

PHONOLOGICAL PROBLEMS IN TEACHING FRENCH
TO AMERICAN HIGH SCHOOL STUDENTS

by

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
The Problem	2
Statement of the problem	2
Limitations and delimitations	2
Definitions of Terms Used	3
Review of the Literature	6
II. CONTRASTIVE ANALYSIS OF THE CONSONANTS OF FRENCH AND OF ENGLISH AND OF THEIR DISTRIBUTION . . .	9
Contrastive Consonant Phoneme Inventory . . .	9
Articulation of French Consonants	11
Stops /p,t,d,k/	11
Fricatives /ʃ,ʒ,r,s,z/	13
Lateral /l/	16
Nasal consonants /n,ɲ,m/	16
Semi-vowels /ɥ,w/	18
Summary	19
III. CONTRASTIVE ANALYSIS OF THE VOWELS OF FRENCH AND ENGLISH	20
Manner of Classification of Vowels	20
Phonetic Description of the Vowel Phonemes	
of French and English	22
The twelve French oral vowels	22
The four French nasal vowel phonemes	23

The nine simple vowel phonemes of English	25
The twenty-seven complex syllabic nuclei of English	26
Contrast of French Vowels with Their Near- counterparts among the English Vowel Nuclei	27
French /ɛ, ɔ/	27
French /i, e, u, o/	29
The low vowels /a/ and /ɑ/	32
The rounded front vowels /y, ø, œ/	33
"Mute" or "fleeting" ə	35
The French nasal vowels /ã, õ, ĩ, œ̃/	36
Summary	38
IV. CONTRASTIVE ANALYSIS OF THE SUPRASEGMENTAL	
PHONEMES OF FRENCH AND ENGLISH	39
Contrastive Suprasegmental Phoneme Inventory .	40
The suprasegmental phonemes of English . . .	40
The suprasegmental phonemes of French . . .	40
Close Juncture	41
Breath groups	41
Linking	42
Liaison	43
Elision	45
"Mute" ə	46

CHAPTER	PAGE
Rules for the retention of the "mute" <u>g</u>	46
Stress and Rhythm	48
Terminal Junctures and Pitch	50
Vowel Length	51
Summary	51
V. PHONOLOGY DRILLS	53
Purposes of the Drills	53
Format and Use of the Drills	54
The Drills	55
Stops /p,t,k/	55
Fricative /r/	57
Fricative /ʒ/	59
Lateral /l/	60
Dental /n/	62
Semi-vowel /ʎ/	64
Consonant clusters /ʃw/, /bw/, and /rw/	65
Consonant plus /j/	66
Word-initial consonant clusters /pn/ and /ps/	67
Vowel purity and tension /i,e,o,u/	67
The high vowels /i/, /y/, and /u/	68
Oral/nasal vowel contrasts	70
Contrast of the nasal vowels /ẽ,ã,õ/	71
Summary	72
A BIBLIOGRAPHY OF REFERENCES CITED	73

LIST OF TABLES

TABLE	PAGE
I. Articulatory Features of the Consonant Phonemes of French and English	10
II. Contrast of the French Oral Vowel Phonemes with Their American Near-counterparts	28
III. Simplified Liaison Table	44

LIST OF FIGURES

FIGURE	PAGE
1. French Oral Vowel System	21
2. French Nasal Vowel Contrasts	24

CHAPTER I

INTRODUCTION

Only small children have the ability to master a second language with native accuracy of pronunciation, merely from hearing it spoken by natives. By the time young people enter the period of adolescence, their native language habits have become firmly entrenched. As a result, they unconsciously transfer the sound system of their native language to any second language they attempt to learn (Léon 1966). It is not enough then, if high school students are to acquire near-native pronunciation, merely that they have native speakers as models. In addition, they require a teacher who is aware of the phonological contrasts between their mother tongue and the target language, and who, therefore, can predict the areas subject to interference from the students' native language speech habits and can provide appropriate learning procedures.

A contrastive phonological analysis of two languages reveals which distinctions of the one lack counterparts in the other, or are significantly different from those of the other where some similarity does exist. From such an analysis of the native and the target languages, the teacher can predict the phonological problems that students will encounter in their study of a given target language, and can plan appropriate techniques for teaching those problem areas.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to explore the work of recognized linguists in the area of French and English phonology, in order to (1) make a contrastive phonological analysis of the two languages, (2) predict, from the analysis, phonological problem areas for American high school students of French, and (3) suggest some techniques for treating the predicted phonological problems.

Limitations and delimitations. This study was limited to consideration of problems concerning the phonological elements of French as encountered in an audio-lingual approach to teaching the language; no consideration was given to pronunciation problems arising from French orthography. There was only a very brief treatment of liaison and the "mute" g: ". . . liaison and /ə/ are really part of the grammar of spoken French rather than a matter of pronunciation. The best way of teaching liaison and /ə/ is, therefore, to present them as part of the grammar (especially morphology) of the French language." (Politzer 1965)

The descriptions of the English speech sounds were limited to the pronunciation of "General American," the dialect spoken in large areas of the Central and Western United States. No attempt was made to treat pronunciation problems peculiar to speakers of other American dialects.

Similarly, the treatment of phonetic aspects of French phonemes was limited to the language as spoken in the Paris area.

The investigation was limited to materials available from the Kanasa State University libraries and from the investigator's own personal library.

II. DEFINITIONS OF TERMS USED

Allophone. Each variant realization of a single phoneme

Articulatory description. Statement of the position and action of the speech organs when producing a speech sound

Audio-lingual. Descriptive of an approach to language teaching which begins with and places emphasis on listening and speaking skills, postponing the reading and writing skills

Consonant clusters. Sequences of contiguous consonants in the same syllable

Content. Meaning related in a systematic way to lexical items and grammatical structures in a language

Contrastive linguistic analysis. The comparison of the structures of two languages to discover the differences in patterning and the nature of the differences

Dialect. Each distinct variation of a language related to social level or geographic area (Lado 1964)

Distribution. The sum of the privileges of occurrence of a linguistic unit in a given language

Idiolect. An individual's unique manner of speaking his language (Buchanan 1963)

Interference. Difficulty in learning certain elements of a second language as a result of contrasts with native language speech habits

Intonation. Variations in "melody"--including elements of pitch, stress, rhythm, and juncture--which determine the meaning of utterances or reveal the attitude of the speaker

Juncture. The transition from one sound to another in speech: (1) Close juncture is a smooth transition between the consonants and vowels of an utterance; (2) open juncture is a perceived break or pause between segmental phonemes; it is this phenomenon which distinguishes night rate from nitrate or black bird from blackbird; (3) terminal juncture is the pitch contour--rising, falling, or monotone--at the end of the utterance as the volume falls to zero; rising terminal juncture occurs at the end of the "yes-or-no" question; falling terminal juncture signals the end of statements, commands, and questions introduced by

interrogative words; sustained terminal juncture at the end of a clause indicates that the speaker intends to continue.

Linguistics. The science which describes and classifies languages in terms of their own internal structures

Morpheme. A minimal unit of meaningful form; girls has two morphemes: {girl} 'immature female' homo sapiens' and {-s} 'plural'

Morphology. The description of the morphemes of a language and of the word-formation patterns (Lado 1964)

Phoneme. A minimal functional sound unit of a specific language; the smallest segment of speech capable of changing meaning in a given language; a class of similar sounds, any of which may be substituted for any other in a given utterance without changing its meaning

Phonetic. Pertaining to the description of a speech sound, purely as a sound, without regard to which of its features are significant in a signaling system (as opposed to phonemic, which pertains to the description of a speech sound as a functional unit in a system of signals)

Phonology. Description of the phonemes of a language, their allophones, and their distribution (Lado 1964)

Target language. The language being learned

III. REVIEW OF THE LITERATURE

A number of phonological studies of French are available. Valdman (1961a) has made a contrastive phonological analysis of French and English. Departing from the traditional French vowel quadrilateral, he makes a three-dimensional presentation of the following contrasts: high to low, front to back, and rounded to spread. In his discussion of intonation patterns, he suggests a scheme similar to that of Treger and Smith (1957) for English, positing a limit of three significant pitch levels for French. He presents a number of drills for the suprasegmental phonemes as well as the vowels and consonants. Liaison and "mute" e are discussed briefly in the morphology section of Valdman's book.

From the pedagogical standpoint, Politzer (1965) has made perhaps the most useful contrastive phonological analysis investigated during the preparation of this report. He has tabulated the consonants of French and English in comparable tables so that phonological contrasts are more readily apparent. Since the vowel phonemes of French in several instances have complex syllabic nuclei as their nearest counterparts in English, a contrast of the French vowels with the nine simple vowel phonemes of English is not extremely useful. Politzer, therefore, has set up a contrast of the French vowel phonemes with their nearest American counterparts, whether simple vowel phonemes or

complex syllabic nuclei. This work also deals with liaison, "mute" g, linking, and intonation.

Engler (1962) has treated the phonemes of General American, and with Haden (1965) has presented a number of characteristic American intonation patterns. Trager and Smith (1957) have offered an extensive analysis of the American phonemes, with a detailed description of the thirty-six syllabic nuclei.

Although this investigation was principally concerned with a linguistic approach to the problem of teaching French pronunciation, several general works on pronunciation were useful. These included articles published in The French Review by Gaudin (1953), Bashour (1966), and Claudel (1960).

Other works which treated a limited number of specific phonological problems, rather than presenting a complete contrastive phonological analysis of French and English, were of significant value. Valdman (1959) and Martinet (1965) have reported on the current status of /œ/ in French. Ernest Haden (1965) has treated some aspects of the "mute" g. Delattre (1966b), considered by some to be the leading French phonetician, has written a number of articles concerning French linguistics. Among the subjects dealt with, the following were applicable to this study: "mute" g, the two g's of French, liaison (an excellent simplified table for beginning students), intonation,

accent, pure vowels, and diphthongization. In an article published in The French Review (Delsttre 1965), he treats the subject of nasalization of vowels in French and in American English. Léon (1966) has discussed the following: the ʒ allophone of English, as an example of the American's problems in articulating the French stops; American and French intonation; diphthongization problems of Americans learning French; prevention of the diffusion of nasalization; and the need for teaching students different standards for audio-comprehension of French than for production of French utterances. Ernst Pulgram (1965) has discussed the suprasegmental phonemes, including a helpful treatment of intonation.

There is a wealth of material available dealing with phonological problems of Americans in learning to speak French and to understand spoken French. The works mentioned here were those which proved most useful in this investigation.

CHAPTER II

CONTRASTIVE ANALYSIS OF THE CONSONANTS OF FRENCH AND OF ENGLISH AND OF THEIR DISTRIBUTION

Consonants are classified according to the point and mode of articulation. Table I presents the consonant phonemes of French (Politzer 1965) and of English (Engler 1962).

I. CONTRASTIVE CONSONANT PHONEME INVENTORY

It is apparent from Table I that French has only twenty consonant phonemes, whereas English has twenty-two. Completely lacking in English are counterparts for French /p/ and /q/. In addition, French /r/ is articulated so differently from its English counterpart, that for practical purposes it too is lacking in English.

On the other hand, French lacks counterparts for English /θ/, /ð/, /ŋ/, and /h/ and the clusters /dʒ/ and /tʃ/. This situation is the source of more problems for the Frenchman learning English than for the American learning French. /dʒ/ causes problems, however, even in an audio-lingual approach to learning French, as will be discussed later, and the others become somewhat troublesome when students are introduced to French orthography. Although French has no /h/ from the point of view of phonemics, Frenchmen can produce the sound because they sometimes use it for emphasis, as occasionally in forms of

TABLE I

ARTICULATORY FEATURES OF THE CONSONANT PHONEMES OF FRENCH AND ENGLISH*

Manner of Articulation	Point of Articulation						
	Bilabial	Labio-dental	Dental	Alveolar	Alveo-Palatal	Velar	Glottal
FRENCH							
Stops							
Voiceless	p		t			k	
Voiced	b		d			g	
Fricatives							
Voiceless		f	s		ʃ		r
Voiced		v	z		ʒ		
Lateral			l				
Nasals	m		n		ɲ		
Semi-vowels	w				j, y		
ENGLISH							
Stops							
Voiceless	p		t			k	
Voiced	b		d			g	
Fricatives							
Voiceless		f	θ		s		
Voiced		v	ð		z		
Lateral			l				
Retroflex							
Nasals	m						
Semi-vowels	w				y		h

* Adapted from Politzer (1965) and Engler (1962)

hair, "to hate," but this distinction does not alter the meaning of the expression (Brooks 1960).

II. ARTICULATION OF FRENCH CONSONANTS

From the point of view of auditory discrimination, the American has only the sounds /p/ and /q/ to master. Achieving an acceptable accent is a more difficult problem. A few consonants offer no major problems for the American student of French: /b,f,v,j,g/ are close enough to their English counterparts that no special consideration need be given them. In the case of some of the other consonants, there are articulation problems which are not apparent in the comparative table of French and English consonants.

Stops /p,t,d,k/. The English stops /p,t,d,k/ have at least two allophones each, and in General American /t/ has a minimum of four. In initial position all four are aspirated, and in final position all may be unreleased. Following /s/, /p,t,k/ are unaspirated. In intervocalic position, /t/ may be a voiced flap, as in water, for example (Léon 1966).

In French, to the contrary, all of these stops have but one allophone; they are unaspirated and fully released. As Table I, page 10, indicates, the point of articulation for French /t,d/ differs from that for their American counterparts. It seems to be easier for Americans to avoid aspiration in dental than in alveolar stops; therefore,

they can produce acceptable sounds for French /t,d/ by using the same point of articulation as native speakers do--that is, by placing the tip of the tongue against the back of the upper front teeth instead of against the alveolar ridge in articulating /t,d/.

Elimination of aspiration from /p,k/ may be more difficult. They are articulated at approximately the same point in both languages, so the solution to the problem would seem to be to warn students to use less force in articulating the French sounds, and to try to use in French only the /p,k/ allophones which they use in English following /s/. Drill with English versus French minimal pairs can be effective for both discrimination and differentiation training of these phonemes. The contrast of such pairs as peak-pique, tell-tel, pat-patts, and lack-lac illustrates the difference between the American and the French sounds. Another technique, which fascinates students, is to let them hold a lighted match before their lips as they say the French and American versions of pipe: if they pronounce the French word correctly, the flame scarcely wavers; but it should go out when they say the American word, thus providing a visual test for aspiration.

The problem of release of the above-mentioned stops, unlike that of aspiration, is on the phonemic level (Léon 1966). The Frenchman will understand an aspirated stop, merely thinking of it as a foreign accent. He very likely

will fail even to hear an unreleased stop such as the frequent American pronunciation of the final consonants in such words as cup, put, pad, and tack. Thus, if the final consonant of French words is unreleased, the native will hear coupe as comp, ils partent as il part, and chaque as chat.

Veldman (1961a) states that the release of stops in final position consists of aspiration, but the other writers consulted in this investigation state that these stops are released and unspirated. Emphasis is placed on the importance of a definite break between the two speech organs producing the consonants in final position, to assure a completely released stop (Bashour 1966). Again the contrast of English with French as described above can be helpful in illustrating the differences between released and unreleased final consonants.

Fricatives /s, ʒ, r, ʒ, ʒ/. French /s, ʒ/ are produced differently from their American counterparts but the sounds in the two languages are very similar. The problem in French lies in the fact that it is impossible to pronounce a French vowel correctly following the American consonants. It is essential for correct pronunciation of the vowel that the shape of the tongue be convex, an impossibility following the American version of /s, ʒ/, in which the tongue is concave, with the tip pointing toward the alveolar ridge. For acceptable French pronunciation of these sounds, the tongue must be convex, with the front part of the tongue

against the alvsolar ridgs (Politzer 1965).

In initial position /ʒ/ posse an additional problem. This sound does not occur in initial position in English words, although it is rather common within words, as in measure, treasure, and azure. The American student of French, unaccustomed to pronouncing /ʒ/ in word-initial position, tends to substitute the consonant cluster /dʒ/ as the initial consonant in such words and expressions as Jean, j'ai, and ja. This mispronunciation is not on the phonemic level: a Frenchman would understand the meaning intended, but would find the sound very strange (Léon 1966).

There is little, if any, similarity in the articulation of French and American /r/. The Parisien /r/ is a velar or uvular fricative in which the tongue and lips are not involved. There are several techniques which may be employed to produce a French /r/. Politzer (1965) suggests that since the tongue position for /r/ is similar to that for /g/, students may be instructed to pronounce /g/ and then to relax the closure slightly to allow passage of the air stream. He also recommends starting with [a] as in the English word father, to achieve the correct tongue and lip positions, and then raising the back of the tongue and lowering the velum. Although it is often suggested that imitation of the sound of gargling will produce a French /r/, this investigator has observed that the sound thus formed is too harsh in the opinion of her friends and teachers who

are native speakers of French. Valdman (1961a), a native of France, suggests starting with a strongly aspirated h and then moving the back of the tongue upward and back until the correct position for /r/ is attained.

Not only is the sound of American /r/ completely foreign to French; just as serious is the distortion it produces in the vowel preceding it or following it. It has been mentioned above that the shape of the tongue must be convex for correct production of French vowels. The English retroflex /r/, produced with the tongue in concave position, the tip pointing toward the alveolar ridge, and the lips slightly rounded, causes diphthongization in the nature of a glide to mid-central in a preceding vowel; in addition, it prevents anticipation of the following vowel, to be discussed below, so essential to the production of the "pure" vowels of French.

The remaining two problem fricatives /s, z/ cause little trouble when they occur singly or in sequences other than those in which they are followed by /j/. Speakers of General American find it difficult, however, to articulate the sequences /sj/, as in monsieur, and /zj/, as in occasion, correctly. The word Hoosier derives from the tendency of Americans in certain areas to pronounce the expression "who is your" as /huwɔjər/; similarly, they pronounce "miss you" as /miɔjʉw/. That is, before /y/ these speakers pronounce /ʒ/ instead of /s/ and /ʒ/ instead

of /s/. This tendency when carried over into French destroys phonemic contrasts which distinguish such expressions as le sien, "his," from le chien, "the dog," and lésion, "injury," from légion, "legion" (Valdman 1961a).

Lateral /l/. Table I, page 10, classifies French /l/ as a dental consonant and American /l/ as an alveolar consonant. Both languages have two allophones of /l/. The French /l/ allophones are pronounced in the anterior portion of the mouth with the tongue tip down rather than retroflexed as for the "dark" /l/ of English (Gaudin 1953). For this reason, the only /l/ of English which is acceptable to the French ear is the "light" or "clear" /l/, found initially before a front vowel as in lip, lap, and leap; in the sequence /ly/ as in million; or in intervocalic position as in silly. Substitution in French of the schwa-colored "dark" /l/ of English causes any vowel before /l/ to end in an off-glide toward mid-central (Engler 1962), a diphthongization which is offensive to the French ear. The two French /l/ allophones are the voiceless variety, as in peuple, and the voiced allophone, as in lard (Martinet 1965).

Nasal consonants /n.p.m/. Table I, page 10, indicates that French /n/ is dental, whereas English /n/ is alveolar. For the former, the tip of the tongue touches the back of the upper incisors, and before front vowels it may descend to the lower incisors. For the American /n/

the tongue is directed toward the alveolus (Delattre 1966b). Again, as has been discussed above in the case of substitution of American /r/ and /l/ for their French counterparts, the most serious consequence of substitution of American /n/ for the French consonant is distortion of the vowel preceding or following the consonant, so that a diphthong rather than a pure vowel is produced.

Earlier, /p/ was cited as one of the few French consonants lacking counterparts in English. It is articulated with the tip of the tongue against the lower gums and the back of the tongue touching the palate. According to Valdman (1961a), the sequence /nj/ often replaces /p/. Since the American counterpart /ny/ as in canyon or onion is very close to the French /p/, Politzer (1965) considers it a reasonably close approximation, although the French phoneme is a single sound rather than a consonant cluster.

French /m/ is not a problem for American speakers when it occurs in initial position, and usually not in intervocalic position. In final position, however, and sometimes in intervocalic position, the American uses an /m/ allophone which gives a schwa color to the preceding vowel--that is, an off-glide to mid-central. If /m/ follows immediately after /s/ in word final position, as in enthusiasme and agnosticisme, the American tends to interpose his /ə/ between the two consonants and substitute /z/ for /s/. The French orthography augments the problem when

students reach the reading stage.

Semi-vowels /w/. One of the common features of an American "accent" in French is substitution of /w/ for /ʍ/. As mentioned earlier, /ʍ/ is one of the two French phonemes for which there are no counterparts whatsoever in English. For this reason the American student of French has difficulty both in auditory discrimination and in production of this sound. Drill with such minimal pairs as lui /lɥi/ and Louis /lwi/ or juin /ʒɥɛ̃/ and joint /ʒwɛ̃/ is effective. After students have mastered auditory discrimination of the sound, they should receive a physiological description of the manner in which it is articulated (Valdman 1965). For example, they may be told to assume the tongue and lip position of /y/ and then to proceed immediately to the following vowel. /ʍ/ does not occur in final position.

Articulation of French /w/ is similar to that of its English counterpart except that the lips must be much more protruded and tightly rounded for the French sound. Students should be told to assume the lip and tongue position for /u/ and then proceed immediately to the following sound. Although /w/ occurring as a single consonant is not difficult for Americans to pronounce, in combination with some other consonants in initial position it poses problems. Some of the troublesome clusters are /ʒw/ as in joint, /ʒw/ as in choisir, /rw/ as in roi, and /vw/ as in voilà and voiture (Gaudin 1953). Like /ʍ/, /w/ does not occur in

final position.

In addition to the problem consonant clusters already mentioned in connection with specific French consonants, there are a few others involving sounds which are not difficult when occurring singly. English lacks the sequences /pn,ps/ in initial position, so American speakers experience difficulty in pronouncing such words as psu, psychologie, and psychique. English /y/ corresponding to French /j/ occurs only in initial position, as in yes. The French phoneme, on the other hand, may occur in clusters and in final position. Such words as yeil /vjɛj/, soleil /solɛj/, and ail /aj/ are difficult for American speakers (Léon 1966).

Summary. French consonants may be problems for American students for several basic reasons. /v/ and /p/ have no counterparts among the American phonemes. French /p,t,d,k/ have only one allophone, unaspirated and fully released, in comparison with the several allophones of their American counterparts; and in addition they have a different point of articulation, except for /p/. Almost all of the French consonant phonemes cause difficulty for American speakers in other than initial position, in that substitution of their English counterparts causes distortion of preceding and/or following vowels. Finally, some consonant sequences of French, as well as some individual consonant phonemes, have a distribution different from that of their counterparts in English.

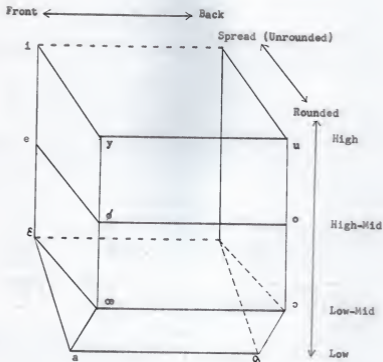
CHAPTER III

CONTRASTIVE ANALYSIS OF THE VOWELS OF FRENCH AND ENGLISH

English vowels may be classified according to the highest part of the tongue during articulation; lip rounding is found only in back vowels, and nasalisation of vowels is not phonemic. In French, however, rounding occurs in both front and back vowels, and nasalization of vowels is phonemic, so a different scheme of classification is required.

I. MANNER OF CLASSIFICATION OF VOWELS

Figure 1 is a three-dimensional representation of the articulatory contrasts of the twelve oral vowels of French. The horizontal dimension represents the relative position, from front to back of the mouth, of the highest part of the tongue during articulation of the vowels. The vertical dimension represents the relative position, from low to high, of the highest part of the tongue; and the third dimension represents the shape of the lips, from spread to rounded. The "mute" a is not included in the diagram because it is quite different from the other vowels of French, and the French linguists themselves disagree as to its articulation. Valdman (1961a) states that it ranges in quality from /œ/ to /ø/.



o

FIGURE 1
 FRENCH ORAL VOWEL SYSTEM
 (FROM VALIMAN 1961b)

Figure 2, page 24, shows that only two contrasts are significant in the French nasal vowels, front/back and spread/rounded. There is a maximum of four nasal vowel phonemes in French.

The vowel chart on page 26 presents the nine simple vowel phonemes of English. They are classified according to the relative position of the highest part of the tongue during articulation of the vowel--front to back and high to low. There are nine simple vowel phonemes in English (Trager and Smith 1957).

II. PHONETIC DESCRIPTION OF THE VOWEL PHONEMES OF FRENCH AND ENGLISH

The twelve French oral vowels. It is apparent from Figure 1, page 21, that the majority of French vowels are fronted, there being both an unrounded and a rounded series of front oral vowels. Delette (1966b) and Valdman (1958) have studied the phenomenon of fronting in French vowels, the latter finding that two thirds of the vowels in a representative spoken string of French are anterior. The series /u, o, ɔ/ differs from the series /y, ø, œ/, respectively, only in the back/front contrast; whereas /u, o, ɔ/ differ from /i, e, ε/, respectively, in both the back/front and the rounded/unrounded dimensions.

A study employing the methods of acoustic phonetics has borne out the description of the high/low contrast

among the French oral vowels as presented in Figure 1, page 21 (Delattre 1966b). There are four significant levels from high to low: /i,y,u/ are classified as high, /e,é,o/ as high-mid, /ɛ,œ,ɔ/ as low-mid, and /a,ɑ/ as low. French /i/ is significantly higher than English /i/, and French /a/ is lower than English /æ/, there being only three significant levels from high to low among the English simple vowel phonemes (Engler 1962).

As has been stated above, French has rounded front vowels as well as a rounded back-vowel series: the former are /y,ø,œ/ and the latter, /u,o,ɔ/. The unrounded front vowels are articulated with lips spread; they comprise the series /i,e,ɛ/. The two remaining unrounded vowels, /a,ɑ/, as indicated in Figure 1, page 21, are articulated with lips in a neutral position, neither rounded nor spread.

A vowel is called "pure" if it is not diphthongized, that is, if its quality does not change during the course of emission. French vowels are commonly described as pure. This purity is the result of at least four influences which affect the quality of French vowels: (1) tension of the vocal apparatus, (2) absolute immobility of the articulatory organs throughout the duration of the vowel, (3) vowel anticipation, and (4) the mode of articulation of the French consonant (Bashour 1966 and Delattre 1966b).

The four French nasal vowel phonemes. As Figure 2 indicates, the only significant contrasts in the nasal

vowels are the front/back end the spread/rounded distinctions, tongue elevation being correlated with the latter. The rounded nasal vowels / œ̃ / and / ɔ̃ / are higher than the unrounded ones, / ɛ̃ / and / ɑ̃ /. The front nasal vowels are / ɛ̃ / and / œ̃ /; the back nasal vowels are / ɑ̃ / and / ɔ̃ /.

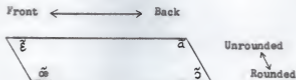


FIGURE 2

FRENCH NASAL VOWEL CONTRASTS
(FROM VALDMAN 1961b)

Non upper-class Parisiens for the most part do not make a distinction between / œ̃ / and / ɛ̃ /, using the letter *o* for both phonemes. This trend seems to be spreading to other speakers, and Valdman (1959) indicates statistical evidence to support his belief that the / œ̃ / phoneme may eventually disappear from the language. He states that *Petit Larousse*, probably the "Webster" of French dictionaries, lists only twenty words containing / œ̃ /, exclusive of the compounds of *un* and of proper nouns. In a relative text frequency test of all French phonemes, in a sample of 26,896 occurrences, Valdman found the following frequencies: / ɑ̃ / 935, / ɔ̃ / 602, / ɛ̃ / 310, / œ̃ / 129, /*e*/ 2212, and /*a*/ 147. The only vowel other than / œ̃ / having a comparably low frequency is /*a*/, which also seems to be disappearing as a

discrete phoneme, merging with /a/.

Valdman (1959) has noted that there are only four minimal pairs in French contrasting /œ̃/ and /ɛ̃/: brin/brun, Alain/alun, empreint/emprunt, and empreinte/emprunte, none of which is an absolute minimal pair; that is, the pairs are not such that the two members have the same grammatical functions and could appear in the same context. The /œ̃/ vs /ɛ̃/ contrast, then, is not necessary to make meaning clear. Martinet (1965), too, has remarked the paucity of /œ̃/ vs /ɛ̃/ contrasts; in addition, he offers articulatory reasons for the possible eventual disappearance of /œ̃/ from the inventory of French phonemes: the rounding and protrusion of the lips necessary to differentiate the sound /œ̃/ from /ɛ̃/ is not easy in vowels articulated with the mouth so wide open as it must be for the nasal vowels. As matters now stand, there is one reason for teaching American high school students to make the /œ̃/ vs /ɛ̃/ contrast: "The phoneme /œ̃/ . . . has a clear socio-linguistic function: retention of /œ̃/ defines prestige Paris speech (Standard French) while its loss characterizes the less socially prestigious Paris dialects. . . ." (Valdman 1959).

The nine simple vowel phonemes of English. Engler (1962) and Trager and Smith (1957) posit nine simple English vowel phonemes. They may be classified as to the position of the highest part of the tongue during articulation and tabulated as follows (Engler 1962):

	Front	Central	Back
High	i	ɨ	u
Mid	e	ə	o
Low	æ	a	ɔ

Labialization is characteristic only of back vowels in English and is progressively more prominent from low to high. The front vowels are produced with lips spread, again the lip action becoming more pronounced progressively from low to high. Central vowels are characterized by a neutral lip position.

The twenty-seven complex syllabic nuclei of English.

The nine simple vowel phonemes combine with the semi-vowels /w, y, h/ to form the "gliding" complex syllabic nuclei, characteristic of English, and the diphthongs /ay, oy, aw/. The symbol /y/ indicates a glide to a higher and more front position as in bee /biy/ and bay /bey/; /w/ indicates a glide to a higher, back, more rounded position as in do /duw/ and go /gow/; /h/ indicates a glide to a more central, unrounded position as in paw /poh/ (Trager and Smith 1957). All of the English vocalic contrasts tend to be blurred in totally unaccented syllables, frequently being replaced by /ɨ/ or /ə/ (Engler 1962 and Martinet 1962).

The thirty-six possible syllabic nuclei do not all occur in the speech of any one person. Most individuals

use five or six of the simple vowels and ten or twelve of the complex nuclei frequently, the other simple vowels and a few of the other complex nuclei occurring occasionally, according to the speaker's idiolect and dialect (Trager and Smith 1957).

III. CONTRAST OF FRENCH VOWELS WITH THEIR NEAR-COUNTERPARTS AMONG THE ENGLISH VOWEL NUCLEI

Although the tables and figures presented thus far are useful in describing the vowel phonemes of English and French, Table II is of more value from the pedagogical standpoint in that from such a comparison the teacher can more readily predict the problems which American students will experience in learning the French vowels. In the upper part of the table are representative examples of occurrence of the French oral vowel phonemes. In the lower part are examples of the American syllabic nuclei which sound closest (at least to the ear of an American) to the French phonemes.

French /ɛ, ɔ/. One obvious fact disclosed by Table II, page 28, is that few of the English vowel nuclei involved are "pure" (or unglided), in contrast to the French phonemes, all of which are relatively pure. English /e/ as in bet, one of the few unglided English vowels in the table, is reasonably similar to French /ɛ/ as in même.

TABLE II

CONTRAST OF THE FRENCH ORAL VOWEL PHONEMES
WITH THEIR AMERICAN NEAR-COUNTERPARTS*

	Front		Back		
<u>FRENCH</u>					
	Unrounded	Rounded			
High	/i/ <u>plis</u>	/y/ <u>pur</u>	/u/ <u>doux</u>		Rounded
High-Mid	/e/ <u>les</u>	/ø/ <u>neu</u>	/o/ <u>peau</u>		
Low-Mid	/ɛ/ <u>même</u>	/œ/ <u>peur</u>	/ɔ/ <u>note</u>		
Low	/a/ <u>car</u>		/ɑ/ <u>bas</u>		Unrounded
<u>AMERICAN</u>					
	Unrounded				
High	/ɪ/ <u>beat</u>		/u/ <u>food</u>		Rounded
High-Mid	/eɪ/ <u>bait</u>	/e/ <u>but</u>	/ow/ <u>boat</u>		
Low-Mid	/e/ <u>bet</u>		/ɔh/ <u>bought</u>		
Low	/æ/ <u>bat</u>		/ɑ/ <u>hot</u>		Unrounded

* Adapted from Politzer (1965) and Engler (1962)

The principal difference between these sounds results from the variation in the amount of tension in the vocal apparatus, the French vowel exhibiting considerably greater tension than its near-counterpart in English. There is a similar difference between French /ɔ/ as in note and English /ɔh/ as in bought, with the added features of tighter lip rounding and increased protrusion of the lips for the French phoneme. Although not desirable, substitution of the American sounds for these two French phonemes is perhaps less obnoxious to the French ear than use of any of the other American near-counterparts shown in Table II, page 28, in place of their respective French vowel phonemes (Politzer 1965).

French /i,e,u,o/. Table II, page 28, shows that the English near-counterparts for French /i,e,u,o/ are "glided," complex syllabic nuclei, rather than pure vowels like the French phonemes. Delattre (1963) conducted a comparative study of these phonemes as produced by native French speakers, and of their American near-counterparts as produced by native American speakers. Using sound motion picture film, he observed movements made by lips, jaws, and tongue--the last by X-ray filming--during articulation of the English words know, Fay, do, and bee and the similar French words and syllables nos, (le)ver, doux, and (ha)bit.

Articulation of the American o of know started as a quite open sound which Delattre compares to French /ɔ/,

proceeded to a more close sound comparable to French /o/, and terminated in a sound close to /w/. It was observed that the speech organs were in constant movement throughout the duration of the vowel and that there was a strong initial attack followed by decreasing effort. In playing the film backward, Delattre heard a distinct "won." Articulation of French non was marked by a quick movement of the tongue to produce /n/, followed by almost complete motionlessness of tongue, jaws, and lips during articulation of /o/, the intensity of sound increasing from the beginning to the end. The gentle attack and increasing intensity of French vowels favors non-diphthongization.

Analysis of the articulation of the remaining three pairs of sounds revealed similar, although not so marked, contrasts. The vowel of English Fay ranged through sounds close to French /ɛ/, /s/, and /j/, again starting with a very open vowel sound, progressing through the close sound, and terminating in the semi-vowel. For the corresponding syllable -yer of French lever, the lips became gradually more open during articulation of the vowel, but tongue and jaws remained relatively motionless.

The vowels of American do and bee ended in the same off-glides as know and Fay, respectively, as indicated in the transcription of these vowel sounds in Table II, page 28. For the last two pairs of contracted American and French vowels, Delattre found the same three contrasts as

for the first two pairs, which he summarized as follows: (1) the four English vowels changed timbre continuously throughout their duration, whereas the French vowels exhibited almost complete stability; (2) the English vowels were arrived at in a roundabout way, starting with an overly open sound and progressing finally to an overclose one; the French vowels were reached by the most direct route and, once attained, remained stable; (3) the attack for the English vowels was strong and was followed by progressively decreasing intensity during production of the sound, whereas for the French vowels the attack was gentle and was followed by increasing intensity throughout the duration of the vowel (Delattre 1963).

Obviously, the problems for the American in producing French /i,e,o,u/ are to avoid moving the tongue, jaws, and (insofar as possible) the lips throughout the duration of the vowel, and to use a gentle attack followed by increasing intensity during production of the vowel. As an aid in avoiding movement of the speech organs during vowel production, students must learn to anticipate the articulation of the French vowel when producing the preceding consonant, rather than to persist in their American speech tendency to anticipate the following consonant while articulating the vowel. For example, the /p/ of such words as pour must be articulated with lips already rounded in anticipation of the following /u/, but the /p/ of words

like pipe should be articulated with lips at least partly spread in preparation for the following /i/ (Speer 1962). In addition, Americans must learn to keep the speech organs tense in speaking French, contrary to their English speech habits, which call for a relatively relaxed state of the vocal apparatus. Finally, as has been mentioned in Chapter II, correct articulation of the French consonants will appreciably lessen the American speaker's tendency to diphthongize French vowels (Gaudin 1953).

The low vowels /a/ and /ɑ/. Table II, page 28, indicates that /a/ and /ɑ/ are the lowest of the French oral vowels. French /a/ is significantly lower than American /æ/ and also more central. Students can learn to produce an acceptable French /a/ by thinking /æ/ but opening their mouths wider than for the American sound. Those educated speakers of Parisian French who differentiate between /a/ and /ɑ/ use for the latter a sound which is close to American /a/, as in got, but is lower and more central (Valdman 1961a).

These two a's of French seem to be becoming more and more similar. At one time French /a/ was more anterior than American /æ/, and /ɑ/ was almost the same as /ɔ/: some phoneticians think the two will become one and the same sound, as they are already for some speakers (Delattre 1957). Today prestige speakers tend toward a single central /a/ while some non-standard speakers sharply differentiate

an extremely front [æ] from a decidedly back [ɔ̃] (Valdman 1959). Among the speakers who use two different a's, there is little agreement as to the words where they use each of the two sounds. As a result, some lexical items requiring a distinction between /a/ and /ɑ/ are falling into disuse, being replaced by words which do not pose a pronunciation problem. For example, devoir and ouvrage are being substituted for tâche, "task," which differs in pronunciation from tache, "stain," only in the /a/ vs /ɑ/ contrast, for those speakers who differentiate between the two sounds (Martinet 1965).

In view of the fact that educated Parisians tend to use a single /a/, it would seem wise to teach American students only the one. Claudel (1960) recommends using a single velar sound as the only a phoneme.

The rounded front vowels /y, ø, œ/. The obvious problem for American students with the rounded front vowels of French is revealed in the lack of counterparts for them among the American syllabic nuclei as presented in Table II, page 28. The first step in learning these sounds is discrimination training. Students must first learn to identify /y/ in contrast with the other front rounded vowels /ø/ and /œ/. Discrimination training among the "neighboring" contrasts /i, y, u/, /e, ø, œ/, and /ɛ, œ, o/ should follow (Valdman 1961a and Politzer 1965).

After students can identify the front rounded vowels,

they should be given a physiological description of their mode of articulation. Valdman (1961a) suggests two possible approaches: (1) start with the front unrounded vowel, keep the tongue in fronted position, and round the lips progressively; (2) start from the back rounded vowel, keep the lips rounded, and move the tongue forward. Politzer (1965) emphasizes the need for thorough differentiation training of the /y/ vs /u/ contrast since American students tend to substitute /u/ for the less familiar /y/.

In fast colloquial speech the rounded front vowels /ø/ and /œ/ as well as the unrounded pair /e/ and /ɛ/ occur in complementary distribution, /œ/ and /ɛ/ occurring in closed syllables, /ø/ and /e/ in open syllables, and /ø/ before /z/ (Hall 1948). In a less conservative variety of French, which is already regarded as quite proper Standard French and seems to be gaining currency, there is a tendency to neutralize the /ɛ/ vs /e/, /ɔ/ vs /o/, and /œ/ vs /ø/ contrasts, suggesting that there may be an ultimate merger of each pair into a single phoneme. This merger is almost a fact now except in breath-group-final position, where the open vowels /ɛ, ɔ, œ/ occur in closed syllables and the close vowels /e, ø, o/ occur in open syllables, and /ø, o/ before /z/; /ɔ/ does not occur in open syllables and /e/ does not occur in closed syllables (Pulgram 1965). In non-final position, the high-mid versus low-mid opposition is already neutralized: Europe may be pronounced either

/œ rɔp/ or /ɔrɔp/; philosophis may be heard as /filozofi/, /filɔzofi/, /filozɔfi/, or /filɔzɔfi/; and laisser is sometimes /lesa/, sometimes /lɛss/ (Valdman 1961a).

Valdman (1961a) notes a great variation in the use of these mid-vowel pairs even in final position. He has found that the same speaker may sometimes use /e/ and other times use /ɛ/ for the plural forms of the determiners les, dés, and so forth. Among different speakers, he has noticed that one may pronounce the words lait and quai as /le/ and /ke/, another as /lɛ/ and /kɛ/, and a third as /ke/ and /lɛ/. Pulgram (1965) also mentions noting /lɛ/ and /le/ in free variation in the speech of the same person, and even in stressed (breath-group-final) position. In light of this situation, Valdman feels that intensive drill of the /œ/ vs /ɔ/, /ɛ/ vs /e/, and /ɔ/ vs /o/ contrasts is a waste of time that could better be spent on the contrasts like /i/ vs /y/ or /y/ vs /u/, which are distinctive for all speakers.

"Mute" or "fleeting" e. One of the most disputed items of French phonology is the "mute" or "fleeting" e, so called because, depending upon context or style, certain e's appearing in the spelling of French words may be pronounced as more or less centralized vowels or may be silent (Martinet 1962). Some linguists question whether "mute" e is actually a phoneme and there is little agreement among the French phoneticians even as to its pronunciation.

Valdman (1958) states that it is disputed whether it is front or back, or high or low, but that there is no question as to the fact that it is labialized. Valdman himself describes /ə/ as ranging in quality between /œ/ and /ɔ/; Hall (1948) classifies it as a low front rounded vowel; Martinet (1962) calls it a "more or less centralised vowel"; Haden (1965) states that, depending upon "the phonetic environment and upon stylistic factors including the speed of utterance," the pronunciation may vary from [ɔ̃] through [œ] to [ə], with [ɔ̃] being the most close and of longest duration and [ə] being most open and of least duration of the three sounds. Haden also describes /ə/ as a shorter than normal vowel in the quality range of [œ]. Politzer (1965), on the other hand, warns against pronouncing /ə/ the same as /œ/ or /ɔ/ and suggests using the vowel sound of the first syllable of the English words regard and support as the French /ə/.

The French nasal vowels /ɑ̃, ɔ̃, ɛ̃, œ̃/. The four French nasal vowels are articulated similarly to their oral counterparts, with the added feature of lowering of the velum to allow resonance in the nasal as well as the oral cavity. Since English has non-phonemic nasalisation of vowels, articulation of these sounds is not a major problem for American speakers. The vowel of want is reasonably close to French /ɑ̃/, as is the vowel of won't to /ɔ̃/, that of can't to /ɛ̃/, and that of punt to /œ̃/. The principal

difference in the articulation of the French nasal vowels is that nasalisation is present throughout the duration of the French vowel, whereas in American English it ordinarily begins sometime after the beginning of the vowel articulation (Valdman 1961e).

Although, as has been stated above, production of the French nasal vowels is not a problem for American speakers, they do experience two types of pronunciation problems in connection with nasal vowels and consonants: (1) diffusion of nasality (indiscriminate nasalization of vowels) and (2) pronunciation of a nasal consonant after a nasal vowel. Since vowel nasality is not phonemic in English--although Malécot (1960) states that it is the nasality of the vowel and not the almost imperceptibly weak nasal consonant of such words as camp, hint, and bunk that differentiates them from cap, hit, and buck, respectively--American speakers tend to nasalize many vowels indiscriminately and almost always nasalize vowels preceding, and sometimes those following, nasal consonants. Also, since English nasal vowels occur only in conjunction with nasal consonants, Americans tend to insert a nasal consonant after French nasal vowels. In French, on the other hand, vowels preceding nasal consonants are for the most part not nasalized, and nasal consonants (indicated in the French orthography) are not pronounced after nasal vowels. If, through liaison, a nasal consonant is pronounced, the vowel

before it is regularly denasalized, with a very few sst exceptions--mon, ton, son, bien, un, rien, on, and en (Politzer 1965).

The American tendency toward diffusion of nasality changes bas /ba/ "stockings" to bancs /bã/ "benches" and destroys such contrasts as il vient/ils viennent, "he comes"/"they come" by making the vowels of both expressions nasal: /ilvjẽ/ and */ilvjẽn/ (Valdman 1961a). Intercalation of nasal consonants can blur such distinctions as Jean/Jeanne, /ʒã/ vs /ʒan/.

Summary. French vowels pose many problems for American students: no French vowel is exactly like any English vowel. In those French vowels which have the nearest English counterparts, there is significantly greater tension of the vocal apparatus. The purity of French vowels is difficult of attainment for American students, with their native language habits of vowel diphthongization, and anticipation of consonants rather than of vowels. Lip rounding and protrusion must be much more decided for French rounded vowels than for those of English, and an entirely new set of speech habits must be formed for dealing with the front rounded vowels of French. Finally, the problem of nasalization for Americans is not so much one of how to produce nasal vowels as of how to avoid nasalization before and after nasal consonants and to avoid pronunciation of a nasal consonant after a nasal vowel.

CHAPTER IV

CONTRASTIVE ANALYSIS OF THE SUPRASEGMENTAL PHONEMES OF FRENCH AND ENGLISH

The segmental phonemes are viewed as discrete segments whose realizations or articulations occur one after the other in the stream of speech, at which time they are endowed with acoustic properties. These latter features, referred to as juncture, pitch, stress, and duration, may function as signals, in which case they are accorded the status of "suprasegmental" phonemes. In other words, the suprasegmentals function only in conjunction with segmental phonemes, in such a way that some properties which are present or potentially present in the segmentals are brought into prosodic function (Pulgram 1965). Thus loudness in English, and duration in French, superimposed on the segmental phonemes, may be used to effect stress. Engler and Haden (1965) have demonstrated that English sentence types may be described and classified by use of two constituents: (1) the intonation or melodic layer, comprised of pitch, stress, and juncture patterns; and (2) the phatic layer formed by the "formal signals of syntactic arrangement." A change in the pattern of pitch variations or in the position of stress or in the type of juncture can change the meaning of an utterance even though there is no change in the segmental phonemes.

I. CONTRASTIVE SUPRASEGMENTAL PHONEME INVENTORY

The suprasegmental phonemes of English. Lado (1964) and a number of other American linguists posit three types of suprasegmental phonemes for American English: (1) four stresses relative to each other--/ˈ/ primary, /ˌ/ secondary, /˔/ tertiary, and /˘/ weak (usually left unmarked), and Engler and Haden (1965) use in addition /ˀ/ overloud for unusual cases of emphasis or emotion; (2) four levels of pitch relative to each other--/1/ low, /2/ mid, /3/ high, and /4/ extra high, the latter often being used in conjunction with overloud stress; and (3) four junctures--/+/ open internal juncture, and three terminal junctures--/↑/ rising terminal, /4/ falling terminal, and /→/ sustained terminal.

The suprasegmental phonemes of French. French also has three types of suprasegmentals, lacking phonemic stress but possessing phonemic vowel length in conservative style. Delattre (1966a) states that only three pitch levels are essential to describe French intonation but that four levels are nearer to the truth as indicated by sound spectrograms; Valdman (1961a) finds that only three pitch levels seem to be significant; both men use /1/ to indicate the lowest significant pitch level, following the same scheme for pitch markers as the American linguists referred to above. In conservative style vowel length may be phonemic in French, but the tendency in current fast colloquial styles

is away from phonemic vowel length. French has the same three terminal junctures as English, but open internal juncture is almost non-existent and non-phonemic.

II. CLOSE JUNCTURE

In places where English would likely employ open internal juncture, close juncture characterized by liaison, elision, and "enchainement" is typical of French. Word boundaries are obliterated in the spoken stream of this language. When two or more vowels occur in succession within a breath group, there is usually no break between them as there is in English, where initial vowels are often preceded by a glottal stop. In emphatic style, a glottal constriction but not a glottal stop may occur between an aspirate h and a preceding vowel, and Trager (1955) classifies this phenomenon as an example of open internal juncture; but in normal style the transition between successive vowels within breath groups is smooth, with both vowels retaining full syllabic value (Valdman 1961a).

Breath groups. The junctural pattern of French is formed by breath groups (or stress groups), whose boundaries are pauses, or disjunctures. The term "breath group" is somewhat misleading because it does not necessarily imply "that which can be uttered with one breath"; rather, it indicates a word or a group of words which are closely related grammatically, such as a noun subject with its

modifiers, or a subject pronoun and verb, and which bears a single non-phonemic stress on the last syllable of the group. There are no required breaks in French utterances other than the boundaries of breath groups, since word boundaries, as stated above, are hidden by liaison and so forth (Pulgram 1965).

Just as it is difficult for the native French speaker, unaccustomed to English open internal juncture, to make the necessary differentiation between such expressions as night rate and nitrate, so is it a problem for American students of French to disregard word boundaries and pronounce an entire breath group as a single phonological word, as required by the close juncture characteristic of French. No definite rules can be given for setting the boundaries of breath groups; they are composed of closely related words and vary in number of syllables from one to about ten, the average number being five or six (Gaudin 1953). Teaching sounds in complete utterances, rather than as isolated sounds or in isolated words, helps students to practice close juncture from the very beginning of their study of French.

Linking. Linking, one means of avoiding pauses or breaks within breath groups, consists in the pronunciation of the final consonant of one word in the same syllable as the initial vowel (or vowel after initial silent h) of the immediately following word. The sentence, "Il est tard,"

is divided into syllables as follows: /i lɛ tar/, l of il being linked to /ɛ/ of the following word. Within a breath group, linking is always obligatory.

Liaison. Liaison, a much more complex phenomenon than linking, is also important in maintaining the smooth transition of French. Liaison is the pronunciation of an ordinarily silent word-final consonant (present in orthography) in the same syllable as an initial vowel (or vowel after initial silent h) in the immediately following word. Whereas the consonants involved in linking are those which are always pronounced, no matter what their environment, the consonants involved in liaison are pronounced only in liaison, although they are always present in the orthography.

A complete treatment of liaison is beyond the scope of this report, but teachers and advanced students should be familiar with the rules presented in Table III, page 44. As indicated in the table, some liaisons are required (obligatoires), others are forbidden (interdites), and some cases, not presented in the table, are optional (facultatives). In all cases of liaison, however, there must be a close syntactic link between the words thus joined. The number of optional liaisons observed varies from person to person and also is dependent upon the speed and style of utterance, fewer liaisons occurring in fast colloquial style than in slow and formal speech (Politzer 1965).

TABLE III
SIMPLIFIED LIAISON TABLE*

	Required	Forbidden
NOUN	<p>determinative + $\left\{ \begin{array}{l} \text{noun} \\ \text{pronoun} \\ \text{adjective} \end{array} \right.$</p> <p>nos élèves deux enfants</p> <p>adjective + noun</p> <p>petit ami petits amis</p>	<p>singular noun + un marin anglais le garçon est là</p> <p>proper noun +</p> <p>Jean arrive Louis entre</p>
VERB	<p>(pronoun +) pronoun + verb</p> <p>ils ont eu vous en avez</p> <p>verb + pronoun (+ pronoun)</p> <p>sont-ils allez-vous-en</p>	
INVARIABLES	<p>monosyllabic $\left. \begin{array}{l} \text{(preposition)} \\ \text{(adverb)} \\ \text{(conjunction)} \end{array} \right\} +$</p> <p>en été dans un arbre très intelligent moins utile</p>	<p><u>et</u> +</p> <p>Marie et Anne eux et elles</p> <p>interrogative adverb +</p> <p>quand êtes-vous comment est-elle allée</p>
SPECIAL	<p>set expressions</p> <p>les États-Unis comment allez-vous accent aigu de temps en temps</p>	<p>+ aspirate <u>h</u>, <u>un</u>, <u>huit</u>, <u>ouze</u> and their derivatives</p> <p>les héros en haut en huitième</p>

*Adapted from Delattre (1966b) and Politzer (1965)

With nouns, the most important required liaisons are those (1) between determinatives (articles or words which can replace them) and the nouns immediately following them, and (2) between an adjective and a following noun. Liaison is forbidden between a singular noun or a proper noun and any word which follows it, although exceptions are found in certain fixed expressions such as accent aigu and sang impur, the latter, however, only in the French national anthem.

Liaison is required between pronouns immediately preceding the verb, and between a pronoun and the verb following it; the same is true of pronouns immediately following the verb, and between the verb and a following pronoun. With the invariables, liaison is required between monosyllabic prepositions, adverbs, and conjunctions and the following word, but forbidden following et and interrogative adverbs, with the exception of comment in the expression "comment allez-vous," where liaison is required. The only remaining important liaison "interdite" is that between any word and a following word with initial aspirate h, or between any preceding word and un, huit, or onze or their derivatives (Delattre 1966b and Politzer 1965).

Elision. The third device involved in effecting close juncture, elision, results from the dropping of a vowel which is otherwise pronounced. In some cases there is a change in the orthography to indicate the dropping of

the vowel; in close syntactic link (1) si becomes s' before /i/, (2) la becomes l' before a vowel or silent h, and (3) the monosyllables ending in "mute" e drop that vowel, the apostrophe taking its place in the orthography, before a vowel or silent h.

"Mute" e. In other instances of elision there is no change in orthography to parallel the dropping of the vowel sound; this is the case of the "fleeing" or "mute" e. The rules for dropping and retention of the "mute" e, like those for liaison, are quite complex, and an exhaustive treatment of the subject is out of place here. For pedagogical purposes the following rules should suffice (Valdman 1961a and Politzer 1965).

Rules for the retention of the "mute" e. "Mute" e, when not followed by two consecutive consonants, is ordinarily silent unless one of the following conditions is present:

- (1) /ə/ is preceded by two or more consonants (especially consonant + /r/ or /l/ cluster) and followed by at least one consonant, as in simplement and correctement.
- (2) /ə/ is preceded by phrase-initial stop consonant (/p,t,k,b,d,g/), especially /k/, as in que fais-tu.
- (3) /ə/ is followed by consonant + /j/, as in

vous parleriez.

- (4) /ə/ is followed by aspirate h, as in quatre
heros.
- (5) Two or more /ə/ occur in successive syllables of the same breath group. In these cases the /ə/ of the first syllable in the phrase is pronounced, the second is silent, the third is pronounced, and so forth; if, however, the first /ə/ follows a sibilant consonant and the second follows a voiceless stop, the first is silent and the second is pronounced, the third is silent, and so forth. The following are some examples: ne m'ê le donne pas,
c'ê que j'ê fais, j'ê te l'ê die.
- (6) The pronoun le follows the verb, as in dites-le.

The above are only general rules and are based on the "law of three consonants," the tendency of the French to pronounce the "mute" g whenever necessary to avoid pronouncing three consonants together. Not all clusters of three consonants are avoided, however, and there is much variation in the number of "mute" g's retained by different speakers, and even by the same speaker in different styles and at different speeds of utterance, more retentions of /ə/ being noted in slow speech. The /ə/ may be inserted into an expression like ours blanc /ursəblɑ̃/, where it is not indicated in the orthography, to avoid pronunciation

of three consonants together.

III. STRESS AND RHYTHM

Stress in English is phonemic: two words made up of the same segmental phonemes may differ in meaning simply because of a difference in the position of stress--for example, /pə'mít/ and /pérmit/, the first being a verb and the second a noun. Similarly the meaning of a sentence may be changed simply by changing the position of the primary stress but making no change in the segmental phonemes.

The rhythm of English is based on stresses, the successive syllables of an utterance varying in duration and in output of energy. Léon (1966) states that the rhythmic regularity of English is carried by the rhythmical group, and suggests that this phenomenon may be illustrated by use of a series of sentences similar to the following:

- (1) The doctor is a man.
- (2) The doctor is a tall man.
- (3) The doctor is a very tall man.

According to Léon the length and energy remain constant in the three sentences, because of the stress-timing which is typical of English.

French, on the other hand, has no phonemic stress. The last syllable of each breath group bears a non-phonemic stress, which consists in lengthening of the vowel but little, if any, added intensity. The syllable is the unit

which carries the rhythmic regularity in French, each syllable being about equal in length and intensity to every other. If a set of three French sentences were set up similar to the three cited above for English, each succeeding one would require a longer time for utterance than that before it because of the syllable-timed rhythm of French. The American speaker of French is likely to be misunderstood because of his tendency to stress French words and sentences in the English manner and to drop unaccented syllables, with the result that such a word as raciter, "to recite," is liable to be understood by the native French speaker as rester, "to stay" (Léon 1966).

French does have a stress for emphasis, the accent d'insistance, which consists in lengthening and intensifying the first consonant in the word: "C'est abominable" /st-te-po-mi-nab(1)/ or "C'est un enfant impossible" /st-t^oẽ-nã-f^oẽ-ẽ-p^o-sib(1)/. To express the contrasts which English can make by a shift in stress, however, it is necessary to change the syntactic structure of a French sentence: "I love my dog" is rendered "Moi, j'aime mon chien" or "C'est moi qui aime mon chien"; in either case the word moi, "I," occurs at the end of a breath group and therefore receives the breath-group-final stress. Similarly, "I love my dog" is expressed by "Je l'aime, mon chien" or "Mon chien, je l'aime," with the word aime, "love," receiving the breath-group-final stress in each case (Pulgram 1965).

IV. TERMINAL JUNCTURES AND PITCH

As mentioned earlier, French has the same three terminal junctures as English and they are employed in much the same way in the two languages. Although Valdman (1961s) and Delattre (1966a) posit only three significant pitch levels for French, a comparison of the American intonation patterns of Engler and Haden (1965) with those of Valdman reveal some striking similarities. Status I of Engler and Haden, which covers the declarative and some interrogative sentences, has identical pitch and terminal juncture markers to the "rising-falling" pattern of Valdman, which he attributes to short declarative clauses, /231↓/. The label of the "yes-or-no" question is /233↑/ with Engler and Haden for English, and /23↑/ with Valdman for French. The pattern for the imperative according to the Americans is /321↓/, whereas Valdman omits the intermediate pitch level, giving only the initial and terminal pitch levels as /31↓/.

According to Léon (1966) there is no troublesome interference from English in French intonation. Questions, orders, and statements will be understood for what they are intended. A study made by Delattre (1966b) indicates that the only intonation problem for American speakers of French lies in the continuity pattern. For French speakers a rising intonation at the end of a breath group indicates continuation, whereas for American speakers it is more

often than not a falling intonation pattern that signals continuation.

V. VOWEL LENGTH

In both French and English, vowels are naturally longer before some consonants (/r z ʒ v/) than before others (/k t p/). In addition to this natural lengthening of vowels, there is a conscious phonemic lengthening, in conservative or formal styles in French, in a very limited number of words. According to Valdman (1959), for most speakers the occurrence of contrastive length is limited to the vowel /ɛ/ in such minimal pairs as tête/tette, bête/bette, and maître/mestre, the added length resulting from respect for the circumflex accent. Since phonemic lengthening is not observed in conversational style, Delattre (1966b) feels that it is relatively unimportant.

VI. SUMMARY

In summary, the greatest problems for Americans with the suprasegmental phonemes of French are in connection with class juncture and syllabic rhythm. They tend to carry their habit of open internal juncture over to French, marking word boundaries within breath groups instead of pronouncing an entire breath group as one phonological word. They also tend to substitute their English language speech habit of stress-timed rhythm for the syllabic rhythm of

French, failing to give nearly equal stress and duration to all syllables except the last syllable of a breath group. As a result, they may be misunderstood by natives who will tend not to hear weakly stressed syllables, and who will not interpret increased intensity as emphasis, since French uses a change of syntactic structure for this purpose.

CHAPTER V

PHONOLOGY DRILLS

It is beyond the scope of this report to present an exhaustive discussion of the principles and practices involved in the formulation and presentation of drills for language learning. The sample drills offered here are intended merely as suggestions upon which the teacher might build his own drills. Language teachers should be familiar with the "5 R's of language learning"--recognition, imitation, repetition, variation, and selection--set forth by Patricia O'Connor and W. F. Twaddell in "Intensive Training for an Oral Approach in Language Teaching," The Modern Language Journal, XLIV (1960), Number 2, Part 2. Some other useful sources of information about language drills are Language Teaching Today, edited by Felix J. Oinas, The Language Laboratory and Modern Language Teaching by Edward M. Stack, and "Language Learning: The Individual and the Process," International Journal of American Linguistics, XXXIII (January, 1966).

I. PURPOSES OF THE DRILLS

Pierre Léon (1966) lists four steps in a complete phonology lesson:

- (1) Presentation of the linguistic unit to be drilled

- (2) Identification of the unit (discrimination)
- (3) Production of the unit and correction (differentiation)
- (4) Fixation (repetition to the point of automatic response)

These steps indicate that the purposes of phonology drills are (1) to help students to hear the problem linguistic units of the target language and to discriminate between them and their close equivalents in the native tongue, (2) to teach students to differentiate the troublesome features of the target language correctly, and (3) to afford sufficient meaningful repetition for habit formation.

II. FORMAT AND USE OF THE DRILLS

Following Léon's second and third steps, the sample drills suggested in this chapter offer first some expressions to teach auditory discrimination of the various problem sounds of French, and then additional expressions for student repetition to teach articulatory differentiation. This latter phase should be accomplished by group repetition in order to free students of inhibitions and to give all students as many opportunities to speak and repeat as possible. After the teacher is reasonably sure that all students are achieving correct production of the element under consideration, then there should be intensive practice, in the language laboratory or with the tape recorder

in the classroom if possible, to fix the habits of articulation. Pronunciation drills should be intensive but short (Léon 1966), and should utilize complete utterances wherever practical in order to drill the suprasegmentals along with the segmental phonemes.

III. THE DRILLS

Stops /p,t,k/. (See Chapter II, pages 11 to 13, for the appropriate articulatory phonetics.) The drills for these voiceless stops cover the following aspects:

(1) non-aspiration in initial position, (2) full closure, not flap, in intervocalic /t/, and (3) final release for all three voiceless stops.

Drill 1: Non-aspiration of /p,t,k/ in initial position

Teacher: Écoutez les deux mots anglais et le mot français
suivant:

tow	stow	tôt
peak	speak	pique
pat	spat	patte
can	scan	canne

(and so forth)

Teacher: Répétez:

tow	stow	tôt
peak	speak	pique

(and so forth)

Teacher: Répétez:

Ton père se pique.

Ton père a de petites pattes?

Ton père a perdu sa canne?

Ton père taquine trop.

(and so forth)

Drill 2: Full closure of intervocalic /t/

Teacher: Écoutez le mot anglais et le mot français suivants:

scooter

couteau

patter

pâture

water

voiture

matinee

matinée

(and so forth)

Teacher: Répétez:

scooter

couteau

patter

pâture

(and so forth)

Teacher: Répétez:

Ton père n'a pas de couteau.

Ton père n'a pas de pâture.

Ton père n'a pas de voiture?

(and so forth)

Drill 3: Final release of /p,t,k/

Teacher: Écoutez ces mots anglais et les mots français suivants:

cup	coupe
-----	-------

pat	patte
-----	-------

sack	sac
------	-----

(and so forth)

Teacher: Répétez:

cup	coupe
-----	-------

pat	patte
-----	-------

(and so forth)

Teacher: Répétez:

Ta tante coupe la viande.

Ta tante coupe sa patte.

Ta tante coupe son sac?

(and so forth)

Fricative /r/. (See Chapter II, pages 13, 14, and 15, for the appropriate articulatory phonetics.) For purposes of auditory discrimination, French /r/ may be contrasted with English /r/ in all positions; however, for differentiation training, it is well to begin with /r/ in prevocalic and intervocalic positions. The more difficult sequences, postvocalic /r/ and /r/ preceded or followed by another consonant, should be introduced later.

Drill 1: Contrastive drill, English-French, for auditory discrimination

Teacher: Écoutez le mot anglais et le mot français suivant:

mercy

merci

robe	robe
rapid	rapide
iris	iris
(and so forth)	

Drill 2: Prevocalic /r/

Teacher: Répétez:

rit	rat
rêve	rite
(and so forth)	

Drill 3: Intervocalic /r/

Teacher: Répétez:

iris	errait
Arabe	parole
(and so forth)	

Drill 4: Postvocalic /r/

Teacher: Répétez:

ire	or
pur	vert
(and so forth)	

Drill 5: Consonant plus /r/

Teacher: Répétez:

grave	gronder
fricatif	prenez
(and so forth)	

Drill 6: /r/ plus consonant

Teacher: Répétez:

garçon	parler
gorge	perte
(and so forth)	

Drill 7: /r/ in complete utterances

Teacher: Répétez:

Robert est sorti.
 Robert parle français?
 Robert garde son argent.
 Robert se trouve près de la porte.
 (and so forth)

Fricative /ʒ/. (See Chapter II, pages 13 and 14, for the appropriate articulatory phonetics.) The fricative /ʒ/ is a problem for Americans principally in word-initial position, where these speakers tend to substitute the consonant cluster /dʒ/ since /ʒ/ does not occur in word-initial position in English.

Drill 1: Auditory discrimination, English-French contrast

Teacher: Écoutez le mot anglais et l'expression française suivante:

Jay	J'ai	
Jack	Jacques	
jacket	jaquette	
John	Jean	(and so forth)

Drill 2: Differentiation practice

Teacher: Répétez:

jay	j'ai
Jack	Jacques

(and so forth)

Drill 3: Initial /ʒ/ in complete utterances

Teacher: Répétez:

J'ai une maison.
 Jacques a une maison?
 J'ai une jaquette.
 (and so forth)

Lateral /l/. English /l/ before a high front vowel, or in intervocalic position as in million or silly, is close to the French sound. It would seem advisable, therefore, to drill /l/ first in these positions and then instruct students to continue using the same sound for /l/ in final position, being sure to place the tip of the tongue against the back of the front teeth in articulating this consonant.

Drill 1: /l/ in word-initial position

Teacher: Écoutez le mot anglais et le mot français suivant:

lee	lit
leave	livre

(and so forth)

Teacher: Répétez:

lee	lit
leave	livre
(and so forth)	

Drill 2: /l/ in intervocalic position

Teacher: Écoutez le mot anglais et le mot français suivant:

million	million
Allen	Alain
(and so forth)	

Teacher: Répétez:

million	million
Allen	Alain
(and so forth)	

Teacher: Répétez:

Parlons d'un million.
Parlons d'Alain.
(and so forth)

Drill 3: /l/ in word-final position

Teacher: Écoutez le mot anglais et le mot français suivant:

sell	sel
peal	pile
ball	bol
bell	belle
(and so forth)	

Teacher: Répétez:

sell	sel
peal	pile

(and so forth)

Teacher: Répétez:

C'est le sel.
 C'est la pile.
 C'est le bol.
 C'est la belle.
 (and so forth)

Dental /n/. In the articulation of French /n/, the tongue touches the back of the upper incisors, and before front vowels it may descend to the lower incisors. The shape of the tongue should be convex to assure the purity of the vowels preceding and following /n/.

Drill 1: /n/ in word-initial position

Teacher: Écoutez le mot anglais et le mot français suivant:

nap	nappe
native	nstive
nation	nation
naval	naval

(and so forth)

Teacher: Répétez:

nap	nappe
native	native

(and so forth)

C'est notre nation, n'est-ce pas?

C'est inutile, n'est-ce pas?

C'est le général, n'est-ce pas?

C'est Anne, n'est-ce pas?

(and so forth)

Semi-vowel /y/. (See Chapter II, pages 18 and 19, for the appropriate articulatory phonetics.) Americans tend to substitute /w/ for /y/, which does not exist in English. Drills contrasting these two sounds as well as drills of the contrast /i/ vs /yi/ are important both for auditory discrimination and for differentiation.

Drill 1: /w/ vs /y/:

Teacher: Écoutez la différence entre les deux mots

français:

Louis	lui
joint	juin

Teacher: Répétez:

Louis	lui
joint	juin

Teacher: Répétez ces phrases:

C'est Louis.

C'est lui?

C'est juin.

C'est joint?

Drill 2: /i/ vs /ɥi/

Teacher: Écoutez la différence entre les deux mots

français:

lit	lui
nid	nuit
y	huis
fis	fuis

(and so forth)

Teacher: Répétez:

lit	lui
nid	nuit

(and so forth)

Consonant clusters /ʃw/, /bw/, and /rw/. American students find the clusters /ʃw/, /bw/, and /rw/ difficult to articulate in word-initial position since they are not common in English.

Drill 1: /ʃw/, /bw/, and /rw/ in isolated words

Teacher: Répétez:

choix	bois	roi
choisi	royal	boivent
choisissez	boyaux	royaliste

(and so forth)

Drill 2: /ʃw/, /bw/, and /rw/ in complete utterances

Teacher: Répétez:

Choisis le bois!

Choisis le roi!
 Choisis le boyau!
 Choisis le royaliste!
 (and so forth)

Consonant plus /j/. Since /j/ occurs only initially in English words, in any other position it is an articulatory problem for American speakers. It is especially difficult in the clusters /vj/, /sj/, and /zj/, the latter two being realized respectively as /S/ and /Z/ by many speakers of General American. Drill for both auditory discrimination and differentiation is important.

Drill 1: /vj/, /sj/, and /zj/ in isolated words

Teacher: Écoutez:

vieux	vieil	vieillard
attention	nation	préposition
occasion	lésion	invasion

Teacher: Répétez:

vieux	vieil	vieillard
attention	nation	préposition

(and so forth)

Drill 2: /vj/, /sj/, and /zj/ in complete utterances

Teacher: Répétez:

Le sien est vieux.
 Le sien est un vieil homme.
 Le sien est le vieillard?

Le sien fait attention.

(end so forth)

Word-initial consonant clusters /pn/ and /ps/. The clusters /pn/ and /ps/ do not occur in word-initial position in English although they are fairly common in French. There is little, if any, problem in auditory discrimination of these sequences, but drill to fix habits of articulation is important.

Drill 1: Isolated words

Teacher: Répétez:

pneu pneumonie psychologie

pssume pseudonyme psychistre

(and so forth)

Drill 2: Complete utterances

Teacher: Répétez:

C'est un pneu de crevé.

C'est un psychiatre.

(and so forth)

Vowel purity and tension /i.e.o.u/. (See Chapter III, pages 27 to 32, for the appropriate articulatory phonetics.) Contrast of English-French "minimal pairs" points out the difference between the relaxed, glided vowels of English and the tense, relatively pure vowels of French.

Drill 1: English-French "minimal pairs"

Teacher: Écoutez la différence entre le mot anglais et
le mot française suivant:

lee	lit
lay	les
low	lot
Lou	loup
(and so forth)	

Teacher: Répétez:

lee	lit
lay	les
(and so forth)	

Drill 2: Complete utterances:

Teacher: Répétez:

Sophie est au lit.
Laissez les épées.
Léo gagne le gros lot.
Les loups se louent.
(and so forth)

The high vowels /i/, /y/, and /u/. (See Chapter III, pages 30 to 35, for the appropriate articulatory phonetics.) Since American speakers tend to substitute /u/ for /y/ and since this contrast is distinctive for native speakers of French, it should be thoroughly drilled. The contrast /i/ vs /y/ is also distinctive.

Drill: Threa-way contrast of /l/, /y/, and /u/

Teacher: Écoutez la différence entra les troia mots de
chaque groupa:

vit	vue	voue
ris	rue	roue
lit	lu	loup
dit	du	doux

Teacher: Quand vous entendrez un mot qui rime avec pu,
lavez la main! "When you hear a word that rhymes
with pu, raise your hand!"

vua	vit	voua
ris	rue	roua
loup	lit	lu
doux	du	dit

(and so forth)

Teacher: Répétez:

vua	vit	voua
ris	rua	roua

(and so forth)

Teacher: Répétez:

Il a vu beaucoup de ruas.
Il a vu beaucoup de lits.
Il a vu beaucoup da loupe.
Il a vu beaucoup de vuea.
Il a vu beaucoup da voua.

(and so forth)

Oral/nasal vowel contrasts. (See Chapter III, pages 36, 37, and 38, for the appropriate articulatory phonetics.) Americans must learn to avoid nasalization of French vowels before nasal consonants.

Drill 1: The contrast /ɛ/ vs /ɛ̃/

Teacher: Écoutez la différence entre les deux mots:

sienne	sien
Lucienne	Lucien
seine	eain
peine	pein
(and so forth)	

Teacher: Répétez:

sienne	eien
Lucienne	Lucien
(and so forth)	

Teacher: Répétez:

C'est la sienne.
C'est le sien.
C'est Lucienne.
C'est Lucien.
(and so forth)

Drill 2: The contrast /ɔ/ vs /ɔ̃/

Teacher: Écoutez:

bonne	bon
eonne	son

donne	don
-------	-----

tonne	ton
-------	-----

(and so forth)

Teacher: Répétez:

bonne	bon
-------	-----

sonne	son
-------	-----

(and so forth)

Drill 3: The contrast /a/ vs /ã/

Teacher: Écoutez:

banne	banc
-------	------

lame	lent
------	------

manne	ment
-------	------

panne	pent
-------	------

(and so forth)

Teacher: Répétez:

banne	banc
-------	------

lame	lent
------	------

(and so forth)

Contrast of the nasal vowels / \tilde{e} , \tilde{a} , \tilde{o} /. Students need to learn to discriminate and differentiate among the three most important nasal vowels / \tilde{e} , \tilde{a} , \tilde{o} /.

Drill 1: Three-way contrast among the nasal vowels

Teacher: Écouter:

bain	banc	bon
------	------	-----

daim	dans	dont
------	------	------

feint	fend	font
main	ment	mont

(and so forth)

Teacher: Quand vous entendrez un mot qui rime avec pent,
 levez la main! "When you hear a word that rhymes
 with pent, raise your hand!"

bein	banc	bon
dana	dont	daim

(and so forth)

Teacher: Répétez:

main	ment	mont
feint	fend	font

(and so forth)

IV. SUMMARY

Phonology drills are aids in teaching auditory discrimination and articulatory differentiation. The sample drills presented in this chapter were intended merely as suggestions upon which the teacher might build complete, intensive drills for classroom use. For some sounds, especially the consonants, contrast with English near-counterparts is effective in discrimination and differentiation training. For other sounds, above all the rounded front vowels and the nasal vowels, contrast with similar sounds in the target language is more practical.

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PHONOLOGICAL PROBLEMS IN TEACHING FRENCH
TO AMERICAN HIGH SCHOOL STUDENTS

by

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AN ABSTRACT OF A MASTER'S REPORT

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The purpose of this study was to make a contrastive phonological analysis of French and English in order to predict phonological problems for American high school students of French and to suggest appropriate teaching devices for those problems. The writings of eminent authorities in the fields of American and French linguistics were studied in the preparation of the report and a review of the literature was included.

Almost all of the French consonants cause some difficulty for American speakers. Those which have no counterparts in English are /ʎ/ and /p/; American speakers tend to substitute /w/ for the former and /nj/ for the latter. French /r/, a velar fricative, poses a serious articulatory problem for American speakers, whose comparable phoneme is an alveolar retroflex. Substitution of the American /r/ not only introduces a foreign sound in the consonant itself but causes distortion of French vowels immediately preceding and following it. The French stops /p,t,d,k/ are unaspirated and fully released; American speakers must learn to use for French /p,t,k/ only the allophones which they use for these phonemes following /s/ in English. Failure to release the stops fully results in problems on the phonemic level since native speakers may not hear unreleased stops. The tendency of speakers of General American to substitute /ʒ/ and /ʒ/ for the sequences /sj/ and /sj/, respectively, is also on the phonemic level since these errors obliterate

such distinctions as le sien/le chien and l'ésion/l'égion. The difficulty most often incurred with the remaining French consonants is distortion of the neighboring vowels as a result of inappropriate consonant articulation.

French vowels pose many problems for Americans: no French vowel is exactly like any English vowel. Even in those French vowels which have the nearest English counterparts, there is significantly greater tension of the vocal apparatus than for the similar English sounds. The purity of French vowels is difficult of attainment for American students, with their native language speech habits of vowel diphthongisation, and anticipation of consonants rather than of vowels. Lip rounding and protrusion must be much more decided for French rounded vowels than for those of English, and an entirely new set of speech habits must be formed for dealing with the front rounded vowels. Finally, the problem of nasalization for Americans is not so much one of how to produce nasal vowels as of how to avoid nasalization before and after nasal consonants and to avoid pronunciation of a nasal consonant after a nasal vowel.

The greatest problems for Americans with the supra-segmental phonemes of French are in connection with close juncture and syllabic rhythm. They tend to carry their habit of open internal juncture over to French, marking word boundaries within breath groups instead of pronouncing an entire breath group as one phonological word. They also

tend to substitute their English language speech habit of stress-timed rhythm for the syllabic rhythm of French, failing to give nearly equal stress and duration to all syllables except the last syllable of a breath group. As a result, they may be misunderstood by natives who will tend not to hear weakly stressed syllables, and who will not interpret increased intensity as emphasis, since French uses a change of syntactic structure for this purpose.

The sample phonology drills presented in this report were intended merely as suggestions upon which the teacher might build complete, intensive drills for classroom use. The drills utilize contrasts of French phonemes with their near-counterparts in English where appropriate, and in other cases they contrast one French sound with a similar sound in the target language.

A bibliography of works cited was appended.