪks] (6)

b- errors due to vowel substitution

/ə/ → [ɛ] 'were' [wɛr] (4)

/e/ → [ɛ:] 'lessons' ['lɛ:sənz] (4)

→ [ɛ] 'level' ['lɛvəl] (3)

c- errors due to rhythm

'either the Daniel Jones' ['ɪ:'ðɪ:'dædʒ'deɪ'njɛ'dʒo:ns] (5)

'you see when I'm' [jə'si:wɛnɪm] (5)

d- errors due to wrong choice of lexical item

'degree' → 'licence' (4)

'even' → 'either' (5)

e- errors due to diphthong substitution

/zə/ → [e] 'where' [wɛr] (5)

/ei/ → [e] 'tapes' [tɛps] (3)

READING

a- errors due to syllable elision

'irritate' ['jɪrɪteɪt] (2)

'woman' [mɛn] (8)

b- errors due to rhythm

'old leisurely tolerance' ['ɔ:ldleɪ:ʒʊli'tɔ'leɪrəns] (4)

(7) SPEAKER No.7

FREE SPEECH

a- errors due to consonant substitution

initial /ð/ → [θ] 'that' [θæt] (2)

final /ð/ → [t] 'with' [wɪt] (3)

final /s/ → [z] 'Essex' ['ɛsɛkz] (5)

final /z/ → [s] 'this is why' [dɪsɪs'waɪ] (3)

final /tʃ/ → [t] 'which struck' [wɪt'ʃʌtrɪk] (5)

b- errors due to rhythm

'was fair' [wəzfeɪ] (7)

'I don't know why' ['ɪdɒntnə'waɪ] (3)

'to make a' ['tu:me:kə] (5)

c- errors due to consonant elision

final /t/ 'at the' [ətɪ] (7)

final /d/ 'realised that' ['ɪrɪəlaɪzɪdæt] (3)

d- errors due to lexical-stress

'directly' ['dɪrɪktli] (3)

'directly' ['dɪrɪktli] (6)

e- errors due to diphthong substitution  
/tə/ → [ə] 'there you've' [dʒəjəv] (8)

f- errors due to syllable elision  
'the ministry' ['dʒɪnɪstɹɪ] (2)

READING

a- errors due to syllable elision  
'he had' [hɛd] (8)

'genuinely' ['dʒɛnjuəlɪ] (8)

'but it was' [bətɪwəz] (3)

b- errors due to consonant elision  
final /l/ 'he still' [ɪstɪ] (6)

final /v/ 'of the' [ɔðə] (2)

final /z/ 'as she' [ʔɛʃɪ] (4)

c- errors due to rhythm  
'had changed and perhaps he had' [hɛ'tʃɛ:ʒdɛpəʃhɪhɛd] (5)

'some of the woods' ['sʊmədəwədz] (4)

d- errors due to resyllabification  
'had rambled' [hɛ'dʒɛbəl] (8)

e- errors due to lexical-stress  
'disturbed' ['dɪstɜp] (4)

f- errors due to vowel substitution  
/ɑ:/ → [eɪ] 'vase' [veɪz] (2)

/i:/ → [ɪ] 'he' [ɪ] (2)

g- errors due to syllable elision  
'in a different' [ɪ'dɪfjən] (2)

(8) SPEAKER No.8

FREE SPEECH

a- errors due to vowel substitution  
/ʌ/ → [ɔ] 'otherwise' [ʔɔðə'waɪz] (4)

/s:/ → [ʃ] 'Stirling' ['stɜ:lɪŋ] (5)

/e/ → [ɛ] 'self' [sɛlf] (2)

**b- errors due to consonant epenthesis**

'we specially' [wɪ?'speʃəlɪ] (5)

'yeah' [jeɪf] (3)

**c- errors due to lexical-stress**

'perfectly' [pɜ:'fɛktlɪ] (4)

'methodology' ['meθɒdɒləʒi] (3)

**d- errors due to consonant substitution**

initial /t/ → [tʃ] 'two' [tʃu] (7)

**e- errors due to incorrect syntactic construction**

'I have a class' → 'I've a class' (6)

**READING**

**a- errors due to vowel substitution**

/ə/ → [ɛ] 'and' [ɔɛ] (3)

/ɑ:/ → [eɪ] 'vase' [veɪz] (6)

/e/ → [eɪ] 'leisurely' ['leɪʒəli] (5)

**b- errors due to lexical item substitution**

'but' → 'and' (9)

**c- errors due to consonant epenthesis**

'grown up' ['grɔ:ʒnʌp] (8)

**d- errors due to lexical-stress**

'upset' ['ʌpsɛt] (2)

**(9) SPEAKER No.9**

**FREE SPEECH**

**a- errors due to rhythm**

'you know' ['jəʊnə:] (2)

'I mean' ['ɪmi:] (2)

'you know' ['jəʊnə:] (2)

'it was' ['ɪtwəz] (2)

b- errors due to vowel substitution

/ʊ/ → [ə] 'on a' [ənə] (2)

/ʌ/ → [ɔ] 'some' ['sɔm] (5)

c- errors due to consonant substitution

final /tʃ/ → [ʃ] 'reached' [ʃeɪtʃ] (3)

final /d/ → [t] 'ride straight' ['raɪd'straɪt] (3)

d- errors due to diphthong substitution

/eɪ/ → [ɛ] 'Davidson' ['deɪvɪdʒən] (4)

e- errors due to consonant epenthesis

'well' [wel?] (3)

READING

a- errors due to vowel substitution

/i:/ → [ɛ] 'even' ['?ɛvə] (5)

/ɑ:/ → [eɪ] 'vase' [veɪ's] (4)

b- errors due to consonant elision

final /n/ 'genuinely' ['dʒɛnjʊəli] (6)

c- errors due to resyllabification

'had rambled' [hæ'dʒæmbəld] (4)

(10) SPEAKER No.10

FREE SPEECH

a- errors due to rhythm

'at two o'clock pm' [?ə'tʰu?əklɒk'piəm] (4)

'some help they are ready' ['sɔmhelptʰeɪ'reɪdi] (4)

'rather I mean not dull' [rəðə'ʔɛmɪn'nɔt'dʌl] (10)  
ʔɛ'wɛðəntʰe'ɔt'dʌl]

'boring in the sense that' ['bɔɪə'ʔɛnsə:s'tʰæt] (8)

b- errors due to vowel substitution

/i:/ → [ɪ] 'he' [hɪ] (5)

→ [ɛ] 'even' ['?ɛvən] (3)

/e/ → [ɔ] 'Central' ['sɛntɹəl] (4)

/ə/ → [ɛ] 'as' [ɛz] (2)

/u:/ → [ʏ] 'you' [ʏ] (7)

c- errors due to diphthong substitution

/tə/ → [ɛ:] 'there' (dem.) [dɛ:] (7)

d- errors due to consonant substitution

final /l/ → [ʔ] 'well' [wɛʔ] (6)

e- errors due to consonant epenthesis

'well honestly' [wɛ'hɒnɛslɪ] (4)

f- errors due to consonant elision

final /d/ 'stayed there' ['steɪdɛ:] (3)

final /l/ 'well' [wɛ] (2)

READING

a- errors due to vowel substitution

/ɑ:/ → [eɪ] 'vase' [veɪs] (7)

/ə/ → [ɛ] 'and' [ɛɛ] (4)

b- errors due to diphthong substitution

/eɪ/ → [ɛ] 'way' ['weɪ] (3)

/əʊ/ → [ɔ] 'don't' ['dɔŋt] (2)

c- errors due to consonant substitution

initial /l/ → [ɹ] 'leisurely' ['leɪʒɹli] (3)

d- errors due to consonant elision

final /n/ 'genuinely' ['dʒɛnjʊəli] (2)

(11) SPEAKER No. 11

FREE SPEECH

a- errors due to vowel substitution

/ɒ/ → [əʊ] 'Maurice's' ['məʊɹɪsɪs] (10)

→ [ɛ] 'wanted' ['wɛŋtɪd] (4)

/æ/ → [e] 'bad' ['beɪd] (5)



**b- errors due to rhythm**

'well I went to Cumbernauld' ['wɛlɪwɛnt:ɪ'kʌbə'nɔ:lɔ] (9)

'this is where' [dɪsɪweɪ] (3)

**c- errors due to consonant substitution**

initial /ð/ → [d] 'opened the' ['əʊpənɔ'ə] (3)

final /t/ → [t] 'spent' [spɛnt] (2)

→ [d] 'thanked' ['θɛŋkɔ] (4)

**d- errors due to resyllabification**

'bad start' ['beɪs'tɑ:t] (5)

'phoned him' ['fəʊndɪm] (3)

**e- errors due to consonant elision**

final /z/ 'wasn't' [wɔ:t] (3)

final /l/ 'well you' [wejə] (3)

**f- errors due to syllable elision**

'arrived' ['ɹaɪvɔ] (3)

**READING**

**a- errors due to vowel substitution**

/ɪ/ → [ɛ] 'miserable' ['mɪzəbəl] (2)

/ɑ:/ → [eɪ] 'vase' [veɪs] (5)

/ə/ → [ɛ] 'and' [ɛ] (2)

**b- errors due to vowel epenthesis**

'tolerance seemed' ['tɒlərənsəɪ'md] (4)

'he realised' [hi'ɹɪ:læɪzɔ] (2)

**c- errors due to consonant elision**

final /b/ 'disturbed' [dɪs'tɜ:d] (4)

**(12) SPEAKER No. 12**

**FREE SPEECH**

**a- errors due to consonant substitution**

final /tʃ/ → [t] 'which' [wɪt] (10)

- b- errors due to wrong choice of lexical item  
 'mainly' → 'means' (9)
- c- errors due to vowel substitution  
 /ɔ:/ → [ɒ] 'of course' [ɒ'kɔ:s] (4)
- d- errors due to consonant elision  
 final /n/ 'only' ['əʊli] (3)

READING

- a- errors due to vowel substitution  
 /æ/ → [e] 'rambled' ['ræmbəld] (4)  
 /ɑ:/ → [eɛ] 'vase' [veɛz] (3)  
 /ə/ → [e] 'tolerance' ['tɒlərəns] (2)
- b- errors due to rhythm  
 'things had changed and perhaps he had' ['θɪŋshæŋdɪfʔɛdʒ'æŋd pərhæpʃhɪhæd] (3)  
 'like the way his aunt kept the sugar' ['laɪkðəwe:hɪzʔt keptðə'sʊgə] (3)
- c- errors due to diphthong substitution  
 /əʊ/ → [o:] 'home' [ho:m] (2)
- d- errors due to consonant elision  
 final /n/ 'genuinely' ['dʒenjəli] (2)

(13) SPEAKER No.13

FREE SPEECH

- a- errors due to rhythm  
 'Engineering Mechanical National' [ʔɪdʒɪ'nɪ:ʤɪme'kɪnekɒl nɒʃənɒl] (9)  
 'I mean' [ʔɪmɛ] (5)  
 'I mean' [ʔɪmɪ] (5)
- b- errors due to incorrect syntactic construction  
 'that fields' (9)
- c- errors due to vowel substitution  
 /æ/ → [ɔ] 'actually' [ʔɔktʃəli] (3)

/ɔ:/ → [ʊ] 'in order' [ɪn'ʊdə] (3)

/ə/ → [ʊ] 'a' [ʊ] (2)

d- errors due to diphthong substitution

/eɪ/ → [e] 'stayed' [sted] (3)

READING

a- errors due to vowel substitution

/ɑ:/ → [eɪ] 'vase' [veɪz] (9)

b- errors due to rhythm

'as she said it' ['ʔɛzʃi:edɪt] (3)

(14) SPEAKER No.14

FREE SPEECH

a- errors due to diphthong substitution

/ɪə/ → [ɪ] 'really' ['ʒɪlɪ] (3)

'here' [hɪ] (6)

'really' ['ʒɪlɪ] (5)

b- errors due to rhythm

'to her she said' [hɪ'ʃɪ:sɛdʔ] (3)

'sent a telegram' [sɛnt'ʔtɛləgrɛm] (3)

'in a whole' ['ɪnəʊl] (6)

c- errors due to consonant elision

final /s/ 'just' [dʒə] (4)

initial /ʃ/ 'and she' [ɛndʃɪ] (7)

d- errors due to syllable elision

'we were' [wɛʔ] (5)

e- errors due to lexical-stress

'because' ['bɪkəz] (3)

f- errors due to vowel epenthesis

'surprised' [sə'pɹɪzɪd] (2)

READING

a- errors due to vowel substitution

/ə/ → [ʊ] 'some of' [sʌmʊv] (2)

/ɑ:/ → [ʌ] 'aunt' ['ʌnt] (6)

/e/ → [ə] 'that' (dem.) [ðə] (10)

b- errors due to diphthong substitution

/əʊ/ → [ɔ:] 'old' [ʔɔ:ld] (2)

c- errors due to consonant elision

initial /ʃ/ 'she' [i] (2)

(15) SPEAKER No.15

FREE SPEECH

a- errors due to syllable elision

'expecting it' [eks'pekɪŋɪt] (10)

'say it' [seɪt] (4)

b- errors due to vowel substitution

/ə/ → [e] 'there' [ðe] (3)

/e/ → [ə] 'when' [wən] (3)

c- errors due to consonant substitution

initial /ð/ → [d] 'did the' [dɪðə] (3)

d- errors due to resyllabification

'not wrong' [nɔ'tʃʊŋ] (2)

READING

a- errors due to consonant substitution

final /t/ → [ʔ] 'but he still' [bʌʔɪ'stɪl] (10)

b- errors due to vowel substitution

/ɪ/ → [ə] 'will' [wəl] (3)

/ʌ/ → [ɛ] 'suddenly' ['sʌdnɪli] (6)

(16) SPEAKER No. 16

FREE SPEECH

a- errors due to lexical-stress

'after'	[ʔəf'tʰ]	(9)
'agreeable'	['εgʷebɔ̃t]	(4)
'laboratory'	['lɔ̃bɔ̃'rɔ̃'tʰɔ̃]	(3)
'Oxford'	['ʔəks'fɔ̃:d]	(2)
'very'	[və'jɪ:]	(3)
'discotheques'	['dɪs'ko'tɛks]	(3)

b- errors due to diphthong substitution

/ɛə/ → [ɛ]	'the airport'	[dɪ'ʔɛpɔ̃t]	(3)
→ [ɛ]	'where'	[wɛ]	(7)
→ [e:]	'their'	[dɛ:]	(4)
/eɪ/ → [ɛ]	'they'	[dɛ]	(3)
→ [ɛ]	'they'	[dɛ]	(4)

c- errors due to consonant substitution

initial /s/ → [t]	'southern'	['təʊðən]	(4)
initial /r/ → [w]	'right'	[wɛɪt]	(6)
initial /h/ → [ʔ]	'here'	[ʔɪə]	(6)
	'who'	[ʔɔ̃]	(3)

d- errors due to syllable elision

'again'	['gɛn]	(3)
'arrived'	[wɔ̃ɪv]	(8)
'you arrive'	[jɔ̃'rɪv]	(7)

e- errors due to rhythm

'we stayed'	[wɪsteː]	(3)
'at the school'	['ʔɛtʰdɛskɔ̃l]	(5)

f- errors due to vowel substitution

/ʌ/ → [ɔ̃:]	'month'	[mɔ̃:f]	(3)
→ [ɔ̃]	'young'	[jɔ̃g]	(3)

**g- errors due to vowel epenthesis**

'slang' [sə'leŋ] (6)

**h- errors due to consonant elision**

final /p/ 'trip for' ['trɪfɔ:] (2)

initial /w/ 'were' [ɜ:] (2)

**i- errors due to consonant epenthesis**

'an hour' ['fɛnəʊə] (3)

**READING**

**a- errors due to rhythm**

'old leisurely tolerance' ['ɔllezɪli'tɔʊləns] (9)

**b- errors due to vowel substitution**

/æ/ → [ɛ] 'rambled' ['ræmbəl] (2)

/ɑ:/ → [eɪ] 'vase' [veɪz] (3)

**(17) SPEAKER No.17**

**FREE SPEECH**

**a- errors due to diphthong substitution**

/əʊ/ → [ɔ] 'overseas' ['ɔvəsɛs] (6)

/uə/ → [ʏ] 'during' ['dʏrɪŋ] (9)

'during' ['dʏrɪŋ] (3)

**b- errors due to vowel substitution**

/u:/ → [ö] 'two' [tʰö] (3)

→ [ɪ] 'tutor' ['tʰɪtə] (3)

/ɒ/ → [ɑ:] 'Salford' ['sɑ:fɔd] (7)

/ə/ → [ʊ] 'can' [kʰʊ] (4)

**c- errors due to consonant substitution**

initial /w/ → [ɥ] 'we' [ɥi] (4)

initial /tʃ/ → [ʃ] 'lectures' ['lɛkʃɔz] (3)

initial /θ/ → [s] 'thrown' [sɔʊn] (4)

initial /ð/ → [d] 'that day' ['dʰætde:] (5)

d- errors due to lexical-stress

'airport' [ʔaɪ'pɔ:t] (7)

'chemistry' [kɪ'mɪ:stɪ] (4)

e- errors due to resyllabification

'I'm going' [ʔɛ'mgɔ:ŋ] (7)

f- errors due to rhythm

'one month' [wʊnθ̃ns] (3)

READING

a- errors due to vowel substitution

/u/ → [y:] 'woods' ['wʊ:dz] (7)

/æ/ → [ɔ] 'rambled' ['rʌmbəld] (4)

/ɑ:/ → [eɪ] 'vase' [veɪz] (6)

/ə/ → [ø] 'leisurely' ['leɪʒəli] (9)

b- errors due to rhythm

'as she said it' [ʔɛz'si'seɪd'ɪt] (4)

'as she would once have done' [ʔɛz'si:wʊ:ɔwʒshəv'dʌn] (7)

c- errors due to consonant epenthesis

'she had' [ʃɪzhɛt] (8)

d- errors due to consonant substitution

initial /l/ → [ɹ] 'tolerance' ['tɔləreɪns] (4)

e- errors due to consonant elision

final /s/ 'accidents' [ʔɛksɪdɪnt̩] (3)

(18) SPEAKER No.18

FREE SPEECH

a- errors due to rhythm

'that day' [ðætde:] (3)

'who were with me' [həwəwɪðmi] (5)

b- errors due to diphthong substitution

/eɪ/ → [e:] 'made' [me:d] (3)

- /ɪə/ → [i] 'here' [hɪ?] (5)
- c- errors due to incorrect syntactic construction
- 'as quicker as French train' (4)
- d- errors due to syllable elision
- 'because' ['bkɔz] (4)
- e- errors due to vowel substitution
- /ʌ/ → [ɔ:] 'other' ['ɔ:ðə] (3)
- f- errors due to lexical-stress
- 'before' ['bɪfɔr] (3)

### READING

- a- errors due to vowel substitution
- /ɔ:/ → [ɛ] 'all' [ʔɛl] (10)
- /ʌ/ → [ɔ] 'some' [sɔ] (6)
- \*/ɜ:/ → [ʔ] 'disturbed' [dɪs'tʔbəd] (3)
- /i:/ → [ɛ] 'even' ['ɛvən] (2)
- [ɪ] 'he' [hɪ] (4)
- /e/ → [e] 'leisurely' ['leɜlɪ] (3)
- /ə/ → [ɛ] 'that he had' [ðɛhɪhəd] (4)
- /ɑ:/ → [eɪ] 'vase' [veɪz] (4)
- b- errors due to syllable elision
- 'said it' [sed] (8)
- 'suddenly' ['sʔdɪ] (7)
- c- errors due to consonant substitution
- initial /h/ → [ʔ] 'he had' [ʔhəd] (3)
- final /n/ 'genuinely' ['dʒɪnjəsɪ] (9)
- d- errors due to lexical item substitution
- 'she' → 'it' (9)
- e- errors due to consonant elision
- final /t/ 'but he' [bʊtɪ] (3)



(19) SPEAKER No.19

FREE SPEECH

a- errors due to rhythm

- 'just to visit'                    ['dʒʌst'tu:vɪzɪt']                    (2)  
'with me'                            ['wɪðmi]                                (3)  
'I was just'                        ['ɪwəz dʒʌst]                         (5)

b- errors due to vowel substitution

- /e/ → [ɛ]                    'pleasant'                    ['plezən]                                (5)  
/ʌ/ → [ɛ]                    'summer'                    ['sʌmɛ]                                 (3)

c- errors due to lexical-stress

- 'situated'                            [sɪtʃy'ʔeɪtɪəd]                        (6)

d- errors due to diphthong substitution

- /əʊ/ → [ɛə]                    'no'                            [nɛə]                                        (3)  
/aʊ/ → [ɛ]                    'now'                            [nɛʔ]                                        (3)

e- errors due to consonant elision

- final /n/                    'didn't'                    ['dɪdɛt]                                    (5)

f- errors due to syllable elision

- 'didn't'                                [dɪt]                                        (3)

g- errors due to consonant substitution

- final /l/ → [ʔ] 'well'                    [weʔ]                                        (3)

READING

a- errors due to consonant elision

- final /s/                    'accidents'                    ['ʔɛksɪdɛnt]                                (5)  
final /n/                    'genuinely'                    ['dʒɛnjʊəli]                                (2)  
                                  'suddenly'                    ['sʌdʒəli]                                 (5)

b- errors due to syllable elision

- 'leisurely'                                ['leɪʒəli]                                    (9)

c- errors due to vowel substitution

- /ɑ:/ → [eɪ]                    'vase'                            [veɪz]                                        (7)

d- errors due to consonant substitution

final /ŋz/ → [ks] 'things' [θɛ̃ks] (2)

final /t/ → [ʔ] 'don't' [dʔʔ] (2)

(20) SPEAKER No.20

FREE SPEECH

a- errors due to vowel substitution

/ɔ:/ → [ɔ̃] 'or' [ʔɔ̃] (4)

/ʌ/ → [e] 'just' [dʒes] (7)

/æ/ → [ä] 'camps' [kädps] (3)

/ɪ/ → [iə] 'Rhyll' [ɹiət] (2)

/e/ → [i] 'very' ['viʔi] (3)

b- errors due to rhythm

'I mean' [ʔimɪ] (4)

'if I may say' [ɪfɪme'seɪ] (3)

c- errors due to consonant elision

final /l/ 'Chelmsley' ['tʃɛslɛ] (5)

d- errors due to syllable elision

'advantage' ['vɛ̃tɪʒ] (4)

e- errors due to diphthong substitution

/əʊ/ → [ø̃] 'cold' [kø̃ld] (4)

f- errors due to lexical-stress

'the contact' [dækɛ'tɔ̃kt] (4)

g- errors due to consonant substitution

final /n/ → [̃] 'in' [ʔɪ] (3)

READING

a- errors due to vowel substitution

/ɑ:/ → [eɪ] 'vase' [veɪz] (4)

b- errors due to diphthong substitution

/əʊ/ → [ø̃] 'old' [ʔø̃l] (2)

(21) SPEAKER No. 21

FREE SPEECH

a- errors due to consonant substitution

initial /dr/ → [dʒ] 'dreamt' [dʒemʌt] (4)

final /t/ → [ʈ] 'liked' ['laɪkəʈ] (3)

b- errors due to consonant elision

final /s/ 'last' [lɛʈ] (4)

final /n/ 'and' ['ʔɛ] (3)

c- errors due to vowel substitution

/ɔ:/ → [əʊ] 'abroad' [ʔə'brəʊd] (2)

/ʌ/ → [ɔ] 'some' [sɔ] (4)

d- errors due to consonant epenthesis

'calm' [kɔlm] (3)

READING

a- errors due to syllable elision

'in a different' [ɛ'dɛfjənt] (3)

'she had said' ['ʃisɛd] (10)

b- errors due to lexical-stress

'disturbed' ['dɪstɜbd] (5)

'genuinely' [dʒɪ'nju:əli] (4)

c- errors due to rhythm

'way his aunt' ['we:'hɪzɛnt] (4)

'her old leisurely tolerance' ['hɛʔɔd'leɪzɔli'ɔləjəns] (3)

d- errors due to vowel substitution

/ɑ:/ → [eɛ] 'vase' [veɛs] (3)

/ə/ → [ʊ:] 'would' [wʊ:d] (4)

e- errors due to consonant substitution

/tr/ → [ʈtʌ] 'tried' [ʈtʌɛd] (3)

f- errors due consonant elision

final /l/ 'little' ['lɪtə] (2)

(22) SPEAKER No.22

FREE SPEECH

a- errors due to consonant substitution

initial /ð/ → [d] 'climb the' [klaɪmðə] (7)

\*'made the' ['meɪdə] (6)

final /d/ → [t] 'wanted' ['wɒntəd] (4)

final /tʃ/ → [s] 'French' ['frentʃ] (3)

b- errors due to diphthong substitution

/əʊ/ → [ɔ:] 'old' ['ɔ:lðə] (9)

c- errors due to rhythm

'of course' [əfkɔs] (6)

d- errors due to lexical-stress

'reserved' ['ɹɪzɜ:v] (6)

e- errors due to consonant elision

final /n/ 'London' ['lɒndən] (3)

f- errors due to vowel substitution

/ə/ → [ɛ] 'was' [wɛz] (2)

READING

a- errors due to consonant substitution

final /n/ → [s] 'genuinely' ['dʒɛnjəsli] (10)

initial /r/ [r] 'he realised' [hɪ'rɪəlaɪz] (4)

b- errors due to consonant elision

final /n/ 'even' ['i:vən] (2)

initial /t/ 'disturbed' [dɪs'tɜ:b] (5)

c- errors due to syllable elision

'in a different' [ɪ'dɪfərənt] (3)

d- errors due to vowel substitution  
/ɑ:/ → [e̞] 'vase' [ve̞z] (3)

e- errors due to diphthong substitution  
/əʊ/ → [ø] 'home' [høm] (2)

(23) SPEAKER No.23

FREE SPEECH

a- errors due to rhythm  
'I have been' ['ʔʌ:fləbɪ] (8)

'spare rooms' ['spɛɹʊmz] (3)

'too long' ['tu:lɔŋ] (3)

b- errors due to syllable elision  
'holidays' ['hɪdeɪz] (4)

'regretted' ['rɪ:tɪd] (10)

c- errors due to diphthong substitution  
/əʊ/ → [ö] 'hope' [flöpʰ] (7)

/əʊ/ → [e̞] 'moments' ['mɛ̞mɛ̞nts] (4)

d- errors due to wrong choice of lexical item  
'last' → 'precedent' (10)

e- errors due to consonant substitution  
initial /f/ → [θ] 'first day' ['θɜ:z'deɪ] (3)

final /d/ → [l] 'would' [wʌl] (4)

f- errors due to vowel substitution  
/ʊ/ → [y:] 'booked' ['bʌ:kɪ] (5)

g- errors due to lexical-stress  
'accompanied' [ʔkə'pənɛd] (3)

h- errors due to vowel epenthesis  
'passed' ['pæsɛɪ] (2)

READING

a- errors due to vowel substitution  
/ɑ:/ → [ʊ̞] 'aunt' ['ʊ̞nɪ] (3)

→ [eɪ] 'vase' [veɪz] (2)

b- errors due to consonant substitution

\*initial /l/ → [ɹ] 'tolerance' ['tɔləjəns] (5)

initial /r/ → [r] 'he realised' [hi'rɪ:ələɪzd] (3)

c- errors due to syllable elision

'irritate' [ʔəɹ'teɪtɪ] (6)

d- errors due to diphthong substitution

/əʊ/ → [ɛ] 'old' ['ʔɛld] (4)

(24) SPEAKER No.24

FREE SPEECH

a- errors due to diphthong substitution

/aɪ/ → [ɪ] 'like' [lɪkɪ] (4)

'kind' [kɪnd] (4)

'kind' [kɪnd] (3)

/əʊ/ → [ɔ] 'so' [sɔ] (4)

b- errors due to vowel substitution

/ɔ:/ → [ə] 'or' [ʔə] (6)

→ [ɔ:ɹ] 'stores' [stɔ:ɹz] (3)

/ɒ/ → [ə] 'on' [ʔən] (6)

c- errors due to rhythm

'I mean' [ʔɪmɪn] (5)

'which is called' [wɛtʃɪzkɔld] (3)

'you know a lot of' [jənəʔəlɔɹɔv] (3)

\*'at rest' [ʔætɹestɪ] (4)

d- errors due to consonant substitution

initial /ð/ → [ʔ] 'they're' [ʔe] (7)

initial /f/ → [ʃ] 'famous' ['ʃe:məs] (2)

final /t/ → [ɪ] 'spent' [spɛntɪ] (3)

e- errors due to consonant elision

final /l/ 'will' [wɪ] (6)

f- errors due to lexical-stress

'also' [ʔəl'sɔ] (4)

READING

a- errors due to vowel substitution

/ɑ:/ → [eɛ] 'vase' [veɛz] (4)

/e/ → [i] 'genuinely' ['dʒɪnjʊnli] (2)

b- errors due to diphthong substitution

/əʊ/ → [ɔ] 'old' [ʔɔl] (2)

/eɪ/ → [ɛ:] 'way' [wɛ:] (3)

c- errors due to syllable elision

'in a different' [ɪdɪfərənt] (3)

d- errors due to consonant elision

final /m/ 'home' [həɔ] (2)

e- errors due to consonant substitution

initial /r/ → [r] 'he realised' [hɪ'rɪ:læz] (2)

VII. 3. IMPORTANCE OF THE DIFFERENT TYPES OF ERRORS

From the preceding section the error types, the total number of errors and the speakers who made them in free speech could be summarized as follows:

<u>ERROR TYPE</u>	<u>TOTAL No</u>	<u>SPEAKERS' NUMBERS</u>
vowel substitution	239	1,2,3,4,5,6,8,9,10,11,12,13,15,16,17,18,19,20,21,22,23,24
rhythm	224	1,2,5,6,7,9,10,11,13,14,16,17,18,19,20,22,23,24.
consonant substitution	169	1,2,3,7,8,9,10,11,12,15,16,17,19,20,21,22,23,24.
diphthong substitution	156	2,4,6,7,8,9,10,13,14,16,17,18,19,20,23,24.
lexical-stress	127	1,3,4,5,6,7,8,14,16,17,18,19,20,22,23,24.
syllable elision	83	1,3,4,11,14,15,16,18,19,20,23

consonant elision	74	2,4,6,7,10,11,12,14,16,19,20, 21,22,24.
consonant epenthesis	32	3,4,8,9,10,16,21.
wrong choice of lexical item	31	5,6,12,23.
incorrect syntactic construction	28	2,8,13,18.
vowel epenthesis	25	2,4,14,16,23.
resyllabification	21	11,15,17,24.

From the above summary it is clear that the factors most detrimental to intelligibility in free speech were vowel substitution > rhythm > consonant substitution > diphthong substitution > lexical-stress > syllable elision > consonant elision. The five remaining factors (i.e. consonant epenthesis, wrong choice of lexical item, incorrect syntactic construction, vowel epenthesis and resyllabification) had the least influence on intelligibility. The two factors vowel substitution and rhythm contributed to intelligibility breakdown much more than any other factors. One, however, should not disregard the influence of consonant substitution, diphthong substitution and lexical-stress which rank lower than vowel substitution and rhythm, but are still influential. Syllable and consonant elision ranks as the third most significant factor on miscomprehension. Hence, considering the total number of errors for each error-type, one can set up a classification as follows:

Category A: - vowel substitution  
- rhythm

Category B: - consonant substitution  
- diphthong substitution  
- lexical-stress

Category C: - syllable elision  
- consonant elision

Category D: - consonant epenthesis  
- wrong choice of lexical item  
- incorrect syntactic construction



- vowel epenthesis
- resyllabification

As already mentioned, Category D proved to have the least influence on the intelligibility of the Algerian speakers' spontaneous speech. The next interesting point that might come out of the previous summary concerns the total number of speakers and the related percentages for each error-type which can be tabulated as follows:

<u>ERROR-TYPE</u>	<u>TOTAL No OF SPEAKERS</u>	<u>% (OUT OF 24 SPEAKERS)</u>
vowel substitution	22	92
rhythm	18	75
consonant substitution	18	75
diphthong substitution	16	67
lexical-stress	16	67
syllable elision	11	46
consonant elision	10	58
consonant epenthesis	7	29
wrong choice of lexical item	4	17
incorrect syntactic construction	4	17
vowel epenthesis	5	21
resyllabification	4	17

The above percentages show that for all the error-types in categories A, B and C the number of speakers involved varied between 46% and 92%. Nearly all the speakers (22 representing 92%) had some kind of problem with vowel segments while three quarters of the subjects had some difficulty with rhythm and consonants. Moreover, mispronounced diphthongs and errors of lexical-stress were common with 67% of the sample of speakers while errors due to syllable elision and consonant elision prevailed with 46% (about half) and 58% respectively.

So it appears that the above percentages have proved a useful indicator of the spread of the major error categories among speakers. In other words, the three major error-categories were not restricted to just a few speakers who kept repeating them, but were actually widespread among a large number of speakers (about half or more of the sample).

The errors for the reading task will now be treated in the same way.

<u>ERROR TYPE</u>	<u>TOTAL No</u>	<u>SPEAKERS' NUMBERS</u>
vowel substitution	242	2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24
consonant elision	95	1,2,4,7,9,10,11,12,14,17,18,19,20,21,22,24.
syllable elision	80	6,7,18,19,21,22,23,24.
consonant substitution	70	2,3,5,10,15,17,18,19,21,22,23,24.
rhythm	61	1,2,5,6,7,12,13,16,17,21.
lexical-stress	25	1,4,7,8,21.
diphthong substitution	24	2,10,12,14,22,23,24.
lexical item substitution	18	8,18.
consonant epenthesis	16	8,17.
resyllabification	12	7,9.
vowel epenthesis	6	11.

The above figures show that slight variations with the results in free speech exist. The total number of cases for each error-type will permit a division of these into three categories as follows:

Category A: - vowel substitution

Category B: - consonant elision

- syllable elision

- consonant substitution

- rhythm

- Category C: - lexical-stress  
- diphthong substitution  
- lexical item substitution  
- consonant epenthesis  
- resyllabification  
- vowel epenthesis

If one considers the length of the reading passage which is very short compared to all the free speech texts, variations in the total number of errors are bound to occur. These variations, however, are small and concern only two points: first, instead of four categories as for free speech, we have only three and second, two types of error (mainly lexical-stress and diphthong substitution) which were classified into the major categories in free speech occur among the least influential in reading (i.e. Category C). Nevertheless, considering the small number of diphthongs and polysyllabic words in the reading passage, one should not regard diphthong substitution and lexical-stress as insignificant. One needs to consider them, as in free speech, as major factors in intelligibility breakdown. The reason why, for example, errors of lexical-stress were less important in the reading task comes from the fact that out of 137 words in the passage, 19 were disyllabic and 8 polysyllabic and with all the rest being monosyllables.

Finally, apart from the two above-mentioned variations, it is clear that all the other major error-types occurring in free speech have also proved substantial in reading. Vowel substitution is still the most influential factor. Among other substantial errors we have consonant elision and substitution, syllable elision and rhythm. Moreover, as for free speech, the least instrumental in intelligibility failure are lexical item substitution, consonant and vowel epenthesis and resyllabification.

#### VII. 4. FURTHER CLASSIFICATION OF ERROR-TYPES INTO MAJOR CATEGORIES

Pinpointing individual mispronunciations with a large system of error-types is reliable and accurate because one describes and classifies each error in a detailed manner. However, for the sake of making generalisations on the Algerian speakers' mispronunciations, it proved more appropriate to reduce the number of error-types to a reasonable size. Obviously, to carry out this task one has to consider only the features which can be grouped together. For example, when grouping syllable elision and consonant elision under the same category, the researcher took into account the fact that the former always involves segmental (comprising vocalic with sometimes consonantal) elisions. It was, therefore, decided to have the following seven categories of errors:

- 1) segmental substitution: replacement of any
  - vowel
  - diphthong
  - consonant
- 2) rhythm
- 3) lexical-stress
- 4) elision: elision of any
  - syllable
  - consonant
- 5) resyllabification
- 6) epenthesis: insertion of any
  - vowel
  - consonant
- 7) lexical and syntactic errors

Among the preceding seven major categories the first four (i.e. segmental substitution, rhythm, lexical-stress and elision) are by far the most important in understanding the causes of intelligibility breakdown

of the English spoken by the sample of Algerian speakers in the present study.

#### VII. 5. SUMMARY

In this chapter we made an attempt to find out the major causes which led to intelligibility failure in the English spoken by our sample of Algerian speakers. We carried out a phonetic analysis of the errors made by the individual speaker in both free speech and reading. This analysis showed that all the parts that created miscomprehension fell into twelve errors. With a few exceptions due to the discrepancy between the amount of material covered in free speech and reading, we found that nearly the same errors occurred in both tasks.

The classification of errors showed that vowel substitution, rhythm, consonant substitution, diphthong substitution, lexical-stress, syllable elision and consonant elision were the most influential on intelligibility failure. Consonant epenthesis, wrong choice of lexical item, incorrect syntactic construction, vowel epenthesis and resyllabification proved the least influential. Due to the large number of errors (twelve), we decided to reduce these to a fewer error-categories for the sake of generalisation.

MAIN CAUSES OF INTELLIGIBILITY BREAKDOWN

VIII. 0. INTRODUCTION

In the present chapter each of the seven major error-categories that have led to intelligibility breakdown in free speech and reading is considered in detail. Moreover, experiments C, D and E were constructed in such a way as to isolate specific features of English conversational speech and to measure them. Although the major emphasis is placed on free speech and reading, the results of experiments C, D and E are introduced into the discussion where appropriate. Hence, for instance, the results of Exp.D which was meant to measure the speakers' ability to deal with lexical stress, can be a positive contribution to the discussion on errors due to lexical stress.

VIII. 1. SEGMENTAL SUBSTITUTION

Three types of segmental substitutions occurred in the data (cf. Chapter VII). In the following each of these substitutions is considered.

(1) VOWEL SUBSTITUTION

In the course of speaking spontaneously or reading the Algerian speakers mispronounced English pure vowels a great deal. This phenomenon possibly results from the complexity of the R.P. vowel system which presents difficulty to those speakers whose first language (or languages) has a less complex system.

A close look at the errors due to vowel substitution shows that all R.P. pure vocalic segments (i.e. twelve of them) were mispronounced to different degrees. Nevertheless, one must bear in mind the frequency of occurrence of every single R.P. pure vowel. Gimson (1980: 149) states

the frequency of vowels in colloquial R.P. as follows:

/ə/	10.74%
/ɪ/	8.33%
/e/	2.97%
/ʌ/	1.75%
/i:/	1.65%
/æ/	1.45%
/ɒ/	1.37%
/ɔ:/	1.24%
/u:/	1.13%
/ʊ/	0.86%
/ɑ:/	0.79%
/ɜ:/	0.52%

However, among all pure vowels, some proved more difficult than others. It is important to consider, at this stage, each vowel and the number of times it led to misunderstanding. Hence, the following are the R.P. vowels in rank order based on the number of times they were misinterpreted:

1.	/ʌ/	47
2.	/ɒ/	36
3.	/ə/	37
4.	/e/	30
5.	/ɔ:/	22
6.	/u:/	21
7.	/æ/	11
8.	/i:/	9
9.	/ɑ:/	6
10.	/ɜ:/	5
11.	/ʊ/	5
12.	/ɪ/	2

The above vowels and figures clearly show that the first six vowels /ʌ, ɒ, ə, e, ɔ:/, u:/ were mispronounced more often than the remaining segments. Furthermore, four out of the six are lax vowels. Hence, one can safely state that lax vowels (with the exception of /æ, u, ɪ/) are more likely to lead to intelligibility failure than tense ones. However,

among tense vowels /ɔ:/ and /u:/ proved influential on miscommunication.

Mispronunciations due to vowel substitution also occurred in the reading passage (i.e. Exp.B). There are, obviously, variations with the above findings. One should not expect the same type and number of errors for both free speech and reading for the simple reason that the reading passage was short and did not contain as many occurrences of each vowel as in free speech (One must also remember that the proportion of occurrence for each vowel is different). For example, the lax vowel /ɒ/ only occurs twice (in 'not' and 'tolerance') in the whole text. It would, nevertheless, be interesting to present the different R.P. vowels in rank order based on the number of times they led to misunderstanding.

1.	/ɑ:/	84
2.	/ə/	43
3.	/æ/	31
4.	/i:/	18
5.	/e/	17
6.	/ʌ/	15
7.	/ɔ:/	10
8.	/ɪ/	8
9.	/ʊ/	7
10.	/ɜ:/	3
11.	/ɒ/ and /u:/	0

The above show that the two vowels /ɒ/ and /u:/ did not lead to any misunderstanding in the reading passage at all. While /ɒ/ proved to be one of the most difficult vocalic segments in free speech, it was understood all the time when read by the Algerians. One, however, must remember that /ɒ/ and /u:/ had a very low frequency of occurrence in the passage.



Another striking feature in the above results involves the vowel /ɑ:/. This does not mean that this vowel had a high frequency of occurrence; this vowel proved to be a problem with one word only: 'vnao', pronounced by 23 Algerian speakers with a diphthongal vowel quality [ej] and misunderstood by 84 informants (i.e. nearly a third of the total number of informants).

Moreover, the above figures also show that, apart from /ɑ:/, two lax vowels /ə/ and /æ/ were the most troublesome for the intelligibility of the reading passage.

At this point it would be worthwhile considering the results of Exp.C which was meant to diagnose isolated and specific features of English pronunciation. For the moment, only those parts of Exp.C which involved pure vowels will be considered. In other words, only the following item numbers from Exp.C are considered: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 18, 19, 20 and 21. The following, presented in rank order, are the different pairs of vowel sounds tested and the respective percentages of the informants who misunderstood the intended vowel.

<u>Item No.</u>	<u>Vowel pair tested (the intended one is on the left)</u>	<u>% (out of 240 responses)</u>	
1.	3	/e/ vs. /æ/	64 %
2.	9	/ʊ/ vs. /u:/	54 %
3.	8	/ɒ/ vs. /ɔ:/	51 %
4.	6	/ʌ/ vs. /ɜ:/	50 %
5.	7	/ʌ/ vs. /ɒ/	43 %
6.	1	/ɪ/ vs. /i:/	32 %
7.	10	/ə/ vs. /ɪ/	30 %
8.	4	/æ/ vs. /ʌ/	29 %
9.	18	/i:/ vs. /ɪ/	25 %
10.	11	/i:/ vs. /ɪ/	11 %
11.	5	/æ/ vs. /ɑ:/	9 %
12.	21	/ɔ:/ vs. /ɒ/	6 %
13.	20	/ɑ:/ vs. /ʌ/	6 %
14.	12	/ɜ:/ vs. /ɔ:/	5 %

15.	2	/e/ vs. /ɪ/	1 %
16.	19	/ɜ:/ vs. /ɑ:/	0 %

Exp.C involved single words within carrier sentences. These words were meant to assess one feature at a time and in the present case, to test whether the native informants were able to allocate the non-native speakers' pronunciation of a given vocalic segment to a member of a pair of vowels. The native informants' success or failure in choosing the intended word will be the measure of the non-native speaker's success in pronouncing this word correctly.

Moreover, Exp.C intended to test, among other things, features which relate to R.P. pure vowels and which were:

- lax vowels are more often mispronounced;
- certain tense vowel qualities may lead to their replacement by a lax vowel;
- the speakers would not respect the quantity (i.e. length) of R.P. pure vowel and, therefore, confuse certain tense vowels with lax ones.

First, the results in Exp.C show that lax vowels are confused with both lax and/or tense vowels. So, for example, vowel /ʌ/ is mispronounced as /ɜ:/ in a given environment, and as /ɒ/ in another. In general, lax vowels tend to be replaced by their 'long' versions and tense vowels by their 'short' counterparts.

Results of Exp.C also show that /ʌ, ɒ, e, ə/ were the most difficult vowels for the Algerian speakers to produce and for the native informants to perceive. This result supports what was already found in free speech. The number of informants who failed to distinguish between /e/ vs. /æ/, /ɒ/ vs. /ɔ:/, /ʌ/ vs. /ɜ:/ and /ə/ vs. /ɪ/ are 64%, 51%, 50% and 30% respectively.

For the tense vowels /ɔ:/ and /u:/ which proved difficult in Exp.A, unfortunately only /ɔ:/ was tested in Exp.C and was

misinterpreted as /ɒ/ by 4% of the total number of informants. This is a case of a tense vowel being replaced by a lax one. /i:/ was also misinterpreted as /ɪ/ by 25% of the informant sample and /ɑ:/ as /ʌ/ by only 6%.

Moreover, the distinction between /i:/ and /ɪ/ due to quantity in item No.18, was not always maintained and 25% of the informants did not succeed in perceiving /i:/ in the word 'sheep'.

In Exp.C, pairs of vowel phonemes embedded in words, were presented to informants to decide which one they thought the Algerian speaker produced. The allocation was to a separate phoneme. While this task was fruitful as a means of testing the native informants' comprehension, it is more interesting to consider the actual phonetic realisations of the mispronounced vocalic segment. Hence, one could try and find out whether general tendencies exist when vowels are substituted. In other words, is any vowel confused with any other, or are there any such tendencies? To carry out this task, one has to call upon the data from both free speech (i.e. Exp.A) and reading (i.e. Exp.B). Each single vowel will be considered starting from the most to the least difficult for intelligibility in free speech.

i- Vowel /ʌ/

The different mispronunciations of /ʌ/ were: [ɛ], [ɝ], [ɔ], [ɔ̃], [ɔ:], [ʊ], [ɣ] and [ɛ]. The last two realisations are rare and occurred twice for [ɣ] with one speaker (S.2) in his pronunciation of 'instructions' and 'unusual' and once for [ɛ] with one speaker (S.20) in his pronunciation of 'just'.

There is, however, a general tendency among speakers to use a type of vowel in the general region of secondary cardinal 11 ([œ]) and another in the general region of primary cardinal 6 ([ɔ]). The actual realisation for each one is often an opener and centralised variety. The

following are a few mispronounced words by different speakers of both vocalic segments:

- quality in the region of [æ]: studies, summer, up, suddenly.
- quality in the region of [ɔ]: young, otherwise, some, month, other.

One might argue that the speakers transferred French vocalic qualities into English. The transfer would operate as follows:

- usually, whenever 'u' occurs in the spelling the Algerian speakers use [ɥ];
- usually, whenever 'o' occurs in the spelling, the Algerian speakers use a vowel quality in the general region of [ɔ].

In other words, beside transfer from French, mispronunciations of /ʌ/ are also dictated by orthography and are better labelled as spelling mispronunciations.

#### ii- Vowel /ɒ/

The Algerian speakers who mispronounced /ɒ/ used [əɔ̃] in words like 'mosque', 'Maurice's'; or [ə] in 'on'; or [ɛ] in 'wanted'; or [a:] in 'Salford'.

The researcher's own experience and observations (cf. Benrabah, 1985: 144) show that, in general, speakers relate /ɒ/ to R.P. /ɔ:/ and, therefore, produce a short variety of the latter. This realisation does not seem to have hindered intelligibility since no unintelligible word contained this pronunciation.

The use of [ɛ] and [a:] usually accompanies an 'a' in the spelling. Though rare, such a mispronunciation is probably the result of spelling interference from French.

As to the use of [ə], it only occurred with two speakers mispronouncing the lexical item 'on' as [ən] once each. The use of [ə] for /ɒ/ is not widespread among Algerian speakers of English. Nevertheless, the diphthongization of /ɒ/ is common and may result

from two major causes.

The use of [əʊ] arises when speakers hypercorrect by trying to give an English 'flavour' to certain lexical items which show similarities in their spelling with French. Such words tend to contain an /ɔ/ or /o/ type of sound spelt as 'au' or 'o'. The above hypercorrections stem from an initial awareness of the existence of diphthongs in R.P. which do not occur in French. Such mispronunciations which are quite widespread and keep spreading among speakers (e.g. from teacher to pupil) tend to be transferred to other words. Some of the lexical items usually uttered with [əʊ] are: 'Maurice's', 'mosque', 'cost'. Second, mispronunciations of words like 'gone' and 'knowledge' represent typical errors due to overgeneralisations; that is, since both 'go' and 'know' contain [əʊ], the same diphthongal vowel is maintained in 'gone' and 'knowledge'.

### iii- Vowel /ə/

The following are all the realisations of the mispronounced /ə/: [ɛ], [ø], [ɛ], [ɛ], [ɔ], [ø], [ɔ], [ø] and [ɥ:]. The present vocalic segments do not show any general tendency in the mispronunciation of /ə/. The majority of words which carried these mispronunciations, were structural items such as: 'for', 'and', 'a', 'were', 'as', 'there', 'can', 'was', 'the', 'of', 'that'. The absence of vowel weakening in this word-category led to the use of strong vocalic segments which respect the orthographic representation of the vowel in the spelling of the given word. Hence, the result is a wide variety of pronunciations for the schwa phoneme especially since the latter could stand for the reduced form of any R.P. diphthongal or pure vowel which in turn is represented by various letters of the alphabet in the spelling.

It is interesting to mention at this stage an instance of intelligibility breakdown due to the Algerian speakers' failure to

reduce R.P. unstressed vowels to /ə/. When uttering 'can' (in 'I can remember that'), speaker No.17 produced [ɔ̃] which led four informants (i.e. 40%) to understand 'can't'.

iv- Vowel /e/

/e/ was also mispronounced by the Algerian speakers who replaced it by one of the following: [ø, œ, ɔ, ə, eɪ, i, ɛ:, ɛ, e]. The realisations [œ] and [eɪ] occurred only twice: the first with one speaker, the second with another. The diphthongal vowel resulted from a spelling pronunciation and was due to the diagraph standing for /e/ in the word 'leisurely'. Open realisations either in the general region of [a] or [ɑ] were also spelling mispronunciations resulting from the French spelling for /ɑ/ such as 'en' in 'central' and 'when'.

By far the most common mispronunciation of /e/ tends to be a vowel in the region of cardinal No.2 ([e]). This seems to be due to a confusion with the French vowel of 'été' which is transferred into English. The following are typical words with a vowel in the region of cardinal No.2: 'better', 'be', 'embassy', 'definite'.

v- Vowel /ɔ:/

Those Algerian speakers who mispronounced /ɔ:/ uttered it as one of the following: [ɔ̃, ɔ̄, ɔ̂, əɔ̄, ə, ɔ:ɹ, ε]. Only one speaker diphthongized /ɔ:/ in the word 'abroad'. The use of the front vowel [ε] is probably the result of the spelling of 'all'. All the remaining mispronunciations of /ɔ:/ are either more back or central.

Generally speaking, the most common mispronunciation of /ɔ:/ is a shortened version with the quality of an opener and centralised cardinal No.6 ([ɔ̂]). The quality is, in fact, similar to the quality of the French vowel which occurs in words like 'homme' and 'pomme'.

vi- Vowel /u:/

The different mispronunciations of /u:/ which led to intelligibility

breakdown include: [ə, ø, ʏ, ø̃, ɨ]. The afore-mentioned realisations tend to include some kind of lip-rounding (e.g. [ø, ʏ, ø̃]), but instead of raising the back of the tongue, speakers raise the front.

From the above substitutions, it appears that there are no general tendencies as to the replacement of one vowel by another but that the substitutions are random.

vii- Vowel /æ/

The following are all the substitutions that speakers made when mispronouncing /æ/: [e, ɛ, ε, ø, ä, ə]. The use of [ə] occurred with one speaker uttering the demonstrative 'that' as a conjunction. There is, however, a tendency among speakers to produce either a closer front vowel than /æ/ or a fronted open back vowel. The main feature missing from both mispronunciations is the lack of lengthening which exists in R.P.. The replacement of [ø] is an interference from Arabic.

viii- Vowels /i:, a:, ɜ:, u, ɪ/

/i:/: Mispronounced /i:/ was realised as [ʏ, e, ɛ]. A surprising habit by a few speakers concerns the pronunciation of the vowel in the pronoun 'he' as [ʏ]; apart from the fact that the vowel exists in French, there seems to be no obvious reason for its transfer especially in one single word. The use, however, of either [e] or [ɛ] for /i:/ must probably result from spelling pronunciation.

/a:/: The R.P. vowel phoneme /a:/ does not usually represent major difficulties to Algerian speakers. In the few cases where they mispronounce it, they replace it by either the French vowel with a quality between cardinals No.4 ([a]) and No.5 ([ɑ]) or the Arabic vowel [ø]. In the data collected for the purpose of the present research, only the following confusions occurred: [ɛ, eɪ, eø̃, äö, ø̃ø̃]. Only one speaker used [ɛ] once for the vowel of the word 'France'. The diphthongal realisations as either [eɪ, eø̃] or [äö, ø̃ø̃] were uttered in two specific

words in the reading passage and were 'vase' and 'aunt' respectively. Out of 24 speakers, 23 produced the word 'vase' with a diphthong having more or less the same quality as R.P. /eɪ/. As it happens, /veɪz/ is the General American pronunciation for the word in question, and since most of the speakers had had native American teachers (at least) at the university level, one can deduce that the Algerians might have picked it up from them. This type of pronunciation could also result from an association with words like 'face' and 'case' which have a somewhat similar orthography. What is surprising, however, is that out of 230 informants who listened to the pronunciation of 'vase' with an /eɪ/, 84 (i.e. representing more than one third of the whole audience), did not understand it.

The mispronunciation of /ɑ:/ as a diphthongal [äö] or [øö] in 'aunt' occurred with two speakers and is likely to result from the pronunciation suggested by the spelling of the word.

/ɜ:/: Vowel /ɜ:/ does not commonly lead to major communication breakdown. However, Algerian speakers tend to include in the production of /ɜ:/ (and also of /ə/) an articulatory feature absent in R.P. which is lip-rounding. The interference of this feature led to the mispronunciation of /ɜ:/ as [ɸ] which in turn caused an intelligibility failure for the words 'Stirling' and 'disturbed'.

/u/: Mispronounced /u/ leads to intelligibility breakdown; it usually involves the confusion of /u/ with R.P. /u:/. Hence, in the data two speakers, each with one word ('booked' and 'woods' respectively), confused /u/ and produced [ʊ:]. In both cases the vowel is represented by 'oo' in the spelling and, therefore, suggest that the speakers were probably misled by the orthography.

/ɪ/: The confusion between /ɪ/ and /i:/ led to some communication breakdowns in both free speech and reading.



Nevertheless, in the reading passage the pronunciation of /ɪ/ as /i:/ did not create major problems. Mispronunciations of /ɪ/ which actually proved difficult for comprehension include [jə], [ʉ], [e], [ə] in the words 'Rhyll', 'business', 'miserable', 'will' respectively. While certain mispronunciations (e.g. 'business') seem to result from the spelling and French interference, others appear to be random.

## (2) DIPHTHONG SUBSTITUTION

Mispronunciations of diphthongal segments and, therefore, their substitution are common among Algerian speakers of English. The extent to which these diphthongs were altered varies from one diphthong to another and from one speaker to another. One also has to mention the frequency of occurrence of individual diphthongs in R.P., because some diphthongs tend to occur more frequently than others.

In the data gathered from the speakers' spontaneous speech and reading, out of the eight R.P. diphthongs, /ɔɪ/ was never mispronounced. As to the remaining seven diphthongal phonemes, some proved more difficult than others. The following list shows the different diphthongs in rank order based on the number of misperceptions (figures of the right-hand side column) made by the native informants in free speech.

1.	/ɛə/	40
2.	/əʊ/	31
3.	/eɪ/	28
4.	/ɪə/	19
5.	/aɪ/	14
6.	/ʊə/	12
7.	/aʊ/	7

In reading, only /əʊ/ and /eɪ/ led to intelligibility breakdown with twelve and eight informants respectively.

The major conclusion to be drawn from the above results is the widespread mispronunciation of /ɛə/, /əʊ/, /eɪ/ and to a lesser extent /ɪə/. Therefore, members of each diphthong category (i.e. closing and centring) are equally substituted by the Algerian speakers.

The results of Exp.C on the effect of diphthongs are presented below as percentages of the informants' incorrect responses:

<u>Item No.</u>	<u>Diphthong pair tested (the intended one is on the left)</u>	<u>% (out of 240 responses)</u>	
1.	15	/eɪ/ vs. /e/	14%
2.	14	/əʊ/ vs. /ɔ:/	13%
3.	16	/ɪə/ vs. /i:/	9%
4.	22	/eɪ/ vs. /e/	7%
5.	13	/əʊ/ vs. /ɔ:/	6%
6.	17	/aʊ/ vs. /əʊ/	6%

Five of the above items were meant to assess the Algerian speakers' tendency to replace a given diphthong by a pure vowel (usually long) or to a lesser extent by another diphthong. Item No.22 was introduced to measure vocalic quantity: that is, /eɪ/ closed by a fortis consonant.

Exp.C shows that among all diphthongs, /eɪ/ and /əʊ/ were more readily substituted. According to Gimson (1980: 149), the importance of the frequency of occurrence of R.P. diphthongs can be stated in the following order:

/aɪ/	1.83%
/eɪ/	1.71%
/əʊ/	1.51%
/aʊ/	0.61%
/ɛə/	0.34%
/ɪə/	0.21%
/ɔɪ/	0.14%
/ʊə/	0.06%

Unfortunately, in Exp.C no item involved the diphthongal phoneme /aɪ/. However, the results of Exp.C show that /eɪ/ and /əʊ/ (which with /aɪ/ occur more frequently in R.P. than the remaining diphthongs) were the least intelligible to the native informants. Exp.C was designed to test whether Algerians replaced one diphthong phoneme by a pure vowel phoneme; in other words, the aim was to find out whether there was any tendency to monophthongize diphthongs. This hypothesis is clearly upheld in Exp.C and is more so in free speech and in the reading passage. Before considering each mispronounced diphthong and its actual phonetic realisations, perhaps one should mention that, except in two cases where a diphthong was substituted by another diphthong, all mispronunciations involved monophthongization. In other words, the general tendency among Algerians regarding the mispronunciation of diphthongs involved the replacement of the latter by pure vowels (either tense or lax). For example, the following which was uttered by speaker No.20 in free speech is a good illustration of monophthongization: [ʃɜ:ɔɜ:ʔəɔɜ] (in 'I don't share their ideas anyway').

As in the case of pure vowel substitutions, the diphthongs that led to unintelligibility are considered in the following section in an order based on their importance in hampering intelligibility in free speech.

#### i- Diphthong /eə/

Mispronunciations of /eə/ were realised as: [ɛ], [ɛ:], [ɛ̃], [ɛ̃], [e], [e:] and [ə]. Thus, /eə/ seemed to be always confused with a monophthong. In addition, except for the realisation as [ə] (for the demonstrative 'there'), all mispronunciations consisted of a vocalic quality in the region of cardinal vowels No.2 ([e]) and No.3 ([ɛ]).

ii- Diphthong /əʊ/

/əʊ/ is the only diphthongal sound that was substituted by another diphthong by two speakers (as [ɛə] in 'no' for speaker No.19 and as [øø] in 'cold' for speaker No.20). The remaining mispronunciations of /əʊ/ are: [o:], [ð], [ɔ], [ð:], [ɔ], [ɔ], [ɛ], [ɛ], [ø]. The most common realisations (of mispronounced /əʊ/) revolve around cardinal vowels No.6 and No.7 and usually represent an 'o' in the spelling. The other mispronunciations of /əʊ/ appear to be random.

iii- Diphthong /eɪ/

Monophthongization seems to be the rule as far as the mispronunciation of /eɪ/ by Algerian speakers is concerned. The following realisations of /eɪ/ show that all the confusions vary around and between cardinal vowels No.2 and No.3: [e], [e:], [e], [ɛ], [ɛ], [ɛ:] and [ɛ:]. Whenever an opener variety occurs, it almost always corresponds to an 'a' in the spelling of the mispronounced word such as 'way', 'Davidson', 'plane' and 'anyway'.

iv- Diphthong /ɪə/

Only two speakers (S.14 and S.18) mispronounced /ɪə/ as [i] in free speech. The words in question were 'really' and 'here' for S.14 and 'here' for S.18. The confusion could be assigned to the presence of 'e' in the spelling and thus to spelling mispronunciation.

v- Diphthongs /aɪ/, /uə/ and /aʊ/

As in the case of /ɪə/, only two speakers (No.2 and No.24) confused /aɪ/ with a monophthong [ɔ] and [d] respectively. The mispronounced words were 'kind' for S.2 and 'like' and 'kind' for S.24.

/uə/ and /aʊ/ were each confused with [ɔ] and [a] respectively by one speaker for each case. The words in question are 'during' for /uə/ and 'now' for /aʊ/.

### (3) CONSONANT SUBSTITUTION

The substitution of consonantal segments occurred quite often in the spontaneous speech of Algerian speakers but less so in their reading. However, apart from a few consonant phonemes, unintelligibility due to consonant substitution was not as substantial as in the case of vowels and diphthongs.

The following shows the consonant phonemes which led to intelligibility breakdown and the respective number of informants who found it difficult to understand the speaker because of such errors:

#### Plosives

/t/	19
/d/	11
/b/	7

#### Fricatives

/θ/	45
/s/	11
/h/	9
/f/	5
/ʃ/	5
/θ/	4
/z/	3

#### Affricates

/tʃ/	24
/dr/	4

#### Lateral non-fricatives

/l/	9
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#### Nasals

/n/	3
-----	---

#### Approximants

/r/	6
/w/	4

The above consonant phonemes and figures represent consonant substitutions in free speech. If one considers reading, not all the

substitutions caused intelligibility failure. Hence, a substitution of /t/, /h/, /l/, /n/ and /r/ led to incomprehensibility for 15, 5, 12, 24 and 9 informants respectively. Reading also provided cases of substitutions of certain consonants which were not replaced in free speech. However, each one of these substitutions was the result of one individual speaker in every case. The phonemes and the number of informants who misunderstood the intended message are as follows:

/v/	3
/tr/	3
/ŋ/	2

The different consonant substitutions that occurred in free speech and mentioned earlier show that the most difficult consonant phonemes were in the following order of importance: /ð/, /tʃ/ and /t/. The only R.P. consonant phonemes which did not create any intelligibility breakdown in either free speech or reading are: /p, k, g, dʒ, ʒ, m, j/.

The results concerning consonant substitutions in Exp.C are:

<u>Item No.</u>	<u>Consonant pair tested (the intended one is on the left)</u>	<u>% of correct responses (out of 240)</u>
1.	32 /t/ vs. /d/	100%
2.	29 [t] vs. ø	75%
3.	28 /ð/ vs. /d/	69%
4.	27 /θ/ vs. /f/	15%
5.	34 /p/ vs. /b/	12%
6.	30 /ŋ/ vs. /n/	11%
7.	23 /p/ vs. /b/	9%
8.	33 /k/ vs. /g/	7%
9.	26 /θ/ vs. /t/	5%
10.	25 /k/ vs. /g/	3%
11.	35 /tʃ/ vs. /dʒ/	3%
12.	24 /t/ vs. /d/	0%
13.	31 /tr/ vs. /dr/	0%

The above-mentioned items in Exp.C intended to test whether native informants assessed correctly the Algerian speakers' ability to

discriminate between pairs of consonants. Hence, the above results show that first, the hypothesis that Algerians are not capable of sustaining the /t/ vs. /d/ distinction on the basis of VOT (i.e. voice onset time) has not been proved. Even the /p/ vs. /b/ and /k/ vs. /g/ distinctions based on aspiration proved difficult for 9% and 3% of the total responses. Therefore, it seems that advanced Algerian speakers do keep the distinction aspirated vs. unaspirated in their production of plosives. Second, in an attempt to assess the hypothesis that [θ, ð, ʒ, ŋ, ʝ] are commonly mispronounced and confused, Exp.C has proved that for the case of /r/ in /tr/ vs. /dr/, the Algerians never fail to sustain the distinction. Furthermore, the replacement of /θ/ by /t/ and /ŋ/ by /n/ has been reported in 5% and 11% of the total responses for each item. The substitution of /θ/ by /f/ is slightly more common and represents 15% of the total informants' responses. However, out of the above-mentioned five consonantal segments, [ʒ] and [ð] proved the most likely candidate for a substitution. 75% of the total responses show that [ʒ] was not perceived and 69% heard [ð] as [d]. Therefore, as in the results for free speech, /ð/ has proved a major influence on intelligibility breakdown.

Finally, items 32, 33, 34 and 35 were meant to assess the Algerian speakers tendency to voice fortis consonants in the vicinity of voiced sounds. As will be shown later on, assimilation of voice among consonantal segments is a widespread phenomenon among Algerian speakers of English. 42% of the total responses for item No.32 understood /d/ instead of /t/. While the substitution of /p/ by /b/ (item No.34) is reported in 12% of responses, the replacement of /k/ by /g/ and /tʃ/ by /dʒ/ are reported by only 7% and 3% respectively. As in the previous results for free speech, the substitution of /t/ is by far the most common.

In the remaining part of the present section, each manner of articulation is considered in turn as well as the individual consonant phonemes which were replaced. Moreover, for every substituted consonant we review the consonantal substitutes to find out whether these share some feature in common or are just random.

#### i- Plosives

As mentioned earlier, only /t/, /d/ and /b/ were substituted in free speech and, to some extent, reading. Hence, the alveolar plosives as well as the lenis bilabial plosive did cause intelligibility breakdown. It is also interesting to note that the remaining plosives (i.e./p/, /k/, /g/) never proved to be a problem.

The most common substitutions of /t/ occurred syllable finally with only one instance of /t/ substitution syllable initially. The latter case happened in the free speech of speaker No.8 with the word 'two' and replaced by [tʃ]. The use of an affricate is probably due to some kind of palatalisation (regressive assimilation) resulting from the use of the vowel [y] instead of [y:]. However, the preceding confusion occurred with only one speaker.

Substitutions of syllable-final /t/, on the other hand, were more common and had the following realisations: [ʔ], [d], [t], [ʔ]. The glottal stop occurred only in reading in the words 'but' and 'don't' with speakers No.15 and No.5 respectively. The confusion of /t/ with a voiced dental plosive stems from two sources: first, because of the influence of Arabic and/or French, Algerians almost always use dental plosives instead of alveolar ones. Second and most important of all, in all cases of /t/ substitution this sound always preceded a voiced consonant and, therefore, was subjected to its influence (i.e. voicing). The voicing of /t/, thus, results from a regressive assimilation.



/d/ substitutions occurred only in free speech and there only syllable-finally. The most common confusion is with [ʒ]. However, one speaker did pronounce 'would' as [wʊʒ] and the error was classified as a substitution of /d/ by /l/. In fact, the latter mispronunciation results from a consonant elision (/d/) and a consonant epenthesis (/l/) due to spelling influence. The realisation of /d/ as [ʒ] is also a case of regressive assimilation of voicing as in, for example, the utterance 'ride straight' produced by speaker No.9.

The confusion of /b/ with [p] happened with only one speaker (S.2) in 'took buses' and is a result of progressive assimilation of voice. It is, nonetheless, important to mention that the speaker did produce a fortis /p/ without long VOT (i.e. a French /p/) and seven informants out of ten reported the word 'passes'.

#### ii- Fricatives

The substitution of labio-dentals /f/ and /v/ was indeed rare. The confusion of syllable-final /v/ with /v/ happened only once in reading with speaker No.2 for the word 'have'. As for syllable-initial /f/, speaker No.23 replaced it with [θ] in 'first day' and speaker No.24 used a voiced version in the word 'famous'.

Among the interdental fricatives /θ/ and /ð/, the latter, as mentioned earlier, proved the most influential on intelligibility failure. Only one speaker (S.17) mispronounced /θ/ as [s] in the utterance 'I was thrown' and seemed to be performing some kind of 'consonant harmony'.

Nearly all the confusions of /ð/ which led to misunderstanding occurred syllable-initially with only one case occurring syllable-finally in 'with' (/ð/ confused with [ʒ]). The mispronunciations of syllable-initial /ð/ included: [ʔ], [θ], [d], [ɸ]. Two speakers (S.1 and S.24) confused /ð/ with [ʔ] in uttering 'they' and 'they're'

respectively. Moreover, [ð] which is an interference from Arabic, is not a widespread mispronunciation of /ð/ and happened with only speaker No.17. The realisation of /ð/ as [θ] occurred in the speech of one speaker (No.7) in the word 'that' coming right after a voiceless consonant. By far the most common mispronunciation of /ð/ is a voiced dental plosive ([d]). Generally speaking, the substitution of /ð/ by [d] does not create great difficulty for comprehension. It does, however, lead to misunderstanding when syllable-initial /ð/ follows a syllable or word ending with an alveolar plosive /t,d/ (usually articulated by Algerians as dental plosives) and, therefore, creating a sequence. As we will see later, Algerian speakers tend to reduce consonant sequences/clusters. Hence, because of cluster reductions and also because of the reduction of the length of two plosives coming together, the native informants will hear only one plosive and then usually do not perceive the mispronounced /ð/. The following are two cases with such type of error:

e.g. 'said that' [sɛ:ð'ðt̪] (S.8)

'made the' [mɛð'ə] (S.22)

The alveolar fricatives were rarely confused and especially the lenis one which was confused only once with [s] syllable-finally by speaker No.7 in the word 'ig'. As for /s/, three speakers mispronounced it once each. Speaker No.16 confused syllable-initial /s/ with [ʃ] in 'gouthern'. Due to the influence of the following voiced sounds, both speakers No.3 and No.7 mispronounced syllable-final /s/ as [z] in 'us' and 'Essex' respectively.

As far as the palato-alveolar fricatives are concerned, only /ʃ/ was confused once by speaker No.3 in the word 'she'.

Finally, the glottal fricative /h/ was mispronounced as [ʔ] by S.16 twice and S.18 once, and as [ɦ] by S.5 once.

### iii- Affricates

Out of all R.P. affricates, /dʒ/ never led to communication failure. Only S.21 confused /tr/ in reading the word 'tried'; the same speaker also confused /dr/ in the word 'dreamt' in free speech and represents the only case of a mispronounced /dr/ realised as [dʒ].

/tʃ/, however, did lead to misperceptions from the part of the native informants with five speakers in free speech. Each Algerian subject confused /tʃ/ only once. Moreover, four cases of syllable-final substitutions occurred and only one case of syllable-initial substitution.

In all /tʃ/ substitutions, speakers elided one element of the affricate in question. The Algerian subjects did not show any preference for the element to be dropped: three speakers replaced /tʃ/ with [ʃ], [ʒ] and [s] respectively while the remaining two both replaced it with [ʔ].

To understand the reason why those speakers reduced /tʃ/, it could be interesting to consider the context within which it occurred in each case.

<u>Speaker's No.</u>	<u>Mispronounced word</u> <u>(underlined)</u>	<u>Correct pronunciation</u>
S.17	'lect <u>u</u> res'	/'lektʃəz/
S.7	' <u>wh</u> ich struck'	/witʃstræk/
S.9	're <u>ach</u> ed'	/ri:tʃt/
S.12	' <u>wh</u> ich was'	/witʃwəz/
S.22	'Fr <u>en</u> ch'	/frentʃ/

The above mispronounced words have all one point in common as far as /tʃ/ is concerned: whether within a word or over word boundaries, /tʃ/ is always involved in a cluster or sequence of three or more consonants. It seems that there is a tendency among those speakers to reduce consonant sequences/clusters by dropping either one of the two elements constituting the affricate /tʃ/. Such behaviour tends to verify the hypothesis that these speakers consider /tʃ/ as two phonemes.

#### iv- Nasals

On the whole, nasal sounds did not disrupt communication between Algerian speakers and British informants. In instances where a nasal follows a vowel, Algerian speakers tend to use nasality (i.e. a nasalized vowel); but this did not usually create problems of understanding for the informants.

While /m/ was always perfectly perceived, /n/ and /ŋ/ led to the misunderstanding of four speakers and one speaker respectively. All these mispronunciations occurred in syllable-final positions. In uttering 'things', speaker No.19 replaced /ŋz/ by [ks]. As for /n/, speaker No.20 used vowel nasalization for the word 'in' ([ĩ]) in free speech and was misunderstood by three informants. In reading, speakers No.3, No.18 and No.22 confused syllable-final /n/ with [s] in the word 'genuinely'

#### v- Lateral non-fricative and approximants

Although Algerian speakers almost always produce a 'clear' /l/ in all positions, the mispronunciation did not create a great deal of difficulty. However, in Exp.C, item No.29 which was designed to assess the speakers' ability to produce a velarized [ɫ], shows that 32% of all British informants did not hear [ɫ] in the word 'whale'. As for free speech only two speakers replaced /l/ by [ʔ] once each, while three speakers confused /l/ with [ɟ] in the words 'leisurely' and 'tolerance' (twice). The latter cases of [ɟ] insertions are the result of the metathesis process which rarely happened.

Finally, out of the three R.P. approximants, /j/ never led to any misunderstanding while /w/ and /r/ were in general the least misunderstood of all the consonants. Only one speaker (S.17) produced /w/ as [ɥ] in 'we' and was probably influenced by both the following front vowel and interference from French. As for /r/, one speaker

(S.16) replaced it by [w] in free speech in the word 'right'. Moreover, in reading the word 'realised' (in 'and suddenly he realised that he had grown up') three speakers used a flap [ɾ] for R.P. [ʒ] which made informants understand: 'and suddenly he had realised that he had grown up'. Hence, the closure for the flap was perceived as that of an alveolar plosive.

## VIII. 2. RHYTHM

### (1) TYPES OF INCORRECT RHYTHMIC PATTERNS

In the last chapter, it was discovered that after vowel substitution errors, errors due to incorrect rhythmic patterns were second in importance.

A look at the data from free speech shows that, on the whole, three major categories of errors emerge. First, speakers used too many stresses (in a given word-group) and, therefore, turned R.P. stress-timed rhythm into a syllable-timed rhythm. All the following instances share this characteristic which led to total communicational breakdown:

['ʔəf'jə'wɔ̃t]	'if you want'
['səm'fɪŋg'lak'dɪs'ɪn'dɪ]	'something like this in the'
['ʔɪ:'dædæ'dɛ'njɛ'dʒo:ns]	'either the Daniel Jones'
['jə'sɪ'wɛn'ɛm]	'you see when I'm'
[hɔ̃'wɔ̃'wɪd'mɪ]	'who were with me'
['ʃɜ:'dɜ:'ʔɪ'dɪz]	'share their ideas'

Second, a category of rhythmic errors involved speakers using far fewer stresses than a native speaker would normally do in cases as:

[t:ək'ʔs'hɪlf'æʊ'tə'v'dɜ:]	'it took us half an hour to arrive there'
['wɪðhɛlpɔ̃f]	'with the help of'
['fɔ̃'sɔ̃rɪ'bɪkɔ̃z]	'for us sorry because'
[wɜ:'kætstɛvɛnswɜz]	'where Cat Stevens was'
['ʔɔ̃'tnɔ̃'waɪ]	'I don't know why'

['boʊɛʔəʒəse:s'dʒi]	'boring in the sense that'
[ʔɪdʒi'ni:ʒi'me'kɪnekɔ̃lnɔ̃fənɔ̃]	'Engineering Mechanical National'
['wɔ̃mɔ̃ns]	'one month'
['dɪfjʊəntəfkɔ̃s]	'different of course'
['spɛʒɔ̃mz]	'spare rooms'
['ʔy:lɔ̃]	'too long'
['pleiʒetfɪzkɔ̃lɔ̃]	'place which is called'
['mei:zjənɔ̃ʔəlʒɔ̃v'stɔ̃i:ts]	'maze, you know, a lot of streets'

Whether using too many or too few stresses, speakers tend to allocate stresses to certain words that native speakers would not normally stress. These words are mainly grammatical items and when speakers highlight them, they also fail to stress the neighbouring content words. The third category of rhythmic errors involves a great deal of inappropriate stressing of grammatical words but with a difference: the nucleus is placed on the first lexical item in a word-group with the subsequent words being left unstressed. All the items stressed were functional words. These received the nuclear tone at the expense of the following content word/s. The type of accent placement involved here could be the result of interference from the French 'accent d'insistance' which Algerians use a great deal when speaking French. This third category of rhythmic errors was widespread among speakers as the following examples show:

['ʔɔ̃fkɔ̃s]	'of course'
['ʔɪzmaɪ]	'as my'
['ʔəbɔ̃s]	'a bus'
['fɔ̃ʒɛsɔ̃ʒi'bikɔ̃z]	'for us sorry because'
['ʔəʒɪnɔ̃'wai]	'I don't know why'
['wɔ̃lɔ̃wɛnt:ɔ̃'kɔ̃be'nɔ̃:lɔ̃]	'well I went to Cumbernauld'
['dɪsiwɛʒ]	'this is where'
['ʔɪmɛ]	'I mean'
['ʔɪmɪn]	'I mean'
[bɔ̃t'ɪnəʒɔ̃l]	'but in a whole'
['wi:ste]	'we stayed'

['dðde:]	'that they'
['dʒɪstɪvɪtʃ]	'just to visit'
['ʔwɛdʒɪs]	'I was just'
['ʔɪmɪ]	'I mean'
['ʔɪhæbɪ]	'I have been'

What makes R.P. rhythm so different from both Arabic and French is the use of weak forms (with vowels reduced to /u,ɪ/ and most often to /ə/) in unstressed grammatical words. Algerian speakers tend to use full vowels instead of reduced ones in grammatical items. Moreover, since a vowel, whose quality is more or less similar to R.P. /ə/, exists in both Algerian Arabic and French, Algerian speakers also use /ə/. However, instead of using it only in unstressed positions, the Algerians used stressed /ə/ in grammatical words in a large number of cases. An immediate consequence of this inappropriate stressing (of structural items) resulted in the neighbouring content words being unstressed. An illustration of this would be the tendency to stress the pronoun in sentence fillers such as 'I mean', 'you know' and leave the full verb unstressed. For example, speaker No.9 pronounced 'you know' twice as ['jʊnɜ:] and 'I mean' as ['ʔɪmɪ].

## (2) SPEECH RATE

It has been suggested that a very slow speech rate (i.e. speed of talking) affects the isochronous nature of English rhythm and, therefore, leads to communicational breakdown due to unEnglish rhythmic patterns. The researcher, thus, thought it appropriate to consider the speech rate for the Algerian subjects as well as the R.P. speaker for comparative purposes.

Speech rate has traditionally been measured in two ways: in terms of number of words per second or in terms of number of syllables per second (Foulke and Sticht, 1969). The use of number of words per second to assess speech rate depends a great deal on one's definition

of the term 'word'. One must consider, for instance, bound morphemes and decide whether they are separate words or part of the free morpheme they accompany. As an illustration, one could mention the token 'couldn't' and specify whether it consists of one word or two.

Complications of the above-mentioned sort make the use of the word as the basic unit for measuring speech rate less appealing. It was, thereby, decided to consider the number of syllables per second (henceforth: s.p.s) as the basis for speech rate measurements.

To measure speech rate the researcher relied upon the original (unedited) recordings of free discourse. For each speaker a sample of speech was chosen, usually not from the beginning of the text to allow for maximum fluency. The total number of syllables for each speaker's portion of speech was, then, counted. Next, all the portions (24 in total) of spoken language were measured using a Heuer Trackmaster stopwatch which allowed measurements of up to one-tenth of a second. This proved adequate for the present purpose.

Obviously, all the portions of speech contained, alongside vocalisation proper, filled and unfilled pauses, back tracking, false starts, repetitions and incomplete constructions. In order to obtain a timing as accurate as possible, each speech sample was timed five times and an average time (in seconds) was then arrived at. There were 24 such speech samples, one for each speaker. Finally, one must note that the method was also applied to the R.P. speaker's free speech for measuring her speed of talking.

Table 23 below shows each individual (Algerian) speaker's speaking rate along with the length of the period of speech measured and the average time needed to utter it.

The R.P. speaker produced, on average, 3.6 s.p.s (148 syllables were measured and uttered in 41.4 seconds) while the average for all



Algerian speakers was 2.6 s.p.s. Although, one could dispute the restricted use of only one R.P. speaker (a larger number of native speakers would have been ideal), it is interesting to note that her rate of speaking was higher than the average for all Algerians as well as for any single Algerian speaker. However, if one bears in mind what Leeson (1975: 144) considers the normal native speaker's rate ( $6\pm 1$  s.p.s), one is surprised by the R.P. speaker's slow rate. A number of possible factors acting individually or together could have influenced such behaviour. First of all, the R.P. speaker is a university lecturer used to teaching phonetics to non-native subjects. Second, a slow rate could have resulted from the nature of the task involved: that is, in talking about a holiday, the speaker is involved in a monologue and not in proper discourse interaction where the influence of the interlocutor is likely to give rise to sudden increases or decreases in the rate (speakers vary their rate according to the situation). Finally, since the recording took place in the presence of the researcher who is a non-native speaker of English and in view of the fact that natives tend to slow down their rate with non-natives, it is likely that the R.P. speaker automatically decreased her normal speaking rate.

Nevertheless, if one considers, on the one hand,  $6\pm 1$  s.p.s as the normal native speaker's rate, and on the other, 2.6 s.p.s as the average rate for Algerian speakers, one can obviously conclude that the Algerian subjects' speech rate is indeed very slow.

Considering that speech rate (and, thus, fluency) is a function of pausing and, therefore, the faster the rate the more pause-less speech is, one can safely conclude that the Algerian speakers spent far more time pausing (and hesitating), back tracking and repeating themselves than native speakers would normally do. A further logical conclusion resulting from a very slow rate concerns the inability of

Algerians to keep English rhythmic patterns unaffected. Slowing down the rate of speaking considerably (as in the case of a large number of Algerian speakers in our investigation), leads to a distortion of rhythmic patterns which become ineffective for communicational purposes.

TABLE 23  
ALGERIAN SPEAKERS' SPEECH RATE IN FREE SPEECH

Speaker No.	No. of syllables measured	Average time (in seconds)	No. of syllables per second
S.1	91	65.9	1.38
S.2	122	46.2	2.64
S.3	163	58.1	2.80
S.4	129	52.2	2.47
S.5	118	46.3	2.55
S.6	83	32.2	2.58
S.7	137	50.3	2.72
S.8	129	44.9	2.87
S.9	114	32.6	3.50
S.10	171	84.8	2.00
S.11	167	57.8	2.88
S.12	133	38.3	3.47
S.13	130	44.1	2.95
S.14	119	46.7	2.55
S.15	113	44.8	2.52
S.16	102	32.9	3.10
S.17	116	60.1	1.91
S.18	133	44.8	2.97
S.19	119	50.0	2.38
S.20	122	40.3	3.00
S.21	97	34.5	2.81
S.22	144	60.2	2.39
S.23	113	46.8	2.42
S.24	115	62.5	1.84
OVERALL AVERAGE (No. of s.p.s)			2.61

(3) RESULTS OF EXP.E

Exp.E was designed to assess two features: nucleus shift and intonational meaning through tone choices. Items No.1-12 dealt with the former whereas items No.13-22 dealt with the latter. The following represents each intended utterance (with a specific nucleus placement)

and the respective percentages of incorrect responses from the British informants:

<u>Item No.</u>	<u>Intended (underlined) nuclear syllable</u>	<u>% of incorrect responses (total:240)</u>
1	No, Mary likes <u>fish</u> .	7.1
2	No, I'll <u>swim</u> across the river.	13.0
3	No, John's a <u>brilliant</u> actor.	6.3
4	No, Mary <u>likes</u> fish.	0.8
5	No, I said open the bedroom <u>door</u> .	19.7
6	No, <u>John's</u> a brilliant actor.	3.4
7	No, I'll <u>swim</u> across the <u>river</u> .	8.0
8	No, I said open the <u>bedroom</u> door.	6.3
9	No, <u>Mary</u> likes fish.	5.5
10	No, John's a brilliant <u>actor</u> .	8.8
11	No, I said <u>open</u> the bedroom door.	1.7
12	No, <u>I'll</u> swim across the river.	3.8

The above results show that the Algerian speakers did not fail in shifting the nucleus according to context. It seems that nucleus shift does not present a great difficulty to the present sample of speakers. Apart from item No.5 and to lesser extent item No.2, all the other utterances were misunderstood by insignificant numbers of informants.

However, the number of informants who could not interpret the speaker's intent through intonation, was slightly higher than in the preceding task (i.e. nucleus placement). The following are the results for the assessment of intonational meaning:

<u>Item No.</u>	<u>Intended nuclear tone</u>	<u>% of incorrect responses (total:240)</u>
13	˘you ,like him.	10.1
14	It's ˘good, ,isn't it?	81.9
15	'What's the ˘time?	17.2
16	I 'got the ,meat, the ,bread, the ,milk	9.2
17	'Come ,in.	43.7
18	D'you 'like ,swimming?	16.8
19	You're a ˘teacher, ˘aren't you?	7.1
20	,Where?	12.6

21	He 'went this ,morning.	2.9
22	I 'went to ,France, ,Spain and `England.	1.7

The above results show that apart from items No.14 and No.17, all the other items led to successful communication. The use of rising tone on a tag-question (in 'It's good, isn't it?') proved the least easy for the Algerian speakers. As a rule, advanced Algerian speakers tend to use a falling tone on tag-questions as in item No.19 which was misunderstood by only 7.1% of the informants. Less serious but still important is the speakers' inability to sound 'inviting' in item No.17. 43.7% of the total number of informants thought that the speakers were ordering instead of inviting them.

### VIII. 3. LEXICAL-STRESS

#### (1) TYPES OF INCORRECT PLACEMENT OF LEXICAL-STRESS

Intelligibility breakdown due to inappropriate lexical-stress placement occurred in 30 instances in free speech and 6 in reading. Out of these 36 cases, 19 were disyllabic items, 10 trisyllabic and 7 words with four and more syllables.

The disyllabic words that have led to unintelligibility are shown below alongside their actual pronunciation by the speaker.

<u>Stress on penultimate syllable</u>			<u>Stress on final syllable</u>		
'police'	['pɔli:s]	(S.1)	'also'	[ɔ'so:]	(S.1)
'ago'	['gɔ]	(S.1)	'money'	[mɔ'ne:]	(S.4)
			'after'	[ʔəf'tɛ:]	(S.16)
			'Oxford'	[ʔəks'fɔ:d]	(S.16)
			'very'	[və'ɹi:]	(S.16)
			'airport'	[ʔaɪ'pɔ:t]	(S.17)
			'contact'	[kɛ'tɛkt]	(S.20)
			'also'	[ʔəl'sɔ:]	(S.24)

The above mispronounced disyllabic words show a striking tendency which involves stress falling on the final syllable when the vowel is long. When no long vowel occurs in the last syllable, stress falls on the penultimate syllable. This habit is probably a direct transfer from lexical-stress patterns of Algerian Arabic.

The trisyllabic words which were allocated an incorrect stress pattern are as follows:

- Stress on initial syllable

'whenever'	['wɛnɛvə]	(S.3)
'another'	['ʔɛnɔðə]	(S.4)
'beginning'	['biɟinən]	(S.6)
'phonetics'	['fonɛtɛks]	(S.6)
'directly'	['ðɛʔɛktli]	(S.7)
'directly'	['ðɛʔɛtli]	(S.7)

- Stress on penultimate syllable

'perfectly'	[pɛr'fɛktlɛ]	(S.8)
'discotheques'	[ðis'koʔɛks]	(S.16)
'chemistry'	[ki'mi:sti]	(S.17)

- Stress on final syllable

'tolerance'	[tɛʔɛ'ʔɛns]	(S.1)
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Six of the above mispronounced trisyllabic words received stress on their initial syllable, three were allocated stress on the penultimate syllable and only one on the final syllable.

If words with four or more syllables are mispronounced, they usually receive primary stress on the first syllable as the following suggests:

- Stress on first syllable

'recuperate'	['rɛkɪprɛiʔ]	(S.1)
'methodology'	['mɛθɔdɔlɔʒɛ]	(S.8)
'agreeable'	['ɛgʷɛbɛʔ]	(S.16)
'laboratory'	['lɔbɔrɔtɔʔɛ]	(S.16)

- Stress on second syllable

'genuinely' [dʒi'nju:əli] (S.21)

- Stress on third (penultimate) syllable

'situated' [sɪtʃu'eɪtəd] (S.19)

'accompanied' [ə'kɒmpənjəd] (S.23)

The tendency to stress the initial syllable of a polysyllabic word probably comes from the interference of the French 'accent d'insistance' which Algerians typically use when speaking French without really intending to be 'insistent'.

Hence, both Arabic and French stress patterns influence stress placement behaviour in English polysyllabic words by Algerian speakers.

(2) RESULTS OF EXP.D

Exp.D was specifically designed to measure the ability of Algerian speakers to handle lexical-stress placement in compound/noun-phrase items as well as in words which can exhibit the noun/verb contrast through stress.

The results of Exp.D emanate from the informants' responses to the Algerians' production of these words. The following represent the percentages of incorrect responses for the different items in the said experiment:

<u>Item No.</u>	<u>Intended lexical-stress pattern</u>	<u>% of incorrect responses (total:240)</u>
1	white 'house	62.6
2	'passed on	53.3
3	'hotplate	41.6
4	black 'bird	62.2
5	'insult	25.6
6	in'port	13.0
7	trans'fer	22.7
8	'convict	34.0
9	ob'ject	25.2
10	'export	35.7

The above results show that items 1-4 (i.e. compound/noun-phrase distinction) show higher percentages of incorrect responses for noun-phrases which need primary stress on the final element (e.g. 'white 'house', 'black 'bird'). These usually had the first syllable stressed; for instance, 'white house' and 'black bird', obtained 62.6% and 62.2% of incorrect responses respectively.

Nevertheless, even for compounds such as 'passed on' and 'hotplate' which need primary stress on the first syllable, Algerian speakers were not particularly successful. They were misunderstood by 53.3% and 41.6% of the total responses respectively.

Items 5-10 proved especially difficult for nouns which received the highest incorrect responses. British informants usually heard nouns as verbs and reported 'insult', 'convict', 'export' as verbs (i.e. stress on the second syllable) 25.6%, 34% and 35.7% respectively.

The mispronunciation of a word that can be substituted for another solely on the basis of stress (e.g. compounds, noun-phrases, words that can be either nouns or verbs) reflects the Algerian speakers' failure to store in the mental lexicon and, alongside the segmental pronunciation of a word, its correct stress placement. Hence, when retrieving from the lexicon any of these words, speakers produce an incorrect stress-pattern. This tendency may be the result of an incorrect storing, in the lexicon, of the words in the first place (i.e. when speakers first learn these lexical items). There is a need, therefore, for appropriate methods of teaching as well as for teachers who are aware of the problem.

#### VIII. 4. ELISION

##### (1) SYLLABLE ELISION

The Algerian speakers who omit syllables, do it within polysyllabic words or within phrases. However, word internal syllable elision is the

most common although, in a number of cases, the first syllable (or vowel) is elided because the preceding word ends with a vowel.

Most frequently, words beginning with a vowel tend to have their first syllable dropped.

e.g.	'okay'	[kɛ]	(S.1)
	'it's a'	[tsɜ:]	(S.1)
	'again'	[gɛn]	(S.16)

Words beginning with a vowel have their first syllable elided especially when the preceding word ends with a vowel.

e.g.	'to, okay'	[tʃkɛ]	(S.1)
	'do you'	[dʊ]	(S.3)
	'you're'	[jʊ]	(S.3)
	'I arrived'	[aɪvɛɪvd]	(S.11)
	'say it'	[seɪt]	(S.15)
	'we arrived'	[wɪ'wɛɪv]	(S.16)
	'you arrive'	[jʊ'rɛɪv]	(S.16)
	'the advantage'	[də'veɪtɪdʒ]	(S.20)
	'to irritate'	[tʊ'rɪteɪt]	(S.6)
	'poor woman'	[pʊ:mɛn]	(S.6)

Furthermore, in two instances where the final syllable of the word had been elided, the latter ended with a vowel (or semi-vowel) and was immediately followed by a lexical item which began with a vowel.

e.g.	'centre of'	['sɛntɜʃf]	(S.4)
	'we were'	[wɛr]	(S.14)

The above syllable omissions are attempts by the speakers to avoid sequences of vowels. This tendency also operates when a nasalised vowel precedes the syllable that is likely to be elided.

e.g.	'expecting it'	[ɛks'pektɪt]	(S.15)
	'didn't it'	[dɪt]	(S.19)
	'genuinely'	['dʒɛnʊəli]	(S.7)
	'suddenly'	['sʌdnli]	(S.18)



'in a different'	[ɪˈdɪfənt]	(S.21)
'in a different'	[ɪˈdɪfənt]	(S.22)
'in a different'	[ɪˈdɪfənt]	(S.24)

In the reading passage, two interesting cases of syllable elision occurred. In both instances what remained of the syllable was the [j] sound which was kept in post-vocalic position.

e.g.	'leisurely'	['leɪʒəj]	(S.19)
	'irritate'	[ɪrɪˈteɪt]	(S.23)

Other instances of syllable elision include:

e.g.	'because'	['bɪkɔːz]	(S.18)
	'holidays'	['hɪdeɪz]	(S.23)
	'regretted'	['rɛɡrɪtɪd]	(S.23)
	'he had'	[həd]	(S.7)
	'but it was'	[bətɪwəz]	(S.7)
	'said it'	[seɪt]	(S.18)
	'she had said'	['ʃɪseɪd]	(S.21)

## (2) CONSONANT ELISION

Consonants can be elided either in pre-nuclear or post-nuclear position in a syllable. These consonants normally occur within a word or across word boundaries but always as part of a consonant sequence. In the following, all cases of consonant elision are presented first for free speech and then for reading. Further, in both instances, elisions are arranged into two columns which represent pre-nuclear and post-nuclear positions respectively. (\* note that S. stands for speaker).

### CONSONANT ELISION IN FREE SPEECH

S.*No.	<u>In pre-nuclear position</u>	<u>In post-nuclear position</u>
S.2	/w/ 'which was' [wɪtʃɔːz]	/s/ 'let's say' [lətʃeɪs]
S.4		/l/ 'well they' [welθeɪ]
		/d/ 'did not' [dɪnɒt]
		/t/ 'it was' [ɪtwɔːz]

S.7		/t/ 'at the' [ət̪i]
		/d/ 'realised that' [ˈrɪələɪzɪdət̪]
S.10		/l/ 'well the' [wɛlə]
S.11		/z/ 'wasn't' [wɔ̃t̪]
		/l/ 'well you' [wɛjʊ]
S.12		/n/ 'only' [ˈɒnli]
S.14	/f/ 'and she' [ɛnd̪i]	/s/ 'just stay' [dʒsteɪ]
S.16	/w/ 'we were' [wɪˈwɜː]	/p/ 'trip for' [ˈtrɪp fɔː]
S.19		/n/ 'didn't know' [ˈdɪdn̩t̪nəʊ]
S.20		/l/ 'Chelmsley' [ˈtʃɛlsli]
S.21		/s/ 'last summer' [lɛt̪ˈsʌmə]
		/n/ 'and the' [ˈɛnd̪i]
S.22		/n/ 'London for' [ˈlɒndən fɔː]
S.24		/l/ 'will not' [wɪl nɒt̪]

CONSONANT ELISION IN THE READING PASSAGE

<u>S.No.</u>	<u>In pre-nuclear position</u>	<u>In post-nuclear position</u>
S.1		/n/ 'then there' [ðeːðɛɪ]
S.2		/m/ 'some of' [ˈsʌmɔv]
		/s/ 'accidents will' [ˈæksɪdɪntwɪl]
		/ld/ 'old leisurely' [ˈɔldleɪzəlɪ]
S.4	/j/ 'genuinely' [ˈdʒenjuəlɪ]	/d/ 'childhood' [ˈtʃɪlhʊd]
		/l/ 'rambled' [ˈræbəd]
S.7		/l/ 'still couldn't' [stɪlkʊdn̩t̪]
		/v/ 'of the' [ɔvðə]
		/z/ 'as she' [zɛʃi]
S.9		/n/ 'genuinely' [ˈdʒenjʊəlɪ]
S.10		/n/ 'genuinely' [ˈdʒenjʊəlɪ]
S.11		/b/ 'disturbed' [dɪsˈtɜːbd]
S.12		/n/ 'genuinely' [ˈdʒenjəlɪ]
S.14	/f/ 'that she' [ðæt̪i]	
S.17		/s/ 'accidents will' [ˈɛksɪdɪntwɪl]
S.18		/t/ 'but he' [bʊt̪hi]
S.19		/s/ 'accidents will' [ˈɛksɪdɪntwɪl]
		/n/ 'genuinely' [ˈdʒenjʊəlɪ]
		'suddenly' [ˈsʌdn̩li]
S.20		/d/ 'old leisurely' [ˈɔldleɪzəlɪ]
S.21		/l/ 'little things' [ˈlɪt̪lɪŋz]

S.22	/t/'disturbed' [dɪs's:b]	/n/'even little' [ˈiːvənˈlɪtəl]
S.24		/m/'home for' [həʊfɔː]
		/d/'old leisurely' [ˈəʊləɪzəlɪ]

The first striking observation that can be made concerns the number of elisions that occurred in post-nuclear positions which, in fact, far exceeded pre-nuclear omissions. Only six cases of consonant elisions in pre-nuclear positions took place over free speech and reading. Four of these omissions involved elisions across word-boundary and two involved word internal elisions. As for the type of consonantal segments concerned, no general tendency can be observed. Finally, these elisions reduced either three-consonant or two-consonant clusters by one consonant.

In contrast, the number of post-nuclear elisions of consonants is quite large. The consonant sequences are, thus, kept to a minimum size (usually to two-consonant but sometimes to single-consonant sequences) and occur mainly at word boundaries. Word internal elisions are more frequent in reading especially with the following lexical items: 'genuinely', 'disturbed' and 'suddenly'. As for the kind of consonantal segment that is readily dropped, the alveolars (i.e. /t, d, s, z, n, l/) are the most affected.

In Exp.C, the Algerian speakers' ability to deal with consonant clusters in R.P. was tested by items No.36, No.37 and No.38 and the percentage of incorrect responses was as follows:

<u>Item No.</u>	<u>Intended word (with appropriate cluster)</u>	<u>% of incorrect responses (total: 240)</u>
36	'texts' ([CVCCCC])	5
37	'tenths' ([CVCCC])	46
38	'girls' ([CVCC])	4

## VIII. 5. RESYLLABIFICATION

Almost all the cases of incorrect syllabification shown below tend to fit the syllable structure of French (and to certain degree Arabic) which has a preference for open syllables. These resyllabifications, therefore, result from an attempt to avoid post-nuclear consonants which are transferred onto the onset of the next syllable.

### INCORRECT RESYLLABIFICATIONS IN FREE SPEECH

<u>Speaker no.</u>	<u>Utterance involved</u>	<u>Phonetic realisation</u>
S.11	'bad start' 'phoned him'	['beds'tɛʃtɛ] ['fəʊndfɪm]
S.15	'not wrong'	[nɔtʃʊŋg]
S.17	'I'm going'	[?ə'mgɔŋg]
S.24	'at rest'	[?'ætɛst]

### INCORRECT RESYLLABIFICATIONS IN READING

S.7	'had rambled'	[hɛ'dʒɛbəl]
S.9	'had rambled'	[hɛ'dʒɛmbɛld]

This kind of resyllabification is accompanied by major phonetic alterations of certain segments. For example, speakers No.15 and No.24, in resyllabifying /nɔt rɔŋ/ and /ət rest/ respectively, produced a voiceless post-alveolar fricative [ç] instead of the normal voiced post-alveolar approximant [ʝ]. In their pronunciation of initial /r/ in 'rambled', speakers No.7 and No.9 transferred the preceding syllable-final /d/ to the onset of the following syllable and transformed /r/ of the word in question into a voiced post-alveolar fricative [ʝ].

## VIII. 6. EPENTHESIS

### (1) VOWEL EPENTHESIS

The following show that Algerian speakers insert mainly [ə] (except when S.4 introduced [ɛ:] as a hesitation sound that led to miscommunication) to avoid consonant clusters.

### VOWEL EPENTHESIS IN FREE SPEECH

<u>Speaker No.</u>	<u>Utterance involved</u>	<u>Phonetic realisation</u>
S.2	'for Sonatrach'	[fərəsonəθyək]
S.4	'I went'	[ʔʊɪd: 'wɛnt]
S.14	'surprised'	[sə'pɹʌɪzəd]
S.16	'slang'	[sə'leŋ]
S.23	'passed'	['pʌsət]

### VOWEL EPENTHESIS IN READING

S.11	'tolerance seemed'	['tɒləɹənsəsɪ'md]
	'he realised'	[hi'ɹi:læɪzəd]

Although the vowel epenthesis phenomenon does not appear to be a major error-category (seven cases in all), it is interesting to note that in five instances [ə] was inserted mainly in the environment of [s] and to a lesser extent [z]

### (2) CONSONANT EPENTHESIS

As in the case of vowel epenthesis, instances of intelligibility breakdown due to epenthetic consonants are not substantial as can be noted from the following.

### CONSONANT EPENTHESIS IN FREE SPEECH

<u>Speaker No.</u>	<u>Utterance involved</u>	<u>Phonetic realisation</u>
S.3	'really'	['ɹɪli?ə]
S.4	'me a'	[mi?ə]
	'well I'	[wel?əɪ]
S.8	'we specially'	[wi?'spɛʃəlɛ]
S.9	'well honestly'	[we'hɒnəsli]
S.16	'an hour'	['fɛnəʊə]
S.21	'calm'	[kɒlm]

### CONSONANT EPENTHESIS IN READING

S.8	'grown up'	['gɹɔ̃ʊp]
S.17	'she had'	[ʃɪzhɛt]

The most commonly inserted consonantal segment remains the glottal stop which is a result of interference from Arabic. In the case of speakers No.10, No.16 and No.21, the errors due to an epenthetic

consonant are a consequence of spelling mispronunciations; for example, the production of silent 'h' and 'l' in words like 'honestly' and 'calm' respectively.

#### VIII. 7. LEXICAL AND SYNTACTIC ERRORS

Three cases of lexical error were a direct result from the speakers' use of 'faux-amis' like 'souvenir' (S.5), 'licence' (S.6) and 'precedent' (S.23). Although these lexical items exist in English, the Algerian speakers concerned unknowingly intended them to carry their French meaning which are:

- 'souvenir' = memory
- 'licence' = (BA) degree
- 'precedent' = last

As for the other two incorrect choices of words, they involved 'either' (S.6) meaning 'even' and 'means' (S.12) meaning 'mainly'.

There is no general tendency as far as the speakers' syntactic errors are concerned as shown in the following (cf. speakers No.2, No.8, No.13, No.18):

#### LEXICAL AND SYNTACTIC ERRORS IN FREE SPEECH

<u>Speaker No.</u>	<u>Word-group involved</u>
S.2	'I seen something quite gigantic station like this'
S.5	'This is why I keep a bad souvenir from this travel'
S.6	- 'I could manage to finish my licence like that' - 'either the Daniel Jones we don't find it'
S.8	'I've a class of about thirty five students'
S.12	'English friends as well as English-speaking people means Indians and Pakistanis'
S.13	'because I have been always interested in that fields'
S.18	'I'd never seen a train before as quicker as French trains'
S.23	'Well I have been in England in this precedent summer holidays'

## SUBSTITUTION OF LEXICAL ITEMS IN READING

S.8	'But'	→	'and'
S.18	'she'	→	'it'

Furthermore, it was mentioned in the preceding chapter that quite a substantial number of cases of incorrect tense concord were made by the speakers and that in their majority these errors were later corrected by the informants. Corrections such as these mean the listening subjects understood the intended message. What is more, it would be interesting to investigate whether the speakers' syntactic errors like tense concord and others, are acceptable and not irritating to the native informants. Unfortunately, this kind of work is beyond the scope of the present study.

All in all, lexical and syntactic errors did not prove major factors for hindering intelligibility and the reason may be sought into the fairly advanced level of attainment of English by the sample of speakers used in our investigation.

### VIII. 8. SUMMARY

The detailed analysis of the errors that led to miscommunication showed that among segmental substitutions, lax vowels proved the most influential. In the majority of cases of diphthong substitution Algerian speakers tended to replace a diphthong by a monophthong. Unintelligibility due to consonant substitution proved less substantial.

Among rhythmic errors, speakers either use too many or far fewer stresses than a native would do. Another type of rhythmic error involves the placement of the nucleus on the first syllable of a word-group. In addition, the absence of weak forms for grammatical words produces a very slow rate of speech which when measured proved very slow.

We have also noted that lexical-stress errors result from negative transfer from both Arabic and French stress-patterns.

Syllable elisions involved mainly sequences of syllables which consist of vowels only while consonant elisions occurred mainly in post-nuclear positions within words. Another strategy for avoiding post-nuclear consonants consisted of resyllabifications which was however a rare phenomenon. Also were scarce errors due to vowel/consonant epenthesis as well as lexical and syntactic errors.



SOME CONCLUDING REMARKS AND PRACTICAL APPLICATIONS

IX. 1. GENERAL REMARKS

We can draw conclusions on the speakers, informants and test material used. Compared with the R.P. subject, the Algerian speakers performed remarkably well, especially when one takes into account the cues (contextual, facial and so forth) missing in a situation where informants hear only the recorded voice. Whether we take the results obtained for EXP.A (i.e. about 84%) or the average over all five experiments (i.e. about 80%) and compare them with the R.P. speaker's (about 100% and 99% respectively), the Algerian speakers have indeed achieved a high degree of success in communicating in English with the British. The likely explanation comes from the speech rate which when measured proved very slow. It is a well known fact that a slow tempo makes speech more intelligible.

A slow rate of speech does, however, distort the rhythmic patterns of the language. We also noticed that segmental substitutions and mainly vocalic ones as well as incorrect (usually stress-timed) rhythmic patterns which accounted for the majority of the phonetic and phonological errors, did not help either. Probably the use of strong forms and incorrect timing led to the slow tempo.

We also noted seven error-categories that interfered with the speech of Algerian speakers. These include in rank order: segmental substitution, rhythm, lexical-stress, elision, resyllabification, epenthesis, lexical/syntactic. It, therefore, follows that segmental substitutions and incorrect rhythm proved the most detrimental to intelligibility. Among the segmental errors vowels and in particular lax ones, ranked highest

in the list. On the whole, the rhythmic errors resulted from a negative transfer from French the language which appears to have contributed most to intelligibility failure especially when one considers the errors due to spelling.

While the degree of Algerian speakers' success in communicating with the British was high, the features of their speech which made them unintelligible undermined this success. This is particularly so in view of what we discussed in the introductory statements in relation to 'accuracy' and also because these speakers are teachers and thus considered models.

It seems that our speakers/teachers failed to be one hundred percent accurate. Two relevant points need mentioning here. First, it is unrealistic to require accuracy of those who started learning English beyond the critical age. Once this critical period is over, the likelihood of a foreign subject ever attaining the native standard is small. One, therefore, needs to be realistic and require as a minimum target standard what Gimson (1980: 303) terms 'Minimum General Intelligibility'.

Second, as models the Algerian teacher in particular must show a high degree of accuracy or in Gimson's terms 'High Acceptability', a target Gimson (1980: 303) describes as:

"the native listener may not identify as non-native, which conveys information as readily as would a native's and which arrives at this result through precision in the phonetic (allophonic) realization of phonemes and by confident handling of accentual and intonational patterns."

In fact, the type of standard mentioned above must take into account individual variations. As a result the chart for example provided by Gimson for 'R.P. High Acceptability' vowel phonemes which shows the maximum 'leeway' permissible for each phoneme represents

the type of material non-native teachers definitely need.

Moreover, there is a widespread belief that prosodic features are far more important to intelligibility than segments. We found in actual fact that as far as intonational patterns were concerned, no major deviations occurred and this could find an explanation in the universality of a number of pitch patterns. Among the prosodic features, incorrect speech timing led to a large number of communication breakdowns. These, however, came second to segmental substitutions which involved both phonetic and phonemic replacements.

Strangely enough, the traditional 'scarers' such as aspiration did not prove as troublesome as expected and in general the speakers handled it properly. Nonetheless, segments like lax vowels did interfere negatively with intelligibility in many instances. The claim that segmental inaccuracies are usually compensated for by redundancy, cannot hold especially when one adheres to the view that lack of intelligibility results from "the cumulative effect of many little departures from the phonetic norms of the language" (Prator and Robinett, 1972: xiv). The normal inaccuracies and mistakes that natives make in natural informal conversational English are not the same as those made by non-natives whose competence is defective. Furthermore, it does not necessarily mean that the non-native speaker has at his disposal the rules of redundancy in the same way the native does. It follows then that phonetic and especially phonemic distinctions of segments must be given sufficient attention in order to enable non-native teachers to acquire "a model of pronunciation that conforms to a widely intelligible standard" (Abbott, 1986: 299).

We also found that the R.P. speaker was far more intelligible to the British informants. These also scored fairly highly with the Algerian speakers. The whole informant population did not show any

significant difference among its members who formed a homogeneous group.

The method of selecting our informants lays us open to criticism. The decision to select only those who made only one mistake over the two parts of the control experiment was prompted by the fact that (1) we needed 'good' listeners to control any further undesirable effect on the experiment due to lack of concentration and conscientiousness on the part of the particular informants and (2) natives with the same linguistic background should be 100% mutually intelligible. In free speech (i.e. Part A of the control test) in particular the native informants, including the rejected ones, had very high scores indeed.

This study enhanced one factor agreed upon by a number of authorities to have an optimizing influence on intelligibility: native speakers as listeners. Native informants are more powerful interpreters than for example non-natives. It thus follows that the average intelligibility scores of 84% (for free speech) and 80% (for overall) should represent optimal comprehension. Consequently, and one can only hypothesize, one should expect lower intelligibility results for our group of speakers or speakers with the same background when listened to by English-speaking (ESL and/or EFL) non-native informants.

One other major finding we have made concerns the lack of correlation between most of the experiments. The need for lexical-stress to handle sentence-accent and intonational meaning has been supported by the significant correlation between EXP.D and EXP.E. The absence of correlation between the other experiments probably indicates that each one measured a different feature which they were in fact intended to do in the first place.

In addition, the use of the word-group as the scoring unit in the dictation task was supported by the correlation between the subjective

(based on effort) and the objective assessments of the same free speech sample. This correlation, however, did not prove high enough to argue that the Algerian speakers of English with a similar background to our present sample can be satisfactorily assessed only through the subjective and more economical method. We instead claimed that both measures were needed.

One can also add that due to the lack of intercorrelation between the five separate experiments it is sufficient to use only free speech measured through dictation coupled with a subjective assessment (i.e. the kind used for EXP.A). This has the advantage of concentrating mainly on natural or near-natural speech and discard artificial conditions. It is especially important for those whose concern is other than phonetic/phonological intelligibility which has been the sole subject-matter of the present study.

## IX. 2. PEDAGOGICAL IMPLICATIONS

Segmental substitutions account for the majority of errors and cause of intelligibility failure. Among these errors we found that lax vowels were most important. To remedy this problem we must stress the point that accurate reproduction of vocalic segments can be best achieved in two stages. First, the foreign learner/speaker must be familiarized with the most difficult vowels, through auditory discrimination. Systematic ear training exercises can result in the development of these discriminatory skills. As a second stage the learner/speaker attempts to reproduce these sounds but not in isolation.

Moreover, vocalic segments and their inappropriate lengthening or reduction lead to an incorrect speech timing. Vowel obscurations in unstressed positions and especially in grammatical words (e.g.

prepositions, pronouns, auxiliaries and so on) are indispensable if the speech is to be intelligible and accurate. These reductions have also a direct effect on tempo. A slow rate usually accompanies unreduced full vowels.

It appears that one incorrect feature induces the distortion of the next until the whole string is affected. The final result produces a totally distorted rhythmic pattern. This is why errors of rhythm proved so numerous and the most important 'scarer' mentioned by authorities in the field.

The Algerian learner/speaker must therefore adjust to R.P. rhythmic patterns and learn how to concentrate the whole 'stress energy' of his utterance at a few places (one or two) instead of distributing it more evenly over the entire rhythmic group. This will probably take care of the speakers' syllable-timed rhythm which results from negative language transfer and/or a slow speaking rate.

The Algerian learners/speakers need to concentrate on features such as assembling stressed and unstressed syllables, the tendency of stress to occur isochronously, the relationship between vowel duration and stress, and vowel duration in general. All these features must first be preceded by the implementation of native habits; that is, the Algerian needs to learn to listen like a native.

Listening like a native presupposes constant exposure to normal informal and conversational English models of speech and not to "a model of spoken English which is never spoken to native English speakers by native English speakers" (Brown, 1977: 46). This kind of English that the non-native never hears tends to contain a lot of segmental inaccuracies. Thus, the same segment varies in quality and quantity depending on its position in the syllable structure and particularly on whether this syllable is stressed or not. An

initial-position and stressed fricative will have more friction and a longer length than the same fricative in a similar position but unstressed (Brown, 1977: 47). For example in the word 'saucer' /'sɔ:sə/ the first /s/ is longer than the second.

In the field of foreign language teaching and even when the spoken medium is favoured over the written one, the usual form of English most widely used is the slow colloquial form whether for beginners or highly advanced learners. This is particularly so since most of the teaching is done by non-natives. We have seen the importance of normal informal English and the present writer believes that the introduction of the form of English which best represents what actually goes on between natives will only benefit the learner.

The question of when to introduce natural conversational English in the curriculum remains debatable. People consider this standard too difficult to institute with their students who will not be able to understand it. It seems that in gradually acquiring a language the learner progressively assimilates more and more difficult and complex grammatical rules and lexical items, but the pronunciation side remains basically elementary with clearly produced patterns at all levels of attainment. It is important to introduce informal English as early as possible to avoid the very familiar surprise for the learner who used to 'text book' English, comes face to face with real native speech. The present researcher shares with Crystal and Davy (1975: 118) and Brown (1977 : 157) the opinion that informal English should be introduced as early as possible and as Brown (1977: 157) puts it:

"It is therefore essential that, as soon as the student begins to be capable of understanding quite small pieces of structured English, he should be exposed to some English as it is normally spoken."

Pre-recorded materials of natural and informal English (e.g. cf. Crystal and Davy, 1975) can serve as a basis or back up to pronunciation classes. These samples which give a true picture of what goes on between native speakers will be useful for imitation.

The rhythmic group may be used as the basic and minimum unit of pronunciation practice of vowels for example or any other difficult segmental sound. One should avoid as much as possible isolated sounds or words in pronunciation drills. As noted above individual sounds lose a great deal of their acoustic identity when they occur in different positions and they also show variation in longer stretches than when in isolation.

The Algerian teacher in particular must be aware of vowel reductions and consonant elisions and assimilations. These can make speech more fluent and rhythmical. For instance, one must make use of weak forms of grammatical words as much as possible and practise with her/his pupils examples such as,

e.g. /'dʒɒn ən 'mɛəri/ 'John and Mary'  
/'ten tə 'faɪv/ 'ten to five'

Furthermore, with beginners a teacher should avoid introducing orthography in the very early stages except for copying the basic sentences or words they have been practising orally. This allows the pupils to focus their attention on the spoken form of the new language. Advanced learners and teachers in particular should practice regularly reading from phonetically transcribed texts to get used to the one symbol one sound relationship.

All this attention to the primacy of oral training and phonetic transcription has the advantage of avoiding ordinary orthography which represents a major source of negative influence on pronunciation. The discrepancy between spelling and the actual pronunciation of words is



notorious in English and it is very easy to relate it to French which shares the same latin alphabet and in which Algerians have acquired varying degrees of competence. When teachers have to read English texts and in order to avoid spelling mispronunciations which could become fixed in their pupils' minds, they should refer to a good pronouncing dictionary (e.g. cf. Gimson, 1977) when in any doubt.

### IX. 3. FURTHER RESEARCH

As already mentioned, we hypothesized that Algerian speakers with the same background as our sample in the present study could prove less intelligible to non-native informants. Since the aim of the present study was not international intelligibility, this type of investigation was beyond the scope of our present work. As a next step one could embark on measuring the success/failure of Algerian speakers of English with informants of different national origins and who have English with ESL status and/or EFL status. Among these one can mention speakers of Indian and Nigerian English which stand as institutionalised varieties. Swedish, Spanish and French speakers of English could be used to assess how successful Algerians can be with informants with an EFL background.

We have already studied the intelligibility of an advanced group of Algerian speakers of English and it might prove worthwhile to consider secondary school or first-year university speakers. Since our sample of speakers consisted of a very homogeneous group, a more heterogeneous group is likely to give different results. Hence, one could include speakers with both an intermediate and advanced level of language proficiency. A further professional group that we did not mention in the present study includes Algerian speakers of English who work in companies as interpreters and translators.

Still using Algerians as speakers and bearing in mind the lack of appropriate speech timing discussed earlier, one could measure instrumentally these speakers speech timing to have an accurate and more reliable data for making more definite decisions and take the necessary dispositions.

Instead of considering the Algerian speaker from the productive side, we can use her/him as an informant to investigate her/his receptive performance with native (R.P. and General American) as well as non-native speakers (Nigerians, Indians, Swedes, and so on). This probably would show which of the native or non-native accents is the most intelligible and verify the claim that native varieties are more comprehensible.

## APPENDIX A

### INDIVIDUAL SPEAKERS' SAMPLES OF FREE SPEECH

#### SPEAKER No.1

I'm going to talk about my trip to France| on Friday the twenty third the plane took off at nine thirty| but during the travel we had not an accident but| we had to come back to Oran airport too| we landed at ten thirty safely of course| the passengers were afraid|

Of course they repair the plane then| the plane took off at eleven o'clock I think| then we arrived at Marignane airport at| half past twelve I think|

When we arrived there| we had of course to pass through the police| and to present our passport to the customs| and after we had to recuperate our luggage| and of course after all this| we left the airport and we took the bus to Marseille| when we arrived at Saint-Charles station| we decided to take another bus to Aix-en-Provence| because my aunt lives there|

It took us half an hour to arrive there| but we had difficulties| and of course we have the address| but it was difficult for us to find the right address| after that of course with the help of the bus-driver| we find of course the right address| and my aunt was happy to okay welcome us| of course we felt at ease| and we relaxed for a moment we took coffee cakes etcetera|

The day after of course we decided to visit Aix-en-Provence| my cousin came with us| it's a beautiful town| as my cousin told me it's a town where a lot of| I think they say bourgeois people live there| they have a lot of students because| there are universities there| and a lot of Algerian students study there| after our visit to Aix-en-Provence| we come back of course to my aunt's house| in the afternoon we went of course visiting| it's like a supermarket a big one| it's a new one okay they open it two years ago only|

After two days in Aix-en-Provence| we decided to go to Marseille| of course to do some shopping and to visit it also| we stayed there the whole day| nearly at five o'clock we took the bus okay to return to Aix-en-Provence| I didn't like it because there were a lot of| people that frightened me especially in the district called Belzince| and I

didn't like it I was afraid and people told us that| you must be careful|

### SPEAKER No.2

Well going to talk about my| if you want my trip to England| it was quite a few years ago| I must say that everything was organised for us by Sonatrach| which was sponsoring my studies in England| well I went to Algiers| we met some responsible people for Sonatrach| and we went to the airport| from there we met plenty of students| they were going to study in England|

I must say there were a lot| let's say about fifty or sixty students like this| because I remember that the plane was quite crowded with these students| well everything was really organised for us| we had our money and we just took the plane| and went straight to Heathrow Airport| I remember that it was a very rainy day| so this is the first thing that surprised me in England| and when we got there we took buses| and we went straight to hotels| but I think when we arrived at the hotels| we just have a walk outside| and we bought some sweets apples things like this| to have a kind of a dinner| then the next morning we had a meeting with our responsible in London| and he gave us our instructions| how to go to the station| and he gave us some money| we went to the station I remember it was Victoria Station| it was quite fantastic because it was the first time that| I seen something quite gigantic station like this| anyway we bought our ticket| well I went with three friends of mine to Brighton| and this is where everything started in fact for me in England| and we got there| it was five o'clock something like this in the afternoon| we went straight to the school where we were going to study English| we just talk to the secretary and she gave us the family addresses| so every one of us took taxi and went to the family|

Well I stayed with the family for about two months| I didn't really like it| the food was quite unusual for me| I think I didn't like it| I really wasn't myself in that family| I couldn't find myself anyway| so I decided to take a room with my friend| and live with him for quite some time| so this is what we did| and so we shared a flat in some area in Brighton| and we lived there for about six months|

### SPEAKER No.3

Well I went to France in order to go to England| I took the plane at two thirty| then I arrived at four thirty at Paris| there I took the plane from Charles-de-Gaulle to Heathrow Airport| then I went through the customs it was really difficult| because the English customs asks you so many questions| they want to know where you're going| how long are you going to stay| how much money do you have etcetera, etcetera| then I went to the underground I took the tube| from Central Heathrow to Sheperd Bush| there I changed and took the tube to Earl's Court| where I was waited by my friend| she was a Polish girl| she lived with her boyfriend| and she lives in a house with a landlady| we stayed there for twenty five days| and it was really wonderful| the next morning| we went to visit London it was really a beautiful town| we visited Buckingham Palace| we saw Big Ben Oxford Street Picadilly Circus and so many interesting places| something which was really nice was that the English people are very helpful| whenever you ask them any question they are happy to| to direct you or to please you| we had a party at my friend's house| there were many people from many countries| Arabic people French Spanish and English| and the English people were really nice| they wanted to ask us many questions where do you come from| how do you find London| do you like it| how long have you been studying English| what did you learn| do you like the country do you like the language you speak| and so many other questions| well I didn't find them cold because| they were always smiling except that when you want to kiss them| they don't want that's all| but anyway they were very helpful and very nice| and we spent a very nice time| for the first time when I went to London| it was very difficult for me to be understood and to understand people| because they speak very very rapidly| and sometimes we cannot understand what they say| because they tend to swallow words| and when we spoke we try to speak very slowly and very clearly| and at the end after many days| they could undertsand us| and I could understand what they said|

### SPEAKER No.4

Well my first visit to England was in nineteen seventy nine| how did I get there| first I sailed from Calais in France in the French coast to Dover| I sailed in the hovercraft| it was an exciting trip| when I got

on the English coast| I had to present my passport to the British officials| well they asked me about the goals of my visit| why did I come to England| I just say to practice my English| and they ask me how much have I got| well I said I've got enough money for the accommodations| after that I took the bus to the centre of Dover| I didn't visit Dover| so after that I took the train until London| I arrived there in the afternoon| I arrived at Victoria Station| well I had my first impressions| because it was my first visit| everything was different from Europe from France the rest of the continent| cars on the left| policemen different from the others| I went to an office| and asked them if there is a hotel nearby| I felt that the man did not understand my question| so he told me to repeat my question another time| and I said can you please show me a hotel| where to spend the night| and at the end he showed me one| well I went to Grosvenor Avenue I think| I spend the night there| it was not expensive| it was about two pounds and a half including breakfast| so the first night was spent without any problems| well my first visit was to Picadilly Circus| it was not far from there| I didn't take the bus| nor the subway as it is called in England| it was a very crowded place| it was I think on Sunday| a lot of people young people were there sitting on the stairs| so I was very surprised to see all the advertisements there| once I sat there| among the young people| one of them gave me well he pushed me| and he gave me a cigarette| it was opium cigarette| so I was very surprised and afraid of course| to smoke there in the centre of London among all these policemen| I did not forget that experience|

#### SPEAKER No.5

I went to England in February nineteen seventy six I remember| then the last summer holidays, August nineteen eighty three| I went there for a week with two sisters a brother and I| it was an organised travel by Touring Club|

First we had to go to Algiers| then to meet the other passengers| we got our passports there our money| we had Dutchmarks not enough| then we took the plane to Heathrow Airport| a bus was waiting for them| for us sorry because I went there too| then we went straight to the hotel| we had rooms very comfortable rooms| we had very good breakfast but we were almost starving| for the rest of the day| we got only fifty pounds| it was not very much| I took some money with me| it

was not enough also| and two days before coming back| I lost my camera my brother's camera| I remember we went to a shoe shop in Regent Street| I do not remember the name of the shop| I think it was next to the Top Shop| we went there| there was a great variety of shoes I was a bit lost| and I think it was there where I lost it| I came back the next day| it was not possible to get it back| this is why I keep a bad souvenir from this travel|

We went to Oxford Street many times to do some shopping| we went to the mosque| where Cat Stevens was supposed to be the imam| I wanted to show this to my brothers and sisters| we had a sightseeing tour organised by the hotel| I could have some friends at the hotel| they were neighbours if you want| I remember one night there was a thriller on TV| I was sitting in the corridor| suddenly because I was too much afraid to watch the film| suddenly I remember I heard doors slamming| and people leaving their rooms| and we had to call the door-keeper| to open the door for us| because as soon as you leave it you cannot come in| because they forgot their keys inside| and I think that's all| yes I forgot I lost also some money in England| I think I lost twenty pounds| so I was completely lost when I discovered this|

#### SPEAKER No.6

My degree in English was specially for teaching| this is why I sometime was put in a school and began teaching| I started teaching in nineteen seventy two in Aÿn-Témouchent| where I was still young| I was only twenty one years old| I wasn't yet a teacher coming from the university I was PEM| it was very difficult to start teaching| but I was very lucky because I met| my old teachers themselves| and they helped me a lot in my work|

It was a little difficult for me| because I had to come to Oran two days a week| and from Témouchent to Oran it's some distance| I had to take the bus| and to come back to Témouchent the same day| for beginning the class the day after| it was a little difficult but| I could manage to finish my licence like that|

I didn't start immediately because at that time| I got married| I had one year rest| and I waited until I had a job in Oran| there was no difference because| when I was in Témouchent I also had the secondary classes| I was also teaching to the pupils who were in secondary school|

When I teach pupils| surely you can improve your grammar lessons| you have a lot of texts you can improve your reading| but I don't think| you can get better than that| we don't have a chance for improving our knowledge more than with textbooks| which is limited to the pupils' level| but we don't find a lot of texts| a lot of books a lot of manuals in Algeria| phonetics must have books| and here we don't have| even the Daniel Jones we don't find it| tapes can improve my pronunciation better| radios the television also| but we must meet foreigners| we must speak the language itself outside the class| not only in the class|

I have thought of going to England a lot of times| but I haven't had the chance the opportunity to do it| I applied for the summer courses in England last December| I really want to pass just some weeks in England| in a university or in a school| I am not feeling confident you see when I'm in a class| I really want to improve my pronunciation and my knowledge in English|

#### SPEAKER No.7

And I'd like to tell you about my first journey to Britain| the reason why I got to Britain is| that I got a scholarship from the Ministry of Education| and I went to Britain precisely to Essex University| well I'm lucky I went with a friend of mine| we had some problems at first when we arrive in Heathrow Airport| well the journey was fair was excellent| when we got there we had no problems with the customs| everything was perfect| they asked us for our papers| after we got out of the airport| we took a taxi| it was very expensive by the way| it was nineteen pound from Heathrow Airport to Liverpool Street| once in Liverpool Street| we asked for the way to Colchester| we arrived to Colchester at six| we took a taxi then| we arrived at the university| we went directly to the information centre| we got the keys| personally I went directly to my room| it is a quarter of an hour walking distance| from the university to my room| in the outskirts of the town of Colchester|

The first week was bad if I can say so| we were facing a new world| really a complete different from our own| because the atmosphere I mean the human atmosphere is different| the way of life is different| people seem very individualistic| everyone has to cope with his own situation| I don't know why| maybe it's their natural way of living|



this is why I found it hard to cope with that situation|

The first friend I had was an English lady| the first friend because she was to share the course with us| and therefore we were obliged to make a contact with her| I got in touch with an Australian guy who is very friendly indeed| as I got to know him| I realised that we can find people who are very nice and friendly| the thing which interest me there| is the fact of existing societies there you've got different societies| drama society for instance| gay societies even which struck me a lot you know| which is very natural indeed| the thing I appreciate there| is that you can fill up your time very easily| which is not the case here in Algeria unfortunately|

#### SPEAKER No.8

Well I teach English in the Institute of Economics| I teach mainly reading comprehension| and the purpose of that is| to enable my student undertsand English books in economics| when they will be working on their research paper| by the end of their postgraduate studies| well I've forgotten to say something| it's that I know perfectly well that I've got a terrible French accent| when I speak in English| the matter is that if I speak to my students otherwise| they do not undertsand me| so I stick to my French accent| I tried hard to get rid of this accent| but I just can't improve it because we need native speakers here| and it's something we can hardly find| and it seems that the best solution| is to stay for a long period in England| well I've been to England for three times| I spent about three weeks every time I went there| and I didn't improve my English| well I've been to Stirling about| well let's say two years ago| I've been granted a scholarship by the British Council| I went there for a course on methodology| the title was self-directed learning| well I think it would be unfair if I said that| I haven't learnt anything from that| I learnt a lot| but the matter is that I can't apply here what I learnt| I've a class of about thirty five students| and I just can't apply self-directed learning| well it consists of letting students learn by themselves| going to and fro in class| and doing whatever they like| something we just can't do here| well we didn't work hard| because as I said it was self-directed learning| everyone did what he or she wanted to do| and I was mainly spending my time in the language lab| to improve my accent as I said but I couldn't| that was two years ago| last year I

just couldn't apply for another scholarship from the British Council! it cost me a lot! I paid for all my expenses about a thousand pounds the equivalent of a thousand pounds yeah! I went with another colleague! we have been accepted for that course! it was almost the same course as the one we had in Stirling! well we specially learnt how to use computers and overhead projectors etcetera! something we just do not use here!

#### SPEAKER No.9

I'm going to speak about my last summer holidays! well I had been looking forward to visiting Scotland! for quite a long period of time! and last summer I had the opportunity to visit Scotland! I went to Stirling! I was on a summer course! I liked Stirling very much! but let me tell you about the trip! it was a very long one! I didn't think! that the trip would be so long you know! and it was a bit tiring because when I reached Stirling! I just realised that I had a terrible headache! first I travelled from my home-town! to Algiers which is the capital of Algeria! and so I had to go to the capital Algiers! to take the plane from Algiers to London! then when I reached London! it was three o'clock I think in the afternoon! and I had to resume my trip! and take a plane from London Heathrow to Edinburgh! I took the plane at! well I don't quite remember but it was by night-fall! then I reached Edinburgh with a terrible headache as I said! there I was welcomed by a member working in the security health! she was a woman! and she just realised that I had! I felt terrible you know I felt tired! and she wanted to give me some help! well I thought it was useless to spend the night in Edinburgh! I just refused to take any medicine! because I knew that the pain I had was going to vanish! then I thanked her! and asked her my way to Stirling! she was very kind! because she asked someone to take me I mean in his car! from Edinburgh Airport to some well I don't remember the place! it's somewhere half-way between Edinburgh Airport and Stirling! there I had to wait for the coach! the coach came just in a few minutes' time! and then I reached the station! the coach station in the centre of Stirling! from there I had to take a taxi! and then ride straight on to the hall of residence! which was called AKD AK Davidson! there when the porter saw me he recognised me! because I was the last person they were expecting! and he knew I was coming from Algeria! so he led me to my room!

#### SPEAKER No.10

I would like to talk now about my first trip in London which I found very exciting! I remember that I took the plane! at two o'clock pm! and we arrived in Heathrow Airport at two thirty! we took some time for the customs! then I took the bus to go to! to go downtown in fact! it took me at least one hour! and then I first discovered London and particularly the West End!

Well I looked for a hotel but! I found them expensive in fact and I ask for a youth hostel! it was in the north of London! the very north of London! and people were very nice there! I stayed there about a month!

I went shopping of course! I visited the British Museum! which I found very beautiful! it took me a whole day! to visit the whole British Museum! then I went to Hyde Park! the tower of London Westminster Bridge and the Houses of Parliament! as far as libraries are concerned! I went to the British Museum Library for my research! I met very interesting people there! there are different rooms the Central Room the North Library! I forgot the names! well at first I didn't know how to! how to ask for books and I asked the librarian!

In the youth hostel I met an English boy! he was very very kind with me and very nice! well honestly speaking he's the only! English person I really talked to and discussed with! well the other English people! I can say that for example in the street whenever you need! some help they are ready to help you! that's all I can say about English people!

For me it was as if I had never! never learnt English at all! particularly the first week it was really difficult for me to cope with! but later on you get used to the English! I mean to the native speakers!

When I came back I first worked in a company! because I didn't want to teach at first! and I worked there two years! well I realised that I couldn't stay there any longer! I find it rather I mean not dull I wouldn't say dull! but boring in the sense that you have to sit behind a desk! all day long and in fact it is even all the week long!

#### SPEAKER No.11

One of the things I remember best! when I think back of my staying in Scotland! is the night I arrive in Glasgow Airport! on that

day I left Algiers at about two in the afternoon! When I arrived in Glasgow it was quite late in the afternoon! I went to pick up my suitcase! then I opened my suitcase because it was a bit cold! so I wanted to have a coat on or something! I opened the suitcase and I was really amazed when I noticed that! it wasn't my case! so I had lifted the wrong case! so I went to the baggage facilities desk! and there I found a man who! was very kind and who help me! one of the things he said! when I first talk to him he said that! I had a bad start! and I agreed with him! well the man said that he was going to phone Lufthansa! so he did! and they said that they had found a blue suitcase like mine! and nobody wanted it! so he said I had to wait until the next day! but I said all my money was in the suitcase! so what was I going to do! he said well you could spend the night in Glasgow and then! you could pick up your suitcase the next day! I said this is impossible because all my money was in the suitcase! okay he said have you got something like twenty or thirty pound! to keep you for the night! I said no! so he said okay I can help you! and he said he could put me up for the night! he gave me a lift to his house! and I spent the night there! the next morning very early in the morning at about six! we drove back to Glasgow Airport! I had to wait until nine o'clock! and I was able to pick up my suitcase! so I thanked the man he was really nice! he gave me his phone number! and I phoned him many times later on! and until now we are very good friends! anytime I go to Glasgow! I go and see him and give him some present! well I went to Cumbernauld! this is where I was supposed to teach! I arrived at the school Saint Maurice's High School! at about ten in the morning! and I was welcomed there by the headmaster!

#### SPEAKER No.12

I studied at Oran University from nineteen seventy! from nineteen sixty eight to nineteen seventy two! and in nineteen seventy two I went to England! in order to teach French in a secondary school! and at the same time improve my English! the British Council had arranged accommodation for me with an English family! so I went at the end of August I remember! we arrived at Heathrow Airport! where the Head of the French Department was waiting for me! then we drove to Kent! so I stayed with an English family! and I was in a secondary school it was a comprehensive school! we had twelve hours a week! the pupils had a

French teacher and we were there only| to train pupils to speak French|

The pupils I had were not very keen on learning French| they thought that English was becoming a world language| so they were not interested at all| and this gave us a lot of difficulty| I was very much surprised because everybody said| that English people were not friendly at all| and the family I stayed with were very nice| and we made a lot of friends| English friends as well as English-speaking people means Indians and Pakistanis| I mean we had a very good time|

At the beginning it was very difficult to speak English| it means we were shy to make mistakes| this lasted one or two weeks| and then we did not realise and we were speaking English|

Of course we went out| we visited a lot of places and a lot of towns| I spoke to you about a course| which was arranged by the Algerian Ministry in Manchester| it was a course mainly for Algerian assistants of English in Great Britain| it lasted about two weeks| and this was the only training period we had| so in the mornings we had| we had group work| we had lesson plans and lesson preparations| and in the afternoons we went to laboratory| and of course in the weekend| a lot of excursions were planned and so on| I remember that at the end of the year| the Headmaster contacted me| and wanted to know if I were interested in staying another year| and of course I had to return to my family| personally I would have liked to stay| but I could not because I had| to return to my family and start work|

#### SPEAKER No.13

Actually I'm a student at the university of Oran| and before coming to the university I was in Algiers| I attended the Engineering Mechanical National Institute| I stayed there for five years| I didn't actually study for five years but only for three years| and the two remaining years I stayed without doing anything| I had got some problems| and to be more precise I have been expelled from the Institute| for many reasons which I wouldn't talk about| why I came to the university of Oran and study English| is that I have been always attracted by this language| in fact when I was in Algiers I had some friends| some American friends| and I used to talk with them| I mean to discuss with them in English| after being expelled I thought of going to the university of Oran| since I live in Ghazaouet| it's almost two hundred kilometres far from the university| so I thought it better to|

to prepare a degree in English| well as I said I have been always tempted to study English| and as I came to the university I find it really interesting| actually at first I found some problems| some problems because I wasn't used to the pronunciation of English| however soon I overcame these problems| I'm attending the sixth semester| and I will be soon graduate| with a degree of Bachelor of Arts| but really I don't know what to do after that| that's the problem| actually I'm interested in having a scholarship| and going to England in order to prepare an MA| I mean a Master of Arts in literature| I mean in comparative literature or translation| or if not in modern drama| because I have been always interested in that fields| I'm practising theatre actually in Algeria| but in Arabic not in English of course| because we haven't the means to do such a work| but the problem is that| not many grants are given to the Department of English| and as I have failed in some modules| as I mean it is the criterion| which is to be fulfilled by the student| in order to have a scholarship| well I mean there are several criteria to be fulfilled| there is I mean a maximum age for getting a scholarship| and also the marks| but still I think that| I can have a scholarship there|

#### SPEAKER No.14

I want to talk about my holidays| about last summer holidays| first of all I went with my mother| we wanted to go to London to visit my sister| we took the plane of course| and we arrived at London Heathrow Airport at about| after two hours I think| we were really surprised because we thought that| our brother-in-law will wait for us| but to our surprise there was nobody there| we looked really puzzled| I had an idea to phone one of my friends| and this friend| lives just near my sister's house| I told him to go to see my sister to tell her| tell her that we had arrived| it was not really difficult to do| so I waited for about half an hour| and then suddenly I was just sitting in the airport| I heard you know my name on the microphone| and a lady said| Miss Hakem from Algeria would you come here to the information desk| I was really surprised what happened| when I came to her she said| that somebody wants to talk to you| I said who can it be| finally I went to| a telephone box and my brother-in-law was talking to me| and he said don't worry I'm coming in a minute| just stay there and wait for me| so we waited about one hour I think| because it's a bit

far from his house to the airport| we were really tired my mother even slept| finally you know he came and took us to our sister's house| it was really a tiring flight because we waited a long time|

Before taking the plane| in the morning I went to the post-office and sent a telegram| when I asked my brother-in-law| didn't you know about our arrival| he said no I didn't receive anything| it was really strange because you know| I thought that everything was going to be alright| but in a whole it was not really bad|

Most of the time we went shopping| with my mother because she likes really England| we went to market places different market places| and she liked this very much| she thinks that it's really a tidy place| a tidy city she says it's really clean|

#### SPEAKER No.15

I'd like to talk about my first travel to England| it happened during I think July| and I had to go first to France| because there was no direct flight to England| I went to France to Paris where I spent a night| and I was in England the day after| and I think if I'm not wrong it was Wednesday the thirteenth| the first impression I had when I arrived to Manchester| because I had to go to Manchester| the first impression I had I said| was that the city seemed to be very deserted| since I spent one night in Paris| I mean not one night let's say twenty four hours in Paris| and then when I went to Manchester| I mean the difference was clear| too many people in Paris and then a few people in Manchester| this is why the city seemed to be very deserted| I didn't know anything about the city| and the first thing I did when I arrived at the airport| was to go to the information desk| there was a lady there| and the first thing I did| was to ask about any British Council representative| and of course I was expecting it the answer was no| and then I asked about the bus to the university| and one thing I would like to mention is that| she told me that the bus would be there| I mean outside in the bus-station in thirty seconds| I had just the time to take my suitcase| and when I arrived| I waited for the bus let's say ten or fifteen seconds| I mean the British punctuality is something wonderful anyway| I took the bus and then went downtown| arrived at the university and I must say it| I was really lost| I didn't know anybody| I didn't know any place to go to| I went first to the students' union| there was an old man there| asked him about a British

Council summer course| he didn't know or he didn't hear about it| and he suggested to go to the Humanities Building| I went there| it wasn't too far from the students' union| and then asked a lady| and she did the job for me| she phoned the Hall she told them about me| saying that there was Mister Hamedí here from Algeria| and then the Hall| told her to show me the way to the Hall of course|

#### SPEAKER No.16

I'm going to talk about my first trip to England| it was a trip for my studies| it was from mid-July until mid or by the end of August| we left Oran| the airport of Es-sénia by the eleven of July| and we stopped for an hour in Paris| we took off again from Paris to London Heathrow| where we arrived by three or four o'clock| after going through the police and the customs| we took a taxi until the boarding house| where we stayed for two months about| it was in I think Notting Hill Gate| we arrived there by five o'clock| we stayed we didn't go out this day| then the next morning at nine o'clock we must be at the school| we had an appointment with the headmaster of the school| he gave us books and all the time-table of the month| and then we went to our classes and we met our teachers| they were very kind and the courses were very agreeable|

We had courses from nine o'clock until one| in the afternoon generally we had laboratory classes| and we were free on saturday| we visited all the town London| we went to Cambridge Oxford Stratford-upon-Avon| we went also to the southern coast|

Everybody told us right the English are very cold person| they don't like the foreigners and so on| it was in a way wrong| because all the English people we met were very kind with us| first the people at the boarding house| they made us meet a lot of people| we were invited to some English houses| they took us to some discotheques where we could meet| young English persons and so on|

The first time you arrive to London or to England you find that| at the first minute it is difficult to undertsand them very well| I think it's because they speak their| slang and Cockney and so on| so I think it's difficult| and it's different from the one we learn here| here as we were taught by teachers they know that| we have problems with English| so they pronounce everything|



I went back I think three or four years after| for a visit with my parents| we were living in another boarding house| it is called London Musical Club| and most of the persons who were living there| they were English American coming from Australia Iran also|

SPEAKER No.17

I'm going to tell you about my staying in England| where it was from February nineteen seventy five to August nineteen seventy nine| I left Algeria on fourteenth February nineteen seventy five| it was from Algiers airport| the flight arrived at around two o'clock| I spent my first two days in London| then I left to Exeter| where I suppose to stay to learn English| because we suppose to learn English before going to Manchester University| I spent around six months in Overseas School of English| my staying in Exeter it wasn't that bad| because I had to cope with the English life| it was completely different from the Algerian one| then I left Exeter I went to Manchester where it was really cold| I start in Manchester University it was in the Chemistry Department| it was really hard for me during the first two months| because our English was very very bad| we used to go to the lectures with the only English| we were only around five or six foreign students| then I had to leave the university for one month| I went to High School where it was in Salford| then I went back to Manchester University| it wasn't that bad| I passed all my exams my final exams| I passed to the second year| the second year was a bit hard than the first one| again I made it| then during the third year| it was bloody awful| I can remember that| I had a girlfriend which was very naughty| she used to live in Bolton| twenty miles from Manchester North of Manchester| I had to stay with her during all the week| so I was really lazy| I used to go to the university once or twice a week| and one day my tutor came to talk to me| to tell me that I haven't been doing well| which is very true| and he told me that he sent a letter to the Algerian embassy| telling them everything| and one day I received| it was April nineteen seventy nine| I received a letter from my tutor telling me that| I was thrown out of the university| I couldn't believe it that day| I was crying shouting swearing| the day after I went to see the tutor to talk to him| he didn't want to talk to me that day| because he was really busy|

### SPEAKER No.18

I'm going to talk about my first trip to France| my first trip was for me a good one| a very important one| since I had never visited Europe in general and France in particular before| so how did I travel to France| I didn't travel by plane| because planes make me fearful| I don't like them at all| so I travelled by boat| well it was a Monday| early in the morning| I went to the harbour in order to take the ship| that day the port was overcrowded| I was very happy to see many people in the port| I met many friends of mine| especially students who were with me in the university| well I went on the boat| the boat was a very good one a beautiful one a nice one| I met many friends there too| so we spent two nights in the sea| I couldn't sleep at all| because the boat was noisy| and I was very happy|

Well we joked we told stories| I made other new friends especially two new girls| and it was a fantastic travelling| well we played cards| we went to the café in order to have some drinks| it was my first bottle of beer I drank| I had never drunk beer before|

We arrived in Marseille late in the evening| so it was very dark| I couldn't see many things or many places in Marseille| and I went directly to the railway station| in order to take the train to Paris| well in the railway station I met| or I made new friends| and I was happy to make French friends| some of them gave me their addresses and they became my penfriends| so I started to exchange letters with them| so here I took the train| well the train was a quick one| I'd never seen a train before as quicker as French trains| we arrived in Paris early in the morning| the railway station was very big noisy and crowded| well I saw faces I had never seen before| my uncle was waiting for me at the railway station| because before going from the harbour of Oran| I wrote to him a letter in order to wait for me| from the railway station we went to my uncle's house in his car|

### SPEAKER No.19

I want to tell you about my travel to England| I don't remember exactly the date| but I think it's maybe two years ago| well I decided to go in England just to visit that's all| first thing is that| I flew from Tafraoui Airport which is situated just near Oran| and I went to France first| well I stayed there for maybe half a month| well and then we flew from Charles-de-Gaulle Airport to Heathrow| one hour later when we

arrived there| well first my problem was with the underground| I didn't know how to take the underground| but fortunately I asked someone who helped me| who was very helpful| a second thing I didn't know where to go| because I didn't have anyone there| but I managed to find a room in King Cross| thanks to an English woman who helped me| well I found it quite expensive at the beginning| because I didn't know the different kinds of hotels| my journey there didn't start for a long time| it was only for a month| I didn't have talks with English people| but I visited different places| and I was not really happy with my travel| because it was too short on one hand| and I didn't benefit a lot from this trip| I don't say I was disappointed no| but I was unhappy that's all| but I hope to come back again to England| not alone because I was there alone| and this is why I think the reason| why I was unhappy| and next time I think| next summer I'm planning to go with my wife| because she's speaking English too she is a teacher with me| and I'm sure that we'll have a pleasant time there| because now I know first how to take the underground| and where to go| I have more information about England| the problem is that as I didn't know a lot of places| I was just walking and walking going maybe to Oxford| but I really didn't visit England| but as I said| next summer I'll go there with my wife| I'm sure that we'll have a very nice time there| if I stay for a long time| I'm sure that I'll have very nice time there| but here the problem will be money|

#### SPEAKER No.20

I will give you an account| about my holidays or my travels to England and elsewhere| my friend Omar has been speaking about his experiences| over here in Algeria| and I'll be speaking about something else| about my experiences abroad| I mean in England if you don't mind| the first time I went to England it was in nineteen eighty| I went there with a kind of special purpose if I may say| I went there to work with the handicapped people| and it was a voluntary work| and it was in Birmingham| actually in Chelmsley Hospital| it is a very big hospital about four hundred and twenty patients| they are both physically and mentally| it is a quite interesting experience| to live with these people the so-called the abnormal people| you learn many things from the experience| and the things you experience with them| I used to work also| with the mentally and physically handicapped people in France|

and I'm still working with them| I mean every summer holidays I went to France and then to England| and I'd like to just draw a comparison between both camps| well in France it was a very hard work| because we were dealing with the handicapped people| about twenty four hours out of twenty four| whereas in England the work was very limited one| about four hours and a half every day| besides we have our weekends| it was not only working with the handicapped people| we take the advantage to be in England to visit some interesting places| to go on trips| such as Blackpool and Rhyl in the Wales| Bournemouth South of England to London and many other places| talking about the English people it was really amazing because before I went to England| I've heard so many things about the English| when I went there it was something different| because they used to tell me that the English are cold| I don't share their ideas anyway| they are not really cold they are maybe reserved| whenever you talk to them you are welcome| and they can discuss with you| in any subject you would like to discuss in| I mean the contact it was not a very difficult one| as I told you before| this is very important I think| you have to make the first step| you have to talk first|

#### SPEAKER No.21

I'd like to talk about my first experience abroad| I always dreamt of visiting Great Britain| as I study English| I learnt so many things about Great Britain| for example the language civilisation the culture of the English people| and their lives| and I wanted to know more about this|

Last summer a summer course was organized by the university of Lancaster| and the university of Oran| so I took this opportunity| and went to England with a group of friends| and some fellow teachers| before that I didn't know how Great Britain looked like| but I had an idea in my mind how it looked like|

I took the plane by a Thursday afternoon| and we arrived at Heathrow Airport at four o'clock| after that we took the coach from the airport| and we went to Lancaster| we arrived there by nearly nine| the university was situated far from the city centre| I liked the university| it was very big| and it was calm| I can of course compare it| it is situated like the university of Oran| outside the city| we had single rooms at the university| we had also common kitchens| I used to

go to the restaurant| because I wanted to know how| I wanted to know how the English cooking was| actually I liked the English cooking| though it is very different from the Algerian cooking| and I liked also the way the English people make their sandwiches|

The lectures were very interesting| we had a course on literature another course on British life and institutions| we visited many interesting spots in Great Britain| and big towns such as York Manchester| and other lovely places such as the Lake District Windermere Blackpool Preston| we used to go discotheques to pubs| the English pubs are really nice| I had a chance to meet English people but they're so| I think that the English people are so cold| I don't mean that they are bad| they're good people but they are difficult to| it is difficult to make friends| well before leaving Great Britain we were invited for a dinner| of course it was organized by the university of Lancaster| after we had dinner we went to a disco| and it was an unforgettable night|

#### SPEAKER No.22

I'd like to talk to you about my first trip to Great Britain| actually it was a short trip| but it was really exciting and very interesting| actually I was studying at Lille in the North of France| I started my trip from Lille| I went first to Calais by train| then I took the boat and we made the cruise| I travelled to Great Britain with one of my friends| she's Egyptian and she was studying in France| she was practising French for one year| I think it took us two hours to arrive there| we took the train of course to London| and we wanted to have| to visit London for a few hours before going to Weston-super-Mare| actually it was a very long trip from London to Weston-super-Mare| because we had to cross many different cities| we passed from Bathspa to Reading| and from Reading we arrived at Weston-super-Mare| I think we arrived at five o'clock in the afternoon| I didn't go to a hotel it was her mother| who agreed to put us off for a few days| I had enough time to visit the city| we went to Bristol too| we went to the university of Bristol and to| the Art Museum of Bristol| my friend had many English friends| she has introduced to me many of her friends| and we had the opportunity of course to visit many places| either in Bristol or in Weston| and I liked very much nature of course| it was really striking and what was really strange| it was the fact that| in

Great Britain you don't find for example mountains| you find just hills| Weston-super-Mare was a kind of village| and old houses were situated in a kind of hill| and the more you climb the hill the more luxurious the houses are| it was overlooking the sea also| it was really a nice place| I liked it very much|

We have been to an English pub| just in front of the sea| and we took an English meal| it's quite different from French food| of course it was different| the way they cooked things| the recipes very different completely different of course| of course it takes a long time to make English friends| they are reserved but| I think they are more elaborate as compared to French people|

### SPEAKER No.23

Well I have been in England in this precedent summer holidays| at the beginning we didn't hope to pass very good holidays| because we have encountered many problems especially in the airport of Heathrow| we were three from Algeria| imagine that we have passed three hours| in the airport answering the customs' questions| but at last we were allowed to get in England|

Well the first day| it was not really exciting because we met some problems| we didn't find spare rooms neither in the hotels nor in the hostels| well but at the second day| we started to enjoy our holidays because| first we drew a line on I would say| the problem of where to sleep| because we found some spare beds in the youth hostel of London| then we begin our visiting of London| we visited many sites and many wonderful places| such as the Hyde Park James Park Kensington Garden the Thames Big Ben| well it will be too long| to cite all the beautiful and fantastic places of London| but let me tell you that| the most exciting moments we have passed in England were at the hostel| because we encountered many different people from many different countries| from America from Spain from Sweden from Germany and especially from Italy| we made some friends especially girlfriends| and let me tell you how I regretted to leave England| because of the lack of money| and because I regretted also the friends I have made| especially some American students| as we passed some exciting moments in this hostel|

We went to some dancings also| we were accompanied by some Italian girlfriends| we were also invited to some parties| for example I

remember a party| we were invited to it by an Italian girlfriend| and we enjoyed this party| we were very welcomed| I remember I have met a Scottish boy| and he was very surprised when we were speaking English| he said that we have a good pronunciation of English|

I remember the last day we haven't any money| we have booked bus tickets at the beginning of our arriving to England| so we could get back to Heathrow by bus| when we go to the plane| I remember that we had| how can I say| yes a discussion with a hostess| this hostess was from France| but she was working in a British airlines|

#### SPEAKER No.24

Well I would like to tell you about a trip| I made last year to France| I went to France in order to pay a visit to my relatives| first I left Algeria on the first of July| I sailed from Oran to Marseille| then I crossed through France by train| and I arrived at Paris| when I arrived there I noticed that| life was I mean quite different from the one we have in Algeria| I mean one would imagine that| the citizens there are pushed by some kind of disorder of the brain| that will not allow them to be at rest| they're always hurrying| or cross the streets I mean at full speed| then I notice also that| Paris as you know is the capital of France| and it is one of the greatest cities in the world| it has got many great stores shops and high buildings and so on| so I spent there two or three days| I visited some places of interest| such as the famous Eiffel Tower| there is another place which is called Sacré-Cœur| which is a kind of ancient church| I even went to the top of this tower I told you about| and from there| one can have a general view of this great capital| which seems to have no end| and it seems to be| a maze you know a lot of streets| I also walked beside this famous river Seine| where I could see some people rowing in their boats| I saw also many people there were fishing| on the bank of the river| I went to so many places and I made some friends| they were very kind and very helpful| I didn't find any difficulty| whenever I asked about something they told me about it| then after that| I decided to leave for another town| it is situated about two hundred kilometres South of Paris| and I caught the train| and two hours later I arrived at this town| which was rather a small town| I arrived at my relatives' house| where they welcomed me with great hospitality| I spent there| I mean about one month| and then after that I went back to Paris| and from Paris I flew back to Algeria|

ANSWER SHEET FOR THE SUBJECTIVE RATING OF FREE SPEECH

Name: .....

INSTRUCTIONS: Along the following scale, give your opinion by ticking the appropriate box on the effort needed to understand the speaker you have just heard on the tape (only one choice required)

- A Complete relaxation possible; no effort required
- B Attention necessary; no appreciable effort required
- C Moderate effort required
- D Considerable effort required
- E No meaning understood with any feasible effort



APPENDIX Q

READING PASSAGE DIVIDED INTO WORD-GROUPS

He had been home for a year now| but he still couldn't quite settle down.| Things had changed and perhaps he had changed too.| All his childhood friends had moved away;| some of the woods where he had rambled as a boy| had been cut down;| and even little things disturbed him| like the way his aunt kept the sugar in a different place.|

And then there was that miserable business of the vase.|

'Don't worry,' she had said.| 'Accidents will happen.'|

But he could tell as she said it| that she was genuinely upset| and that she couldn't forgive him| as she would once have done.|

He tried not to irritate the poor woman| but it was no use.| Her old leisurely tolerance seemed to have vanished| and suddenly he realised that he had grown up.|

APPENDIX D

ANSWER SHEETS FOR EXP.C, EXP.D AND EXP.E

NAME: .....

EXP.C

INSTRUCTIONS: Put a cross in the appropriate box to show which one of the following pairs of words you think the speaker on the tape is using. If it is neither of the two, please write down what you think you have heard on the dotted line.

- |  |           |     |       |
|--|-----------|-----|-------|
| 1. Let's all ..... together.                     | leave     | [ ] | ..... |
|  | live      | [X] | ..... |
| 2. This is where I .....                         | slept     | [X] | ..... |
|  | slipped   | [ ] | ..... |
| 3. The ..... will arrive soon.                   | man       | [ ] | ..... |
|  | men       | [X] | ..... |
| 4. The room was full of old .....                | rags      | [X] | ..... |
|  | rugs      | [ ] | ..... |
| 5. John will come as soon as he's finished ..... | packing   | [X] | ..... |
|  | parking   | [ ] | ..... |
| 6. Were there any ..... on the tree?             | birds     | [ ] | ..... |
|  | buds      | [X] | ..... |
| 7. When you came I had been .....                | wondering | [X] | ..... |
|  | wandering | [ ] | ..... |
| 8. I saw a piece of ..... on the table.          | cord      | [ ] | ..... |
|  | cod       | [X] | ..... |
| 9. He shouted loudly '.....'                     | fool      | [ ] | ..... |
|  | full      | [X] | ..... |
| 10. I enjoyed watching the ..... last night.     | dancers   | [X] | ..... |
|  | dances    | [ ] | ..... |
| 11. Would you like to take the ..... ?           | lead      | [X] | ..... |
|  | lid       | [ ] | ..... |
| 12. Which ..... do you want?                     | ward      | [ ] | ..... |
|  | word      | [X] | ..... |
| 13. That ..... is hardly large enough.           | hole      | [X] | ..... |
|  | hall      | [ ] | ..... |
| 14. We have to use a different kind of .....     | cord      | [ ] | ..... |
|  | code      | [X] | ..... |

15. She's got a ..... in her hand.	pen	[ ]	.....
	pain	[X]	.....
16. You didn't mention the .....	bees	[ ]	.....
	beers	[X]	.....
17. We ..... him at the hotel.	found	[X]	.....
	phoned	[ ]	.....
18. He's drawing a picture of a .....	ship	[ ]	.....
	sheep	[X]	.....
19. The ..... train leaves at one o'clock.	fast	[ ]	.....
	first	[X]	.....
20. Tell me, have you got a .....?	hut	[ ]	.....
	heart	[X]	.....
21. The first man was .....	short	[X]	.....
	shot	[ ]	.....
22. You should ..... it before.	taste	[X]	.....
	test	[ ]	.....
23. We used to keep the ..... in that box.	bills	[ ]	.....
	pills	[X]	.....
24. Did you say '.....'?	time	[X]	.....
	dime	[ ]	.....
25. I thought it was .....	gold	[ ]	.....
	cold	[X]	.....
26. All that the captain wanted was .....	thanks	[X]	.....
	tanks	[ ]	.....
27. He ..... for a long time.	fought	[ ]	.....
	thought	[X]	.....
28. The ..... wind made the ship move.	sudden	[ ]	.....
	southern	[X]	.....
29. It's a very long .....	way	[ ]	.....
	whale	[X]	.....
30. He ..... when he received the letter.	rang	[X]	.....
	ran	[ ]	.....
31. Why don't we ..... it?	try	[X]	.....
	dry	[ ]	.....
32. That ..... must have cost you a fortune.	bed	[ ]	.....
	bet	[X]	.....
33. John broke his ..... again.	bag	[ ]	.....
	back	[X]	.....
34. You'll need a longer ..... than that.	rope	[X]	.....
	robe	[ ]	.....
35. That man has a very large .....	gin	[ ]	.....
	chin	[X]	.....
36. I prepared many .....	texts	[X]	.....
	tests	[ ]	.....
37. '.....' did you say?	tense	[ ]	.....
	tenths	[X]	.....

38. The ..... must come here.

girls [X]  
girl [ ] .....

**EXP.D**

**INSTRUCTIONS:** Put a cross in the appropriate box to show whether you think the speaker on the tape is using a) or b) in each of the following sentences.

1. He lives in the .....
  - a) white house (i.e. the house which is white) [X]
  - b) White House (i.e. the house where President Reagan lives) [ ]
2. This is the paper he .....
  - a) the paper he passed the exam with [X]
  - b) the paper he forwarded [ ]
3. The ..... burned her hand
  - a) hot plate ( i.e. the plate which is hot) [ ]
  - b) hotplate (i.e. the heating element on a cooker) [X]
4. There is a ..... in that tree
  - a) blackbird (i.e. a kind of bird) [ ]
  - b) black bird (i.e. a bird which is black) [X]

**INSTRUCTIONS:** Put a cross in the appropriate box to show whether the following words on the tape could be preceded by 'to' (i.e. verb) or 'the' (i.e. noun).

5. Insult

(the) insult	[X]	(to) insult	[ ]
--------------	-----	-------------	-----
6. Import

(the) import	[ ]	(to) import	[X]
--------------	-----	-------------	-----
7. Transfer

(the) transfer	[ ]	(to) transfer	[X]
----------------	-----	---------------	-----
8. Convict

(the) convict	[X]	(to) convict	[ ]
---------------	-----	--------------	-----
9. Object

(the) object	[ ]	(to) object	[X]
--------------	-----	-------------	-----
10. Export

(the) export	[X]	(to) export	[ ]
--------------	-----	-------------	-----

**EXP.E**

**INSTRUCTIONS:** Put a cross in the appropriate box to show which of the following questions you think the speaker on the tape is answering.

1. No, Mary likes fish.
  - a) Does Mary like meat?
  - b) Does John like fish?
  - c) Does Mary hate fish?
2. No, I'll swim across the river.
  - a) Will you swim across the Channel?
  - b) Will John swim across the river?
  - c) Will you jump across the river?
3. No, John's a brilliant actor.
  - a) Is john a brilliant man?
  - b) Is John a lousy actor?
  - c) Is Peter a brilliant actor?
4. No, Mary likes fish.
  - a) Does Mary like meat?
  - b) Does John like fish?
  - c) Does Mary hate fish?
5. No, I said open the bedroom door.
  - a) Did you say open the garage door?
  - b) Did you say open the bedroom window?
  - c) Did you say shut the bedroom door?
6. No, John's a brilliant actor.
  - a) Is john a brilliant man?
  - b) Is John a lousy actor?
  - c) Is Peter a brilliant actor?
7. No, I'll swim across the river.
  - a) Will you swim across the Channel?
  - b) Will John swim across the river?
  - c) Will you jump across the river?
8. No, I said open the bedroom door.
  - a) Did you say open the garage door?
  - b) Did you say open the bedroom window?
  - c) Did you say shut the bedroom door?

9. No, Mary likes fish.
- a) Does Mary like meat? [ ]
  - b) Does John like fish? [X]
  - c) Does Mary hate fish? [ ]
10. No, John's a brilliant actor.
- a) Is John a brilliant man? [X]
  - b) Is John a lousy actor? [ ]
  - c) Is Peter a brilliant actor? [ ]
11. No, I said open the bedroom door.
- a) Did you say open the garage door? [ ]
  - b) Did you say open the bedroom window? [ ]
  - c) Did you say shut the bedroom door? [X]
12. No, I'll swim across the river.
- a) Will you swim across the Channel? [ ]
  - b) Will John swim across the river? [X]
  - c) Will you jump across the river? [ ]

**INSTRUCTIONS:** Put a cross in the appropriate box to show the speaker's attitude and therefore the meaning you think she (he) is conveying in each of the following utterances.

13. You like him.
- a) the speaker is stating the fact that you like him. [ ]
  - b) the speaker is asking whether you like him. [X]
14. It's good, isn't it?
- a) the speaker is asking a question and expects either 'yes' or 'no' [X]
  - b) the speaker is asking a question and expects the answer 'yes' [ ]
15. What's the time?
- a) the speaker is asking a question in a neutral manner [X]
  - b) the speaker is making an echo-question showing disapproval of the question being asked. [ ]
16. I got the meat, the bread, the milk.
- a) the speaker is stating these are the only items she (he) has got. [ ]

- b) the speaker implies that she (he) has got more than these three items. [X]
17. Come in.
- a) the speaker is commanding somebody to come in. [ ]
- b) the speaker is inviting somebody to come in. [X]
18. D'you like swimming?
- a) the speaker is asking a simple and neutral question. [X]
- b) the speaker is asking an insistent question. [ ]
19. You're a teacher, aren't you?
- a) the speaker is asking a question and expects the answer 'yes'. [X]
- b) the speaker is asking a question and expects either 'yes' or 'no'. [ ]
20. Where?
- a) the speaker is asking a question in a neutral manner. [ ]
- b) the speaker is asking a question expecting a repetition of what has just been said. [X]
21. He went this morning.
- a) the speaker is stating that he went this morning. [X]
- b) the speaker is asking whether he went this morning. [ ]
22. I went to France, Spain and England.
- a) the speaker is stating that these are the only countries she (he) visited [X]
- b) the speaker implies that he went to other countries as well. [ ]

THE SPEAKER'S BACKGROUND

1- PERSONAL DETAILS

Name .....

Date of birth ..... Sex .....

Birthplace,  
 a) City .....  
 b) Wilaya .....  
 c) How long did (or have) you live(d) there? .....

Residence,  
 a) City .....  
 b) Wilaya .....  
 c) How long have you lived there? .....

Nationality .....

Occupation ..... If teacher specify: Secondary school [ ]  
 University [ ]  
 Other [ ]

When did you first start teaching? .....

Mother tongue .....

Other languages spoken,  
 a) ..... fluent, fair, slight  
 (circle when appropriate)  
 b) ..... fluent, fair, slight  
 (circle when appropriate)

Language(s) spoken at home .....

Have you visited any English-speaking country?  
 a) Where .....  
 b) How long .....  
 c) Purpose of visit .....

2- EDUCATION

Primary school(s) ..... Dates .....

.....

Middle school(s) ..... Dates .....

.....

Secondary school(s)..... Dates .....

.....



University (ies) ..... Dates .....  
.....

**3- QUALIFICATIONS**

Baccalauréat (or Equivalence) .....  
Subject(s) .....  
Date .....

Licence (i.e. BA) .....  
Subject(s) .....  
Date .....

Any other qualification(s) .....  
Subject(s) .....  
Dates .....

**4- ENGLISH AS A SUBJECT/MEDIUM**

English begun as a subject,  
Middle school? (write Yes or No) ..... Age .....

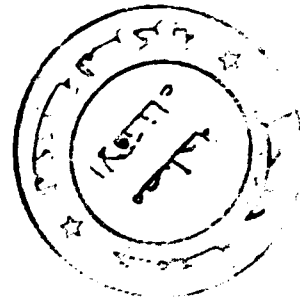
English used as a medium of instruction,  
University? (write Yes or No) ..... Age .....  
Elsewhere? (where?) ..... Age .....

Proportion of native English teachers (circle when appropriate)  
Middle school: all or nearly all - most - about half - a few - none  
Second. school: all or nearly all - most - about half - a few - none  
University : all or nearly all - most - about half - a few - none  
Elsewhere : all or nearly all - most - about half - a few - none

**5- MISCELLANEOUS**

Have you had any special training in Phonetics or spoken English? .....  
If Yes, give details:

Can you mention any other factors which may have influenced your English pronunciation?



APPENDIX F

CONTROL EXPERIMENT - PART A

Well I like going to Scotland| and I do quite often go to Scotland| usually to the Central or Western Highlands| which I'm very fond of| but the last time I went| in fact I went right up to the north coast| to stay with some friends| and it was unbelievably desolate| two of us travelled from the nearest railway-station which is | about thirty miles from my friends' house| and their nearest doctor's eighty miles away| and for the whole of this thirty miles| from the railway-station to their house| we were just going over absolutely lonely moorland with heather| and nothing else to be seen all around.|

APPENDIX G

CONTROL EXPERIMENT - PART B

NAME: .....

INSTRUCTIONS: Put a cross in the appropriate box to show which of the following pairs of words you think the speaker on the tape is using. If it is neither of the two, write down what you think you have heard on the dotted line.

- |   |           |     |       |
|---|-----------|-----|-------|
| 1. The ..... will arrive soon.              | man       | [ ] | ..... |
|   | men       | [X] | ..... |
| 2. When you came, I had been .....          | wondering | [X] | ..... |
|   | wandering | [ ] | ..... |
| 3. You didn't mention the .....             | bees      | [ ] | ..... |
|   | beers     | [X] | ..... |
| 4. We used to keep the ..... in that box.   | bills     | [ ] | ..... |
|   | pills     | [X] | ..... |
| 5. He ..... for a long time.                | fought    | [ ] | ..... |
|   | thought   | [X] | ..... |
| 6. He ..... when he received the letter.    | rang      | [X] | ..... |
|   | ran       | [ ] | ..... |
| 7. That ..... must have cost you a fortune. | bed       | [ ] | ..... |
|   | bet       | [X] | ..... |
| 8. '.....' did you say?                     | tense     | [ ] | ..... |
|   | tenths    | [X] | ..... |

INSTRUCTIONS: Put a cross in the appropriate box to show whether you think the speaker on the tape is using a) or b) in each of the following sentences.

9. He lives in the .....
- a) white house (i.e. the house which is white) [X]
- b) White House (i.e. the house where President Reagan lives) [ ]
10. The ..... burned her hand
- a) hot plate (i.e. the plate which is hot) [ ]
- b) hotplate (i.e. the heating element on a cooker) [X]

**INSTRUCTIONS:** Put a cross in the appropriate box to show whether the following words on the tape could be preceded by 'to' (i.e. verb) or 'the' (i.e. noun).

11. Convict

(the) convict [X] (to) convict [ ]

12. Object

(the) object [ ] (to) object [X]

**INSTRUCTIONS:** Put a cross in the appropriate box to show which of the following questions you think the speaker on the tape is answering.

13. No, I'll swim across the river.

- a) Will you swim across the Channel? [X]
- b) Will John swim across the river? [ ]
- c) Will you jump across the river? [ ]

14. No, I said open the bedroom door.

- a) Did you say open the garage door? [ ]
- b) Did you say open the bedroom window? [ ]
- c) Did you say shut the bedroom door? [X]

15. No, I'll swim across the river.

- a) Will you swim across the Channel? [ ]
- b) Will John swim across the river? [X]
- c) Will you jump across the river? [ ]

16. No, I said open the bedroom door.

- a) Did you say open the garage door? [X]
- b) Did you say open the bedroom window? [ ]
- c) Did you say shut the bedroom door? [ ]

**INSTRUCTIONS:** Put a cross in the appropriate box to show the speaker's attitude and therefore the meaning you think she is conveying for each of the following utterances.

17. You like him.

- a) the speaker is stating the fact that you like him. [ ]
- b) the speaker is asking whether you like him. [X]

18. Where?

- a) the speaker is asking a question in a neutral manner. [ ]

b) the speaker is asking a question expecting a repetition of what has just been said.

[X]

19. It's good, isn't it?

a) the speaker is asking a question and expects either 'yes' or 'no'.

[X]

b) the speaker is asking a question and expects the answer 'yes'.

[ ]

20. I went to France, Spain and England.

a) the speaker is stating that these are the only countries she visited.

[X]

b) the speaker implies that she went to other countries as well.

[ ]

THE INFORMANT'S BACKGROUND

1- PERSONAL DETAILS

Name .....

Age ..... Sex .....

Birthplace,  
a) City ..... b) County .....  
c) How long did (have) you live(d) there? .....

Residence,  
a) City ..... b) County .....  
c) How long have you lived there? .....

Nationality ..... Occupation .....

If student, specify the following (tick the appropriate box)

6th. Form	Undergraduate	Postgraduate	Field of study

What variety of English do you speak?  
(e.g. BBC, London, Scots, Irish, Welsh, etc.) .....

Fluency in any other language/s .....

Knowledge of any other language/s .....

Have you lived abroad?

a) Where? ..... b) How long? .....

2-EDUCATION

Primary school/s

a) City ..... b) County .....

Secondary school/s

a) City ..... b) County .....

Education equivalent to (tick the appropriate box)

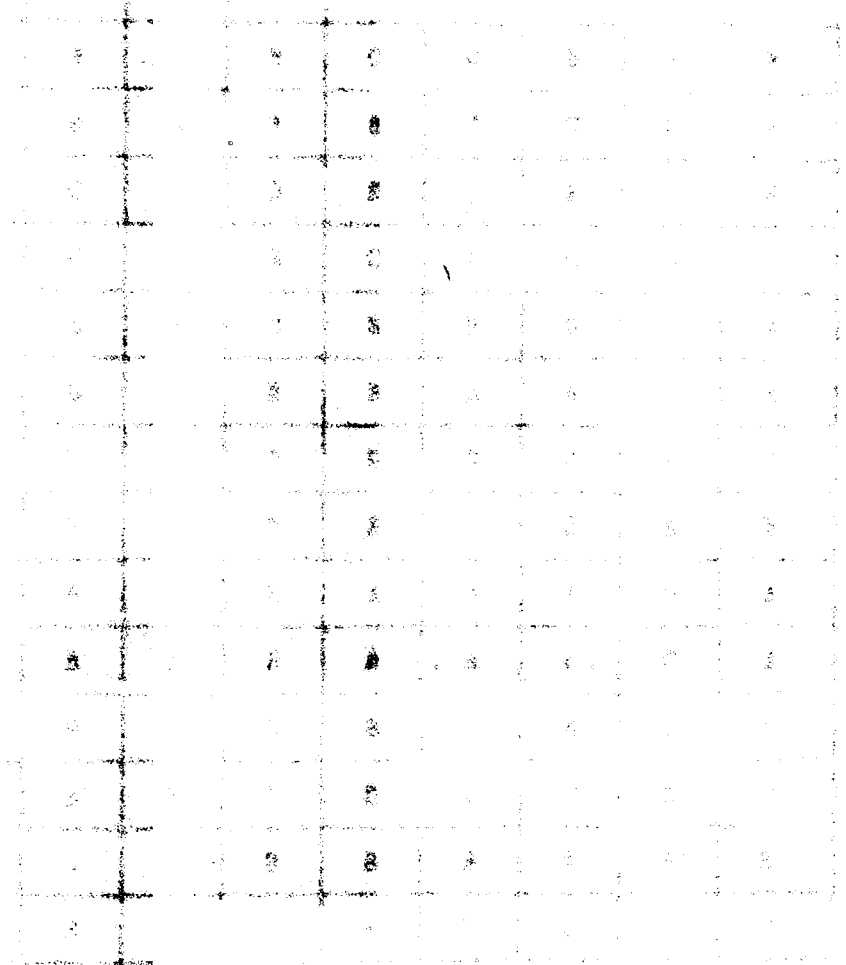
Under O-level	O-level	A-level	University or professional

**3- MISCELLANEOUS**

Please state (if) any qualification and/or experience in Phonetics and/or spoken English

Have you often talked to English-speaking Algerians? .....

Have you often talked to English-speaking foreigners? .....



APPENDIX I

TABLE 24  
INFORMANTS' SUBJECTIVE RATINGS OF INDIVIDUAL SPEAKERS

S.1	B	C	B	B	B	B	C	B	B	B
S.2	B	B	A	B	A	B	B	B	B	C
S.3	B	B	B	A	A	B	B	B	B	B
S.4	B	B	A	B	B	B	B	B	B	B
S.5	A	A	A	C	B	B	B	B	B	A
S.6	B	B	B	B	B	B	B	B	B	B
S.7	B	C	B	B	B	B	B	B	B	B
S.8	B	B	C	B	B	B	B	C	B	B
S.9	B	A	B	B	A	B	B	B	B	B
S.10	A	B	B	B	B	B	B	C	C	B
S.11	C	B	B	C	B	C	C	B	B	B
S.12	A	B	B	A	A	B	B	C	B	A
S.13	B	B	C	B	B	B	C	B	B	B
S.14	C	B	C	B	B	C	A	C	A	B
S.15	B	B	A	B	B	B	B	B	A	A
S.16	A	B	B	B	B	B	B	B	B	B
S.17	B	B	B	C	B	B	B	B	A	B
S.18	B	B	B	B	B	B	B	B	B	B
S.19	B	A	B	B	B	A	A	B	B	B
S.20	B	B	B	B	B	B	A	B	C	B
S.21	B	B	B	A	B	B	B	A	B	B
S.22	B	B	B	B	B	B	B	C	B	B
S.23	B	B	C	B	B	B	A	B	A	B
S.24	B	B	B	B	B	B	C	C	B	B



**TABLE 25a****INTELLIGIBILITY SCORES FOR SPEAKER No.1**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 29	78	84	95	40	73
I. 30	80	84	84	40	77
I. 67	76	89	82	60	86
I. 84	86	89	87	30	77
I. 154	92	89	89	50	68
I. 179	86	84	82	40	77
I. 187	78	84	87	30	77
I. 206	74	84	84	30	77
I. 207	88	95	74	30	68
I. 237	78	95	84	50	82

**Mean:** 81.6 87.7 84.8 40 76.2  
**S.D:** 5.6 4.5 5.4 10.5 5.6

**TABLE 25b****INTELLIGIBILITY SCORES FOR SPEAKER No.2**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 4	84	89	76	40	82
I. 49	72	79	58	20	77
I. 64	96	89	76	30	73
I. 132	86	79	68	40	82
I. 139	78	84	84	70	86
I. 163	64	68	74	30	82
I. 175	84	84	74	40	91
I. 181	70	63	74	40	64
I. 189	72	74	74	40	77
I. 216	74	84	61	40	86

**Mean:** 78 79.3 71.9 39 80  
**S.D:** 9.5 8.7 7.6 12.9 7.7

**TABLE 25c**

**INTELLIGIBILITY SCORES FOR SPEAKER No.3**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 18	96	95	83	70	82
I. 40	88	95	82	40	82
I. 72	86	79	79	60	91
I. 96	98	95	82	60	95
I. 155	94	84	82	60	91
I. 192	92	79	82	60	91
I. 196	88	95	95	60	91
I. 200	90	79	84	70	91
I. 225	88	89	82	80	91
I. 239	90	95	87	70	95

Mean: 91 88.5 83.8 63 90  
 S.D: 3.9 7.5 4.4 10.6 4.5

**TABLE 25d**

**INTELLIGIBILITY SCORES FOR SPEAKER No.4**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 12	88	84	82	50	68
I. 35	86	63	89	50	73
I. 45	88	89	76	40	82
I. 77	84	74	74	30	73
I. 120	86	74	84	60	77
I. 149	86	53	71	60	73
I. 156	78	74	76	60	68
I. 183	84	84	76	10	82
I. 222	96	100	76	50	73
I. 236	90	74	76	80	73

Mean: 86.6 76.9 78 49 74.2  
 S.D: 4.6 13.2 5.4 19.1 4.9

TABLE 25e

## INTELLIGIBILITY SCORES FOR SPEAKER No.5

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 58	94	89	89	60	91
I. 78	80	84	92	20	91
I. 85	90	95	84	70	86
I. 86	84	89	84	80	82
I. 125	74	74	82	70	95
I. 143	84	89	87	50	91
I. 147	86	89	77	70	86
I. 150	94	89	87	70	91
I. 158	86	100	84	50	82
I. 160	90	95	84	80	86

Mean: 86.2 89.3 85 62 88.1  
 S.D.: 6.2 7 4.1 18.1 4.3

TABLE 25f

## INTELLIGIBILITY SCORES FOR SPEAKER No.6

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 33	90	95	87	50	100
I. 48	86	95	84	40	100
I. 59	92	100	87	50	100
I. 63	84	95	76	60	95
I. 90	80	89	89	80	95
I. 94	65	74	79	60	86
I. 102	90	95	84	50	95
I. 173	92	95	84	60	77
I. 174	92	84	87	50	91
I. 240	92	95	89	40	95

Mean: 86.3 91.7 84.6 54 93.4  
 S.D.: 8.5 7.6 4.3 11.7 7.2

TABLE 25g

## INTELLIGIBILITY SCORES FOR SPEAKER No.7

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 9	86	79	84	80	95
I. 43	88	68	84	70	91
I. 46	88	84	92	70	95
I. 57	82	68	87	60	86
I. 76	65	47	87	70	91
I. 97	71	58	84	80	82
I. 107	88	68	92	70	95
I. 145	90	58	89	70	91
I. 157	88	63	82	70	86
I. 194	80	68	92	70	95

Mean: 82.6 66.1 87.3 71 90.7  
 S.D.: 8.4 10.6 3.8 5.7 4.6

TABLE 25h

## INTELLIGIBILITY SCORES FOR SPEAKER No.8

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 8	74	84	92	70	77
I. 19	92	79	89	70	86
I. 37	80	89	89	70	86
I. 124	84	84	74	60	86
I. 141	86	84	87	60	77
I. 152	96	74	92	60	82
I. 159	88	79	84	80	82
I. 171	76	79	82	70	86
I. 195	78	68	87	80	82
I. 228	78	79	92	60	91

Mean: 83.2 79.9 86.8 68 83.5  
 S.D.: 7.3 5.9 5.6 19.3 4.4

TABLE 25i

## INTELLIGIBILITY SCORES FOR SPEAKER No.9

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 15	96	89	79	90	91
I. 21	96	84	76	90	91
I. 70	90	84	79	90	91
I. 74	84	89	84	90	91
I. 75	98	89	84	80	95
I. 131	88	89	74	100	91
I. 153	88	84	71	80	91
I. 212	94	79	84	90	91
I. 226	92	79	74	80	86
I. 227	82	84	74	80	86

Mean: 90.8 85 77.9 87 90.4  
 S.D: 5.4 3.9 4.8 6.8 2.6

TABLE 25j

## INTELLIGIBILITY SCORES FOR SPEAKER No.10

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 93	88	95	79	70	91
I. 119	86	89	89	60	86
I. 121	80	95	82	60	91
I. 126	74	95	92	70	86
I. 138	70	89	87	40	82
I. 148	82	84	79	60	86
I. 182	74	89	92	60	91
I. 186	76	68	87	30	73
I. 219	74	84	89	30	91
I. 235	82	68	82	60	77

Mean: 78.6 85.6 85.8 54 85.4  
 S.D: 5.9 10.1 5.1 15.1 6.4

TABLE 25k

## INTELLIGIBILITY SCORES FOR SPEAKER No.11

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 88	88	89	79	80	91
I. 101	94	84	76	80	86
I. 127	82	84	84	80	95
I. 144	80	95	84	70	82
I. 162	74	79	84	90	86
I. 169	86	79	87	80	77
I. 172	74	84	79	90	91
I. 185	88	95	79	90	82
I. 223	82	74	82	80	77
I. 224	82	84	82	80	91

Mean: 83                      84.7                      81.6                      82                      85.8  
 S.D: 6.3                      6.8                      3.3                      6.3                      6.2

TABLE 25l

## INTELLIGIBILITY SCORES FOR SPEAKER No.12

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 5	86	74	84	80	95
I. 14	88	84	84	80	77
I. 17	84	100	87	60	86
I. 36	88	89	87	90	91
I. 41	86	79	82	80	91
I. 81	88	89	66	80	91
I. 98	86	89	82	80	91
I. 99	78	63	82	90	82
I. 170	80	68	87	80	82
I. 230	90	100	84	70	95

Mean: 85.4                      83.5                      82.5                      79                      88.1  
 S.D: 3.8                      12.5                      6.2                      8.8                      6.1

TABLE 25m

## INTELLIGIBILITY SCORES FOR SPEAKER No.13

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 7	84	95	76	70	91
I. 20	88	100	82	70	91
I. 24	78	89	82	70	91
I. 38	88	89	87	70	91
I. 42	78	89	79	70	91
I. 69	84	89	89	70	91
I. 103	72	74	82	70	91
I. 167	84	95	82	70	86
I. 214	86	95	89	80	91
I. 221	86	95	87	100	95

Mean: 82.8 91 83.5 74 90.9  
 S.D: 5.2 7.1 4.4 9.7 2.1

TABLE 25n

## INTELLIGIBILITY SCORES FOR SPEAKER No.14

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 11	74	84	87	70	95
I. 22	80	84	79	40	91
I. 44	80	68	87	70	95
I. 62	84	84	87	60	86
I. 79	84	84	89	50	86
I. 80	82	79	87	50	86
I. 95	82	89	82	50	86
I. 130	80	84	92	70	91
I. 165	78	89	87	50	91
I. 203	78	79	84	60	95

Mean: 80.2 82.4 86.1 57 90.2  
 S.D: 3.1 6.1 3.6 10.6 4

TABLE 25o

## INTELLIGIBILITY SCORES FOR SPEAKER No.15

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 31	88	74	82	70	95
I. 89	92	79	82	60	95
I. 115	92	84	79	70	86
I. 129	86	89	68	80	91
I. 140	94	89	76	70	91
I. 161	84	89	82	90	95
I. 168	88	84	84	60	91
I. 178	92	84	76	60	95
I. 197	90	89	89	70	91
I. 218	88	79	76	70	95

Mean: 89.4      84      79.4      70      92.5  
 S.D.: 3.1      5.3      5.8      9.4      3

TABLE 25p

## INTELLIGIBILITY SCORES FOR SPEAKER No.16

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 55	76	95	74	40	86
I. 66	71	89	82	60	91
I. 73	80	95	82	50	95
I. 113	84	95	76	60	91
I. 123	86	84	82	60	91
I. 177	76	95	76	70	91
I. 193	90	95	84	50	82
I. 233	53	84	79	30	86
I. 234	67	95	82	60	82
I. 238	80	89	76	40	82

Mean: 76.3      91.6      79.3      52      87.7  
 S.D.: 10.7      4.7      3.5      12.3      4.7



**TABLE 25q**

**INTELLIGIBILITY SCORES FOR SPEAKER No.17**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 50	80	53	66	50	82
I. 56	88	95	76	50	95
I. 82	82	68	68	60	86
I. 108	74	74	74	60	91
I. 110	78	74	76	70	73
I. 114	74	68	71	20	82
I. 118	76	79	87	60	82
I. 151	78	58	71	70	82
I. 176	84	74	84	40	82
I. 232	88	84	74	60	86

**Mean:** 80.2 72.7 74.7 54 84.1  
**S.D.:** 5.2 12.1 6.6 15.1 6

**TABLE 25r**

**INTELLIGIBILITY SCORES FOR SPEAKER No.18**

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 1	90	74	63	60	86
I. 53	82	63	74	70	95
I. 71	94	74	82	50	95
I. 87	92	74	79	80	86
I. 104	96	74	79	60	95
I. 106	88	47	74	60	95
I. 112	92	68	84	60	95
I. 164	82	68	71	50	91
I. 215	90	58	74	60	86
I. 229	86	74	79	60	95

**Mean:** 89.2 67.4 75.9 61 91.9  
**S.D.:** 4.7 9.1 6.1 8.8 4.3

TABLE 25s

## INTELLIGIBILITY SCORES FOR SPEAKER No.19

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 6	94	84	84	60	82
I. 13	96	84	84	50	82
I. 47	84	79	89	50	73
I. 54	73	68	84	50	82
I. 68	90	74	84	60	82
I. 109	86	74	84	70	86
I. 111	86	95	84	60	86
I. 146	92	84	89	60	86
I. 201	80	74	74	60	86
I. 211	88	63	79	60	77

Mean: 86.9 77.9 83.5 58 82.2  
 S.D: 6.8 9.3 4.4 6.3 4.3

TABLE 25t

## INTELLIGIBILITY SCORES FOR SPEAKER No.20

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 16	88	84	79	80	91
I. 26	92	100	82	80	86
I. 51	72	79	74	80	91
I. 60	82	95	82	80	91
I. 128	88	84	76	70	86
I. 142	88	100	74	70	95
I. 184	80	95	87	70	91
I. 188	84	100	79	80	91
I. 190	78	95	79	80	86
I. 231	86	95	76	70	86

Mean: 83.8 92.7 78.8 76 89.4  
 S.D: 5.9 7.6 4.1 5.2 3.2

TABLE 25u

## INTELLIGIBILITY SCORES FOR SPEAKER No.21

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 2	82	68	74	70	77
I. 34	90	58	89	60	86
I. 122	78	63	84	70	86
I. 135	92	84	84	80	91
I. 180	92	74	89	70	86
I. 198	94	84	79	70	91
I. 199	94	95	76	70	86
I. 208	92	89	82	60	91
I. 209	90	84	84	60	86
I. 210	72	74	84	70	82

Mean: 87.6 77.3 82.5 68 86.2  
 S.D: 7.6 11.9 5 6.3 4.4

TABLE 25v

## INTELLIGIBILITY SCORES FOR SPEAKER No.22

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 39	82	79	89	40	95
I. 65	86	84	89	40	77
I. 100	88	68	92	60	91
I. 105	88	84	87	60	95
I. 116	76	79	79	50	91
I. 117	84	79	82	30	95
I. 134	88	84	76	40	91
I. 191	92	84	79	40	77
I. 202	82	79	92	30	91
I. 217	90	84	92	60	91

Mean: 85.6 80.4 85.7 45 89.4  
 S.D: 4.7 5 6.2 11.8 6.8

TABLE 25w

## INTELLIGIBILITY SCORES FOR SPEAKER No.23

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 27	80	95	89	70	91
I. 28	65	84	76	80	95
I. 52	67	68	71	60	91
I. 91	71	84	84	50	77
I. 92	82	100	84	90	91
I. 166	73	89	71	60	95
I. 204	88	74	79	80	82
I. 205	73	84	79	70	95
I. 213	78	89	84	80	86
I. 220	73	68	79	40	91

Mean: 75 83.5 79.6 68 89.4  
 S.D: 7 10.7 5.9 15.5 6

TABLE 25x

## INTELLIGIBILITY SCORES FOR SPEAKER No.24

Informant's Number	Exp. A	Exp. B	Exp. C	Exp. D	Exp. E
I. 3	76	79	87	70	91
I. 10	88	95	87	70	82
I. 23	76	95	84	40	86
I. 25	69	95	79	70	95
I. 32	82	89	82	90	95
I. 61	80	95	87	90	91
I. 83	63	84	79	70	73
I. 133	76	89	82	80	82
I. 136	69	84	84	80	82
I. 137	82	89	92	80	100

Mean: 76.1 89.4 84.3 74 87.7  
 S.D: 7.5 5.7 4.1 14.3 8.1

**TABLE 26****SELECTED INFORMANTS' RESULTS IN THE CONTROL EXPERIMENT**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 1	0	100	1	95	97.5
I. 2	0	100	0	100	100
I. 3	0	100	0	100	100
I. 4	0	100	0	100	100
I. 5	0	100	0	100	100
I. 6	0	100	0	100	100
I. 7	0	100	1	95	97.5
I. 8	0	100	0	100	100
I. 9	0	100	0	100	100
I. 10	0	100	1	95	97.5
I. 11	0	100	0	100	100
I. 12	0	100	0	100	100
I. 13	0	100	0	100	100
I. 14	0	100	0	100	100
I. 15	0	100	0	100	100
I. 16	0	100	0	100	100
I. 17	0	100	1	95	97.5
I. 18	0	100	1	95	97.5
I. 19	0	100	0	100	100
I. 20	0	100	0	100	100
I. 21	0	100	1	95	97.5
I. 22	0	100	1	95	97.5
I. 23	0	100	0	100	100

Table 26 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 24	0	100	0	100	100
I. 25	0	100	0	100	100
I. 26	0	100	0	100	100
I. 27	1	93	0	100	96.5
I. 28	0	100	1	95	97.5
I. 29	0	100	1	95	97.5
I. 30	0	100	0	100	100
I. 31	0	100	0	100	100
I. 32	0	100	1	95	97.5
I. 33	0	100	1	95	97.5
I. 34	0	100	0	100	100
I. 35	0	100	0	100	100
I. 36	0	100	0	100	100
I. 37	0	100	1	95	97.5
I. 38	0	100	0	100	100
I. 39	0	100	0	100	100
I. 40	0	100	0	100	100
I. 41	0	100	1	95	97.5
I. 42	0	100	0	100	100
I. 43	0	100	0	100	100
I. 44	0	100	1	95	97.5
I. 45	0	100	0	100	100
I. 46	0	100	1	95	97.5
I. 47	0	100	0	100	100

**Table 26 (cont'd)**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 48	0	100	0	100	100
I. 49	1	93	0	100	96.5
I. 50	0	100	0	100	100
I. 51	0	100	0	100	100
I. 52	0	100	1	95	97.5
I. 53	0	100	1	95	97.5
I. 54	0	100	0	100	100
I. 55	0	100	0	100	100
I. 56	0	100	0	100	100
I. 57	0	100	1	95	97.5
I. 58	0	100	1	95	97.5
I. 59	0	100	1	95	97.5
I. 60	0	100	0	100	100
I. 61	0	100	0	100	100
I. 62	0	100	1	95	97.5
I. 63	1	93	0	100	96.5
I. 64	0	100	0	100	100
I. 65	0	100	1	95	97.5
I. 66	0	100	0	100	100
I. 67	0	100	0	100	100
I. 68	0	100	1	95	97.5
I. 69	0	100	0	100	100
I. 70	0	100	0	100	100
I. 71	0	100	0	100	100

Table 26 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 72	0	100	0	100	100
I. 73	0	100	1	95	97.5
I. 74	0	100	0	100	100
I. 75	0	100	0	100	100
I. 76	0	100	1	95	97.5
I. 77	0	100	0	100	100
I. 78	0	100	1	95	97.5
I. 79	0	100	1	95	97.5
I. 80	0	100	0	100	100
I. 81	0	100	0	100	100
I. 82	0	100	0	100	100
I. 83	0	100	0	100	100
I. 84	0	100	0	100	100
I. 85	0	100	1	95	97.5
I. 86	0	100	1	95	97.5
I. 87	0	100	0	100	100
I. 88	0	100	0	100	100
I. 89	0	100	0	100	100
I. 90	0	100	0	100	100
I. 91	0	100	1	95	97.5
I. 92	0	100	0	100	100
I. 93	0	100	0	100	100
I. 94	0	100	0	100	100
I. 95	1	93	0	100	96.5



Table 26 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 96	0	100	0	100	100
I. 97	0	100	1	95	97.5
I. 98	0	100	1	95	97.5
I. 99	0	100	1	95	97.5
I. 100	0	100	1	95	97.5
I. 101	0	100	0	100	100
I. 102	0	100	0	100	100
I. 103	0	100	0	100	100
I. 104	0	100	0	100	100
I. 105	0	100	1	95	97.5
I. 106	0	100	0	100	100
I. 107	1	93	0	100	96.5
I. 108	0	100	1	95	97.5
I. 109	0	100	1	95	97.5
I. 110	0	100	0	100	100
I. 111	0	100	0	100	100
I. 112	0	100	0	100	100
I. 113	0	100	0	100	100
I. 114	0	100	0	100	100
I. 115	0	100	0	100	100
I. 116	0	100	0	100	100
I. 117	0	100	0	100	100
I. 118	0	100	0	100	100
I. 119	0	100	0	100	100

Table 26 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 120	0	100	1	95	97.5
I. 121	0	100	0	100	100
I. 122	0	100	1	95	97.5
I. 123	0	100	0	100	100
I. 124	0	100	0	100	100
I. 125	0	100	1	95	97.5
I. 126	0	100	1	95	97.5
I. 127	0	100	1	95	97.5
I. 128	0	100	0	100	100
I. 129	0	100	1	95	97.5
I. 130	0	100	0	100	100
I. 131	0	100	1	95	97.5
I. 132	0	100	0	100	100
I. 133	1	93	0	100	96.5
I. 134	0	100	0	100	100
I. 135	0	100	0	100	100
I. 136	0	100	1	95	97.5
I. 137	0	100	0	100	100
I. 138	0	100	0	100	100
I. 139	1	93	0	100	96.5
I. 140	0	100	0	100	100
I. 141	0	100	0	100	100
I. 142	0	100	0	100	100
I. 143	0	100	1	95	97.5

**Table 26 (cont'd)**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 144	0	100	0	100	100
I. 145	1	93	0	100	96.5
I. 146	0	100	0	100	100
I. 147	1	93	0	100	96.5
I. 148	0	100	0	100	100
I. 149	0	100	0	100	100
I. 150	0	100	0	100	100
I. 151	0	100	0	100	100
I. 152	0	100	0	100	100
I. 153	0	100	0	100	100
I. 154	0	100	0	100	100
I. 155	0	100	0	100	100
I. 156	0	100	1	95	97.5
I. 157	1	93	0	100	96.5
I. 158	0	100	0	100	100
I. 159	0	100	0	100	100
I. 160	0	100	1	95	97.5
I. 161	0	100	0	100	100
I. 162	0	100	0	100	100
I. 163	1	93	0	100	96.5
I. 164	0	100	1	95	97.5
I. 165	0	100	1	95	97.5
I. 166	0	100	0	100	100
I. 167	0	100	0	100	100

**Table 26 (cont'd)**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 168	0	100	0	100	100
I. 169	0	100	1	95	97.5
I. 170	0	100	1	95	97.5
I. 171	0	100	0	100	100
I. 172	0	100	0	100	100
I. 173	0	100	1	95	97.5
I. 174	0	100	1	95	97.5
I. 175	0	100	1	95	97.5
I. 176	0	100	1	95	97.5
I. 177	0	100	0	100	100
I. 178	0	100	0	100	100
I. 179	0	100	0	100	100
I. 180	0	100	0	100	100
I. 181	0	100	1	95	97.5
I. 182	0	100	0	100	100
I. 183	0	100	0	100	100
I. 184	0	100	0	100	100
I. 185	0	100	0	100	100
I. 186	0	100	1	95	97.5
I. 187	0	100	0	100	100
I. 188	0	100	0	100	100
I. 189	1	93	0	100	96.5
I. 190	0	100	0	100	100
I. 191	0	100	1	95	97.5

**Table 26 (cont'd)**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 192	0	100	1	95	97.5
I. 193	0	100	0	100	100
I. 194	0	100	0	100	100
I. 195	0	100	0	100	100
I. 196	0	100	1	95	97.5
I. 197	0	100	0	100	100
I. 198	0	100	1	95	97.5
I. 199	0	100	0	100	100
I. 200	0	100	1	95	97.5
I. 201	0	100	0	100	100
I. 202	0	100	1	95	97.5
I. 203	0	100	1	95	97.5
I. 204	0	100	1	95	97.5
I. 205	0	100	0	100	100
I. 206	0	100	0	100	100
I. 207	0	100	0	100	100
I. 208	0	100	0	100	100
I. 209	0	100	0	100	100
I. 210	0	100	1	95	97.5
I. 211	0	100	1	95	97.5
I. 212	0	100	0	100	100
I. 213	0	100	0	100	100
I. 214	0	100	0	100	100
I. 215	0	100	1	95	97.5

Table 26 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 216	0	100	0	100	100
I. 217	0	100	0	100	100
I. 218	0	100	0	100	100
I. 219	0	100	0	100	100
I. 220	0	100	0	100	100
I. 221	0	100	1	95	97.5
I. 222	0	100	0	100	100
I. 223	0	100	0	100	100
I. 224	0	100	0	100	100
I. 225	0	100	0	100	100
I. 226	0	100	0	100	100
I. 227	0	100	0	100	100
I. 228	0	100	1	95	97.5
I. 229	0	100	0	100	100
I. 230	0	100	0	100	100
I. 231	0	100	0	100	100
I. 232	0	100	0	100	100
I. 233	0	100	1	95	97.5
I. 234	0	100	1	95	97.5
I. 235	0	100	1	95	97.5
I. 236	0	100	0	100	100
I. 237	0	100	0	100	100
I. 238	0	100	0	100	100
I. 239	0	100	1	95	97.5
I. 240	0	100	0	100	100

**TABLE 27****REJECTED INFORMANTS' RESULTS IN THE CONTROL EXPERIMENT**

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 14'	1	93	2	90	91.5
I. 17'	0	100	2	90	95
I. 19'	0	100	2	90	95
I. 33'	0	100	4	80	90
I. 41'	0	100	2	90	95
I. 56'	0	100	2	90	95
I. 72'	1	93	3	85	89
I. 78'	0	100	2	90	95
I. 78"	1	93	3	85	89
I. 87'	1	93	5	75	84
I. 93'	0	100	2	90	95
I. 99'	0	100	2	90	95
I. 101'	0	100	3	85	92.5
I. 102'	0	100	2	90	95
I. 105'	2	87	2	90	88.5
I. 108'	0	100	2	90	95
I. 113'	0	100	2	90	95
I. 117'	0	100	2	90	95
I. 130'	0	100	2	90	95
I. 135'	0	100	2	90	95
I. 150'	0	100	2	90	95
I. 150"	0	100	2	90	95
I. 160'	1	93	2	90	91.5

Table 27 (cont'd)

INFORMANT'S NUMBER	PART I		PART II		FINAL SCORE (%)
	No. of mistakes	Score (%)	No. of mistakes	Score (%)	
I. 160"	2	87	2	90	88.5
I. 171'	1	93	2	90	91.5
I. 173'	0	100	3	85	92.5
I. 180'	1	93	1	95	94
I. 181'	1	93	1	95	94
I. 189'	0	100	2	90	95
I. 191'	1	93	3	85	89
I. 195'	1	93	3	85	89
I. 198'	0	100	2	90	95
I. 199'	0	100	2	90	95
I. 204'	0	100	2	90	95
I. 206'	0	100	2	90	95
I. 209'	0	100	2	90	95



APPENDIX J

PHONETIC ANALYSIS OF THE SPEAKERS' ERRORS IN FREE SPEECH

SPEAKER No.1

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>of course</u> they repair the plane	-of ... they repair	3	['ʔɔfɪkɔs]	rhythm
when <u>we</u> arrived there	-when you arrived	4	[wɪ]	/i:/ → [ɪ]
we had of course to pass through the <u>police</u>	-through the ...	3	['pɔli:s]	lexical-stress
and after we had to <u>recuperate</u> our luggage	-had to re... our -had to recuperate our	3	['rɛkɪpreɪt]	lexical-stress
<u>it took us half an hour to arrive</u> there	-..... -because half an hour drive there -because her...arrived there	3	[t:ɔk'ðɜs'hɔlfɪʔəʊtɔ rɔ'ɪv'ðɜ:]	rhythm
after that of course <u>with the help</u> of the bus-driver	-we had the bus -we asked the bus -we ... bus -we held up the bus -we helped the bus	9	['wɪ:ðɜhɛlpɔf]	rhythm
and my aunt was happy to <u>okay</u> welcome us	-to get welcome	5	[kɛ]	syllable elision
as <u>my</u> cousin told me it's a town where a lot of	-asked cousin -after my cousin	3	['ʔɪzmaɪ]	rhythm
<u>they</u> have a lot of students because	-I have a lot of students -I have a letter of a student -it have a lot of students	9	[ʔɛ]	/θ/ → [ʔ]

SPEAKER No.1 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
it's a new one okay they open it two years <u>ago only</u>	-years ...	6	['gəʔʒli]	lexical-stress
after two days in Aix-en-Provence	-after today's -after today	5	['tə]	/u:/ → [ə]
of course to do some shopping and <u>to visit it also</u>	-shopping ... -shopping and to ... -shopping and visit it ourselves	5	[əntɥ:vɛ'ziti:tɥl'so:]	lexical-stress
nearly at five o'clock we took the bus again to bus <u>okay</u> to return to Aix-en-Provence	-bus again to	5	[kɛ]	syllable elision
<u>You</u> must be careful	-we must	3	[ʒɥ]	/u:/ → [ʒ]

SPEAKER No.2

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>if you want my trip</u> to England	-... my trip -talk about my trip	3	[?əfjəwɔ̃t]	rhythm
I must say that everything was organised <u>for us</u> by Sonatrach	-organised ... by Sonatrach	3	[fdɔ̃əs]	/ə/ → [d]
<u>which was</u> sponsoring my studies in England	-we chose sponsoring	3	[wɪtsɔ̃:z]	consonant elision
which was sponsoring <u>my studies</u> in England	-by ... in England	2	[mɪj'stədʒɪz]	/ʌ/ → [dʒ]
we met some responsible people <u>for</u> Sonatrach	-people from Sonatrach -people ... Sonatrach	9	[fərə]	vowel epenthesis
<u>let's say</u> about fifty or sixty students like this	-... say about	2	[leʃsə:]	consonant elision
because I remember that the <u>plane</u> was crowded with these students	-the ... was -the plan was	3	[ple:n]	/eɪ/ → [ɛ:]
<u>and went</u> straight to Heathrow Airport	-I went straight -in winter straight	5	[ən]	/ə/ → [ɛ]
and when we got there we took <u>buses</u> to have <u>a kind of a dinner</u>	-took passes -to have ... for dinner -to have a kind of for dinner	7	['pʌsɪz]	/b/ → [p]
then the next morning we had a meeting with our responsible <u>in</u> <u>London</u>	-to have them for dinner -responsible ... -responsible and we had dinner	3	[ə'kʌnʃə]	/aɪ/ → [ʃ]
and he gave us our <u>instructions</u>	-our restrictions	2	[ɪn'lɛkʃən]	/ʌ/ → [dʒ]
		3	[ʃə'tɪʃk(ɪ)nz]	/ʌ/ → [ʃ]

SPEAKER No.2 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I seen something quite gigantic station like this	-I had seen something as gigantic as a station like this -I see ... a gigantic station like this -I seen ... gigantic station like this -I seen something like quite gigantic station like this	9	acceptable pronunciation	incorrect syntac- tic construction
<u>anyway</u> we <u>bought</u> our ticket	-we bought a ticket -we got our ticket	4	['boʊtɜ:]	/əʊə/ → [ɜ:]
it was five o'clock <u>something</u> like <u>this</u> in the afternoon	-o'clock or something on this afternoon -o'clock ... afternoon	3	[səm'fɪŋgləkɪsɪndɪ]	rhythm
<u>well</u> I stayed with the family for about two months	-while I stayed -when I stayed	3	[wɔɪl]	/e/ → [ɔ]
the food was quite <u>unusual</u> for me	-quite ... for me	3	[dʒy'nju:ʒəl]	/ʌ/ → [dʒy:]
I couldn't find <u>myself</u> <u>anyway</u>	-myself anywhere -myself any work	5	['eɪwə]	/eɪ/ → [ɛ]
<u>and</u> <u>live</u> with him for quite some time	-I live with -I lived with	4	[ɜ'li:v]	/ə/ → [ɜ]
<u>and</u> <u>so</u> we shared a flat in some area in Brighton	-...we share the flat -also we shared the flat	3	[ʒəʊ]	/ə/ → [ɜ]

SPEAKER No.3

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
they want to know where <u>you're</u> going	-where you going -where ... going	4	[Jʰ]	/u:/e/ → [ʰ]
<u>she</u> was a Polish	-he was a -it was a -there was a	5	[sɪ]	/ʃ/ → [s]
and she lives in <u>a</u> house with a landlady	-lives in ... house	3	[ʰ]	/e/ → [ʰ]
we went to visit London it was really <u>a</u> beautiful town	-really ... beautiful	6	['ʃɪlɪʔə]	consonant epenthesis
something which was really nice was that the English people are <u>very</u> helpful	-are really helpful	3	['vɪ.ɪ]	/e/ → [ɪ]
<u>whenever</u> you ask them any question they are very happy to	-when I ask -one can ask	3	['wɛnʰvɛjʰ]	lexical-stress
they wanted to ask <u>us</u> many questions where do you come from	-ask as many	2	[əz]	/s/ → [z]
they wanted to ask us many questions where do <u>you</u> come from	-where they come from -where ... come from	2	[dʰ]	syllable elision

SPEAKER No.4

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
first I sailed from Calais in France in the French coast to Dover	-Calais ... French	6	[ʔʔ'frɛsʔʔdɔ]	/ɑ:/ → [ɛ]
well they asked me about the goals of my visit	-when they asked -where they asked	5	[wɛdɛ]	consonant elision
well they asked me about the goals of my visit	-the cause of my	3	[go:lz]	/əʊ/ → [o:]
well I said I've got enough money for the accommodations	-enough...for -enough monies for -enough only for	5	[mɔ'ne:]	lexical-stress
I did not visit Dover	-I ... not -I do not	2	[dɛnɔt]	consonant elision
because it was my first visit	-because ...was my -because both my	6	[ʔʔwɔ:z]	consonant elision
I went to an office	-...went to -I hardly went to -I only went to	6	[ʔʔɪd:wɛnt]	vowel epenthesis
so he told me to repeat my question another time	-question ...	3	[ʔʔɪnɔdɔ'fʔɪ:m]	lexical-stress
and I said can you please show me a hotel	-show me hotel	5	[ʔɔ]	consonant epenthesis
and at the end he showed me one	-showed me ...	4	[wɔ]	/ʌ/ → [ɔ]
well I went to Grosvenor Avenue I think	-then I went -when I went	3	[welʔɛɪ]	consonant epenthesis

SPEAKER No.4 (cont'd)

UNIT WITH THIS UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
among the <u>young</u> people	-the ... people -the old people	5	[jʒg]	/ʌ/ → [ʒ]
to smoke <u>there</u> in the centre of London among all these policemen	-smoke that in	3	[dɛʒ'in]	/eə/ → [ɛ]
to smoke <u>there</u> in the <u>centre</u> of London among all these policemen	-in the ... of -in the sums of	2	['sɛntɜːf]	syllable elision

SPEAKER No.5

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I went there for a <u>week</u> with two sisters a brother and I	-there for 2 weeks with -there ...with	3	[fɔ:ʔ'wi:k]	/ə/ → [ʔ]
a <u>bus</u> was waiting for them	-a vessel was -a ... was	4	[?'æbʔswɔ:z]	rhythm
for us <u>sorry</u> because I went there too	-for I saw it or I went -for I was sorry because I went -... they went -... sorry because I went -for us also for I went	5	[ 'fɔ:ʔsɔ:ɟi 'bi:kɔ:z]	rhythm
this is why I keep a <u>bad</u> <u>souvenir</u> from this travel	-keep a bad ... from -keep a ... from	3	[ 'bɛ:d'su:vni]	wrong choice of lexical item
we went to the <u>mosque</u>	-to the most -to the ...	7	[mɔ:ʔak]	/ɒ/ → [əʔ]
<u>where</u> Cat Stevens was supposed to be the <u>imman</u>	-...were supposed -where ... was supposed -where ... were supposed -where customers were supposed -where cats figures were supposed	9	[wɜ:'kɛʔstɛvɛnswe:z]	rhythm
suddenly because I was too much afraid to watch the film	-suddenly as I was -suddenly ... I was	3	[ 'bi:kɔ:z]	lexical-stress
because they <u>forgot</u> their keys inside	-they forelock their -they ... their	3	[ 'fɔ:ʔɔ:t]	lexical-stress



SPEAKER No.6

UNIT WITH THIS UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>where</u> I was still young	-when I was -well I was	5	[wɛr]	/ɛə/ → [ɛ]
for <u>beginning</u> the class the day after	-for begin the class -for ... the class	7	['bɪɡɪnɪŋ]	lexical-stress
I could manage to finish my <u>licence</u> like that	-my ... like -my lessons like	4	['laɪsəns]	wrong choice of lexical item
I was also teaching to the pupils <u>who were</u> in secondary school	-pupils who...secondary -pupils ... secondary	4	[həwɛr]	/ə/ → [ɛ]
surely you can improve your <u>grammar lessons</u>	-grammar your less -grammar ... -grammar listening	4	['le:sɪnz]	/e/ → [ɛ:]
which was limited to the pupils' <u>level</u>	-pupils' liver -pupils ...	3	['ləvəl]	/e/ → [ɛ]
<u>phonetics</u> must have books	-its take I must -some ... must -phonetics I must -... I must	6	['fɒnɛtɪks]	lexical-stress
<u>either</u> the <u>Daniel Jones</u> we don't find it	-either the ... we don't -... we don't -for ... we don't -but either ... we don't	5	['ɪ:də'deɪndʒe'dʒɔ:nɪs]rhythm	
<u>tapes</u> can improve my pronunciation better	-... can -these can -... I can	3	[tɛps]	/eɪ/ → [ɛ]
I am not feeling confident <u>you</u> when I'm in a class	-confident ... I am in -confident ... in	5	['jə'sɪ'wɛn'jʌ]	rhythm

SPEAKER No.7

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
that I got a scholarship from the Ministry of Education	-because I got -is I got	2	[θeɪ]	/ð/ → [θ]
that I got a scholarship from the <u>Ministry of Education</u>	-from ... -from the university	2	['dʒɪnɪstɹɪv'edɪ'keɪfən]	syllable elision
and I went to Britain precisely to <u>Essex</u> University	-to ... university -to Sussex University -to Exeter University	5	['ɛsɛkz]	/s/ → [z]
well I'm lucky I went <u>with</u> a friend of mine	-went to a friend	3	[wɪθ]	/ð/ → [t]
well the journey was <u>fair</u> was excellent	-journey there was -journey ...was -journey from there was -journey with ferry was	7	[wɛsfɛ]	rhythm
we arrived at <u>the</u> university	-arrived ...university -arrived in university	7	[edɪ]	consonant elision
we went <u>directly</u> to the information centre	-went out ...to -went ...to	3	['dɪrɛktli]	lexical-stress
personally I went <u>directly</u> to my room	-went ...to -went out to	6	['dɪrɛtli]	lexical-stress
I don't <u>know why</u>	-I have no -I have no wife	3	['nəʊnə'waɪ]	rhythm
<u>this is why</u> I found it hard to cope with that situation	-...I found -this way I found -this wife I found	3	[dɪsɪs'waɪ]	/z/ → [s]

SPEAKER No.7 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and therefore we were obliged to <u>make</u> a contact with her	-to a contact	5	[ʔ'blɔ:3d'tu:me:k]	rhythm
I <u>realised</u> that we can find people who are very nice and friendly	-I realise that	3	['ʔiələeʔzɔt]	consonant elision
is the fact of existing societies <u>there you've</u> got different societies	-societies...they've got -societies that you've got -societies you've got	8	[dɔjəv]	/tə/ → [ə]
gay societies <u>even which</u> struck me a lot you know	-societies even...struck me -societies...which struck me -societies...which shocked me -societies for instance that strike me	5	['ʔi'venwi'tʃɔk]	/tʃ/ → [t]

SPEAKER No.8

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
well <u>I've</u> forgotten to say something	-well I forgotten	2	[aɪf'gɔtən]	syllable elision
it's that I know perfectly well that I've got a terrible French accent	-know terribly well -know ... well	4	[pə'fɛktlɪ]	lexical-stress
the matter is that if I speak to my students <u>otherwise</u>	-students all the ... -students all the whiles	4	['ʔɔðə'waɪz]	/ʌ/ → [ɔ]
well I've been to <u>Stirling</u> about	-been studying about -been to stay about -been to ... in about -been to ... about	5	[stɪ'stɛrlɪn]	/z:/ → [ʔ]
<u>well let's say</u> two years ago	-...two - well it's say two -well it's two	5	['wɛlət'se:]	consonant elision
I went there for a course on <u>methodology</u>	-on micro-biology -on ... -on mythology	3	['mɛθɔdɔləʒi]	lexical_stress
the title was <u>self-directed</u> learning	-was...directed	2	[sɛf]	/e/ → [ʔ]
well I think it would be unfair if I <u>said that</u>	-if I say that -if i say ...	5	['sɛ:'dʔt]	consonant elision
I've a class of about thirty five students	-I've class	6	pronunciation acceptable	incorrect syntactic construction
that was <u>two</u> years ago	-was three years	7	[tʃ]	/t/ → [tʃ]

SPEAKER No.8 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
a thousand pounds the equivalent of a thousand pounds <u>yeah</u>	-pounds here	3	[.jeɪ]	/ɛə/ → [e]
we'll we <u>special</u> ly learnt how to use computers and overhead projectors etcetera	-we especially learnt	5	[wɪ?'spɛʃəlɪ]	consonant epenthesis

SPEAKER No.9

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I was on <u>a summer</u> course	-was...summer	2	[əne]	/v/ → [ə]
that the trip would be so long you <u>know</u>	-long no	2	['jɔns:]	rhythm
well I don't quite remember but it was by night-fall	-but I don't	3	[welʔɪ]	consonant epenthesis
well I don't quite remember but it was by night-fall	-but...by	2	['ʔɪtweɪ]	rhythm
then I <u>reached</u> Edinburgh with a terrible headache as I said	-I wished Edinburgh -I ...Edinburgh	3	[.ɛft]	/tʃ/ → [ʃ]
I felt terrible you <u>know</u> I felt tired	-terrible...I felt	2	['jɔns:]	rhythm
because she asked someone to take me I <u>mean</u> in his car	-me...in	2	'ʔɪmɪ]	rhythm
from Edinburgh Airport to <u>some</u> well I don't remember the place	-to somewhere I -to...well I	5	['eɪm'welʔ]	/ʌ/ → [ʔ]
and then ride <u>straight</u> on to the hall of residence	-then right straight on -then right...on	3	['.sɛɪt'stɛɪt]	/d/ → [t]
which was called A.K.D: A.K. <u>Davidson</u>	-A.K.Devinson -A.K.Devison -A.K. ...	4	['dɛvɪdɪsən]	/eɪ/ → [ɛ]

SPEAKER No.10

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>at two o'clock pm</u>	-and I took ... -I ... -I took the pm	4	[?ə'tʰʊ?əklok'pɪəm]	rhythm
I <u>stayed</u> there about a month	-I stay there	3	['steɪdɜ:]	consonant elision
there are different rooms the <u>Central</u> room the North Library	-the ... room -the centre room	4	['sɛntɹə]	/e/ → [ɔ]
<u>he</u> was very very kind with me and very nice	-who was very	5	[hɪ]	/i:/ → [ɪ]
<u>well</u> <u>honestly</u> speaking he's the only	-well ... speaking -... speaking	4	[we'hɒnəsli]	consonant epenthesis
<u>well</u> the other English people	-where the other	2	[weðə]	consonant elision
<u>some</u> <u>help</u> <u>they</u> are <u>ready</u> to help you	-...ready to -...to	4	['sʌmheɪ'reɪ'di]	rhythm
for me it was <u>as</u> if I had never	-was... if I	2	[ɛz]	/ə/ → [ɛ]
but later on <u>you</u> get used to the English	-on I get -on they get -on it gets -on ... get	7	[ɪ]	/u:/ → [ɪ]
and I worked <u>there</u> two years	-worked ... two -worked then two	7	[ðɜ:]	/eə/ → [ɛ:]
<u>well</u> I realised that I couldn't stay any longer	-when I realised -then when I realised	6	[weɪ]	/l/ → [ɹ]
<u>all</u> day long and in fact it is <u>even</u> all the week long	-it is ... all the	3	['ɛvən]	/i:/ → [ɛ]

SPEAKER No.10 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I find it <u>rather I mean not dull</u> I <u>wouldn't say dull</u>	-it rather...not dull I wouldn't say dull -it...I wouldn't say... -it well not dull I wouldn't say dull -it rather I wouldn't say tough -it rather I mean not dull I wouldn't say... -it dull not dull -it rather not entirely I wouldn't say -it rather dull no not dull but	10	[.ʔɪðə 'ʔeɪmɪn 'nɔ? 'dʒʌl?ɛ 'wʊdnt se 'dʒʌl]	rhythm
<u>but boring in the sense that you</u> <u>have to sit behind a desk</u>	-but I ... you -but boring to...you -but boring all the same you -but ... you -but ... says that you	8	['bɔ:ɪŋ?ɪŋ'se:s 'dʒʌt]	rhythm



SPEAKER No.11

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
when I <u>arrived</u> in Glasgow it was quite late in the afternoon	-I...in Glasgow -I was in Glasgow	3	['rɪvɪd]	syllable elision
so I <u>wanted</u> to have a coat on or something	-so I want to -so I went to	4	['wɒntɪt]	/v/ → [e]
I <u>opened</u> the suitcase and I was really amazed when I noticed that	-I open the	3	['əʊpəndə]	/ð/ → [d]
it <u>wasn't</u> my case	-it was my	3	[wɒt]	consonant elision
I had a <u>bad start</u>	-I had best heart -I had ... -I had best start -I had a best part	5	[ə'beds'tɹt]	resyllabification
he said <u>well</u> you could spend the night in Glasgow and then	-said that I could -said that you could	3	[we.jʊ]	consonant elision
and I <u>spent</u> the night there	-I spend the	2	[spɛnt]	/t/ → [t]
so I <u>thanked</u> the man he was really nice	-I thank the -I said to the -I said the	4	['θɛkt]	/t/ → [d]
and I <u>phoned</u> him many times later on	-I phone him	3	['fəʊndɪm]	resyllabification
<u>well</u> I went to <u>Cumbernauld</u>	-what I want to comment on -well I went to ... -well I went to Campbell Lord -when I went to ... -when ... - ...	9	['wɛlɪkwɛnt:ɪ: 'kʌm'bɜ:nɔ:lɪd]	rhythm

SPEAKER No.11 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>this is where</u> I was supposed to teach	-this was when I was -it was about I was	3	['disiweʝ]	rhythm
I arrived at the school <u>Saint Maurice's</u> High School	-school ... high -school Saint Moses high -school Saint ... high -school Saint Thomas's high -school Saint Morrisons high	10	['eɪt'məʝi:si:s]	/v/ → [əʝ]

SPEAKER No.12

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
the pupils had a French teacher and we were there <u>only</u>	-teacher and there early -teacher...	3	[ʔwiweʝe'əpli]	consonant elision
English friends as well as English speaking people <u>means</u> Indians and Pakistanis	-people all these Indians -people like Indians -people with Indians -people ... Indians -people as well as Indians	9	[mɪns]	wrong choice of lexical item
which was arranged by the Algerian Ministry in Manchester	-with ... it was -with ... was	10	[wɪʔ]	/tʃ/ → [ʔ]
it was a course mainly for Algerian assistants of English in Great Britain	-was of course mainly -was ... mainly	4	[ʔ'kɔs]	/ɔ:/ → [ʔ]

SPEAKER No.13

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I attended the <u>Engineering</u> <u>Mechanical National</u> Institute	-the... and national -the...mechanical national -the Algerian mechanical national -the in general and mechanical national -mechanical... institute	9	[ʔʔɔdʒi 'ni : jɔme 'kɔnekɔl nɔʃənɔl]	rhythm
and the two remaining years I <u>stayed</u> without doing anything	-years....without -years I study without	3	[ʔɔstɛd]	/eɪ/ → [ɛ]
I <u>mean</u> to discuss with them in English	-and...to discuss -and then to discuss -and I ...discuss	5	[ 'ʔɔmɛ]	rhythm
I <u>mean</u> in comparative literature or translation because I have been always interested in that <u>fields</u>	-I'm in comparative -either in comparative -in that field	5	[ 'ʔɔmɛ]	rhythm
I'm practising theatre <u>actually</u> in Algeria	-theatre...in Algeria	3	acceptable pronunciation [ 'ʔɔktʃəli]	incorrect syntac- tic construction /æ/ → [ɑ]
in <u>order</u> to have a scholarship	-... have a	3	[ɪn 'ɔdɔ]	/ɔ:/ → [ʊ]
in <u>order</u> to have a scholarship	-have ... scholarship	2	[ʊ]	/ə/ → [ʊ]

SPEAKER No.14

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
it was not <u>really</u> difficult to do	-not very difficult -not ... difficult	3	['rɪli]	/rɪ/ → [ɪ]
miss Hakes from Algeria would you come <u>here</u> to the information desk	-come ... to the	6	[hi]	/rɪ/ → [ɪ]
I was really <u>surprised</u> <u>what</u> happened	-surprised at what	2	[sə'pɹæzəʃdʒwət]	vowel epenthesis
when I came to <u>her</u> <u>she</u> said	-to where she sat -to where she said	3	[tʰɔtʰ'ʃi:sɛdʰ]	rhythm
<u>just</u> to stay there and wait for me	-so stay -to stay -...stay	4	[dʒɛstɛ]	consonant elision
because it's a bit far from his house to the airport	-or be it's a -... it's a	3	['bi:kɛz]	lexical-stress
we were <u>really</u> tired my mother even slept	-but really -I really -I felt really -... really	5	[wɛʔ]	syllable elision
in the morning I went to the post-office and <u>sent</u> a telegram	-and sent air mail -and tell them how much	3	[sɛʔ'tɛlɛgɹɪm]	rhythm
but <u>in</u> a <u>whole</u> it was not really bad	-but ... it -but in ... it -but in the end it	6	['ɪnɔʃəl]	rhythm
with my mother because she likes <u>really</u> England	-likes ... England -likes ... in England -likes being in England	5	['rɪli]	/rɪ/ → [ɪ]

SPEAKER No.14 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and <u>she</u> liked this very much	-we liked this -and we liked this -... we like this -... like this	7	[ɛndi'leɪgd'is]	consonant elision

SPEAKER No.15

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
because <u>there</u> was no direct flight to England	-because it was -because I was	3	[de]	/ə/ → [ɛ]
and I think <u>if</u> I'm not wrong it was wednesday the thirteenth	-think ... it was	2	[ʔifdɪmɔq'tʃɪθɪŋ]	resyllabification
and of course I was <u>expecting</u> it the answer was no	-was expecting that the -was expecting...the -was expected...the -was expected that the	10	[ɛks'pektɪt]	syllable elision
and <u>when</u> I arrived	-and while I	3	[wɛn]	/e/ → [ɛ]
arrived at the university and I <u>must</u> say it	-must say ...	4	[seɪt]	syllable elision
and she did <u>the</u> job for me	-did a job	3	[dɪd'ə]	/ð/ → [d]

SPEAKER No.16

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
it was a <u>trip</u> for my studies	-a ... my -a first my	2	['tʃɪfʊ:]	consonant elision
the <u>airport</u> of Bs-senia by the eleven of July	-at the ...the Bs-senia -leave the air of Bs-senia	3	[di'ʔɛpɔtʃ]	/ɛə/ → [ɛ]
and we stopped for an <u>hour</u> in Paris-for ... in Paris		3	['fɛnəʊə]	consonant epenthesis
we took <u>off</u> <u>again</u> from Paris to London Heathrow	-took off ... from -took ... from	3	['ɔf'gen]	syllable elision
<u>where</u> we arrived by three or four o'clock	-when we -... we	7	[wɛ]	/ɛə/ → [ɛ]
<u>after</u> going through the police and the customs	- ... going -they are going -we are going -then we were going -there going -the going	9	[ʔɛf'ʃtʃ:]	lexical-stress
we <u>arrived</u> there by five o'clock	-we got there -we went there -we were there	8	[wɛɪv]	syllable elision
we <u>stayed</u> we didn't go out this day-we ... we didn't		3	['wɪ:ste]	rhythm
then the next morning at nine o'clock we must be at the <u>school</u>	-at the school gate -at the ...	5	['ʔɛtʃɛskɔl]	rhythm
he gave us books and all the time-table of the <u>month</u>	-of the ...	3	[mɔ:ʃ]	/ʌ/ → [ɔ:]
they were very kind and the courses were very <u>agreeable</u>	-very ...	4	['ɛgʁeɪbəl]	lexical-stress

SPEAKER No.16 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
in the afternoon generally we had <u>laboratory classes</u>	-had ... classes -had ...	3	['lɒbɔrɪ'tʃeɪ]	lexical-stress
we went to Cambridge, <u>Oxford</u> , Stratford-upon-Avon	-Cambridge...Stratford	2	['ʔeks'fɔ:d]	lexical-stress
we went also to the <u>southern</u> coast	-to the Thelby coast -to the ... coast	4	['təʊðən]	/s/ → [ʃ]
everybody told us <u>right the</u> English are very cold person	-us that the English -us what the English -us ... English	6	[weɪt]	/r/ → [w]
everybody told us right the English are <u>very cold</u> person	-English called...person -English ... person	3	[ðve'jɪ:'kɔ:lɔ]	lexical-stress
they took us to some <u>discotheques</u> where we could meet	-some ... where	3	[dɪs'kɔʃeks]	lexical-stress
<u>young</u> English persons and so on	-some English -... English	3	[jʌŋ]	/ʌ/ → [ɜ]
<u>the first time you arrive to</u> <u>London</u> or to England you find that	-time we arrived to London or -time we went to London or -time you ride to London or -time you went to London or -time you go ... or -time you ... or	7	[ʃɪ'fɪstɪm'ɪv'ɪv'ɪ: lɒndən]	syllable elision
<u>slang</u> and Cockney and so on	-... in Cockney -London Cockney -... and Cockney -language Cockney	6	[sɒ'leɪŋən]	vowel epenthesis

SPEAKER No.16 (cont.'d)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I think it's because they <u>spea</u> <u>thei</u> r	-speak they are -speak ...	4	[dɛ:]	/ɛə/ → [e:]
here as we were taught by teachers they know that	-... as we -you know as we	6	[ʔiə]	/h/ → [ʔ]
so <u>the</u> y pronounce everything	-so ... pronounce -so that pronounce	3	[dɛ]	/eɪ/ → [ɛ]
we <u>were</u> living in another boarding house	-we are living	2	[wɪʒs:]	consonant elision
and <u>most</u> of the persons <u>who were</u> living there	-persons...were living -persons...living	3	[ʔɪwɛ:]	/h/ → [ʔ]
<u>they were</u> English American coming from Australia Iran also	-there were	4	[dɛ]	/eɪ/ → [e]



UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I'm <u>going</u> to tell you about my staying in England	-I want to tell Algiers I ...	7	[ʔə'mgɔʔəŋ]	resyllabification
it was from Algiers <u>airport</u>	-Algiers I approached -Algiers port	7	[ʔəɪ'pɔ:ɪ]	lexical-stress
because <u>we</u> suppose to learn English before going to Manchester University	-because ... supposed -because I supposed	4	[ʔɪ]	/w/ → [ʔɪ]
I spent around six months in <u>Overseas</u> School of English	-in this school -in ... school -in others school -in the official school	6	[ 'ʔɔvəsɪs]	/əʊ/ → [ʔ]
I start in Manchester University it was in the <u>Chemistry</u> Department	-in the Linguistic Dept. -in the Community Dept.	4	[kɪ'mɪ:stɪ]	lexical-stress
it was really hard for me during the first <u>two</u> months	-first few months	3	[tʊ]	/u:/ → [ʊ]
we used to go to the <u>lectures</u> with the only English	-the ... the only -the lessons with the only	3	[ 'lɛkʃəz]	/tʃ/ → [ʃ]
then I had to leave the university for <u>one</u> month	-for ...	3	[ 'wʊntɪns]	rhythm
I went to high school where it was in <u>Salford</u>	-in Suffolk -in Stafford -in Southwark -in Southend	7	[ 'sɑ:fəd]	/ɒ/ → [ɑ:]
I had to stay with her during <u>all</u> the week	-her during...the week -her...the week	3	[dɪ'ʔɪɡɔ:l]	/əʊ/ → [ɪ]

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF UNINTELLIGIBILITY BREAKDOWN
then <u>during</u> the third year	-then ...the third -then indeed the third -then again the third -then I did the third -then into the third	9	['dʏ:ɹɪn]	/ue/ → [ʏ]
I <u>can</u> remeber that	-I can't remember	4	[kã]	/e/ → [ã]
I received a letter from my <u>tutor</u> telling me that	-my teacher telling	3	['tʃɪtə]	/u:/ → [ɪ]
I was <u>thrown</u> out of the university	-was soon out -was ... out	4	[sɔ:n]	/θ/ → [s]
I couldn't believe it that day	-it that they -it but I -it ... -it but they	5	['æbt'ðe:]	/ð/ → [d]

SPEAKER No.18

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF UNINTELLIGIBILITY BREAKDOWN
<u>that day</u> the port was overcrowded	-but they the port -but the port	3	['ɑ:de:]	rhythm
especially <u>students who were with me</u> in the university	-students who would meet in the university -students I meet in the university -students I would meet in the university -students who...in the university	5	[hə'wɔ:'wi:d'mi]	rhythm
I <u>made</u> other new friends especially two new girls	-made all the new -made many new	3	['ɜ:de]	/ʌ/ → [ɜ:]
or I <u>made</u> new friends	-or I meet new	3	[me:d]	/eɪ/ → [e:]
so <u>here</u> I took the train	-so ... I took	5	[hi?] acceptable pronunciation	/ɪə/ → [i]
I'd never seen a train before <u>as</u> quicker <u>as</u> French trains	-as quick a French	4	['bktɜ:]	incorrect syntactic construction
<u>because</u> before going from the harbour of Oran	-... before going	4	['bɪfɜ:]	syllable elision
<u>because</u> before going from the harbour of Oran	-because... going	3		lexical-stress

SPEAKER No.19

UNIT WITH THIS UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
well I decided to go in England <u>just to visit that's all</u>	-England ... that's	2	[ 'dʒɛts tʃvɛzɛtʃ ]	rhythm
I flew from Tafraoui airport which <u>is situated just near Oran</u>	-is...near to Oran -is....just near Oran -is....near Oran -is situated...in Oran	6	[ sɪtʃy 'ʔɛtʃɛdʒɪst nɪ:ʃ ]	lexical-stress
well I stayed there for maybe half a month	-where I -when I	3	[ wɛʔ ]	/l/ → [ʔ]
I <u>didn't</u> have talks with English people	-I'd have -I did have	3	[ dʒɪt ]	syllable elision
I don't say I was disappointed <u>no next summer</u> I'm planning to go with my wife	-disappointed now -.... I'm -next time I'm	3	[ nʃə ]	/su/ → [ʃə]
because she's speaking English too she is a teacher <u>with me</u>	-teacher ... -teacher like ...	4	[ nɛk 'sɪtʃɪt ]	/ʌ/ → [ʃ]
and I'm sure that we'll have a <u>pleasant</u> time there	-have pleasing time -have ... time	3	[ 'wɪdʒɪ ]	rhythm
because <u>now</u> I know first how to take the underground	-have ... time -because...I	5	[ 'plezən ]	/e/ → [e]
the problem is that <u>as I didn't</u> know a lot of places	-because...I -that...know -that now I know	3	[ nɛʔ ]	/su/ → [ʃ]
I <u>was</u> <u>just</u> walking and walking going maybe to Oxford	-I would...walking -our ... walking	5	[ 'ʔɛzʃ 'dʒɛtʃnɔ ]	consonant elision
next <u>summer</u> I'll go there with my wife	-next time I'll	3	[ 'sɪtʃɪt ]	rhythm /ʌ/ → [ʃ]

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
about <u>my</u> holidays or my travels to England and elsewhere	-holidays and my	4	[ʔʔ]	/ɔ:/ → [ʔ]
over here in <u>Algeria</u>	-here ... Algeria -here and in Algeria	3	[ʔʔ]	/n/ → [ʔ]
I <u>mean</u> in England if you don't mind	-... in England	4	['ʔm̩ɪ]	rhythm
I went there with a kind of special purpose if I <u>may</u> say actually in <u>Chelmsley Hospital</u>	-purpose ... -purpose for me you might say	3	[ɪfəme'seʔ]	rhythm
and I'd like to <u>just</u> draw a comparison between both camps	-in ... hospital	5	['tʃslɛ]	consonant elision
and I'd like to <u>just</u> draw a comparison between both camps	-I...like to...draw	7	[æʔ'leʔktʃu:'dʒes]	/ʌ/ → [ʔ]
we take the <u>advantage</u> to be in England to visit some interesting places	-both countries -both ...	3	[kʊps]	/z/ → [ʔ]
such as Blackpool and <u>Rhyll</u> in the Wales	-the ... in England	4	['vɛtɪstʊbɪ]	syllable elision
because they used to tell me that the English are <u>cold</u>	-and ... in -are cruel -are ...	2	[.jɛt]	/ɪ/ → [tɛ]
I don't <u>share</u> their ideas anyway	-don't show that there is anyway -don't...what it is anyway	4	[kʰʊldʔ]	/əʊ/ → [ʔʊ]
this is <u>very</u> important I think	-don't show that there is anyway -is really important	3	['fɜ:'dɜ:'ʔʊ'dɪz]	rhythm
		3	['vɪʔɪ]	/e/ → [t]

SPEAKER No.20 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
they are not really cold they are <u>maybe</u> reserved	-they...may be reserved -they....reserved	4	[ʔə'meɛ'bi:]	rhythm
I mean the <u>contact</u> it was not a very difficult one	-mean ... was	4	[dɛkɛ'tɪkt]	lexical-stress

SPEAKER No.21

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
I'd like to talk about my first experience <u>abroad</u>	-experience about -experience at	2	[ʔə'bɹɔʊd]	/ɔ:/ → [əʊ]
I always dreamt of visiting Great Britain	-I always...of -I always tried of -I always thought of	4	[dʒemt]	/dr/ → [dʒ]
<u>last summer</u> a summer course was organised by the University of Lancaster	-that summer	3	[lɛt'sɜmə]	consonant elision
and the <u>University</u> of Oran	-I went to the university -at the university	3	[ 'ʔɛdi]	consonant elision
and <u>some fellow</u> teachers	-and saw fellow teachers -and ...teachers	4	[sɔ'felo]	/ə/-/ʌ/ → [ɔ]
and it was <u>calm</u>	-was ...	3	[kɔlm]	consonant epenthesis
actually I <u>liked</u> the English cooking	-I like the	3	[lɛʔkɔt]	/t/ → [t]

SPEAKER No.22

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
then I took the boat and we made <u>the</u> cruise	-made a cruise -made cruise	6	[mæʃd̥·ə]	/ð/ → [d̥]
she's Egyptian and she <u>was</u> studying in France	-she is studying	2	[wɛz]	/ə/ → [ɛ]
and we <u>wanted</u> to have	-we want to	4	['wɔ̃tət]	/d/ → [t]
to visit <u>London</u> for a few hours before going to Weston-super-Mare	-to visit...for	3	['lɪd̥əfɔ̃]	consonant elision
and <u>old</u> houses were situated in a kind of hill	-and all the houses	9	['ʔɔ:lɪd̥ə]	/əu/ → [ɔ:]
and the more you <u>climb</u> the hill the more luxurious the houses are	-you climbed the	7	[klaɪm̥·ə]	/ð/ → [d̥]
it's quite different from <u>French</u> <u>food</u>	-from France -from France for the	3	['fʁɑ̃s'fud̥]	/tʃ/ → [s]
the recipes very different completely different of <u>course</u>	-different ...	6	['di:fjɔ̃təfkõs]	rhythm
they are <u>reserved</u> <u>but</u>	-are re... but -are ... -are so ... -are ... but -are re...	6	['ʁɛzə:v]	lexical-stress

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
well I <u>have been</u> in England in this precedent <u>summer holidays</u>	-well I did in England -well I ... in England -well I lived here in England	8	['ʔ:neɪbɪdi]	rhythm
well I <u>have been</u> in England in <u>this precedent summer holidays</u>	-England these present summer -England this present summer -England this place summer	10	[ɪndi:s'pɪesɪdənt]	wrong choice of lexical items
at the beginning we didn't <u>hope</u> to pass very good holidays	-didn't have to	7	[neɪpɪ]	/əʊ/ → [ö]
well the <u>first day</u>	-the thursday	3	['θɜ:z'deɪ]	/f/ → [θ]
we didn't find <u>spare rooms</u> neither in the hotels nor in the hostels	-find sparrows neither	3	['spɛɹjəʊmz]	rhythm
we started to enjoy our <u>holidays</u> because	-our ... because	4	['hɪdeɪz]	syllable elision
first we drew a line on <u>I would say</u>	-on ... -on how you say	4	[ʔəʊl'se:]	/d/ → [l]
well it will be <u>too long</u>	-be two months -be too ...	3	[['tu:lɔ:]]	rhythm
the most exciting <u>moments</u> we have passed in England were at the hostel	-exciting places we ...	4	['mɛmənts]	/əʊ/ → [ɛ]
and because <u>I regretted</u> also the friends I have made	-because ... also -because of ... also -because I ... also -because I read also	10	[['rɪ:tɪd]]	syllable elision
as we <u>passed</u> some exciting moments in this hostel	-we pass some	2	['pɛsət]	vowel epenthesis



SPEAKER No.23 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
we were <u>accompanied</u> by some Italian girlfriends	-were ... by	3	[ʔd̪kə'pənʒed]	lexical-stress
we <u>have booked</u> bus tickets at the <u>beginning</u> of our arriving to England	-we have both bus -we had bought bus -we bought bus -we had bought bus	5	[hɛv'bu:kɪ]	/v/ → [v]

SPEAKER No.24

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
well I would <u>like</u> to tell you about a trip	-would love to	4	[lɪkɪ]	/aɪ/ → [ɪ]
life was I <u>mean</u> quite different from the one we have in Algeria	-was ... quite	5	[ 'ʔmɪn]	rhythm
the citizens there are pushed by some <u>kind</u> of disorder of the brain	-some ... of	4	[kɪnd]	/aɪ/ → [ɪ]
that <u>will</u> not allow them to be at rest	-that we not -that may not	6	[wɪnɔt]	consonant elision
that <u>will</u> not allow them to be at <u>rest</u>	-be addressed -be ...	4	[ 'ʔɛt.rɛst]	rhythm
<u>they're</u> always hurrying	-... hurrying	7	[ʔe]	/ð/ → [ʔ]

SPEAKER No.24 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
or <u>cross</u> the streets I mean at full speed	-across the	6	[ʔəkʝos]	
it has got many <u>great stores</u> shops and high buildings and so on	-great stalls shops -great tall shops	3	[stɔ:ʝɔ]	/ɔ:/ → [ɔ:ʝ]
there is another place <u>which is</u> called Sacré-cœur	-place...Sacré-cœur	3	['pleiʝwətʃɪkʝɔ]	rhythm
a <u>maze</u> you know a <u>lot of</u> streets	-maze ... streets	3	['meiʝjəmʝʔelʝjɔv'st.ɔ:ʝɔ]	rhythm
I also walked beside this <u>famous</u> river Seine	-this ... river	2	['fe:məs]	/f/ → [f]
I saw also <u>many</u> people there were fishing	-I saw so many -I saw ... many	4	['ʔel'sj:]	lexical-stress
<u>on</u> the bank of the river	-and the	6	[ʔən]	/ɒ/ → [ə]
I went to <u>so</u> many places and I made some friends	-to some many -to see many	4	[sɔ]	/eə/ → [ɔ]
they were very <u>kind</u> and very helpful	-very calm and	3	[kɔdʝ]	/aɪ/ → [ɔ]
I <u>spent</u> there	-I spend there	3	[spɛnt]	/t/ → [t]

APPENDIX K

PHONETIC ANALYSIS OF THE SPEAKERS' ERRORS IN READING

SPEAKER No.1

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>and then</u> there was that miserable business of the vase	-and there there	9	[ðɛ:ðɛɹ]	consonant elision
'don't worry' she <u>had said</u>	-she ... -she hesitated	2	[ 'ʃi: 'hɛdɜ:sɛɪ ]	rhythm
her old <u>leisurely tolerance</u> seemed to have vanished	-leisurely ... seemed -leisurely presence seemed	8	[ 'tɛəɹə 'ʃɛns ]	lexical-stress

SPEAKER No.2

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>some</u> of the woods where he had rambled as a boy	-so had the ... -so at the ... -so in the ... -so of the ...	5	[ 'sɔʔɔv ]	consonant elision
<u>some</u> of the woods where he had rambled as a boy	-had brambled as -had scrambled as -had ... as -had wondered as	6	[ 'rɛʔbɛld ]	/s/ → [ʔ]
like <u>the way</u> his aunt kept the sugar in a different place	-like ... his	2	[ 'dɔ'wɛ ]	/eɪ/ → [ɛ]

SPEAKER No.2 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and then there was that miserable business of the vase	-business ... -business of ...	5	[ɔfðə'veɪs]	/ɑ:/ → [eɪ]
<u>accidents</u> will happen	-accident will	3	['æksɪdəntwɪl]	consonant elision
as she would once <u>have</u> done	-once had done	3	[hæv]	/v/ → [v]
her old <u>leisurely</u> tolerance	-her own leisurely tolerance seemed to	9	['ɜːləɪsɪəli'tɔləreɪns]	consonant cluster elision
	-her own leisurely times seemed to			
	-her own level of tolerance seems to			
	-her ... leisurely tolerance seems to			
	-her own initial ...seems to			
	-her own usual tolerance seems to			
and suddenly he realised that he had <u>grown</u> up	-had grown ... -had ...	3	['g-rɒntʌp]	/ʌ/ → [ʔ]

SPEAKER No.3

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
some of the woods where he had <u>rambled</u> as a boy	-had ... as	5	['jʃbæld]	/æ/ → [ɛ]
that she was <u>genuinely</u> upset	-was ... upset -was genuinely upset	5	['dʒɛnjʊəsli]	/n/ → [a]
her old <u>leisurely</u> tolerance <u>seemed</u> to have vanished	-old ... seemed -old...tolerance seemed -old visually...seemed -old visually two...seemed	7	['leʒɔli'tɔle.jʃs]	/e/ → [ɛ]

SPEAKER No.4

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>he</u> had been home for a year now	-...had -they had	2	[he]	/i:/ → [e]
all his <u>childhood</u> friends had moved away	-all he ...friends -all his...friends	3	[ni'tʃɪlhɔd]	consonant elision
some of the woods where he had <u>rambled</u> as a boy	-had run as -had ... as	6	['rʃbəd]	consonant elision
and then there was that <u>miserable</u> presence of the vase	-miserable presence of -miserable experience of	3	['bɪznəs]	/ɪ/ → [ɔ]
and then there was that <u>miserable</u> business of the vase	-of the ... -of the face	4	[veɪʒ]	/ɑ:/ → [eɪ]
that she was <u>genuinely</u> upset	-was generally upset	3	['dʒɛnjuəli]	/nɪ/ → [n]
that she was <u>genuinely</u> <u>upset</u>	-was genuinely absent	2	['ju:psət]	lexical-stress

SPEAKER No.5

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
but <u>he still couldn't</u> quite settle down	-but his teeth couldn't quite settle down -but he is...with it quiet settled down -but he still hadn't quite settled down	4	[hɪ'sti:l kʊdnt̩ 'kwɪt̩sɛtl̩]	rhythm
like the way his aunt kept <u>the</u> sugar in a different place	-kept ... sugar -kept his sugar	2	[dʊ]	/ə/ → [ʊ]
and then there was that miserable <u>business</u> of the vase	-business of the ... -business about the vase -business with the vase	4	[ɔvɔs'veɪz]	/ə/ → [ɔ] /ɑ:/ → [eɪ]
and suddenly <u>he</u> realised that he had grown up	-suddenly she realised	2	[hɛ]	/h/ → [ɦ]

SPEAKER No.6

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
he tried not to <u>irritate</u> the poor woman	-not to ... the -not to rotate the	2	[ 'ɪrɪteɪt̩]	syllable elision
he tried not to irritate the poor <u>woman</u>	-poor man -poor men	8	[mɛn]	syllable elision
her old <u>leisurely tolerance</u> seemed to have vanished	-her...tolerance seemed -her old...seemed -here one...seemed -her old...tolerance seemed	4	[ 'ʔɔ:lɪɔ:ly:st̩l̩ 'tɔ:l̩e:rens]	rhythm

SPEAKER No.7

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<p>he had been home for a year now but he <u>still</u> couldn't quite settle down</p>	<p>-... had -but I still couldn't -but is still couldn't -but this year couldn't -but ... couldn't</p>	<p>8 6</p>	<p>[hɛd] [ɪs'tɪkɒdənt]</p>	<p>syllable elision consonant elision</p>
<p>things <u>had changed</u> and perhaps he <u>had</u> changed too</p>	<p>-things are changing perhaps you have changed too -things are changing and perhaps...had changed too -things are changing perhaps here too</p>	<p>5</p>	<p>[hɛ'tʃɛ:ʒdʒə'ʃɪpəhɪd]</p>	<p>rhythm</p>
<p>some of the <u>woods</u> where he had rambled as a boy</p>	<p>-some of them where -some of the...where -some...where</p>	<p>4</p>	<p>['sɒmədʒwədz]</p>	<p>rhythm</p>
<p>some of the <u>woods</u> where he had rambled as a boy</p>	<p>-had trampled as -had trembled as -had...as -had known as</p>	<p>8</p>	<p>[hɛ'dʒɪbəl]</p>	<p>resyllabification</p>
<p>and even little things <u>disturbed</u> him</p>	<p>-things disturb him -things that ... him -in ... different</p>	<p>4</p>	<p>['dɪstʌɪp]</p>	<p>lexical-stress</p>
<p>like the way his aunt kept the sugar in a different place</p>	<p>-business with the -business about the -the race -the ...</p>	<p>2</p>	<p>[ɪ'dɪfərə]</p>	<p>syllable elision</p>
<p>and then there was that miserable business of the vase</p>	<p>-business with the -business about the -the race -the ...</p>	<p>2</p>	<p>[vɑz]</p>	<p>consonant elision</p>
<p>and then there was that miserable business of the <u>vase</u></p>	<p>-the race -the ...</p>	<p>2</p>	<p>[veɪz]</p>	<p>/ɑ:/ → [ɛ]</p>

SPEAKER No.7 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED): WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
but <u>he</u> could tell as she said it	-but you could	2	[ʏ]	/i:/ → [ʏ]
but he could tell <u>as</u> she said it	-tell ... she	4	[ʔɛ]	consonant elision
that she was <u>genuinely</u> upset	-was very upset -was ... upset -was duly upset -was jeerly upset -was really upset	8	['dʒɛʔɪli]	syllable elision
but <u>it</u> was no use	-but ... was	3	[bəʔwɪz]	syllable elision

SPEAKER No.8

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>but</u> he still couldn't quite settle down	-and he	9	[ʔɛhɪ]	lexical item substitution /ə/ → [ɛ]
things had changed <u>and</u> perhaps he had changed too	-changed ... perhaps	3	[ʔɛ]	/a:/ → [ɛ]
and then there was that miserable business of the <u>vase</u>	-of the face	6	[veɪ]	lexical-stress /e/ → [ɛ]
that she was <u>genuinely</u> upset	-genuinely absent	2	['ʔɛpsəʔ]	
her old <u>leisurely</u> tolerance seemed to have vanished	-her old...tolerance -her old visually tolerance -her...visually tolerance	5	['ʔo:ld'leɪʒələ]	
and suddenly he realised that he had <u>grown</u> up	-had ... -had grown older	8	['g.rəʊn'ʔɪp]	consonant epenthesis



SPEAKER No.9

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
some of the woods where he had <u>rambled</u> as a boy	-had trembled as -had trampled as	4	['dʒʌmbəld]	resyllabification
and <u>even</u> little things disturbed him	-and...little things disturbed -and...thing disturbed -and every little things disturbed -and if only a things had disturbed -and other little things disturbed	5	['ʔeʋə'liʔtəl]	/i:/ → [e]
and then there was that miserable business of the <u>vase</u> that she was <u>genuinely</u> upset	-of the face -of the ... -was generally upset	4	[vejs]	/a:/ → [e]
		6	['dʒɛnʝəli]	consonant elision

SPEAKER No.10

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
like <u>the way</u> his aunt kept the sugar in a different place	-like the ... his -like where his	3	[ðə'weɪ]	/ei/ → [e]
and then there was that miserable business of the <u>vase</u>	-of the face -of the plate -of the ...	7	[veɪz]	/a:/ → [eɪ]
don't worry <u>she</u> had said	-... had	2	[ 'ʃɪ: 'ep.ɪstɪ]	/su/ → [ʃ]
that she was <u>genuinely</u> upset	-was duly upset -was generally upset	2	[ 'dʒɛn.j(ə)lɪ]	consonant elision
her <u>old</u> leisurely tolerance seemed to have vanished	-her ...ordinary tolerance -her....old tolerance	3	[ 'ʔɔ:lɪ'leɪsɪ]	/l/ → [ɹ]
<u>and</u> suddenly he realised that he had grown up	-as suddenly	4	[ʔɛ]	/ə/ → [ɛ]

SPEAKER No.11

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and even little things <u>disturbed</u> him	-things disturb him	4	[dɪs'tɜ:ɪd]	consonant elision
and then there was <u>that</u> <u>miserable</u> business of the vase	-was the pleasurable business -was the terrible business	2	[dæt'mɛzəbəl]	/ɪ/ → [ɛ]
and then there was that miserable business of the <u>vase</u>	-of the ...	5	[veɪs]	/ɑ:/ → [eɪ]
her old leisurely <u>tolerance</u> <u>seemed</u> to have vanished	-tolerance had seemed	4	[ 'tɒlə.rənsɪ.məd]	vowel epenthesis
<u>and</u> suddenly he realised that he had <u>grown</u> up	-when suddenly -then suddenly	2	[ʔ]	/ə/ → [ɛ]
and suddenly <u>he</u> realised that he had <u>grown</u> up	-he had realised	2	[hɪ'ɪ:ɹɪ:lɪzɪd]	vowel epenthesis

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
he had been <u>home</u> for a year now	-been ... for	2	[ho:m]	/əu/ → [o:]
<u>things</u> had <u>changed</u> and <u>perhaps</u> he had	-since he had changed he still could have changed too -since ...have changed too -I think he had changed and he thought he had changed too	3	['θi:nsheɪtʃɛdʒ'ɛ pɜ:'hɛpsʰi:heɪ]	rhythm
some of the <u>woods</u> where he had <u>rambled</u> as a boy	-of them ... as -of the ... as -of the woods where he had wondered as -of the woods where he had roamed as	4	['wɜ:dzwe:rhɪheɪ'dʒembəld]	/z/ → [e]
<u>like</u> the way his aunt kept the <u>sugar</u> in a different place	-like...his aunt kept the sugar in a -at the ... in a -and the way his fishing tackle was in a	3	['læŋkɔwe:hi:zɪkpeɪtʃe 'ʃʊgɜ]	rhythm
and then there was that miserable business of the <u>vase</u> that she was <u>genuinely</u> upset	-of the ... -was ... upset -was dearly upset	3	[veɪʒ]	/ɑ:/ → [eɪ]
her old <u>leisurely</u> <u>tolerance</u> <u>seemed</u> to have vanished	-leisurely...seemed	2	['dʒemjəli] ['tɔlərəns]	consonant elision /ə/ → [ɜ]

SPEAKER No.13

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and then there was that miserable business of the <u>vase</u>	-of the face	9	[veɪz]	/ɑ:/ → [eɪ]
but she could tell <u>as she said it</u>	-tell as he decided -tell ... -tell as she ...	3	[ 'ʔəzɪsɪə'dɪt ]	rhythm

SPEAKER No.14

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>some of the woods</u> where he had rambled as a boy	-so the woods	2	[sʌmɔ:v]	/ə/ → [ʌ]
like the <u>way his aunt kept</u> the sugar in a different place	-the way they kept the sugar -the ways...the sugar -the ways...out sugar -the way...kept the sugar	6	[ 'weɪz 'ʔʌŋt 'keɪpt ]	/ɑ:/ → [ʌʃ]
and then there was <u>that</u> miserable business of the vase	-was the miserable -was ... miserable	10	[ðə]	/æ/ → [ə]
that <u>she</u> was genuinely upset	-that he was -that ... was	2	[ðʌtɪ]	consonant elision
her <u>old</u> leisurely tolerance seemed to have vanished	-her hold leisurely -her own leisurely	2	[ʔə:lɔ:]	/su/ → [ʊ:]

SPEAKER No.15

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
but <u>he still</u> couldn't quite settle down	-...still he couldn't -...he...couldn't -...still couldn't -...he just couldn't -which he...couldn't	10	[beʔi'stɪl]	/t/ → [ʔ]
accidents <u>will</u> happen	-accidents would happen	3	[wəl]	/ɪ/ → [ə]
and <u>suddenly</u> <u>he</u> realised that he had grown up	-and certainly he realised -and suddenly realised	6	['sʌpɪsɪŋɪ]	/ʌ/ → [ʔ]

SPEAKER No.16

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
some of the woods where he had <u>rambled</u> as a boy	-had remembered as -had ... as	2	[ 'ræmbəl ]	/æ/ → [ɛ]
and then there was that miserable business of the <u>vase</u>	-of the ...	3	[veɪz]	/ɑ: / → [eɪ]
her old <u>leisurely</u> <u>tolerance</u> <u>seemed</u> to have vanished	-her own leisurely...seemed -her ... seemed -her only ... seemed -her ordinary tolerance seemed -her...tolerance seemed -her old...seemed -her own leisurely tolerance seemed	9	[ 'ɒlɪsɪəli 'tɔ:ljəns ]	rhythms

SPEAKER No.17

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
some of <u>the woods where</u> he had rambled as a boy	-of the moves he -of the rooms where he -of the routes he -of those who he	7	[dø'wʉ:ðwær]	/u/ → [ʉ:]
some of <u>the woods where</u> he had rambled as a boy	-had remembered as -had ... as	4	['rʉmbold]	/z/ → [d]
and then there was that miserable business of <u>the vase</u>	-of the ... -of the plate	6	[veiz]	/a:/ → [ej]
don't worry <u>she had said</u>	-worry she shouted -worry his aunt said -worry she's...said -worry he aunt said -worry she's outside -worry ... said	8	[ʃizhət'sed]	consonant epenthesis
<u>accidents will happen</u>	-accident will	3	['ʔkaidənt,wɪl]	consonant elision
but he could tell <u>as she said it</u>	-tell...she said it -tell ... it -tell...she said of it -tell she ... it	4	['ʔʉz'si'sed'ʔit]	rhythm
<u>as she would once have done</u>	-but she ... -that she once would have done -and that she would have done -as she said she would have done -but ... -but she...was very hard up -as she would otherwise have done	7	['ʔʉz'si'wʉ:ðwæhəv'ðʉn]	rhythm

SPEAKER No.17 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>her old leisurely tolerance</u> seemed to have vanished	-her old...tolerance had seemed -her old leisure...seemed -her own...tolerance seemed -her...things seemed -her...tolerance seemed -her own leisurely tolerance seemed -her own Victorian values seemed	9	['le3#li:] ['tʃe:rens]	/ə/ → [ʃ] /l/ → [j]

SPEAKER No.18

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>he had been home for a year now</u>	-I have been -I had been	3	[?ebed]	/h/ → [ʔ]
<u>but he still</u> couldn't quite settle down	-I honestly couldn't -but I could still not -and I still couldn't	3	[bɒŋi'stɪ:l]	consonant elision
<u>all his childhood friends</u> have moved away	-... his -in his	10	[?eɪ]	/s:/ → [ɛ]



SPEAKER No.18 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>some</u> of the woods where he had rambled as a boy	-and some of the woods -and the woods -... the woods -from the woods	6	['sʌʒʔqv]	/ʌ/ → [ʒ]
and even little things <u>disturbed him</u>	-things stood there -things disturb him	3	[dɪs'tʌbədɦɪm]	/ɜ:/ → [ʔ]
and <u>even</u> little <u>things</u> disturbed him	-and every little thing disturbed him	2	[evən'liʔəlθɪŋ]	/i:/ → [e]
and then there was that miserable business of the <u>vase</u>	-of the race -of the ...	4	[veɪʒ]	/ɑ:/ → [eɪ]
but <u>he</u> could tell as she said it	-but you could tell -but ... could	4	[ɦ]	/i:/ → [ɦ]
but he could tell as she said <u>it</u>	-said ...	8	[sed]	syllable elision
that <u>she</u> was genuinely upset	-that ... was -that it was	9	[ɪt]	lexical item substitution
that she was <u>genuinely</u> upset	-was generally upset -was ... upset -was ... absent -was ... absurd -was <u>geniously</u> absent -was ...	9	['dʒɪnjesli]	/n/ → [s]
her old <u>leisurely</u> tolerance seemed to have vanished	-her...usually tolerance -her old...tolerance	3	['eɦ'legɦli]	/e/ → [e]
and <u>suddenly</u> he realised that he had grown up	-and sadly he	7	['sɦɦli]	syllable elision

SPEAKER No.18 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and suddenly he realised <u>that</u> he <u>had</u> grown up	-realised they had grown up -realised...had grown up -realised I have grown up	4	[dɛhɪhɛd]	/ə/ → [ɛ]

SPEAKER No.19

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
<u>things</u> had changed and perhaps he had changed too	-thanks changed -thanks had changed	2	[θɛŋs]	/ŋz/ → [s]
and then there was that <u>miserable business</u> of the <u>vase</u>	-of the ... -of that days -of the plates -of the face -of the fees	7	[veɪz]	/ɑ:/ → [eɪ]
<u>don't worry</u> she had said	-the worry she -stop worrying she	2	[dʒʊ?'wɔ:ʃe]	/t/ → [ʔ]
<u>accidents</u> will happen	-accident will	5	['æksɪdɪntswɪl]	consonant elision
that she was <u>genuinely</u> upset	-was generally upset -was ... upset	2	['dʒɛnʃʊəlɪ]	consonant elision
and <u>suddenly</u> he realised that he had grown up	-and sadly he	5	['sʌdɪlɪ]	consonant elision

SPEAKER No.19 (cont'd)

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
her old <u>leisurely</u> tolerance seemed to have vanished	-old leisured tolerance -old leisure tolerance -old leisable tolerance -old level of tolerance -old measure of tolerance -old leisural tolerance	9	['leʒəʊ]	syllable elision

SPEAKER No.20

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and then there was that miserable business of the <u>vase</u>	-of the ... -of the race	4	[veɪʒ]	/ɑ:/ → [eɪ]
her <u>old</u> leisurely tolerance seemed to have vanished	-her own leisurely	2	[ʔɪ]	/əʊ/ → [ʊ]

SPEAKER No.21

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
and even <u>little</u> things disturbed him	-even other things -even with other things	2	['lɪtə'fɪŋgz]	consonant elision
and even little things <u>disturbed</u> him	-things told him -things just drove him -thing ... him -things just told him	5	['dɪstɪʔbɔd]	lexical-stress
like the <u>way his aunt</u> kept the sugar in a different place	-the waitress kept -the way the sugar is kept -the way his mum kept -the ... kept	4	['we:'hɪzɛft]	rhythm
like the way his aunt kept the sugar in a different place	-in different	3	[ɛfɪfərəsɛnt]	syllable elision
and then there was that miserable business of the <u>vase</u>	-of the face -of the ...	3	[veɪs]	/ɑ:/ → [eɪ]
don't worry she <u>had</u> said	-she said	10	['fɪ'seɪd]	syllable elision
that she was <u>genuinely</u> upset	-was really upset -was unusually upset -was ... upset	4	[dʒɪ'nju:əli]	lexical-stress
as she <u>would</u> once have done	-she was...done -she once had done -she was have done	4	[wɔ:ɪd'wʊʒəv]	/ə/ → [ʊ:]
he <u>tried</u> not to irritate the poor woman	-he had tried not	3	[hɪttɪeɪd]	/tr/ → [ttɪ]
her old <u>leisurely</u> tolerance seemed to have vanished	-he ... seemed -here old-fashioned tolerance seemed	3	['heɪʔɪ'le:ʒɪli tɔləʊəns]	rhythm

SPEAKER No.22

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
he had been <u>hose</u> for a year now	-been here for	2	[hɔ̃m]	/əʊ/ → [ɥ]
and <u>even</u> little things disturbed him	-and ... little -and ... the little	2	[ 'i've'li:tel]	consonant elision
and even little things <u>disturbed</u> him	-things disturb him -things...him	5	dɪs'ɜ:b]	consonant elision
like the way his aunt kept the sugar in a different place	-in ... different	3	[ɪ'dɪfərənt]	syllable elision
and then there was that miserable business of the <u>vase</u>	-of the ... -of the face -of the ways	3	[veɪ]	/ɑ:/ → [eɪ]
that she was <u>genuinely</u> upset	-was...upset -was terribly upset -was jealously upset -was seriously upset	10	[ 'dʒɛnʒənlɪ]	/n/ → [s]
and suddenly <u>he</u> realised that he had grown up	-he had realised	4	[hɪ'reɪləɪz]	/r/ → [r]

SPEAKER No.23

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
like the way <u>his aunt kept</u> the sugar in a different place	-way he had to get the sugar -way that his aunt kept the sugar -way his...get the sugar -of the ...	3	['hɪ:z 'ʊnt 'kept]	/ɑ:/ → [ʊ]
and then there was that miserable business of the <u>vase</u>				
but <u>he</u> could tell as she said it	-but you could	3	[hɪ]	/i:/ → [ɪ]
he tried not to <u>irritate</u> the poor woman	-to ... the poor	6	[?əʊ'ɪrɪt]	syllable elision
her old <u>leisurely tolerance</u> seemed to have vanished	-her...seemed -her old...seemed -her old...tolerance seemed -her old elderly tolerance seemed -her own...seemed	7	[?ɪd'leɪʃəli'tɔləjəns]	/əʊ/ → [ʊ] /ə/ → [ʊ] /l/ → [j] and /r/ → [j]
and suddenly <u>he realised</u> that he had grown up	-he had realised	3	[hɪ'ri:ələɪzd]	/r/ → [r]

SPEAKER No.24

UNIT WITH THE UNINTELLIGIBLE (UNDERLINED) WORD/S	INFORMANTS' RESPONSES	No. OF OCCURRENCES	ACTUAL PRONUNCIATION OF UNINTELLIGIBLE WORD/S	LIKELY CAUSE OF INTELLIGIBILITY BREAKDOWN
he had been <u>home</u> for a year now	-been held for -been here for	2	[həʊfɔ:]	consonant elision /eɪ/ → [ɛ:]
like <u>the way</u> his aunt kept the sugar in a different place	-like where his -like ... his -like they way his	3	[ðəweɪ:]	syllable elision /a:/ → [æ]
like the way his aunt kept the sugar in a different place and then there was that miserable business of the <u>vase</u> that she was <u>genuinely</u> upset	-in ... different -of the ... -was ... upset -was only upset	3 4 2	[ɪ'dɪfərənt] [veɪz] ['dʒɪnʒmənt]	syllable elision /e/ → [ɪ] /ə/ → [ʊ]
her old leisurely tolerance seemed to have vanished and suddenly <u>he realised</u> that he had grown up	-her own leisurely -he had realised	2 2	[ʔɪlɪeɪlənt] [hi'reɪzɪzɪd]	/r/ → [r]

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