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Contrastive Analysis of the Italian and English Consonant Phoneme Systems

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INTRODUCTION

There has never been a time when so many nations were needing to talk to each other so much. There has never been a time when so many people wished to travel to so many places. [...] Never has the need for more widespread bilingualism been greater, to ease the burden placed on the professional few. And never has there been a more urgent need for a global language. (Crystal, 2013: 14)

These few lines taken from David Crystal's *English as a Global Language* clearly show the key role which English has assumed as a *lingua franca* in any field of human knowledge and action in which international relationships are required.

Although Italy is a founding member of the G8 and the third largest economic power in Europe, it seems that this country still underestimates how English is now a decisive factor for success in the international arena. According to the 2015 *EF English Proficiency Index* report, not only has Italy an English level well below the average of its European economic peers Germany and France, but it ranks with ex-Soviet countries such as Latvia, Slovakia, Lithuania and Ukraine, which do not generally present the same high standards as Italy in terms of both welfare and industry.

In the table below I will present the *EF EPI* indices which might help understand the possible reasons for Italy's low rank position, namely the average number of years of education received by people aged 25 and older; the total public expenditure dedicated to education; the Gross

National Income (GNI) *per capita* calculated in US dollars (USD) and based on purchasing power parity; and, finally, the percentage of people with access to the Internet.

Moreover, in the hope that their contrast might prove useful, I will compare Italy's results with those of the ex-Soviet countries mentioned above and those of Sweden, which holds the top position for the third time since 2011.

	Sweden	Italy	Latvia	Slovakia	Lithuania	Ukraine
EF EPI score	70.94	54.02	57.16	56.34	55.08	52.61
Change from 2014	+3.14	+1.22	- 2.27	+0.38	n/a	+4.11
Schooling years	11.7	10.1	11.5	11.6	12.4	11.3
Education spending	13.2%	8.0%	8.9%	10.4%	13.6%	13.7%
GNI <i>per capita</i>	46,170	35,220	22,510	25,970	24,530	44,291
Internet penetration	94.8%	58.5%	75.2%	77.9%	68.5%	41.8%

Table 1 EF EPI Index for Italy, Sweden, Latvia, Slovakia, Lithuania and Ukraine

First of all, in view of the homogeneity among the data provided, I will immediately exclude the average number of schooling years as a possible cause for Italy's low position. Similarly, although Internet penetration in Sweden is twice as high as in Ukraine, this index does not appear to offer conclusive results, in that other countries like Slovakia and Latvia also present positive figures.

Moving further to consider the gross national income, the similar figures presented by top-ranked Sweden and bottom-ranked Ukraine lead me to say that not even a higher individual purchasing power appears to

be a determining factor, although more money generally implies a higher chance of quality and advanced education.

Therefore, education spending represents the only other possible reason – among those offered by the *EF EPI* report – for such diverging levels of English proficiency. Considering that Sweden is on the same level with Lithuania and Ukraine, there seems to be no cause-effect relationship between education spending and English proficiency level. Nevertheless, if I also take trends into account along with ranking positions, it appears that the EF EPI scores vary proportionally to the countries' annual expenditure on their education systems. For instance, while the countries spending the most, such as Ukraine (13.7%) and Sweden (13.2%), present the highest upward trends (+4.11 and +3.14 respectively); those spending the least have either made only slight progress, as in the case with Italy (+1.33), or have reversed their trend, as in the case with Latvia (-2.27). As a confirmation of this correlation, it would be interesting to see whether Latvia's downward trend has been caused by public cuts in education; nevertheless, this is not possible as the 2015 report was the first one to present detailed data for this country.

Foreign language teaching in the Italian education system

I concluded the previous section by showing how higher education spending is generally suggestive of a higher level of English proficiency. Nevertheless, I must point out that the *quantity* of public money allocated to education does not always correlate with the *quality* of the education system.

Therefore, with specific reference to the scope of this study, I will now investigate the quality of English language teaching in the Italian education system, focusing in particular on what qualifications are required to teach English in primary school, in that the general low preparation of primary school teachers appears to be one of the main causes for the average poor English pronunciation of Italophones.

The Reform of 1985¹ pushed through by the then Education Secretary Franca Falcucci was the first legislative action making the teaching of one foreign language mandatory from the third grade. Furthermore, although by ‘foreign language’ the law meant the choice between English, French, German and Spanish depending on ‘local exigencies’, the majority of schools opted for English.

Nevertheless, the educational reform was not brought into effect until the early 1990s, when the Ministerial Decree dated 28 June 1991 finally provided schools with clear indications on how foreign language teaching could be actually introduced as a subject in primary school. In

1 The Sitography includes the links to the full texts of all the laws I will be mentioning

particular, Article 5 provided that the *module* teacher² who would be trained in the foreign language had to achieve the following competences:

- master the language used in daily communication with fluency, formal correctness and lexical appropriateness;
- know the cultural landscape of the country speaking the language natively;
- be able to write short texts in an adequate and formally correct way;
- know and be able to put into practice the fundamental approaches of foreign language teaching³.

Nonetheless, as the launch of these training courses was constantly delayed, headteachers, meanwhile, were forced to hire specialized personnel to teach the foreign language in six to seven classes each. Only the Reform by the Education Secretary Letizia Moratti (2003) – which also brought language teaching forward to the first grade – made a decisive effort to put an end to cross-class language teaching, in that it promoted agreements with university language centres to train *module* teachers in English and certify their attainment of the B1 level according to the CEFR standards.

To conclude this historical outline of English language teaching in primary school, the Education Secretary Mariastella Gelmini administered the *coup de grâce* to the figure of the teacher specialized in English in

² Before the Gelmini Reform of 2008 (see below), each grade was taught by a *module*, namely a group of three teachers, each of whom was specialized in humanities, sciences or English

³ If not otherwise indicated, all translations are mine

2008, in that Article 4 of Law 137 reintroduced the one teacher per class ratio which had been in force until 1990, when Sergio Mattarella – now President of the Republic – implemented the above-mentioned *module* system with Law 148.

In order to show how high-quality language teaching in early childhood might be the key to success in foreign language learning, I will now refer to the issue of child language development and, in particular, to the Language Acquisition Device theory (hereafter referred to as LAD theory) proposed by Noam Chomsky in the mid-1960s.

The LAD theory holds that humans are born with an innate mental capacity to learn any language thanks to a human-specific device, *i.e.* the LAD, which allows children in the first years of life to extrapolate structures and rules of the language to which they are constantly exposed (Chomsky, 1980).

Although Chomsky refers to first language *acquisition*, his theory still suggests how early age and high exposure to language stimulation must play a key role even in foreign language *learning*. Therefore, it seems that three English classes per week mostly delivered in Italian by teachers who are only required to have a threshold level of English are not the best conditions for Italian pupils to successfully learn the language. Moreover, with specific reference to pronunciation, the generally low preparation of primary teachers does not allow them to nip in the bud the most basic interference that Italian exerts on their students' English pronunciation.

Specific tools for improving Italophones' English pronunciation

Those Italian learners of English who would like to improve their English pronunciation must immediately resign themselves to the fact that there are very few handbooks which might help them become aware of and, therefore, avoid the many cases of mispronunciation to which the linguistic interference of their native language might lead them.

The reasons behind this academic vacuum are manifold. First and foremost, most books on English pronunciation have been written for international students, and therefore do not pay any particular attention to those phonemes and phenomena which might cause trouble to Italian-speaking learners.

Secondly, there are some scholars who have actually investigated the interference of the Italian phonological system on EFL pronunciation; nonetheless, the majority of their works do not seem to offer much help to learners.

For example, Luciano Canepari has explored the divergences between the English and the Italian sound systems more than any others; yet, his *Pronuncia inglese per italiani* (2011) mainly focuses on the articulatory differences between English and Italian sounds, making no reference to the detrimental effects that the Italian phonological system might exert on English pronunciation. Moreover, even those learners who have studied pronunciation would find his handbook rather difficult to read. First of all, as Canepari aims to provide transcriptions as faithful as possible to the real pronunciation of English words, he uses phonetic symbols, although most students are trained only in phonology. Secondly, he uses his own transcriptional system – named ^{can}IPA after his surname – which differs substantially from all the sound sets commonly used in the recent years. To name just one example, [t] and [d] are used only when

they are dentalized by a following phone as in *hats* ['hæts] and *pads* ['p^hædz], while [t] and [d] are the phones used to represent the non-dentalized plosives as in *hat* ['hæf] and *pad* ['p^hæd]⁴ (2011: 33-44).

Although the English variety that I will take as reference is Received Pronunciation (see page 12), another book which is worth mentioning is Avery and Ehrlich's *Teaching American Pronunciation* (1992) in that, unlike Canepari's, it provides a list of the most common pronunciation mistakes that Italian learners are likely to make. Nevertheless, this pronunciation manual suffers from two major drawbacks. First of all, the causes for mispronunciation are left unexplained; secondly, while some cases appear to be specious, others are completely ill-founded. For instance, I have never heard Italians 'tend[ing] to substitute a /ʃ/ or a /dʒ/ for /ʒ/ in words such as *measure*' (p. 132). Similarly, it appears a sweeping generalization to state that Italian 'speakers will often add a final vowel to English words that end with consonants [as] Italian does not permit any word-final consonants', so that words like *big* and *bad* will sound like 'bigə and 'bædə. Although epenthesis actually takes place in some areas of Southern Italy⁵, Avery and Ehrlich should have pointed out that this case of mispronunciation might appear only as a result of the interference of regional accent.

⁴ can₁IPA differs from Standard IPA especially in terms of vowels. For example, /eɪ/ is [Eɪ] as in *day* [dEɪ], /aɪ/ is [æE] as in *my* [mæE], /ɔɪ/ is [σE] as in *boy* [bσE], /aʊ/ is [aσ] as in *now* [nɑσ], /əʊ/ is [aσ] as in *no* [nσw], /i:/ is [ii] as [sii], and /u:/ is [uu] as in *too* [tuu] (Canepari, 2011: 20)

⁵ Canepari (1986: 55) reports that in many southern and some central regions of Italy, speakers tend to add a vowel after a final consonant. The general realization in the central areas is [e], in the upper south [ə], and in the lower south [ɪ]. Therefore, a word like *gas* will be pronounced as ['gasse], ['gassə] and ['gassɪ] respectively

Lastly, other handbooks are much more reliable; nevertheless, their analyses are neither comprehensive nor sufficiently systematic. For example, the only guideline that Collins and Mees' *Practical Phonetics and Phonology* (2008: 114) offers about centring complex vowels refers to the diphthong /eə/, as we read how it is 'overwhelmingly spelt *are, air, ary, and eir*'. Although this rule of thumb might be useful from time to time, it is too generic and incomplete to be considered reliable: it does not take into consideration either where these clusters are placed (compare *are* in *hare* heə and *claret* 'klærət) or where the stress falls (compare *ary* in *Canary* kə'neəri and *Calgary* 'kælgəri). Moreover, *are, air, ary, and eir* are clusters representing only one of the four distributional cases in which vowel graphemes are realized as the centring diphthong /eə/ in pre-/r/ position (see Section 3.1).

The interference of the Italian consonant phoneme system in EFL pronunciation

So far, I have not pointed out how all the books mentioned in the previous section – along with many others⁶ – pay very little attention to the interference that the Italian consonant system might exert on EFL pronunciation.

As a matter of fact, phoneticians have always preferred to focus on vowel phonemes, as the Italian vowel set is so different from the English one that it causes the most evident and recurring cases of mispronunciation. I will show it by presenting both Italian (in blue type) and English vowels (in red type) in the same vocogramme, keeping black only those few phonemes which are common to both phonological systems⁷.

⁶ See, for example, Brookes, M. (2002) *Pronounce English*; Celce-Murcia, M. et al. (1996) *Teaching Pronunciation: A Reference for Teachers of English to Speakers of Other Languages*; and Haycraft, B. (1975) *The Teaching of Pronunciation: A Classroom Guide*

⁷ For this vowel diagramme as well as for the consonant chart below I have combined the information provided by Cruttenden for English (2008: 17) and Nespor & Bafile for Italian (2008: 36-38, 44)

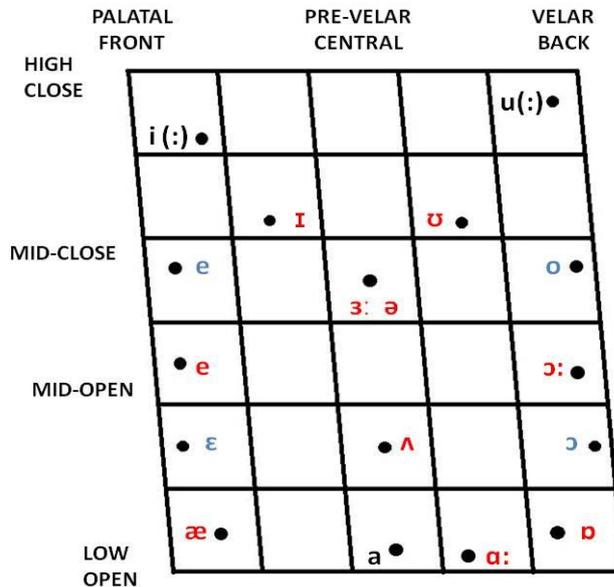


Figure 1 Vowel chart featuring Italian and English simple vowel phonemes

As can be seen, there are as few as three vowel phonemes which Italian and English have in common, i.e. /i(:)/, /u(:)/ and /a/. Nevertheless, while the former two are only short in Italian, as vowel length is not phonemically contrastive in this language, the third one appears in English only in complex vowels like /aʊ/, /aɪ/ and /aɪə/ as in *wow* waʊ, *fly* flaɪ and *fire* faɪə.

Moving further to consonants, the chart below clearly shows how the Italian and English phonological systems share most of them.

	bilabial	labio-dental	dental	alveolar	post-alv.	palatal	velar	glottal
occlusives	p b		t d	t d			k g	
tremulants				r				
fricatives		f v	θ ð	s z	ʃ ʒ			h
affricates				ts dz	tʃ dʒ			

nasals	m	n	ɲ	ŋ
laterals		l	ʎ	
approximants	w		r	j

Table 2 Consonant phonemes of the Italian and English phonological systems

Although the two languages have most of their consonant phonemes in common, this does not necessarily mean that they always present the same articulation, appear in the same distributions and undergo the same phonological processes.

As the impact of these differences have never been fully investigated, I have decided to make them the subject of my study. To begin with, in Chapter 1, I will compare and contrast the Italian and English phonological systems in order to understand where they actually differ from each other. Then, in Chapter 2, I will investigate to what extent these divergences might affect pronunciation, and I will do so by means of an experimental survey (see page 16). Finally, I will devote Chapter 3 to providing a series of guidelines which might help Italian learners of English avoid the most significant cases of mispronunciation to which the interference of their native phonological system might lead them.

I will now conclude with a note on the preliminary choices I have made about the phonological symbols and pronunciation varieties to adopt as reference.

First of all, as they are now used by most phoneticians, including Roach (see next paragraph), the phonological symbols I have adopted are those devised by Gimson for his *Introduction to the Pronunciation of English* (1963) in the revised version of Cruttenden (2008).

Secondly, I have adopted Received Pronunciation (hereafter shortened as RP) as a model accent for two main reasons. First of all,

although it is spoken by only a small and declining proportion of the British people, RP is still widely used as a reference variety, and I will quote Gilliam Brown's words to explain the cause underlying this apparent inconsistency:

[RP] is the obvious accent to choose for several reasons – it is the only accent of which several segmental and intonational descriptions are readily available [,] it is the accent which is most usually taken as a model for foreign students, and, finally, it is the accent towards which many educated speakers of other accents tend. (1990, 12-13)

The second reason is strictly related to the first one, as the students who agreed to respond to my questionnaire had Peter Roach's *Phonetics and Phonology* (2009) as their course book, and Roach is among the many using RP for his phonological transcriptions.

Unlike English, Italian does not present any geo-socially determined pronunciation to be adopted as a model. Therefore, I will use as reference what Canepari (2008: 122) calls *modern neutral Italian pronunciation*, which is only a general abstraction of that North Italian pronunciation which is becoming the most popular and widely used accent in the mass media.

Structure of the thesis

As can be understood from the outline provided above, the three chapters are not to be regarded as independent units, in that they deal with the same issues but from different viewpoints or with different purposes. As supporting evidence of how they run parallel to one another, I will now summarize what I am going to say for each of those phonemes investigated in Chapter 1, 2 and 3.

As far as the phoneme /r/ is concerned, while in Chapter 1 I will contrast the phonological class and articulation of it in the two languages, in Chapter 2 I will show how the resultant differences in rhoticity might represent a problem for Italian learners, especially when spelling obfuscates the real distribution of this approximant. Finally, I will describe in a systematic way in what distributional circumstances the English approximant might influence the nature of the vowels immediately before it, as this will help students understand when centring complex vowels should be used instead of pure short ones.

The phonemes that I will analyze after /r/ are the interdental fricatives /θ/ and /ð/. In Chapter 1 I will show how the absence of /θ/ and /ð/ in Italian phonology often leads learners to substitute them with their native /t/ and /d/ respectively. In the following chapter, not only will I provide evidence of this phonological replacement, but I will also point out how the right choice between the voiceless /θ/ and unvoiced /ð/ can also represent a significant problem for Italian speakers. Lastly, in Chapter 3 I will address both issues as I will show how interdental frication always corresponds to the digraph <th> and how the difficult choice between /θ/ and /ð/ might be guided by the presence of certain ortho-morphological structures.

As for the velar nasal /ŋ/, considering that in Chapter 1 I will demonstrate how it only appears before velar plosives in both languages, I will dedicate Chapter 2 to the only phenomenon which might be problematic for Italian learners, namely /g/-dropping in post-/ŋ/ position.

As far as the hissing sibilants /s/ and /z/ are concerned, Chapter 1 will show how they are phonemes in English but only complementary variations in Italian. Chapter 2 will deal with how their assimilation-based distribution in Italian often interferes in English pronunciation. Finally, Chapter 3 describes how spelling and morphology might be of great help to counteract this interference.

I will conclude by dealing with the approximants /j/ and /w/. In Chapter 1 I will compare their distributional patterns in the two languages, in Chapter 2 I will show how the Italian and English approximants do not coincide only when their corresponding graphemes <i> and <u>, and <y> and <w> respectively stand in intervocalic position. Finally, in Chapter 3 I will offer rules for four main issues: the conditions on which a palatal approximant appears before a close back vowel; the difficult choice between a close front vowel and /j/ when the following vowel is a schwa; how to deal with the approximants in non-integrated loans; and, finally, the darkening effect exerted by the onset /w/ on the following vowels in certain distributional circumstances.

Approach and methodology

As mentioned above, each chapter presents a different approach and methodology.

As for Chapter 1 and Chapter 3, they appear to stand at opposite ends in that, while the former investigates the differences between the English and the Italian consonant systems by means of *theoretical* classifications and oppositions such as grapheme-phoneme, phoneme-allophone, free-complimentary distribution, etc.; Chapter 3 is eminently *pragmatic*, as it aims to provide Italian learners with useful guidelines to improve their English pronunciation.

Finally, Chapter 2 will be an *analytical* investigation of the results of a survey that I have conducted with the aim of assessing the extent to which the phonological differences investigated in Chapter 1 might cause Italian to interfere in EFL pronunciation.

In this survey I asked a volunteer group of 30 Italian students in their first-year of English Studies at Ca' Foscari University to transcribe how they would pronounce a series of words, each presenting one of those phonemes mentioned in Section 5 (Appendix A). Then, I collected all their answers in Appendix C, where I also calculated the mean values of their correct or incorrect transcriptions in order to understand what were the phonemes and phonological realizations which caused most trouble to them. Finally, I reported the most significant cases of mispronunciation in Chapter 2, when I also tried to investigate the possible causes underlying them.

I will now move on to Chapter 1, in which I will provide a contrastive analysis between the Italian and English consonant phonemes system

with the aim of understanding the possible causes underlying the interference that Italian frequently exerts on EFL pronunciation.

1. CONTRASTIVE ANALYSIS OF THE ITALIAN AND ENGLISH CONSONANT SYSTEMS AND INVESTIGATION OF THE INTERFERENCE THAT THE FORMER MIGHT EXERT ON NON-NATIVE ENGLISH PRONUNCIATION

This chapter aims to conduct a comparative investigation of the main differences between the Italian and the English sets of consonant phonemes with the intention of discovering and systematizing the most recurring cases of interference that the Italian phonological system might lead to when English is spoken as a foreign language.

In general terms, there are many reasons why a non-native speaker makes pronunciation mistakes, and they are mostly dependent on a series of phonological mechanisms which are activated unconsciously to face the lack of correspondence between the two sound systems. Therefore, in an attempt to describe them, I will use the theoretical categories that Ivan Klajn (1972) defined in his general study on English loanwords in the Italian language. Although his work might now seem academically outdated, it must be noted that it is still regarded as a reference study into the phonological phenomena taking place in non-native speech.

Klajn identifies four chief causes at the basis of the divergences between native and non-native pronunciation of English: phonetic assimilation; the influence exerted by orthography; hypercorrection; and, finally, the contamination between English words and homographic cognates from other languages.

The first cause is probably the most significant one as it embraces a series of crucial and frequently occurring processes such as the *substitution* of certain phonemes with others – be they native or non-native (see Sections 1.3.2 and 1.3.3.2), and the *dropping* of phonemes when they are considered irrelevant or too difficult to pronounce (see Section 1.3.1). Furthermore, there are another two cases which do not involve a change in the status of phonemes, namely the *addition* of sounds which do not appear in native speech (see Section 1.1.2), and phonological *re-distribution* as in the cases of *iron* *'aɪrən and *aren't* *'ɑ:rənt (see Section 2.1).

In fact, Klajn also deals with stress shift, since this does not only represent a mistake *per se*, but it also leads to a change in the correct distribution between strong and weak vowels. Notwithstanding the crucial importance of stress position, I will not take it into account since it goes beyond the scope of my investigation: consonants never bear stress, therefore, they can never be affected by it – not even indirectly (Klajn, 1972: 45).

The second major cause of interference is orthography; in other words, the different relationships between graphemes and phonemes in the two languages. Once again, Klajn makes exclusive reference to one-word cases such as *Lincoln* *'lɪnkəlɪn and *colonel* *'kɒlənəl, or to low productive consonant clusters such as <sw> as in *sword* *swɔ:d and *answer* *'ɑ:nswə (Klajn, 1972: 45). On the contrary, I will resort to this category only to discuss systematic cases of grapheme-led mispronunciation⁸. To name but a few, I will analyze the realization of the

⁸ Since this study will not deal with all cases of silent consonants, for an overview I recommend the comprehensive list provided in Collins & Mees, 2008: 109-111

word-frontal cluster <wr> as */wr/ (see page 99), and the much more complex case of the approximant /r/, which can either lengthen or diphthongize vowels in non-rhotic contexts (see Section 3.1).

The third reason Klajn pinpointed as a possible source of mispronunciation is represented by hypercorrection. This extremely interesting phenomenon is generally mentioned in linguistics as evidence of how children do not acquire individual syntagma (*behavioural hypothesis*), but deduce and generalize morpho-syntactical rules from the verbal stimuli with which they come into contact during their first years of life (*cognitive hypothesis*)⁹. Nevertheless, hypercorrection does not take part in language acquisition alone. It also extends its domain to many other fields of human activity in that the process of generalization underlying it represents the most powerful means we have to acquire new knowledge with minimized costs of cognitive energy.

Once again, I will distance myself from Klajn, as the aim of the present research is not to provide individual examples of hypercorrection such as *posthumous* as *'pɒsθjʊməs or *gasoline* as *'gæsələɪn, but to individualize and describe only those interferences which might embrace more or less large lexical groups. A case in point will be the non-realization

⁹ Hypercorrection in language acquisition is an extremely interesting topic, but it is also relevant to the scope of my investigation as it might give some insight into what cognitive processes lead to mistakes when it comes to foreign language learning. For further work on hypercorrection, see first Chapter 8 'Thought and Language' in Smith *et al.* (2001) *Fundamentals of Psychology*. Then, for a more in-depth study, see Clark H.H. & Clark E.V. (1977) *Psychology and Language: An Introduction to Psycholinguistics* and Foss, D.J. & Hakes, D.T. (1978) *Psycholinguistics: An Introduction to the Psychology of Language*. Finally, more recent works which have contributed significantly to this field are Tarter, V.C. (1986) *Language Processes*; Carroll, D.W. (1985) *Psychology of Language* as well as the groundbreaking Chomsky, N. (1980) *Rules and Representations*

of the phoneme /h/ word-initially when corresponding to the cluster <wh> as in such words as *whole* and *whom* (see page 99).

The fourth and last reason that Klajn mentions in his work makes reference to those loanwords shared by both languages which Italians tend to pronounce either as they have been integrated or with their original pronunciation, but only rarely as the English would actually do. Among the classical examples, I might mention the nouns *paella*, *bluff* and *suspense* whose pronunciation ranges from the integrated /pa'eʎʎa/, /blɛf/ and /sus'pans/ to the original /pa'eʎa/, /blœf/ and /sys'pɔ̃s/. Having said that, this possible cause will not be dealt with as the only linguistic interference that I will take into consideration is the one between Italian and English.

Before moving further, some considerations regarding Klajn's classification must be made for the sake of clarity. First of all, these four reasons cannot be always considered individually, as some cases of mispronunciation can be ascribed to more than one of them. For instance, as far as the replacement of the phoneme /θ/ with /t/ is concerned (see Section 1.1.1), both substitution and the interference of native spelling could be indicated as possible causes. As a matter of fact, the continuant is substituted with the similarly sounding phoneme /t/ because there is no voiceless interdental fricative in Italian. Nevertheless, it is also true that all the consonants which are followed by the letter <h> are pronounced as plosives in Italian.

Moreover, this categorization seems to mix causes with consequences. For example, as far as the glottal aspirate /h/ is concerned, I might well assert that dropping takes place as a *consequence* of the grapheme-phoneme correspondence in Italian, according to which <h> never presents an individual phonological realization (*cause*). As a result, if I regard such processes as addition and dropping only as *means* to resolve phonological impediments and not as *causes* of them, I will be

able to point to reasons which would otherwise remain implicit. For instance, Italian EFL students are unlikely to reduce into a single phoneme (*adding*) those clusters starting such words as *psychology*, *mnemonic* and *pterodactyl* as they are unaware they are phonotactically impossible onsets in English. On the contrary, they are likely to keep phonemes unrealized (*dropping*) when dealing with consonant clusters which do not exist in their native language. For example, such words as *texts* and *twelfth* are real tongue-twisters as both /ksts/ and /lfθ/ are too long codas in Italian.

I conclude with some indications as to the criterion that has been used to order the many phenomena to analyze. Klajn's classification will be only adopted as useful terminology to describe them, since they will be grouped exclusively depending on their linguistic distribution. In short, I will start by taking into account those phonemes which are present in both Italian and English, but featuring different articulations, *i.e.* /t, d/ and /r/. Then, I will move on to discuss those phonemes which belong only to one of the two languages, namely the Italian-specific /ʎ, ɲ/ and /dz/, and the English-specific /h, θ, ð, ŋ/ and /z/. Finally, the last section will be fully devoted to the approximants /j/ and /w/ as, although they are present in both languages and roughly in the same distributions, they might still cause trouble to non-native English speakers.

1.1 Same phonemes but different phones

Although I have stated that this study will focus on the description and analysis of the possible differences which might be appreciated on a phonological level only, this very first section must temporarily widen the scope of investigation to phonetics, as some phonic divergences between Italian and English consonants also exert a profound impact on phonology.

What follows, therefore, is a descriptive analysis of those phonemes which, despite featuring in both languages, present relevant articulatory dissimilarities, *i.e.* /t/, /d/ and /r/.

1.1.1 The alveo-dentals /t/ and /d/

I will begin by dealing with /t/ and /d/, since they only differ slightly. Basically, while in Italian the tongue presses on the upper teeth to realize the two dental plosives, in English the tongue either touches them only slightly or does not make any real contact with them, as it stops no further than the alveolar ridge (Graffi & Scalise, 2003: 107).

This difference in production results in few and unsystematic mistakes which mostly regard the unvoiced occlusive only. The reason for this discrepancy is likely to be due to another phonetic difference between the Italian and the English unvoiced plosives, namely the aspiration with which they are realized in English when they are word-initially or when they immediately precede a stressed vowel (Canepari, 2011: 36). Because

of this, Italophones perceive the English /t/ to be so close to their native post-alveolar affricate /tʃ/ that they often feel wrongly tempted into adopting it instead of the plosive, especially when a likewise close back phoneme follows. For example, we are likely to hear Italian EFL speakers pronounce such words as *Tuesday*, *two*, *tomorrow*, *together* and *twenty* as if they featured a word-initial affricate instead of the plosive /t/.

As far as the voiced plosive is concerned instead, it is a little more difficult to find examples of mispronunciation that are brought about by a difference in place of articulation. This is due to the simple fact that in standard British English the assimilation between the occlusive and the palatal approximant into a post-alveolar affricate /dʒ/ does not take place in final position, so Italophones refrain from assimilating word-initially.

1.1.2 The phonological status of /r/

As far as the approximant /r/ is concerned, I refer first to Table 3, as it shows graphically how the articulation of this phoneme in Italian and English is the most dramatically different of the three:

	Italian /r/	English /r/
<i>class</i>	consonant	approximant
<i>manner of articulation</i>	obstruent (rolled)	sonorant
<i>place of articulation</i>	alveolar	post-alveolar
<i>tongue shape</i>	apical	retroflex
<i>lip position</i>	neutral	slightly rounded

<i>phonation</i>	voiced	voiced
<i>rhoticity</i>	rhotic	non-rhotic

Table 3 Different articulation of Italian and English /r/

To start by considering the phonological class of /r/, I must preliminarily point out that it varies enormously from language to language depending on two key factors. First of all, whether it can function as a syllabic nucleus or not; secondly, the extent to which the articulators hinder the egressive airstream which is necessary to realize it. In Italian – as well as in all the other Romance languages – /r/ is a consonant which can only appear either as an onset or as a coda because the multi-vibration of the tongue apex against the palate curbs the airflow quite conspicuously (Canepari, 1983: 91). On the contrary, although the airstream is still slightly obstructed by the tongue, in such Slavic languages as Slovene and Macedonian, /r/ is still considered a vowel which – as such – can act as a nucleus (Grošelj, 2013: 136). A well-known example to Italians is the Slovene name given to the city of *Trieste*, namely *Trst*, in which /r/ is the nucleus joining the onset /t/ to the coda cluster /st/. Finally, as happens in English, /r/ can be also regarded as an approximant the status of which stands halfway between that of a consonant and a vowel: it is phonetically articulated as a vowel but shares the same phonological distributions with consonants. This is why approximants are also defined as *semi-consonants* or *semi-vowels* depending on the theoretical viewpoint adopted (Nespor & Bafile, 2008: 40).

Since the position of the tongue plays a key role in determining the class of /r/, I will now move on to describe all the articulators involved and how they interact to produce this phoneme. To begin with, while the Italian /r/ results from the vibrations produced by the apex of the tongue (*apical*)

repeatedly hitting the alveolar ridge (*obstruent*), in English the tongue curls back (*retroflex*) to post-alveolar position but never makes actual contact with the roof of the mouth (*sonorant*). Here probably lies the most significant difference between the two /r/, as the so-called *trill* is the most glaring pronunciation flaw of Italian-speaking learners of English (Avery & Ehrlich, 1992: 132).

Finally, whereas the lips hold a more or less neutral position in Italian, in English they are instead slightly rounded so as to produce that deep sound which is typical of this language. For this reason, as Roach (2009: 50) highly recommends, when learners of English who are not used to the English /r/ first try to make their lips rounder, they should avoid exaggerating it, otherwise the sound produced might risk being too similar to the labial approximant /w/.

I have here described and compared the two types of /r/. I have dwelt on the articulatory nature of the English /r/ because it might exert a deep impact on both phonology and pronunciation.

First of all, while the English varieties which feature a retroflex /r/ can be either rhotic or non-rhotic¹⁰, trilling accents such as Scottish and Welsh rarely drop their /r/. Secondly, with specific reference to Received Pronunciation (RP), when the approximant finds itself in non-rhotic contexts, it systematically affects the preceding vowels, either lengthening or splitting them into complex vowel sounds.

¹⁰ Rhoticity characterizes most American varieties – including General American and Canadian –, Irish, much Caribbean, and the regional accents of the West Country of England. Non-rhoticity, instead, is limited to some varieties present in England and Wales (Collins & Mees, 2008: 91-92). Moreover, for the American English-specific phenomenon of *r-colouring*, see among others Avery, 1992: 45-46

Since the effects /r/ exerts on the nature and length of vowels will be described in the last chapter as useful guidelines for Italian students (see Section 3.1), for the moment it is sufficient to mention the distributions in which this variety keeps /r/ unrealized. In short, there are only two contexts in which the phoneme never occurs, namely before a consonant (a) and word-finally (b). Instead, it must be always realized in front (c) and intervocalic (d) position, as well as after a consonant (e) (Roach, 2009: 50):

phonological rule	examples
a) <r> → Ø / _ C	<i>work, beard, absorption, advertiser, allergen, etc.</i>
b) <r> → Ø / _ #	<i>employer, abhor, cellular, actor, alabaster etc.</i>
c) <r> → r / # _	<i>rabbi, raccoon, reach, read, ribaldry, road etc.</i>
d) <r> → r / V _ V	<i>arrive, charity, tarot, dexterous, erudition etc.</i>
e) <r> → r / C _	<i>dress, trim, Israel, shrink, appraise, acrimony etc.</i>

Table 4 Rhotic and non-rhotic distributions of /r/

Surprisingly enough, although most Italian speakers are aware that the English <r> has a different pronunciation from the Italian, hardly any of them (including many first-year students) respect the distributional peculiarities by which this phoneme is characterized.

1.2 Italian phonemes not existing in English / ʎ ɲ dz /

The first substantial phonological difference between the Italian and the English consonant sound systems lies in their lack of mutual correspondence, that is Italian contains some phonemes which English does not, and vice versa. In general terms, this basic divergence misleads Italophones at a low level of English proficiency into avoiding the realization of foreign phonemes or making use of indigenous phonemes instead of non-native ones. This might occur for many different reasons, but it mainly happens under the influence of their native grapheme-phoneme associations, or – more positively – as a linguistic strategy adopted to overcome the difficulties posed by the articulation of sounds they are unaccustomed to.

I will start by dealing with Italian phonemes as they represent only a minor problem when EFL students adopt them in non-native speech. As a matter of fact, the Italian-specific /ʎ/, /ɲ/ and /dz/ do not cause any problems in mutual understanding as they are close in pronunciation only to those English (cluster) sounds which they replace, namely /lj/, /nj/ and /z/.

1.2.1 The assimilated /ʎ/ and /ɲ/

I will first consider the palatal liquid /ʎ/ and nasal /ɲ/ together since they both frequently appear in fast non-native speech as the result of an Italian-specific case of total assimilation. Namely, when /l/ and /n/ are followed by a close back vowel or, alternatively, by a schwa corresponding to the grapheme <u>, an approximant /j/ usually emerges in between (see, for example *accuse* əˌkjuːz and *pure* pjʊə). As a consequence, the palatal place of articulation of the semi-consonant influences both the liquid and nasal, which recede to the same back position and eventually combine into /ʎ/ and /ɲ/, which are phonemes completely unknown to the English consonant system. Here below is the rule governing the phonological merger just described:

$$\left. \begin{array}{l} nj \rightarrow ɲ \\ lj \rightarrow ʎ \end{array} \right\} / _ \text{close back V}$$

Before looking at some examples, a few considerations must be made in order to avoid any dangerous generalizations or false conclusions.

First of all, although assimilation could be defined as the *natural* influence between neighbouring sounds due to articulatory reasons (Nespor & Bafile 2008: 62), it cannot be assumed that this phonological process occurs within the same distributions in all languages around the world. In fact, when it comes to inter-language analysis, logical deduction is often of no help, if not even misleading, and the palatal assimilation discussed here is a clear case in point. English does not merge the

consonant clusters /lj/ and /nj/ into the single phonemes /ʎ/ and /ɲ/ except in very rare occasions¹¹, whereas Italian does so systematically, and both the diachronic development and the synchronic realizations of this Romance language can be cited as supporting evidence of this.

As for the orthographic metamorphosis of Italian from its mother-language, we might provide as illustrative examples those Italian words in which the Latin spelling was adapted to reflect the systematic occurrence of this assimilative merger in current speaking (Franceschi, 2004: 105-107 and Krämer, 2009: 26-27).

Latin /nj/		Italian /ɲ/	
<i>companio</i>	kom'panjo	>	<i>compagno</i> com'paɲɲo
<i>senior</i>	'sɛnjor	>	<i>signore</i> siɲ'ɲore
<i>somnium</i>	'sɔmnjum	>	<i>sogno</i> 'sɔɲɲo
<i>Spania</i>	'spanja	>	<i>Spagna</i> 'spaɲɲa
<i>verconia</i>	ver'kɔnja	>	<i>vergogna</i> ver'gɔɲɲa

Latin /lj/		Italian /ʎ/	
<i>alium</i>	'aljum	>	<i>aglio</i> 'aʎʎo
<i>dolium</i>	'dɔljum	>	<i>doglio</i> 'dɔʎʎo
<i>folium</i>	'fɔljum	>	<i>foglia</i> 'fɔʎʎa
<i>milium</i>	'miljum	>	<i>miglio</i> 'miʎʎo
<i>tilia</i>	'tilja	>	<i>tiglio</i> 'tiʎʎo

Table 5 Impact of the assimilation of /nj/ and /lj/ into /ɲ/ and /ʎ/ on the evolution from Latin to Italian spelling

¹¹ /ɲ/ and /ʎ/ also appear in English, but with a very low frequency of occurrence and exclusively at a phonetic level. For these reasons, they will not be taken into consideration (Bailey, 1985: 56)

As examples of phonological realizations which have not yet affected orthography, I will instead consider how frequently lexemes featuring the pre-vocalic clusters <ni> and are pronounced as having /ɲ/ and /ʎ/ in fast and uncontrolled speech. It goes without saying that <i> cannot be stressed as in *armonia* ‘harmony’, *malinconia* ‘melancholy’, *cigolio* ‘creak’, *emofilia* ‘haemophilia’, since only vowels can work as stressed nuclei.

<niV>	*/ɲ/	<liV>	*/ʎ/
<i>coniugare</i>	koɲu'gare	<i>ciliegia</i>	tʃi'ledʒa
<i>cerimonia</i>	tʃeri'moɲa	<i>Sicilia</i>	si'tʃiʎa
<i>opinione</i>	opi'ɲone	<i>umiliare</i>	umi'ʎare
<i>riunione</i>	riu'ɲone	<i>filiale</i>	fi'ʎale
<i>ventennio</i>	ven'teɲɲo	<i>spalliera</i>	spaʎ'ʎera

Table 6 Italian tendency to assimilate /nj/ and /lj/ into /ɲ/ and /ʎ/

As can be seen, the clusters /nj/ and /lj/ are realized as /ɲ/ and /ʎ/. Yet, they do not double as self-geminating vowels generally do¹², unless the two original <n> and <l> are not already homogeneous digraphs (see, for example, *ventennio* and *spalliera*).

As the emergence of the palatal approximant will be fully discussed in a section of Chapter 3 entirely devoted to this (see Section

¹² A small group of phonemes – *i.e.* /ɲ/, /ʎ/, /ʃ/, /ts/ and /dz/ – self-geminate intervocalically in standard Italian even when they do not correspond to homogeneous digraphs and the primary stress is not on the syllable they belong to (Canepari, 1986: 21-23). See, for example, *pegno* 'peɲɲo' 'token', *cagliata* kaʎ'ʎata 'curd', *fascia* 'faʃʃa' 'band', *fazione* fat'tʃjone 'faction', and *azienda* ad'dzjenda 'company'

3.4.2), I will now offer only two clarifications which are necessary to interpret the examples which are going to be provided correctly.

With reference to the alveolar nasal, it is untrue what many grammar and pronunciation books state with reference to the appearance of the approximant, namely that it occurs only in British English, and not in American English (see, for example, Svartvik & Leech, 2006: 162). In general, they only take into consideration when /n/ is followed by /u:/, and provide the classic example of *New York* BrE ,nju: 'jɔ:k v. AmE ,nu: 'jɔ:rk. Yet, they completely ignore all the other close back vowels, as well as the weight that their corresponding graphemes might have on the emergence of the approximant (see Section 3.4.2).

As my study uses students enrolled at Ca' Foscari University as participants, I will cite as illustrative examples of this lacuna in English language reference books only those which are adopted at this university. Prodromou's *Grammar and Vocabulary* (2012), used in first-year courses, does not present any pronunciation guidelines or exercises whatsoever as it is meant as training for the Cambridge Certificate in Advanced English, which does not feature any pronunciation test. Similarly, *English File* (2014) for upper-intermediate students, also used in first-year courses, does not make any mention of this difference between BrE and AmE either in the pronunciation section devoted to 'the letter u' in Unit 8A (75), or in the *sound bank* included at the end of the book (167). As for the version for teachers, it only recommends them to 'watch out for the "hidden" /j/ in words like *accuse*, *music* etc.' (110).

Although the grammar book and the student course book mentioned above pay little or no attention to pronunciation, the same cannot be said for those books whose objective is precisely to teach students English pronunciation and phonology. Roach's *English Phonetics and Phonology* (2009), which has been adopted for the first-year

phonology course, does not even hint at *yod-dropping* in his 20th chapter devoted to the ‘Varieties of English pronunciation’ (161-68). Nor does the second-year course book, Svartvik & Leech’s *English. One Tongue, Many Voices* (2006: 164). It actually spends a few lines on AmE *yod-dropping*, but it makes exclusive reference to the long close back vowel. All we read is, ‘GA has /u:/ and /not the /ju:/ often found in RP in words such as *due, new, suit, tune, pursue, resume*: ‘doo, ‘noo’, ‘toon’ etc. All the books adopted at Ca’ Foscari are just indicative of how little foreign language learning focuses on correct pronunciation and how students are not provided with any valid reference to improve it.

Finally, as far as the lateral liquid is concerned, for the moment suffice it to note that /j/ never emerges between it and a long close back. This means that such a realization as /ʌu:/ can only appear in non-native speech as a result of hypercorrection. Since the majority of consonants attract a palatal approximant when followed by /u:/ as in the words *cute* kju:t, *mute* mju:t and *tutor* 'tju:tə, learners of English sometimes wrongly infer that /j/ must also appear after /l/. As a consequence, they will realize such a word as *lute* as *lju:t, hence the assimilation into *ʌu:t.

After these necessary elucidations, here is provided a list of words showing how this phonological process can be extremely productive among Italian speakers of English, inasmuch as these two cases of assimilation occur in all possible distributions and with all kinds of close back vowels.

	nj → ɲ / _	BrE	lj → ʌ / _	BrE
u:	<i>avenue</i>	'ævənju:	<i>Luton</i>	'lu:tən
	<i>annuity</i>	ə'nju:əti	<i>lubricate</i>	'lu:brɪkeɪt
	<i>numeric</i>	nju:'merɪk	<i>absolute</i>	æbsəlu:t

ʊ	<i>enuresis</i> <i>manure</i>	,enjʊə'ri:sis mə'njʊə	<i>allure</i> <i>velure</i>	ə'lʊə vi'ljʊə
u	<i>continuing</i> <i>genuine</i>	kən'tɪnjuɪŋ 'dʒenjʊɪn	<i>evaluation</i> <i>celluloid</i>	ɪ,vælju'eɪʃən 'seljʊləɪd
ə	<i>onion</i> <i>tenure</i>	'ʌnjən 'tenjə	<i>cellular</i> <i>failure</i>	'seljələ 'feɪljə

Table 7 Italian assimilation of the clusters /nj/ and /lj/ into /ɲ/ and /ʎ/

1.2.2 The sneaking /dz/

I will now move further and consider the alveolar affricate /dz/. I will begin by showing how in Italian this phoneme stands in a harmonious relationship with the other three consonants from the same class:

Italian	unvoiced	voiced
Palato-alveolar	tʃ <i>ceco</i> 'tʃɛko 'blind' <i>Cina</i> 'tʃɪna 'China'	dʒ <i>geko</i> 'dʒɛko 'gecko' <i>Gina</i> 'dʒɪna
Alveolar	ts <i>razza</i> 'raddza 'the ray fish'	dz <i>razza</i> 'rattsa 'race, ethnic group'

Table 8 Italian affricates

As can be clearly seen, the affricates in Italian can be analyzed collectively as two perfectly matching voiced-unvoiced oppositions: the palato-alveolar /dʒ/ and /tʃ/ on the one hand, and the alveolar /dz/ and /ts/ on the other.

It is also worth noting that, although they are still considered distinctive in meaning, /ts/ and /dz/ feature an extremely low functional load. In fact, the example of the bi-semantic *razza* is the sole minimal pair that can be resorted to as adequate evidence of the phonological relevance of these two affricates (Canepari, 1986: 23). As a matter of fact, they have virtually lost their phonemic role, and now mainly function only phonostylistically, in the sense that pronouncing *pizza* as *'piddza instead of 'pittsa or *zucchero* as *'tsukkeru instead of 'dzukkeru would be regarded as unacceptable by most native speakers, although the meaning would not change or become incomprehensible because of their different phonation.

That said, I will now compare the table above with the one provided below to see whether the affricates match each other in English as well:

English	unvoiced	voiced
Palato-alveolar	tʃ <i>chain</i> tʃeɪn <i>chin</i> tʃɪn	dʒ <i>Jane</i> dʒeɪn <i>gin</i> dʒɪn
Alveolar	ts <i>pizza</i> 'pɪtsə <i>Nazi</i> 'nɑ:tsi	/

Table 9 English affricates

As can be seen, the unvoiced alveolar /ts/ exists only in free morphemes borrowed from other languages, and it has no corresponding voiced

counterpart in the lower-right corner, and this is simply due to the inexistence of the phoneme /dz/ in the English language. Nevertheless, what is of real interest in this study is not this basic divergence in the affricate sets of the two languages, but how Italian EFL speakers tend to fill this phonological vacuum with their native /dz/ when it corresponds to the grapheme <z>. Therefore, they are likely to pronounce such words as *zeal*, *Arizona* and *Alcatraz* as *dzi:l, *æɪɪ'dzəʊnə and *'ælkətrædz.

The primary reason behind this particular case of mispronunciation is undoubtedly linguistic interference and, specifically, the Italian correspondence between the grapheme <z> and the phoneme /dz/. As supporting evidence of this assumption I can use the many foreign words that both Italian and English have borrowed from other languages, and see how they have been made to fit the two different phonological systems. Among the most notable examples, we might look at:

from		It	BrE	ItE
Spanish	<i>Zorro</i>	'dzɔrro	'zɔrəʊ	'dzɔrəʊ
Swahili	<i>Zambia</i>	'dzambja	'zæmbiə	'dzæmbiə
Assyrian	<i>ziggurat</i>	'dziggurat	'zɪgəræt	'dzɪgəræt
French	<i>zebu</i>	dze'bu	'zi:bu:	'dzi:bu:
Zulu	<i>zulu</i>	dzu'lu	'zu:lu:	'dzu:lu:

Table 10 Systematic correspondence between word-initial <z> and /z/ in Italian

In actual fact, it seems that what misleads Italian learners of English is not only the interference of native spelling, but also the etymological origin of lexemes. In particular, this phonological substitution tends to take place more systematically with those English cognates of Graeco-Latin

derivation in that Italians are likely to perceive them as native because of their Romance origin.

Italian			Graeco-Latin origin		English	
<i>zefiro</i>	'dzɛfiro	<	Gr. <i>zephuros</i>	>	<i>zephyr</i>	'zefə
<i>enzima</i>	en'dzima	<	Gr. <i>enzume</i>	>	<i>enzyme</i>	'enzaim
<i>topazio</i>	to'pattsjo	<	Gr. <i>topaz</i>	>	<i>topaz</i>	'təʊpæz
<i>zelota</i>	dze'lota	<	Gr. <i>zelotes</i>	>	<i>zealot</i>	'zelət
<i>Amazzone</i>	a'mattsone	<	Gr. <i>Amazon</i>	>	<i>Amazon</i>	'æməzən

Table 11 Interference of the pronunciation of Italian words in that of English cognates

Nevertheless, it must be specified that sometimes /ts/ might be also opted for instead of /z/, but never word-initially, and the reason for this is twofold. First of all, /dz/ is more likely to be selected as it features the same voicing as /z/. More importantly, Italian /ts/ is defective in front position, so it could never appear as a substitute for /z/ regardless of phonation.

Before moving further to the following section, I will conclude with a marginal note on the status of the above-mentioned /ts/, as it is not always reported as an English phoneme. In fact, phoneticians and phonologists have long debated the status of affricates in general, that is whether they are to be regarded as single phonemes or stop-fricative sequences¹³. That said, it must be borne in mind that this study is only an

¹³ For further reading on the status of the affricates, studies in acoustic phonetics is the approach providing the most satisfactory results. See, among others, Howell, P. & Rosen, S. (1983) 'Production and perception of rise time in the voiceless affricate/fricative distinction'. *The Journal of the Acoustical Society of America*, 73 (3), 976–984; Mitani, S., Kitama, T. & Sato, Y. (2006) 'Voiceless affricate/fricative distinction by frication duration and amplitude rise slope'. *ibid.*,

empirical analysis of the linguistic interference of the Italian consonant set on EFL speech, and – as such – does not aim to engage in theoretical discussion.

Therefore, as far as this specific section is concerned, I will limit myself to observing that /t/ is often followed by /s/ in English, and that the sound resulting from the combination of these two phonemes is roughly the same as the Italian affricate /ts/. As a matter of fact, there are several graphemes and digraphs which can realize an unvoiced alveolar affricate:

- <z> as in *Nazi, Heinz* etc;
- <zz> as in *intermezzo, pizza, paparazzi* etc.;
- <ts> as in *tsunami, tsetse, shiatsu, curtsy* etc.;
- <tz> as in *blitz, chintz, ersatz, hertz, putz* etc.

Moreover, if I overstep the boundaries of single free morphemes, the cases of affrication would rise exponentially thanks to the productive processes of inflection and compounding:

- plurals as in *accents, cats, districts, markets, pits, jets*, etc.:
- third person singulars as in *cuts, fits, gets, pants, shorts* etc.:
- Saxon genitives as in *Matt's, student's, Abbotsford, catseye* etc.:
- compounds as in *footstool, goatskin, nightstick, outskirts, sportsman*.

Nevertheless, I must remember that, when /t/ and /d/ join to /s/ and /z/ as a result of morphological formations, /ts/ and /dz/ are traditionally considered

120 (3), 1600–1607; and Johnson, K. (2003) *Acoustic and Auditory Phonetics*. 2nd ed. Malden: Blackwell Publishing, 135-148 (Ch. 8)

combinations of plosives with fricatives, and not single phonemes¹⁴ (Celata, 2004: 30).

1.3 English phonemes not existing in Italian /h θ ð ŋ z/

There are five English consonant phonemes that do not exist in Italian, and they all belong to the fricative class – /h, θ, ð, z/ – except for the nasal /ŋ/.

As a useful preliminary to their investigation, I will divide them into three categories on the grounds of their usual realizations in non-native speech. I start with the glottal /h/, which can form a group of its own since it is the only phoneme that Italian learners tend to keep unrealized. On the contrary, the two interdental consonants /θ/ and /ð/ will be considered together as they undergo the same phonological adaptation, namely the substitution with similar phonemes shared by both languages. Finally, /ŋ/ and /z/ will be also described as a pair as both of them actually exist in Italian, but only as combinatory variations of the phonemes /n/ and /s/ respectively.

¹⁴ Phonetic notation shows this morphology-based distinction by means of a *ligature*, which is most commonly placed under them ([tʃ], [dʒ]), but might also appear above for typographic reasons ([tʃ̥], [dʒ̥]). Finally, in some older phonetic books you might still find them represented with the sibilants as superscripts ([tʃ^s], [dʒ^s]) (Canepari, 1983: 114-115)

1.3.1 The missing /h/

As far as the English fricative /h/ is concerned, the only grapheme which can realize it is the same-shaped <h>. As opposed to the phoneme, this grapheme also exists in Italian, where it serves two extremely important basic functions. First of all, it works as a phonological diacritic, distinguishing the plosives /k/ and /g/ from the affricates /tʃ/ and /dʒ/, as they would be graphemically alike otherwise:

	plosives		affricates	
<c>	<i>china</i>	'kina	<i>Cina</i>	'tʃina
	<i>chicca</i>	'kikka	<i>cicca</i>	'tʃikka
	<i>chela</i>	'kɛla	<i>cela</i>	'tʃɛla
<g>	<i>ghiaccio</i>	'gjattʃo	<i>giaccio</i>	'dʒattʃo
	<i>ghiro</i>	'giro	<i>giro</i>	'dʒiro
	<i>Gherardo</i>	ge'rardo	<i>Gerardo</i>	dʒe'rardo

Table 12 The role of <h> in the opposition between plosives and affricates in Italian

As the examples in the table show, affrication occurs only within precise distributional limitations which are dictated by a basic pronunciation rule of the Italian language. Namely, while the graphemes <c> and <g> are *always* realized as plosive onsets when followed by <a>, <o> and <u>, they are pronounced as stops before <e> and <i> *only* if an aitch is interposed between them (Krämer, 2009: 9).

$$\begin{array}{ll}
\langle c \rangle \rightarrow /tʃ/ & \langle c \rangle \rightarrow /k/ \\
& / _ e, i \\
\langle g \rangle \rightarrow /dʒ/ & \langle g \rangle \rightarrow /g/
\end{array}
\left\{ \begin{array}{l} _ a, o, u \\ h + i, u \end{array} \right\}$$

Secondly, Italians resort to an initial <h> in order to distinguish the simple present forms of the verb *avere* ‘to have’ from conjunctions (*ho* ‘I have’ v. *o*, ‘or’), prepositions (*hai* ‘you have’ v. *ai*, ‘to’; *ha* ‘has’ v. *a* ‘to’), and nouns (*hanno* ‘they have’ v. *anno*, ‘year’) (Krämer, 2009: 9).

What these two uses of the letter *aitch* have in common is somewhat paradoxical. Although in both of them <h> works as a diacritic, giving rise to phonological oppositions, in neither of them does it present an individual phonological realization¹⁵. In fact, it might reasonably be argued that, as for the first case, the aspirate *is* of phonological relevance since it produces plosives. Yet, it still does not produce any sound of its own, as it does instead in English.

I have provided this rather long description of the spelling distributions and phonological realizations of the grapheme <h> in Italian not as an end in itself, but as a necessary premise to understanding why most Italians do not aspirate their aitches, and how this widespread case

¹⁵ As a matter of fact, since word-initial <h> remains phonologically unrealized, most Italian primary school pupils encounter much difficulty when it comes to choosing whether a word-initial <h> is required or not. Therefore, since spelling rules are generally taught before sentence analysis, teachers often have to resort to curious tricks to make them stop misspelling words. For instance, as far as my region – the Veneto – is concerned, many teachers advise their students to translate into dialect the sentences including the words whose spelling they are unsure about. The reason lies in the fact that only if the translated words start with a <g> as /g/, they are forms of the verb *avere*. For example, while the question *Andiamo a (prep.) mangiare fuori?* (Eng. ‘Shall we go out for lunch?’) would be translated into dialect as ‘nemo a magnar fora’; the possible answer *Ho (verb) già mangiato* (Eng. ‘I’ve already had my lunch’) would be *go già magnà*

of mispronunciation can exert a profoundly negative impact on communication. As a matter of fact, whereas the assimilation of /nj/ and /lj/ into /ɲ/ and /ʎ/, and the substitution of /z/ with /dz/ pose no hindrance to inter-comprehension, missed aspiration does so, as the glottal fricative is distinctive in meaning:

# h	# V	# h	# V
<i>had</i> (SF)	v. <i>ad</i>	<i>hate</i>	v. <i>ate</i>
<i>hair</i> / <i>hair</i>	v. <i>air</i>	<i>haul</i>	v. <i>all</i>
<i>ham</i>	v. <i>am</i> (SF)	<i>hay</i>	v. <i>a</i> (SF)
<i>hand</i>	v. <i>and</i> (SF)	<i>heal</i> / <i>heel</i>	v. <i>eel</i>
<i>handy</i>	v. <i>Andy</i>	<i>hear</i>	v. <i>ear</i>
<i>has</i> (SF)	v. <i>as</i> (SF)	<i>heat</i>	v. <i>eat</i>
<i>hat</i>	v. <i>at</i> (SF)	<i>hew</i>	v. <i>you, ewe</i>

Table 13 The phonological relevance of aspiration in English

Since this basic mistake is so common that it does not present any exception either in terms of distributional contexts or morphological formations (Avery & Ehrlich, 1992: 132), I will postpone discussing more specific cases to the following chapter.

1.3.2 The dentalized /θ/ and /ð/

While the aspirate /h/ finds no phonological realization in Italian EFL speech, the interdentalals /θ/ and /ð/ are generally substituted with their plosive counterparts /t/ and /d/ (Avery & Ehrlich, 1992: 132). In view of the complete neglect of the English glottal fricative, the solution adopted for this pair appears to be reasonably satisfactory. Nonetheless, it could be so only at a superficial level, since interdentality is actually distinctive in meaning in all possible positions. Therefore, the risk of misunderstanding remains extremely high. Compare the following minimal pairs:

	θ	t	ð	d
# _	<i>thick</i>	v. <i>tick</i>	<i>than</i> (SF)	v. <i>Dan</i>
	<i>thin</i>	v. <i>tin</i>	<i>the</i> (SF)	v. <i>D</i> (letter)
	<i>thinker</i>	v. <i>tinker</i>	<i>they</i>	v. <i>day</i>
	<i>thorn</i>	v. <i>torn</i>	<i>thine</i>	v. <i>dine</i>
	<i>thought</i>	v. <i>taught</i>	<i>though</i>	v. <i>dough</i>
_	<i>faithful</i>	v. <i>fateful</i>	<i>worthy</i>	v. <i>wordy</i>
	<i>heats</i>	v. <i>heaths</i>	<i>paths</i>	v. <i>pads</i>
_ #	<i>both</i>	v. <i>boat</i>	<i>boot</i>	v. <i>booth</i>

Table 14 The phonological opposition between /t/ and /θ/ in English

The possible reasons behind this substitution are manifold. First and foremost, the two pairs of phonemes are similar in sound, phonation and place of articulation, although some might not agree with this last point since the two English stops are alveolar. Nonetheless, it must be borne in

mind that Italian EFL speakers are likely to stick to their native plosives, which are traditionally classified as *dental* consonants (see Table 1, p. 12).

Furthermore, with specific reference to the unvoiced fricative /θ/, <th> is the only digraph which can realize it. This consonant cluster can derive from two different historical sources: the Celtic rune *thorn* <þ> after it was incorporated into the Anglo-Saxon alphabet (Svartvik and Leech, 2006: 29), and the ancient Greek letter *theta* <θ> (Abercrombie, 1967: 122), whose symbol has been eventually adopted by the IPA to represent the same-sounding phoneme (IPA, 1999: 176–181).

Having said that, I will now focus only on this latter case, since the diverging diachronic developments of *theta* in English and in Italian is key to understanding their likewise diverging phonological realizations. For the sake of completion, the table below will also provide information about the other two Greek aspirates, namely φ *phi* and χ *chi*.

Greek letter	φ <i>phi</i>	χ <i>chi</i>	θ <i>theta</i>	
	[labial fricative]	[velar plosive]	[dental fricative]	
Transliteration		It. <h> dropped		
Aspiration		Lost		
Voicing		Unvaried		
Manner of articulation		Unvaried		
Place of articulation	Labiodental	Unvaried	It. alveolar	Eng. unvaried

Table 15 Development of the Greek aspirates in English and in Italian

As you can see, whereas some features such as voicing, manner and place of articulation have either remained unvaried or changed in both

languages, some others have been subject to transformation only in one of the two languages.

Nevertheless, as far as my focus is concerned, only the discrepancy in the graphemic evolution of *theta* is significant. If English made the Greek <th> complement the Germanic unvoiced <th>, Italian lost the contrast between the fricative and the plosive /t/ as <h> disappeared. Naturally, *h*-dropping did not take place all of a sudden, and aspiration had already started fading away in Latin. While early Latin pronunciation somehow still kept close to the original /θ/ with a slightly aspirated /tʰ/, by the time of Ecclesiastic pronunciation, the dental consonant lost even that residual Greek aspiration, first becoming a free variation of /t/, then completely disappearing as a phoneme (Canepari, 1999: 541).

This basic difference in the adaptation of the Greek grapheme and phoneme well explains the Italian-specific mispronunciation of the English <th> as /t/, which is probably one of the most significant cases of interference of Italian on English, if we consider the immense quantity of Greek-origin words which are present as cognates both in Italian and English. By way of example, compare the representative sample below, where the left-column words are lexemes which Italian took directly from Latin, while the right-column words are lexemes which English borrowed mainly via French after the Normans settled in the British Isles in the 10th century¹⁶.

¹⁶ For further reading on the influence that the Latin and Neo-Latin languages had on English, see among others the detailed account presented in Baugh & Cable (1978) *A History of the English Language* (especially 44-46 and 107-198)

	Italian		English	
# _	<i>tiroide</i>	ti'roide	<i>thyroid</i>	'θaɪrɔɪd
	<i>terapeutico</i>	tera'pɛutiko	<i>therapeutic</i>	'θerə'pju:tɪk
	<i>termo-</i>	'tɛrmo	<i>thermo-</i>	'θɜ:məʊ
	<i>tesauro</i>	te'zauro	<i>thesaurus</i>	θɪ'sɔ:rəs
	<i>teocrazia</i>	teokrat'tsia	<i>theocracy</i>	θi'ɒkrəsi
V _ V	<i>estetismo</i>	este'tizmo	<i>aestheticism</i>	i:s'θetɪsɪzəm
	<i>anestesia</i>	aneste'zia	<i>anaesthesia</i>	'ænəs'θi:ziə
	<i>artrite</i>	ar'trite	<i>arthritis</i>	ɑ:'θraɪtɪs
	<i>acanto</i>	a'kanto	<i>acanthus</i>	ə'kænθəs
	<i>etnico</i>	'etniko	<i>ethnic</i>	'eθnɪk
_ #	<i>zenit</i>	'dzɛnit	<i>zenith</i>	'zɛnɪθ
	<i>Golia</i>	go'lia	<i>Goliath</i>	gə'laɪəθ
	<i>mito</i>	'mito	<i>myth</i>	mɪθ
	<i>plinto</i>	'plɪnto	<i>plinth</i>	plɪnθ
	<i>assenzio</i>	as'sɛntsjo	<i>absinthe</i>	'æbsɪnθ

Table 16 The impact of the Italian evolution of Greek theta on EFL pronunciation

Before proceeding further, it must be noted that mid-position is the distributional case presenting the highest error rate, and the reason behind it is attributable to the elevated level of difficulty in pronouncing a non-native phoneme correctly when it is both preceded and succeeded by other sounds. On the contrary, word-end <th> is the most likely to be pronounced adequately, and the cause could be twofold. First of all, unlike word-mid <th>, distributional interference plays a reduced role since the phoneme is followed by neither a vowel nor a consonant. Secondly, if I consider that English stress tends to fall on initial syllables, Italian speakers do not feel tempted into opting for a consonant that ranks higher in the *consonant strength hierarchy* (Nespor & Bafile, 2008: 67).

Incidentally, it must be clear that this choice cannot be labelled as a case of spirantization, since what Italian EFL speakers do is simply *choose* the right phoneme, and no /t/ is lenited to /θ/.

The unvoiced plosive /t/ has been so far regarded as the sole Italian substitute for the unvoiced fricative /θ/. Nevertheless, this is only the most occurring replacement, as at least another three phonemes are occasionally used instead of it, namely the alveolar affricate /ts/, and the post-alveolar and labiodental fricatives /ʃ/ and /f/. Each of them presents a different reason for their selection. With reference to the first two phonemes, while the affricate appears to be a phonological calque of cognates featuring <z> as /ts/ in Italian (a); the fricative seems to emerge from an unfounded process of assimilation (b). Most of those Italian derivatives which have <z> as /ts/ correspond to English cognates whose original stem-final consonants <s> or <c> as /s/ merge with the following suffixal /i/ into /ʃ/. By way of example, compare *essenziale* essen'tsjale, *razziale* rat'tsjale and *credenziale* kreden'tsjale with *essence* 'esəns > *essential* i'senʃəl, *race* reɪs > *racial* 'reɪʃəl and *credence* 'kredəns > *credential* kɹɪ'denʃəl. What some Italian speakers do is generalize the phonological rule by which s → ʃ / _ <i> [unstressed], extending it to /θ/, although the phoneme /θ/ is never subject to total assimilation. Here are some emblematic examples of this misled phonological process:

Italian	English	BrE	ItE (a)	ItE (b)
<i>corinzio</i>	<i>Corinthian</i>	kə'rɪnθiən	kə'rɪntsɪən	-ʃən
<i>forsizia</i>	<i>forsythia</i>	fɔ:'saɪθiə	fɔ:'saɪtsɪə	-ʃə
<i>promezio</i>	<i>promethium</i>	prə'mi:θiəm	prə'mi:tsiəm	-ʃəm

Table 17 Italian tendency to pronounce <th> as /ts/ or /ʃ/ when the Italian cognates present <z> as /ts/ instead of it

As regards the labiodental fricative /f/, it is not such a frequent substitute as the former two consonants. In fact, it only represents an occasional pronunciation flaw that many Italians acquired in their first school years of English learning. As I have already pointed out in the Introduction (see page 6), it is not an easy task to unlearn what has been passed off as correct for so long. As a result, many EFL speakers will be still caught pronouncing the ordinal number *three* as if it were homophonous with *free*. As supporting evidence of this assumption, it might be noted that derivatives from *three* – such as *threefold* and *threesome* – are pronounced differently (either as /θ/ or /t/) as if they have been learnt from high school level on as individual lexemes rather than as derivatives from an already-familiar stem.

1.3.3 The Italian allophones /ŋ/ and /z/

As has been already stated in the introduction to this chapter (see page 40), I will consider the velar nasal /ŋ/ and the alveolar fricative /z/ together since they share the same status of combinatory variations in the Italian language, which means that they do not differentiate meanings as they do in English (Canepari, 1986: 22). Here are some examples showing how they can both produce minimal pairs in English.

/n/		/ŋ/		/s/		/z/	
<i>ban</i>	bæn	<i>bang</i>	bæŋ	<i>sip</i>	sɪp	<i>zip</i>	zɪp
<i>pan</i>	pæn	<i>pang</i>	pæŋ	<i>mussle</i>	'mʌsəl	<i>muzzle</i>	'mʌzəl
<i>sinner</i>	'sɪnə	<i>singer</i>	'sɪŋə	<i>lacy</i>	'leɪsi	<i>lazy</i>	'leɪzi
<i>thin</i>	θɪn	<i>thing</i>	θɪŋ	<i>house n.</i>	haʊs	<i>house v.</i>	haʊz
<i>win</i>	wɪn	<i>wing</i>	wɪŋ	<i>close 'near'</i>	kleʊs	<i>close 'shut'</i>	kleʊz

Table 18 Phonological relevance of /ŋ/ and /z/ in English

1.3.3.1 The velar /ŋ/

I will start by dealing with /ŋ/ since in both languages this phoneme appears in the same distributions and results from the same regressive assimilation of the velar articulation of the plosives /k/ and /g/:

	Italian	[]	English	//
n → ŋ / _ k	<i>ancora</i>	'aŋkora	<i>anchor</i>	'æŋkə
	<i>inchiostro</i>	ɪŋ'kjɔstro	<i>ink</i>	ɪŋk
	<i>bronco</i>	'brɔŋko	<i>bronchus</i>	'brɔŋkəs
n → ŋ / _ g	<i>angoscia</i>	aŋ'gɔʃʃa	<i>anguish</i>	'æŋgwɪʃ
	<i>inglese</i>	ɪŋ'gleze	<i>English</i>	'ɪŋɡlɪʃ
	<i>Ungheria</i>	uŋge'ria	<i>Hungary</i>	'hʌŋɡəri

Table 19 Distributional identity between the Italian and English velar nasal

Thanks to the identical phonological distribution of the velar nasal, Italian EFL learners do not have any difficulty in pronouncing /ŋ/ when speaking in English. What is more, as Canepari observes,

throughout Northern Italy, word-final and syllable-final <n> is articulated as /ŋ/ [...] even by those speakers whose dialect does not present it [as a standard realization]. Nonetheless, since speakers do not have any conscious control over their articulators, they do not use it when actually needed in English [...] Therefore, for instance, Anglophones are likely to misinterpret North Italian *win* as their *wing* (2001: 35).

Nevertheless, since this coincidence is only regional, it will not be investigated further. I will move on and discuss how problems arise instead when it comes to the English-specific /g/-dropping in morpheme-end position, as this case of consonant deletion never occurs in standard Italian except as an occasional result of euphonic simplification. To start with a case in which this happens quite systematically, I will first look at those few compound – or etymologically compound – lexemes in which the first constituent drops the velar plosive provided it is immediately followed by another consonant with the same place of articulation (a). On the contrary, if this basic condition is not complied with, the phonological results might be of two kinds. If the second element starts with a vowel phoneme, the velar plosive is no longer omitted since it works exactly in the same way as the linking /r/ (b). Instead, if the digraph <ng> is succeeded by a consonant which is not velar, /ŋ/ will yield its place to other allophones featuring the same articulatory position as the following stem-initial consonants:

N → N [α place] / _ C [α place]

Therefore, while it does not change when followed by such frontal consonants as /t/ and /d/ (c.i), it turns into the bilabial [m] after the plosives /p/ and /b/ (c.ii), and into the labiodental [ɱ] after the fricatives /f/ and /v/ (c.iii) (Nespor & Bafile, 2008: 59)

		Italian []	English //
a)	<i>Bangkok</i>	baŋ'kɔk	'bæŋkɔk
	<i>Hong Kong</i>	hoŋ'kɔŋ(g)	'hɔŋ'kɔŋ
	<i>King Kong</i>	kiŋ'kɔŋ(g)	'kiŋ'kɔŋ
b)	<i>Shanghai</i>	ʃaŋ'gai	'ʃæŋ'hai
c) i.	<i>Wellington</i>	'wellinton	'welɪŋtən
ii.	<i>ping-pong</i>	pim'pɔŋ(g)	'pɪŋpɔŋ
iii.	<i>kung fu</i>	koŋ'fu	'kʌŋ'fu:

Table 20 Word-mid /g/-dropping in Italian

I will now discuss the second and last distribution in which the velar plosive might disappear in Italian, namely word-final <ng>. In fact, although this phonological context is quite similar to the previous one, it opposes it as /g/-dropping here can take place only optionally, and the choice is generally dictated by the nature of the speech: the slower and more controlled the speech is, the less likely speakers are to drop their /g/.

It must be noted that to provide examples which could illustrate this last phenomenon, I must inevitably resort to words which have been borrowed from foreign languages and, above all, from English. This is simply due to the fact that the consonant cluster <ng> represents a case

of defective word-final distribution in Italian, as it does not exist as a possible coda.

	English //	Italian []	
		Controlled speech	Uncontrolled speech
<i>boomerang</i>	'bu:məɾæŋ	'bumerɑŋg	'bumerɑŋ
<i>dribbling</i>	'drɪblɪŋ	'dɪbblɪŋg	'dɪbblɪŋ
<i>ginseng</i>	'dʒɪnsɛŋ	dʒɪn'sɛŋg	dʒɪn'sɛŋ
<i>meeting</i>	'mi:tɪŋ	'mɪtɪŋg	'mɪtɪŋ
<i>shopping</i>	'ʃɒpɪŋ	'ʃɒppɪŋg	'ʃɒppɪŋ

Table 21 Word-final /g/-dropping in Italian

The velar nasal will be further investigated in a dedicated section of the following chapter (see Section 2.2.3).

1.3.3.2 Word-initial and mid-position /z/

As far as the hissing sibilants are concerned, some glottologists still argue that the Italian [s] and [z] should be regarded as phonemes since they still discriminate meanings in intervocalic position in such homographic words as *chiese* 'kjɛze (III person singular of the simple past of *chiedere* 'ask') and *chiese* 'kjɛse (plural of *chiesa* 'church') (Mioni, 2001: 166). Nevertheless, it must be also noted that this meaning-based difference actually persists only in Tuscany, while in the rest of Italy [s] and [z] mainly

function only as variations, whose complementation changes greatly depending on regional accents.

Therefore, in view of their extremely limited phonematic role and their capricious distribution, the two hissing sibilants will be thought of only as Italian allophones hereafter, and their Northern Italian contextual patterns will be taken as reference for comparison with English. The reason for this choice is twofold: first of all, Northern Italian is the most geographically widespread distribution of all (see page 13). Secondly, it has been gradually attaining the status of standard Italian pronunciation, and the general accent adopted by the majority of TV news reporters and film dubbers can be easily cited as evidence of this statement (Carboni and Sorianello, 2011: 129).

On the contrary, as regard the two fricatives in English distribution, no debate has been raised over their status as distinct phonemes insofar as they can replace each other without causing a change in meaning except in rare and special cases which – as such – I will describe in the last chapter (see page 92). However, in order to make the comparison with the Italian [s] and [z] easier, a choice is also to be made as to the English sibilants. Namely, only the grapheme <s> will be taken into consideration in this chapter as it is the only one that can be realized as both phonemes in English. The discussion of all the other letters which can phonologically result in /s/ or /z/ will be postponed to the final chapter, as their predictable realizations make them helpful guidelines for phonology students (see Section 3.3.1).

Having concluded with these preliminary indications, I will now examine whether the two languages stand in contrast within the same distributions, and how this occurs. To start with front-position <s>, whereas both languages present [s] before a vowel (a) and a voiceless consonant (b), only in Italian is the sibilant subject to regressive assimilation when

followed by a voiced consonant (c) (Graffi and Scalise, 2003: 109, and Canepari, 1986: 23). Incidentally, although this latter case is the only one that produces interference, the systematic way in which regressive voicing takes place even in the presence of morphological boundaries (see *Christmas* and *bodysnatcher*) makes of it one of the most recurring and remarkable instances of mispronunciation.

	Italian		English		ItE
a) # _ V	<i>sette</i>	'sɛtte	<i>seven</i>	'sevən	✓
	<i>sano</i>	'sano	<i>sane</i>	seɪn	✓
	<i>sicuro</i>	si'kuro	<i>safe</i>	seɪf	✓
b) # _ C [-voiced]	<i>stabile</i>	'stabile	<i>steady</i>	'stedɪ	✓
	<i>spazio</i>	'spattsjo	<i>space</i>	speɪs	✓
	<i>squama</i>	'skwama	<i>scale</i>	skeɪl	✓
c) # _ C [+voiced]	<i>smacco</i>	'zmakko	<i>smack</i>	smæk	*zmæk
	<i>snello</i>	'znello	<i>snack</i>	snæk	*znæk
	<i>sventura</i>	zven'tura	<i>Svengali</i>	svən'gɑ:li	*zvəŋgɑ:li

Table 22 The impact of word-initial position on /s/-voicing in Italian and English

In truth, English stands at opposite ends with Italian regarding this phonological process in that regressive assimilation is so ineffectual in the English language that there are even occasional cases of progressive de-voicing, especially in the pronunciation of loanwords. This is due to the fact that the sudden shift from a phonological system to another can often bring to light phenomena which would be otherwise impossible to show if not by means of diachronic analysis.

A case in point is provided by the adjective *svelte* *svelt* (from It. *svelto* ['zvelto] 'slim, slender'), whose status as a borrowing is proved by the fact that the initial cluster <sv> does not represent an onset phonotactically possible in English. Nevertheless, what interests us here is not the difference in distribution between the lending and the borrowing language, but what integration has led to: *svelte* has developed a less predictable alternative pronunciation than /svelt/, namely /sfelt/. Not only does /s/ not assimilate the [+voiced] feature of the following consonant /v/ as it does in Italian, but it even de-voices it into its labiodental counterpart /f/.

Moving further to word-mid <s>, the contrast between the two languages becomes far more complicated. Its realization appears much more systematic in Italian than in English insofar as, when the sibilant is in pre-consonant position, assimilation follows exactly the same rules as frontally. This means it occurs only if the following phoneme is voiced (d). Similarly, when it appears intervocalically (f), <s> cannot help but absorb the voiced feature from both the previous and following vowels.

On the contrary, as far as the English language is concerned, there appears to be regularity only when the grapheme <s> precedes a voiced consonant (e) as voicing occurs neither in pre-voiced consonant (d) nor in intervocalic position (f):

	Italian		English	
d) _ C [+voiced]	<i>asma</i>	'azma	<i>asma</i>	'æsmə or 'æzmə
	<i>trasloco</i>	traz'loko	<i>measles</i>	'mi:zlz
	<i>Bosniaco</i>	boz'niako	<i>Bosnian</i>	'bozniən

e)	_ C	<i>peste</i>	'pɛste	<i>pest</i>	pest
		<i>estetico</i>	es'tɛtiko	<i>aesthetic</i>	i:s'teθɪk
		<i>disco</i>	'disko	<i>disco</i>	'dɪskəʊ
f)	V_ V	<i>musica</i>	'muzika	<i>music</i>	'mju:zɪk
		<i>basalto</i>	ba'zalto	<i>basalt</i>	'bæɪsɔ:lɪt
		<i>isolamento</i>	izola'mento	<i>isolation</i>	,aɪsə'leɪʃən

Table 23 The impact of mid-position on /s/-voicing in Italian and English

As for intervocalic <s>, there seem to be very few guidelines to follow when it comes to deciding whether this grapheme should be realized as a voiced or unvoiced hissing sibilant (a). Nevertheless, although not all words present an intervocalic <s> as a result of it, morphological formation might be of some help. For instance, if we take *curiosity* as an illustrative example and bear in mind that the most occurring suffix *-ous* is always realized as /əs/, we should not be lured into transcribing *curiosity* with a voiced sibilant, considering that morphological boundaries generally curb assimilation.

On the contrary, voicing in preconsonant position is not so arbitrary as it might first appear. As a matter of fact, regressive assimilation is most likely to take place diachronically, provided that the cluster <sC> is not split between two different morphemes (b).

a)	VzV		VsV	
	<i>easy</i>	'i:zi	<i>ecstasy</i>	'ɛkstəsi
	<i>busy</i>	'bɪzi	<i>basic</i>	'beɪsɪk
	<i>prison</i>	'prɪzən	<i>garrison</i>	'gærɪsən

b) <s+C>		<sC>	
<i>dismal</i>	'dɪzməl	<i>dismay</i> (<i>dis</i> + <i>may</i>)	dɪs'meɪ
<i>miasma</i>	mi'æzmə	<i>mismanage</i> (<i>mis</i> + <i>manage</i>)	,mɪs'mænɪdʒ
<i>numismatic</i>	,nju:mɪz'mætɪks	<i>unsmiling</i> (<i>un</i> + <i>smiling</i>)	ʌn'smaɪlɪŋ
<i>Bismark</i>	'bɪzmɑ:k	<i>besmirch</i> (<i>be</i> + <i>smurch</i>)	bɪ'smɜ:tʃ

Table 24 <s> in intervocalic position and the curbing effect that morpheme boundaries exert on voicing in English

Other clear evidence of the natural tendency of English /s/ to voice in this phonological context is provided by those words which have eventually developed an alternative pronunciation featuring /z/. For instance, if I consider that the American pronunciation of *asthma* is 'æzmə, it seems clear that the sibilant has become voiced thanks to the proximity with /m/ after that the interdental has dropped for reasons of simplification. The same has happened with loanwords and acronyms such as *basmati* and *ASBO*, which have eventually turned their previously voiceless /s/ into /z/.

Before continuing with the last phonological pattern, it must be clear that this distinction cannot be taken as an absolute rule, as it only represents a general phonological trend. On the one hand, not all derivatives keep their prefix-final <s> unvoiced as shown by such words as *observe*, *reserve* and *design* (see Section 3.3.3). On the other hand, not all single free morphemes voice their hissing sibilants, and a comparison between words featuring the same distributions but different alveolar fricatives can easily demonstrate it. For instance, while such lexemes as *dense* and *cease* end in a voiced sibilant, others such as *cleanse* and *please* present the voiced counterpart word-finally.

Let us now conclude with end-position <s> since Italian and English roughly coincide: in general terms, both feature [s] at the end of free morphemes. Incidentally, there are a few cases in which <s> is realized as /z/ word-finally in English such as when it fulfills a diacritical function or when it is followed by a word-final <e>. Nevertheless, as they both represent exceptional instances, they will be dealt with in the following chapters (see page 92 and Section 3.3.2 respectively).

Thus, I will here only provide evidence of this phonological convergence by listing some words chosen among borrowings and Graeco-Latin cognates, as – once again – linguistic integration turns out to be useful to show unambiguously how both the languages adhere to the same rules:

	Italian	English
<i>bus</i>	bus	bʌs
<i>gas</i>	gas	gæs
<i>pancreas</i>	'pʌnkre,as	'pæŋkriəs
<i>thermos</i>	'tɜ:mos	'θɜ:məs
<i>virus</i>	'vɪrʌs	'vaɪrəs

Table 25 Word-final <s> as /s/ in Graeco-Latin cognates

1.4 The approximants /j/ and /w/

I will now take into consideration the last set of consonants which might cause trouble to Italian EFL learners due to linguistic interference, namely the approximants /j/ and /w/. In particular, this introductory section aims to contrast the diverging grapheme-phoneme correspondences between the Italian and the English languages as a suitable starting point to understand a series of systematic mistakes that students commit when it comes to peculiar distributions (see page 96) and ambiguously similar sounds (see Sections 3.4.1 and 3.4.3).

Let us start with the grapheme <j> as it might cause interference *per se* since this glyph has been adopted by the International Phonetic Association to represent precisely the voiced palatal approximant. In actual fact, this choice was not made to sow confusion, but was dictated by the fact that many Neo-Latin languages started using the grapheme <j> when <i> was phonologically realized as a palatal approximant. Specifically, this orthographic innovation was advanced mainly in the first half of the 16th century by the Renaissance audacity of such prominent linguists as Antonio de Lebrija in Spain (1492)¹⁷, Gian Giorno Trissino in Italy (1524)¹⁸ and Louis Meigret in France (1542)¹⁹. Notwithstanding this,

¹⁷ Antonio de Lebrija (1444-1522), after living in Italy for ten years, went back to Spain in 1473, where he held professorships in Seville, Salamanca and Alcalá. As for his interest in orthography, he published *Gramática sobre la lengua castellana* (1492) and *Reglas de ortografía castellana* (1517). Furthermore, he compiled the *Dictionarium Latinum-Hispanicum et Hispanicum-Latinum* between 1492 and 1499

¹⁸ Gian Giorgio Trissino (1478-1550) is mainly remembered for his *Sofonisba* (1514-15, published 1524), as his tragedy represented the first regular play

their proposals for spelling reform were not much welcomed initially and attained success only from the 17th century on. (Traina & Bernardi Perini, 1995: 136).

It is true that <j> had not been previously employed as an independent grapheme to distinguish the semi-vocalic from the semi-consonantal <i>. Nevertheless, this does not mean it did not exist before. As a matter of fact, Mediaeval Latin did use <j>, but only as a lengthened variant of <i> to be preferred when the following glyphs featured vertical strokes as in the case of <m, n, u> and <i>. For instance, it appeared as the desinence of the singular genitive of II-declension nouns such as *aestuarium* and *kalendarium* or as the genitive singular and the nominative, dative, vocative and ablative plurals of first-declension adjectives such as *arbitrarius* and *astemius*. (Traina & Bernardi Perini, 1995: 135).

After many Romance language-speaking countries adopted the lengthened variant of <i> to represent the approximant, the use of this grapheme soon started to differ depending on the phonological and

composed closely sticking to the Aristotelian principles. As a linguist, Trissino wrote *Castellano* (1529), in which he claimed how literary Italian should be based neither on Florentine nor general Tuscan, but on a language common to all peninsular dialects. Coming to the core of our topic, he put forwards the idea of introducing such letters as Greek <ε, ω> and Latin <j, j, v> so as to represent adequately and univocally those Italian phonemes corresponding either to digraphs such as /j/ or to graphemes realizing two different phonemes such as /ε, ɔ, j, v/. In particular, *Epistola del Trissino de le lettere nuovamente aggiunte ne la lingua Italiana* (1524) was his first personal attempt to systematically adopt these new graphemes

¹⁹ Louis Meigret (1510-1558) was the author of the *Tretté de la Grammaire française* (published in 1550), which represents the first grammatical description of French ever provided

orthographic evolution that each language had undergone. Among the various results, I might remember how <j> now corresponds to the French and Portuguese voiced post-alveolar fricative /ʒ/ as in *jeu* and *jardin*, and *Janeiro* and *jogo*, as well as to the Spanish voiceless velar fricative /x/ as in *juego* and *joven*.

As far as Italian is concerned, for some time it maintained the original use of <j> as a semi-consonant as in such words as *jeri* ‘yesterday’ and *jella* ‘bad luck’. In addition, it also began making use of it as a diacritic to distinguish plural nouns in which <i> belonged to the root (sing. *vario*, pl. *varj* ‘various’) from those in which <i> belonged to the inflectional ending (sing. *varo*, plur. *vari* ‘ship launch’).

The use of <j> as a semi-consonant mostly disappeared between the second half of the 19th and the first half of the 20th century. Yet, it still survives in a few lexemes whose spelling have not been adapted because of the in-built resistance to change typical of some lexical groups. I am referring to Latinisms like *Juventus* and *juniores*; proper names like *Jacopo* and *Jolanda*; surnames like *Jannacci*, *Ojetti* and *Serrajotto*; and toponyms like *Ajaccio* and *Jesolo*.

To conclude with the consequences of the disappearance of <j>, it mainly resulted in the adoption of two other graphemes. Spelling either went back to <i> (a) or substituted <j> with <g>, especially in mid-position (b). (Traina & Bernardi Perini, 1995: 136).

The story of <j> in the English language is much shorter, as this language has not modified the spelling of Latin borrowings, which have maintained their original <j> both in mid (a) and front position (b).

	Italian	<	Latin	>	English
a)	<i> v. <j>		<i>adiacente</i>		<i>adjacent</i>

	<i>Beniamino</i>	<	<i>Beniaminus</i>	>	<i>Benjamin</i>
	<i>deiezione</i>	<	<i>deiectio, -nis</i>	>	<i>dejection</i>
	<i>eiaculare</i>	<	<i>eiaculari</i>	>	<i>ejaculate</i>
	<i>reietto</i>	<	<i>reiectus</i>	>	<i>reject</i>
b) <g> v. <j>	<i>Geova</i>	<	<i>lehoua(h)</i>	>	<i>Jehovah</i>
	<i>Gesù</i>	<	<i>lesus</i>	>	<i>Jesus</i>
	<i>gettare</i>	<	<i>iactare</i>	>	<i>jet</i>
	<i>giocososo</i>	<	<i>ioculus</i>	>	<i>jocular</i>
	<i>giudice</i>	<	<i>iudex, -cis</i>	>	<i>judge</i>

Table 26 Grapheme development of the Latin <i> as /j/ in Italian and English

Nevertheless, since my investigation focuses on phonology, what is of real interest is not the different diachronic results of the Latin semi-consonant <i>, but the fact that English currently never pronounces <j> as /j/ – not even when it comes to non-integrated Latin and Italian borrowings such as *junior* 'dʒu:niə, *de jure* ,dei 'dʒʊəri, and *Jacuzzi* dʒə'ku:zi.

Incidentally, although English displays a definite preference to keep faithful to the Latin spelling rather than to its original pronunciation, there are some few cases which can be cited to show how the English language behaves when it means to favour the phoneme /j/ over the grapheme <j>. If I consider the Latin borrowings *yawn* < *hiare* and *mayor* < *major*, but also the German *yodel* < *jodeln* and the Norwegian *yacht* < *jaght*, it is clearly shown how it replaces the original <i> and <j> with <y>. The reason why this substitution occurs so naturally in English is ascribable to the regularity with which the grapheme <y> is realized as /j/ when followed by any vowel.

Here below follows a list of all the pure and complex vowel phonemes which can follow the semi-consonant /j/. For the sake of synthesis, I will also take into consideration <w> as it presents the same

systematicity as <y> in phonological realization: while <y> is always /j/, <w> is always /w/.

V	<y V>	→ /j V/	<w V>	→ /w V/
ʌ	<i>young</i>	jʌŋ	<i>wonder</i>	'wʌndə
æ	<i>yankee</i>	'jæŋki	<i>wagon</i>	'wæɡən
ɑ:	<i>yard</i>	jɑ:d	<i>wasp</i>	wɑ:sp
aɪ	<i>yikes</i>	jaɪks	<i>white</i>	waɪt
aʊ	<i>yowl</i>	jaʊl	<i>wow</i>	wau
aɪə	-	-	<i>wire</i>	waɪə
e	<i>yellow</i>	'jeləʊ	<i>weather</i>	'weðə
ə	<i>yer</i>	jə	<i>wazir</i>	wə'zɪr
ɜ:	<i>yearn</i>	jɜ:n	<i>whirl</i>	wɜ:l
eɪ	<i>Yale</i>	jeɪl	<i>waifer</i>	'weɪfə
eə	<i>yeah</i>	jeə	<i>wear</i>	weə
əʊ	<i>yeoman</i>	'jəʊmən	<i>woe</i>	wəʊ
ɪ	<i>yiddish</i>	'jɪdɪʃ	<i>whisk</i>	wɪsk
i:	<i>yeast</i>	ji:st	<i>weak</i>	wi:k
ɪə	<i>year</i>	jɪə	<i>weary</i>	'wɪəri
ɒ	<i>yacht</i>	jɒt	<i>waddle</i>	'wɒdəl
ɔ:	<i>yawn</i>	jɔ:n	<i>walk</i>	wɔ:k
ʊ	<i>yukata</i>	ju'kætə	<i>wolf</i>	wʊlf
u:	<i>yew</i>	ju:	<i>womb</i>	wu:m

Table 27 Systematic realization of <y> and <w> as /j/ and /w/ when followed by any vowel

In an attempt to understand whether the emergence of the approximants might pose a problem to non-native students in English phonology, we must take into account that the production of semi-consonants in the Italian language depends on very similar distributions to those in English. In short, they rise when the unstressed close vowels I and U are followed by vowels with a higher prominence, namely the remaining A, E and O. In other words, <i> and <y>, and <u> and <w> become /j/ and /w/ respectively when they find themselves starting what are traditionally – but wrongly²⁰ – called *ascending diphthongs* (Ohala & Eukel, 1987: 211).

V	<i V> → /j V/	<u V> → /w V/
a	<i>ghiacciaia</i> gjat'tfaja	<i>quanto</i> 'gwanto
ɛ	<i>fieno</i> 'fjɜno	<i>guerra</i> 'gwɜrra
e	<i>sedie</i> 'sɛdje	<i>tregue</i> 'trɛgwe
i	/	<i>qui</i> kwi
ɔ	<i>fiordo</i> 'fjɔrdo	<i>pioggia</i> 'pjɔddʒa
o	<i>armadio</i> ar'madjo	<i>oppio</i> 'ɔppjo
u	<i>fiume</i> 'fjume	/

Table 28 Italian <i> and <u> as /j/ and /w/ in ascending diphthongs

²⁰ Since this dissertation does not have any theoretical pretension, it will adopt the phrase *ascending diphthongs* as it is still generally used and widely recognized. Nevertheless, as Canepari states, 'from a phonetic viewpoint, the only real *diphthongs* are those sequences made up of two vocoids [...], namely those which are traditionally called *descending diphthongs*. On the contrary, *ascending diphthongs* are not diphthongs at all, but simply a sequence of a consonant (either the palatal approximant [j] or the labio-velar [w] in Italian) followed by a vowel. (2004: 144)

What is more, the two languages also coincide when they take part in *descending diphthongs*. Namely, when the Italian weak vowels <i> and <u> and the English consonants <y> and <w> do not precede, but follow such strong vowels as A, E and U, they do not turn into approximants. This provided that they do not give rise to long vowels such as *flaw* flɔ: or *blew* blu: .

	Italian			English		
<_ i / y >	ai	<i>airone</i>	ai'rone	aɪ	<i>iris</i>	'aɪrɪs
	ɛi	<i>volerei</i>	vole'rɛi			
	ei	<i>quei</i>	'kwei	eɪ	<i>away</i>	ə'weɪ
	oi	<i>voi</i>	voi			
	ɔi	<i>foiba</i>	'fɔiba	ɔɪ	<i>boy</i>	bɔɪ
<_ u / w >	au	<i>flauto</i>	'flauto	aʊ	<i>allow</i>	ə'lau
	eu	<i>eunuco</i>	eu'nuko			
	ɛu	<i>feudo</i>	'fɜudo	əʊ	<i>flow</i>	fləʊ

Table 29 Identity of Italian and English vowels in descending diphthongs

Therefore, from a contrastive viewpoint, English approximants do not cause much trouble to Italian students as the two languages share most of the distributional patterns in which they appear. In fact, there are two divergences between English and Italian in the production of semi-consonants. Yet, they pose no problems to Italian EFL students.

First of all, while both of them realize their graphemes as approximants in rising diphthongs and as semi-vowels in falling diphthongs, only English opts for semi-consonants when the nucleus is formed by close vowel as in such words as *yield* ji:lɪd and *woman* 'wʊmən. On the contrary, in those rare cases of Italian words in which two weak

vowels appear consecutively, the two phonemes cause a hiatus, and are therefore realized as two distinct vowels. As the cluster <uu> is phonotactically inexistent in the Italian language, we can only cite as examples those few morphological processes which can give rise to a geminated <i>, namely the pluralization of nouns ending in *-io* such as *pii* 'pii 'pious' or *genii* 'dʒɛnii 'geniuses', and the third-person singular of the past simple of third-conjugation verbs such as *aprii* a'prii 'I opened' or *udii* u'dii 'I heard' (Canepari, 2004: 211 and Franceschi, 2004: 100-102).

Homogeneous digraphs represent a suitable link to the second and last point of divergence between English and Italian approximants, since only in Italian can hiatuses discriminate meanings. As supporting evidence of this assumption, the words chosen for the table below – when possible – are minimal pairs as they can demonstrate best of all how the opposition between the weak vowels /i/ and /u/ and the approximants /j/ and /w/ is distinctive in meaning.

	ascending diphthong		hiatus	
<a>	<i>piano</i> ('slow')	'pjano	v. <i>piano</i> ('pious')	pi'ano
<e>	<i>piè</i> (<i>lit.</i> 'foot')	pjɜ	v. <i>pie</i> ('pious')	'pie
<u>	<i>qui</i> ('here')	kwi	v. <i>cui</i> ('which')	'kui
<i>	<i>fiume</i> ('river')	'fjume	<i>niuno</i> (<i>lit.</i> 'nobody')	ni'uno
<o>	<i>pioggia</i> ('rain')	'pjɔddʒa	<i>piolo</i> ('rung')	pi'ɔlo

Table 30 Phonological opposition between the approximants /j/ and /w/ and the vowels /i/ and /u/ in Italian

Further cases of possible interference will be discussed in the following two chapters (see Sections 2.3 and 3.4).

1.5 Conclusion

I have now finished investigating the main differences between the Italian and the English consonant phoneme systems, which has mainly focused on articulation, distribution and the relationship between graphemes and phonemes.

Although the differences between the two languages has often led me to take into consideration how Italian frequently interferes in EFL pronunciation, the negative influence that the Italian phonological rules might exert on English pronunciation will be the main subject covered in the following chapter.

2. EXPERIMENTAL ASSESSMENT OF THE INTERFERENCE OF THE ITALIAN CONSONANT PHONEME SYSTEM ON EFL PRONUNCIATION

In Chapter 1 I have described the Italian and English consonant phoneme systems with the aim of pointing out the main differences between the two. In particular, I have shown how some phonemes exist only in one of the two languages as in the case of the English fricatives /h/, /θ/ and /ð/, and the Italian palatals /ʎ/ and /ɲ/, but I have also highlighted how other consonants do exist in both languages, but with some differences in status as with /z/ and /r/, phonological class as with /r/, and articulation as with /t/ and /d/.

In fact, with the discussion of the most significant divergences between the Italian and the English consonant phoneme sets, I have been laying the theoretical groundwork for the present chapter, which will be an empirical assessment of the impact that Italian might exert on EFL pronunciation when its native consonant phonemes, distributional rules and all the other factors discussed in Chapter 1 differ from those of English.

In particular, the data I will provide in this chapter are based on the information offered by a sample group of 30 native Italian speakers in their first year of English Language at Ca' Foscari University.

The reason why my choice fell on this group is twofold.

First of all, as I also study at Ca' Foscari, it was easier for me to recruit volunteers for my study, and to collect useful background information about their language experience. Secondly, the group of

students had a level of English approximately equal to the CEFR B2 level: I felt this level of language proficiency represented a level in English pronunciation that would be sufficiently high to provide me with relatively homogeneous data.

As regards the methodology that I adopted, I initially aimed to record these students while reading a list of English words. However, I soon realized that recording would not be feasible for various reasons. To start with, those students whom I first asked to participate in my study were rather reluctant to have their voice recorded, as they wished to remain anonymous. Secondly, it would also be rather difficult to provide accurate transcriptions for their recordings without an adequate sound analyzer, especially when dealing with vowels. Finally, the transcription of as many as 254 recorded words for each of the 30 students who agreed to fill in the questionnaire would be extremely time-consuming.

I therefore decided to resort to students who had already attended a course in English phonology, and asked them to *transcribe* how they pronounced the graphemes and clusters presented in a questionnaire (see Appendix A).

This decision proved successful. On the one hand, many students immediately accepted to participate in my study as they had their anonymity ensured by the fact that the questionnaires were only numbered for identification; on the other hand, transcriptions offered me many advantages. First of all, they allowed me to reduce the time needed to administer the questionnaire, as I was able to ask all the volunteers to join me on the same day. Then, as mentioned above, they were ready-made material on which to start working immediately.

Nevertheless, I must point out that, although phonological transcriptions are much more manageable data than recordings, they

cannot be likewise accurate and reliable as the latter. As for accuracy, phonemes are, by definition, only abstractions of real sounds:

The phonemes [...] are abstract, but there are many slightly different ways in which we make the sounds that represent these phonemes, just as there are many ways in which we may make a mark on a piece of paper to represent a particular (abstract) letter of the alphabet. (Roach, 2009: 32)

As for reliability, when students provide transcriptions, there is no certainty that they will transcribe words as they actually pronounce them.

Nevertheless, the advantages of phonological transcriptions outweighed those of recordings, especially taking into consideration another important factor, namely what I used as incentive to attract the students' interest. As they had not sat their English phonology exam yet, in exchange for their help I promised to provide them with some useful guidelines to improve their English pronunciation and, as a consequence, their chance of transcribing English words correctly.

With specific reference to the content of the questionnaire, the list I asked the students to transcribe was made up of both words featuring the phenomena of interference presented in Chapter 1 and other similar words not presenting problematic realizations. For instance, for the section dedicated to the aspiration of /h/ (2.2.1), I did not only ask the students if they pronounced the aitch in uncommon instances like loans (e.g. *halal*, *haiku*) and etymologically derived words (e.g. *adhere* and *abhor*), but also in ordinary words like *house* and *hospital*. Not only did the contrast between these problematic and unproblematic words allow me to show the impact of interference by comparing the answers provided for them, but

their random order also prevented students from realizing that some words shared the same phonological, orthographic or morphological structure.

I have collected the transcriptions provided by each of the students in Appendix C, where I also calculated the average of correct transcriptions for each phenomenon (B). Both the words (in blue type) that I asked the students to transcribe and the means of correct answers will represent the main source of information for what I will be dealing with below.

Before starting to analyze these data, I would first like to point out that pronunciation questions were only Part C of the questionnaire that I administered to students, as I also asked them information about their language background (Part A) as well as their opinion on the effectiveness of the guidelines that I provided for them once they finished filling in the questionnaire (Part B). While Part B will be discussed in the Conclusion, I will now only focus on Part A, making reference to the information I collected in Appendix B.

To start with, as can be seen from the pie chart below, the students who accepted to participate in my study come from many different types of high school, although modern languages play a key role in two of the three most attended schools, namely *Liceo Linguistico*, an Italian high school with a curriculum focused on foreign languages and literatures, and *Istituto tecnico per il Turismo*, a training school for business operators.

HIGH SCHOOLS ATTENDED BY THE STUDENTS

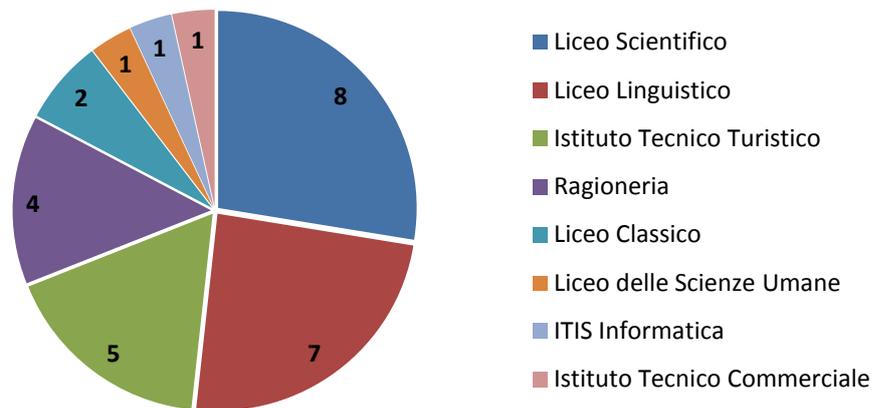


Figure 2 High schools attended by the respondents to the questionnaire

As far as the number of classes per week is concerned, more than half of the students reported they attended no more than three one-hour English classes per week.

NUMBER OF ENGLISH CLASSES PER WEEK

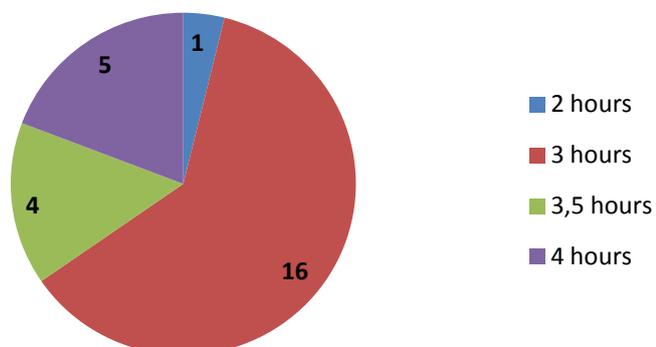


Figure 3 English classes attended by the respondents per week

Finally, with specific reference to pronunciation and phonology, although all students but one reported that their English teachers corrected their pronunciation, they also reported that they never used phonological symbols to show them how to pronounce words correctly.

2.1 Non-rhotic /r/

As already mentioned in the previous chapter (see Section 1.1.2), although most of the first-year students in this study articulated the English phoneme /r/ as a retroflex approximant and not as a trilled consonant, not all of them could shed their native rhoticity when necessary, especially when it came to words with unusual grapheme or distributional patterns.

A noteworthy case is provided by those words whose spelling mystified the phonological context in which /r/ was found. For instance, 64.8% of the students did not transcribe it word-finally when the corresponding grapheme was geminated as in *purr*, *burr* and *whirr*, and, in particular, when the homogeneous digraph was also followed by a silent aitch as in such words as *myrrh* and *catarrh*.

Consonant clusters were not the only possible cause of mistranscription. Considering that the order of graphemes and phonemes always match in Italian, the students were misled when <r> and /r/ did not coincide in positional terms. For example, more than 90% of the respondents transcribed the pre-consonant approximant in the words below as they believed it to be in the same intervocalic position as the corresponding grapheme:

	_C (BrE)	V_V (ItE)
<i>iron</i>	aɪə(r)n	*aɪrən
<i>aren't</i>	ɑ:(r)nt	*ɑ:rənt

Table 31 The interference of grapheme order in the non-rhotic distribution of /r/

Another general issue for students seemed to be the presence of the linking /r/ in compound lexemes, that is to say the phonological realization of the approximant at the end of the first constituent when the second started with a vowel phoneme. What seems to have misled many of them in this case is neither spelling nor opaque distribution, but their general approach to phonological transcription. As they informally told me, they tend to transcribe the two elements individually and regard them as a single word only when it comes to deciding where the stress is to be placed. As a consequence, if the first element presents a final /r/, they are likely to drop it as they do not consider it an intervocalic linker, but only a word-final approximant.

Evidence of the widespread adoption of this piecemeal approach is provided by the fact that the number of the respondents who transcribed /r/ rose by 40% when the constituents were kept separate either by a space (b) or a hyphen (c), and not joined together as one word (a).

	compound	BrE
a)	<i>whereas</i> <i>hereabouts</i>	,weər'æs ,hɪərə'baʊts
b)	<i>care assistant</i>	'keər ə ,sɪstənt
c)	<i>counter-attack</i>	'kaʊntər ə ,tæk

Table 32 Non-rhotic /r/ at the end of the first element in compounds

To conclude, my study also showed that 30% of the students were unaware that /r/ must be exceptionally pronounced stem-finally in those adverbs and nouns ending in *-edly* and *-edness* like *assuredly* and *preparedness*.

As a rule, the inflectional suffix *-ed* keeps /r/ unrealized morpheme-finally as in the verb forms as *armoured* 'ɑ:məd, *hammered* 'hæməd and *laboured* 'leɪbəd. Nevertheless, their combination with the adverbial and nominal suffixes *-ly* and *-ness* curbs syncope and the zero-nucleus /d/ is substituted with the allomorph /ɪd/. This means that /r/ shifts from pre-consonant to intervocalic position and must be realized as a result (Bailey, 1985: 203).

2.2 English phonemes not existing in Italian /h θ ð ŋ z/

2.2.1 The missing /h/

As far as word-initial /h/ is concerned, the majority of the students in the study appear to know that an aitch always corresponds to glottal affrication, as 84.5% of them transcribed the initial /h/ in such words as *house*, *hospital* and *hotel*. Furthermore, nearly the same number of students (80%) also observed this grapheme-phoneme correspondence when it came to complex and compound words whose morphological structures were still easily recognizable as in the case with *preheat*, *adulthood* and *beehive*.

Nevertheless, the number of correct transcriptions provided by the students decreased by 20% when I asked them how they pronounced lexemes whose derivation or compounding was discernible only through diachronic investigation. I am referring to those many words featuring roots, affixes and combining forms which are relevant in phonological terms although they are no longer regarded as proper morphemes in modern English.

While compounding offers only a few instances of this kind such as *perhaps* pə'hæps (from *per* 'hap' + *hap* 'chance'), derivation abounds with examples. Here below are the two words I asked the students to transcribe (their morphological structures are made clear by their etymological origins):

- *abhor* /əb'hɔː/ from Lat. *abhorrere* 'to tremble at', from *ab-* 'away' + *horrere* 'tremble, shudder';

- *adhere* /əd'hɪə/ from Lat. *adhaerare* ‘to stick to’, from *ad-* ‘to’ + *haerare* ‘stick’.

The only exception to this etymology-based rule is represented by the Latin preposition *ex-*, as the post-prefixal aitch is never aspirated in such words as *exhaust*, *exhort* and *exhilarate*, with the exception of *exhale* and *exhume*, in which glottal affrication is optional. Evidence of the impact of the choice of the prefix on root-initial aspiration might be provided through the comparison between such words as *prohibit* and *exhibit*, as both feature *hibit* > Lat. *habere* ‘to hold’ as their second element, but only the former presents glottal affrication: prə'hɪbɪt v. ɪg'zɪbɪt.

Leaving the exception of the prefix *ex-* to one side, whereas such lexemes as *abhor* and *adhere* serve to point out how diachronic compounding and derivation generally affect morphology alone, such words as *perhaps* and *philharmonic* are useful to show how phonology might also – yet rarely – adapt when morphology is no longer easily discernible. As far as the adverb *perhaps* is concerned, while the traditional transcription pə'hæps still does justice to the original union of *per* ‘by, through’ with *haps* ‘chances’, the alternative form præps – which has been recently accepted as standard English – is indicative of how *hap* is no longer perceived as an English free morpheme.

As for the adjective *philharmonic*, it enjoys the same uncertain morphological status as *perhaps* since, although it comes from the combination of Lat. *philo-* ‘loving’ with *harmonic* ‘harmonious’, it has coalesced into a single free morpheme and developed an alternative pronunciation in which <h> has dropped, *i.e.* ˌfɪlɑ:'mɒnɪk.

Moving further to another case of aitch-dropping, fewer than half of the respondents to the questionnaire showed knowledge of those <h>-starting words which English borrowed from French but has never made to

complement the conventional Germanic aspiration, namely the nouns *honest* 'ɒnɪst, *honour* 'ɒnə, *heir* eə and *hour* aʊə, along with AmE *herb* 3:b and all their derivatives.

These are the only five words which are mentioned in even the most complete and recent publications on English pronunciation. Nevertheless, proper consultation of any up-to-date English dictionary would bring to light another few words presenting no initial aspiration²¹:

<i>habitué</i>	æ'bitʃueɪ (optional)
<i>hotelier</i>	,əʊ'telɪɪ (optional in NAmE)

Table 33 Silent aitch in loanwords

Before moving on to the third and last aitch-dropping group, I must first add a marginal note on the borrowings *habitué* and *hotelier*, as one might argue that the English lack of initial affrication does not represent any exception but only conforms to the native pronunciation of these words. At first sight, this argument appears to be rather convincing in that both the French of *habitué* and *hotelier* are actually non-aspirating languages. Nevertheless, a quick scan through the *h*-entries in any English dictionary will immediately dismiss this claim as unsound as loanwords acquire Germanic aspiration as a rule, no matter whether the source language presents glottal affrication – a to f – or not – g to h:

²¹ Just to quote only the most important publications, none of the following pronunciation books make reference to the words in the table: Celce-Murcia *et al.* (1996); Avery & Ehrlich (1992) and Karjalainen, J. (2002)

- a. Arabic: *halal* 'hælæɪ, *hadith* hæ'di:θ, *hajj* hædʒ, *hakim* hæ'ki:m and *halwa* 'hælwɑː;
- b. Ancient Greek: *hades* 'heɪdi:z;
- c. Hebrew: *hannukkah* 'hænu:kə;
- d. German: *heineken* 'hainəkən;
- e. Chinese: *hakka* 'hækə;
- f. Japanese: *haiku* 'haiku: and *hara-kiri* ,hærə 'kiri;
- g. Spanish: *hacienda* ,hæsi'endə;
- j) Scholastic Latin: *hallelujah* ,hæli'lu:jə, *hapax* 'hæpæks, *habeas corpus* ,heɪbiəs 'kɔ:pəs and *hosannah* həʊ'zænə. *Honoris causa* ɒ,nɔ:ris 'kaʊzɑː represents an exception which is easily justified as a phonological calque of the non-aspirated English word *honour*.

As for the answers provided by the respondents to the questionnaire, it seems that they took into consideration whether these words present aspiration or not in their original realization, as the error rate shows an increase of 10% with words in which English adds aspiration to their native pronunciation (see *hacienda*, *hallelujah* and *hapax*).

I will now move further to the third and last group of aitch-dropping words, namely weak forms, as they posed a serious problem for the first-year students in the study, considering that more than 80% of them transcribed both the weak form of *have* in 'I *have* been working for ages' and the strong form of it in 'No, I *haven't*' with an initial /h/.

This mistake is likely to be due to the diverging isochrony between Italian and English. While Italian is a syllable-timed language in which rhythm is based on the equal duration of every syllable; English is a stress-timed language in which the equality in time lies in the regular intervals between stressed syllables 'irrespective of the number of intervening unstressed syllables' (Roach, 2008: 107). This means that, in

order to fit the rhythmic speech movement, vowels in unstressed syllables will diminish their prominence up to point of turning into short central or close front vowels. Consonants, instead, remain unvaried except for the glottal fricative /h/, which disappears in certain circumstances.

To conclude, shifting from syllable timing to stress timing requires a very high proficiency in English, as the adoption of the latter rhythmical pattern implies fluency and fast speech.

2.2.2 /θ/ voicing to /ð/

In Chapter 1 I have shown how the interdental fricatives /θ/ and /ð/ are likely to be pronounced as the dental plosives /t/ and /d/ respectively as they are unknown sounds to the Italian phonological system (see Section 1.3.2). Although half of the respondents to the questionnaire confused the two pairs, in this chapter I would like to take a step further and investigate only how the students behaved when the source of uncertainty was represented by the more difficult choice between the two interdentals.

For the sake of clarity, I will group the words I asked the students to transcribe according to their orthographical and morphological nature, as this classification might be adopted as a useful guideline for those of them who still cannot recognize the different distributions of /θ/ and /ð/.

To begin with, although the digraph <th> always voices when it is followed word-finally by the grapheme <e>, 82.4% of the students reported that they pronounce the words featuring this cluster with a final /θ/. Here below are the three main lexical groups featuring this grapheme pattern.

- a) Germanic words. In fact, a substantial majority of lexemes ending in *-the* is of Anglo-Saxon or Norse derivation. Nevertheless, the presence of Greek-origin words such as *absinthe* 'æbsɪnθ' makes the mention of etymology necessary.

word	pron.	etymology
<i>lith</i> e	laɪð	from OE <i>liðe</i> 'soft, mild, gentle, meek'
<i>scythe</i>	saɪð	from OE <i>sipe</i> 'to cut'. The <i>sc-</i> spelling is from influence of Lat. <i>scissor</i> 'carver, cutter' and <i>scindere</i> 'to cut'
<i>writh</i> e	wraɪð	from OE <i>wriðan</i> 'to twist or bend', earlier 'to bind or fetter'

Table 34 Germanic words ending in *-the* as /ð/

- b) Noun-verb class pairs. Unlike the above-mentioned case in which pronunciation is independent of grammar class, voicing in the following pairs serves to distinguish nouns from verbs.

While the presence of a final <e> generally results in the /θ/-/ð/ opposition as the only class-distinctive change produced, it can also sometimes lead to a change in the status of the preceding vowels as in the case of *bath* – *bathe*, *cloth* – *clothe*, and *breath* – *breathe*.

nouns		verbs	
<i>teeth</i>	ti:θ	<i>teethe</i>	ti:ð
<i>bath</i>	bɑ:θ	<i>bathe</i>	beɪð

Table 35 The role of the /θ/-/ð/ opposition in noun-verb pairs

Incidentally, there is one word in which class-related voicing occurs although no final <e> is present in the verb. I am referring to the lexeme *mouth*, which must be regarded as a unique exception in that grammatical conversion does not generally affect the nature of consonants.

- c) Double spelling and pronunciation. As far as I know, this is a one-word category; nevertheless, it is still worth mentioning it since it clearly shows the key role of <e> word-finally. The lexeme *swath* swɒθ might be also spelt as *swathe*, and the addition of the vowel grapheme causes the interdental fricative to voice and the nucleus to diphthongize to /eɪ/.

Although virtually no student transcribed correctly *paths* as 'pɑ:ðz, the pluralizing -s (a) might also lead to the voicing of the digraph <th>, although this inflectional morpheme does not affect the unvoiced interdental so systematically as the word-final grapheme <e> does. For example, while *oath*, *sheath*, *wreath* and *youth* voice their final -s in the plurals, *berth*, *earth*, *froth* and *length* keep it unvoiced.

Finally, there are also a couple of derivational cases which might cause the interdental /θ/ to voice, and in this case the number of the students who provided correct transcriptions rises by 20%. To start with the noun-to-adjective suffix -y, it sometimes turns stem-end /θ/ into /ð/. Yet, if the previous inflectional case was productive but not systematic, this presents voicing only occasionally, as in *worthy* and *smithy*, and in most cases only as an alternative pronunciation, as in *mouthy* and *toothy*.

The second and final case of voicing is represented by the compass-related suffixes *-ern* and *-erly*, which are decidedly limited in production, but much more regular in their voicing effects.

root noun	adjective in <i>-ern</i>	adjective in <i>-erly</i>
<i>north</i> nɔ:θ	<i>northern</i> 'nɔ:ðən	<i>northerly</i> 'nɔ:ðəli
<i>south</i> saʊθ	<i>southern</i> 'sʌðən	<i>southerly</i> 'sʌðəli

Table 36 The voicing effect that the derivational suffixes *-ern* and *-erly* exert on /θ/ in word-final position

I have now finished listing all the grapheme distributions and morphological formations which might voice the interdental fricative /θ/ to /ð/. Since an attempt to systematize all these cases would be a vain effort, I will now conclude this section by showing only how all of them must comply with the same *condicio sine quam non*, namely the absence of suffix-initial onsets, be they voiced or unvoiced: θ → ð / _ + V.

By way of example, I might refer back to *north* and *south*, and see how the word-final digraph <th> voices only if the suffixes they join start with a vowel (see Table 36 above), as neither consonant nor semi-consonant onsets can cause regressive assimilation (e.g. *southbound* 'saʊθbaʊnd and *southward* 'saʊθwəd).

Similarly, the phonological complementation of two alternative pronunciations of *with* – wɪθ and wɪð – in compounds depends entirely on the initial phoneme of the second constituents. Namely, while vowels always voice the digraph <th> to /ð/ (c), consonants present it only as an alternative to /θ/ (b). Incidentally, although it oversteps the boundaries of segmental phonology, it is also worth pointing out that this assimilative rule also works when *with* is followed by another free morpheme. Compare, for

example, the following prepositional phrases: *with Andrew* wɪð 'ændru: and *with Mark* wɪθ/ð 'mɑ:k.

a) <i>with</i> + V		b) <i>with</i> + C	
<i>withal</i>	wɪ'ðɔ:l	<i>withdraw</i>	wɪθ'drɔ: or wɪð-
<i>within</i>	wɪ'ðaʊt	<i>withhold</i>	wɪθ'həʊld or wɪð-
<i>without</i>	wɪ'ðɪn	<i>notwithstanding</i>	ˌnɒtwɪθ'stændɪŋ or -wɪð-

Table 37 The different effects that vowels and consonants exert on the final /θ/ in *with*

2.2.3 /g/-dropping

As far as the velar nasal /ŋ/ is concerned, while the first chapter aimed to compare and contrast the status and distribution of this phoneme in Italian and English (see Section 1.3.3.1), the present chapter will focus entirely on /g/-dropping. The reason for this choice lies in the fact that this phenomenon represents the only difficulty that the first-year students encountered when dealing with /ŋ/, as they mostly dropped the plosive only when the grapheme and phonological syntagma coincided and the velar cluster was in word-final position.

To begin with a clear example of the importance of the grapheme-phoneme relationship, I might point out how, while more than 90% of the students did not transcribe the final plosive in such words as *playing* and *along*, fewer than 20% of them dropped it when spelling did not make the

word-final position of /ŋ(g)/ immediately recognizable. For instance, when I asked these students how they realized nouns ending in the silent cluster *-gue*, they focused on the tricky ending so exclusively that nearly 90% of them completely overlooked the resultant /g/-dropping:

	BrE	ItE
<i>meringue</i>	mə' ræŋ	*mə' ræŋg
<i>tongue</i>	tʌŋ	*tʌŋg

Table 38 The interference of spelling on /g/-dropping

Along with the interference of spelling, the other main problem for the students was caused by the little attention that they paid to the morphological nature of lexemes, although word formation is sometimes the only way that non-native speakers have to identify phonological processes which would otherwise remain unnoticed.

To start with compounding, compounds whose first elements ended in a velar cluster did not represent a major difficulty, as students generally analyze and transcribe constituents as two separate words, and this *modus operandi* makes them immediately aware of the presence of stem-final clusters. Nevertheless, the same cannot be said when morphological compoundness was obfuscated by lexical obsolescences or fossilized spelling forms, as more than 60% of the respondents to the questionnaire reported that they do pronounce the plosive after /ŋ/ in words like *Buckingham*, *Ardingly* and *Kingston*, which are clear examples of this phenomenon, as toponyms are likely to remain unvaried across the centuries in the face of the lexical replacement which linguistic evolution and stratification usually lead to.

Similarly, when it came to transcribing complex words in which the root-final velar cluster was in word-mid position (a), the number of students who did not drop /g/ was particularly high (80.5%), and the reason for this seems to lie in their common perception of both derivational and inflectional morphemes as particles indivisible from the words they join to form.

In particular, the error rate in wrong transcriptions reached extraordinarily high levels in one case: nine in ten students transcribed /g/ stem-finally when it was attached to a suffix starting with a vowel (compare *winged* with *singer*) in that the Italian allophone [ŋ] is always accompanied by a velar plosive in pre-vocalic position (see, for example, *ancora* 'aŋkora 'anchor' and *anguilla* aŋ'gwilla 'eel').

I would also like to mention another two cases within this derivation-based classification, as they were an important source of uncertainty for the respondents to the questionnaire.

I will first refer to the comparative and superlative suffixes *-er* and *-est*, which exceptionally never drop /g/ and posed a real problem only for those students who were unable to recognize stem-final velar clusters in word-mid position. Error analysis provides supporting evidence of this, since the average number of correct transcriptions that the students provided for *longer* and *strongest* (92.1%) is inversely proportional to the rate of correct answers provided for such derived words as *winged* and *singer* (19.45%).

Before moving further to the second group of problematic /g/-dropping words, I will first add a note on the recent AmE coinage *winningest* 'wɪnɪŋɪst in that students might find it difficult to decide whether the velar plosive is to be transcribed or not since it finds itself between two bound morphemes acting in a diametrically opposed way on /g/-dropping, namely the inflectional *-ing* and derivational *-est*.

I will now discuss a series of words which 9 in 10 students in this study transcribed incorrectly as they drop their velar plosives although they are not in morpheme-end position.

The largest part of them is represented by loanwords. Sometimes /g/ appears to drop as the English varieties which first came into contact with the borrowing languages kept faithful to their native pronunciation as in the case with *Tongan* and *Bangla*. Other times, instead, /g/-dropping seems to take place because English phonology does justice to the compound or derived nature of the loans as in the case with *tungsten* (Swedish *tung* ‘heavy’ + *sten* ‘stone’) and Shanghai (Chinese *shang* ‘above’ + *hai* ‘sea’).

Nevertheless, since the velar plosive also disappears in borrowings belonging to neither of these categories, it is not unreasonable to suppose that English speakers do not drop it because they *know* these words as compounds, but because they *perceive* them as compounds. As a matter of fact, I can find no other explanation than morphological calquing for the /g/-dropping words below:

word	pronunciation	pseudo-formation	similar Eng. derivate
<i>hangar</i>	'hæŋ(g)ə	* <i>hang</i> + <i>ar</i>	<i>hanger</i>
<i>humdinger</i>	'hʌmdɪŋə	* <i>humding</i> + <i>er</i>	<i>gaslinger</i>

Table 39 Loans dropping /g/ due to the English perception of them as compound words

Along with borrowings, *anxiety* æŋ'zaiəti is another word in which /g/-dropping occurs although the velar plosive is not in morpheme-end position. Nevertheless, the transcription of this substantive was problematic for nearly all the students (95%) not only because it represents an exception to morpheme-end dropping, but also because the

velar cluster <ng> usually corresponding to /ŋ(g)/ is exceptionally replaced by <nx>.

For these two reasons, the steps to take and the rules to apply in order to understand the reasons why the noun *anxiety* diverges so much from the corresponding adjective *anxious* 'æŋkʃəs are manifold and require full attention. To start with, as opposed to *anxious*, the stress in *anxiety* no longer falls word-initially. As a consequence, /s/ becomes the onset of a stressed syllable and the whole digraph /ks/ voices to /gz/ (*æŋg'zaiəti) (see page 128). Finally, /g/ disappears as it turns into a coda-end phoneme (æŋ'zaiəti).

This last step is of crucial importance as it dismisses as a partial truth what we read in Roach about the distributional rule for /g/-dropping, namely that 'no /g/ is pronounced after /ŋ/ at the end of a morpheme' (2008: 47). Although morpheme-end and coda-end positions generally overlap, they do not always coincide. As a result, Roach's statement should be rectified to consider syllable codas – and not morphemes – the real cause for /g/-dropping.

2.2.4 Word-final /z/

As far as the consonant phoneme /z/ is concerned, in Chapter 1 I have shown so far how it stands in complementary distribution with the unvoiced counterpart /s/ and how the pre-voiced consonant and the intervocalic positions are the only cases in which Italian distributional rules interfere in EFL pronunciation (see Section 1.3.3.2).

The only phonological context that I still have not taken into consideration is word-final position, and this deferral has been due to the fact that the distributional peculiarities by which the grapheme <s> is characterized in both Italian and English caused trouble to many of the respondents to the questionnaires. I am referring to the fact that, while the hissing sibilant is in defective distribution in Italian, appearing word-finally only in non-integrated loanwords, in English not only does it often appear in word-final position, but it can also work as a diacritic in number, class and meaning.

Nevertheless, as all these peculiarities will be fully discussed in due time, I will now orderly consider the various contexts in which the grapheme <s> might be found word-finally so as to determine when Italian and English distributions coincide.

To start with post-consonant position, voicing never takes place in Italian since [s] turns into [z] only when it is followed – and not preceded – by a voiced consonant (compare, for example, the words *asma* 'azma with *ansa* 'ansa). As a consequence, more than 40% of the students in this reported that they do not pronounce English words ending with a final sibilant as /z/ – not even when /s/ voices systematically in English as in the case with the inflectional suffix -s in post-voiced consonant position.

voiced C + s	BrE	It
<i>Kellogg's</i>	'keləgz	'kɛllogʃ
<i>AIDS</i>	eɪdz	aɪdz
<i>Cairns</i>	keənz	kɛ(r)ns
<i>fans</i>	fænz	fans

Table 40 Loans in Italian ending in <s> as /s/

On the contrary, when it comes to loanwords in which the final sibilant is preceded by a vowel, Italophones might realize it either as [s] or [z]. Initially, I was inclined to believe that the choice between the two allophones depended on the origin of words since, while most Anglo-Saxon loans such as *case*, *house* and *juice* feature a voiced continuant, most ancient Greek loans such as *chaos*, *ethos* and *thermos* present the unvoiced counterpart. Nonetheless, when other words like *bus* and *blues* came to my mind, I realized that the choice between the two sibilants could not be based on etymology but on phonology.

As a matter of fact, it seems that there is a direct correlation between the voicing of the sibilant word-finally and the nature of the preceding vowels in that [s] voices to [z] only when it is preceded by a long or complex vowel. Therefore, if we bear in mind how the grapheme <e> in word-final position either lengthens or breaks pure vowels into complex sounds (see Section 3.3.2), it does not come as a surprise that *all* English loanwords ending with this grapheme are all pronounced with a voiced continuant.

As a consequence, Italian adaptation rules might be detrimental to correct English pronunciation only when word-final vowels are either long or complex (a), in that short vowels imply word-final voiced sibilants in both languages (b). This is evidenced by the fact that more than 65% of the

students in this study transcribed words belonging to the first group with a final /z/.

	a) long or complex V _		b) short V _	
	BrE	It	BrE	It
<i>house</i> n.	haʊs	v. auz	<i>chaos</i>	'keɪɔs 'kaos
<i>mouse</i>	maʊs	v. mauz	<i>ethos</i>	'i:θəs 'ɛtəs
<i>juice</i>	dʒu:s	v. juz	<i>focus</i>	'fəʊkəs 'fɒkəs
<i>overdose</i>	'əʊvəˌdəʊs	v. ove'dɔz(e)	<i>versus</i>	'vɜ:səs 'vɜrsəs
<i>blues</i>	blu:z	bluz	<i>bus</i>	bʌs bus

Table 41 English loans in Italian in which the final /z/ is originally preceded by a long or complex vowel

I will now end this section dedicated to the hissing sibilant in word-final position by pointing out how 60% of the students showed a pronounced tendency to opt for /z/ even when the [\pm voiced] feature produced minimal pairs. For the sake of clarity, I will now group all those words in the questionnaire pertaining to this category according to the various cases in which the /s/ – /z/ opposition makes a difference.

- a) Number opposition. Although students generally know that Greek words ending in -sis pluralize as -ses, most of them do not extend this distinction to pronunciation, realizing both forms as /zɪs/ (see *analysis* and *diagnoses*). Nonetheless, this realization is an Italian adaptation corresponding neither to the singular /sɪs/ nor the plural /si:z/. While the voicing of /s/ to /z/ depends on the intervocalic position of it (see page 56), the missed lengthening of the close front vowel in the plural is not only due to the basic absence of long

vowels in Italian, but also to the fact that the corresponding Italian cognates are all invariant in number, and a short /i/ is used for both the singular and the plural. Thus, for example, *analisi* a'nalizi will stand for both *analysis* ə'næləsɪs and *analyses* -si:z, and *diagnosi* di'apnozi for both *diagnosis* daɪæg'nəʊsɪs and *diagnoses* -si:z.

- b) Class opposition. Not only can the voiced-unvoiced opposition determine number, but also grammar class, and the words in the table below act as nouns or as verbs depending on whether the grapheme <s> is realized as /s/ or /z/ respectively.

a)	b)
(ab)use	<i>excuse</i> advice, -se
diffuse	house device, -se
dowse	<i>refuse</i> * licence, -se

**refuse* as a verb does not oppose *refuse* as a noun only in voicing, but also in stress position and the resultant reduction of the initial <e> to /ɪ/: 'refju:s → rɪ'fju:z.

Table 42 The opposition between /s/ and /z/ acting as a word-final diacritic

Nevertheless, I must add some explanatory notes so as to avoid any misleading generalization.

First of all, this voicing-based classification does not mean that *all* multi-class words ending in -s present the same opposition. Sometimes, this distinctive function is fulfilled by other diacritics such as stress position as in *increase* and *produce*. Nonetheless,

situational context is often the only way of understanding whether words are acting as nouns or verbs, given that some lexemes end only in /s/ (e.g. *base, case, dose*, etc.), while others only in /z/ (e.g. *cause, phase, pose* etc.).

Second of all, homophony is not the same as homography. While the words in a) are full homographs, nouns in b) have substituted their <s> with <c>, as the second consonant does not generate any confusion since it can be only realized as an unvoiced phoneme (see page 124).

In turn, it must be noticed that the <c>–<s> opposition is not always phonologically relevant. For example, while in some class pairs such as *practice, -se* and *prise, -ze* the two graphemes act as diacritics only in writing; other times, they affect neither pronunciation nor spelling. With this latter case I am referring to the fact that American English has often replaced the nominal ending in *-ce* with *-se* as in *pretence, defence* and *offense* in order to adapt orthography to pronunciation²².

- c) Semantic opposition. Finally, along with number and class, the voiced-unvoiced opposition is also relevant on a semantic level as it can distinguish same-spelling words with different meanings. In actual fact, it seems that *close* is the only case in which this function

²² The bulk of the American spelling reforms was mainly promoted by the dictionary-maker Noah Webster in his *American Spelling Book* (1783). He was considered 'schoolmaster of the Republic', and his linguistic proposals aimed to give the American variety of English an identity of its own. For a detailed account of the differences between British and American English not only in spelling, but also in grammar, vocabulary and pronunciation, see Svartvik & Leech (2008): 150-173

is fulfilled; nevertheless, it is still worth mentioning it since first-year students are likely to pronounce both the <s> in *close* kləʊs 'near' and the <s> in *close* kləʊz 'shut' as /z/. As for the reason of this case of mispronunciation, I refer back to the effects that both diphthongs and word-final -e exert on EFL pronunciation (see 3.3.3.2).

2.3 The approximants /j/ and /w/

The problems that the English approximants /j/ and /w/ have caused to the respondents to the questionnaire are manifold. Thus, I will first deal with those common to both, and then I will move on to discuss those difficulties that each phoneme might lead to.

To begin with, while more than 80% of the students showed no hesitation in recognizing when <y> and <w> worked as post-vocalic semi-vowels in words like *lay* leɪ and *wow* waʊ and as pre-vocalic semi-consonants in words like *yellow* 'jeləʊ and *witch* wɪtʃ, most of them (95.2%) had doubts when these two graphemes were in intervocalic position. This is due to the fact that, while the Italian <i> and <u> and the English <y> and <w> coincide phonologically when they are either preceded or followed by a vowel, they diverge when they are both preceded and followed by a vowel.

Only rarely are the English graphemes <y> and <w> realized as approximants. As for <y>, it always corresponds to /ɪ/ in triphthongs (a) or, when a hiatus breaks its link with the third vowel, in ascending diphthongs

(b). On the contrary, as far as Italian is concerned, the cluster <V_V> is mainly realized as the union of a zero-coda syllable with another syllable starting with a semi-consonant onset; for example, such words as *aiuto* 'help' and the loan *power* will be pronounced as a'juto and 'pawer.

The interference that this grapheme patterns exert on English pronunciation is much significant if I consider that more than 95% of the students in this study reported that they pronounce English words like *betrayal*, bɪ'treɪəl *kayak* kaɪ'æk and *bayonet* 'beɪəʊnet with an approximant in intervocalic position.

Before moving further to the bilabial approximant, I will briefly mention those few cases in which the grapheme <y> in intervocalic position neither takes part in complex vowel sounds nor acts as a nucleus on its own like in *mayor* meə and *prayer* preə, in that all the students in this study reported they pronounce them either with a short close front vowel or a palatal approximant.

The phonological realization of <w> in intervocalic position depends on stress position. In short, when the stress falls on the first vowel, <w> either results in a long close back vowel (a) or in a short one within a diphthong (b) or a triphthong (c). Instead, English realizes it as an approximant when the stress falls on the second vowel as in *away* ə'weɪ and *award* ə'wɔ:d, or on neither of them as in *Ottawa* 'ɒtəwə.

Similar to what stated for <y> in intervocalic position, more than 90% of the students transcribed the grapheme <w> as /w/ in words like *chewing* 'tʃu:ɪŋ and *cowardice* 'kaʊədɪs.

Since I have concluded the analysis of the main causes of mispronunciation common to both the approximants, it is now time to move on and describe the individual difficulties to which /j/ and /w/ might lead.

To begin with the palatal approximant, another two problematic cases must be dealt with. First of all, the vast majority of the students entertained doubts about how to transcribe the archiphoneme /j/ when it was followed by a schwa. For instance, when they were asked how they pronounced a list of words each featuring a different close front phoneme or /j/ such as *ideal* aɪ'di:əl, *hear* hɪə, *aerial* 'eəriəl and *rivulet* 'rɪvjələt, more than 80% of them provided /ɪə/ as the correct realization for all of them, making no distinction in status and length. Nevertheless, since some useful guidelines can be provided to eliminate or, at least, reduce this mispronunciation, I will postpone this issue to the following chapter (see Section 3.4.3) and move further to deal with the second problematic instance.

As I will fully describe in Chapter 3 (see Section 3.4.2), close back vowels can frequently cause a palatal approximant to emerge. At first sight, it seems that the first-year students in this study could apply this phonological rule correctly. Nonetheless, some transcriptions that they provided demonstrated that, although they usually pronounce words correctly, this does not mean they possess thorough knowledge of the distributional patterns in which approximation might appear.

They were sometimes misled by the presence of different vowel graphemes and clusters, although the emergence of the palatal approximant depends exclusively on consonant onsets. For example, while none of them did not transcribe any /j/ when <r> was followed by <u> as in *rude* ru:d and *prudent* 'pru:dənt, more than 90% transcribed it when the close back vowel corresponded to the digraph <ew> as in *Andrew* *'ændrju: and *crew* *krju:.

More frequently, the students seem to have learnt the pronunciation of clusters in individual words in that they were unable to extend their realization to other lexemes with the same grapheme patterns. For

instance, while the 90% of them reported they pronounce correctly such ordinary words as *student* 'stju:dənt, *duke* 'dju:k and *blue* blu:, not as many reported to pronounce a palatal approximant with less common words such as *tumescient* tju:'mesənt and *dubious* 'dju:biəs, although both the series featured the same syntagma <tu> and <du> and.

However, lack of systematization mainly occurs with vowel digraphs such as <eu> and <ui> in that their compound structure often interferes with their one-phoneme results. As for the first digraph, it came as a surprise that half of the students in the study have not realized how <eu> always corresponds to /ju:/, despite the constant presence of *Europe*-related vocabulary in the mass media, and reported they pronounce words like *hermeneutic*, *Teutonic* and *zeugma* with no palatal approximant. As for the second and third digraphs, only a few students (12%) calqued the Italian hiatus <ui> when it came to showing how they pronounce such words as *bruise* bru:z.

Nevertheless, most cases of mispronunciation were caused by a phenomenon which stands at opposites ends with lack of systematization, namely hypercorrection. As a matter of fact, a significant number of the students (nearly 80%) generalized the recurring appearance of the palatal approximant before close back vowels without realizing that only certain onsets require them to emerge. For example, as they knew that such common words as *knew*, *few* and *new* all present /j/, they also used it with words with similar spelling forms such as *blew*, although the onset /l/ does not require it. I will stop here as in the following chapter I will list all the onsets which cause approximation and investigate whether the nature and length of close back vowels can be of any relevance in this regard.

Moving further to deal with the bilabial approximant, another problematic case was represented by those distributions in which the phoneme remained silent. As usual, I will only focus on those contexts

which can offer some regularity in phonological results. Therefore, I will not dwell either on single lexemes or on toponymic exceptions, as there would be no user-friendly rule to explain why /w/ remains silent only in *sword* and *two* but not in similar words such as *swear* and *twit*. Likewise, nothing but good memory can help remember that, while some place names such as *Gatwick* and *Sandwich* still pronounce their <w>, others like *Warwick*, *Greenwich* and *Norwich* have dropped it.

Having said that, I will first deal with the word-initial cluster <wr> as it did not pose a major problem for the university students in this study. The mispronunciation of <wr> as */wr/ is a notoriously widespread among learners of English, therefore, most high school teachers are aware of it and do their best to correct this mistake. As a result, 96% of the students showed to know that words like *write* and *wrong* do not feature any initial /w/.

The same cannot be said for word-initial <wh>, as 4 in 10 students ignored that some of the most common words featuring this digraph start with aspiration as the bilabial approximant should be dropped. Amongst other words, I might cite the pronoun *who* hu: along with its objective and genitive forms *whom* hu:m and *whose* hu:z, the adjective *whole*, and the nouns *whore* hɔ: and *whoop* hu:p.

As for the cluster <sw>, it does not represent a third case of silent /w/, but another Italian-specific instance of regressive /s/-voicing (see page 54) which is worth mentioning to point out another pronunciation flaw typical of Italian learners of English. I am referring to the fact that the Italian realization of /sw/ as */zw/ is not only due to assimilation, but also to the recurring labio-dentalization of the approximant, which becomes similar to the fricative /v/. Nevertheless, since this articulatory phenomenon pertains to the domain of phonetics, it must be considered only incidentally.

In conclusion, I would like to note that, although each of these last three digraphs present a different reason for mispronunciation, they all share as a general cause the fact that Italian EFL learners regard the approximant /w/ as a normal consonant phoneme which – as such – is always pronounced and presents the same processes typical of this phonological class.

2.4 Conclusion

I have now finished providing empirical evidence of the impact that the Italian consonant system might exert on EFL pronunciation thanks to the analysis of the data provided by a sample group of 30 Italian-speaking students of English.

As shown by the answers that they gave in the questionnaire (Appendix C), mispronunciation appears to be caused by two main reasons: either the students did not apply phonological rules in a systematic way, or they did not take into consideration some linguistic factors which might have been key to understanding the correct pronunciation of words, *i.e.* distributional patterns, grapheme-phoneme correspondences, morphological boundaries and etymology.

As a matter of fact, the pronunciation guidelines that I promised these students in exchange for their help are entirely based on these factors, and, as their feedback on their usefulness and effectiveness was highly positive (see Appendix D), I will now spend the last chapter describing them.

3. PRACTICAL GUIDELINES FOR ITALIAN-SPECIFIC DIFFICULTIES IN ENGLISH PRONUNCIATION

In Chapter 2 I examined the English phonemes and distributions most likely to lead to pronunciation issues, using data from the transcriptions provided by the students in my study.

I will now conclude this study by reporting all those guidelines which I provided for this sample group once they had returned their questionnaires, as – according to their own feedback (see Appendix D) – they proved effective in helping them avoid the many snares that English pronunciation generally poses for Italian learners.

In fact, the analysis and correction of the most frequent sources of linguistic interference have already allowed me to offer some helpful rules in Chapter 2. Therefore, all the various strategies and suggestions that I propose in this chapter will only complement those provided so far.

Before starting, I would also like to point out that the following guidelines are meant to provide a practical, handy support for students in increasing their awareness of the major causes for English mispronunciation. I have therefore adopted a pragmatic approach, using elements from phonology, spelling, morphology and etymology.

To give an illustrative example of the approach adopted, as far as the /s/-/z/ opposition is concerned (3.3), I will resort to spelling to show how the graphemes and clusters <c>, <s>, <ss> and <c(h)s> can be only realized either as a voiced or as a voiceless hissing sibilant, (3.3.1); nevertheless, with reference to <x>, I will also have to resort to phonology, in that this grapheme is realized as /ks/ or /gz/ depending on the position of the stress. I will finally refer to morphology to show how morphological

boundaries curb assimilation of voice in English provided that the complex or compound nature of the words in which /s/ appears is still discernible (3.3.3).

To conclude with a note on how these guidelines will be provided, as I asked the sample group to transcribe phonologically how they pronounced the graphemes or clusters listed in the questionnaire, I will use phonological transcriptions to show how words should be pronounced correctly.

3.1 The lengthening and diphthongizing effects of /r/

As far as the retroflex approximant is concerned, I devoted the previous chapters to describing how most of the respondents to the questionnaire did not drop /r/ in non-rhotic position, especially when /r/ was within opaque distributional patterns or unusual grapheme clusters.

Now, I will move on to consider another important issue, namely how the phoneme /r/ is deeply influential in the production of long and centring complex vowels provided that the following conditions are satisfied: non-rhotic distribution, stressed position, non-gemination of the corresponding grapheme <r> in intervocalic position, and a specific number of pre- and post-/r/ vowel graphemes.

Before investigating each of these conditions, I would first like to show how most of the students in this study showed to be completely unaware of the fact that /r/ might produce vowels totally different from those appearing before the other consonant phonemes. With reference to

the table below, as many as 9 in 10 students did not use centring diphthongs to transcribe the underlined nuclei in the left-hand column, as if there were no /r/ to affect their status as in the case with those in the right-hand column.

graph.	centring diphthongs	pure V or descending diph.
<a>	<i>secret<u>ar</u>ial</i> ,sekɹə'teəriəl	<i>interr<u>a</u>cial</i> ,ɪntə'reɪʃəl
<e>	<i>mat<u>e</u>rial</i> mə'tɹəriəl	<i>con<u>e</u>genial</i> kən'dʒi:niəl
<i>	<i>fa<u>i</u>ri</i> fə'kiə	<i>cr<u>e</u>dit</i> 'kredit
<u>	<i>ne<u>u</u>ron</i> 'nju:ɹɒn	<i>ne<u>u</u>tron</i> 'nju:trɒn

Table 43 Examples of the students' mastery of centring diphthongs in pre-/r/ position

What stated for vowel breaking is also valid for lengthening, as 3 in 4 students showed themselves unable to recognize how the retroflex approximant affected the length of the previous vowels when it appeared in non-rhotic position.

graph.	long V	short V
<a>	<i>car<u>p</u>enter</i> 'kɑ:pɛntə	<i>car<u>a</u>van</i> 'kærəvæn
<e>	<i>vert<u>e</u>ical</i> 'vɜ:tɪkəl	<i>eth<u>e</u>ical</i> 'eθɪkəl
<i>	<i>virt<u>u</u>al</i> 'vɜ:tʃuəl	<i>vict<u>u</u>als</i> 'vɪtəlz
<o>	<i>Morm<u>o</u>n</i> 'mɔ:mən	<i>Moroc<u>o</u></i> mə'rɒkəʊ
<u>	<i>bur<u>l</u>esque</i> bɜ:'lesk	<i>bul<u>e</u>t</i> 'bʊlɪt

Table 44 Examples of the students' mastery of long vowels in pre-/r/ position

After these preliminary indications on how most of the students totally ignored the influence that /r/ might exert on the previous vowels, I will now move on to investigate the above-mentioned conditions that vowel

breaking and lengthening must satisfy in order to take place, *i.e.* non-rhotic distribution, the stressed position of pre-/r/ nuclei, the non-gemination of the grapheme <r> in intervocalic position, and a specific number of pre- and post-/r/ vowel graphemes.

I will start by providing evidence on how /r/-dropping frequently represents a prerequisite for both these phenomena.

As for the production of diphthongs and triphthongs, I might contrast British with American English in order to show how only the former non-rhotic variety can produce centring complex vowels.

	BrE	AmE
<i>care</i>	kəə	ker
<i>adhere</i>	əd'hɪə	əd'hɪr
<i>allure</i>	ə'lʊə	ə'lʊr
<i>emir</i>	e'mɪər	e'mɪr
<i>souvenir</i>	ˌsu:və'nɪər	ˌsu:və'nɪr
<i>hierarchy</i>	'haɪərɑ:kɪ	'haɪrɑ:rki

Table 45 The importance of non-rhoticity for the production of centring complex vowels in pre-/r/ position

Non-rhotic distribution also plays a significant role in lengthening, and I can show it by contrasting derivatives in which suffixation has produced different effects on the position of the retroflex approximant. With reference to the table below, while the derived words in a) present the same long vowels as their roots in that their suffixes have not changed the pre-consonant status of /r/; the derived words in b) instead, present short vowels in that their suffixes have turned the approximants into intervocalic phonemes which can no longer be dropped .

	root words		derivatives	
a) V_C # → V_C	<i>conform</i>	kən'fɔ:m	<i>conformity</i>	kən'fɔ:məti
	<i>accord</i>	ə'kɔ:d	<i>accordance</i>	ə'kɔ:dəns
	<i>endorse</i>	ɪn'dɔ:s	<i>endorsement</i>	ɪn'dɔ:smənt
b) V_# → V_V	<i>err</i>	ɜ:	<i>errant</i>	'erənt
	<i>concur</i>	kən'kɜ:	<i>concurrently</i>	kən'kɜ:rəntli
	<i>deter</i>	dɪ'tɜ:	<i>deterrent</i>	dɪ'terənt

Table 46 The importance of non-rhoticity for the production of long vowels in pre-/r/ position

Although the opposition between rhoticity and non-rhoticity frequently represents a decisive factor in vowel length, some exceptions actually exist. For instance, the contrast between British and American English which I have used for vowel breaking does not work in this case, as both varieties use long vowels when /r/ is in stressed pre-consonant or word-final position, as in *alarm* ə'lɑ:(r)m and *world* wɜ:(r)ld, and *car* kɑ:(r) and *floor* flɔ:(r) respectively.

Moving on to the second key factor, stress position is of cardinal importance for both vowel breaking and lengthening. Nevertheless, only the former requires it as a *condicio sine qua non*, in that centring complex vowels can appear only if the approximant is preceded by a stressed nucleus, whether /r/ belongs to the same rhyme (see, for example, *adjure* and *furore 1* in the table below), or acts as the onset of the following unstressed syllable (see, for example, *Canary* and *furore 2*). The only exception to this rule is represented by the grapheme <o>, as it never diphthongizes.

	post-stressed vowel /r/		post-unstressed vowel /r/	
<a>	<i>Canary</i>	kə'neəri	<i>Calgary</i>	'kælgəri
	<i>nary</i>	'neəri	<i>binary</i>	'baɪnəri
	<i>contrary 1</i>	kən'treəri	<i>contrary 2</i>	'kɒntrəri
<e>	<i>Chimera</i>	kai'miərə	<i>camera</i>	'kæməərə
	<i>sclera</i>	'skleərə	<i>sclerotic</i>	skle'rotɪk
	<i>hero</i>	'hiərəʊ	<i>heroic</i>	hə'reʊɪk
<i>	<i>lira</i>	'liərə	<i>diriment</i>	'dɪrɪmənt
	<i>guiro</i>	'gwiərəʊ	<i>empirical</i>	ɪm'pɪrɪkəl
<u>	<i>adjure</i>	ə'dʒʊə	<i>conjure</i>	'kɒndʒə
	<i>furore 1</i>	'fjʊərə:	<i>furore 2</i>	fju'rɔ:ri

<o>	<i>amphora 1</i>	æm'fɔ:rə (AmE)	<i>amphora 2</i>	'æmfərə (BrE)
	<i>angora</i>	æŋ'gɔ:rə	<i>diaspora</i>	daɪ'æspərə

Table 47 The importance of stress for the production of centring complex vowels in pre-/r/ position

As far as lengthening is concerned, while stressed vowels lengthen systematically when they are followed by /r/ in non-rhotic distribution, unstressed vowels do not always keep short, although English as a rule realizes weak nuclei as the short vowels /ə/ and /ɪ/.

As supporting evidence of the systematic lengthening in stressed position, the table below contrasts roots and their corresponding derivatives in which unstressed vowels in pre-/r/ position lengthen when the stress moves onto them.

	V_C		'V_C	
<a>	<i>lethargy</i>	'leθədʒi	<i>lethargic</i>	lə'θɑ:dʒɪk
	<i>Edward</i>	'edwəd	<i>Edwardian</i>	ed'wɑ:diən
<e>	<i>allergy</i>	'ælədʒi	<i>allergic</i>	ə'lɜ:dʒɪk
	<i>energy</i>	'enədʒi	<i>energetic</i>	ɪ'nɜ:dʒɪk
<i>	<i>Virginian</i>	və'dʒɪniən	<i>virgin</i>	'vɜ:dʒən
	<i>circuitous</i>	sə'kjʊ:ɪtəs	<i>circuit</i>	'sɜ:kɪt
<o>	<i>Oxford</i>	'ɒksfəd	<i>Oxfordian</i>	ˌɒks'fɔ:diən
	<i>Abbotsford</i>	'æbətʃfəd	<i>Abbotsfordian</i>	ˌæbətʃ'fɔ:diən
<u>	<i>liturgy</i>	'lɪtədʒi	<i>liturgical</i>	lɪ'tɜ:dʒɪkəl
	<i>metallurgy</i>	mə'tælədʒi	<i>metallurgical</i>	ˌmetə'lɜ:dʒɪkəl

Table 48 The importance of stress for the production of long vowels in pre-/r/ position

As mentioned above, although the stress-timed nature of English generally causes unstressed vowels to reduce to short central phonemes, the examples in the table below well illustrate how the presence of /r/ in non-rhotic position is likely to prevent long vowels from shortening when the stress falls before or after them, and even when they are 'squeezed up' between the primary and secondary stress.

	– 'σ	'σ –	ˌσ – 'σ / 'σ – ˌσ
<a>	<i>marsupial</i> <i>cartoon</i>	mɑ:'su:piəl kɑ:'tu:n	<i>rampart</i> <i>autarchy</i>
			<i>incarnation</i> <i>embarkation</i>
<e>	<i>mercurial</i> <i>Germanic</i>	mɜ:'kjʊəriəl dʒɜ:'mæni:k	<i>extern</i> <i>converse</i>
			<i>expertise</i> <i>externality</i>
<i>	<i>flirtatious</i>	flɜ:'teɪʃəs	/* <i>extirpate</i>
			'ekstɜ:ˌpeɪt

	<i>zirconium</i>	zɜ:ˈkɒniəm				
<o>	<i>fortuitous</i>	fɔ:ˈtju:ɪtəs	<i>exorcist</i>	ˈeksɔ:sɪst	<i>exportation</i>	ˌeksɔ:ˈteɪʃən
	<i>Cornelian</i>	kɔ:ˈni:liən	<i>consort</i>	ˈkɒnsɔ:t	<i>deportee</i>	ˌdi:pɔ:ˈti:
<u>	<i>burlesque</i>	bɜ:ˈlesk	<i>suburb</i>	ˈsʌbɜ:rb	<i>inurbane</i>	ˌɪnɜ:ˈbeɪn
	<i>purloin</i>	pɜ:ˈlɔɪn	<i>Saturn</i>	ˈsætɜ:n	<i>conurbation</i>	ˌkɒnɜ:ˈbeɪʃən

*<ir> as /ɜ:/ always takes the stress in this position, as exemplified by words like *affirm* əˈfɜ:m, *confirm* kənˈfɜ:m, and *outwhirl* aʊtˈwɜ:l.

Table 49 The non-reduction of unstressed long vowels in pre-/r/ position

Finally, before moving on to deal with non-gemination, I would like to consider the first two conditions together, *i.e.* non-rhoticity and stressed position, as the reluctance of unstressed vowels to shorten seems to indicate that, when the stress factor comes into conflict with the non-rhotic one, the latter is likely to prevail over the former.

Solid evidence of the higher influence that stress exerts on length is also provided by stress-shifting suffixation in that, if the suffix does not affect the non-rhotic position of /r/, the previous vowel is unlikely to become short. Nevertheless, while the vowel graphemes <a>, <o> and <u> present no exception to this rule, <e> and <i> are realized as long vowels in all contexts (a) except when they are between two stressed vowels (b).

	root words	' _		derivatives	_ 'σ
<a>	<i>starve</i>	stɑ:v	a)	<i>starvation</i>	stɑ:'veɪʃən
	<i>marble</i>	'mɑ:bəl		<i>marmoreal</i>	mɑ:'mɔ:riəl
	<i>embark</i>	ɪm'bɑ:k	b)	<i>embarkation</i>	ˌembɑ:'keɪʃən
	<i>award</i>	ə'wɔ:d		<i>awardee</i>	ˌæwɔ:'di:
<o>	<i>normal</i>	'nɔ:məl	a)	<i>normality</i>	nɔ:'mæləti
	<i>organ</i>	'ɔ:gən		<i>organic</i>	ɔ:'gæni:k
	<i>transport</i>	'trænsɔ:t	b)	<i>transportation</i>	ˌtrænsɔ:'teɪʃən
	<i>conform</i>	kən'fɔ:m		<i>conformation</i>	ˌkɒnfɔ:'meɪʃən
<u>	<i>curve</i>	kɜ:v	a)	<i>curvaceous</i>	kɜ:'veɪʃəs
	<i>turbid</i>	'tɜ:bɪd		<i>turbidity</i>	tɜ:'bɪdəti
	<i>perturb</i>	pər'tɜ:b	b)	<i>perturbation</i>	ˌpɜ:tɜ:'beɪʃən
	<i>urban</i>	'ɜ:bən		<i>conurbation</i>	ˌkɒnɜ:'beɪʃən

<e>	<i>herb</i>	hɜ:b	a)	<i>herbaceous</i>	hɜ:'beɪʃəs
	<i>verb</i>	vɜ:b		<i>verbose</i>	vɜ:'bɔ:s
	<i>observe</i>	əb'zɜ:v	b)	<i>observation</i>	ˌɒbzə'veɪʃən
	<i>intern</i>	ɪn'tɜ:n		<i>international</i>	ˌɪntə'næʃənəl
<i>	<i>flirt</i>	flɜ:t	a)	<i>flirtatious</i>	flɜ:'teɪʃəs
	<i>circa</i>	'sɜ:kə		<i>circadian</i>	sɜ:'keɪdiən
	<i>affirm</i>	ə'fɜ:m	b)	<i>affirmation</i>	ˌæfə'meɪʃən
	<i>infirm</i>	ɪn'fɜ:m		<i>infirmarian</i>	ˌɪnfə'meəriən

Table 50 The effects of stress-shifting suffixation on long vowels when the following /r/ does not drop

On the contrary, when derivation prevents /r/ from dropping, pre-/r/ long vowels always become short in unstressed position. In the table below are some illustrative examples of this; nevertheless, I can provide none for the vowel graphemes <i> and <u> as derivatives never present them in unstressed position. See, for example, *stir* stɜ: > *stirrer* 'stɜ:rə, *demur* dɪ'mɜ: > dɪ'mɜrəl, and *recur* rɪ'kɜ: > *recurrence* rɪ'kɜrəns.

	root words ' _		derivatives _ 'σ or 'σ _
<a>	<i>cigar</i>	sɪ'gɑ:	<i>cigarette</i> ,sɪgə'ret
	<i>agar</i>	'eɪ,gɑ:	<i>agarose</i> 'eɪgə,rəʊs
<o>	<i>adore</i>	ə'dɔ:	<i>adoration</i> ,ædə'reɪʃən
	<i>restore</i>	rɪ'stɔ:	<i>restoration</i> ,restə'reɪʃən
<e>	<i>transfer</i> (v.)	træns'fɜ:	<i>transference</i> 'trænsfərəns
	<i>confer</i>	kə'fɜ:	<i>conferee</i> ,kɒnfə'ri:

Table 51 The effects of stress-shifting suffixation on long vowels when the following /r/ drops

The third factor to take into account is whether the phoneme /r/ is the realization of a single or double <r> in intervocalic position, in that word-final <rr> never affects rhoticity. Compare, for example, *per* (SF) pɜ: with *err* ɜ: and *Qatar* 'kætɑ: with *catarrh* kə'tɑ:.

In particular, the effects that this homogeneous digraph might exert on the previous stressed vowel depend on whether it appears within root words or as a result of suffixation.

As far as root-mid position is concerned, <rr> is of crucial importance both in British and American English as, on the one hand, it

neutralizes the diphthongizing effect of /r/ in BrE, on the other, it causes <u> to be realized as a long vowel in AmE.

	root-mid <r>		root-mid <rr>			
	BrE,	AmE	BrE	AmE		
<a>	<i>Cary</i>	'keəri	'kær-	<i>carry</i>	'kæri	
	<i>vary</i>	'veəri	'vær-	<i>barrack</i>	'bærək	
<e>	<i>query</i>	'kwɪəri	'kwɪ-	<i>equerry</i>	ɪ'kwɛri	
	<i>here</i>	hɪə	hɪr	<i>herring</i>	'herɪŋ	
<i>	<i>guiro</i>	'gwɪərəʊ	'gwɪr-	<i>cirrus</i>	'sɪrəs	
	<i>De Niro</i>	də'niərəʊ	də'nɪr-	<i>mirror</i>	'mɪrə	
<o>	<i>borough</i>	'bʌrə	'bɜ:r-	<i>borrow</i>	'bɒrəʊ	'bɑ:r-
	<i>orifice</i>	'ɔrɪfɪs	'ɔ:r-	<i>worry</i>	'wʌrɪ	'wɜ:r-
	<i>coral</i>	'kɔrəl	'kɔ:r- or 'kɑ:r-	<i>corridor</i>	'kɔrɪdɔ:	'kɜ:r-
<u>	<i>durum</i>	'dʒʊərəm	'dʊr-	<i>burrow</i>	'bʌrəʊ	'bɜ:r-
	<i>curette</i>	kjʊə'ret	kjʊ-	<i>current</i>	'kʌrənt	'kɜ:r-
	<i>fury</i>	'fjʊəri	'fjʊr-	<i>flurry</i>	'flʌrɪ	'flɜ:r-

Table 52 The importance of the non-gemination of the grapheme /r/ in root words for the production of centring complex vowels

Moving on to the second case, when the reduplication of the grapheme <r> appears as a spelling adaptation in complex words, vowel length depends on the nature and productivity of the bound morphemes joining the roots. Namely, while inflectional suffixes never affect stressed vowels in non-rhotic position (a), derivational suffixes keep their length unvaried, provided that they are morphologically productive (b).

		roots		complex words	
				BrE	AmE
a)	<i>tar</i>	tɑ:	<i>tarring</i>		'tɑ:riŋ
	<i>err</i>	ɜ:	<i>erring</i>		'ɜ:riŋ
	<i>whirr</i>	wɜ:	<i>whirring</i>		'wɜ:riŋ
	<i>purr</i>	pɜ:	<i>purring</i>		'pɜ:riŋ
b)	<i>star</i>	stɑ:	<i>starry</i>		'stɑ:ri
	<i>refer</i>	rɪ'fɜ:	<i>referral</i>		rɪ'fɜ:rəl
	<i>stir</i>	stɜ:	<i>stirrer</i>		'stɜ:rə
	<i>fur</i>	fɜ:	<i>furry</i>		'fɜ:ri
c)	<i>concur</i>	kən'kɜ:	<i>concurrently</i>	kən'kʌrəntli	-'kɜ:r-
	<i>deter</i>	dɪ'tɜ:	<i>deterrent</i>	dɪ'terənt	-'tɜ:r-
	<i>abhor</i>	əb'hɜ:	<i>abhorrence</i>	əb'hɒrəns	-'hɜ:r-
	<i>war</i>	wɜ:	<i>warrior</i>	'wɒriə	'wɜ:r-

Table 53 The importance of the non-gemination of the grapheme /r/ in derivatives for the production of long vowels

I will now discuss the fourth and final factor, namely the importance of the number and nature of the vowel graphemes before and after /r/ for the production of vowel breaking and lengthening.

I will start by dealing with this latter phenomenon as there is only one vowel which does not always lengthen when it is in stressed position and followed by a word-final /r/. I am referring to <i>, which is realized as a long vowel only when it corresponds to the nucleus of a monosyllable; in any other case, it diphthongizes to /iə/:

monosyllables		polysyllabic words	
<i>stir</i>	stɜ:	<i>emir</i>	e'mɪə
<i>fir</i>	fɜ:	<i>elixir</i>	ɪ'lɪk,sɪə
<i>whir</i>	wɜ:	<i>acyclovir</i>	eɪ'saɪklə,vɪə
<i>sir</i>	sɜ:	<i>wazir</i>	wə'zɪə

Table 54 Diphthongization of the grapheme <i> in pre-/r/ stressed position in polysyllabic words

As far as centring complex vowels are concerned, I will first mention those words in which /r/ is preceded by two consecutive vowel graphemes in stressed position, in that digraphs often diphthongize but only as *closing* diphthongs, if there is no /r/ to follow.

The only digraphs which do not observe this rule systematically are those starting in <o> (except for <oi> and <oo>), as they are realized long vowels. Nevertheless, I must point out that this vowel grapheme shows a general reluctance to diphthongization, and evidenced by the other distributions that I will investigate below.

<VVC>		<VVr>	
<ai>	<i>chain</i> tʃeɪn	<i>chair</i> tʃeə	
<ea>	<i>piece</i> pi:s	<i>pierce</i> piəs	
<eu>	<i>Euston</i> 'ju:stən	<i>Europe</i> 'jʊərəp	
<ee>	<i>peek</i> pi:k	<i>peer</i> piə	
<ei>	<i>feign</i> feɪn	<i>bear</i> beə	
<io>	<i>bio-</i> 'baɪəʊ	<i>prior</i> praɪə	
<ui>	<i>quick</i> kwɪk	<i>Muir</i> mjʊə	
<ue>	<i>quench</i> kwentʃ	<i>query</i> 'kwɪəri	

<oa>	<i>float</i> fləʊt	<i>roar</i> rɔ:	

<oe>	<i>amoeba</i>	ə'mi:bə	<i>Boer</i>	bɔ:
<ou>	<i>coat</i>	kəʊt	<i>court</i>	kɔ:t
<oi>	<i>coil</i>	kɔɪl	<i>choir</i>	kwaɪə
	<i>join</i>	dʒɔɪn	<i>coir</i>	kɔɪə
<oo>	<i>book</i>	bʊk	<i>moor</i>	mɔ: or mʊə
	<i>fool</i>	fu:l	<i>poor</i>	pɔ: or pʊə

Table 55 Grapheme digraphs realizing centring complex vowels in pre-/r/ stressed position

Another lexical group producing vowel breaking is represented by those words in which the retroflex approximant is followed by the grapheme <e> in word-end position. In this case, the choice of the centring complex vowels is much more systematic: while <i> triphthongizes to /aɪə/, <a>, <e> and <u> diphthongize to /eə/, /ɪə/ and /ʊə/ respectively. With specific reference to this latter diphthong, considering that close back vowels often cause a palatal approximant to emerge before them, /ʊ/ can sometimes disappear as a result of a merger with /j/ and the previous consonant (see *mature*, *azure* and *ordure* in the table below). Finally, <o> represents an exception even in this case, as it lengthens irrespective of the presence of the grapheme <e> in final position.

graph.	'V_ #		'V_ <e> #	
<a>	<i>far</i>	fɑ:	<i>fare</i>	feə
	<i>mar</i>	mɑ:	<i>mare</i>	meə
	<i>par</i>	pɑ:	<i>pare</i>	peə
<e>	<i>aver</i>	ə'vɜ:	<i>severe</i>	sə'viə
	<i>her</i> (SF)	hɜ:	<i>here</i>	hiə

	<i>transfer</i> (v.)	træns'fɜ:	<i>sphere</i>	sfiə
<i>	<i>stir</i>	stɜ:	<i>attire</i>	ə'taɪə
	<i>fir</i>	fɜ:	<i>fire</i>	faiə
	<i>sir</i>	sɜ:	<i>sire</i>	saiə
<u>	<i>fur</i>	fɜ:	<i>mature</i>	mə'tʃʊə mə'tʃʊə
	<i>blur</i>	blɜ:	<i>azure</i>	'æzjʊə 'æzə
	<i>concur</i>	kən'kɜ:	<i>ordure</i>	'ɔ:dʒʊə 'ɔ:dʒə
<o>	<i>or</i>	ɔ:	<i>ore</i>	ɔ:
	<i>for</i> (SF)	fɔ:	<i>fore</i>	fɔ:
	<i>cor</i>	kɔ:	<i>core</i>	kɔ:

Table 56 The production of centring complex vowels with /r/ in 'VV_ <e> position

Vowels also diphthongize when /r/ is preceded by a vowel grapheme in stressed position and followed by another two vowels.

In this case, <o> is not the sole exception, as <u> does not also follow the rule, although for the opposite reason: while <o> is always realized as a long vowel as in the previous cases, <u> always diphthongizes irrespective of the number of the post-/r/ vowel graphemes.

	'V_VV		'V_V	
<a>	<i>pharaoh</i>	'feərəʊ	v. <i>Arab</i>	'ærəb
	<i>area</i>	'eəriə	v. <i>apparel</i>	ə'pærəl
	<i>malaria</i>	mə'leəriə	v. <i>claret</i>	'klærət
<e>	<i>posterior</i>	pɒ'stɪəriə	v. <i>posterity</i>	pɒ'stɪəri
	<i>experience</i>	ɪk'spiəriəns	v. <i>experiment</i>	ɪk'spɪrɪmənt
	<i>hysteria</i>	hɪ'stɪəriə	v. <i>hysterics</i>	hɪ'stɪrɪks

<i>	<i>vizirial</i>	vɪ'zɪəriəl	v. <i>satirical</i>	sə'tɪrɪkəl
	<i>delirium</i>	dɪ'lɪəriəm	v. <i>virulent</i>	'vɪrələnt
	<i>Erie</i>	'ɪəri	v. <i>empiricism</i>	ɪm'pɪrɪsɪzəm

<u>	<i>centurion</i>	sen'tʃʊəriən	<i>curate</i>	'kjʊərət
	<i>prurient</i>	'prʊəriənt	<i>maturity</i>	mə'tʃʊərəti
	<i>durian</i>	'dʊəriən	<i>neuralgia</i>	njʊə'rældʒə
<o>	<i>euphoria</i>	ju:'fɔ:riə	<i>chlorine</i>	'klɔ:ri:n
	<i>Orient</i>	'ɔ:riənt	<i>forage</i>	'fɔ:ri:dʒ
	<i>Salvadorean</i>	ˌsælvə'dɔ:riən	<i>deforest</i>	ˌdi:'fɔ:rist

Table 57 The production of centring complex vowels with /r/ in 'V_VV position

In actual fact, stressed vowels can also diphthongize when /r/ is followed by a single vowel grapheme on condition that it stands word-finally, as shown by the oppositions in the table below. As for the graphemes <o> and <u>, they present the same opposite results as above: while the former never diphthongizes, the latter does so regardless of position.

		'V_V #		'V_V
<a>	<i>chary</i>	'tʃeəri	<i>charity</i>	'tʃærəti
	<i>Mary</i>	'meəri	<i>samaritan</i>	sə'mæritən
<e>	<i>query</i>	'kwɪəri	<i>querulous</i>	'kwerələs
	<i>hero</i>	'hiərəʊ	<i>severity</i>	sɪ'verəti
<i>	<i>lira</i>	'liərə	<i>lyrical</i>	'liɪrɪkəl
	<i>Madeira</i>	mə'diərə	<i>diriment</i>	'dɪrɪmənt

<o>	<i>glory</i>	'glɔ:ri	<i>Oregon</i>	'ɔ:riɡən

	<i>fedora</i>	fɪ'dɔ:rə	<i>moralist</i>	'mɒrəlɪst
<u>	<i>fury</i>	'fjʊəri	<i>puritan</i>	'pjʊərɪtən
	<i>caesura</i>	si'zjʊərə	<i>purulent</i>	'pjʊərələnt

Table 58 The production of centring complex vowels with /r/ in 'V_V# position

I must finally point out that <u> and <e> can also diphthongize when the post-/r/ vowel is not in word-end position. Nevertheless, while this happens systematically with <u>, it seems that <e> is realized as /ɪə/ only when /r/ is followed by another strong vowel, in that both /ə/ and /ɪ/ curb vowel breaking as in words like *cherub* 'kerəb, *merit* 'merɪt, *feral* 'ferəl, and *heron* 'herən.

	'V_VC	centring diph.		'V_VC	pure V
<e>	<i>eros</i>	'ɪəɒs	<a>	<i>arid</i>	'æɪɪd
	<i>xerox</i>	'zɪəɒks		<i>baron</i>	'bæərən
	<i>interferon</i>	ˌɪntə'fɪərən	<i>	<i>spirit</i>	'spɪrɪt
				<i>viril</i>	'vɪrɪɪl
<u>	<i>mural</i>	'mjʊərəl	<o>	<i>forum</i>	'fɔ:rəm
	<i>neuron</i>	'njʊərən		<i>floret</i>	'flɒrɪt
	<i>juror</i>	'dʒʊərə			

Table 59 The production of centring complex vowels with /r/ in 'V_VC position

I will now conclude this section with a brief summary of the guidelines provided so far. As far as lengthening is concerned, vowel graphemes are likely to be realized as long vowels when they are stressed and immediately followed by /r/ in non-rhotic position. As for vowel breaking, they are likely to be realized as centring complex vowels in stressed

position within the following grapheme distributions: 'VVr, Vre#, 'VrVV and 'VrV#, with the only exception of the stressed vowel <o>, which never diphthongizes.

3.2 The interdental /θ/ and /ð/

So far, I have pinpointed two phonological problems regarding the interdental fricatives. While in Chapter 1 I showed how Italophones are likely to replace them with their native /t/ and /d/, in Chapter 2 I pointed out how even the university students who responded to the questionnaire often found it hard to choose between the voiced and the unvoiced interdental.

In this last section dedicated to this pair, I will resume both these difficulties as I will try to provide useful guidelines for each of them.

3.2.1 Systematic realization of the digraph <th> as /θ/ and /ð/

To start with the first problem, the fact that the students in this study did not always transcribe <th> as /θ/ or /ð/ means that they still have not systematized the regular correspondence between this digraph and interdental frication. Therefore, the first step to take is to make them aware

that <th> is *always* realized as an interdental fricative, be it the voiceless /θ/ or unvoiced /ð/.

In actual fact, there are a limited number of words in which <th> corresponds to the unvoiced alveolar plosive /t/. Nevertheless, these exceptions do not undermine the absoluteness of this grapheme-phoneme correspondence as their non-standard pronunciation is often the result of some inconsistency in the evolution or adaptation of the spelling. For instance, the grapheme <h> in the following three words has appeared as a mistaken interpolation:

- *Thames* temz comes from British *Tamesa* via Lat. *Tamesis*. The spelling *Thames*, which first appeared in 1649, is an example of the kind of learned respelling that went on in English from the late Renaissance through the Enlightenment, when the prestige of Latin and Greek prompted scholars to ‘correct’ the form of many English words. Nevertheless, the aitch in *Thames* was added in the mistaken belief that this word was of Greek derivation;
- *posthumous* 'pɒstjʊməs is from Lat. *postumus* ‘last, last-born’, superlative of *posterus* ‘coming after, subsequent’. The aitch was introduced in Late Latin by association with the verb *humare* ‘to bury’, as it suggested death;
- *Anthony* 'æntəni comes from the name of the Roman gens *Antonius*, and the excrescent <h> was probably suggested by the many Greek loanwords beginning with *anth-* ‘flower’ as in *anthology* and *anthurium*, and with *anthropo-* ‘human’ as in *anthropology* and *anthropomorphic*.

With other words, either spelling has not evolved hand in hand with pronunciation or presents a different origin from the pronunciation adopted:

- Biblical proper names such as *Esther* 'estə, *Thomas* 'tɒməs and *Theresa* tə'ri:zə have maintained the Greek digraph <th>; yet, they are pronounced with no affrication as they were in Ecclesiastic Latin;
- *thyme* taɪm: while the spelling is from Lat. *thymum* < Gr. *thymon*, the pronunciation adopted comes from 13th-century Old French *tym*;
- *Neanderthal* ni'ændə,tɑ:l comes from the union between the Graecized surname of the German poet Joachin Neumann and the archaic spelling form of German *Tal*, *Thal* 'valley', which is cognate with English *dale*.

Finally, <th> is sometimes realized as /t/ because the spelling of foreign words has been adapted in a misleading way. For example, the aitch in the loans *Thai* taɪ and *thali* 'tɑ:li was added to do justice to the native aspirated plosive /t^h/, since it contrasts with /t/ both in Thai and Hindi.

Nevertheless, not only does the introduction of <h> mislead EFL learners into pronouncing *Thai* and *thali* as *θaɪ and *'θɑ:li, but it was also completely pointless in that English aspirates all voiceless plosives when they act as one-phoneme onsets in stressed syllables. Compare, for instance, such words as *top* [t^hɒp], *stop* [stɒp], and *trod* [trɒd] (Akmajian *et al.*, 2001: 90-91).

To recapitulate briefly, the digraph <th> will always correspond to the interdental fricatives /θ/ or /ð/, unless it appears within the few words provided above, where it is exceptionally realized as /t/.

3.2.2 A multi-criteria analysis of the interdental fricatives

I will now move further to the second source of mispronunciation and provide some helpful guidelines about the difficult choice between the two interdental fricatives.

To do so, I will resort to two well-known theoretical oppositions, namely function-lexical class and Germanic-Romance origin; yet, I will not content myself with repeating that function and Germanic words usually realize the digraph <th> as /ð/, while lexical and Romance words are likely to realize it as /θ/ (Horobin *et al.*, 1992: 67), in that this classification is too generic to be able to systematize the pronunciation of all English words featuring the digraph <th>. For example, on the one hand, function words like *beneath* and *both*, and Germanic words like *thank* and *smith* realize <th> as /θ/; on the other hand, lexical words like *breathe* and *tithe*, and Romance words like *rhythm* realize <th> as /ð/.

Therefore, I will now try to remedy the inadequacy of these traditional guidelines by considering word class and origin in combination with the position of the digraph <th>, as their combined analysis provides much more precise information about the distributions of the two interdental fricatives.

To start with word-initial position, <th> is always realized as /θ/ unless it appears in functional words of Germanic derivation such as *the*, *then* and *that*.

On the contrary, if I exclude those cases in which /ð/ is the result of voicing or acts as a diacritic word-finally (see Section 2.2.2), when <th> is in word-end position, it is always realized as /θ/, with the only exception of the following few words: *booth*, *smooth*, *bequeath* and *with* (also wɪθ).

As far as word-medial position is concerned, when <th> is either in intervocalic or post-consonant position, the origin-based distinction is extremely useful as all Romance words present it as /θ/, while all Germanic words present the voiced counterpart, except for the noun *brothel* 'brɒθəl and the adjective *ethel* 'eθəl 'noble', which is frequently attested as the first element in Anglo-Saxon names such as *Ethelred*, *-bald*, *-bert*, *-linda* and *-wulf*.

Instead, when the digraph is in pre-consonant position, it is always realized as /θ/, regardless of the origin of the words presenting it. The only exception is represented by the noun *rhythm* 'rɪðəm, in which /θ/ voiced to /ð/ after that a schwa was interpolated between /θ/ and /m/ to make them phonotactically realizable²³.

I would finally like to add a helpful note on the Romance-Germanic opposition.

I have suggested using word origin as a key to understanding whether <th> should be realized as /θ/ or /ð/ in that Italian students find it easy to understand when English words are of Graeco-Latin derivation as

²³ As supporting evidence of this voicing, I might remind that the same happened with the Latin suffix *-ism* ɪzəm. As /sm/ did not exist as a phonotactically possible realization in word-end position, a central weak vowel was inserted between the two consonants and, as a result, /s/ voiced to /z/

they are generally similar to the Italian cognates. Nevertheless, this similarity in spelling and pronunciation can sometimes mislead students, rather than help them, in certain circumstances. For example, some of the students who attended the tutorial believed that English *father* and *mother* were cognate with Italian *padre* and *madre* via Latin *pater* and *mater*, and not via PIE **pater* and **mater*. As a consequence, they regarded 'fɑ:ðə and 'mɑ:ðə as exceptions to the above-mentioned rule providing that word-mid <th> must be realized as /θ/ in Latin-origin words.

To sum up, although Graeco-Latin and lexical words are more likely to realize the digraph <th> as /θ/, while Anglo-Saxon and functional words are more likely to realize it as /ð/, this traditional classification will be really effective only if considered along with the position of the digraph:

- word-initial <th> is always realized as /θ/ except in Germanic-origin functional words;
- word-final <th> is always realized as /θ/ except when the /θ/-/ð/ opposition works diacritically or /ð/ is the result of assimilation of voice;
- word-mid <th>
 - in post-consonant and intervocalic position is always realized as /θ/ in Romance words and as /ð/ in Germanic words
 - in pre-consonant position is always realized as /θ/ regardless of word class and origin.

3.3 The importance of spelling and morphology for the choice between /s/ and /z/

As far as the hissing sibilants are concerned, while in the previous chapters I have mainly focused on how Italian assimilation rules might interfere in EFL pronunciation, I will now deal with another three important factors which I have postponed so far, as they might be presented as practical guidelines for those students who still find it hard to choose between /s/ and /z/.

I will first show how the graphemes and clusters <c>, <z>, <ss>, <cc>, <c(h)s> and <x> present much more systematic realizations than <s>. Secondly, I will explore the voicing effect that the grapheme <e> might exert on /s/ when it follows word-finally. Lastly, I will spend a few words on how morphological boundaries generally block assimilation of voice.

3.3.1 Systematic grapheme-phoneme correspondences

To start with the relationship between graphemes and phonemes, I will first deal with the phonological realizations of <c> and <z> as they diametrically opposed to each other. Namely, while the former is always realized as /s/ when it does not correspond to the plosive /k/, the latter is always realized as /z/ except for those few non-integrated loanwords that I listed in Chapter 1 (see page 39).

As a consequence, the graphemes <c> and <z> contrast with <s> as /z/ and <s> as /s/ respectively, giving rise to minimal pairs like those in the table below. The only exception is represented by the opposition between <c> and <s> word-initially, in <s> as /z/ is in defective in this position.

<c>		<s> as /z/		<z>		<s> as /s/	
# _	<i>city</i> 'sɪti <i>center</i> 'sentə <i>certain</i> 'sɜ:tən			<i>zip</i> zɪp <i>zeal</i> zi:l <i>zoo</i> zu:		<i>sip</i> sɪp <i>seal</i> si:l <i>sue</i> su:	
_	<i>lacer</i> 'leɪsə <i>faces</i> 'feɪsɪz <i>advices</i> əd'vaɪsɪz	<i>laser</i> 'leɪzə <i>phases</i> 'feɪzɪz <i>advices</i> əd'vaɪzɪz		<i>muzzle</i> 'mʌzəl <i>muzzly</i> 'mʌzli <i>azide</i> 'eɪzaɪd		<i>mussel</i> 'mʌsəl <i>muscly</i> 'mʌsli <i>A-side</i> 'eɪsaɪd	
_ #	<i>bodice</i> 'bɒdɪs <i>Bruce</i> bru:s <i>fleece</i> fli:s	<i>bodies</i> 'bɒdɪz <i>bruise</i> bru:z <i>flees</i> fli:z		<i>as</i> (SF) æz <i>buzz</i> bʌz <i>swizz</i> swɪz		<i>ass</i> æs <i>bus</i> bʌs <i>Swiss</i> swɪs	

Table 60 The systematic grapheme-phoneme correspondence between <c> and /s/ and <z> and /z/

With specific reference to /z/, the importance of its systematic correspondence with <z> is evidenced by the fact that it can also affect spelling. For example, when English borrowed Romance words presenting <s> as /z/, it frequently replaced the original grapheme with <z> so as to prevent any chance of de-voicing to /s/.

borrowing language		lending English	
French	<i>assise</i> asiz	>	<i>assize</i> ə'saɪz
French	<i>blason</i> blaʒɔ̃	>	<i>blazon</i> 'bleɪzən
French	<i>losange</i> lɔʒɑ̃ʒ	>	<i>lozenge</i> 'ləʒɪndʒ

French	<i>rasoir</i>	rɑzwaʁ	>	<i>razor</i>	'reɪzə
Portuguese	<i>Brasil</i>	bra'zjw	>	<i>Brazil</i>	brə'zɪl

Table 61 The diachronic impact of the systematic correspondence between <z> and /z/ on spelling

Similarly, some English words have developed alternative spelling forms in which <z> has replaced <s> as /z/ (a), and this adaptation is particularly productive when words are shortened in informal English (b).

a)	traditional spelling	adapted spelling	
	<i>cosy</i> (BrE)	'kəʊzi	<i>cozy</i> (AmE)
	<i>crozier</i>	'krəʊziə	<i>crozier</i>
	<i>-ise</i> (BrE)	aɪz	<i>-ize</i> (AmE)
	<i>prise</i> (BrE)	praɪz	<i>prize</i> (AmE)
	<i>tease</i>	'ti:zəl	<i>teazle</i>
b)	<i>because</i>	bɪ'kɒz (SF)	<i>coz</i> (also <i>cos</i>) kəz (SF)
	<i>business</i>	'bɪznəs	<i>biz</i> bɪz
	<i>disgusting</i>	dɪs'gʌstɪŋ	<i>scuzzy</i> 'skʌzi
	<i>lesbian</i>	'lezbɪən	<i>lezzy</i> (also <i>lezzie</i>) 'lezi
	<i>present</i>	'prezənt	<i>prezzie</i> 'prezi
	<i>president</i>	'prezɪdənt	<i>prez</i> prez

Table 62 The synchronic impact of the systematic correspondence between <z> and /z/ on spelling

Moving further to <ss>, this homogeneous digraph does not cause much interference in that both languages always realize it as /s/, except for the following English words in which it is pronounced as /z/ word-medially:

dessert dɪ'zɜ:t, *hussar* hə'zɑ:, *scissors* 'sɪzəz, *possess* pə'zes, *Missouri* mɪ'zʊəri, *Aussie* 'ɔ:zi, *pressie* 'prezi, and *dissolve* dɪ'zɒlv.

Nevertheless, considering that consonant length is not phonologically relevant in English, <ss> as /s/ opposes <s> as /z/ only in Italian, where this opposition is systematic given that <ss> appears only intervocalically and /s/ always voices to /z/ in this position:

<s>	/z/	<ss>	/s/
<i>leso</i>	'lezo	<i>lesso</i>	'les:o
<i>mese</i>	'meze	<i>messe</i>	'mes:e
<i>osa</i>	'ɔza	<i>ossa</i>	'ɔs:a
<i>case</i>	'kaze	<i>casse</i>	'kas:e
<i>fesa</i>	'feza	<i>fessa</i>	'fes:a

Table 63 The phonological relevance of the hissing sibilant length in Italian

I will now investigate the phonological realizations of the grapheme clusters <cc>, <c(h)s> and <x> together, as the hissing sibilant is always preceded by a velar plosive as in *access* 'ækses, *electrics* ɪ'lektrɪks, and *exact* ɪg'zækt.

As for the homogeneous digraph <cc>, I must specify that the unvoiced plosive /k/ is followed by the sibilant /s/ only when <cc> is in intervocalic position and the second vowel grapheme is either <i> or <e>:

$$k \rightarrow ks / V _ \left\{ \begin{array}{l} <i> \\ <e> \end{array} \right\} \begin{array}{l} \text{as in } \textit{accident}, \textit{Occident}, \text{ and } \textit{succinct} \\ \text{as in } \textit{accede}, \textit{eccentric}, \text{ and } \textit{succeed} \end{array}$$

Italian learners of English do not find it difficult to remember this rule as a similar one is present in their native language. I am referring to the fact

that the digraph <cc> in Italian is pronounced as /tʃ/ – and not as /k/ – on the same conditions as those provided for English. Compare, for example, *accedere* at'tʃedere 'access' with *accadere* akka'dere 'occur', and *accigliarsi* attʃiλ'larsi 'frown' with *accogliere* ak'kɔλλere 'welcome'.

Similarly, Italian EFL learners are unlikely to mispronounce the grapheme cluster <c(h)s> as both languages realize it as /ks/. The only two words that might be pronounced incorrectly are *fuchsia* 'fju:ʃə and *Tucson* 'tu:sɒn, as they have been standardized as 'fuksja and 'tukson in Italian.

In fact, the only grapheme posing a real problem for Italian learners is <x> in that Italian only realizes it as /ks/, while English can also realize it as /z/ and /gz/, depending on the position of the digraph and the stress, and the phonological class of the phoneme immediately after <x>.

I will first show how <x> always corresponds to /z/ word-initially and to /ks/ word-finally irrespective of stress position:

	Italian		English	
# _	<i>xenofobia</i>	ksɛnofo'bia	<i>xenophobia</i>	ˌzenə'fəubiə
	<i>Xerox</i>	'ksɛroks	<i>xerox</i>	'ziɛrɒks
	<i>xilofono</i>	ksi'lɔfono	<i>xylophone</i>	'zaɪlə'fəʊn
_ #	<i>climax</i>	'klimaks	<i>climax</i>	'klaɪmæks
	<i>Botox</i>	'bɒtoks	<i>Botox</i>	'bəʊtɒks
	<i>jukebox</i>	dʒub'bɒks	<i>jukebox</i>	'dʒu:kɒks

Table 64 The phonological realization of word-initial and final <x> in Italian and English

Instead, when this grapheme is in word-mid position, it might result either in /ks/ or /gz/, depending on which phoneme follows and where the stress is placed. Specifically, while <x> is always realized as /ks/ when a

consonant follows as in *excavate* 'ekskəveɪt, *expand* ɪk'spænd, and *expedition* ,ekspə'dɪʃən, the choice between the voiced and the unvoiced cluster in intervocalic position also depends on where the stress falls. Only if it falls on the vowel immediately after <x>, /ks/ voices to /gz/ as in *auxiliary* ɔ:g'zɪliəri, *example* ɪg'zɑ:mpəl, and *exist* ɪg'zɪst; in any other case, /ks/ remains unvaried as *execute* 'eksɪkju:t, *exhibition* ,eksɪ'bɪʃən, and *exorcist* 'eksɔ:sɪst.

The pairs of words in the table below clearly highlight the key role played by the two factors just mentioned, *i.e.* phonological class and stress position. While a) shows how consonants in post-<x> position can neutralize the voicing of /ks/; the words in b) aptly illustrate the importance of stress in the choice between /ks/ and /gz/, as they are either words with two alternative stress positions, or etymologically-related words with different stresses.

	<x> as /gz/		<x> as /ks/	
a)	<i>exhume</i> 1	ɪg'zju:m	<i>exhume</i> 2	eks'hju:m
	<i>exhaust</i>	ɪg'zɔ:st	<i>exhale</i>	ɪks'heɪl
b)	<i>exigency</i> 1	ɪg'zɪdʒənsɪ	<i>exigency</i> 2	'eksɪdʒənsɪ
	<i>eczema</i> * 1	ɪg'zi:mə (AmE)	<i>eczema</i> 2	'eksɪmə (BrE)
	<i>exhibit</i>	ɪg'zɪbɪt	<i>exhibition</i>	,eksɪ'bɪʃən
	<i>exert</i>	ɪg'zɜ:t	<i>exercise</i>	'eksəsaɪz
	<i>Alexander</i>	,æɪɪg'zɑ:ndə	<i>Alex</i>	'æɪɪks

* <cz> is not worth forming a class of its own, considering that *eczema* is the only word presenting it in word-mid position.

Table 65 The importance of the phonological class of the post-<x> phoneme for the voicing of /ks/ to /gz/

To conclude by summarizing all the information provided so far, while the grapheme <c> and the clusters <cc>, <ss> and <c(h)s> will always realize a voiceless hissing sibilant, <z> will always correspond to a voiced one. As for the grapheme <x>, it will be realized as /gz/ – and not as /ks/ – only when the stress falls on the vowel immediately after the sibilant.

3.3.2 The voicing effect of the grapheme <e> in word-final position

I will now move further to deal with another phenomenon that might be useful when it comes to choosing between /s/ and /z/, namely the voicing of the hissing sibilant when the grapheme <e> in word-final position causes the nucleus to lengthen or break into a complex vowel. Compare, for example, the pairs in the table below:

_ #		_ e	
<i>this</i>	ðɪs	<i>these</i>	ði:z
<i>loss</i>	lɒs	<i>lose</i>	lu:z
<i>marquis</i>	'mɑ:kwɪs	<i>marquise</i>	mɑ:'ki:z
<i>crisis</i>	'kraɪsɪs	<i>Chinese</i>	tʃaɪ'ni:z
<i>promise</i>	'prɒmɪs	<i>compromise</i>	'kɒmprə'maɪz

Table 66 The voicing effect that <e> in word-final position exerts on /s/ (1)

Now that I have provided the general rule, I would also like to make some observations in order to avoid any misunderstanding or confusing generalization.

First of all, the voicing of /s/ to /z/ is regular, but not so systematic as that of /θ/ to /ð/ (see page 81), as evidenced by words like *abase* ə'beɪs, *decease* di'si:s and *abstruse* əb'stru:s.

Secondly, the frequency rate at which assimilation of voice occurs also depends on word class as nouns and adjectives are much more likely to keep their word-final sibilants unvoiced than verbs. Compare, for instance, the /s/-ending nouns *caboose*, *goose* and *paradise* and the adjectives *concise*, *otiose* and *precise* with the /z/-ending verbs *advertise*, *rise* and *appease*. Moreover, the multi-class words ending in -se that I investigated in Chapter 2 seem to support this class-based distinction in that their final /s/ remains unvoiced when they act as nouns as in *use* ju:s and *house* haʊs; while it voices to /z/ when they act as verbs as in *use* ju:z and *house* haʊz (see page 93).

Finally, it must be clear that /s/ voices to /z/ exclusively when it is the grapheme <e> to cause vowels to lengthen or break into complex vowels. On the contrary, when they would be long or complex even if there were no <e> word-finally, voicing is much more unlikely to take place. Compare, for example, the pairs in the table below and see how the right-handed column words do not present any voicing in that the vowel digraphs they present would be realized as long or complex vowels regardless of the presence of <e>.

_z		_s	
<i>lose</i>	lu:z	<i>loose</i>	lu:s
<i>muse</i>	mju:z	<i>moose</i>	mu:s

<i>Japanese</i>	<i>ˌdʒæpəˈniːz</i>	<i>geese</i>	<i>giːs</i>
<i>expertise</i>	<i>ˈekspɜːˈtiːz</i>	<i>decease</i>	<i>dɪˈsiːs</i>
<i>hose</i>	<i>həʊz</i>	<i>louse</i>	<i>laʊs</i>

Table 67 The voicing effect that <e> in word-final position exerts on /s/ (2)

To sum up what I have investigated in this section, the grapheme <e> in final position is likely to voice the hissing sibilant immediately before it only when it causes the word-end nucleus to lengthen or diphthongize.

3.3.3 The curbing effect that morphological boundaries exert on assimilation of voice

In a final attempt to make the choice between /s/ and /z/ as informed as possible, I will end this long section devoted to the two hissing sibilants with some indications on the significant role that morphology plays on voicing neutralization.

First of all, I must point out that the students who responded to the questionnaire generally paid little attention to morphology, although knowing that inter-morpheme assimilation does not take place in English would have prevented them from voicing /s/ in pre-voiced consonant and intervocalic position as in compounds like *Christmas* and *bodysnatcher* (see page 55), and derivatives like *disappoint* and *misleading*.

I will now take into consideration some bound morphemes which might represent a problem for Italian learners regardless of this general rule.

To start with the prefixes *dis-* and *mis-*, they are worth mentioning for two reasons. First of all, *dis-* is probably the most productive bound morpheme in both languages, and this causes a high level of interference when Italian and English differ in assimilation of voice. Secondly, there are some words that I must list as they constitute a violation of the rule, namely *dissolve* dɪ'zɒlv, *disease* dɪ'zi:z, and *disaster* dɪ'zɑ:stə, although the last two words can be hardly considered exceptions since their derivation is only etymological (*dis* 'not' + *ease* 'health'; It. *dis* 'not' + *astro* 'star' in the sense of 'ill-starred event'). Nevertheless, I have already pointed out how productive and etymological morphology usually act alike on a phonological level (see, Section 2.2.1).

	Italian [z]		English /z/	
V_V	<i>disappunto</i>	dɪzəp'punto	<i>disappoint</i>	ˌdɪsə'pɔɪnt
	<i>disobbedire</i>	dɪzɔbbedɪ're	<i>disobey</i>	ˌdɪsə'beɪ
	<i>disimbarcare</i>	dɪzɪmbar'kare	<i>disembark</i>	ˌdɪsɪm'bɑ:k
	<i>misanthropo</i>	mɪ'zantropo	<i>misanthrope</i>	'mɪsənθrəʊp
– C [+voiced]	<i>disgrazia</i>	dɪz'grattsja	<i>disgrace</i>	dɪs'greɪs
	<i>disdegno</i>	dɪz'deŋno	<i>disdain</i>	dɪs'deɪn
	<i>disborso</i>	dɪz'borso	<i>disbursement</i>	dɪs'bɜ:smənt
	<i>misleale</i>	mɪzle'ale	<i>misleading</i>	mɪs'li:diŋ

Table 68 The voicing of the final /s/ in the prefixes *dis-* and *mis-* in Italian

Although the prefixes *ob-* and *ab-* work exactly like *dis-* and *mis-*, I must discuss them separately as the hissing sibilant belongs to the root and, therefore, is placed *after* the voiced bilabial plosive. As a consequence, Italian assimilation rules might interfere only in the realization of the three English words *absolve* əb'zɒlv, *absorb* əb'zɔ:b (also -'sɔ:b) and *observe* əb'zɜ:v, as the Italian [s] never voices to [z] in post-consonant position (see page 56).

Moving further to the prefixes *de-* and *re-*, /s/ in root-initial position might voice only on two conditions: first of all, the phoneme immediately after must be a vowel (compare *re/z/ide* and *de/z/ignate* with *re/s/plendent* and *de/s/cribe*); secondly, derivation must be only etymological. As a practical rule, this implies that either roots no longer exist as in *de + *sire* and *re + *sist*, or have meanings which are no longer strictly related to those of their prefixed counterparts as in *de + *serve* and *de + *sign*.

productive derivation → /s/		etymological derivation → /z/	
<i>reset</i>	< <i>re + set</i>	<i>reside</i>	< <i>re + *side</i>
<i>resell</i>	< <i>re + sell</i>	<i>reserve</i>	< <i>re + serve</i>
<i>resit</i>	< <i>re + sit</i>	<i>resent</i>	< <i>re + *sent</i>
<i>resettle</i>	< <i>re + settle</i>	<i>resemble</i>	< <i>re + *semble</i>
<i>resale</i>	< <i>re + sale</i>	<i>resilient</i>	< <i>re + *silient</i>
<i>desalination</i>	< <i>de + salination</i>	<i>desire</i>	< <i>de + *sire</i>
<i>deselect</i>	< <i>de + select</i>	<i>deserve</i>	< <i>de + serve</i>
<i>desensitize</i>	< <i>de + sensitize</i>	<i>design</i>	< <i>de + sign</i>

Table 69 The importance of unproductive morphology for the voicing of root-initial /s/ after the prefixes *re-* and *de-*

In fact, there is another clear difference between these two morphological groups. As a rule, the prefix-end <i> is realized as a strong /i:/ only when the bound morpheme is still perceived as an individual unit; on the contrary, when it has lost its morphological autonomy, it loses the primary stress, reducing to a weak /ɪ/. The table below shows how this occurs regularly with any vowel-ending prefix.

prefix	productive derivation → /i:/	etymological derivation → /ɪ/
<i>pre-</i>	<i>prefabricated</i> ,pri:'fæbrɪkeɪtɪd	<i>precarious</i> prɪ'keəriəs
<i>de-</i>	<i>descale</i> ,di:'skeɪl	<i>design</i> di'zaɪn
<i>pro-</i>	<i>proactive</i> ,prəʊ'æktɪv	<i>productive</i> prə'dʌktɪv
<i>co-</i>	<i>coexist</i> ,kəʊɪg'zɪst	<i>collaborate</i> kə'læbəreɪt
<i>retro-</i>	<i>retroactive</i> ,retrəʊ'æktɪv	<i>retrograde</i> 'retrəgreɪd

Table 70 The importance of productive morphology for the length of prefix-final vowels

I conclude by dealing with the realization of the prefix *tra(n)s-* in Italian and English, which is rather problematic, considering that the two languages present the same sibilant /s/ only when the root-initial phoneme is an unvoiced consonant (a).

On the contrary, when the consonant is a voiced one, regressive voicing affects the Italian [s] as usual, while English presents both /s/ and /z/ as possible realizations (b).

The main problem is represented by the prefix-end sibilant in pre-vocalic position, as neither language appears to follow systematic rules in this regard (c).

To start with Italian, both allophones can be adopted, although the choice of one or the other might give a different semantic nuance to the derived word. For instance, if the word *transatlantico* is pronounced with a

voiced sibilant, the speaker is more likely to refer to a liner sailing transatlantic routes than to the corresponding adjective; instead, if the speaker pronounces it with an unvoiced /s/, the opposite is more likely to be the case, in that the prefix is kept isolated from the root so as to stress its 'crossing' meaning (Renzi *et al.*, 1991: 485).

As for English, the choice between /s/ and /z/ is not only based on phonology, but also on morphology. Namely, while unstressed prefixes joining existing roots feature /s/ (i), stressed prefixes joining no longer existing roots present /z/ (ii); in any other case, both the hissing sibilants are possible realizations (iii).

	Italian	[]	English	//
a)	<i>trasferire</i> <i>trascritto</i> <i>transessuale</i>	trasfe'rire tras'kritto transes'swale	<i>transfer</i> (v.) <i>transcript</i> <i>transsexual</i>	træns'fɜ: 'trænskript træn'sekʃuəl
b)	<i>trasmissione</i> <i>traslucente</i> <i>trasgressore</i>	trazmis'sjone trazlu'tʃente trazgres'sore	<i>transmission</i> <i>translucent</i> <i>transgressor</i>	træns/z'mɪʃən træns/z'lu:sənt træns/z'gresə
c) i)	<i>transazione</i> <i>transatlantico</i> <i>transalpino</i>	trans/zat'tsjone trans/za'tlantiko trans/zal'pino	<i>transaction</i> <i>transatlantic</i> <i>transalpine</i>	træn'zækʃən ,trænzət'læntɪk trænz'ælpain
ii)	<i>transitivo</i> <i>transitorio</i>	trans/zi'tivo trans/zi'torjo	<i>transitive</i> <i>transitory</i>	'trænsətɪv 'trænsɪtri
iii)	<i>transistor</i> <i>transit</i> <i>transizione</i>	tran's/zistor 'trans/zit trans/zit'tsjone	<i>transistor</i> <i>transit</i> <i>transition</i>	træn's/zɪstə 'træns/zɪt træn's/zɪʃən

Table 71 The voicing of the final /s/ in *trans-* in Italian and English

To summarize what I have pointed out in this section, I might say that morpheme boundaries generally curb assimilation of voice, provided that the derivational and compounding constituents are still lexically discernible and morphologically productive.

3.4 The approximants /j/ and /w/

I will first consider the two approximants together in order to investigate how English adapts loanwords presenting approximants, but also how it might use them to replace non-native phonemes.

Then, with specific reference to /j/, I will first provide information about the conditions on which it emerges before U; then, I will give some useful indications as to the difficult choice between a close front vowel and a palatal approximant in pre-schwa position.

As for the bilabial approximant, I will only spend a few words on a phenomenon which I have not mentioned so far, namely the darkening effect that /w/ might exert on the following vowel in certain distributional circumstances.

3.4.1 Non-integrated loans in English and the approximants

I will start by exploring non-integrated loanwords presenting approximants in their native realizations, as linguistic integration in Italian and English often differ in this regard. Compare, for instance, how the loans in the table below are realized in their native language and in English:

	borrowings	pronunciation		native words with similar distributions	
		native	English		
a)	Fr. <i>abattoir</i>	abatwɑ	'æbətwa:	<i>choir</i>	kwaɪə
	Sp. <i>guacamole</i>	gwaka'mole	ˌgwækə'məʊleɪ	<i>quackery</i>	'kwækəri
	Lat. <i>status quo</i>	ˌstatus 'kwɔ	ˌsteɪtəs 'kwəʊ	<i>quote</i>	kwəʊt
	Fr. <i>milieu</i>	miljø	mi:'ljɜ:	<i>yearn</i>	jɜ:n
b)	It. <i>commedia</i>	kom'mɛdja	kɒ'mɛɪdiə	-	-
	It. <i>pianoforte</i>	ˌpjano'fɔrte	pɪˌænəʊ'fɔ:ti	-	-
	Sp. <i>arroyo</i>	a'rrojɔ	ə'ɾɔɪəʊ	-	-
	Sp. <i>hacienda</i>	a'sjenda	ˌhasi'endə	-	-
	Sp. <i>fiesta</i>	'fjesta	fi'ɛstə	-	-

Table 72 Non-integrated loanwords in English presenting approximants in their native realizations

As can be deduced from the examples in the table, English might change the status of the original approximants depending on the extent to which English distribution coincides with that of the lending language. For instance, the loanwords in a) keep their native /w/ and /j/ because, when a vowel is followed by another vowel in stressed position and with a more

open articulation (*descending diphthongs*), the former becomes a semi-consonant in all the languages concerned.

On the contrary, the approximants are bound to disappear when the distributional rules of the borrowing and lending languages do not coincide.

Just to begin with a clear example, /j/ in Spanish *arroyo* is adapted into /ɪ/ as the corresponding grapheme <y> stands in intervocalic position (see page 96).

Similarly, /j/ is not preserved in Italian *commedia* because English never presents unstressed descending diphthongs as Italian does. By way of example, compare the following English-Italian homographic cognates: *Armenia* ɑ:'mi:niə v. ar'mɛnʃa, *malaria* mə'leəriə v. ma'larʃa, and *radio* 'reɪdiəʊ v. 'radʃo.

As for the remaining cases in b), they all drop their palatal approximants in that descending diphthongs in English can only correspond to digraphs starting with <y>. As a consequence, stress interposes between the two vowels since <i> can only correspond as a syllable nucleus.

To conclude, with specific reference to these final two cases, decisive evidence of the importance of stress position in the integration of the approximants is provided by French loans, as in American and British English the stress falls on different vowels. While AmE preserves the oxytonicity typical of the Romance language, BrE moves the stress leftwards to a more natural English front position. As a result, when it comes to words which natively present semi-consonantal onsets in stressed syllables, only AmE keeps them, while BrE reduces them to weak close front vowels. Compare, for instance, *sommelier* AmE səmə'ljeɪ to BrE sə'meliɪɪ, and *concierge* AmE kɑ:n'sjɜrʒ to BrE 'kɒnsieɜrʒ.

Now that I have defined the rules whereby native approximants should be kept or not in English, I will move on to describe the opposite phenomenon, namely the appearance of /j/ and /w/ only once foreign words have been incorporated into English.

As for the palatal semi-consonant, it emerges only in the presence of U, since close back vowels are the only phonemes which can attract it. I might cite as examples some of the many lexemes that English has borrowed from Latin and Italian such as *in situ* in 'sɪtju:, *tabula rasa* ,tæbjʊlə 'rɑ:zə, *sostenuto* ,sɒstə'nju:təʊ, and *tessitura* ,tesɪ'tʃʊərə.

As for the bilabial approximant instead, clear evidence is provided by Spanish borrowings such as *conquistador* kɒn'kwɪstə'dɔ:r, as they end up featuring a post-plosive /w/, although the grapheme <u> does not only attract a palatal approximant in Spanish, but it also keeps silent when followed by another vowel (kɒn'kɪstə'dɔ:r).

The third and final case in which non-integrated loanwords might cause trouble to Italian students regards the use of the approximants as substitutes for similar phonemes which do not belong to the English phonological system such as the palatal nasal /ɲ/, the palatal liquid /ʎ/, the labio-palatal approximant /ɥ/ and the close front rounded vowel /y/.

When English borrows words featuring the consonants /ɲ/ and /ʎ/, it usually breaks them into the clusters /nj/ and /lj/, and this represents exactly the opposite phonological adaptation investigated in Section 1.2.1, namely the Italian tendency to assimilate the English /nj/ and /lj/ into their native /ɲ/ and /ʎ/.

As for the French /ɥ/ and /y/, while the former is always replaced with a bilabial approximant; the latter, instead, is always realized as the combination of a palatal approximant with a pure close back vowel – which might eventually break into a centring diphthong when it is stressed and followed by the grapheme <r> as in *couture* (see page 114).

	loanword	pronunciation	
		native	English
ŋ	Fr. <i>chignon</i>	ʃiɲɔ̃	ˈʃi:njɒn
	It. <i>cognoscenti</i>	koŋnoˈʃenti	ˌkɒnjəˈʃenti
	Sp. <i>mañana</i>	maˈɲana	mænˈjɑ:nə
ʌ	It. <i>tagliatelle</i>	ˌtaʎʎaˈtɛlle	ˌtæljəˈteli
	It. <i>imbroglio</i>	imˈbrɔʎʎo	imˈbrɜʊliəʊ
	Sp. <i>paella</i>	paˈeʎa	paiˈela
	Sp. <i>tortilla</i>	torˈtiʎa	tɔːˈti:ə
ɥ	Fr. <i>cuisine</i>	kɥizin	kwiˈzi:n
	Fr. <i>ennui</i>	ɑ̃ɥi	ɒnˈwi:
y	Fr. <i>étude</i>	etyd	ˈɛɪtju:d
	Fr. <i>couture</i>	kutyʀ	kuˈtjʊə
	Fr. <i>au naturel</i>	natyʀɛl	əʊˌnætjuˈrel

Table 73 Integration of loans in English by means of the approximants /j/ and /w/

I might now conclude this section dedicated to loanwords incorporated into English by pointing out that, while the preservation or disappearance of the approximants /j/ and /w/ mainly depend on whether the borrowing languages present them in the same distributions as English, their appearance is generally the result of a phonological substitution due to the presence of similar non-native phonemes.

3.4.2 The emergence of a palatal approximant in pre-close back vowel position

With reference to the first objective, I will first investigate what vowel graphemes and digraphs prevent /j/ from emerging when they are realized as close back vowels.

To start with <u>, it always causes approximation when there is no onset to prevent it, as in *unicorn* 'ju:nɪ,kɔ:n, *volumize* 'vɒljʊmaɪz, and *Europe* 'jʊərəp. Furthermore, although these examples show how <u> can be realized both as /u:/ and /ʊ/, it is worth pointing out that it generally corresponds to /u:/ when a palatal approximant appears before it, whether the stress falls on it or not:

/u:/ with primary stress		/u:/ with no primary stress	
→ secondary stress			
<i>human</i>	'hju:mən	<i>humankind</i>	,hju:mən'kaɪnd
<i>mule</i>	mju:l	<i>muleteer</i>	,mju:lə'tiə
<i>putrify</i>	'pju:trɪfaɪ	<i>putrification</i>	,pju:trɪ'fækʃən
<i>universe</i>	'ju:nɪvɜ:s	<i>university</i>	,ju:nɪ'vɜ:səti
<i>utilize</i>	'ju:təlaɪz	<i>utilitarian</i>	,ju:tɪlɪ'teəriən
→ pre-stress position			
<i>dual</i>	'dju:əl	<i>duality</i>	dju:'æləti
<i>funeral</i>	'fju:nərəl	<i>funereal</i>	fju:'nɪəriəl
<i>tumult</i>	'tju:mʌlt	<i>tumultuous</i>	tju:'mʌltʃuəs
<i>dubious</i>	'dju:biəs	<i>dubiety</i>	dju:'baɪəti
<i>tutor</i>	'tju:tə	<i>tutorial</i>	tju:'tɔ:riəl

→ post-stress position

<i>attribution</i>	,ætrɪ'bjʊ:ʃən	<i>attribute</i>	ə'trɪbjʊ:t
<i>community</i>	kə'mju:nəti	<i>commune</i>	'kɒmjʊ:n
<i>costumier</i>	kɒs'tju:miə	<i>costume</i>	'kɒstju:m
<i>legume 1</i>	li'gju:m	<i>legume 2</i>	'legju:m
<i>vacuity</i>	və'kju:əti	<i>vacuum</i>	'vækju:m or -juəm

Table 74 The regular realization of <u> as /u:/ when a palatal approximant appears before it

As <u> is the only grapheme to be realized as U, with the sole exception of <o> in *lose* 'lu:z, I will now move on to deal with the digraphs <ue>, <ui>, <eu> and <ew>, which are the only clusters causing approximation.

To start with the cluster <ue>, it can correspond to three different phonological realizations: it can keep silent as in *colleague* kə'li:g and *catalogue* 'kætə,lɒg; be realized as two distinct vowels as in *affluent* 'æfluənt and *gruel* 'gru:əl; or be realized as a long close back vowel as in *flue* flu: and *blue* blu:.

As this final case is the only relevant one to the present study, I would like to underline how <ue> as /u:/ appears only word-finally, whether it be in stressed or unstressed position. Compare, for instance, *accrue* ə'kru: and *construe* kən'stru: with *argue* 'ɑ:gju: and *value* 'vælju:.

When it is not realized as a hiatus as in *acuity* ə'kju:əti and *altruism* 'æltruzəm, the digraph <ui> is also realized as a long close back vowel as in *nuisance* 'nju:səns and *suit* s(j)u:t. Nevertheless, there seem to be very few words presenting a palatal approximant, as this digraph usually appears after liquids, which never require it before /u:/, as shown by such words as *sluice* slu:s, *bruise* bru:z and *cruise* kru:z.

Finally, I will describe the digraphs <eu> and <ew> together since <u> and <w> always behave alike when they follow another vowel (see the table below). In particular, when the vowel they follow is <e>, they are both realized as /u:/ and cause /j/ to appear, unless the onset hinders it, as happens with the second-line pair in the table.

	<u>		<w>	
<e_>	<i>feud</i>	fju:d	<i>few</i>	fju:
	<i>leukemia</i>	lu:'ki:miə	<i>blew</i>	blu:
<a_>	<i>laud</i>	lɔ:d	<i>lawn</i>	lɔ:n
	<i>August</i>	'ɔ:gəst	<i>awful</i>	'ɔ:fəl
<o_>	<i>thou</i>	ðəʊ	<i>cow</i>	kəʊ
	<i>dough</i>	dəʊ	<i>widow</i>	'wɪdəʊ

Table 75 The identical realization of <u> and <w> when preceded by the same vowel grapheme

While all these digraphs cause /j/ to emerge only if the onsets preceding them allow it, I will now list all those clusters which never require it, regardless of what consonants precede them.

To start with the digraph <ou>, I must first point out how it is likely to be the most productive cluster in phonological terms, as it can correspond to the short vowels /ʌ/ as in *enough*, /ɒ/ as in *cough*, /ʊ/ as in *could*, and /ə/ as in *ardour*; to the long vowels /ɔ:/ as in *four*, /u:/ as in *group* and /ɜ:/ as in *scourge*; and, finally, to the complex vowels /aʊ/ as in *about*, /əʊ/ as in *boulder*, and /aʊəl/ as in *flour*.

Nevertheless, as far as the focus of this study is concerned, it is only worth underlining that when <ou> is realized as /u:/, it never causes /j/

to appear even after onsets that would not prevent its emergence, as evidenced by words like *cougar* 'ku:gə, *mouflon* 'mu:flɒn, *ghoul* gu:l, and *soup* su:p.

The only other cluster which never presents approximation is the homogeneous digraph <oo>, which differs from the previous one in two ways. On the one hand, it can be only realized as a close back vowel; on the other hand, this close back vowel might be /u:/ as in *boot* bu:t and *baboon* bæ'bu:n; or /ʊ/ as in *hood* hʊd and *hook* hʊk, but it can also diphthongize to /ʊə/ as in *poor* puə and *moor* muə.

Considering that I have already investigated the conditions for centring diphthongization in 3.1, I will now focus on the first two realizations in order to provide helpful guidelines for the difficult choice between /u:/ and /ʊ/.

These guidelines will be based on the combination of four different criteria, *i.e.* position, syllable number, word class and distribution; nevertheless, it must be clear that they are not meant to be considered individually, but as a four-step ladder leading to the gradual elimination of uncertainty. For instance, taking the passage from the first to the second criterion as an example, only words in which <oo> is in mid-position (first criterion) will be also analyzed in syllabic terms (second criterion), as <oo> is systematically realized as /u:/ both at the beginning and end of words, as shown by examples like *oodles* and *ooze*, and *bamboo* and *shampoo* respectively.

Thus, syllable count is the next step to take in order to determine when word-mid <oo> is realized as a long or short close back vowel, in that polysyllabic words like *balloon*, and *tycoon* always present <oo> as /u:/, provided they are not derivatives like *understood* and *adulthood*.

Finally, both word class and distribution might be of great help to understand when word-mid <oo> in monosyllables should be pronounced as /u:/ or /ʊ/.

To start with, word class is crucial when <oo> appears in verbs, as both irregular forms like *stood*, *took* and *shook* and conditional modals like *could*, *would* and *should* are always realized as /ʊ/.

Instead, when the words featuring this digraph in mid-position are regular verbs or belong to another class, attention should be paid to the consonants immediately before and after <oo>, as there are only two specific cases in which this digraph is realized as /ʊ/, namely when it is followed by a velar consonant as in *book*, *cook* and *hook*, and when it is preceded by a (post-)velar consonant and followed by /d/ as in *wood*, *good* and *hood*²⁴.

There are a few words which do not obey these rules, namely *foot* fʊt, *wool* wʊl, *soot* su:t, *poof* pʊf, *gook* gu:k, and *spook* spu:k. Nevertheless, their limited number and the low occurrence of most of them cannot undermine the effectiveness of the criteria provided.

Now that I have finished grouping graphemes and digraphs according to whether they require a palatal approximant or not, I will move further to investigate when onsets can prevent the emergence of /j/. Yet, I must first make two observations as a necessary preliminary to their classification.

First of all, when onsets are made up of more than one phoneme, the appearance of /j/ depends on the consonant immediately before the

²⁴ Collins & Mees (2008: 114) also provide a similar attempt to systematize the realizations of the digraph <oo>. Nevertheless, since their guidelines are only based on what consonant phonemes follow the digraph, they can be useful only for a limited number of English words

nucleus. For instance, while /p/ and /t/ are followed by a palatal approximant in words like *pupil* 'pju:pəl and *tribute* 'trɪbjʊ:t, they no longer present it when a liquid intervenes between them and their nuclei as in *Pluto* 'plu:təʊ and *brute* bru:t, in that /l/ and /r/ never present /j/ before a long close back vowel.

Secondly, some consonants are never followed by palatal approximants for other reasons than their onset position. For instance, English phonotactics prevents two semi-consonants from appearing consecutively; therefore, no English word will ever feature the syntagm */wj/. Similarly, the post-alveolar fricatives and affricates /ʃ/, /ʒ/, /tʃ/ and /dʒ/ are never followed by /j/, as they are already the product of a phonological merger between a consonant and /j/ or /i/. To make it as clear as possible, here below are all words in which this coalescence is still only optional, and not the only possible realization as in words like *possession* pə'zefən, *Asia* 'æʒə, *procedure* prə'si:dʒə, and *nature* 'neɪtʃə.

		no assimilation	assimilation
sj → ʃ	<i>dyspepsia</i> <i>Belarusian</i> <i>hessian</i>	dɪs'pepsɪə ,belə'ru:siən 'hesiən	dɪs'pepʃə ,belə'ru:ʃən 'heʃən (AmE)
zj(ʊ) → ʒ	<i>azure</i> <i>anaesthesia</i> <i>Cartesian</i>	'æzjʊə ,ænəs'θi:ziə kɑ:'tɪ:ziən	'æʒə ,ænəs'θi:ʒə kɑ:'tɪ:ʒən
tj(ʊ) → tʃ	<i>overture</i> <i>immature</i> <i>micturate</i>	'əʊvətjʊə ,ɪmə'tjʊə 'mɪktjʊreɪt	'əʊvətʃʊə ,ɪmə'tʃɜr (AmE) 'mɪktʃəreɪt
dj(ʊ) → dʒ	<i>ordure</i> <i>undulate</i>	'ɔ:djʊə 'ʌndjuleɪt	'ɔ:rdʒər (AmE) 'ʌndʒəleɪt (AmE)

<i>verdure</i>	'vɜ:dʒə	'vɜ:rdʒər (AmE)
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Table 76 Total assimilation between the alveo-dentals /s, z, t, d/ and /j/ or ɹ

After these preliminary remarks, I will start by dealing with the vastest group of consonants behaving alike, namely /p, b, m, n, f, v, k, g, h, z, t, d, θ/ and /n/, which always require a pre-nucleus approximant except when they are followed by the close back vowel /ʊ/ in stressed position (see the first-line words *pudding*, *bullet* etc. in the table below).

	u(:)		ʊə		ʊ
p	<i>computer</i> kəm'pjʊ:tə <i>amputate</i> 'æmpjuteɪt		<i>puerile</i> 'pjʊərəɪl <i>purity</i> ɪm'pjʊərəti		<i>pudding</i> 'pʊdɪŋ <i>opulent</i> 'ɒpjʊlənt
b	<i>abuse</i> (n.) ə'bju:s <i>tabulate</i> 'tæbjuleɪt		<i>bureau</i> 'bjʊərəʊ <i>politburo</i> 'pɒlɪtbjʊərəʊ		<i>bullet</i> 'bʊlɪt <i>fibula</i> 'fɪbjʊlə
m	<i>mute</i> mju:t <i>emulate</i> 'emjuleɪt		<i>mural</i> 'mjʊərəl <i>immure</i> ɪ'mjʊə		<i>mullah</i> 'mʊlə <i>amulet</i> 'æmjʊlət
f	<i>fuel</i> 'fju:əl <i>funereal</i> fju'nɪəriəl		<i>fury</i> 'fjʊəri <i>sulphuric</i> sʌl'fjʊəri:k		<i>full</i> fʊl <i>scrofula</i> 'skrɒfjʊlə
v	<i>review</i> rɪ'vju: <i>ovulation</i> ,ɒvju'leɪʃə		<i>bravura</i> brə'vjʊərə <i>pleura</i> 'plʊərə		<i>Nunavut</i> 'nʊnəvʊt <i>rivulet</i> 'rɪvjʊlət
k	<i>cucumber</i> 'kju:kʌmbə <i>accusation</i> ,ækju'zeɪʃən		<i>curate</i> 'kjʊərət <i>curious</i> 'kjʊəriəs		<i>cushion</i> 'kʊʃən <i>accuracy</i> 'ækjʊrəsi
g	<i>legume</i> 'legju:m <i>arguable</i> 'ɑ:gjuəbəl		<i>pagurian</i> pə'gjuəriən <i>oliguria</i> ,ɒlɪ'gjuəriə		<i>guru</i> 'gʊru: <i>augury</i> 'ɔ:gjuəri
h	<i>humus</i> 'hju:məs	-	-		<i>hummus</i> 'hʊməs

	<i>hubristic</i>	hju'brɪstɪk	-	-	-	-
z	-	-	<i>azure</i>	'æzjʊə	-	-
	-	-	<i>cynosure</i>	'sɪnəzjʊə	<i>lazuli</i>	'læzjʊli
t	<i>tube</i>	tju:b	<i>couture</i>	ku'tjʊə	<i>dupatta</i>	dʊ'pʌtə
	<i>tuition</i>	tju'ɪʃən	<i>immature</i>	ɪmə'tjʊə	<i>petulant</i>	'petjʊlənt
d	<i>deduce</i>	dɪ'dju:s	<i>during</i>	'dʒʊərɪŋ	<i>Inuktitut</i>	ɪ'nʊktɪ,tʊt
	<i>conduit</i>	'kɒndjuɪt	<i>endurance</i>	ɪn'dʒʊərəns	<i>sedulous</i>	'sedjʊləs
θ	<i>enthuse</i>	ɪn'θju:z	<i>Arthurian</i>	ɑ:'θjʊəriən	-	-
	<i>Lithuanian</i>	ɪθju'eɪniən	<i>anthurium</i>	æn'θjʊəriəm	-	-
n	<i>numerical</i>	nju:'merɪkəl	<i>inure</i>	ɪ'njʊə	<i>Nunavut</i>	'nʊnəvʊt
	<i>genuine</i>	'dʒenjuɪn	<i>neural</i>	'njʊərəl	<i>cannula</i>	'kænjʊlə

Table 77 The emergence of a pre-U /j/ after the onsets /p, b, m, n, f, v, k, g, h, z, t, d, θ/ and /n/

The phoneme /s/ represents a case *in limine* between those onsets requiring approximation and those rejecting it, as British English realizes it only optionally as in *suit* s(j)u:t, *suicide* 's(j)u:ɪsaɪd, and *capsulate* 'kæps(j)ʊleɪt. As for the syntagm /sjʊə/, I cannot provide any example of it as it always assimilates to /ʃ(v)ə/ as in *censure* 'senʃə, *fissure* 'fɪʃə, and *insurance* ɪn'ʃʊərəns.

Similarly, the lateral liquid /l/ is followed by /j/ only occasionally. Nevertheless, the nature of the close back vowel appears to be unable to explain when /l/ attracts a palatal approximant and when it does not. For example, while words like *curlew* 'kɜ:lju: and *evaluate* ɪ'væljueɪt feature it, others like *blew* blu: and *affluent* 'æfluənt do not, although both pairs present the same close back vowels and the same stress position.

Although I cannot explain the reasons underlying them, here are some rules of thumb that are of great help in systematizing the contexts in which /j/ appears after /l/. First of all, it emerges after /u:/ only when this vowel is the nucleus of an open syllable at the end of a polysyllabic word (a). On the contrary, if the word is a monosyllable (b) or the vowel is followed by a coda (c), no palatal approximant emerges. Finally, as far as the remaining vowels are concerned, /j/ appears only when /l/ acts as an onset on its own (a), and not when it acts as a post-initial consonant (b).

	a)	b)	c)
u:	<i>value</i> 'væljʊ: <i>curlew</i> 'kɜ:lju:	<i>glue</i> glu: <i>lewd</i> lu:d	<i>allude</i> ə'lu:d <i>dissolute</i> 'disəlu:t

u	<i>eluate</i> 'eljueɪt <i>toluic</i> təʊ'ljuɪk <i>valuable</i> 'væljʊəbəl	<i>affluent</i> 'æfluənt <i>fluidity</i> flu'ɪdɪti <i>mellifluous</i> me'ɪfluəs	
ʊ	<i>ululate</i> 'ju:ljuleɪt <i>lucubrate</i> 'lu:kjubreɪt <i>pullulate</i> 'pʌljʊleɪt	- - -	- - -
ʊə	<i>lure</i> l(j)ʊə <i>lurid</i> 'l(j)ʊərɪd <i>tellurium</i> te'l(j)əʊrɪəm	<i>pleura</i> 'plʊərə <i>plural</i> 'plʊərəl <i>fluorescent</i> ,fluə'resənt	

Table 78 The emergence of a pre-U /j/ after the onset /l/

As for the other liquid, /r/ does not present the same capricious nature as /l/, as it is never followed by a palatal approximant. Here are two words for each close back vowel as examples: *brutal* 'bru:təl and *accrue* ə'kru:; *altruism* 'altruɪzəm and *February* 'februəri; *brusk* brʊsk and *pruritus* prʊ'reɪtəs; and, finally, *prurient* 'prʊəriənt and *Ruritanian* ,rʊəri'teɪniən.

I would now like to conclude this section by summarizing all the information provided so far about the appearance of a palatal approximant before a close back vowel.

As for the graphemes which are realized as U, while <u>, <ue>, <ui>, <eu> and <ew> cause /j/ to appear, <ou> and <oo> never do so.

Finally, as for the onsets which might curb the appearance of /j/:

- /p, b, m, f, v, k, g, h, z, t, d, θ, n/ never prevent it except when U is /ʊ/ in stressed position;
- /s/ causes /j/ to appear only optionally;
- /l/ presents it after /u:/ only in an open syllable at the end of a polysyllabic word, and after /u/, /ʊ/ and /ʊə/ only when it acts as an onset of its own;
- /r/ never causes /j/ to appear.

3.4.3 The difficult choice between l and /j/ in pre-schwa position

I will now deal with the third major problem regarding the palatal approximant, namely how difficult it is for Italophones to pronounce differently similar pre-schwa phonemes, as those in the following words: *heal* hi:l, *hear* hɪə, *aerial* 'eəriəl, *ideal* aɪ'di:əl, and *rivulet* 'rɪvjəlet. In view of this, I will take into consideration each of these phonemes individually and provide some rules which might help to understand when a close back vowel should be preferred to the palatal approximant, and which of these vowels should be opted for.

I will start by dealing with a mistake that many students made in the transcription of the word *heal*, namely the replacement of /i:/ with /ɪə/, as they were misled by the fact that in Italian each grapheme presents an individual realization.

This specific case of Italian interference also explains why most of them transcribed both *hear* and *ideal* with /ɪə/, although this centring diphthong should be used exclusively when the digraph is in stressed position and followed by a post-alveolar approximant (see Section 3.1).

Furthermore, as far as the hiatus /i:ə/ in *ideal* is concerned, I would like to point out that it does not represent a major problem for Italophones as it only appears in three specific cases.

First of all, it appears in derived words in which the stem ends with <ee> and the suffix starts with a schwa as in *agreeably* ə'gri:əbli, *foreseeable* fɔ:'si:əbəl, and *freer* 'fri:ə.

The second case refers to the phonological integration of foreign words in which the grapheme <i> is natively realized as a stressed /i/. Although this phoneme actually exists in English, it never appears in stressed position, therefore, it is usually lengthened to /i:/ as in Sp. *sangria* sæŋ'gri:ə and It. *trattoria* ˌtrætə'ri:ə. Incidentally, this adaptation is highly satisfactory, in that both languages lengthen stressed vowels in open syllables, although vowel length is not phonologically relevant in Italian and Spanish (Nespor & Bafile, 2008: 75).

The last group includes English lexemes in which <e> in stressed position is realized as /i:/ and the following unstressed vowel is reduced to a schwa, as in *idea* aɪ'di:ə and *real* ri:əl.

Nevertheless, considering that this grapheme is generally realized as /e/ in stressed position, there are only a few words presenting <e> as /i:/. As evidence of this, the table below presents words in which the stress

can fall on different syllables (a), and words with different stress positions as a result of suffixation:

	stressed /e/		unstressed /ɪ/	
a)	<i>decade 1</i>	'dekeɪd	<i>decade 2</i>	dɪ'keɪd
	<i>hegemony 1</i>	'hedʒɪməni	<i>hegemony 2</i>	hɪ'dʒeməni
	<i>rebel 1</i>	'rebəl (n.)	<i>rebel 2</i>	rɪ'bel (v.)
b)	<i>essence</i>	'esəns	<i>essential</i>	ɪ'senʃəl
	<i>excellent</i>	'eksɪlənt	<i>excel</i>	ɪk'sel
	<i>equatorial</i>	ˌekwə'tɔ:riəl	<i>equator</i>	ɪ'kwetətə

Table 79 The complementary realization of <e> as stressed /e/ and unstressed /ɪ/

I must finally point out that the vast majority of words realizing this vowel syntagm are non-integrated Graeco-Latin loans and, in particular, those which still have not reduced the Latin digraphs <ae> and <oe> to <e> as in the following examples:

- <ae> as in *Pangaea* pæn'dʒi:ə, *panacaea* pænə'si:ə, *Linnaean* lɪ'ni:ən, *Manichaeen* ,mæni'ki:ən, *peritoneal* ,perɪtə'ni:əl etc.
- <oe> as in *diarrhoea* ,daɪəri:ə, *gonorrhoea* ,gɒnə'ri:ə, *apnoea* æp'ni:ə etc.

The importance of the original spelling is evidenced by the fact that, when American English has reduced <ae> and <oe> to <e> as in words like *fr(a)enulum*, *(a)esthete* and *anap(a)est*, it can no longer realize the vowel both as /e/ and /i:/ – as the British variety can still do –, but only as /e/.

Referring to the examples provided above, the suffix *-aeen* in *Linnaean* and *Manichaeen* requires further investigation in that it might be

also realized as /iə/, which is the vowel cluster that I am going to deal with immediately after /i:ə/.

In an attempt to systematize the pronunciation of this suffix, word origin is a key factor as it seems that, when *-aean* joins names of personages from the modern era, it always corresponds to /iən/ (a). Instead, when it joins names of personages from ancient history, it is always realized as /i:ən/ (b), unless there is already a long close front vowel in stem-final position (c).

	noun		adjective	
a)	<i>Nietzsche</i>	'ni:tʃə	<i>Nietzschean</i>	'ni:tʃiən
	<i>Burke</i>	bɜ:k	<i>Burkean</i>	'bɜ:kiən
	<i>Joyce</i>	dʒɔɪs	<i>Joycean</i>	'dʒɔɪsiən
	<i>Mozart</i>	'mɔʊtsɑ:t	<i>Mozartian</i>	mɔʊ'tsɑ:tiən
	<i>Boole</i>	bu:l	<i>Boolean</i>	'bu:liən
b)	<i>Epicure(us)</i>	'epɪ,kjʊər(əs)	<i>Epicurean</i>	ˌepɪkjʊ'ri:ən
	<i>Manichaeus</i>	ˌmæni'ki:əs	<i>Manichaean</i>	ˌmæni'ki:ən
	<i>Euripides</i>	ˌjʊə'rɪpɪ'di:z	<i>Euripidean</i>	ˌjʊə'rɪpɪ'di:ən
	<i>Hercules</i>	'hɜ:kju'li:z	<i>Herculean</i>	ˌhɜ:kju'li:ən
	<i>Sophocles</i>	'sɒfə'kli:z	<i>Sophoclean</i>	ˌsɒfə'kli:ən
c)	<i>Archimedes</i>	ˌɑ:kɪ'mi:di:z	<i>Archimedean</i>	ˌɑ:kɪ'mi:di:ən
	<i>Prometheus</i>	prə'mi:θiəs	<i>Promethean</i>	prə'mi:θi:ən

Table 80 Proper names joining the adjective suffix *-(a)ean*

As exemplified by the words in the table, the cluster /iə/ can appear only in unstressed word-final position, and position turns out to be of crucial importance for the correct pronunciation of such words as *ulterior* ʌ'tɪəriə

and *superior* su:'piəriə, in that Italo-phones are unlikely to perceive the difference in sound between /iə/ and /Iə/.

I must also point out that the word-final requisite cannot be specified in morphological terms, as the grapheme realizing the close front vowel oscillates between the stem-final and the suffix-initial position. For instance, using the suffix *-al* as an illustrative example, /i/ might belong to the stem, whether derivation is productive, as in *colonial* < *colony* + *-al* and *remedial* < *remedy* + *-al*, or etymological, as in *bestial* < Lat. *besti(a)* + *-al* and *colloquial* < Lat. *colloqui(um)* + *-al*; but it might also belong to the allomorphic suffix *-ial*, whether it is productive, as in *authorial* < *author* + *-ial* and *baronial* < *baron* + *-ial*, or etymological, as in *aerial* < Gr. *aer(os)* + *-ial* and *cordial* < Lat. *cor, cord-* + *-ial*.

To conclude, although these general rules should be sufficient to prevent mispronunciation, here below is a list of the most common suffixes (with their allomorphs and associated forms within brackets) that might realize the cluster /iə/:

- **-al** (*-ial, -eal*) as in *adversarial* ,ædvə'seəriəl, *alluvial* ə'lu:viəl, and *marmoreal* mɑ:'mɔ:riəl;
- **-an** (*-en*) as in *cerulean* sɪ'ru:liən and *Nigerien* ni:'ʒeəriən;
- **-ance** (*-ence, -ancy, -ans, -ant*) as in *dalliance* 'dæliəns, *omniscience* ɒm'nɪsiənt, *deviancy* 'di:viənsi, *Sapiens* 'sæpiənz, and *ambient* 'æmbiənt;
- **-ar** (*-ary, -arian*) as in *familiar* fə'mɪliə, *auxiliary* ɔ:g'zɪliəri, and *agrarian* ə'greəriən;
- **-at** (*-ot*) as in *proletariat* ,prəʊlə'teəriət and *compatriot* kəm'pætriət;
- **-ative** as in *palliative* 'pæliətɪv and *associative* ə'səʊʃjətɪv;

- **-atrician** as in *geriatrician* ˌdʒeriəˈtriʃən and *pediatrician* ˌpiːdiəˈtriʃən;
- **-atory** as in *conciliatory* kənˈsɪliətəri and *repudiatory* rɪˈpjuːdiətəri;
- **-ea** (-eo, -eal) as in *area* ˈeəriə, *cornea* ˈkɔːniə, and *choreograph* ˈkɔəriəˌɡrɑːf;
- **-er** and **-est** as in *happier* ˈhæpiə and *angriest* ˈæŋɡriəst;
- **-er** (-or) as in *carrier* ˈkæriə, *worrier* ˈwɒriə, *copier* ˈkɒpiə, and *warrior* ˈwɒriə;
- **-om** as in *axiom* ˈæksiəm and *idiom* ˈɪdiəm;
- **-on** (from French) as in *vermillion* vəˈmɪliən and *battalion* bæˈtæliən;
- **-on** (from Latin) as in *union* ˈjuːniən, *communion* kəˈmjuːniən, and *scorpion* ˈskɔːpiən;
- **-or** (Latin comparative): *senior* ˈsiːniə, *anterior* ænˈtiəriə, and *inferior* ɪnˈfɪəriə;
- **-ous** (-ously) as in *abstemious* əbˈstiːmiəs, *corteous* ˈkɔːtiəs, and *gloriously* ˈɡlɔːriəsli;
- Graeco-Latin words irregular in number:
 - **-on, a** as in *criterion* kraɪˈtiəriən and *ganglia* ˈɡæŋɡliə;
 - **-um, a** (-al) as in *bacterium* bæktɪˈriəm, *media* ˈmiːdiə, and *ileal* ˈɪliəl;
 - **-us** as in *gluteus* ˈɡluːtiəs.

I will now conclude this section by showing how /j/ is likely to substitute close back vowels depending on two factors, *i.e.* spelling and morphology.

As for spelling, it is of great help as /j/ seems to appear only when the following schwa corresponds either to the single grapheme <u> or, rarely, to the cluster <io> in *-ion*. Contrast, for example, *modular* ˈmɒdjələ

with *factorial* fæk'tɔ:riəl, *acumen* 'ækjəmən with *chromium* 'krəʊmiəm, and *bunion* 'bʌnjən with *avian* 'eɪviən.

Furthermore, with specific reference to <u>, there seem to be only three cases in which this grapheme is systematically realized as /jə/. The first one concerns derivation as /jə/ appears when suffixation moves the stress away from <u> as /ju:/ (a). The second and the third ones concern spelling in that, when /jə/ does not result from a change in stress, /jə/ appears only when the following syllable starts with a liquid, be it the lateral /l/ (b) or the post-alveolar /r/ (c). Contrast, for example, *corpulent* 'kɔ:pjələnt with *monument* 'mɒnjumənt, *mercury* 'mɜ:kjəri with *deputy* 'depjuti, and *inaccurate* ɪn'ækjərət with *calculate* 'kælkjuleɪt.

a)	<i>molecule</i>	'mɒlɪkju:l	<i>molecular</i>	mə'li:kjələ
	<i>disrepute</i>	ˌdɪsrɪ'pju:t	<i>disreputable</i>	dɪs'repjətəbl
	<i>execute</i>	'eksɪ,kju:t	<i>executive</i>	ɪg'zɛkjətɪv
	<i>globule</i>	'glɒbjʊ:l	<i>globular</i>	'glɒbjələ
	<i>ridicule</i>	'rɪdɪ,kju:l	<i>ridiculously</i>	rɪ'dɪkjələsli
b)	<i>circulate</i>	'sɜ:kjələɪt	<i>pendulous</i>	'pendjələs
	<i>copula</i>	'kɒpjələ	<i>rivulet</i>	'rɪvjələt
	<i>cumulative</i>	'kju:mjələtɪv	<i>speculum</i>	'spekjələm
	<i>fraudulent</i>	'frɔ:djələnt	<i>tumulus</i>	'tju:mjələs
	<i>particular</i>	pə'tɪkjələ	<i>vocabulary</i>	və'kæbjələri
c)	<i>accuracy</i>	'ækjərəsi	<i>figurine</i>	'fɪgjəri:n (AmE)
	<i>aneurysm</i>	'ænjərɪzəm	<i>inaugurate</i>	ɪ'nɔ:gjərəɪt
	<i>augury</i>	'ɔ:gjəri	<i>suppurate</i>	'sʌpjərəɪt
	<i>configure</i>	kən'fɪgjə (AmE)	<i>obdurate</i>	'ɒbdjərət
	<i>failure</i>	'feɪljə	<i>penury</i>	'penjəri

Table 81 The distributional contexts in which schwa is preceded by /j/

I will now conclude this section with a brief summary of what I have discussed so far in order to provide some general but handy guidelines:

- /i:/ is the standard realization of <ea> when the vowel digraph is in stressed position and it is not realized as a close-mid front vowel as in *bread* bred and *tread* tred;
- /i:ə/ appears only in stressed position, and the two phonemes are usually the realization of either vowel graphemes belonging to different but close morphemes, or the clusters <(a)ea> or <(o)ea> in words of Graeco-Latin derivation;
- /ɪə/ appears only in stressed position and immediately before /r/, provided that the approximant appears in one of the following grapheme patterns: 'VVr, Vre#, 'VrVV and 'VrV#;
- /iə/ appears only in unstressed word-final position;
- /jə/ is the unstressed realization of <u> or <io> in *-ion* when the following syllable starts with a liquid or when suffixation has moved the stress away from <u>.

3.4.4 The darkening effect of the bilabial approximant /w/

With the choice between a close front vowel and a palatal approximant in pre-schwa position, I have finished dealing with /j/. I will now conclude this section devoted to the approximants by investigating the darkening effect that /w/ exerts on the realization of the grapheme <a>.

When /w/ works as an onset, the following <a> stops being realized as /æ/ and /ɑ:/, as the bilabial approximant systematically turns it into /ɒ/ and /ɔ:/. As for the choice between the two back vowels, it depends on the consonants acting as codas: all consonants require /ɒ/ (a) except for liquids (b) unless they are graphemically reduplicated (c):

a)	<i>waft</i>	wɒft	<i>Washington</i>	'wɒʃɪŋtən
	<i>waddle</i>	'wɒdəl	<i>wash</i>	wɒʃ
	<i>wand</i>	wɒnd	<i>wasp</i>	wɒsp
	<i>want</i>	wɒnt	<i>watch</i>	wɒtʃ
	<i>was (SF)</i>	wɒz	<i>watt</i>	wɒt
b)	<i>dwarf</i>	dwɔ:f	<i>waltz</i>	wɔ:ls
	<i>walk</i>	wɔ:k	<i>war</i>	wɔ:
	<i>wall</i>	wɔ:l	<i>warty</i>	wɔ:ti
	<i>walnut</i>	'wɔ:nʌt	<i>swarm</i>	swɔ:m
	<i>walrus</i>	'wɔ:lɹəs	<i>thwart</i>	θwɔ:t
c)	<i>wallow</i>	'wɒləʊ	<i>warren</i>	'wɒrən
	<i>wallaby</i>	'wɒləbi	<i>warrant</i>	'wɒrənt
	<i>Wallace</i>	'wɒlɪs	<i>warrener</i>	'wɒrənə
	<i>wallet</i>	'wɒlɪt	<i>warrigal</i>	'wɒrɪgæl
	<i>swallow</i>	'swɒləʊ	<i>warrior</i>	'wɒrɪə

Table 82 The darkening effect that the onset /w/ exerts on the realization of the following grapheme <a>

There are only two exceptions to this phonological rule.

The first one depends on the presence of the vowel grapheme <e> in word-final position, as its diphthongizing effect prevails over the darkening one of the approximant. Compare, for example, *wad* wɒd with *wade* weɪd, *waffle* 'wɒfəl with *wafer* 'weɪfə, and *wan* wɒn with *Wane* weɪn.

The second exception is caused by presence of a velar coda, as /k/, /g/ and /ŋ/ always prevent the darkening effect of the bilabial onset.

_ k		_ g		_ ŋ	
<i>wack</i>	wæk	<i>swagger</i>	'swæɡə	<i>swank</i>	swæŋk
<i>wax</i>	wæks	<i>chinwag</i>	'tʃɪnwæg	<i>twang</i>	twæŋ
<i>thwack</i>	θwæk	<i>wag</i>	wæg	<i>twank</i>	twæŋk
<i>wacko</i>	'wækəʊ	<i>waggle</i>	'wæɡəl	<i>wangle</i>	'wæŋɡəl
<i>AWACS</i>	'eɪ.wæks	<i>wagon</i>	'wæɡən	<i>wank</i>	wæŋk

Table 83 The neutralization that velar codas exert on the darkening effect of /w/

3.5 Conclusion

I have now finished reporting all the guidelines which I provided for the students who agreed to participate in this study once they had handed in their questionnaires.

Therefore, I will now move on to the Conclusion, where I would like to comment on the feedback that these students gave me on the effectiveness of these guidelines and on how phonology might have

proved beneficial to improve their English pronunciation, if they had been taught it at school (see Appendix D).

CONCLUSION

First of all, I would like to summarize what I have investigated in this study in order to achieve that overall view which is necessary before drawing conclusions.

In Chapter 1 I contrasted the Italian and English consonant phoneme systems with the aim of understanding where they actually differ from each other. Then, in Chapter 2 I assessed the extent to which the differences that I pinpointed in the previous chapter might interfere in Italophones' English pronunciation, and I was able to do so thanks to the help of a group of 30 Italian students in their first year of English Studies at Ca' Foscari University, who agreed to transcribe how they pronounced a series of graphemes and grapheme clusters in a questionnaire that I gave them (Appendix A). Finally, I devoted Chapter 3 to presenting those practical guidelines which I suggested that they should adopt in order to avoid the most common pronunciation mistakes that I could detect in the questionnaire.

As can be understood, these three chapters do not constitute independent units, but a three-step path leading to an empirical assessment of how the Italian consonant system might affect English pronunciation, and what tools might be used in order to eliminate or, at least, reduce the interference of the native language.

While the poor results that the sample group provided with their transcriptions are a clear answer to the first issue, the feedback that they gave on the tutorial is indicative of how a contrastive approach to English

phonology might be a valuable support for Italophones who wish to learn correct English pronunciation (see Appendix D).

In the introduction to Chapter 2, I reported how none of the 30 university students who participated in my study had been taught English phonology at school. Nevertheless, when I asked them ‘Do you think that teaching phonology in high school would be useful?’ (question no. 2), all but one replied in the affirmative, in that they regarded phonology as a *very useful* tool for helping learners of English improve their pronunciation (question no. 3).

As a matter of fact, if they had been taught it, they would have avoided the most basic pronunciation mistakes that their native language caused them to make. For example, they would not have transcribed the grapheme <z> as /dz/ and the clusters <niV> and <niV> as /ɲ/ and /ʎ/, if only they had known that these three phonemes do not exist in English. Similarly, they would not have transcribed *singer* and *winged* with a /g/, if they had known that this plosive is always dropped after /ŋ/ in morpheme-end position.

Furthermore, with specific reference to the contrastive approach that I adopted in the tutorial, the students seem to have appreciated it much, as they graded it 4.5, namely from *very* (4) to *extremely useful* (5) (question no. 1), and their positive feedback is due to the fact that the constant comparison between the English and the Italian consonant phoneme systems allowed them to recognize and eliminate most of their cases of mispronunciation.

For example, the simple contrast between the charts of Italian and English consonants immediately made the students aware that /r/ is a post-alveolar approximant in English, and not an alveolar trill as in Italian. Similarly, they also realized that they pronounced /tj/ and /dj/ as /tʃ/ and /dʒ/ in words like *two* and *Tuesday*, as they did not know that the English

plosives are articulated in a more back position than the Italian dental /t/ and /d/. Finally, to provide an example regarding phonological phenomena, the contrastive examination of the two languages stopped them from voicing /s/ to /z/ in intervocalic and pre-voiced consonant position in words like *isolation* and *smile*, and also in inter-morphemic position as in *Christmas* and *bodysnatcher*.

Therefore, if I can draw any conclusion from what this study has brought to light is exactly how a contrastive approach to English phonology might prove to be a valuable tool for helping learners to develop correct EFL pronunciation as it effectively prevents their native language from interfering in the learning process.

FORMAT, INITIALS, ACRONYMS, ABBREVIATIONS AND SYMBOLS

FORMAT

<i>blue</i>	words in the questionnaire
CAPITALS (A, E, I, O, U)	archiphonemes
<i>italics</i>	words, graphemes

INITIALS, ACRONYMS AND ABBREVIATIONS

AmE	American English	ModE	Modern English
attr.	attributive	NZE	New Zealand English
AustralE	Australian English	OE	Old English
diph.	diphthong	pers.	person
BrE	British English	ph.	phoneme
C	consonant	PIE	Proto-Indo European
Eng.	English	pl.	plural.
Fr.	French	pron.	pronunciation
Gr.	Greek	SC	semi-consonant

graph.	grapheme	SF	strong form
It.	Italian	sing.	singular
ItE	Italian English	Sp.	Spanish
Lat.	Latin	triph.	triphthong
Lit.	literate	V	vowel
ME	Middle English		
n/a	not available	WF	weak form

SYMBOLS

- * In phonology, it indicates a wrong phonological transcription as in *car* *cær. In philology, it indicates a reconstructed form as in PIE *pəter
- // includes phonological symbols and transcriptions as in *top* /top/
- [] includes phonetic symbols and transcriptions as in *top* [t^hɒp]
- { } includes various changes occurring in the same phonological context
- <> includes graphemes and grapheme clusters as in <a> and <wr>
- 'become'. It indicates a phonological change as in the Italian realization of <c> as tʃ: k → tʃ / _ i, e (compare *amico* a'miko with *amici* a'mitʃi)
- / precedes the phonological context in which a change takes place (see →)
- _ indicates the contextual position of the phoneme which is subject to a change (see →)
- ∅ zero realization
- σ syllable

-
- α** indicates that a specific variable maintains the same value in a phonological rule
- <** 'comes from' as in Lat. *familia* > It. *famiglia*
- >** 'becomes' as in It. *famiglia* < Lat. *familia*
- +** union of two morphemes as in *dogs* < *dog* + *s*
- =** 'the same as'
- ≈** 'similar to'
- ≠** 'different from' or 'except for'
- v.** 'contrast(s) with'

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APPENDICES

APPENDIX A – QUESTIONNAIRE ON ENGLISH PRONUNCIATION

QUESTION TYPES:

- **Yes/No questions:** cross (X) the ‘Yes’ or the ‘No’ box;
- **Open questions** (___): provide a short answer in letters or numbers;
- **Multiple choice** (a., b., c., etc.): cross (X) only one box (□);
- **Differential scale:** cross (X) only one number

- | | | | |
|---|--------------------|---|------------------|
| 0 | Completely useless | 1 | Not very useful |
| 2 | Slightly useful | 3 | Useful |
| 4 | Very useful | 5 | Extremely useful |

PART A – PHONOLOGY IN HIGH SCHOOL

- 1 **What high school did you attend?**
NB: do not indicate the name of your school (e.g. Leopardi), but the typology (e.g. liceo linguistico, turistico, ragioneria etc.) _____
- 2 **How many English classes were you taught weekly?** _____
- 3 **Were you taught English phonology at school?** yes no
- 4 **Did your English teacher correct your pronunciation when you made mistakes?** yes no
(skip the following question if your answer is ‘no’)
-

-
- 5 **When you made pronunciation mistakes, how did your teacher correct them?**
- a. The teacher told us how they should be pronounced correctly, but made *no* use of the IPA system.
 - b. The teacher *transcribed* the words on the blackboard to show their correct pronunciation
- 6 **Do you think teaching English phonology in high school was/would be useful?** 1 – 2 – 3 – 4 – 5
- 7 **Do you think that, if you had been taught English phonology at school, your pronunciation would be better now?** (skip this question if you were taught it) yes no

PART B – ENGLISH PHONOLOGY TUTORIAL

- 1 **What grade would you give the tutorial?** 1 – 2 – 3 – 4 – 5
- 2 **What have been the *strengths* of the approach adopted by the tutor?** (optional) _____

- 3 **What have been the *weaknesses* of the approach adopted by the tutor?** (optional) _____

PART C – PRONUNCIATION QUESTIONS

Please, answer quickly without dwelling too much on each question in order to find the *right* answer. This questionnaire does not aim to assess you. Moreover, questionnaires will remain completely anonymous.

How do you pronounce <t> and <d> in the following words ?

tossing	_____	two	_____
Tuesday	_____	turbulence	_____
module	_____	modal	_____
scandalous	_____	acidulous	_____

Do you pronounce <r> in the followings words in Received Pronunciation?

employer	yes	no	hereabouts	yes	no
purr	yes	no	myrrh	yes	no
iron	yes	no	counter-attack	yes	no
whereas	yes	no	work	yes	no
care assistant	yes	no	aren't	yes	no
assuredly	yes	no	preparedness	yes	no

How do you pronounce the underlined vowels in the followings words?

concur	___	emir	___	deterrent	___	tapir	___
conform	___	Arab	___	accordance	___	pharaoh	___
K <u>E</u> T	___	post <u>e</u> rity	___	ca <u>r</u> e	___	post <u>e</u> rior	___
interr <u>a</u> cial	___	sat <u>i</u> rical	___	secret <u>a</u> rial	___	viz <u>i</u> rial	___
cong <u>e</u> rial	___	cu <u>r</u> ate	___	mat <u>e</u> rial	___	centu <u>r</u> ion	___
neu <u>t</u> ron	___	bin <u>a</u> ry	___	neu <u>r</u> on	___	n <u>a</u> ry	___
cred <u>i</u> t	___	cam <u>e</u> ra	___	faqu <u>i</u> r	___	Chim <u>e</u> ra	___
car <u>p</u> enter	___	emp <u>i</u> rical	___	car <u>a</u> van	___	gui <u>r</u> o	___
eth <u>e</u> rical	___	char <u>i</u> ty	___	vert <u>i</u> cal	___	ch <u>a</u> ry	___

v <u>i</u> ctuals	___	qu <u>e</u> ry	___	v <u>i</u> rtual	___	qu <u>e</u> rerulous	___
M <u>o</u> rocco	___	dir <u>i</u> ment	___	M <u>o</u> rmon	___	l <u>i</u> ra	___
b <u>u</u> llet	___	a <u>r</u> id	___	b <u>u</u> rllesque	___	e <u>r</u> os	___
Calg <u>a</u> ry	___	ch <u>a</u> in	___	Can <u>a</u> ry	___	ch <u>a</u> ir	___
f <u>e</u> rry	___	pie <u>c</u> e	___	f <u>a</u> re	___	pie <u>r</u> ce	___
av <u>e</u> r	___	E <u>u</u> ston	___	seve <u>r</u> e	___	E <u>u</u> rope	___
st <u>i</u> r	___	C <u>a</u> ry	___	att <u>i</u> re	___	car <u>r</u> iage	___
f <u>u</u> r	___	qu <u>e</u> ry	___	mat <u>u</u> re	___	equ <u>e</u> rry	___
<u>o</u> r	___	<u>o</u> re	___				

Do you pronounce <n> as /ŋ/ (*compagno*) in the following words?

avenue	yes	no	network	yes	no	onion	yes	no
noir	yes	no	continuing	yes	no	nut	yes	no

Do you pronounce <l> as /ʌ/ (*aglio*) in the following words?

lochness	yes	no	evaluation	yes	no	solar	yes	no
Luton	yes	no	flotation	yes	no	cellular	yes	no

How do you pronounce the velar phonemes in the following examples - as /ŋ/, /ŋ/ or /ŋg/?

playing	___	strongest	___	along	___	longer	___
meringue	___	Tongan	___	tongue	___	Bangla	___
Buckingham	___	Shanghai	___	Ardingly	___	tungsten	___
winged	___	hangar	___	singer	___	humdinger	___

How do you pronounce <z> in the following words - as /z/, /s/, /dz/ or /ts/?

zeal	___	Arizona	___	Alcatraz	___
Zorro	___	Zambia	___	ziggurat	___
zephyr	___	enzyme	___	topaz	___

Do you pronounce <h> in the following words?

house	yes	no	hotel	yes	no	hospital	yes	no	
beehive	yes	no	preheat	yes	no	adulthood	yes	no	
adhere	yes	no	abhor	yes	no	exhaust	yes	no	
honour	yes	no	honest	yes	no	hour	yes	no	
hades	yes	no	halal	yes	no	haiku	yes	no	
hacienda	yes	no	hallelujah	yes	no	hapax	yes	no	
I have been working for ages				yes	no	No, I haven't		yes	no

How do you pronounce <th> in the following examples - as /t, d, θ, ð, dz, ts, f/ or /ʃ/?

thankful	_____	anthem	_____	beneath	_____
thyroid	_____	aestheticism	_____	zenith	_____
Corinthian	_____	three	_____	southern	_____
then	_____	although	_____	booth	_____
lithe	_____	scythe	_____	writhe	_____
swath	_____	threefold	_____		
teeth	_____	bathe	_____		
berths	_____	paths	_____		
north	_____	swathe	_____		
smith	_____	worthy	_____		

Do you pronounce <s> as /s/ or /z/ in the following words?

smack	___	You've got no	___	snack	___	He refused my	___
		exc <u>u</u> se				invitation	
basalt	___	The bar is close	___	isolation	___	Come close to me	___
Aids	___	disappoint	___	Cairns	___	disobey	___
mouse	___	disgrace	___	house	___	misleading	___
Christmas	___	reset	___	bodysnatcher	___	reside	___
fans	___	desalination	___	Kellog's	___	desire	___
analysis	___	transmission	___	diagnoses	___	transitive	___

How do you pronounce <x> in the following examples : /ks/, /gz/, /s/ or /z/?

excavate	_____	expand	_____	expedition	_____
auxiliary	_____	example	_____	exist	_____
exorcist	_____	exhibition	_____	execute	_____
anxiety	_____				

How do you pronounce the underlined graphemes/digraphs?

ba <u>yo</u> net	___	<u>y</u> ellow	___	<u>kay</u> ak	___	<u>l</u> ay	___
che <u>w</u> ing	___	wi <u>ch</u>	___	<u>c</u> ow <u>ar</u> dice	___	<u>w</u> ow	___
<u>m</u> ayor	___	he <u>a</u> r	___	pr <u>a</u> yer	___	ri <u>v</u> ulet	___
he <u>a</u> l	___	ae <u>r</u> ial	___	ide <u>a</u> l	___		
Nietzs <u>ch</u> ean	___	Epicure <u>a</u> n	___	Manichae <u>a</u> n	___		

Do you pronounce a palatal approximant /j/ in the following words?

knew	yes	no	rude	yes	no	blew	yes	no	Andrew	yes	no
Europe	yes	no	fruit	yes	no	hermeneutic	yes	no	bruise	yes	no
student	yes	no	duke	yes	no	tumescant	yes	no	du <u>b</u> ious	yes	no

Do you pronounce a labial approximant /w/ in the following words?

wafer	yes	no	write	yes	no	water	yes	no	wrong	yes	no
which	yes	no	whose	yes	no	whom	yes	no	whore	yes	no

How do you pronounce the vowel following <w> in the words below?

waft	_____	dwarf	_____	wallow	_____
wack	_____	swank	_____	swagger	_____

APPENDIX B – STUDENTS’ LANGUAGE BACKGROUND

(BASED ON DATA FROM APPENDIX A, PART 1)

Leftmost column (1, 2...30)	identification numbers assigned to the questionnaires filled in by the students who accepted to participate in this study
Uppermost row (1, 2...5)	questions about their language background that the students were asked to reply in Appendix A, Part 2
	1 What high school did you attend?
	2 How many English classes were you taught weekly?
	3 Were you taught English phonology at school?
	4 Did your English teacher correct your pronunciation when you made mistakes?
	5 When you made pronunciation mistakes, did the teacher correct them by means of phonological transcriptions?
v	affirmative answer to <i>yes-no</i> questions
x	negative answer to <i>yes-no</i> questions
tot.	correct answers provided by the respondents to the questionnaire expressed in percentage terms

1		2	3	4	5	tot.		1	2	3	4	5	tot.
1	Classico	4.5	x	v	x	61%	16	Scientifico	3	x	v	x	45%
2	Linguistico	4	x	v	x	50%	17	Scientifico	3	x	v	x	44%
3	Scientifico	3	x	v	x	50%	18	-	-	-	-	-	75%
4	Linguistico	3	x	v	x	45%	19	Ragioneria	3	x	v	x	53%
5	Scientifico	3	x	v	x	47%	20	Ragioneria	3	x	v	x	40%
6	Commerciale	4	x	v	x	59%	21	Turistico	3	x	v	x	41%
7	Scientifico	3	x	v	x	44%	22	Scientifico	3	x	v	x	53%
8	Linguistico	4	x	x	x	47%	23	Linguistico	4	x	v	x	66%
9	Ragioneria	3	x	v	x	51%	24	Turistico	6	x	v	x	55%
10	Turistico	4	x	v	x	50%	25	Classico	3	x	v	x	67%
11	Turistico	3.5	x	v	x	48%	26	Scienze umane	3.5	x	v	x	49%
12	Turistico	6	x	v	v	49%	27	Linguistico	3.5	x	v	x	54%
13	Scientifico	3	x	v	x	57%	28	Scientifico	2	x	v	x	59%
14	ITIS informatica	3	x	v	x	54%	29	Linguistico	3.5	x	v	x	56%
15	Linguistico	3	x	v	x	50%	30	Ragioneria	3	x	v	x	49%

APPENDIX C – DATA COLLECTION

(BASED ON DATA FROM APPENDIX A, PART C)

- | | |
|--|--|
| uppermost row
(1, 2... 30) | as the students handed in their questionnaires (Appendix A) anonymously, I have assigned an identification number to each of them |
| leftmost column
(<i>Tuesday, two</i> etc.) | the words in the first column are the same words that the students were asked to transcribe in the questionnaire and that I used (in <i>blue type</i>) as supporting evidence for the phenomena of linguistic interference described in Chapters 1, 2 and 3 |
| indented words
(<i>tossing, turbulence</i> etc.) | the indented words in the first column have been used either as distractors or as contrasts to other words in which the interference of Italian might take place. For this reason, I have not taken their mean values into account to work out B (see below) |
-
- correct transcriptions (e.g. <x> in *example* as /g'z/)
 - incorrect transcriptions (interference) (e.g. <x> in *example* as /k's/)
 - irrelevant transcriptions (random) (e.g. <x> in *example* as /'x/)
 - no answer provided
 - v affirmative answer to *yes-no* questions

- x negative answer to *yes-no* questions
- A ratio of the incorrect transcriptions (interference) to the total amount of the incorrect transcriptions (interference + random) provided in percentage terms. I have not computed it when students were asked *yes-no* questions or when the choice was limited to two phonemes only, in that incorrect and irrelevant transcriptions coincided
- B average of correct answers expressed in percentage terms (NB: in Chapter 2 I have frequently used the average of incorrect answers)
-  total mean values of the individual values in A and B. These are the only averages that I have used in my investigation of linguistic interference, as this study does not aim to carry out any cross analysis of the students' individual results

As mentioned at the beginning of Chapter 2, Appendix C collects all the data provided by the Ca' Foscari first-year students who accepted to participate in my study, by transcribing how they pronounced the specific graphemes or clusters in the questionnaire included as Appendix A.

As for the presentation of the students' results, I will not list them in the same random way as they are in the questionnaire, but according to their order of appearance in Chapters 1, 2 and 3, in that this makes it easier to use them as supporting evidence for the phenomena of linguistic interference that I have been investigating throughout.

Here are some general indications as to how I will calculate the mean values. First of all, the averages will present only the first decimal place, and they will be rounded up only when the first omitted digit is

higher than 5. In case it equalled 5, I will adopt the same criterion with the following decimal place omitted. For example, while I will round an average score like 36.54% down to 36.5%, I will round an average score like 40.56% up to 40.6%. Finally, as for the unanswered questions, I will not them into account in the calculation of mean values.

FIRST CHAPTER

1.1.1 THE ALVEO-DENTALS /t/ AND /d/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
tossing	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	-	100	
turbulence	t	t	t	t	t	t	t	t	t	t	t		tj	t	t	t	t		t	t	t	t	t	t	t	t	t	t	t	t	-	96.4	
Tuesday	tj	tj	tj	tj	t	t	t	ts	t	tj	tj	t	tj	tj	tj	tj	tj	t	tj	t	tj	t	tj	t	t	t	t	tj	t	tj	tj	94.5	40
two	t	tj	tj	tj	tj	t	t	tj	t	tj	tj	t	tj	t	tj	tj	t	t	t	t	tj	tj	t	tj	t	100	36.6						
																																97.2	38.3
scandalous	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	-	100	
modal	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	-	100	
acidulous	d3	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	100	83.3	
module	d3	d	d	d3	d	d	d	d3	d	d3	d3	d	d3	d3	d	d3	d3	d	d	d	d	d	d	d	d	d	d	d	d	d	100	69	
																																100	76.1
																																98.6	57.2

1.1.2 THE TREMULANT /r/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
work	x	x	x	x		x	x	x	x	x	x	x		x	x		x				v	x				x	x	x	x	v	-	90.5	
employer	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x				x	x				x	x	x	x	x	-	100	
																																95.2	

1.3.2.2 THE ITALIAN ALLOPHONE /z/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
Christmas bodysnatcher	s	s	s	s	z	s	s	s	s	s	s	s	s	s	s	s	s	s	s	z	s	s	s	z	s	z	s	s	s	s	-	86.2	
	z	z	s	s	s	s	s	z	z	s	z	z	s	s	s	s	s	s	z	z	z	s	s	s	s	z	s	s	s	z	-	62.1	
																																	74.1
smack snack	s	z	s	z	z	s	z	z	z	s	s	z	s	s	z	z	s	s	z	s	z	s	s	s	s	z	z	z	s	s	-	51.7	
	z	z	s	z	s	z	z	z	z	s	s	z	s	s	z	z	s	s	z	z	z	s	s	s	z	s	s	s	z	z	-	44.8	
																																	48.25
basalt isolation	s	z	z	z	z	s	z	z	z	z	z	z	s	s	z	z	z	s	z	s	s	z	z	s	z	z	z	z	s	s	-	27.6	
	s	z	z	s	z	z	z	z	z	z	z	z	s	z	z	z	z	z	z	s	z	z	z	s	s	z	z	s	s	s	-	28.6	
																																	28.1
																																	50.2

SECOND CHAPTER

2.1 NON-RHOTIC /r/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
purr	x	x	x	x	x	x	v	v	v	x	x	x		x	x		v					v	x				x	x	x	x	x	-	77.3
myrrh	x	v		v	x	x	v	v	v	x	x	x		v	x		v					v	x				v	x	v	x	x	-	52.4
																																	64.8
iron	v	v	v	v	x	x	v	v	v	v	v	v		v	v		v					v	v				v	v	v	v	v	-	9.1
aren't	v	v	v	v	x	v	v	v	v	v	v	v		v	v		v					v	v				v	v	v	v	v	-	4.5
																																	6.8
whereas	v	v	v	v		v	v	v	v	v	v	v		v	v		v					v	v				v	v	v	v	v	-	100
hereabouts	v	v	v	v	v	v	x	v	v	v	x	v		x	x		v					v	v				v	x	v	x	v	-	72.7
care assistan.	v	v	v	v		x	v	x	v	v	x	v		x	x		x					v	v				x	x	x	x	v	-	52.4
counter-att.	x	v	v	x		x	x	x	x	x	x	x		x	v		x					x	v				v	v	x	v	v	-	38.1
																																	65.8
assuredly	v	v	v	v	x	x	x	x	v	v	v	v		x	x		v					v	v				v	x	v	x	v	-	63.6
preparedness	v	v	v	x	v	v	x	v	v	v	v	v		x	x		v					v	v				v	x	v		v	-	76.2
																																	69.9

2.2.1 THE MISSING /h/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
house	v	v	v	v	x	v	v	v	v	v	v	v	v	v	v	v	v	v	v	x	v	v	v	v	v	x	v	v	v	v	-	90	
hospital	v	x	v	v	v	v	v	v	v	v	v	v	v	v	v	x	v	v	v	x	x	v	v	v	v	v	v	v	v	v	-	86.7	
hotel	v	x	v	v	x	v	v	v	v	v	v	v	v	v	v	x	v	v	x	x	v	v	v	v	v	x	v	x	v	v	-	76.7	
																																84.5	
preheat	v	v	v	v	x	v	v	x	v	v	v	x	v	v	v	v	v	x	x	v	v	v	v	v	x	v	x	v	x	-	73.3		
adulthood	v	v	v	v	x	v	v	x	v	v	v	x	v	v	v	x	v	v	v	x	x	v	v	v	v	v	v	v	v	v	-	80	
beehive	v	x	v	v	x	v	v	x	v	v	v	v	v	v	v	v	v	v	v	x	x	v	v	v	v	v	v	v	v	v	-	86.7	
																																80	
abhor	v	v	v	v	v	v	v	x	x	v	v	x	v	v	x	x	x	v	v	x	x	v	v	v	v		v	x	x	x	-	62.1	
adhere	v	x	v	v	v	v	v	x	v	v	v	x	v	v	x	v	x	v	v	x	x	v	v	v	v	x	v	v	v	v	-	73.3	
exhaust	v	x	v	v	v	x	v	x	x	v	v	x	v	x	x	x	x	x	x	x	x	v	v	v	v	v	v	x	x	v	-	46.7	
																																60.7	
honest	x	x	x	v	x	v	v	v	v	v	v	x	x	v	x	x	v	x	x	x	v	x	x	x	x	x	x	v	v	v	v	-	53.3
honour	x	x	x	v	x	v	v	x	x	v	v	v	v	v	x	x	v	x	x	x	v	x	x	x	x	x	x	v	v	x	v	-	56.7
hour	x	v	x	v	v	x	v	x	x	v	v	x	v	x	x	x	v	x	x	x	v	x	x	x	x	v	v	v	x	x	-	60	
																																56.7	
halal	v	v	v	v	x	v	v	v	v	v	v	v	v	v	v	x	x	v	v	x	v	v	v	v	v	x	x	v	v	v	-	80	
hades	v	v	v	v	x	v	v	v	v	v	v	v	v	v	v	x	x	v	v	x		v	v	x	v	v	v	v	v	x	-	79.3	
haiku	v	v	v	v	v	v	v	v	v	v	v	x	v	x	v	x	x	v	v	x	x	v	v	v	v	x	x	x	x	v	-	66.7	
																																75.3	
hacienda	v	v	v	v	x	v	v	v	x	v	v	x	v	v	x	x	x	v	x	x	x	v	v	x	v		x	x	x	x	-	51.7	
hallelujah	v	x	v	v	x	v	v	v	v	v	v	v	v	v	v	x	v	v	x	x	x	x	v	v	v	x	v	v	v	v	-	76.6	
hapax	v	x	v	v	v	v	v	v	v	v	v	x	x	x	x	x	x	v	x	x	x	v	v	v	v	x	v	x	v	v	-	60	
																																62.8	
have (SF)	v	v	v	v	v		v	v	v	v	v	x	v	v	v	v	v	x	x	x	v	v	v	v	v	x	v	x	v	v	-	79.3	
have (WF)	v	v	v	v	v	v	x	v	v	v	v	x	v	v	v	x	v		v	x	v	v	x	v	v	v	v	v	v	v	-	17.8	

2.2.2 /θ/ VOICING TO /ð/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B
lithe	θ	t	ð	θ	t	θ	t	θ	θ	t	ð	t	θ	t	t	t	t	ð	θ	d	d	θ	θ	θ	ð	θ	θ	θ	θ	θ	92.3	13.3
scythe	θ	t	ð	ð	t	θ	t	θ	θ	θ	ð	t	θ	t	t	ð	t	ð	t	t	t	θ	θ	θ	ð	θ	θ	θ	θ	θ	100	20
writhe	θ	θ	ð	t	t	t	θ	t	θ	θ	t	θ	θ	t	θ	t	θ	ð	t	t	ts	θ	ð	θ		θ	θ	θ	θ	t	96.1	18.3
swath	θ	θ	t	θ	θ	t	t	θ	θ	θ	t	t	θ	θ	θ	θ	θ	θ	t	ʃ	ts	θ	θ	θ	θ	θ	θ	θ	θ	θ	75	73.3
swathe	θ	θ	ð	ð	t	θ	t	θ	θ	θ	ð	t	θ	t	t	d	t	ð	t	ʃ	t	θ	ð	θ	ð	θ	θ	θ	θ	θ	91.3	23.3
teeth	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	t	t	ʃ	θ	θ	θ	θ	θ	θ	θ	θ	ð	50	86.7
bathe	θ	θ	ð	t	t	θ	θ	θ	θ	θ	θ	θ	θ	t	θ	θ	t	ð	θ	d	t	θ	θ	θ	ð	ð	θ	θ	θ	t	96.1	13.3
berths	θ	θ	t	t	t	t	t	θ	ð	t	t	t	θ	θ	θ	t	t	θ	θ	t	ʃ	θ	θ	θ	θ	θ	θ	θ	θ	ð	78.6	53.3
paths	θ	θ	t	t	t	t	t	θ	θ	t	θ	t	θ	θ	θ	θ	t	ð	θ	t	t	θ	θ	θ	θ	θ	θ	θ	θ	t	100	3.3
																															95.15	17.6
smith	θ	θ	θ	θ	t	θ	t	θ	θ	θ	t	θ	θ	θ	θ	θ	θ	θ	t	t	ʃ	θ	θ	θ	θ	θ	θ	θ	θ	t	85.7	76.7
worthy	θ	θ	θ	θ	t	θ	θ	θ	θ	θ	θ	θ	ð	θ	θ	θ	θ	ð	θ	t	ts	ð	θ	θ	θ	θ	θ	θ	θ	θ	88.9	10
north	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	t	θ	θ	θ	θ	θ	θ	θ	θ	θ	θ	ð	50	93.3
southern	θ	t	θ	θ	t	θ	θ	θ	ð	θ	ð	θ	θ	θ	θ	ð	ð	θ	θ	t	ð	ð	θ	θ	θ	θ	θ	θ	θ	ð	85	33.3

2.2.3 /g/-DROPPING

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B
playing	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ		ŋ		ŋ	ŋ			ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	100	100
along	ŋ	ŋ	ŋ	ŋg	ŋ	ŋ	ŋg	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ		ŋ		ŋ	ŋ			ŋ	ŋ	ŋ	ŋg	ŋ	ŋ	ŋ	ŋg	ŋ	ŋ	100	84.6
																															100	92.3
meringue	ŋg	ŋ	ŋg		ŋg		ŋg	ŋg			ŋ	ŋg	100	7.7																		
tongue		ŋ	ŋg	ŋg	ŋg	ŋ	ŋg	ŋg	ŋg	ŋ	ŋg	ŋg	ŋg		ŋg		ŋg	ŋg			ŋg	ŋg	ŋg	ŋg	ŋg	ŋ	ŋg	ŋg	ŋg	ŋg	100	16
																															100	11.8
Buckingham	ŋg	ŋg	ŋg	n	ŋg	ŋ	ŋg	ŋg	ŋg	ŋg	ŋg	ŋ					ŋg	ŋg			ŋ	ŋg	ŋg	ŋg			ŋ	ŋg	ŋg	ŋg	94.4	18.1

2.2.4 WORD-FINAL /z/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
Kellogg's	z	s	z	z	z	z	z	z	s	z	z	z	z	s	s	s	z	z	s	s	z	z	z		z	s	z	z	z	z	-	72.4	
Aids	z	s	z	z	z	s	s	z	s	s	z	z	z	s	s	s	z	z	z	z	z	z	z		z	z	z	z	z	z	-	72.4	
Cairns		s	s	z	z	s	s	z	s	z	z	z	s	s	s	s	s	z	s	s	s	z	z		z	z	s	s	z		-	44.4	
fans	s	s	z	s	z	s	z	z	s	s	z	s	s	s	s	s	s	z	z	z	s	z	z		z	z	s	s	z	s	-	44.8	
																																58.5	
house (n.)	s	z	s	s	z	s	s	z	s	s	z	z	z	s	s	z	z		z	z	z	z	z		s	z	s	s	s	s	-	50	
mouse	s	z	z	z	z	z	z	z	z	s	z	z	z	z	z	z	z	s	z	z	z	s	z		s	z	z	z	z	z	-	17.2	
																																	33.6
analysis	s	s	s	z	s	z	z	z	z	z	z	z	s	s	z	s	s	s	z	z	z	s	s		s	z	z	z	z	s	s	-	48.7
diagnoses	s	s	s	s	z	z	z	z	z	z	z	z	s	z	z	s	z		z	z	s	s	z		s	z	z	z	s	s	s	-	42.9
refuse (v.)	s	z	z	z	z	z	z	z	z	z	z	z	z	z	z	z	z		z	z	s	z	s		s	z	z	z	z	z	z	-	85.7
excuse (n.)	s	z	z	z	z	s	z	s	z	z	z	z	z	z	s	z	z	s	z	s	z	s	z		s	z	z	z	z	z	s	-	31
close (shut)	z	z	z	s	z	z	z	z	z	z	z	z	z	s	z	z	z		z	s	z	z	z		s	z	z	z	s	s	s	-	78.6
close (near)	s	z	z	s	z	z	z	z	z	z	s	z	s	s	z	z	z		z	z	s	z	s		s	z	z	s	s	s	s	-	39.5
																																	38.8

2.3 THE APPROXIMANTS /j/ AND /w/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B												
lay	ei	ai	ei	ej	ei	ei	ei	ei	ei	ei	ej	ei	ei		ei		ei				ei	ei	ei	ej	ai	ei	ei									-	72.7							
wow	aʊ	aʊ	aʊ	aʊ	a	aʊ	aʊ	ʊə	aʊ	aʊ	aʊ	aʊ	aʊ		aʊ		aʊ				aʊ	aʊ	aʊ	aʊ	aʊ	aʊ											-	90.5						
witch	wi		ʊi	wi	wi	wi	wi	ju:	wi	wi	wi		wi		wi		wi				wi	wi	wi	wi	wi		wi										-	85						
yellow	ie	je	je	je	je	ie	je		je	ie	je					je	je	je	je	je	je					je						-	86.4											
																																							83.5					
kayak	aia	aia	aja	eja	aja	aia	ejæ	æjə	æj	aja	æjə	aia	aja		aia	aia	aja					aj	aia	æja	ja	aja	aia											50	4.3					
bayonet	eio	ajə	ajo	ajo	ajo	aia	ajo	ajɔ	ajɔ	ajo	æjo	ejo	æjo		ajo	æ	æjo				jo	æjo	ai	æjo	aj	ajo	eia						aj						70.8	0				
chewing	ʊ			wi	jɔ	ʊi	jɔ	ju:	jɔ	u:	jɔi	ɪ	ju:		ju:	ju:	ju:						ew	w	eʊ	eʊi	u:													15.8	0			
cowardice	aʊə	owa	əʊə	wa	əʊ	aʊə	ɔ:	ɔwə		aʊə	ɔwə		əʊə		awa	ɔ:	əʊə						ɔwə	aʊ	ɔwə	aʊə	əʊə	aʊə												35.3	15			
																																								43	4.8			
mayor	ei		ei	ejo	ajo	eia	ejo	ejɔ:	ejɔ	eja	æjɔ	ejo	edʒə		eia	æia	edʒə					ejo	edʒ	jo	dʒ	ajo	eia													52.4	0			
prayer		aje	ei	eja	eja	eia	ia	aja	eja	æja	ia	eia			eia	eia	eia					eja	eia	æjo	j	aje	eia														47.6	0		
																																									50	0		
rude	x	x	x	x	x	x	x	x	x	x	x	x	x	x	v	x	x				x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			-	100		
Andrew	v	v	v	v	v	v	v	v	v	v	x	v	v	v	v	v	v				v	v		v	v	v	v	v	v	x												-	7.7	
student	v	x	v	v	v	x	v	v	v	v	v	v	v		v		v				v	v		v	v	v	v	v														-	91.3	
tumescent	v	x	x	x	v	x	x	x	x	x	x	x	v		x		v				x	x		v	x	x	x															-	31.8	
duke	v	x	v	x	v	v	v	v	v	x	v	v	v		v		v				v	v		v	v	v	v	v														-	82.6	
dubious	v	v	v	v	v	x	v	x	x	v	v	x	v		v		v				x	x		x	x	v	x	x	v													-	56.5	
Europe	v	v	v	v	v	v	v	v	v	v	v	v	v		v		v	x	v		v	v		v	v	v	x	v	v													-	91.3	
hermeneutic	x	x	x	x	x	x	v	v	v	v	v	v	v		x	x	x	x			v	x		v	x	v	v	v	v													-	53.8	
fruit	x	x	x	x	v	x	x	x	x	x	x	x	x	x	x	x	x				x	x		x	x	v	x	x	x	x												-	82.6	
bruise	x	x	x	x	x	x	x	v	x	x	x	x	x	x	x	x	x				v	v		x	x	v	x															-	88	
knew	v	v	v	v	v	v	v	v	v	v	v	v	v		v		v				v	v		v	v	v	v	v														-	96.1	
blew	x	v	v	v	v	v	v	v	x	x	v	v	v		v		v				v	v		v	v	x	v	x	v	x												-	23.1	
																																										43.5		
wafer	v	x	v	x	v	x	x	v	v	v	x	v	v	v	v	v	v				v	x		x	x	v	v	x	v	v												-	64.5	
which	v	v	v	v	v	v	v	v	v	v	v	v	x		v		v				v	v		v	v	v	v	v	v														-	96
water	v	x	v	v	x	v	v	v	v	v	x	v	v		v		v				v	v		v	v	v	v	v	v													-	87.5	

THIRD CHAPTER

3.1 THE LENGTHENING AND DIPHTHONGIZING EFFECTS OF /r/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B
concur	ə	ʌ	ə	ə	u:	ɜ:	ə	ʌ		ʊə	u:	u:			ə		ʌ				ʌ	ə					ə	ju:	ə	ə	22.2	5.5
deterrent	ə		ə	e	e	ɜ:	ə	e	e	ə	e	e			ə		e						e				ə				12.5	50
conform	ɔ:		ɒ	ɔ:		ɒ	ɔ:	ɔ:	ɔ:	ɔ:	ɔ:	ɔ:	ɒ				ɔ:					ɒ	ə			ɒ	ə				62.5	52.9
accordance	ɔ:		ɒ	ɔ:	ɒ	ɒ	ɔ:	ɒ	ɔ:	ɔ:	ɒ	ɔ:					ɒ						ɒ				ɔ:			ɒ	100	46.7
KET	e			e	e	e	e	e			e	e	ɪ		e		e					e	ɪ			e		e	ɜ:	-	81.2	
care	ɜ:	e	æ	a	eə	eə	ɜ:	eə	æ	æ	eə	eə			æ		æ					æ	æ				eə		eə	eə	63.6	42.1
secretarial	æ		æ	ə		eə	e	e	æ	æ	æ	æ			ə		e					æ	æ				æ		æ	æ	66.7	6.2
interracial	æ		æ	ə		eɪ	o	e	æ	æ	æ	æ			ə		æ					æ	æ			eɪ	ɒ		ɒ	æ	-	12.5
material	ɪ	i:	ɪ	ɪ	ɪ	ɪə	ɪ	ɪ	ɪ	ɪ	i:	ɪ			ɪ		ɪ					i:	ɪ				ɪ		ɪ	ɪ	100	5.5
congenial	ɪ		ɪ	ɪ		i:	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ			ɪ		ɪ					i:	ɪ			ɪ	ɪ		ɪ	ɪ	-	11.8
faqir			ɪ	i:	i:	i:	ɪ	ɪə	ɪ	ɪ	i:	ɪ			ɪə		ɪ					ɪ	ɪ				ə		ɪə	ɪ	100	18.7
credit	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ	ɪ			ə		ɪ					ɪ	ɪ			ɪ	ɪ		ɪ	ɪ	-	95
neuron	ju		ju:		ju:	ju:			ju:		ju:					ju:	ju:			ju:	ju:		ju:	ju:	100	0						
neutron	ɪə		ju:	ɪə	ju:	ju:	ju:	ju:		ɪə	ju:	ju:			ju:		ju:					ju:	ju:			ju:	ju:	ju:	ju:	ju:	-	84.2
																															91.7	7.6
carpenter	æ		a	ʌ		o:	o:	ə	ə	o:	æ				ʌ		æ					o:	æ			æ	o:		o:	æ	54.5	35.3
caravan	æ		æ	ə	æ	æ	æ	æ	æ	æ	æ	æ			æ		æ					æ	æ			æ	æ		æ	æ	-	94.1
vertical	ɜ:		ə	ə	ə	ɜ:	ə	ɜ:	e	e	e	e			ə		ə					ə	ɜ:			ə		ɜ:		ə	30	33.3
ethical	e	e	e	e		e	e	e	e	e	e	e			e		e					e	ɪ				ɪ	i:		ɪ	-	70.6
virtual			ɪ	ɪ	ɪ	ɜ:	ɪ	ɜ:	ɪ	ə	ɪ	ɪ					ə					ɪ	ɪ				ɜ:		ɪə	ə	69.2	18.7
victuals			ɪ	ɪ	ɪ	ɪ	ɪ	ə	ɪ	ɪ	ɪ	ɪ			ə		ɪ					ɪ	ɪ				ɪ		ɪ	ɪ	-	87.5
Mormon			ɒ	ɒ	ɒ	ɒ	ɔ:	ɒ	ɔ:		ɒ	ɔ:					ɔ:					ɔ:	ɒ				ɜ:			ə	77.8	30.8
Morocco	ɒ		ɒ	ə		ɔ:	ɒ	ɒ	ɔ:	ʊə	ɒ						ɔ:						ɒ				ɔ:		ɒ	ʊə	-	50

burlesque	u:	ʊ		ɜ:	ə	ʌ	ʊ	əʊ	u:		ʊ	ʊ		ʊ	u:			ju:	ə	46.2	7.1				
	ʌ	ʌ	ʌ	ʌ	ʌ	ʌ	ʊ	ʌ	ʌ		ə	ʌ		ʊ	ʌ		ʌ	ʌ	ʌ	ju:	-	11.8			
bullet																					55.5	25			
Calgary	æ																				-	46.7			
Canary		æ	æ		ə	æ	ə	æ	ə	ə		æ							ə	ə	ə	ə	53.8	0	
fare	ɜ:		æ	æ		eə	æ	eə	æ		eə									eə	eə	87.5	38.5		
aver	ə		ə	ʌ		ə	ə	ə	e	ə	ə	ə							ə	ə	ə	ə	11.8	0	
severe			ɪ	e		ɪə	ə	ɪ		ə	e									ɪ:	ɪ:	50	7.7		
stir	ɪ:	ɜ:		ə	ɪ		ɜ:	ə	ɪ	ɪ	ɪ:	ɪ:							ɪ	ɜ:	ɪə	ɪ:	73.3	16.7	
attire			aɪ	aɪ		aɪə	aɪ	ɪ		aɪ	ɪ:								ɪ	aɪ	aɪ	aɪ	70	23.1	
fur	ə		ʌ	ʊ		ɜ:	ə	u:	u	ʊə	ju:	u:							ɜ:	ju:	ʊə	u:	63.6	11.8	
mature	ə		ju:	ju:		ju:	ə	ju:		u:	u:								ju:	ju:	ju:	ju:	69.2	0	
or	ɔ:	ɒ	ɒ	ɒ	ɒ	əʊ	ɔ:	ɔ:	ɔ:	ɔ:	ɔ:	ə							ɒ	ɒ	ɔ:	ɔ:	80	47.4	
ore			ɒ	ɒ		əʊ	ɒ	ʊə		ɔ:	ɔ:								ɔ:		əʊ		57.1	36.4	
																						66.8	21.1		
tapir			ɪ	ɪ		ɜ:	ɪ	ɪə		ɪə	ɪ:								ɪ	ɪə	ɪə	ɪə	42.8	6.6	
stir	ɪ:	ɜ:		ə	ɪ		ɜ:	ə	ɪ	ɪ	ɪ:	ɪ:							ɪ	ɜ:	ɪə	ɪ:	73.3	16.7	
emir	ɪ		ɪ	ɪ:		ɜ:	ɪ	ɪə		ɪ:	ɪ:								ɪ	ə	ɪə	ɪ:	84.6	18.7	
pharaoh		æ	a	ɪ		æ	e	æ	æ	æ	æ	æ								æ	æ	69.2	0		
Arab	æ		æ	ʌ	æ	æ	æ	æ	æ	æ	æ	æ							æ	æ	æ	ə	-	83.3	
posterior			ɪ	ɪ	ɪ:	ɪə	ɪ	ɪə		ɪ	ɪ								ɪ	ɪ	ɪ	ɪ	100	13.3	
posterity	e		ɪ	e	ɪ	e	e	e	e	ə	e								ə	ɜ:	æ	æ	-	62.5	
vizirial			ɪ	ɪ		ɪə	ɪ	ɪ	ɪ	ɪ	aɪ	ɪ							ɪ		aɪ	aɪ	66.6	7.7	
satirical	ɪ	ɪ	ɪ	ɪ		ɪ	ɪ	ɪ	ɪ	ɪ	ɪ:	ɪ							ɪ	ɪ	ɪ	ɪ	-	94.4	
centurion			u:	ʊ		ju:	ju:	ʌ	ʊ	ju	ʊ								ju:	ju:	ju:	u:	92.8	0	
curate	ɔ		ju:	ju:		ju:	ju:	u:	ɔ	ɔ	ju:	ju:							ju:	ju:	ju:	u:	-	0	
																							67.1	4.2	
nary			æ	æ	æ	eə	e	æ	æ	e	æ									ɜ:	e	eɪ	64.3	6.7	
binary	æ		æ	æ		ə	æ	æ	æ	æ	ə	ə								ə	æ	æ	-	40	
Chimera			e	e	e	e	e	eə		e	e	e							ə	ɜ:	ɪ	ɪ	78.6	0	
camera	e		ə	e	e	ə	æ	e	e	ə	ə									ə	ə	ə	-	62.5	
gujro			ɪ	ɪ		ɪ	ɪ	ɪ	ɪ		ɪ									ɪ	ɪ	ɪ	ɪ	100	0
empirical			ɪ	ɪ	aɪ	ɪ	ɪ	ɪ	ɪ	ɪ:	ɪ								aɪ	ɪ	aɪ	aɪ	-	73.3	
																							81	2.2	

ch <u>ary</u>		æ	ə	æ	eə	e	e	æ	æ	æ			æ	æ	æ	æ	æ	æ	71.4	6.7		
char <u>ity</u>	æ	æ	ə		æ	e	e	æ	æ	æ	æ	æ	æ	æ	æ	æ	æ	æ	-	68.7		
qu <u>ery</u>	e	e	e	ɒ	ʊə	e	eə	e	e	e			æ	ɜ:		ɜ:		ɜ:	60	0		
qu <u>erulous</u>		e	ə	i:	ju:	æ	e			e	e		e	ɪ	ɪ		e	ɪ	ə	-	42.9	
l <u>ira</u>		aɪ	aɪ	ɪ	i:	ɪ	ɪ			aɪ	ɪ	ɪ	ɪ	ɪ	i:	ɪ	aɪ	ɪ	aɪ	68.7	0	
d <u>iriment</u>		ɪ	aɪ		ɪ	ə	ɪ	ɪ	aj	ɪ			ɪ				ɪ		ɪ	-	75	
																				66.7	2.2	
<u>arid</u>	æ	æ	a	æ	æ	æ	æ	æ	a	æ			æ	æ	æ	æ	æ	æ	-	82.3		
<u>gros</u>	e	ɪ	ɪ	ɪ	e	e	e		ɜ:	e			e		ɪ		ɪ	e	ɪ	ɪ	93.3	0
<u>chain</u>		eɪ	eɪ	eɪ	eɪ	e	e	æ	ej	eɪ			eɪ	eɪ	eɪ		e	eɪ	eɪ	-	66.7	
ch <u>air</u>	ɜ:	æ	eɪ	eə	eə	æ	eə	æ	æ	eə	ə		eə	eə	eə		ɜ:	eə	eə	50	50	
<u>piece</u>	i:	ɪ	ɪ	i:		i:	i:			i:	i:		i:	i:	i:		i:	i:	i:	-	87.5	
<u>perce</u>		ɪ	i:	ə	i:	ɪə	i:			i:	ɪə		i:	i:	i:		i:	i:	i:	81.8	15.4	
<u>Euston</u>	ju:	jʊ	ju:			ju:	-	94.7														
<u>Europe</u>	ju:	jʊ	jʊ	ju:	ju:		ju:	100	0													
																				77.3	21.8	
<u>carriage</u>	æ	æ	e		æ	e	æ	æ	æ	æ			æ	æ	æ	æ	æ	æ	æ	-	85.7	
<u>Cary</u>		æ	e		eə	e		e	æ	æ		æ	æ	æ	æ	æ	æ	æ	æ	69.2	7.1	
<u>ferry</u>	e	e	e	e		e	e	e	e	e			e	e	e		e	æ	ɜ:	-	87.5	
<u>equerry</u>		e	e		ju:	ə	e		ə	ɪ			ɪ	ɪ		e	ɜ:	ə	ə	-	33.3	
<u>query</u>	e	e	e	ɒ	ʊə	e	eə	e	e	e			e		e	æ	ɜ:	ɜ:	ɜ:	60	0	
<u>concur</u>	ə	ʌ	ə	ə	u:	ɜ:	ə	ʌ		ʊə	u:	u:	ə	ə	ə	ə	ə	ə	ə	22.2	5.3	
<u>deterrent</u>	ə		ə	e	e	ɜ:	ə	e	e	ə	e	e	ə	ə	ə	ə	ə	ə	ə	12.5	50	

3.3 THE IMPORTANCE OF SPELLING AND MORPHOLOGY IN THE CHOICE BETWEEN /s/ AND /z/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B	
excavate	ks	-	100																														
expand	ks	-	100																														
expedition	ks	-	100																														
																																100	
auxiliary	ks	gz	ks	ks	ks	ks	ks	gz	ks	gz	gz	gz	gz	ks	gz	ks	ks	gz	ks	gz	gz	gz	gz	gz	-	43.3							
example	gz	gz	gz	ks	ks	gz	ks	gz	gz	ks	gz	ks	ks	ks	gz	ks	ks	gz	ks	ks	gz	ks	ks	ks	ks	gz	gz	gz	gz	gz	-	50	
exist	ks	gz	ks	ks	ks	gz	ks	gz	ks	ks	gz	gz	gz	ks	gz	ks	gz	gz	ks	gz	gz	-	46.7										
																																46.7	
execute	ks	gz	gz	ks	ks	ks	ks	gz	ks	ks	gz	ks	ks	ks	ks	gz	ks	gz	ks	ks	gz	ks	gz	ks	-	76.7							
exorcist	ks	gz	ks	ks	ks	gz	ks	gz	ks	ks	gz	ks	gz	gz	ks	gz	ks	-	76.7														
exhibition	ks	gz	ks	ks	ks	gz	ks	gz	gz	ks	ks	ks	gz	ks	ks	ks	gz	gz	ks	gz	ks	ks	ks	-	73.3								
																																75.6	
disappoint	s	z	z	z	z	z	z	z	z	z	z	z	z	s	z	s	z	s	z	s	z	z	s		s	z	z	z	z	s	-	27.6	
disobey	s	s	z	s	z	z	z	z	z	s	z	z	z	z	z	s	z		z	s	z	z	s		s	z	z	s	z	s	-	35.7	
disgrace	z	z	s	s	z	z	z	z	z	z	z	z	z	s	s	z	z	s	z	z	z	s	z		s	z	z	s	z	s	-	31	
misleading	s	s	s	s	z	s	z	z	s	s	z	s	s	s	s	z	z	s	s	z	z	s	s		s	z	z	s	z	s	-	60.7	
																																38.7	
reside	s	s	s	s	z	s	s	z	s	s	z	s	s	s	s	s	z		z	z	s	s	s		s	z	z	s	z	s	-	28.6	
desire	z	z	z	s	z	z	z	z	z	z	z	z	z	s	z	s	z		z	z	s	z	s		s	z	z	s	z	s	-	67.9	
reset	s	z	z	s	z	s	s	z	s	z	z	z	s	z	z	s	z	s	z	s	z	s	s		s	z	z	s	z	s	-	48.3	
desalination	s	z	s	z	z	s	z	z	s	s	z	s	s	s	s	s	s	s	s	s	s	s	s	z	s	s		s	z	s	-	64.3	
																																56.3	
transmission	z	z	z	s	s	z	z	z	z	s	z	z	z	s	s	s	s	s	s	s	z	z	s	s		z	z	z	s	z	z	-	100
transitive	s	s	z	s	s	s	s	z	z	z	z	z	s	z	z	s	z		z	z	z	z	z		z	s	s	z	s	s	-	42.9	
																																71.4	

3.4 THE APPROXIMANTS /j/ AND /w/

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	A	B		
hear	ia	ia	ia	ie	eə	ia	ia	ia	ia	ia	eə	ia	ia		ia	ia	ia				ia	ia	ia	ja	ia							22.2	57.1	
heal	i	ia	ia	ia	ia	ia	ia	ia	i	ia	ia	i	ia		ia	ia	ia				ia	ia	ia	ja								70	0	
aerial	ia	ia	ia	ia		ia	jo	ia	ia	ɜ:	je	ia	ja		ia	æ	ə				ia	ia	ia	ja	o							47.4	0	
ideal	ia	i:a	ia	ja	ja	ia		ia	ia	ia				i:	ia	ia	ja	ə							55	0								
rivulet	ia			o	o		jo		jo		jo	ju:	jo		ju:		o					o	ju:	jo	j							0	35.7	
																																38.9	18.6	
Nietschean	ia		ia	ʌ		eə	ia	æ		ə	ia	i	ə		ia	i	ə					ia	e	j	ə							0	23.5	
Epicurean	ia	ia		ia		ə	ia	ia	ia		ja	ia	ia		ia	æ	ea				ia	ia	ia	ja	ə							55.6	0	
Manichaeian		aia	ia	i		eə	ia	i:	ia		æja		eo		ia		ea				ia	ea		æjo	ə							26.7	0	
																																27.7	7.8	
waft	o	o	ə		o		æ	æ	o	o		o				o:					æ					o	æ		æ			50	71.4	
dwarf	o	ɔ:	ə				o	o	o	o		o			o		o:				o				o	ɔ:						15.4	0	
wallow	o	ɔ:	ə				ɔ:	æ	e	o		a				ɔ:					æ						ɔ:					14.3	30	
																																26.6	33.8	
wack	æ	æ	ə		æ		e	o	o	æ		e				æ					æ					o	æ		ɔ:			50	42.9	
swank	æ	æ	e		æ		e	o	æ	o		o				o:					o							æ		æ			46.1	28.6
swagger	æ	æ	ə		æ		æ	æ	e	æ		æ			æ		æ				æ					æ	æ					85.7	0	
																																60.6	35.75	

APPENDIX D – STUDENTS’ FEEDBACK
(BASED ON DATA FROM APPENDIX A, PART A - B)

Column in bold
 (1, 2...30) the questionnaires handed in by the students who volunteered to participate in the present study

Uppermost row
 (1, 2, 3, in **bold**) the questions I asked the students to reply about the effectiveness of the guidelines provided and the importance of phonology as a means to improve pronunciation (Appendix A)

1 What grade would you give the tutorial? (Part 2, q. 1)

2 Do you think that teaching phonology in high school was/would be useful? (Part 1, q. 6)

3 Do you think that, if you had been taught English phonology at school, your pronunciation would be better now? (Part 1, q. 7)

Answers

v affirmative answer to *yes-no* questions

x negative answer to *yes-no* questions

- no answer provided

1 to 5 differential scale for question 1:

- | | |
|----------------------|--------------------|
| 0 Completely useless | 3 Useful |
| 1 Not very useful | 4 Very useful |
| 2 Slightly useful | 5 Extremely useful |

	1	2	3		1	2	3		1	2	3
1	2	x	-	11	5	v	-	21	5	v	5
2	4	v	4	12	4	v	4	22	4	v	5
3	4	v	5	13	3	v	-	23	3	v	5
4	3	v	-	14	5	v	-	24	4	v	4
5	3	v	-	15	3	v	4	25	4	v	4
6	4	v	-	16	3	v	5	26	3	v	-
7	4	v	4	17	3	v	5	27	3	v	-
8	5	v	4	18	-	-	-	28	2	v	-
9	4	v	-	19	2	v	-	29	2	v	-
10	4	v	5	20	3	v	4	30	4	v	5

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