

**Klementina Jurančič Petek**

University of Maribor  
Slovenia

## The “Magnet Effect” – A Powerful Source of L1 Dialect Interference in the Pronunciation of English as a Foreign Language

Summary

Wieden and Nemser (1991) carried out a study investigating the development of pronunciation of English as a foreign language in Austria. One of the main issues in this research was L1 dialect interference. Individual studies have proven that the pronunciation of a second (L2) or foreign language (FL) is not influenced only by the standard variety of the first language (L1), but also by the L1 dialect of the speaker's place of origin (Karpf et al. 1980). Wieden and Nemser's study wished to prove this on a larger scale. A similar study was carried out also for Slovenia (Jurančič Petek 2007). Contrastive analysis (CA) of the Slovene Standard pronunciation and English was performed as well as that of the sound systems of individual Slovene dialects and the English one. Error analysis (EA) of the obtained results showed that L1 dialect interference did not occur in the instances predicted by contrastive analysis; however the study in itself did prove the existence of such influence (“magnet effect” in vowels).

**Key words:** “magnet effect”, monophthongs, L1 dialect interference, pronunciation of English

### »Magnetni učinek« – močan vir vpliva narečja materinščine na izgovorjavo angleščine kot tujega jezika

Povzetek

Wieden in Nemser (1991) sta v Avstriji izvedla nacionalno raziskavo o razvojnem značaju izgovorjave angleščine kot tujega jezika. Eden glavnih ciljev raziskave je bil vpliv prvega jezika (ali dialekta). Posamezne znanstvene raziskave so pokazale, da na izgovorjavo drugega ali tujega jezika (TJ) ne vpliva le standardna varianta materinščine, temveč tudi dialekt območja, iz katerega govorec/učenec izvira (Karpf et al. 1980). Raziskava, ki sta jo izvedla Wieden in Nemser naj bi to dokazala na vsej avstrijski populaciji. Podobna raziskava je nastala tudi za območje Slovenije (Jurančič Petek 2007). V njej je bila izvedena kontrastivna analiza slovenske knjižne izgovorjave in angleščine ter tudi analiza glasovnih sistemov slovenskih narečij v primerjavi z angleškim. Sledila je analiza napak, ki je pokazala, da se vpliv narečij materinščine ni pokazal tam, kjer ga je predvidela kontrastivna analiza, je pa raziskava dokazala, da takšen vpliv obstaja (»magnetni učinek« v samoglasnikih).

**Ključne besede:** »magnetni učinek«, monoftongi, vpliv narečja materinščine, izgovorjava angleščine

# The “Magnet Effect” – A Powerful Source of L1 Dialect Interference in the Pronunciation of English as a Foreign Language

## 1. Introduction

Throughout the development of the study of speech (from de Courtney in the beginning of the 19<sup>th</sup> century onwards) it has been evident that first language (L1) varieties play an important role in L1 acquisition. But it was only in the early 1980s that the discussion of the role of language varieties shifted from the framework of first language acquisition to second language learning. Until then sociolinguists concentrated particularly on the heterogeneity of the target language rather than on the class and regional dialects of the first language in investigating second language learning.

Karpf et al. (1980) produced an extensive study comparing the Styrian dialect with Standard Austrian with the aim to find out to what extent one and the other are represented in the speaker’s L2. The study was based on the assumption that L1 dialect interference can be proven only on examples of typical L1 dialect features showing in the pronunciation of a foreign language. Dialect phonology and foreign language acquisition was also the main topic in the 1983 volume of papers edited by James and Kettemann.

Later, a more nationwide approach, namely Wieden and Nemser’s study of the pronunciation of English in Austria (1991), examined the pronunciation of English by Austrian school children. The research was designed to testify to the *developmental* character of foreign language learning (also discussed in Wode 1981, James 1990). The authors based their work on the claims that in the course of learning the learner employs three representational modes, expressing different approaches to the target elements: the “presystemic”, “transfer”, and “approximative” modes (Wieden and Nemser 1991, 228), that “naturalistic and FLT acquisition are basically identical processes” and that “whatever the acquisitional type, the learner actively rebuilds the target language for himself” (ibid.). They found that the “presystemic”, “transfer”, and “approximative” modes occur at different stages for different aspects of speech, namely for segments and for prosody. The separate study of segmental and prosodic elements resulted in the finding that in the case of the segmental elements, the presystemic and transfer stages overlap, followed by later approximation and consolidation, while in the case of prosodic features, transfer follows the presystemic stage reaching far into the approximation stage of segments, and is discontinuous in relation to the presystemic stage (ibid., 230).

### Segments

presystemic/transfer	approximation	consolidation
----------------------	---------------	---------------

### Prosody

presystemic	transfer	approximation
-------------	----------	---------------

Although this Austrian study intended to examine the amount to which L1 dialects influence the pronunciation of English as a foreign language, the research gave results failing to prove such influence. This was possibly due to the fact it was conducted in the four larger cities where the speech origin of the respondents tends to be vague. Also, the study itself concentrated on the

developmental character of learning L2 pronunciation rather than on individual factors causing interferences.

A similar research to the 1991 Austrian study was conducted by the present author for the whole of Slovenia (Juranič Petek 2007). The main idea was to examine the state of the pronunciation of English in Slovenia, to study factors influencing foreign language learning, and to devise strategies which would aid foreign language acquisition and learning. Although the Austrian project did not give particularly conclusive results regarding L1 dialect interference we were cautious to choose respondents from places all over Slovenia rather than only those concentrated in larger cities. The research material gave results which enabled the classification into types of interference such as influence of the L1 in general, influence of orthography, influence of exposure to the most popular English variety, namely American English, and influence of the test situation resulting in speech errors. It seemed, however, that dialect interference would not show. Contrastive analysis predicted that most errors would occur in the case of consonants and diphthongs, as differences in these sounds were most pronounced across dialect regions. It should also be noted that it was at that time naturally assumed that due to insignificant traces of L1 dialect interference in individual pilot studies and due to a less distinct accent in the pronunciation of English by Slovene learners (than e.g. in the case of German or French learners), contrastive studies based on the comparison of both standard varieties (Slovene and English) were sufficient for the detection and study of potential pronunciation errors in English as a FL. So, if errors due to L1 dialect interference were expected to show in the pronunciation of English this would be in the case of consonants and diphthongs. At least this is what we thought.

The significant errors that did occur, however, did not occur in the case of consonants and diphthongs. Errors occurring in the case of consonants were consistent with general L1 interference or transfer, L1 dialect characteristics occurring only randomly, and errors in the case of vowel sounds, especially diphthongizations characteristic of a particular dialect region did not occur or they occurred in isolated instances. It was only when we compared the results between different regions that we noticed that there were significant differences in the quality of the monophthongal vowels, which might have remained undetected were it not for the comparison.

Why contrastive analysis could not predict the differences in monophthongal vowel quality in the pronunciation of English as a FL across different dialect regions in the first place can be explained by the fact that vowel systems of individual Slovene dialects are dealt with only from the quantitative point of view without particular specifications of differences in the quality of different vowels across various dialects. Slovene dialectology systematically defines the *quantitative* aspect of vowels, assigning the same quality to individual vowels for each region. Qualitative issues are dealt with only in notes (cf. 4.2. in this paper).

Why these differences in vowel quality actually did occur can to a certain extent be explained by the cognitive linguistic theory definition and interpretation of the so-called “magnet effect”

## 2. The native language magnet theory NLM

To acquire a language, the infant has to discover which phonetic distinctions are characteristic of the language of her culture, and she uses them accordingly. For example, English is different from Slovene in the use of aspiration. An English child will acquire this phonological characteristic with voiceless plosives in an English environment intuitively; a Slovene infant will learn to produce these same sounds unaspirated in a Slovene environment. The question that has always

puzzled linguists is at which point in life can infants perceptually differentiate between different phonological characteristics of different languages. Up to the 1980s the prevalent theory was that the infant does not distinguish between phonetic processes until the age of 1 year. Later studies (Kuhl 2008) have proven that the child has established the phonological repertory of her native language by the age of six months and is aware of the phonetic distinctions between languages even though the child's phonological development could up to then have developed along the lines of any world language. These observations not only stress the importance of the influence of the subject's early native language, culture and environment on language development but also argue against the universal nature of language being entirely independent of culture in its early development. They provide a basis on which to predict which features are potential sources of L1 interference in second or foreign language learning. If a six-month-old infant is capable of differentiating between phonological characteristics of different languages, this proves that distinct phonological characteristics pertaining to a particular language do exist. It is not a question of when further on in life and to what extent the infant is capable of suppressing native phonological characteristics in order to accommodate second or foreign language acquisition or learning, but rather if by this early distinction in phonological features we can claim that she has perceptually formed a native phonological system which serves as a potential source of interference in second or foreign language learning. The question which concerns us in this debate is whether the phonological repertory acquired in infancy is powerful enough to be considered the primary source of L1 interference in second language learning. The variety of the native tongue obtained in the infants' earliest years is usually the L1 dialect, since it is regionally conditioned (a child is born into a certain regional environment and exposed to its language variety) rather than socially or otherwise. The child is exposed to the standard variety only later in life and since language is transferred through the human rather than the non-human (Kuhl et al. 2008, 979) at least in the earliest phases of life, the exposure to the standard variety of the native language through the media (radio, television, the Internet) has little or no effect on the shaping of the infant's basic phonological inventory even when exposed to them in abundance. Regarding the question which elements in the native sound inventory will persist longer, vowels or consonants, the answer should be vowels. In their inherent nature, vowels are more susceptible to the magnet effect compared to consonants, since the transition between them is more gradual, whereas in the case of consonants there is a sharp shift in perception between two discrete categories which is known as categorical perception (Whitney 1998, 151). Interestingly enough, when differences in the pronunciation of English occurred across different Slovene dialect regions, it was the pure vowels that exhibited the effect of this phenomenon.

Taking into account the shifting of attention toward the local environment and early infancy, and observations made for vowel sounds in the pronunciation of English as a FL, the need should arise to revise the approach to identifying the basic L1 language structure which functions as the source of interference in the acquisition and learning of the second or foreign language. As mentioned in the introduction, it was the L1 standard variety that was until recently compared to/contrasted with the foreign language in order to predict types of interference. The present paper wishes to show that the standard L1 is not necessarily the sole source of transfer into the foreign or second language. The occurrence of L1 dialect features in the L2 pronunciation confirm that it is necessary to consider the L1 regional dialect in the search for sources of negative transfer in foreign language learning, at least partly if not in whole.

### 3. Dialect interference in second language learning in Slovenia

English as a FL was in the time of the research introduced to Slovene pupils in their 4<sup>th</sup> grade as an optional course and in the 5<sup>th</sup> grade as an obligatory one. It was assumed that by then pupils would have mastered enough of the standard Slovene language for the latter to serve as a basis for L2 or FL learning. L1 interference, be it that of the standard variety or the dialect, is in the case of the acquisition/learning of English by Slovene learners not as distinguishable as in the case of French, Spanish or Russian learners of English, where the native language accent can almost unmistakably be defined. Due to the fact that there are not very many points in which Slovene as L1 can influence the learning/acquisition of English as the L2/FL, this makes claims of the existence of dialect interference in such learning even less possible.

The Slovene school curriculum generally encourages the pupils already in elementary school to adopt the standard variety, even if this means sacrificing their native dialect. Usually the pupils try to acquire the features they are asked to, but never gain complete control of the entire standard variety. They merely end up no longer speaking pure dialect, but mixing it with features of Standard Slovene. This is a basis which makes it difficult to predict which features (if any) of the dialect could actually influence FL learning.

Despite the potentially slim chance of even detecting, let alone proving, dialect interference, we embark on a quest to examine the English spoken by Slovene learner across different dialect regions in order to arrive at results which would prove the existence of L1 dialect interference in the English spoken by Slovene learners.

### 4. Investigation of dialect interference in L2 pronunciation by Slovene learners

The research discussed in the present paper (Jurančič Petek 2007) involved 287 pupils and students from 35 primary and secondary schools throughout Slovenia and across all its eight dialect regions, namely Upper Carniola (UC), Lower Carniola (LC), Styria (Sty), Carinthia (Car), Prekmurje (Pan), the Littoral (Lit) and Rovte (Rov). Tests were designed to elicit errors caused by different types of interference, such as orthography, L2 varieties of English (British and American), psychological conditions causing speech errors (i.e. the test situation). Special attention was paid in the design of the test in order to elicit errors resulting from L1 standard and dialect interference. The KNN (Kohonen neural network) computer program was employed to obtain the most feasible results possible on the basis of a relatively moderate sample of participants from all Slovene dialect regions representing the situation of the whole of Slovenia. The contrastive analysis of the L1 dialects and Standard British English (the established variety of English taught in Slovene schools) gave results suggesting that the majority of responses resulting from dialect interference would pertain to consonant sounds and diphthongs rather than monophthongal vowels.

The results of the study, however, revealed that consonant sounds consequently did not offer conclusive results regarding dialect interference, which was due to the fact that consonants, with certain exceptions (e.g., the voiced glottal fricative replacing the voiced velar stop in Rovte, etc.) overlap in the dialects and the standard varieties. It is thus difficult to say whether the dialect consonant or the Standard Slovene (StSl) consonant (e.g., /p/ and /d/) is matched with the FL sound during FL learning. The situation was quite different in the case of vowel sounds. The

varieties that occurred, although not in an entirely expected way, proved to be specific of individual Slovene dialect regions, as will be explained in the following.

## 4.1 Comparison between the vowels of the Slovene dialect and the vowel system of Standard English

Over the past decades, several studies comparing the English sound system and the sound system of Standard Slovene have been carried out, in the field of consonant as well as vowel sounds. Due to their articulatory character, consonants seemed the obvious choice for investigation, in isolation, in mixed contexts and especially in consonant clusters (Srebot-Rejec 1988/89, 1992). On the other hand, vowels seemed elusive, being judged by auditory criteria, which is why they were not so readily investigated. One of the most useful tools, on the basis of which to contrast the Slovene vowel system and the English one, is the demonstration of Slovene vowels by Šuštaršič and Komar in *The Handbook of the International Phonetic Association* (1999). As opposed to the traditional Slovene demonstration of vowels with their quantitative distinctions, Šuštaršič and Komar give a qualitative presentation of the Slovene vowels, and provide examples of the contexts in which they occur. Such a presentation can be compared with the vowel system of Standard English more readily than the vowel systems produced by Slovene dialectologists. Vowel sounds for individual Slovene regions presented in such a way would prove most useful for the purpose of this research.

As mentioned, Slovene dialectology uses a typology which does not distinguish between vowel systems of individual Slovene regions in terms of the quality of individual vowel sounds, but determines the presence of particular sounds and gives qualitative descriptions and diphthongized varieties of sounds. Hence the expectation that the diphthongs present in most Slovene dialects in different varieties (cf. 4.2.1 – 4.2.6) would show as interference in learning English as a FL. In the following, the vowel systems of Slovene dialect groups will be presented.

## 4.2 The vowel systems of individual Slovene dialect regions

Tine Logar describes the vowel characteristics of individual Slovene dialect regions in *Slovenska narečja* (Slovene Dialects) from 1993. Accompanying the book are four audio cassettes which complete the theoretical analysis of the sounds with rich audio material from natural dialect speakers. The present paper makes use of the description of long vowels and diphthongs within the individual Slovene dialect group in order to accommodate assumptions made when contrasting the vowel system with the English vowel system and the English vowel system (mainly in relation to diphthongs) and results gained through error analysis (particularly relating to monophthongs).

### 4.2.1 The Upper Carniola vowel system

The Upper Carniola vowel system is characterized by long and short accented vowels (Logar 1993, 106). It has a monophthongal system of long vowels:

i:	u:
e:	o:
e:	o:
ɑ:	

### 4.2.2 The Lower Carniola vowel system

The Lower Carniola vowel system is generally monophthongal-diphthongal (ibid., 111).

*i:	u:
ie	uo
e:	o:
a:	

### 4.2.3 The Carinthia vowels system

Almost all Carinthian dialects (except the western part of Rož) have monophthongal-diphthongal systems of long vowels (ibid., 132):

i:	u:
i: ə	u: ə
ɛ:	ɔ:
e:	o:
a:	

### 4.2.4 The Prlekija vowel system

The Prlekijan dialect is spoken in the eastern part of Slovenske gorice and is (alongside the Prekmurje dialect) one of the three dialects of the Pannonian group of Slovene dialects (ibid., 141). Accented vowels are either long or short. Most of the dialects of the Prlekija region have a monophthongal system of long vowels:

i:	ü	u:
ɛ:	ɔ:	
o:		

### 4.2.5 The Littoral vowel system

The Littoral vowel system is characterized by a monophthongal-diphthongal system of long accented vowels (ibid., 129):

i:	u:
ie	uo
e:	o:
a:	

### 4.2.6 The Pannonian vowel system

The Pannonian vowel system is characterized by a monophthongal-diphthongal system of long accented vowels:

i:	u: ü:
ei	ou
e:	o:
ɑ:	

In the system of short vowels, mid-close ɛ and ɔ are also present.

The above descriptions of the vowel systems of different Slovene dialects show that the majority of Slovene dialects combine the monophthongal-diphthongal system of long vowels. The Upper Carniola dialect, with its singularly monophthongal system, is an exception. Since the Slovene standard variety developed on the basis of this Upper Carniola variety, it, too, maintained the monophthongal system, resulting in the fact that the most distinguishing feature between the vowels systems in Standard Slovene compared to Slovene dialects is in dialects having a diverse diphthongal character which the standard does not have. It is therefore not surprising if contrastive analysis between the standard variety and the dialects suggested diphthongs as the most promising sources of interference in the pronunciation of English as a foreign language.

### 4.3 Dialect vowels causing pronunciation difficulties in Standard Slovene

On the other hand there are those small observations that e.g. Toporišič mentions almost in passing as pronunciation difficulties relating to vowel quality in certain dialects. He begins with saying that the Slovene sounds /i/ and /u/ are least problematic. However, instead of central open standard /ɑ/, the more fronted variant is used in Prekmurje, almost approaching mid-open /æ/ (Toporišič 2004, 50). The broad and narrow /e/ and /o/ tend to be most problematic in realization across Slovenia. The standard is spoken only in Upper Cariniola, the Savinjska Valley, Inner Carniola, the Karst and the Littoral. The remaining dialects have broad /e/ and /o/ vowels, however, in the form of diphthongs (ibid., 51). The short equivalents are frequently inconsistent in quality compared to the central Slovene dialects. The fronting of /u/ towards /ü/ in Prekmurje is not even mentioned in the text, but referred to in a figure from Ramovš's Short History of the Slovene Language (*Kratka zgodovina slovenskega jezika*) in Toporišič (ibid., 50). And these neglected features of vowel sounds across Slovene dialect regions unexpectedly proved to have such a profound impact on the pronunciation of English by Slovene learners (cf. Tables 1-10 and also Tables 11-13).

## 5. The vowels of “Slovene English”: the pronunciation of English vowels across different Slovene dialect regions

In the following, actual occurrences of vowel sounds in English as a FL will be discussed for reading and free speech test-types across different regions (in order to exclude the possibility of deviant responses resulting from orthographic interference). As mentioned, in the case of consonant sounds, deviant responses resulting from L1 interference occurred with relatively equal distribution across the whole of Slovenia. Whether they can truly be attributed to the influence of Slovene as a standard language, independent of dialect, is another question.

The diphthongizations, expected on the basis of the comparison between different Slovene dialects, most of which contain diphthongs (as observed above in 4.2.1 to 4.2.6), also, did not occur as much as expected. In this case CA, thus, failed to predict the potential major sources of L1 interference.



Not CA but pronunciation difficulties in the pronunciation of Standard Slovene due to dialect characteristics of vowels (cf. 4.3) would have anticipated the pronunciation errors that had occurred in the pronunciation of vowel sounds in English as a foreign language. The more powerful the difficulty the more it showed in the pronunciation. E.g. the RP /e/ and /æ/ proved to be the most interesting among the vowel sounds. There was a tendency to pronounce them with a variety which was too open or a variety which was too close. We could assume that the same was expected of the /ɔ/ and /ɒ/, but the results were contaminated with other types of interference (orthography, L2), which is why we offer an unbiased analysis of /ɔ/ in /ɔɪ/.

## 5.1 Responses for /e/ across different dialect regions

Table 1 shows that speakers of the Pannonian and Styrian dialects pronounced the English /e/ in most cases in the form of open-mid [ɛ] sometimes almost reaching [æ]. On the other hand, the speakers of the Upper Carniolan, Littoral and Prlekija dialects frequently pronounced the English /e/ with the close-mid variant or the one between open-mid and close-mid. The latter were considered closest to the target sound and thus not erroneous. The Lower Carniola and Carinthian dialect areas show an even distribution of the open and close variant. Diphthongized variants did occur, but not as much as expected. In the Pannonian region diphthongization toward /ɪ/ occurred both in reading and in free speech, which undoubtedly qualifies it as dialect interference. Its fairly scarce occurrence prevents us from qualifying it as a general tendency.

### *Responses for /e/ between two consonants across different dialect regions*

region	/e/ CeC CeC	[e] %	[e̞] %	[e̝] %	[ɛ] %	[ɛ/æ] %	[et] %	[ɪ] %	[ə] %	other %
UC	<b>136</b>	<b>54.4</b>	<b>16.9</b>	15.4	7.4	0.7	2.9	2.2	0.0	0.0
	<u>50</u>	<b>62.0</b>	<b>6.0</b>	22.0	10.0	0.0	0.0	0.0	0.0	0.0
LC	<b>196</b>	17.9	5.6	29.1	<b>42.3</b>	3.1	0.0	1.5	0.5	0.0
	<u>56</u>	32.1	1.8	33.9	<b>32.1</b>	0.0	0.0	0.0	0.0	0.0
Sty.	<b>173</b>	10.4	1.7	21.4	<b>45.1</b>	<b>15.6</b>	1.7	3.5	0.0	0.6
	<u>59</u>	6.8	0.0	25.4	<b>57.6</b>	<b>8.5</b>	0.0	0.0	1.7	0.0
Pan.	<b>103</b>	12.6	3.9	15.5	<b>51.5</b>	<b>9.7</b>	<u>3.9</u>	1.9	0.0	1.0
	<u>35</u>	8.6	0.0	22.9	<b>54.3</b>	<b>11.4</b>	<u>2.9</u>	0.0	0.0	0.0
Prl.	<b>63</b>	25.4	14.3	11.1	31.7	15.9	0.0	1.6	0.0	0.0
	<u>24</u>	25.0	4.2	25.0	37.5	8.3	0.0	0.0	0.0	0.0
Car.	<b>92</b>	16.3	3.3	33.7	37.0	4.3	3.3	2.2	0.0	0.0
	<u>27</u>	11.1	0.0	48.1	37.0	3.7	0.0	0.0	0.0	0.0
Lit.	<b>128</b>	<b>51.6</b>	4.7	21.1	18.0	0.8	0.8	1.6	0.0	1.6
	<u>45</u>	<b>48.9</b>	4.4	40.0	6.7	0.0	0.0	0.0	0.0	0.0
Rov	<b>60</b>	<b>41.7</b>	10.0	23.3	20.0	1.7	0.0	1.7	0.0	1.7
	<u>23</u>	<b>43.5</b>	8.7	30.4	17.4	0.0	0.0	0.0	0.0	0.0

*Table 1: Number of responses for /e/ in the structural position between two consonants in words **red**, **head**, **beg**, **letter**; **bedroom**, **bed**; scores (in %) for correct responses, scores for deviant responses due to dialect interference: narrow variety of /e/, /e/ open to [e̞], [e̝], [ɛ/æ], diphthongized /e/, /e/ closed to [ɪ], centralized /e/ and “other” across different dialect regions (Upper Carniola (UC), Lower Carniola (LC), Styria (Sty), the Pannonian region (Pan.), Prlekija (Prl), ...) and reading and free speech test types.*

The relatively high score for correct responses in Upper Carniola can be explained by the fact that the informants used the narrow variety of /e/ in their native dialect to their advantage. Experience, however, has shown that the problem which in this region usually occurs in later stages is that learners become aware of the fact that in colloquial English /e/ is pronounced with a slightly more open variety, and as they attempt to reach it, they usually overdo it by using an equivalent to the Slovene open-mid [ɛ]. In the age groups of respondents involved in this study, students have (fortunately) not yet reached this stage.

The Littoral dialect has a natural tendency to use an /e/ which is not as close as the Upper Carniolan one and not as open as the Styrian one. It strongly resembles the English between half-close and half-open /e/. Thus the high score for correct responses in this area.

## 5.2 Responses for /æ/ across different dialect regions

The highest scores for correct responses for RP /æ/, characterized by tongue position just below the half-open front position, were obtained by speakers from Styria, the Panonnic area and Carinthia (cf. Table 2), while the lowest scores were gained by learners from Upper and Lower Carniola. The most frequent type of deviant response in Upper Carniola was the closing of /æ/ to reach the StSl open-mid [ɛ] and even further, almost to Slovene close-mid /e/. Deviant responses of the [a] type were most probably the result of orthographic interference, even though they did seem to be consistent in the Littoral area, possibly as a result of Italian influence.

Again (as in the case of /e/) we come across diphthongization, this time of /æ/ realized as /eɪ/. Despite the fact that such diphthongization more frequently occurs in regions with more pronounced dialect diphthongizations, its scarce occurrence again prevents us from considering this a general rule. A characteristic which could be considered dialect interference within this diphthongization is the centralizing of the starting point of the diphthong, namely /e/ to [ə], resulting in [əɪ] in the Upper Carniola region (9.4% for reading and 12.1% for free speech, cf. Table 2).

### *Responses for /æ/ in initial position across different dialect regions*

region	$\frac{/\æ/ \#æC}{\#æC}$	[æ]%	[æ̃]%	[ɛ]%	[ɛ̃]%	[e]%	[eɪ]%	[a]%	[əɪ]%	other%
UC	<b>32</b>	9.4	6.3	25.0	<b>40.6</b>	0.0	9.4	0.0	<b>9.4</b>	0.0
	<u>33</u>	6.1	6.1	27.3	<b>39.4</b>	0.0	9.1	0.0	<b>12.1</b>	0.0
LC	<b>47</b>	17.0	17.0	<b>46.8</b>	10.6	0.0	4.3	4.3	0.0	0.0
	<u>47</u>	25.5	29.8	<b>29.8</b>	12.8	0.0	0.0	2.1	0.0	0.0
Sty.	<b>39</b>	<b>76.9</b>	7.7	5.1	0.0	0.0	2.6	7.7	0.0	0.0
	<u>39</u>	<b>89.7</b>	5.1	0.0	0.0	0.0	2.6	2.6	0.0	0.0
Pan.	<b>24</b>	<b>70.8</b>	4.2	4.2	4.2	0.0	<b>16.7</b>	0.0	0.0	0.0
	<u>24</u>	<b>75.0</b>	0.0	0.0	0.0	0.0	<b>20.8</b>	4.2	0.0	0.0
Car.	<b>22</b>	<b>50.0</b>	9.1	9.1	13.6	0.0	18.2	0.0	0.0	0.0
	<u>23</u>	<b>73.9</b>	4.3	4.3	8.7	0.0	4.3	4.3	0.0	0.0
Lit.	<b>31</b>	19.4	6.5	19.4	22.6	0.0	19.4	12.9	0.0	0.0
	<u>33</u>	24.2	9.1	24.2	3.0	3.0	24.2	12.1	0.0	0.0
Rov.	<b>16</b>	18.8	37.5	0.0	<b>37.5</b>	0.0	6.3	0.0	0.0	0.0
	<u>16</u>	37.5	6.3	12.5	<b>37.5</b>	0.0	6.3	0.0	0.0	0.0

Table 2: Number of responses for /æ/ in initial position in words **apple**; *apple*; scores (in %) for correct responses, scores for deviant responses due to dialect interference: narrower variety of /æ/, /æ̃/

close to [ɛ], to [ɛ̃] and [e], diphthongized into [eɪ] and [əɪ], pronounced as [a] and “other” across different dialect regions and reading and free speech test types.

The results for /æ/ in the structural position between two consonants are similar to those for initial position (except in the case of diphthongization) (cf. Tables 2 and 3).

*Responses for /æ/ between two consonants across different dialect regions*

region	/æ/ #æC #æC	[æ̃]%	[æ̃:]%	[ɛ]%	[ɛ̃]%	[e]%	[eɪ]%	[a]%	[əɪ]%	other%
UC	<b>192</b>	7.8	9.8	19.3	<b>48.4</b>	9.4	0.5	5.2	0.0	0.0
	<u>53</u>	5.7	22.6	24.5	<b>41.5</b>	5.7	0.0	0.0	0.0	0.0
LC	<b>291</b>	24.1	19.2	<b>33.3</b>	16.2	2.1	0.0	4.8	0.0	0.3
	<u>62</u>	22.6	19.4	<b>43.5</b>	14.5	0.0	0.0	0.0	0.0	0.0
Sty.	<b>242</b>	<b>71.1</b>	10.3	7.0	0.4	0.0	0.0	10.7	0.0	0.0
	<u>48</u>	<b>81.3</b>	8.3	4.2	4.2	0.0	2.1	0.0	0.0	0.0
Pan.	<b>128</b>	<b>65.6</b>	12.5	7.8	0.8	0.0	0.8	<u>12.5</u>	0.0	0.0
	39	<b>89.7</b>	7.7	0.0	0.0	0.0	0.0	<u>2.6</u>	0.0	0.0
Car.	<b>139</b>	52.5	14.4	12.9	12.9	0.0	2.2	5.0	0.0	0.0
	<u>35</u>	34.3	25.7	20.0	8.6	0.0	0.0	11.4	0.0	0.0
Lit.	<b>188</b>	26.1	10.6	25.5	18.1	3.7	0.0	16.0	0.0	0.0
	<u>42</u>	14.3	14.3	31.0	33.3	4.8	0.0	2.4	0.0	0.0
Rov.	<b>84</b>	29.8	13.1	9.5	33.3	3.6	3.6	6.0	0.0	1.2
	<u>21</u>	23.8	28.6	14.3	19.0	14.3	0.0	0.0	0.0	0.0

Table 3: Number of responses for /æ/ in the structural position between two consonants in words: (cat, captain), matter, cab, cap, stab, man; cat, have; scores (in %) for correct responses, scores for deviant responses due to dialect interference: narrower variety of /æ/, /æ/ close to [ɛ], to [ɛ̃] and [e], diphthongized into [eɪ] and [əɪ], pronounced as [a] and “other” across different dialect regions and reading and free speech test types.

### 5.3 Results specific to /ɑ:/

In the central Slovene regions the RP long fully open vowel between centre and back is pronounced with a (slightly or strongly) fronted variant, corresponding to StSl *a*. In the eastern parts, and in some parts of the Coast and Carinthia, the StSl *a* is slightly rounded, which has proven to be an advantage in the pronunciation of RP /ɑ:/. The Lower Carniola and Prekmurje (Panonian dialect) have both variants, the front open [a] and the rounded [ɔ] in their systems, suggesting that both variants will show in the pronunciation of RP /ɑ:/.

*Responses for /ɑ:/*

region	Cɑ:C Cɑ:C	[ɑ:]%	[a]%	[ɔ]%	[q/a]%	[ɑ] %	[æ] %	[ɜ]%	[ɔ]%	[ɪ/e]%	[eɪ/ aɪ]%
UC	<b>32</b>	0.0	3.2	3.2	<b>45.2</b>	<b>32.3</b>	12.9	0.0	0.0	3.2	0.0
	32	0.0	9.4	0.0	<b>53.1</b>	<b>21.9</b>	0.0	0.0	0.0	15.6	0.0
LC	<b>43</b>	16.3	7.0	2.3	<b>34.9</b>	<b>23.3</b>	16.3	0.0	0.0	0.0	0.0
	37	18.9	18.9	2.7	<b>27.0</b>	<b>29.7</b>	0.0	0.0	0.0	2.7	0.0
Sty.	<b>38</b>	10.5	<b>31.6</b>	<b>21.1</b>	23.7	0.0	10.5	0.0	<b>2.6</b>	0.0	0.0
	37	8.1	<b>51.4</b>	<b>24.3</b>	16.2	0.0	0.0	0.0	0.0	0.0	0.0

Pan.	<b>23</b>	13.0	13.0	<b>43.5</b>	0.0	0.0	8.7	0.0	<b>8.7</b>	8.6	4.3
	<u>20</u>	20.0	15.0	<b>35.0</b>	10.0	5.0	0.0	0.0	<b>5.0</b>	10.0	0.0
Car.	<b>20</b>	15.0	5.0	0.0	<b>60.0</b>	0.0	20.0	0.0	0.0	0.0	0.0
	<u>15</u>	26.7	20.0	0.0	<b>53.3</b>	0.0	0.0	0.0	0.0	0.0	0.0
Lit.	<b>32</b>	12.5	15.6	3.1	<b>34.4</b>	9.4	21.9	0.0	0.0	3.1	0.0
	<u>30</u>	20.0	23.3	3.3	<b>46.7</b>	3.3	0.0	0.0	0.0	3.3	0.0
Rov	<b>14</b>	7.1,	14.3	7.1	<b>35.7</b>	7.1	28.6	0.0	0.0	0.0	0.0
	<u>16</u>	18.8	18.8	0.0	<b>43.8</b>	0.0	0.0	0.0	0.0	18.8	0.0

*Table 4: Number of responses for /a:/ in the words: **father**; father; scores (in %) for correct responses, scores for deviant responses due to L1 interference (reduction in length to [a], dialect interference: narrower variety of [a], fronting to [a̟] and fronting and opening to [a̟], influence of GA in reading in the [æ] type closing to [v] and “other” (narrowing and fronting toward e and i and diphthongization) across different regional origin of speakers, and reading and free speech test types.*

Table 4 clearly shows the preference for the open fronted variety of /a:/ in Upper and Lower Carniola, slightly less in the Littoral and Rovte, but not in Styria and Pannonia, where the more retracted and rounded variants are preferred. All regions display a reduction of the English long vowel, a characteristic influence of StSl. The Styrian pronunciation of RP /a:/, however, shows greatest qualitative resemblance to the target and thus supports the positive transfer suggested in the description of Slovene dialects.

## 5.4 Results specific to /u:/ and /ʊ/

The RP long close back vowel is monophthongal in formal speech and diphthongal and slightly fronted in informal speech. The short /ʊ/ has a positioning of the tongue just above the half close position more to the centre than to the back. /ʊ/ is thus shortened and centralized when compared to /u:/.

### *Responses for /u:/*

region	<b>Cu:C</b> <u>Cu:C</u>	[u:]%	[u]	[u]%	[u <sup>w</sup> ]%	[ü]%	[ɔ(:)]%	[ə]%	other
UC	<b>32</b>	15.6	<b>68.8</b>	12.5	0.0	0.0	0.0	<b>3.1</b>	0.0
	<u>29</u>	10.3	<b>62.1</b>	24.1	0.0	0.0	0.0	0.0	3.4
LC	<b>48</b>	25.0	31.3	<b>35.4</b>	0.0	2.1	0.0	4.2	2.1
	<u>22</u>	9.1	36.4	<b>54.6</b>	0.0	0.0	0.0	0.0	0.0
Sty.	<b>40</b>	15.0	<b>47.5</b>	15.0	0.0	0.0	5.0	2.5	15.0
	<u>38</u>	2.6	<b>63.2</b>	10.5	5.2	5.3	0.0	2.6	10.5
Pan.	<b>27</b>	7.4	33.3	18.5	11.1	<u>18.5</u>	0.0	0.0	11.1
	<u>22</u>	18.2	36.4	18.2	9.1	<u>18.2</u>	0.0	0.0	0.0
Car.	<b>23</b>	17.4	39.1	21.7	0.0	0.0	0.0	0.0	21.7
	<u>23</u>	17.4	34.8	39.1	4.3	0.0	0.0	0.0	4.3
Lit.	<b>32</b>	0.0	<b>53.1</b>	37.5	3.1	0.0	0.0	0.0	6.3
	<u>25</u>	0.0	<b>48.0</b>	48.0	0.0	0.0	0.0	0.0	4.0
Rov.	<b>16</b>	18.8	<b>56.3</b>	<b>0.0</b>	0.0	0.0	0.0	<u>12.5</u>	6.3
	<u>15</u>	0.0	<b>33.3</b>	<b>53.3</b>	0.0	0.0	0.0	0.0	13.3

*Table 5: Number of responses for /u:/ in the words: **school**; school; scores (in %) for correct responses (monophthongal and retracted), scores for deviant responses due to L1 interference (reduction in length to [u] and backing to [u̟], dialect interference: fronting to [ü] and centring to [ə]),*

*influence of informal style of English in fronting and diphthongization to [u<sup>u</sup>] and “other” (with diphthongization of the [oə] type) across different regional origins of speakers, and reading and free speech test types.*

Reduction of /u:/ to schwa was detected in Rovte (12.5% in reading) (cf. Table 5). The majority of responses were reduced and retracted variants of /u:/, namely [ʊ] and [ɯ], which is typically L1 interference and possibly, to a certain extent, the result of “ease of pronunciation”. However, in the Pannonian region we can detect tendencies of fronting to the diphthongized variant (11.1% in reading and 9.1% in free speech). In other regions such results occurred from 0 to 5%. Further on there were exaggerations in fronting (18.5% for reading and 18.2% for free speech) reaching the Pannonian fronted [ü]. This is undoubtedly proof of dialect interference.

*Responses for /ʊ/*

region	C <sub>o</sub> C C <sub>o</sub> C	[ʊ]%	[ɯ]%	[u <sup>u</sup> ]%	[ʊ̯]%	[ü]%	[ʌ]%	[o/v]%	[ə]%
UC	<b>63</b>	<b>33.3</b>	<b>44.4</b>	7.9	3.2	4.8	1.6	4.8	0.0
	<u>10</u>	<b>60.0</b>	<b>30.0</b>	0.0	0.0	10.0	0.0	0.0	0.0
LC	<b>98</b>	<b>41.8</b>	<b>35.7</b>	11.2	2.0	3.0	0.0	5.1	1.0
	<u>31</u>	<b>9.7</b>	<b>64.5</b>	3.2	6.5	9.7	0.0	6.5	0.0
Sty.	<b>90</b>	<b>30.0</b>	<b>27.8</b>	16.7	7.8	8.9	1.1	6.7	1.1
	<u>22</u>	<b>31.8</b>	<b>68.2</b>	0.0	0.0	0.0	0.0	0.0	0.0
Pan.	<b>48</b>	<b>20.8</b>	<b>31.3</b>	0.0	10.4	<b>25.1</b>	0.0	12.5	0.0
	<u>2</u>	<b>33.3</b>	<b>33.3</b>	0.0	11.1	<b>11.1</b>	0.0	11.1	0.0
Car.	<b>46</b>	21.7	<b>50.0</b>	10.9	10.9	0.0	0.0	6.5	0.0
	<u>21</u>	33.3	<b>66.7</b>	0.0	0.0	0.0	0.0	0.0	0.0
Lit.	<b>60</b>	23.3	<b>41.7</b>	21.7	0.0	6.7	0.0	6.7	0.0
	<u>15</u>	33.3	<b>66.7</b>	0.0	0.0	0.0	0.0	0.0	0.0
Rov.	<b>32</b>	34.4	<b>46.9</b>	3.1	3.1	9.4	0.0	0.0	<b>3.1</b>
	<u>14</u>	21.4	<b>50.0</b>	0.0	0.0	14.3	14.3	0.0	0.0

*Table 6: Number of responses for /ʊ/ in the words: good, looked; sugar, put...; scores (in %) for correct responses (slightly retracted), scores for deviant responses due to L1 interference (backing to [ɯ] and backing and lengthening to [u<sup>u</sup>]; dialect interference: fronting to [ü] and centring to [ə], and orthographic interference in opening to [o/v]) across the different regional origins of speakers, and for reading and free speech test types.*

L1 interference showed in the highest score of retracted variants for the /ʊ/ vowel (cf. Table 6). Traces of dialect interference were nevertheless detected in the excessive fronting of /ʊ/ toward [ü] for reading in all regions except Carinthia. The only region where this phenomenon occurred in both reading and free speech was the Pannonian region (25.1% in reading and 11.1% in free speech), undoubtedly the result of dialect interference. In Rovte, there was also a certain amount of centring toward schwa (3.1%).

### 5.5 Results specific to /ɪ/

RP short /ɪ/, articulated with the tongue just above the half-close position, more to the centre than to the front has no equivalent in quality in StSl, but certain regional variants, especially in the Rovte region, come fairly close to it (cf. description of Slovene dialects).

### *Response for /ɪ/*

region	$\frac{C_iC}{C_iC}$	[ɪ]%	[ɪ̞]%	[i]%	[i̞]%	[ə]%	[e]
UC	<b>64</b> <u>31</u>	<b>34.4</b> <b>67.7</b>	29.7 16.1	32.8 9.7	0.0 0.0	<b>1.6</b> <b>6.5</b>	<b>1.6/0.0</b> <b>0.0/0.0</b>
LC	<b>93</b> <u>47</u>	37.6 42.6	30.1 6.4	<b>30.1</b> <b>44.7</b>	1.1 2.1	0.0 2.1	0.0/0.0 0.0/2.1
Sty.	<b>76</b> <u>39</u>	22.4 64.1	35.5 12.8	<b>40.8</b> <b>23.1</b>	0.0 0.0	1.3 0.0	0.0/0.0 0.0/0.0
Pan	<b>44</b> <u>24</u>	20.5 50.0	36.4 8.3	<b>43.2</b> <b>41.7</b>	0.0 0.0	0.0 0.0	0.0/0.0 0.0/0.0
Car.	<b>46</b> <u>22</u>	15.2 54.5	37.0 22.7	39.1 18.2	0.0 0.0	4.3 4.5	4.3/0.0 0.0/0.0
Lit.	<b>54</b> <u>32</u>	31.5 43.8	35.2 9.4	25.9 37.5	0.0 9.4	0.0 0.0	7.4/0.0 0.0/0.0
Rov.	<b>32</b> <u>16</u>	<b>46.9</b> <b>62.5</b>	21.9 12.5	18.8 12.5	0.0 0.0	<b>12.5</b> <b>12.5</b>	0.0/0.0 0.0/0.0

*Table 7: Number of responses for /ɪ/ in the words: this, little, ship; milk; scores (in %) for correct responses, scores for deviant responses due to L1 interference (closing to [ɪ̞] and closing and lengthening [i̞] and [i̞̞]), to dialect interference: centring to [ə], opening and fronting to [e] across different regional origins of speakers and across reading and free speech test types.*

L1 interference was quite strong in the case of short /ɪ/ pronounced by Slovene learners, since the words “this”, “little”, “ship” and “milk” are words with a high frequency of occurrence. Nevertheless, we notice (cf. Table 7) that the score for correct responses is, as expected, highest in Upper Carniola and Rovte. Here the scores for deviant responses characterized by closing and fronting are the lowest, and besides Carinthia these are the only regions where the centralized variant schwa occurs both in reading and in free speech.

## 5.6 Results specific to /ə/

The schwa usually occurs as the reduced variant of short vowels in rapid speech. It is called the “weak form” or normal form. Bearing in mind that the eastern Slovene dialects tend to replace the schwa in words like “megla” and “pes”, where StSl has it, with the open-mid /e/, this should also be a disadvantage for these dialects in the pronunciation of English schwa. The neutralization of Slovene short vowels in the central and western Slovene dialects should, on the other hand, prove advantageous. At this point we chose the definite article “the” as the subject of examination to eliminate any possibility of orthographic interference. Thus, as soon as the respondent identified the initial “th-“ as /ð/ or [d], we would know he/she had identified the whole word and that the following /e/-like responses were not the result of orthographic interference.

### *Responses for /ə/*

region	$\frac{\#Cə\#C(vd)}{\#Cə\#V}$	[ə]%	[e̞]%	[e]	[i]	∅/other
UC	<b>64</b> <b>64</b>	<b>96.9</b> <b>73.4</b>	1.6 10.9	0.0 12.5	0.0 3.1	1.6/0.0 0.0/0.0

LC	<b>96</b> 95	<b>87.5</b> 55.8	6.3 14.7	5.2 15.8	1.0 13.7	0.0/0.0 0.0/0.0
Sty.	<b>80</b> 79	78.8 46.8	3.8 7.6	<b>12.5</b> <b>36.7</b>	3.8 7.6	0.0/1.3 0.0/1.3
Pan.	<b>48</b> 48	83.3 33.3	2.1 22.9	<b>8.3</b> <b>39.6</b>	4.2 4.2	0.0/2.1 0.0/0.0
Car.	<b>46</b> 45	<b>91.3</b> <b>57.8</b>	0.0 8.9	6.5 20.0	0.0 11.1	0.0/2.2 0.0/2.2
Lit.	<b>64</b> 65	81.3 56.9	3.1 10.8	10.9 18.5	3.1 10.8	0.0/1.6 0.0/3.0
Rov.	<b>24</b> 24	<b>87.5</b> <b>58.3</b>	4.2 8.3	8.3 33.3	0.0 0.0	0.0/0.0 0.0/0.0

Table 8: Number of responses for /ə/ in contexts: “the” garden, “the” little; scores (in %) for correct responses, scores for deviant responses due to L1 interference (fronting towards [ɛ̣] and [ɛ̥]), elision and other across different regional origins of speakers in reading, and for contexts: “the” able, “the” opera, where the correct responses should be of the /i:/ type.

The best results for schwa were achieved in the Upper Carniola region, which was in accordance with expectations and can be considered positive transfer. The scores for Rovte, however, were not expected to be so low (cf. Table 8). As expected, respondents from the Styrian and Pannonian dialects to a large extent resorted to fronting toward /e/, and to confirm the above-mentioned predictions about the type of /e/, we should mention it was particularly the open-mid [ɛ̣].

## 5.7 RP diphthongs and results specific for /ɔɪ/

Diphthongs will in this paper be mentioned only as a control case; namely we will be observing the pronunciation of the first element in the diphthong /ɔɪ/. Since the results for RP /ɒ/ and /ɔ:/ turned out to be rather inconclusive due to interference of the written form of the test items and the potential influence of the target speech variant, we wish to demonstrate an unbiased case of the mid-open to mid-close back vowel, where dialect influence is quite evident.

Responses for /ɒ/ and /ɔɪ/ did not give the desired results, probably due to the fact that the speakers were quite competent in their English and had already acquired sounds close to the target ones. This, however, does not mean that we were unable to test dialect interference on the sounds of this type. For this we had to resort to the only diphthong containing the mid-open rounded back vowel, namely /ɔɪ/. Learners from the Eastern parts of Slovenia usually pronounce the first element with a quality of /ɔ/ which is too narrow. On the other hand learners from the north-western parts of Slovenia tend to produce it with a quality which is extremely open, almost approaching the quality of /a/ and overlapping the /aɪ/ diphthong. These results correspond to the fact that north-western dialects distinguish two /o/ sounds, the open-mid and the close-mid one, whereas the more eastern dialects use one /o/ for both StSl varieties, namely the close-mid variety. Table 9 shows to what extent the dialect variants can influence the pronunciation of the diphthong /ɔɪ/.

### Responses for /ɔɪ/

region	Cɔɪ(C)# Cɔɪ#	[ɔɪ]%	[ɔ̣ɪ]	[ɔ̣ɪ]%	[ɔ̥ɪ]%	[ɔ̥ɪ]%	other
UC	<b>91</b> 18	2.2 0.0	22.0 16.7	6.6 11.1	<b>59.3</b> <b>72.2</b>	8.8 0.0	1.1 0.0

LC	<b>144</b> 16	11.1 6.3	20.5 25.0	9.7 0.0	<b>45.8</b> <b>50.0</b>	11.8 18.8	1.4 0.0
Sty.	<b>119</b> 20	3.4 5.0	<b>68.1</b> <b>60.0</b>	10.9 30.0	16.8 5.0	0.0 0.0	0.8 0.0
Pan.	<b>71</b> 12	0.0 0.0	<b>76.1</b> <b>91.7</b>	14.1 8.3	8.5 0.0	0.0 0.0	1.4 0.0
Car.	<b>69</b> 7	0.0 0.0	59.4 57.1	8.7 28.6	27.5 14.3	1.4 0.0	2.9 0.0
Lit.	<b>92</b> 11	6.5 0.0	35.9 27.3	21.7 45.5	31.5 27.3	3.3 0.0	1.1 0.0
Rov.	<b>32</b> 3	0.0 0.0	46.9 33.3	12.5 0.0	<b>40.6</b> <b>66.7</b>	0.0 0.0	0.0 0.0

Table 9: Number of responses for /ɔɪ/ in the words: *boys, boy, voices; boy.*; scores (in %) for correct responses, scores for deviant responses due to L1 interference (closing to [ɔi] and opening to [ɔi], [ɔi] and [ɔi], to dialect interference: centring to [ə], opening and fronting to [e]) across different regional origins of speakers and across reading and free speech test types.

The results in Table 9 confirm our predictions regarding the openness or closeness of the first element of /ɔɪ/ by Slovene learners of English from different regions. Respondents from the central north-western regions (UC, LC, and Rov.) produced it with an open variety, while in the eastern regions (Sty. and Pan.) learners mainly used the close variant, which was erroneous but consequently clearly a result of dialect interference.

## 5.8 Results specific for /eɪ/

The respondents from the north-western Slovene regions distinctly pronounced the diphthong /eɪ/ as [əɪ], centralising the first element. This, however, did not happen in the eastern parts of Slovenia and is one of the strongest indicators of dialect interference regarding diphthongs.

## 6. Expected replacements of English vowels by Slovene ones and the degree to which they were replaced

Srebot-Rejec (1988/89, 60) argues that the “human ear” (auditory phonetics) and not sophisticated equipment (acoustic phonetics) is capable of distinguishing the relevant quality of individual sounds from the personal features of the speaker. The spectrograph will “pick up” also features characteristic of the speaker, e.g. difference in size of vocal tract in a younger and an older speaker, even though they are both producing a “linguistically” same sound. The human ear can distinguish whether the seemingly same sounds (e.g., the close-mid /e/ by two different speakers) really are linguistically the same. Our study involved respondents of different ages and of both sexes. Spectrographic images, even for the same sound, were bound to give different results.

Further research into the comparison between Slovene and English vowels was performed by Srebot-Rejec (1988/89, 61) as she makes an attempt to predict with which Slovene vowels the Slovene speaker will replace the English ones (cf. Table 10).

	p/i:t	p/ɪ:t	p/e:t	p/æ:t	p/a:t	p/ʌ:t	p/ɒ:t	p/ɔ:t	p/ʊ:t	p/u:p	p/ɜ:t	b/ə:t
Slovene	i	ɔ	ɛ	ɛ	a	ɔ	ɒ	ɔ	ɔ	u	ɔ	
English	i	ɪ	e	æ	ɑ	ʌ	ɒ	ɔ	ʊ	u	ɜ	ə

Table 10: Expected replacements of English vowels with Slovene ones by speakers of English.



Srebot-Rejec's findings were more or less in line with the observations made in previous paragraphs (especially relating to pronunciation difficulties in Standard Slovene) which is why her table provided a fine grid which can be provided with information on the degree to which certain English vowel sounds were replaced with Slovene (dialect) ones.

Tables 11, 12 and 13 show Slovene substitutes for English vowels and the degree to which they occur.

*Results for the whole of Slovenia*

	peat	pit	pet	pat	part	putt	pot	port	put	poop	purse	but
Slovene score%	i 60.7	ə 0.5	e <sub>i</sub> 6.8	ɛ 17.2	a 40.2	ə 14.1	ɒ 35.3	o <sub>i</sub> 55.3	ə 4.0	u 52.0	ə 92.0	
English	i	ɪ	e	æ	ɑ	ʌ	ɒ	ɔ	ʊ	u	ɜ	ə

*Table 11: StSl Substitutes for English vowels as predicted by Sot (1988/89, 62) and the degree to which individual sounds occurred in the pronunciation of Slovene learners of English in the whole of Slovenia.*

*Results for Upper Carniola*

	peat	pit	pet	pat	part	putt	pot	port	put	poop	purse	but
Slovene score%	i 51.3	ə 6.5	e <sub>i</sub> 16.9	ɛ 67.7	a 79.6	ə 10.3	ɒ 46.5	o <sub>i</sub> 63.9	ə 1.4	u 61.9	ə 98.6	
English	i	ɪ	e	æ	ɑ	ʌ	ɒ	ɔ	ʊ	u	ɜ	ə

*Table 12: StSl Substitutes for English vowels as predicted by Srebot-Rejec (1988/89, 62) and the degree to which individual sounds occurred in the pronunciation of Slovene learners of English in Upper Carniola.*

*Results for Pannonia*

	peat	pit	pet	pat	part	putt	pot	port	put	poop	purse	but
Slovene score%	i 54.2	ə 0.0	e <sub>i</sub> 3.9	ɛ 0.8	a 9.6	ə 9.4	ɒ 35.0	o <sub>i</sub> 68.2	ə 6.3	u 45.8	ə 89.6	
English	i	ɪ	e	æ	ɑ	ʌ	ɒ	ɔ	ʊ	u	ɜ	ə

*Table 13: StSl Substitutes for English vowels as predicted by Srebot-Rejec (1988/89, 62) and the degree to which individual sounds occurred in the pronunciation of Slovene learners of English in the Pannonian region.*

A comparison between the results for Upper Carniola and the Pannonian region show that those for Upper Carniola were much closer to the predictions made by Srebot-Rejec than those from the Pannonian region, and they also correspond to the predictions for the transfer of elements of StSl. Only the responses predicted by Srebot-Rejec were included, since other variants for both regions would obscure clarity of data presentation. We see, however, that the scores for responses of the [ɛ] type for /æ/ were much higher in Upper Carniola (67.7%) than in the Pannonian region (0.8%), as were also the [e<sub>i</sub>] type responses (Upper Carniola with 16.9% and the Pannonian region with 3.9%). Dialect interference proved positive transfer in the case of Pannonia, since /æ/

scored a high amount of correct responses which are not included in Table 13, but can be seen in Tables 2 and 3. The most significant difference occurred regarding responses for [a], a fronted variant of /ɑ:/ (79.6% in the case of Upper Carniola and 9.6% for the Pannonian region). It is also interesting to note that the sound /ɒ/ received a higher score of responses of this type in Upper Carniola (where it is also quite common) than in the Pannonian region (where in Slovene it is replaced by the close-mid /o/). Correspondingly the closer [o<sub>1</sub>] occurred more frequently in the Pannonian region than in Upper Carniola. The influence of individual dialects and not only the StSl is quite evident.

## 7. Contrastive analysis, error analysis and the results

The error analysis (EA) which followed the initial contrastive analysis showed that in the case of consonants the L1 influence was more or less evenly distributed across the whole of Slovenia, which made them features which could not be said to be characteristic of some particular region and they were thus not presented in the tables of this paper. As regards vowel sounds, the diphthongizations predicted by the contrastive analysis did not take place. This could be explained by the fact that alongside diphthongal variants, the dialect also had monophthongal ones which could serve as replacements for the potential diphthongizations. Why they would be stronger than the diphthongs could only be explained by the deep-rootedness of the already existing L1 dialect vowel sound and the uninterrupted transition from one vowel sound to the other, which makes it almost impossible for the non-native speaker of English to produce the similar, but not exactly same English sound without falling into the pit of the L1 native sound.

The present study thus determined the influence of L1 dialect features mainly by contrasting the English sounds produced by Slovene learners across all Slovene dialect regions, as vowel quality is a relative notion and can only be described in relative terms. As the gathering of material during fieldwork developed from region to region, it became obvious that the quality of English vowels produced by Slovene learners differed significantly, more, however, in the case of some vowels (e.g. /e/ and /æ/, /ɔ/ and /ɒ/) than in the case of others (e.g., /ɪ/, /ʊ/ and /ɑ/). What was essential in this comparison was seeing contrasts between the features of individual regions. Once the typology was set, the remainder of the task was just a matter of statistics. One only needed to see the contrast.

## 8. Conclusion

Proving L1 dialect interference involves showing distinctly that features causing negative transfer in the foreign language differ from region to region considerably. The 2007 study of the pronunciation of English in Slovenia has proven that this is not an easy task not only due to the assumption that such differences might not exist, but also because it is just possible that they are masked by other types of interference, such as the influence of the orthographic image of the test items, influence of different varieties of the target language (in the case of English the British and American varieties) and pressure caused by the test situation as material is collected.

Despite everything, the 2007 study proved L1 dialect interference in the pronunciation of English as a foreign language does exist. It was due to the fact that a nation-wide Slovene study was carried out which allowed unexpected differences to show between different dialect regions which could only be explained as L1 dialect interference. They showed mainly in the area of monophthongal vowel sounds, particularly with half-close and half-open sounds, open sounds and less with closed ones. The most interesting were front open-mid and close-mid Slovene /e/ which substituted for

the English between half-open and half-close /e/. A similar situation was expected in the case of the English /o/, but the results were not as conclusive as for /e/ due to other potential forms of interference such as influence of the target variety, namely American English, and orthography. The closest to the pattern established for the English /e/ sound proving dialect interference was for the English /ɔ/ observed in the diphthong /ɔɪ/, which has no obvious peculiarities in the American variety and is orthographically relatively uniform, which prevents orthographic or L2 interference.

The Austrian study of the pronunciation of English as a FL (Wieden and Nemser 1991) examines the developmental character of foreign language learning and establishes that the “transfer” mode may be delayed into the “approximation” mode in the case of some aspects of language. The authors attribute the delay to prosodic features as opposed to segmentals which achieve “approximation” fairly quickly. On the basis of the results of the study on the pronunciation of English in Slovenia (2007) we might consider monophthongal vowels, like the prosodic features, as experiencing delayed transfer. On the scale from segmentals, which achieve “approximation” the fastest, to the prosodic features which linger in the “transfer” mode the longest, monophthongal vowels would classify after diphthongal vowels, which are closer to consonants and involve change in position of the vocal organs, and before intonation which entirely relies on perception and frequently does not even reach the “approximation” mode. The origin of these L1 dialect monophthongal sounds, however, is to be sought in the earliest childhood, namely before the age of one. Any related sound in any subsequent foreign language one is exposed to will for its existence have to overcome the so-called “magnet effect” of the native sound. Some learners may be completely successful in overcoming it, and some may come half way, but several will never overcome it. What distinguishes these L1 dialect monophthongal sounds from other sounds, such as diphthongs and consonants is that while the latter show distinct differences within the language and between languages and can be detected and corrected if necessary, differences in monophthongal quality are not distinct enough for recognition, which makes them difficult to detect and correct even though the learner wishes to do so.

Vowel quality in L1 dialect monophthongs characterized by the persistence of Wieden’s “transfer” mode in the acquisition of English as a foreign language thus serves as proof enough that an individual’s native language sound inventory, or at least an important part of it is formed very early in life under the influence of the natural environment and can survive through the exposure to other systems, native or non-native, intentional learning or acquisition. Not only can it resist change, it can also cause change in others through a process that is characteristic particularly of vowels, namely the “magnet effect”, a process which in our case was powerful enough to make L1 interference become worthy of consideration.

## References

- Brglez, Adam. 1993. *Uvod v načrtovanje eksperimentov 1*. Zreče: COMET Holding.
- Collins, Beverley, Rasto Šuštaršič, and Smiljana Komar, 2002. *Present-day English Pronunciation. A Guide for Slovene Students*. Ljubljana: Znanstvena založba Filozofske fakultete.
- Cruttenden, Alan. 2001. *Gimson’s Pronunciation of English*. London: Arnold; New York: Oxford University Press.
- Ellis, Rod. 1994. *The Study of Second Language Acquisition*. Oxford: Oxford University Press.
- Greenberg, Marc L. 2000. *Historical Phonology of the Slovene Language*. Heidelberg: C. Winter.
- Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet*. 1999. Cambridge: Cambridge University Press.

- James, Allan, and Bernhard Kettemann, eds. 1983. *Dialektphonologie und Fremdsprachenerwerb [Dialect Phonology and Foreign Language Acquisition]*. Tübingen: G. Narr.
- James, Carl. 1998. *Errors in Language Learning and Use: Exploring Error Analysis*. London; New York: Longman.
- Jurančič Petek, Klementina. 2007. *The Pronunciation of English in Slovenia*. Zora 53. Maribor: Slavistično društvo.
- Karpf, Annemarie, Bernhard Kettemann, and Wolfgang Viereck. 1980. "Phonology of Dialect Interference in Second Language Learning." *IRAL – International Review of Applied Linguistics in Language Teaching* 18 (1-4): 193-208.
- Koletnik, Mihaela. 1996. "Mariborski pogovorni jezik." Paper presented at the "Slovenska obmejna narečja" summer school, Faculty of Education Maribor, 16-21 September.
- Kuhl, Patricia K. 2000. "A New View of Language Acquisition." *Proceedings of the National Academy of Sciences of the United States of America* 97 (22): 11850-11857.
- Kuhl, Patricia K., Karen A. Williams, Francisco Lacerda, Kenneth N. Stevens, and Björn Lindblom. 1992. "Linguistic Experience Alters Phonetic Perception in Infants by 6 Months of Age." *Science, New Series* 255 (5044): 606-608.
- Kuhl, Patricia K., Barbara T. Conboy, Sharon Coffey-Corina, Denise Padden, Maritza Rivera-Gaxiola, and Tobey Nelson. 2008. "Phonetic Learning as a Pathway to Language: New Data and Native Language Magnet Theory Expanded (NLM-e)." *Philosophical Transactions: Biological Sciences* 363 (1493): 979-1000.
- Logar, Tine. 1993. *Slovenska narečja*. Ljubljana: Mladinska knjiga.
- Srebot-Rejec, Tatjana. 1988/89. "Kakovost slovenskih in angleških samoglasnikov." *Jezik in slovstvo* XXXIV (3): 57-64.
- Srebot-Rejec, Tatjana. 1992. "Initial and Final Sonorant Clusters in Slovene." *Linguistica* XXXII: 227-230.
- Toporišič, Jože. 2000. *Slovenska slovnica*. Maribor: Obzorja.
- Wells, John Christopher. 1990. *Pronunciation Dictionary*. Essex: Longman.
- Whitney, Paul. 1998. *The Psychology of Language*. Boston; New York: Houghton Mifflin.
- Wieden, Wilfried, and William Nemser. 1991. *The Pronunciation of English in Austria: A developmental and regional study*. Tübingen: G. Narr.
- Wieden, Wilfried. 1993. "Aspects of Acquisitional Stages." In: *Current Issues in European Second Language Acquisition Research*, edited by Bernhard Ketteman and Wilfried Wieden, 125-135. Tübingen: G. Narr.
- Zorko, Zinka. 1994. "Samoglasniški sestavi v slovenskih narečnih bazah (ob izbranih narečnih besedilih)." Zbornik predavanj, Seminar slovenskega jezika literature in kulture pri Oddelku za slovanske jezike in književnosti Filozofske fakultete, 325-342. Ljubljana: Seminar slovenskega jezika literature in kulture pri Oddelku za slovanske jezike.