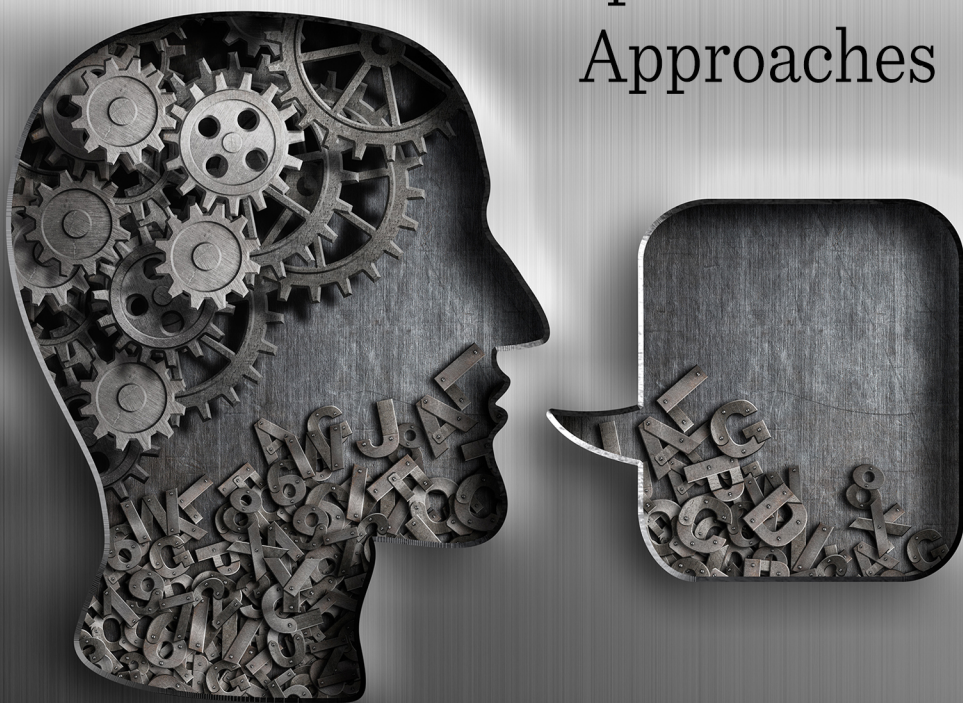


# Mind and Second Language Acquisition

Experimental  
Approaches



Edited by  
Georgios P. Georgiou

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*Experimental Approaches*

Edited by

Georgios P. Georgiou

Cambridge  
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Edited by Georgios P. Georgiou

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## INTRODUCTION

The volume *Mind and Second Language Acquisition: Experimental Approaches* consists of a collection of studies by researchers from all over the world that provide evidence about several aspects of second language (L2) acquisition using experimental protocols, or open the way for future experimental research that will allow us to better understand speakers' attitudes and motivations to learn an L2. Specifically, it concerns the perception of segmental and suprasegmental L2 features, the production of morphophonemic L2 features, the acquisition of vowel variants, the acquisition of L2 prepositions, attitudes about code-switching, and factors that motivate speakers to use and learn a heritage language. An array of different methodologies is employed which includes but is not limited to perceptual tasks, production tasks, interviews, and questionnaires. It is also of great importance that there have been studied various first or second languages some of which are underresearched. These include Cypriot Greek, English, French, Italian, Polish, Russian, Sanna (Cypriot Maronite Arabic), Scottish English, Slovak, Spanish, and Tunisian Arabic. To date, there is a need for innovative research that examines topics of L2 acquisition in an attempt to better define the mechanisms and processes that underlie the acquisition of an L2. This volume responds to this need as it offers a multidisciplinary approach to L2 acquisition and experimental methods. It also brings together researchers conducting research in the aforementioned area to discuss their research findings and exchange ideas regarding the future direction of L2 acquisition research.

Chapter 1 examines the difficulties of Cypriot Greek learners of English with respect to the perception of voicing in English plosives. Speakers of different English proficiency levels completed a forced-choice perceptual test in which they were asked to underline the word they heard from the recordings of minimal pairs with plosives. The results demonstrated that during the process of voiceless English plosives, the learners relied to a great extent on voice onset time and to some extent on the change in fundamental frequency. Furthermore, formant transitions after a plosive affected the perception of English voiceless stops by Cypriot Greek speakers. It was found that difficulties in the process of English plosives affected high proficiency learners more than lower proficiency learners.



Chapter 2 investigates the perception and production of L2 prosody by Polish bilinguals in L2 French. The perceptual test was developed with the use of prosodic morphing and addressed qualitative analyses of prosody at the interface of phonetics, phonology, syntax, and semantics. The findings yielded that cognitive processes were preventing the acquisition of L2 prosody before the highly advanced stage of L2 development. Thus, it is concluded that L2 prosody comprises the last stage of L2 acquisition.

Chapter 3 examines the assimilation of the Greek sounds [θ] and [ð] to the Russian phonological categories – these sounds are not present in the Russian system. Russian students completed a computer-based perceptual test in which they were asked to assimilate the target sounds to their L1 system. The results showed that the Greek [θ] was mostly assimilated to the Russian [s] and the Greek [ð] to the Russian [z]. These findings are not consistent with some earlier findings in the literature. The author explains that these differences might have emerged due to the learners' dialectal background, their knowledge of other foreign languages, and possible differences in their cognitive functions.

Chapter 4 investigates the production of English plural [s] in two groups of Tunisian EFL child learners differing in the English learning onset time, and the role of memorization and orthography on this acquisition. The productions were collected by means of flashcards and word lists and recorded on a PC using the Praat speech signal processing software. Children who had been learning English for 7 months pronounced better the phonetic realizations of words' final [s] compared to those who had just started to learn English. Both memorization and orthography significantly impacted the results.

Chapter 5 studies the extent to which long-term Slovak immigrant women acquire the variation of FACE and GOAT vowels compared to their typical native-speaking Scottish peers and the role of identity in their adaptation to the local language community. The data were collected through a semistructured interview, a reading passage, a word list task, and a series of tasks for comparing differences in vowel realization across speech styles. The results demonstrated that immigrants were about to acquire the monophthongal variation of /e/ and /o/, however, their productions significantly differed from the productions of the native speakers. It was also observed an association between accent acquisition and identity.

Chapter 6 examines the acquisition of L2 Italian prepositions by English monolingual and English – Spanish bilinguals. It also investigates the role of gender, experience, and task type on this acquisition. The

experimental protocol required participants to complete translation, fill-in-the-blank, and multiple-choice tasks. The results showed that the L1 background of learners affected the acquisition of Italian prepositions since bilinguals outperformed monolinguals. Experience also affected the acquisition as learners with lower proficiency level presented with higher gains of accuracy in the acquisition of the prepositions. Gender and task type did not have any effect on the ability of learners in acquiring the L2 prepositions.

Chapter 7 explores the attitudes of academics in regard to the use of code-switching by Cypriot Greek speakers in EFL tertiary education classrooms and the functions it serves when it is used by them. The data were collected through questionnaires that were administered to the academics. The findings indicated that academics had mostly neutral opinions about code-switching. The author concludes that code-switching comprises an important tool in the EFL classroom since it can have pedagogical, administrative, and interactional functions. However, it should not overtake the foreign language.

Chapter 8 studies the factors which motivate Sanna speakers in Cyprus to learn their heritage language through education in adulthood. The participants of the study completed an online questionnaire. The results demonstrated that Sanna speakers associate themselves with the identity, culture, and heritage of their community. Nevertheless, they reported limited instrumental motivation regarding the use and learning of their variety. The authors propose that future experimental protocols would allow a deeper understanding of the speakers' diverse experiences.

The chapters discuss primary evidence about topics of L2 acquisition using various methodologies and speakers/learners of various languages. Their research findings are relevant but not limited to the fields of psycholinguistics, sociolinguistics, educational linguistics, and applied linguistics. Hopefully, the present volume will spark the interest of other researchers who may critically evaluate and expand the presented research or may employ the same protocols to investigate other languages or other populations.

# CHAPTER 1

## PERCEPTION OF L2 VOICING SYSTEM AND ITS EFFECT ON L2 SPELLING: THE CASE OF CYPRIOT GREEK SPEAKERS LEARNING ENGLISH

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### **Abstract**

Native users of Cypriot Greek (CG), a variety of Greek spoken in the Republic of Cyprus, may sporadically misspell letters representing plosives while writing in English. Users of English with CG as their L1 tend to spell words containing voiced plosives using letters that stand for voiceless counterparts of the plosives, and vice versa. Such spelling mistakes can also be found on various shop labels, signboards, menus or leaflets. Hence, it is possible to encounter spellings such as octobus instead of 'octopus', rapid not 'rabbit', delicadessen for 'delicatessen', carlic for 'garlic', or avocato for 'avocado'. This research investigates the possible link between the said spelling and possible difficulties with the perception of voicing in English plosives by speakers of CG caused by the differences between voicing patterns of English and CG. A forced-choice perceptual test was administered to a group of 90 learners of English at 5 different levels of proficiency in English. The experiment tested Greek Cypriots' perception of minimal pairs that differed in the voicing of the plosives that they contained. The analysis of the relationship between the factors affecting the perception of voicing in English plosives and the frequency of perceptual mistakes in the forced-choice test suggest that native speakers of CG do not perceive the voicing patterns of English plosives in the way native speakers of English do. It seems that native speakers of CG depend largely on VOT and to some extent on the change in fundamental frequency when processing voiceless plosives.

Also, formant transitions following a plosive play a certain role in the perception of voiceless stops by CG speakers. As far as voiced stops are concerned, the data did not reveal a clear relationship between VOT, the change in F0 or formant transitions, and the number of mistakes.

*Keywords:* speech perception, spelling mistakes, voice onset time, fundamental frequency, formant transitions, plosives

## 1. Introduction

In the Republic of Cyprus, in which the official languages are Greek (in the government-controlled areas and Turkish (in the non-government-controlled areas), English is widely used in the public domain due to the country's colonial past and to tourism, which is an important source of the country's economy. Thus, it is common to see information in shops, restaurants, businesses, hotels, etc., in English and Greek around Cyprus. The English text on various notices (such as menus, leaflets or shop labels), however, may contain spelling mistakes in words which contain graphemes that represent English plosive sounds, that is sounds such as /p/, /t/, /k/, /b/, /d/ and /g/. It is striking that the mistakes concern graphemes representing a group of sounds that are produced significantly differently in Cypriot Greek (henceforth CG, a variety of Greek used by Greek Cypriots in day-to-day conversations) and in English, and that voiced and voiceless counterparts that are normally confused.

Thus, one might pose a hypothesis that the source of confusion could be the differences in voicing between the Greek and English counterparts of the sounds. To this end, this study investigates whether and which of the known cues for voicing affect the perception of English plosives by native users of CG.

In section 2 the focus is on the description of spectral cues that are used to determine voicing in plosives, whereas section 3 gives an overview of differences in voicing patterns of CG and English. Research questions are presented in section 4, and the methods of data collection are described and discussed in section 5. Furthermore, section 6 is devoted to data analysis and discussion which include is the influence of VOT, F0 change and the first two formant transitions on perception. Finally, the data limitations are specified in section 7, whereas concluding remarks are presented in section 8.

## 2. Acoustic cues for voicing

There is a plethora of phonetic experiments which indicate that several acoustic cues can influence listeners' decisions concerning whether the stop consonant they hear is voiced or voiceless. An account of some of these cues, such as variation in fundamental frequency, the length of voice onset time and the transition of the first two formants following the release of the plosive, is given in this section.

Lisker and Abramson (1964), who analysed acoustically initial plosives across languages, found that voice onset time (VOT) values, i.e. the time between the offset of a burst of a plosive and the beginning of voicing, can be utilised for categorising voicing manners (such as voiced or voiceless) in plosives. The study also showed that languages can have from two to four different voicing categories for each place of articulation; that is, voiced, voiced aspirated, voiceless unaspirated and voiceless aspirated. Additionally, the data suggest that the length of VOT also depends on the place of articulation of the given plosive. The relation of the length of VOT and the place of articulation was also in agreement with previous findings by Liberman, Delattre and Cooper (1958). The findings by Lisker and Abramson (1964) as to the status of VOT as a spectral cue of voicing were consistent with studies which employed tests using synthetic speech by Liberman, Delattre and Cooper (1958), as well as Lisker and Abramson (1970).

Stevens and Klatt (1974) indicated the importance of the timing of formant transition after the release of a plosive as well as a trading relationship between VOT and formant transition in the perception of voicing in plosives. The data from a set of experiments by Stevens and Klatt (1974, 657) on the perception of synthesised syllables by English speakers indicated that for a plosive to be perceived as voiceless the transition of the first two formants needs to take place before the voicing starts. Also, there has to be minimum 20ms of VOT. In case the transition continues after the voicing onset, listeners tend to rely on different cues, that is, either on the VOT or the speed of formant transition. Thus, having a long VOT increases the chances of a plosive being identified as voiceless by some listeners; however, voicing onset with a rapid change in the frequency of the first two formants may signify voicing for other listeners (Stevens and Klatt 1974, 657). Nonetheless, data coming from research on the perception of synthesised syllables by native English speakers carried out by Lisker (1975) suggest that F1 transition is not essential for plosives to be perceived as voiced and that it is not certain whether it is necessary for initial plosives not to have F1 transition to be heard as voiceless. He also draws attention to

the tendency among many languages (e.g. Spanish) not to use F1 transition as a cue for voicing, which would make it very unusual for F1 to be used as a cue in English (Lisker 1975, 1550).

Research carried out by Ohde (1984) demonstrated that fundamental frequency values differ for voiced, voiceless unaspirated and voiceless aspirated plosives in American English. Specifically, voiceless aspirated and voiceless unaspirated plosives have a much higher fundamental frequency than voiced plosives at all periods following offset. The difference between voiceless aspirated and unaspirated plosives is that the fundamental frequency at the first period is substantially higher for unaspirated plosives than for the aspirated ones, where at the following periods the values for aspirated and unaspirated plosives were very similar. As far as the rate of change of frequency in the first two periods is concerned, the research by Ohde (1984) revealed that the change depends on the place of articulation, voicing and the adjacent vowel. It was discovered that voiceless unaspirated stops undergo the greatest changes of all the stops, whereas aspirated stops have generally similar F0 values to voiced stops for labial and alveolar places of articulation, but higher F0 values than voiced for velars. One should note that although English voiceless unaspirated plosives and voiced plosives are very similar with regard to VOT values, they differ substantially with respect to the fundamental frequency (Ohde 1984, 226 – 227).

### **3. Voicing patterns in Cypriot Greek and English**

According to several sources (Armosti 2010; Arvaniti 2010; Newton 1972), there are only voiceless plosives in the phonemic inventory of CG. CG voiceless plosives, however, have a few allophonic variations. If preceded by a homorganic nasal, /z/, vowel or sonant, the stops surface as voiced. While Newton (1972) classifies voiceless geminate plosives as allophones, later descriptions of CG plosive inventories (Armosti 2010; Arvaniti 2010) state that this group of sounds should be treated as phonemes, especially that they may occur in the same positions as singleton voiceless stops, and there are minimal pairs in CG in which the only different sounds are singleton and geminate stops. Nevertheless, the discussion of what is a phoneme or an allophone has no significance for this study. What is noteworthy is what types of plosives can be found in certain contexts in CG.

**Table 1. Voicing patterns of CG and English: a summary**

	Cypriot Greek	English
Voiced	<b>Pre-nasalised</b> [ <sup>m</sup> b, <sup>n</sup> d, <sup>ŋ</sup> g]	<b>Short VOT</b> (around 10ms) <b>Or negative VOT</b> (Ladefoged 2001)
Voiceless	<b>Short VOT</b> /p/ - 14ms, /t/ - 16ms, /k/ - 31ms (Arvaniti 2001)	<b>Long VOT</b> (/p/ - 50 - 60ms) (Ladefoged 2001)
Voiceless geminate	<b>Long VOT</b> /p: <sup>h</sup> / - 50ms, /t: <sup>h</sup> / - 60ms, /k: <sup>h</sup> / - 63ms <b>+ longer closure duration</b> (Arvaniti 2001)	

Several measurements of VOT values in CG have been made so far. For instance, according to Arvaniti's research (2001, 41, Figure 2), the mean VOT durations of singleton plosives at normal speech rate are around /p/ - 14ms, /t/ - 16ms and /k/ - 31ms. There is no change in VOT value for /p/ and /t/ at a fast speech rate, however, in the case of /k/ the duration falls to about 18ms. The speech rate seems to have a great influence on the VOT values of geminates. In line with Arvaniti's study (2001, 41), the mean VOT durations are about 50ms for /p:<sup>h</sup>/, 60ms for /t:<sup>h</sup>/ and 63ms for /k:<sup>h</sup>/ at normal rate, whereas at fast rate the mean durations fall to nearly 40ms for /p:<sup>h</sup>/ and around 45ms for /t:<sup>h</sup>/ and /k:<sup>h</sup>/. A similar study by Arvaniti and Tserdanelis (2001, 4, Figure 2) reveals the VOT values may also change depending on whether a geminate plosive is in a stressed or unstressed syllable, namely in stressed syllables, average VOT values seem to be about 75ms for /t:<sup>h</sup>/ and /k:<sup>h</sup>/, and about 60ms for /p:<sup>h</sup>/. To sum up, the VOT of singleton voiceless stops has been asserted to range from about 14ms up to 31ms, while the VOT durations for geminate plosives start from 40ms and reach 75ms.

As claimed by Ladefoged (2001, 127), the VOT duration of English stressed /p/ in word-initial position ranges between 50 and 60 ms. As far as /b/ is concerned, it may have up to about 10ms of VOT, however, the value can also be negative. As regards /p/ following /s/, usually described as unaspirated, it is characterised by VOT value similar to that of /b/ (Ladefoged 2001, 127). Taking into consideration the findings by Newton (1972), Arvaniti (2001), Arvaniti and Tserdanelis (2001) and data provided by Ladefoged (2001), it can be maintained that as to VOT values,

CG voiceless plosives seem to be more like English voiced and unaspirated plosives, than to aspirated voiceless plosives. CG geminate plosives in stressed syllables (syllable initial position) range between 60 and 75ms, which in this respect makes them similar to English stressed voiced stops (between 50- 60ms). CG voiced stops, unlike their English counterparts, are obligatorily pre-nasalised.

#### 4. Research questions

Taking into consideration the observations discussed in section 1 regarding the potential perception-related spelling difficulties characteristic of learners of English whose L1 is Cypriot Greek, the differences in plosive inventories, and the various cues possibly used by listeners to determine the voicing of a given sound, the following question was put forward:

1. Could the differences in the acoustic properties in plosive inventories cause speakers of Cypriot Greek as L1 difficulties with their 'perceptual fine-tuning' of English plosives? And if so, two related questions were asked:
  - 1a. In what word contexts do listeners whose L1 is Cypriot Greek have difficulties with precise identification of voicing patterns in English?
  - 1b. Which acoustic cues have an influence on the perception of voicing in English plosives by listeners whose L1 is Cypriot Greek?

#### 5. Method of data collection

The experiment tested Cypriot Greek speakers' perception of minimal pairs that differed in the voicing of the plosives that they contained. The plosives appeared in various positions in words, which were selected in line with different ways of realisation suggested by Gimson (1989); the positions of tested plosives are specified in Tables 2 and 3 in section 6. Each of the words in each minimal pair was embedded in a sentence (see Appendix 1). The sentences were written in a way that allowed both words in each minimal pair to be used in a relatively contextualised lexical chunk. A recording of an adult male British-English native speaker (standard southern variety) reading the sentences was made. Then, each of the sentences was copied and pasted using PRAAT in a way that enabled the same sentence to be played twice. Afterwards, all the recordings were converted into WAV format and a list of sentences (each repeated twice) was created.



The list of sentences was played to several different language-level groups of adult English learners. At the time of listening, each of the subjects could see the list of previously recorded sentences on a worksheet that presented each sentence including both minimal-pair words printed in bold. The task of the subjects was to underline the word in each minimal pair that they heard.

The perceptual task was carried out in quiet classrooms. The recordings were played through two loudspeakers.

## 6. The results

The total number of mistakes was 21.6% for all levels i.e. this was the percentage of students that chose the wrong minimal pair word for a given recorded sentence. Such a result appears to indicate that there is a difference in the way native speakers of CG and of English perceive voiced and voiceless plosives in English words produced by a native user of English. Furthermore, it was found that the number of mistakes was lower for voiceless targets (17.6%) than for the voiced ones (25.66%) (see Tables 2 and 3). There was noticeable variation within the 'voiced' and 'voiceless' categories as well. That is, with regard to voiced plosives (Table 3), the lowest percentage of errors was for velars (22.98%), and the highest percentage of errors was for bilabials (25.9%). Whereas, with reference to voiceless stops (Table 2), the highest percentage of mistakes occurred in velars (19.9%), the lowest percentage of mistakes was for alveolars (14.3%) and bilabials had intermediate values (18.6%).

**Table 2. Overall percentages of mistakes for voiceless plosives.**

	Accented aspirated		Weakly accented, Relatively unaspirated		Syllable Final	Followed by nasal consonant	Followed by lateral consonant	Total for of mistakes each class
	Followed by vowel	Followed by a consonant	Following a vowel	Following a nasal				
p	pet	pride	Mopping	simple	rip	Lapmate	nipple	
%	4.4	5.5	7.7	33.3	15.5	56.6	7.7	<b>18.6</b>
t	tied	-	Latter	renter	bet	mitten	petal	
%	14.4	-	10	11.1	33.3	5.5	6.6	<b>14.3</b>
k	cards	class	Locker	anchor	back	Pickman	ankle	
%	4.4	2.2	6.66	36.6	40	23.3	26.6	<b>19.9</b>
<b>TOTAL (for all voiceless plosives)</b>								
								<b>17.6</b>

**Table 3. Overall percentages of mistakes for voiced plosives.**

	Initial, devoiced		Intervocalic		Final, voiceless	Followed by a nasal consonant	Followed by a lateral consonant	Total for of mistakes each class
	Partially followed by a vowel	Followed by a consonant	Following a vowel	Voiced				
	bet	by a consonant	by a vowel	by a consonant	rib	Labmate	nibble	
b	14.4	6.6	35.5	16.66	51.1	48.8	8.88	<b>25.9</b>
d	12.2	-	25.5	5.5	42.2	27.7	55.5	<b>28.1</b>
g	1.1	11.1	16.66	15.5	22.2	65.5	28.8	<b>22.98</b>
<b>TOTAL (for all voiced plosives)</b>								
<b>25.66</b>								

The data in Table 4 suggest that there is a relationship between student language level and perceptual development. That is, lower-level students appeared to have more perception-related mistakes than higher-level students. However, there was one exception, for the overall score for B2<sup>1</sup> level students, which might have been slightly skewed by the small sample (only 9 students).

**Table 4. Percentages of mistakes and numbers of subjects according to the level of English.** <sup>2</sup>

Level	A2	B1	B2	C1	C2	TOTAL for all the students
Number of subjects	9	32	9	24	16	<b>90</b>
%	27.2	24.5	19.4	20.3	14.2	<b>21.6</b>

Study data also suggest that there was a tendency for sounds in certain word contexts to have caused a relatively high level of mistakes. This was true for voiced and voiceless plosives in word-final position, compounds and words in which a plosive followed a nasal. It may be the case that the mistakes in the words with a plosive following a nasal could have been made not only because of perception. To be more precise, in Standard Modern Greek, which is the official language in Cyprus, in any word-medial sequence in which a plosive follows a nasal, the plosive is realised as voiced (Newton 1972, 22-23). Based on anecdotal observations, I tentatively hold that sequences that are spelled with  $\mu\pi$ ,  $\nu\tau$  and  $\gamma\kappa$  often appear to be treated as equivalents of *nk*, *nt*, *mp* or even *nch* in the Latin alphabet by Greek and Greek Cypriot learners of English as L2. It is worth considering then, that some of the subjects might have attached more importance to the spelling of the word while taking part in the experiment, or even perceive a sound as voiced depending on the cue which was a nasal element before a plosive, as this would be the case in their native language.

---

<sup>1</sup> In this paper reference will be made to Common European Framework of Reference (CEFR). B2 level is an upper-intermediate level

<sup>2</sup> The levels of the courses are thought to be approximate to the ones specified by CEFR.

## 6.1. Data analysis I: Perception of voiced and voiceless plosives with different VOT values

### 6.1.1. Voiceless plosives

Table 1 shows percentages of mistakes for all voiceless plosives tested in the study. Some of the words did not undergo further analysis as a result of problems with measuring the VOT in the stop consonants that they contained. To be more precise, in this study VOT is defined as the time between the offset of the plosive and the beginning of vibration of vocal cords (for voiceless plosives) or the time between the offset of burst and the first visible peak of a periodic wave (for voiced plosives). Thus it could not be measured for the sounds that were in word-final position and were not followed by any other voiced sound. Therefore, words like *rip*, *bet*, and *back* were not included in my analyses of the relationship between the length of VOT and the number of minimal-pair mistakes. In addition, it was not possible to detect VOT in the word *Lapmate*, so it was not incorporated in further analyses considering the length of VOT.

Figures 1, 2 and 3 below illustrate the relation between the English native speaker's VOT values for plosives in given words and the percentages of subjects' mistakes made in the minimal pair test. Results for /p/ show that for VOT ranging from about 26ms to around 34ms, the number of subject mistakes was 7.7% for *mopping* and *nipple*, and 33.3 % for *simple* which might have had a greater number of mistakes due to the *nasal + plosive* sequence. Yet, from 51ms up to 83ms of VOT the number of mistakes decreases as the VOT goes up. For items with /t/, as VOT increases from 65ms to 75ms, the number of mistakes slightly rises but starts falling for VOT values between 75 and 84ms. From the data on alveolars and bilabials, it is possible to notice a tendency where, if VOT is longer than 51ms for /p/ and 84ms for /t/, the percentage of mistakes is not very high. However, the data for /k/ seem to be more varied. The words *anchor* and *ankle* (*nasal + plosive* sequence) and *Pickman* (compound) caused a relatively higher percentage of mistakes than the other currently analysed words with /k/. However, even if the three items are not taken into consideration in the analysis, the same tendency for /p/ and /t/ did not seem to apply. The reason for this situation may be that there may have been some additional factors affecting the results (see sections 6.2. and 6.3.).

Figure 1. The relationship between the percentage of mistakes and the length of VOT in items with /p/

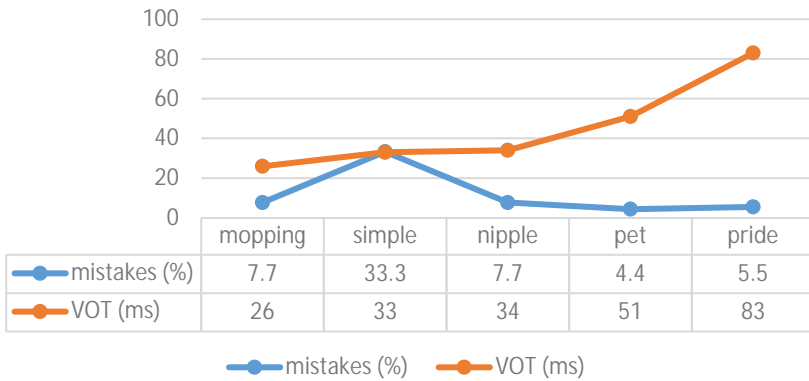


Figure 2. The relationship between the percentage of mistakes and the length of VOT for the items with /t/

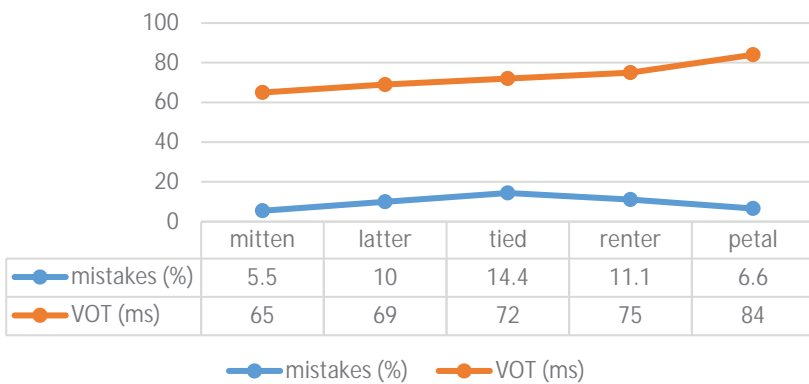
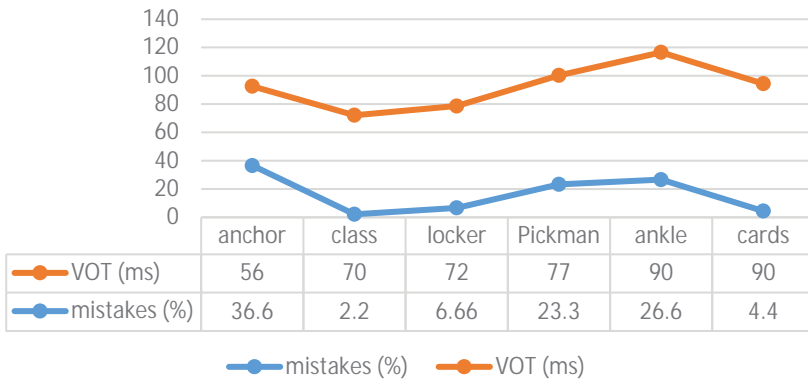


Figure 3. The relationship between the percentage of mistakes and the length of VOT for the items with /k/



### 6.1.2. Voiced plosives

Figures 4, 5 and 6 below present the link between the percentage of mistakes and VOT in the voiced plosives examined. To investigate this link, a different definition of VOT was applied, namely the distance from the offset of the plosive to the first visible peak of a periodic wave on a waveform<sup>3</sup>. This measurement was taken irrespective of whether any of the items was prevoiced<sup>4</sup>. In several of the items examined in this study, the offset of the plosives could not be seen clearly in the waveform (i.e. *Labmate*, *midden*, *nibble*, *symbol*, *Pigman*), therefore the VOT was not specified for these words, and thus, they appear in Figures 4, 5 and 6 without the value for VOT. As measuring VOT for voiced stops in word-final position was not possible, the words *rib*, *bed* and *bag* were not included in the following analysis. Information on the percentage of mistakes for these words can be seen in Table 3.

<sup>3</sup> Such procedure was earlier employed by Ohde (1984).

<sup>4</sup> The prevoiced items were as follows: *anger*, *dye*, *midden*, *mobbing*, *nibble* and *pedal*.

Figure 4. The relationship between the percentage of mistakes and the length of VOT for items with /b/

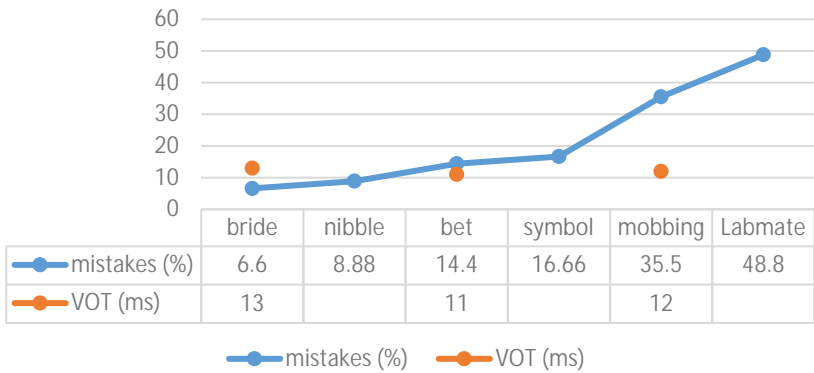


Figure 5. The difference between the percentage of mistakes and the length of VOT for items with /d/

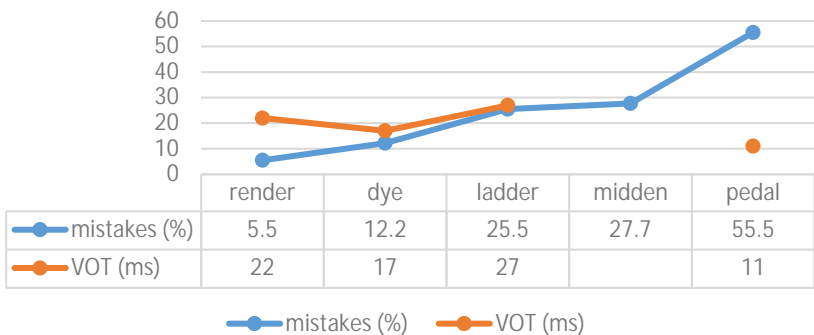
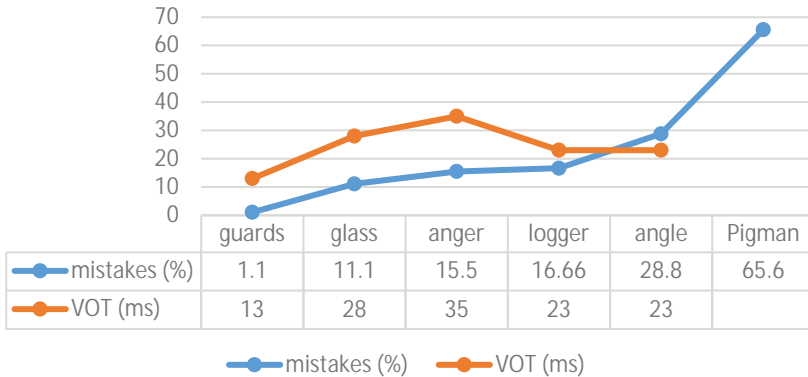




Figure 6. The difference between the percentage of mistakes and the length of VOT for items with /g/



The comparison of VOT values for voiced plosives with corresponding percentages of mistakes did not reveal any clear correlation. High percentages of mistakes were found for short and long VOTs and even if prevoicing of some of the items is taken into consideration, no clear pattern seemed to emerge from the data. This study's data suggested that the perception of voicing in the case of voiced stops did not seem to be dependent on VOT only, if at all.

The length of VOT did not seem to be the only factor in difficulties in the accurate perception of voiceless plosives and did not appear to have much influence, if any, on the correct perception of voiced plosives. Therefore, the influence of changes in fundamental frequency and formant transitions were analysed in sections 6.2. and 6.3. respectively.

## 6.2. Data analysis II: Perception of voiced and voiceless plosives with different fundamental frequency values

As there appeared to be more reasons for the variation in the percentages of mistakes in voiced and voiceless plosives than the length of VOT, an examination of the influence of the fundamental frequency on the perception of the target sounds was undertaken. The fundamental frequencies of the

first and second glottal period were measured for every word, as the most substantial differences between voiced, voiceless aspirated and voiceless unaspirated plosives seem to occur in the change between the frequency of the two cycles (Ohde 1984, 226-227). The length of each cycle was measured by placing cursors on the peaks, as well as at zero points of each glottal cycle. The frequency then was calculated as a reciprocal of the length of the glottal period<sup>5</sup>. A change in frequency between the first and the second glottal period for each word was then calculated and compared with the number of mistakes in a minimal pair test and VOT values. In order to facilitate data analysis, instead of giving the actual values of F0 change, corresponding names of categories from Ohde's data were used.<sup>6</sup>

### 6.2.1. Voiceless plosives

The results presented in Table 5. show that the F0 change might also have had an influence on the perception of voicing in plosives. Some trends could be observed, when the items in Table 5. were grouped into three categories according to the percentage of mistakes (Category I – from 2.2% to 6.6%, category II – from 7.7% to 14.4% and Category III – from 15.5% to 56.6%). The items in Category I seem to have very low numbers of mistakes due to either long VOT and/or the F0 change characteristic of voiceless aspirated or unaspirated stops. There are two exceptions (*cards* and *petal*) which have F0 change like voiced plosives. It seems, however, that their very long VOT is enough for most of the speakers to consider the items voiceless. In the second class it is possible to find items with plosives of three types: 1. not very long VOT (26-34ms) and F0 change characteristic of voiceless aspirated and unaspirated plosives, 2. long VOT and fundamental frequency change as in voiceless unaspirated plosives and 3. long VOT and the change in F0 like for voiced stops. Category III contains three out of four words with the nasal + plosive sequence, compounds and items in which the VOT

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<sup>5</sup> It was decided in this analysis not to extract F0 by means of PRAAT as the program measures F0 only for a specified point in time as opposed to a period of time. Therefore, it is only possible to measure the F0 at a certain point of a glottal period, while the F0 value is likely to change within the same period, which would pose the problem of which value should be chosen for the analysis. Hence, because the results were meant to be analysed on the basis of the results achieved by Ohde, choosing Ohde's procedure seemed to be the most advisable.

<sup>6</sup> For example, the F0 change for *pet* was 17Hz and in Ohde's (1984) study it was found that that value within the class of bilabials was characteristic of voiceless aspirated plosives, hence instead of the value the category 'voiceless aspirated' was assigned.

and F0 change could not be measured due to the offset of burst not being clearly visible on the spectrum and waveform, or the lack of a voiced element following the stop consonant. These words caused relatively large numbers of mistakes.

**Table 5. The relationship between the percentage of mistakes, VOT and the degree of change in F0 for voiceless plosives.**

Category	Word	Mistakes (%)	VOT (ms)	Voicing category according to F0 change
I	Class	2.2	86	Unaspirated
	Cards	4.4	90	Voiced
	Pet	4.4	51	Aspirated
	Pride	5.5	83	Aspirated
	Mitten	5.5	64	Unaspirated
	Petal	6.6	84	Voiced
	Locker	6.6	71	Unaspirated
II	Mopping	7.7	26	Aspirated
	Nipple	7.7	34	Unaspirated
	Latter	10	69	Unaspirated
	Renter	11.1	75	Voiced
	Tied	14.4	72	Unaspirated
III	Rip	15.5	-	-
	Pickman	23.3	-	-
	Ankle	26.6	90	Aspirated
	Simple	33.3	37	Aspirated
	Bet	33.3	-	-
	Anchor	36.6	56	Aspirated
	Back	40	-	-
	Lapmate	56.6	-	Aspirated

### 6.2.2. Voiced plosives

**Table 6. The relationship between the percentage of mistakes, VOT and the degree of change in F0 for voiced plosives.**

Word	Mistakes (%)	VOT (ms)	Voicing category according to F0 change
Guards	1.1	13	Voiced
Render	5.5	22	Unaspirated
Bride	6.6	13	Unaspirated
Nibble	8.8	-	Voiced
Glass	11.1	28	No category; closest to unaspirated
Dye	12.2	17	No category; closest to unaspirated
Bet	14.4	11	Voiced
Anger	15.5	35	Voiced
Logger	16.6	23	Voiced
Symbol	16.6	-	-
Ladder	25.5	27	Voiced
Midden	27.7	-	
Angle	28.8	23	Voiced
Mobbing	35.5	12	No category; closest to unaspirated
Labmate	48.8	-	No category; closest to voiced
Pedal	55.5	11	voiced
Pigman	65.6	-	-

A summary of relationships between mistake percentages, VOT and the change in F0 for voiced plosives (Table 6) indicates that there are three options of how F0 changed in the items in this study. That is, the variations corresponded to what in Ohde's (1984) study was labelled as voiced plosives, voiceless unaspirated plosives or the changes that did not match any category. In cases where the rate of change did not match any category, the values were close to those of voiceless unaspirated plosives. For some

of the items, (*symbol, midden, Pigman*) measurement of F0 change was not possible. Nevertheless, it is difficult to observe any clear indications as to whether any of the degrees of change in F0 and their corresponding voicing categories (according to Ohde 1984) have any influence on the number of mistakes. That is, items that caused more than around 14% of the mistakes, generally match the category of voiced plosives, excluding *symbol, midden* and *Pigman*, which could not have had their F0 changes measured, and *mobbing* (closest to unaspirated) and *Labmate* (close to voiced). On the other hand, the items that had around 12% and below would fit all the categories mentioned i.e. voiced, aspirated and unaspirated. What is more, excluding any problematic items such as those with *nasal + plosive* sequence or compounds from the analysis would not result in receiving any clear pattern of the influence of F0 change in voiced plosives on their perception by native speakers of CG.

### **6.3. Data analysis III: The influence of formant transition and VOT on the perception of voicing.**

The following analysis was aimed at detecting possible influences of the timing of the first two formant transitions on the perception of voicing in English plosives by native speakers of CG. For all plosives in this study, the length of formant transition was measured from the offset of the plosive (identified on the waveform displayed in PRAAT) up to the point where a substantial transition in the formants was completed (on the spectrogram in PRAAT). In some of the words, the offset of the plosive was not possible to detect, and therefore VOT and formant transitions were not measured.

As can be seen in Figure 7, there are no items that were known to have a VOT longer than 20ms and completed formant transition by the beginning of voicing at the same time, which as Stevens and Klatt (1974) claimed would make them more likely to be perceived as voiceless by native speakers of English. In nearly all items, formant transitions took longer than the distance from the offset to the first visible peak of a periodic wave. Neither the length of formant transitions from the burst nor the length of formant transitions after the beginning of voicing (see Figure 8) seemed to have any correlation with the percentage of mistakes. Those data correspond with the findings of Stevenson and Klatt (1974) according to which listeners tend to rely on either formant transitions or VOT while judging if a plosive is voiced or not, unless the VOT is longer than 20ms and the formant transitions are completed by that time. Also, it is important to remember that that data are relevant to native speakers of English, and might differ for speakers of CG.

Figure 7. Percentages of mistakes, VOT and the timing of the formant transitions for voiced plosives

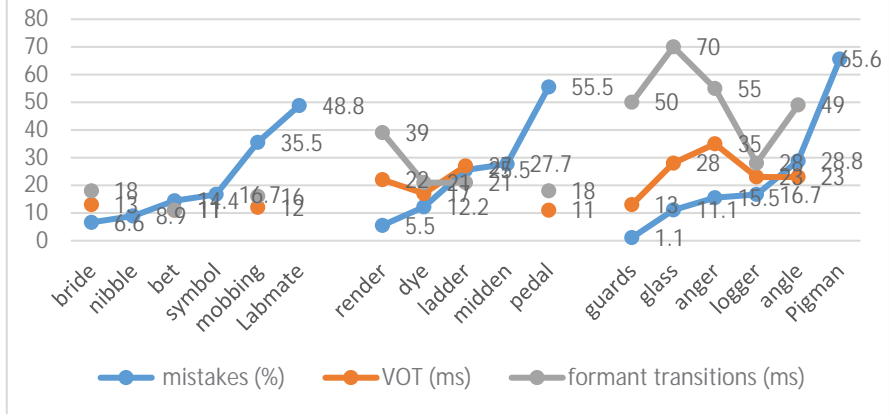
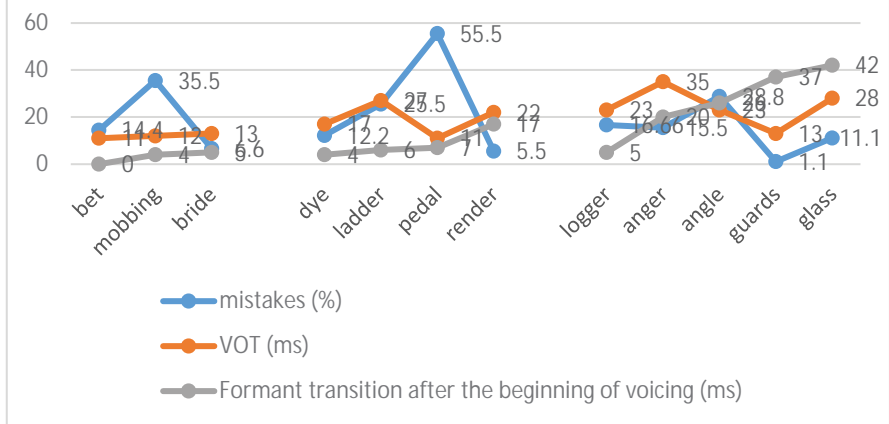


Figure 8. Percentages of mistakes, VOT and the formant transition timing after the beginning of voicing in voiced plosives



**Table 7. The relationship between the percentage of mistakes, VOT and the time of formant transitions of voiceless plosives.**

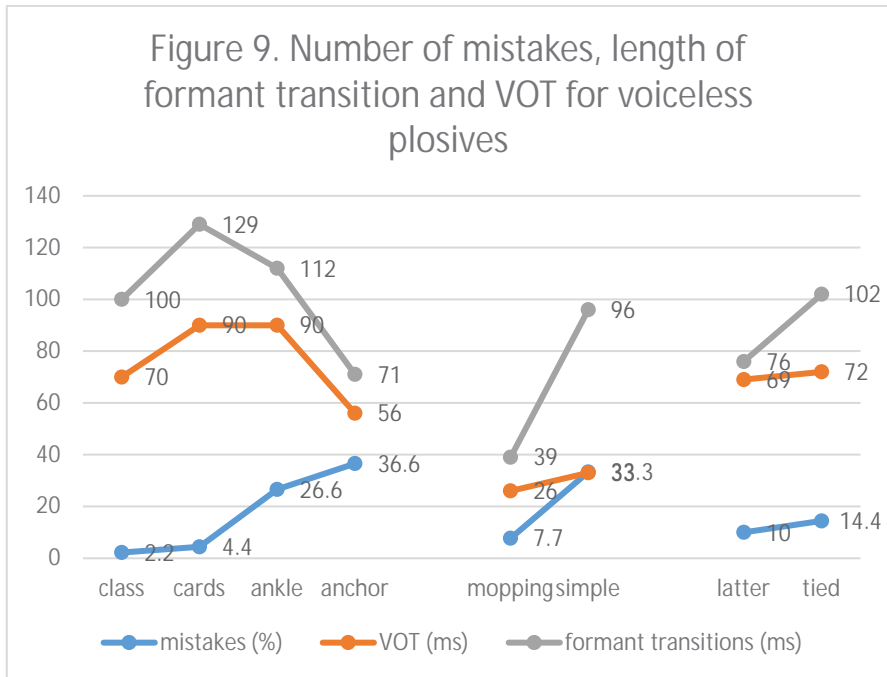
	Mistakes (%)	VOT (ms)	Formant transition (ms)
Mopping	7.7	26	39
Nipple	7.7	34	b <sup>7</sup>
Simple	33.3	33	96
Pet	4.4	51	b
Pride	5.5	83	b
Lapmate	56.6	53	
Rip	15.5		
Mitten	5.5	65	b
Latter	10	69	76
Tied	14.4	72	102
Renter	11.1	75	b
Petal	6.6	84	b
Bet	33.3		
Anchor	36.6	56	71
Class	2.2	70	100
Locker	6.66	72	b
Pickman	23.3	77	b
Ankle	26.6	90	112
Cards	4.4	90	129

A large number of voiceless plosives were found to have their VOT longer than 20ms and formant transitions completed by that time (see Table 7). However, there were a few items in which transitions of formants took longer to complete than it took voicing to begin. The relationship between the number of mistakes, length of formant transition and VOT are presented in Figure 9. At first glance, the data seem to suggest that the longer the transition of formants, the greater the number of mistakes. The picture seems to be spoiled by the items *ankle* and *anchor*, which do not fit this pattern, despite having shorter formant transitions more mistakes were made with these words than with other words containing /k/. If the reason for this were the *nasal + plosive* sequence in both of the items, the same should have applied to *simple*. If *simple* were excluded from the analysis, there would be only one item left in the bilabial category following the pattern,

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<sup>7</sup> b – transition of formants completed before the beginning of voicing.

and thus there would not be enough data to analyse the influence of formant transitions on the number of mistakes in the class of voiceless bilabials. Moreover, the remaining words with velar sounds caused the lowest percentage of mistakes in the velar category. It could be argued that a long VOT (*class, cards*) made the listeners perceive the sounds as voiceless. However, in line with this premise, it would be advisable to apply the same rule to *latter* (69ms) and *tied* (72ms) which caused a larger number of mistakes.10 % and 14.4% respectively, and had slightly shorter transitions of formants.



### 7. Study limitations

It is necessary to mention that other factors might have influenced the results of the experiment. For instance, some of the words in the minimal pairs could have a higher frequency of use, and therefore they might have been chosen by the learners as being more familiar than others. Also, some of the



items could seem to be more likely to fit in the context of the carrier phrase<sup>8</sup>. What is more, the experiments were carried out in normal classrooms, which, although being relatively quiet, might have been subject to background noise. Also, there might have been some influence of the amplitude of burst on the perception of voicing. Some of the plosives had a very weak offset of burst, and so were not taken into consideration in the analyses in which measurements of VOT were essential. However, it may be suspected that the nature of such potentially weak offsets might have been the reason why there were difficulties in determining the voicing of these items. Plosives in word-final positions also lack the cues such as F0 change, VOT or the transition of the first two formants, so that might partly explain why there were so many perception-related problems.

## 8. Conclusions

In this study, it was found that, to a certain extent, native speakers of CG have difficulties with determining the voicing of English plosives in different word contexts. The difficulty seems to be greater for lower-level learners of English and less for more advanced learners. It seems that native speakers of CG depend largely on VOT and to some extent on the change in fundamental frequency when dealing with voiceless plosives. Also, formant transitions play a certain role in the perception of voiceless stops by speakers whose L1 is Cypriot Greek. As far as voiced stops are concerned, the data did not reveal any clear relationship between VOT, the change in F0 or formant transitions and the number of mistakes. This suggests the need to research the importance of prenasalisation as a cue for voicing in speakers of Cypriot Greek as L1.

As this study tested the perception of natural speech, which was not manipulated at any stage, only words with certain values for certain cues and types of plosives were used. It was therefore not possible to identify precise values for any of the cues that might help clarify what could be perceived as voiced or voiceless by native speakers of CG. In order to set categories for what is perceived as voiced or voiceless, it would involve manipulated or even synthesised speech.

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<sup>8</sup> E.g. Have you got a pet/bet? The option 'pet' may be the more prototypical as learners of English are more likely to be familiar with the 'have you got a pet' lexical chunk than the 'have you got a bet' one, which is slightly stilted.

## References

- Armosti, Spyros. "The phonetics of plosive and affricate gemination in Cypriot Greek". PhD dis., University of Cambridge, 2010.
- Arvaniti, Amalia. "Comparing the phonetics of single and geminate consonants in Cypriot and Standard Greek." In *Proceedings of the Fourth International Conference on Greek Linguistics, 2001*, 37-44. Thessaloniki: University Studio Press, 2001. Accessed March 21, 2007, <http://ling.ucsd.edu/~arvaniti/Arvaniti.ICGL4.pdf>
- Arvaniti, Amalia. "A (brief) overview of the phonetics and phonology of Cypriot Greek". In *The Greek language in Cyprus from antiquity to today* edited by In Andreas Voskos, Dionysis Goutsos and Amalia Moser, 107-124. Athens: University of Athens, 2010.
- Gimson, Alfred, Charles. *An Introduction to the Pronunciation of English*. 4<sup>th</sup> ed. London: Edward Arnold, 1989.
- Ladefoged, Peter. *A Course in Phonetics*. Boston: Heinle & Heinle, 2001.
- Liberman, Alvin, Pierre Delattre, and Franklin Cooper. "Some cues for the distinction between voiced and voiceless stops in initial position." *Language and Speech*, 1 (1958): 153 - 167.
- Lisker, Leigh. "Is it VOT or a first-formant transition detector?" *The Journal of the Acoustical Society of America* 57 (1975): 1547 – 1551.
- Lisker, Leigh, and Arthur Abramson. "A cross-language study of voicing in initial stops: acoustical measurements." *Word* 20 (1964): 384 – 422.
- Lisker, Leigh, and Arthur Abramson. "The voicing dimension: some experiments in comparative phonetics." *Proceedings of the 6<sup>th</sup> International Congress of phonetic Sciences*. Prague: Academia, (1970): 563 – 567.
- Newton, Brian. *Cypriot Greek: Its Phonology and Inflections*. The Hague: Mouton, 1972.
- Ohde, Ralph. "Fundamental frequency as an acoustic correlate of stop consonant voicing." *The Journal of the Acoustical Society of America* 75 (1984): 224 – 230.
- Stevens, Kenneth and Dennis Klatt. "Role of formant transitions in the voiced-voiceless distinction of stops." *The Journal of the Acoustical Society of America* 55 (1974): 653-659.
- Tserdanelis, Georgios and Amalia Arvaniti. "The acoustic characteristics of geminate consonants in Cypriot Greek." *Proceedings of the Fourth International Conference on Greek Linguistics*, Thessaloniki: University Studio Press, (2001): 29-36.

## Appendix 1

Answer sheet provided to study participants in the perceptual test. Sentences number 1, 3, 4, 5, 6, 7 and 6 (which was changed slightly) were taken from *Sounds English: A Pronunciation Practice Book* by J.D. O'Connor and C. Fletcher. (1989) Longman. The target words are underlined.

1. Have you got a pet/bet?
2. Somebody said pride/bride.
3. The doctor looked at the rip/rib.
4. She tied/dyed the scarf.
5. He has never made a bet/bed.
6. One of the cards/guards is missing.
7. Sarah's class/glass is quite big.
8. I could see her bag/back on the train.
9. He brought me a pedal/petal.
10. Who said nipple/nibble?
11. Where is the mitten/midden?
12. Did he say simple/symbol?
13. What does anchor/anger mean?
14. Did you say ladder/latter?
15. Did you say mopping/mobbing?
16. Could you tell me something about that locker/logger.
  
17. She shouted render/renter.
18. Have you heard about Mr. Pigman/Pickman?
19. Was Labmate/Lapmate the name of that company?
20. Nobody knew about the pet/bet?
21. Everything happened because of his pride/bride.
22. Tim didn't see that rip/rib.
23. I want to tie/dye my ribbon.
24. The bet/bed cost him a lot of money.
25. Imagine we have guards/cards.
26. The class/glass was dirty.
27. Have a look at this ankle/angle.
28. Let's have a look at the pedal/petal.
29. We wrote nipple/nibble.
30. That's mitten/midden.
31. Please write simple/symbol?
32. Somebody wrote ladder/latter.

33. How do you spell **mopping/mobbing**?
34. Everybody knew that **locker/logger**.
  
35. On the wall it says **render/renter**.
36. Is Mr. **Pigman/Pickman** your teacher?
37. Did you buy **Labmate/Lapmate**?
38. He said **anchor/anger**.
39. What about that **angle/ankle**?
40. Can you see her **back/bag**?

# CHAPTER 2

## PERCEPTION AND PRODUCTION OF L2 PROSODY BY POLISH BILINGUALS IN FRENCH L2

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### Abstract

This paper explores the perception and production of L2 prosody. Prosodic morphing was used to develop a perceptual test from which qualitative analyses of prosody at the interface of phonetics, phonology, syntax and semantics were performed. The results suggest the interdependence of different dimensions of prosody and the impact of cognitive constraint on the late emergence of prosodic structure in L2.

*Keywords:* prosody, speech, structure, L2, perception, production

## 1. Introduction

### 1.1. Prosody, first dimension of language

Prosody is the archaic phase of language ontogeny and its main pathway. The development of prosody in L1 relies on an immature cognitive system, driven by an irresistible attraction to all dynamic elements including speech. This system processes prosodic cues in the absence of the phonemic representation of the segments, facilitating its acquisition (Bijeljack-Balbick 2000). Irreproducible because it is inoperative in later acquisition, this cognitive bias is considered in the literature to be the major obstacle to successful acquisition of L2 prosody. The widely held view is that L2 prosody diverges from that of native speakers despite many years of exposure. Other explanatory hypotheses can be put forward. Among them,

the extreme complexity of the prosodic fact which is simultaneously linguistic (structuring and hierarchy of verbal content), paralinguistic (expressiveness and degree of investment of the speaker in the discourse) and extra-linguistic (physical, psychological and social characteristics of the speaker). By participating in syncretic semiotics, prosody manifests a variable geometry semiotics, because depending on the context, the same fact can have different meanings (Di Cristo 2000; 2013). The paroxysm of complexity is compounded by the multidimensional nature of linguistic prosody (Mennen 2006; 2014; Mennen et al. 2012), which can be broken down into four domains: systemic (phonological), realisation (phonetic), functional (use of prosodic forms in context) and distributional (frequency of use in the same context) (Mennen 2014; Mennen and de Leeuw 2014). The mastery of the linguistic functions of intonation, i.e. the use of systemic elements to signal functions of intonation (Mennen 2006; 2014; Mennen et al. 2012), reveals numerous cross-lingual interferences, suggesting that linguistic processing is particularly permeable to L1. It affects the whole sphere of realisation starting with the amplitude of the intonational gesture (McGory 1997; Wennerstrom 1994; Jun and Oh 2000; Mennen et al., 2010); shape of the contour (Jilka 2000; Ueyama and Jun 1998); realisation of the lexical boundary accent (Tremblay et al. 2016; Gut 2009); accentuation (Barlow 1998; Rasier and Hilgismann 2007; Braun et al. 2011). In particular, it has been shown that L2 learners therefore tend to emphasise almost every word in the utterance regardless of its (known/new) informational value (Rasier and Hilgismann 2007), despite the assimilation of information structuring principles with L1 development. It manifests itself in strong exaggerated F0 modulations or wider melodic movements (Wieden 1993; Schwab 2012) and a strong dominance of rising intonational gestures (Jilka 2000; 2007; Wieden 1993; Santiago and Delais-Roussarie 2015). These properties are observed independently of the source and target languages and are attributed to universal acquisition mechanisms conceptualised as acquisitional primitives (Jilka 2000; 2007).

## **1.2. Prosody L2 target like: the Holy Grail of Second Language?**

Prosody is the only component of L2 competence that is based on purely implicit learning, in the absence of available declarative knowledge. It is a procedural knowledge that can be accessed exclusively through the procedure and falls very much in line with what Klein (1989) has formulated in these terms: communicating to learn = learning to communicate. While the basic auditory perception of raw prosodic contours (F0, intensity, duration) does

not require any language-specific linguistic ability. In L1 development the linguistic value of prosodic parameters is learned over time, while they are perceived and even produced long before (Kakouros and al. 2018). Studies suggest that the automatic adaptation of our perceptual system to prosodic regularities would be operational throughout life, guaranteeing the speed and efficiency of their processing despite individual variability (Kakouros and al. 2018). It is not excluded that the same adaptation device would allow the identification of prosodic regularities in an L2. Furthermore, it has been observed that the exposure to prosodic variation that can lead to perceptual change at both the electroencephalographic and behavioural level seems to be very short (Kakouros and al. 2018), and possible even in institutional learners (Nickels and al. 2013). A longitudinal study by Mennen and al. 2010 found a phonetic improvement in pronunciation, known to be particularly challenging, after 30 months of Punjabi and Italian L1 speakers arriving in the UK. These findings suggest that long-term immersion may not be necessary to master the processing of L2 prosody in a native way.

### 1.3. L2 experience

It is clear that studies from this research paradigm are based on institutional learners, whose L1 practice remains predominant, while L2 exposure and practice are in the minority. The presence of multiple interferences in this learning context is not surprising. It has been shown in the context of active bilingualism involving the daily use of two language systems that its intensity is associated with lower proficiency in the dominant language (Luk and Bialystok 2013). Evidence of the interaction of the two languages in the bilingual individual creating a linguistic competence that is difficult to decompose and describe according to the monolingual standard (Grosjean 1989; Cook 2003; Birdsong 2018). Moreover, studies on the prosody of advanced learners have shown that the values tested were found to be intermediate between L1 and L2, thus confirming the hypothesis of the intonational space common to both languages, the result of the interaction of the two systems present (De Leeuw and al. 2012; Mennen 2004; Mennen and al. 2012). The studies cited also reveal that there are speakers who exhibit monolingual behaviour in both languages Mennen 2004; De Leeuw and al. 2012). Although the factors contributing to the maintenance of two separate systems are not well known, there is empirical evidence for the mastery of L2 prosody.

According to Piaget (1964), the appropriation of knowledge is based on a mental activity that disrupts the entire cognitive system, which is likely to be restructured according to the experiences and learning that it

integrates. In the same way, the monolingual system undergoes a profound upheaval in the process of appropriating a second language, and all the more so if the exposure is long and the input rich. The degree to which the cognitive system adapts to the second language depends on the specific learning context (a certain type of communicative need, +/- rich input, length of stay, language practice etc.). To these contextual factors belongs the determining role of the level of automation of the mechanisms involved in the production of language in L2 and of the signature that the L2 experience will have imprinted on the cognitive system. They will be diametrically different for an institutional learner compared to an immigrant in immersion with rich exposure and frequent relations with L2 speakers. These conditions of second language experience determine the cognitive remodelling and outcome of the acquisition process, including prosody.

Based on the idea that the social norm constitutes a gateway to the most optimal L2 learning (Moyer 2004; 2014), we recruited speakers who have had experience of acquiring French as a second language in the highly demanding social context, with the aim of examining the mastery of L2 prosody through perception and production in a language production task by excellence: the narrative.

## 2. Population and task

Inspired by criteria applied by Hyldenstam and Abrahamsson (2003), L2 French speakers perceived as natives in everyday communication were targeted. Adults at the time of the survey, all participants had a profession requiring a high level of oral French, had been living in France for more than 10 years and used French on a regular basis (see Table 1).

The control group consisted of monolingual speakers of French as a target language and Polish as a source language, matched on age and socio-professional category. 7 phonological experts familiar with the manipulation of synthetic voices were approached for the perception tests. 3 speakers with a strong foreign-sounding pronunciation were recruited.

The analysis corpus consisted of language productions (film narratives). In these narratives the participants narrate an episode of the silent film *Modern Times*, after having watched it once in the absence of the experimenter, in response to the instruction: "Tell what happened in the film when I left". The experimenter leaves the room at the moment before the chosen episode, so that it can be viewed in its entirety in her absence to solicit productions in the absence of shared knowledge.



**Table 1. Representation of the Franco-Polish bilingual cohort according to the criteria of age of acquisition, length of stay and level of education.**

Age groups	< 6	(6-10)	(11-15)	(16-20)	(21-26)	(27-34)
Number	5	4	6	4	4	4
AOA (average age)	3,9	7,25	12,3	17, 75	23,25	31,25
LOR (average of years)	38,7	19	28,1	29,25	31	22,5
Educational Levels (average)	Bac + 3,2	Bac + 3,5	Bac + 4,8	Bac +3,5	Bac +8	Bac +6

### 3. Methods

#### 3.1. In perception

The challenge in creating a spontaneous speech prosody perception task is to manage to extract prosody from speech samples, in order to avoid that the perceptual judgement runs up against the segmental (pronunciation) bias. Thus, we experimented with speech synthesis and automatic processing tools and by applying the prosodic morphing method.

##### 3.1.1. Prosodic morphing

The transcribed files were processed in Praat (optimal F0 setting, spectral cleaning and correction of false F0 detections, creation of the xml file, Praat collection, etc.). The resulting phonetic transcripts were manually re-corrected (paying particular attention to disfluencies, schwas, slurs and pauses), and then given as input to the Acapela Multimedia TTS speech synthesis system. Only two voices were used: one female and one male. The synthesis outputs were in turn segmented by automatic alignment in Easyalign and manually corrected at each processing stage. Using the "PSOLA" re-synthesis model and with the precious help of Philippe Boula de Mareuil from the LIMSI laboratory, phoneme by phoneme, the duration and F0 parameters of the originals were transplanted onto the synthesized voices. All false detections were carefully corrected manually. The data thus

obtained present homogeneous segmental properties because they were designed with the French phonemic system and the prosody of our test speakers. However, formal bias (choice of lexical and morpho-syntactic encoding) cannot be excluded.

### **3.1.2. Perception test**

Synthesis samples corresponding to stories from the same episode, averaging 36 seconds each, were extracted and re-recorded in a random order for each evaluator. 35 Extracts were used for the experiment, 5 of which were in L1 French, and 3 by FRL2 speakers with a lower level of French for contrast. The experts evaluated the samples according to a mixed scale, (numerical and verbal at the same time) associating values from 0-4 with categories formulated as follows: (0: prosody certainly not native; 1: probably not native, 2: prosody perhaps not native; 3: prosody probably native; 4: prosody certainly native). They were asked to consider only the prosodic aspect of the data to be evaluated.

## **3.2. In production**

### **3.2.1. Intonational period**

We are interested in prosody as a discourse construction tool, exploring its most fundamental function: segmentation and grouping. We have chosen the cognitive model of prosody (Lacheret 2003), which aims to bring out a set of phonetic indices mobilised to segment productions into units of maximum rank: intonational periods (P). The particularity of this model is that it takes perception into account. The proposed approach is inductive (bottom-up processing) and is based on phonetic observation, which leads to a phonological representation and symbolic interpretation (Lacheret 2003; 2007). The objective processing of the acoustic parameters is based on the evolution in time of the fundamental frequency (F0) modelled by Bernard Victorri (Lacheret and Victorri 2002). Segmentation of the sound continuum into periods is done automatically using Anamor processing software. The detection criteria are as follows:

**Table 2. Parameters for automatic detection of maximum rank units (intonation periods).**

Parameter	Description	Value
<b>Pause duration</b>	The interval between two portions of F0	Above the 300ms threshold
<b>Amplitude of the gesture</b>	Height difference between the last F0 extremum and the mean of F0 over the entire portion of the signal preceding the pause.	Above the threshold in the order of 4 semitones
<b>Amplitude of the jump</b>	Pitch difference between the last F0 value before the pause and the first F0 value following the pause (Reset)	Above the threshold in the order of 3 semitones
<b>Hesitations (uh)</b>	Absence of hesitation phenomena in the immediate vicinity of the break.	Absence

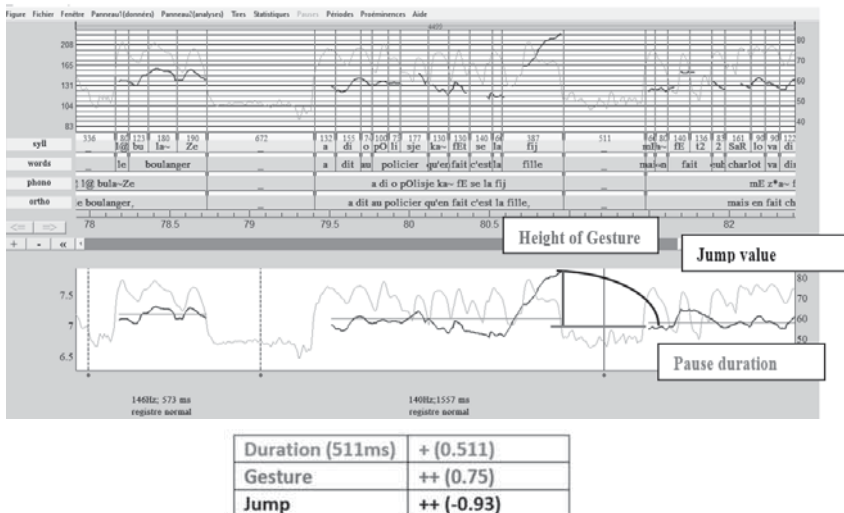


Figure 1: Visualisation of intonation period detection according to the parameters: Duration, Jump and Gesture. All three parameters have positive values.

The segmentation algorithm is based on fixed value scales. Segmentation decisions are made according to the magnitude of the thresholds, whose values must be higher than the threshold. If one of the parameters has a lower value, the two remaining parameters must have maximum values because the sum of the values of the different thresholds must be positive.

**Table 3. Presents the ranges of values according to the order of magnitude of the thresholds. The segmentation decision is made on the basis of the overall situation (Lacheret 2003 pp. 58).**

<b>PAUSE</b>	<b>GESTURE</b>	<b>JUMP</b>
Pause (0.25) = [-pause] = -1	GESTURE (0.24) = [-gesture] = -1	JUMP (0.15) = [-geste] = -1
Pause (0.33) = [=pause] = 0	GESTURE (0.4) = [=gesture] = 0	JUMP (0.3) = [=jump] = 0
Pause (0.66) = [+pause] = 1	GESTURE (0.66) = [+gesture] = 1	JUMP (0.6) = [+jump] = 1
Pause (0.66<) = [++pause] = 2	GESTURE (0.66<) = [++gesture] = 2	JUMP (0.6<) = [++jump] = 2

### 3.2.2. Internal structure of the intonation period.

Segmentation is based on a delineation into intonational clusters (IG) defined as a sound assembly, with a perceptually salient demarcation in final stress. The feature matrix (below) is used to label the boundaries of the (IGs) in order to estimate the type of relationship that unites successive (IGs). The definition of relationship is based on the principle of differentiation, where the accentual degree of the second group is higher than the previous one, the groups in question are considered related.

**Table 4. Matrix of phonetic features used to describe the boundaries of IG intonational groups (Lacheret 2003).**

<b>Descriptive paradigms</b>	<b>Feature matrix</b>
Contour and its characteristics	Static (T), Rising (R), Falling (F), Dynamic: (RF), (FR)
Level crossed	Over High-pitched (OH), High - pitched (H), Medium (M), Low-pitched (L), Over Low-pitched (OL)
Syllabic lengthening	
Pause	(#)
Hesitation	uh

### 3.2.2.1. Principles of inclusion

The principle of prosodic grouping is based on the assumption that the perception of significant prosodic contrasts between two successive final's intonational groups (IG) prominences reveals the hierarchic relationship between these two groups (Mertens 1987; Lacheret 2003). As a result, a GI-1 with a higher prominence than the GI -2 subsequent to its right, the two groups are a break-up relationship. And conversely, a GI-1 whose final prominence is weaker than that of a immediately adjacent IG-2 to its right, is dominated by the latter and grouped with it.

Depending on the features mobilised (see Table 4) different grouping principles can be formulated. Two principles were chosen according to their degree of perceptual salience.

**RDOMI: (Grouping by Intonational Dominance).** This principle is an explicit marker of intonational inclusion. The accentual degree of IG dominates that of IG if its terminal frequency excursion into the high -pitch level is higher by at least one tone. As illustrated below, the accentual group IG-1 ending on the syllable 'ta' is dominated by the immediately adjacent accentual group to its right IG-2 on the syllable 'po' whose rising gesture is 2.5 tones higher than that of IG-1.

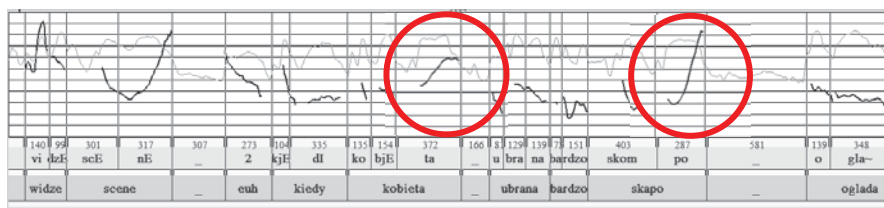


Figure 2. Visualisation of the Intonational Dominance Grouping principle

**RNEUT: (Grouping by flat linear structure).** A static tone perceived as accented results from the process of accentual neutralisation (Lacheret 2003). An inclusion relationship is established between the intonational group carrying the static tone (T) and the unit to its right. The final static contour of the group is part of the range of cues available in French to mark cohesion between consecutive groups in the spoken chain (Lacheret 2003).

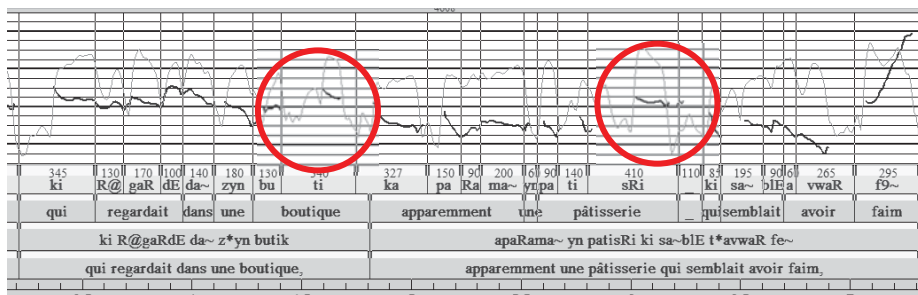


Figure 3. Visualisation of the grouping principle in the context of flat linear structure

### 3.2.2.2. Principles of segmentation

Intra-periodic segmentations are justified on the basis of three criteria: stronger salience (IG-1 has a more salient marker than IG-2 to its right), equal salience (the strength of the salience of the two intonational groups in succession is equivalent), and reset (the reset of IG2 signals the opening of an internal constituent of the prosodic unit). Segmented intonational groups do not have a dependency relationship with each other.

Analogously to the grouping principles, the mobilised physical features give rise to the different segmentation principles: SEGA: (Segmenting in a context of syllabic lengthening).

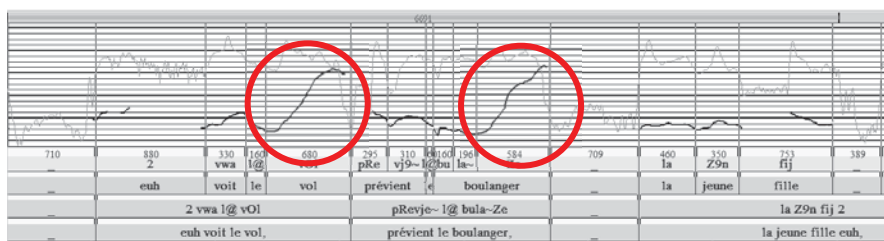


Figure 4. Visualisation of the principle of segmentation in the context of syllabic lengthening.

### SEG DY: (Segmenting with Dynamic contour)

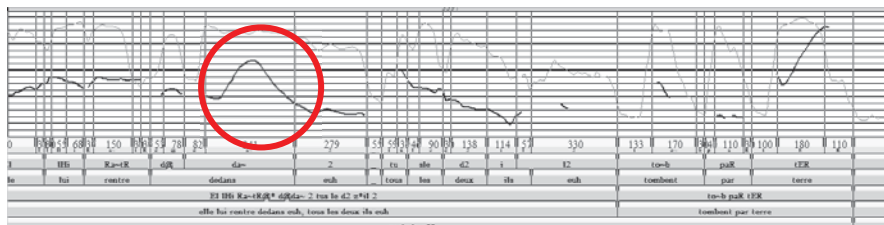


Figure 5. Visualisation of the Segmentation principle in the context of Dynamic Contour.

### 3.3. Prosody-syntax interface

In discourse analysis three types of configurations at the interface between the intonational period and syntactic constructions emerge from numerous studies (Avanzi 2010; Lacheret et al. 2014). The first is alignment, when syntactic and prosodic cues are congruent (simple or complex sentence: main and subordinate), the second is fragmentation of syntax by prosody (segmentation of one of the constituents of a sentence, or of a subordinate of the main) which gives it the status of a dislocating period, and finally, when a single period covers at least two sentences, it constitutes an encompassing unit.

### 3.4. Prosody - semantic interface

Following Mandler and Johnson's model (1977) the division of narratives into essential event sequences (initial situation, triggering event, actions (here obstacles), resolution, final situation and peripheral (internal state, coda) was compared to the sequencing of the narrative according to intonational periods. Three types of constructions in prosody-semantic interface emerge from our analysis at the interface of the cognitive structure of the narrative (CS).

- a) congruency  $P = CS$ , when a component of the cognitive schema is materialised through a single period:

P7 [mais et/ il y a une vieille dame/ qui qui la qui la qui l'aperçoit]  
(Complication A) (FRL2BND)

*P7 [but and / there is an old lady/ who who the who the who the who sees it] (Complication A) (FRL2BND)*

- b) non-congruency CS = Pn, when a construction stage extends over several periods:

P14 [comme par hasard/ le bon samaritain arrive]

P15 [tout à fait par hasard]

P16 [monsieur Chaplin] (Complication B) (FRL2NNTSZ)

*P14 [as luck would have it/ the Good Samaritan arrives]*

*P15 [quite by chance]*

*P16 [Mr Chaplin] (Complication B) (FRL2NNTSZ)*

- c) non-congruency P = CSn, when several components of the pattern are contained in a single period:

P4 [euh dans la confusion/ donc une euh/une euh/passante/a dénoncé/ la jeune fille/ au livreur / qui a couru/ après la jeune fille] (Obstacle 2, Consequence OB2) (FRL1M)

*P4 [uh in the confusion/ so a uh/ a uh/passenger told/ the girl/ to the delivery man/ who ran/ after the girl] (Obstacle 2, Consequence OB2) (FRL1M)*

## 4. Results

### 4.1. Perception

An analysis of variance (ANOVA) of the results on prosody suggests a significant effect of the speaker group among the 8 distinguished [ $F(7,272) = 3.38$ ;  $p < 0.01$ ]. In contrast, pairwise Student's t-tests show a significant effect only with the learner group. The result suggests that the prosodic morphing test does not differentiate bilinguals from monolingual French, but it does seem to differentiate learners from bilinguals and monolinguals combined.



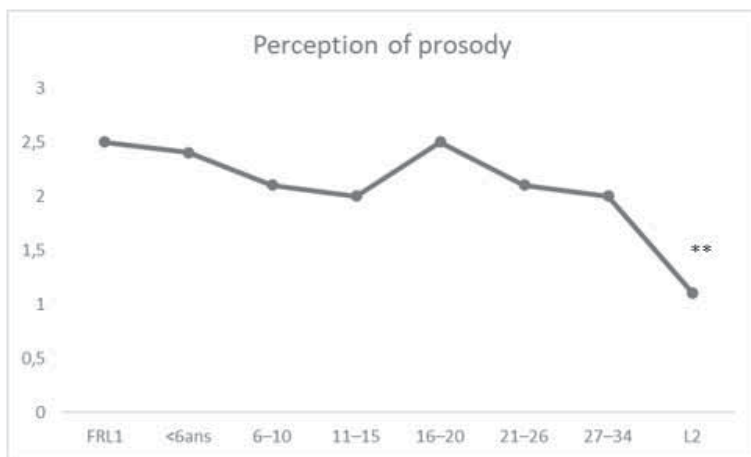


Figure 6. In vertical the average performance according to the judges, in horizontal the age groups according to the first exposure to L2 French.

However, the standard deviation averaged  $\sigma = 1.202$  (min: 0.462 / max: 1.597). Only 5 speakers out of 35 (14.2%) were evaluated with a dispersion below 1, suggesting a possible difficulty of the perceptual task itself.

An individual analysis of the results (see Figure 3) shows that one FRL1 speaker was not correctly recognised. His mean score of 1.75 with  $\sigma = 1.281$  places him in the category of possibly native speakers. The lack of fluidity of his speech, with backtracking and repetition, probably contributed to the impression of a laborious construction of his speech, and confused his assessment:

P1 [alors euh y a une@, jeune fille@, qui en, d'abord, je vais commencer, y a d'abord, y une voiture qui est, ouais, c'est un ca, une voiture@, avec des ma euh, des marchandises, qu'arrive, et en fait, c'est pour un boulanger (...)] (FRL1NI).

*P1 [so um there's a@, young girl@, who in, first, I'll start, there's first, there's a car that's, yeah, it's a ca, a car@, with ma um, goods, that's coming, and in fact, it's for a baker (...)] (FRL1NI).*

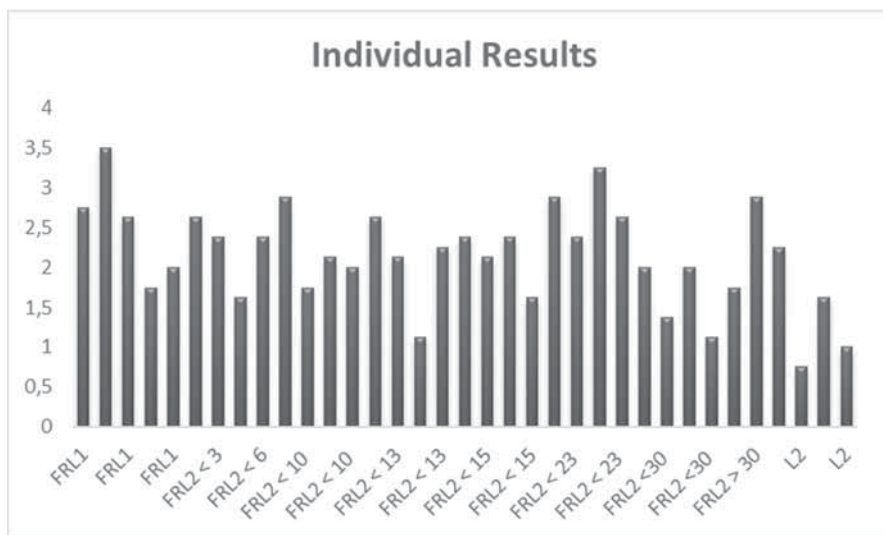


Figure 7. The average performance by raters for each subject. The line delineates the scores of the bilinguals aligned with the best results of the French monolingual

By removing this atypical speaker, the recognition of natives becomes higher 2.718 and the dispersion lower  $\sigma = 0.931$ . The natives approach the category *probably native prosody*. Similarly, the % of experts able to recognise native prosody rises to 50%.

Finally, regarding the ability of expert judges to recognise an L2 learner, the average score of 1.125 places them in the category: *prosody probably not native*. However, the dispersion betrays a lack of consensus:  $\sigma = 1.127$ . Only half of the judges give learners a score below 1.

Despite the questionable perceptual result regarding the recognition of monolingual natives, the narratives of the 6 bilingual speakers selected for further analysis are those whose perceptual result aligns with the result obtained by the 3 monolingual speakers with the highest scores and those whose speakers obtained the lowest scores.

## 4.2. Production

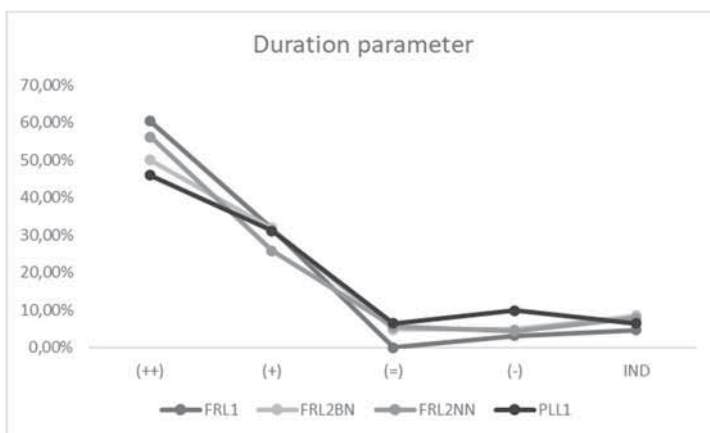
According to the quantitative measure of verbal fluency, the results of monolingual and bilingual French in L2 prosody are comparable. The score of speakers with non-native prosody shows that they produce on average one syllable less, suggesting the lower level of L2 French proficiency.

Groupes	FRL1	FRL2BN	FRL2NN	PLL1
Average speech speed (syllable/second)	3,6	3,7	2,9	3,2

Figure 8. Represents the average number of syllables per second in four groups.

#### 4.2.1. Intonational period

The observation of the values of the detection parameters: Duration, Jump and Gesture (Figure 9) suggests a homogeneity of tendencies of all French speakers compared to monolingual speakers of Polish. However, monolingual French speakers show the highest percentage of values well above the threshold (++) in the three parameters considered. The factors lowering the values of the parameters are not identical.



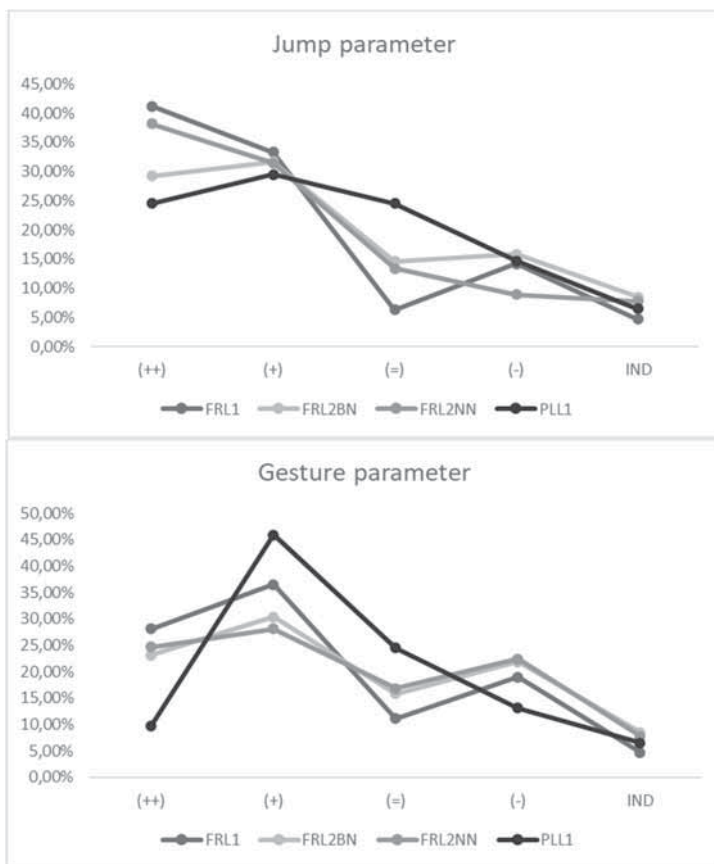


Figure 9. The graphs represent the detection values of Duration, Jump and Gesture according to 4 groups of speakers and as a function of the parameters: well above the threshold "++"; above the threshold "+"; around the threshold "="; below the threshold "-"; not detected "IND»

Two lowering factors affect the values of Jump and Gesture in French. The presence of dynamic contours (RF) at the end of the intonational period lowers the value of these two parameters. The Jump value is affected by the reduction of the pitch interval between the last f0 point of the tested contour and the initial contour of the next subsequent period. The value of the Gesture is affected by the lowering of the last extremum of the f0 of the contour at the end of the period, compared to the average of f0 of the period. The Gesture value can also be affected by the insufficiency of intonational

excursions at the end of the period boundary not in the high register but in the low register, or even below it.

For Polish L1 it is the generally high resets at the beginning of the period. In the context of the R and FR contours at the end of the period, the detection values are also reduced. The F-contour in Polish, associated with a high reset, can only contribute to increase it. The second lowering factor is related to the salience peaks internal to the period.

In bilinguals in prosody all parameters are slightly lowered, the difference is about 10.3% for the Duration parameter, 11.5% for the Gesture parameter, and 13.5% for the Jump parameter. Analysis of lowering contexts revealed several lowering factors for Jump: an "insufficient" rise at the end of intonational period, as in the target language, or a falling contour, associated with the neutral reset, or creaky voice. Gesture shares the same lowering contexts as Jump.

In non-native speakers the duration parameter plays the determining role in detecting the intonational period. The amplitude of Gesture is considerably lowered, concerning 39.3% of periods. The main factor of Gesture lowering is the presence of the salience peaks internal to the period which can only be compensated by end-of-period gestures above 8dt. The jump values approach the FRL1 monolinguals, but their enhancement requires a different process. In neutral or low reset contexts, the realisation of the F or RF end-of-period gestures in the high frequency ranges participates in the increase of the Jump value. The lowering contexts mainly concern whispers and creaky voice.

#### **4.2.1.1 End contour of intonational period**

In French L1, the end-of-period marking is mainly based on the rising melodic gesture. Polish L1 shows a greater variability in this respect, but with a slight advantage of the rising contour. Another peculiarity of the PL group is the absence of the convex RF contour, replaced by the FR contour not attested in the FRL1 corpus. Native bilinguals use the R contour preferentially, as do native French speakers. On the other hand, they have not "known" how to get rid of the use of the descending gesture, which retains comparable values as in the group of Polish natives. We also observe that the convex FR gesture has almost disappeared (one occurrence) from the productions of native bilinguals. As for the use of the static T and convex RF contour, it is comparable.

The NNs, like the BNs, are intermediate between monolingual source and target language speakers in the use of the rising gesture.

However, they differ from other Polish speakers in their less frequent use of the periodic boundary marker with a descending tag.

NNs, like BNs, are intermediate between monolingual source and target language speakers in the use of the rising gesture. However, they differ from other Polish speakers in the less frequent use of the periodic boundary marker with a descending gesture.

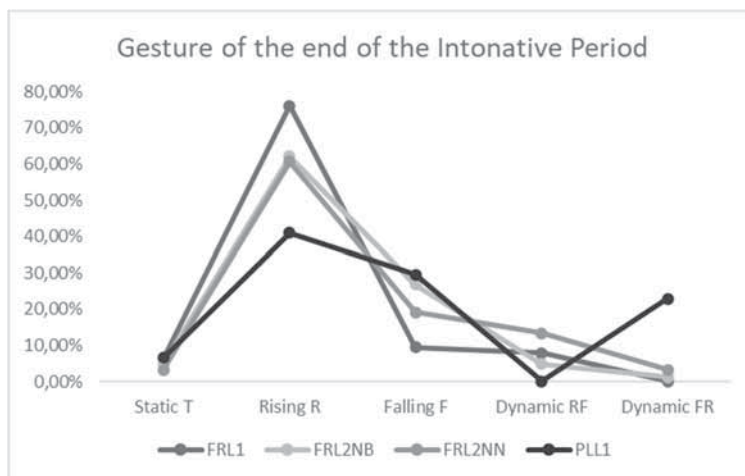


Figure 10. The distribution of intonational contours according to groups. (FRL1): target language; (FRL2BN): native bilinguals in prosody; (FRL2NN): non-native bilinguals in prosody; PLL1: (source language). Vertical: % of occurrences; horizontal: intonational contours: T (static); R (rising); F (falling); RF (rising-falling), FR (falling-rising)

#### 4.2.1.2 Contexts of use of the falling gesture.

The analysis of the use of the descending contour at the end of the period suggests that it does not cover the same functions in the source language and in the target language. In FRL1 it is present at the end of the narrative, assuming a closing function except in one case, whereas in PLL1 the narrative can be structured mostly with descending contours. Bilinguals in L2 prosody use it in accordance with L2 at the end of the narrative, however, they create a sequence of 2 or 3 closing periods:

P11 [et je crois/ que c'est Ch Charly Chaplin/ qui rend la baguette] F

P12 [et ça se finit comme ça il est embarqué/ fin il est embarqué/ avec la foule/ on sait pas trop moi ché pas trop pourquoi] F

P13 [fin je crois ça / j crois que c'est tout] F

P11 [and I think/ that it's Ch Charly Chaplin/ who gives back the wand] F

P12 [and that's how it ends, he's taken away/ well he's taken away/ with the crowd/ we don't really know why] F

P13 [well I think that / I think that's it] F

### 4.3. Nature of the intonational period

At the syntactic interface (Figure 11) we observe that intonosyntactic congruency represents only half of the constructions in source and target languages (52,30% for French and 55,60% for Polish). This alignment seems to be higher in L2 (62% in BN and 68,5% NN). The congruency concerns more a simple sentence in target language French, whereas in source language Polish both constructions (simple and complex). On the other hand, the nature of constructions other than aligned shows an opposite tendency in monolinguals: packaging in FRL1 (25.30%) and dislocation of constituents (21.5%) in PLL1.

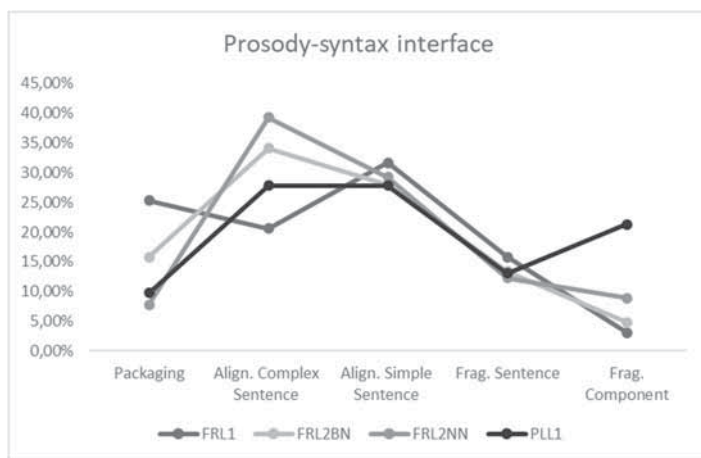


Figure 11. The distribution of intonosyntactic constructs across speaker groups.

The most representative intonosyntactic configurations in FRL2 is the alignment on complex sentences, and in second place on simple sentence. The difference between the two groups concerns the nature of non-aligned constructions. In this respect, BNs construct encompassing periods and

dislocations on simple sentence as in the target language. Conversely, non-native speakers dislocate and encompass little as in PLL1.

The direct consequence of the particularities of the intonosyntactic structure between source (dislocating) and target (encompassing) languages is the use of intonational periods with a single intonational group (exoperiods), which is frequent in L1 Polish and rare in L1 French. The use of finer granularity constructions is observed in both L2 groups (Figure 12).

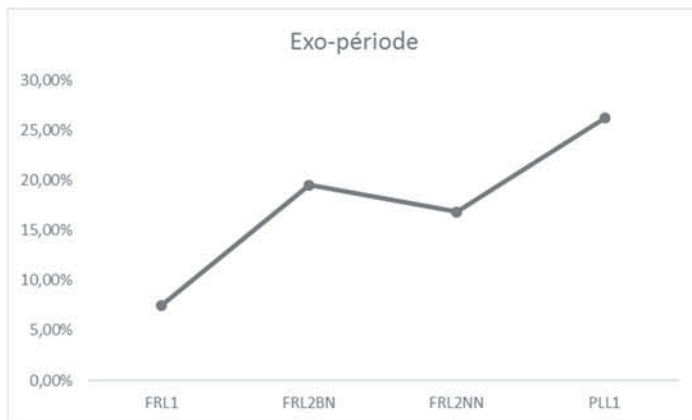


Figure 12. Graphical representation of single intonational group constructions (exoperiods).

#### 4.4. Internal structure

Our results support the preponderance of grouping strategies (REG) in the prosodic structuring of narratives in L1 French, L2 French BN and L1 Polish, despite the very small gap between the two types of strategies for the source language. In contrast, for non-native speakers the result is the opposite. Within-period groupings account for only 35%. It is in this group that formulation difficulties seem to be higher as well (Figure 13).



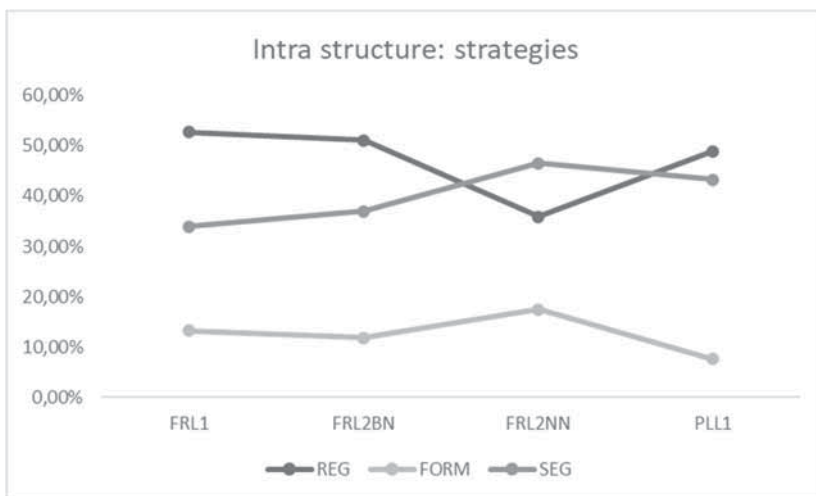


Figure 13. The percentage of grouping (REG) and segmentation (SEG) strategies within the period. The label FORM denotes disfluencies.

#### 4.4.1. Grouping

The analysis of grouping strategies (Figure 9) shows that French as a target language and Polish as a source language are at two extremes in the choice of preferential strategies. French L1 opts for the principle of clustering in the context of accentual neutralisation (low salience), whereas Polish prefers the principle of intonational dominance (salience), which is a hierarchic principle by excellence. BNs choose both a target language strategy (RNEU) and an L1 strategy (RDOM). Non-native speakers are distinguished by their reduced use of grouping strategies. The RNEU principle is infrequent and the advantage of RDOM minimal, mainly in relation to the end of the intonational period.

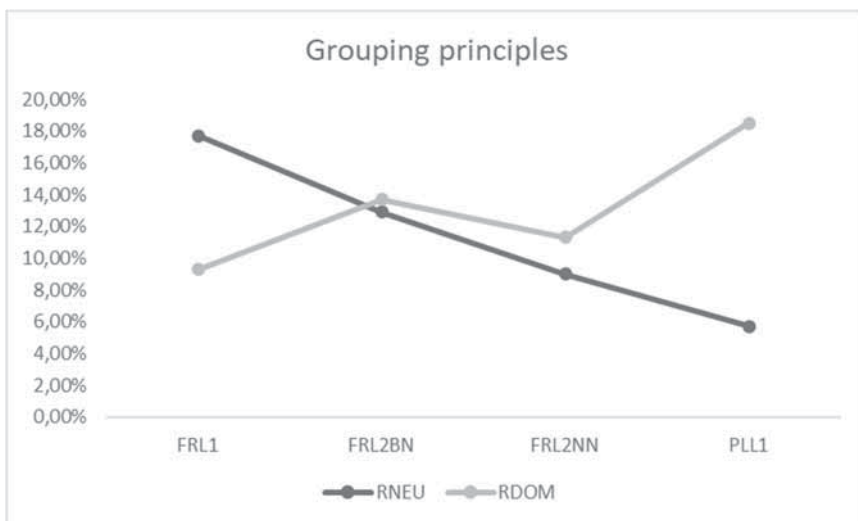


Figure 14. Distribution of the RNEU (Grouping by accentual neutralisation) and RDOM (Grouping by intonational dominance) across the 4 groups.

#### 4.4.2. Segmentation

Two types of segmentation strategies were analysed. The one that involves a process of grouping on the left and breaking on the right (SEGDOM) and the focusing principle by excellence (SEGDY); and on the other hand the strategies with no hierarchical relationship with what comes before, only breaking with what follows. This result shows that the use of the SEGDY principle in non-native speakers in prosody is not an interference of the L1, which uses a perceptually salient principle (SEGDOM) in the service of prioritisation to mark a boundary after intonational groups grouped within the period. NNs rarely segment in the context of intonational dominance, suggesting that intonational subordination linking is probably poorly mastered.

Unrelated segmentation principles are predominantly deployed in non-native speakers, but source language usage is equally frequent. The use of NLS seems comparable (5% difference) for the SEGA principle. On the other hand, all Polish speakers combined make little use of the segmentation principle in the pause context.

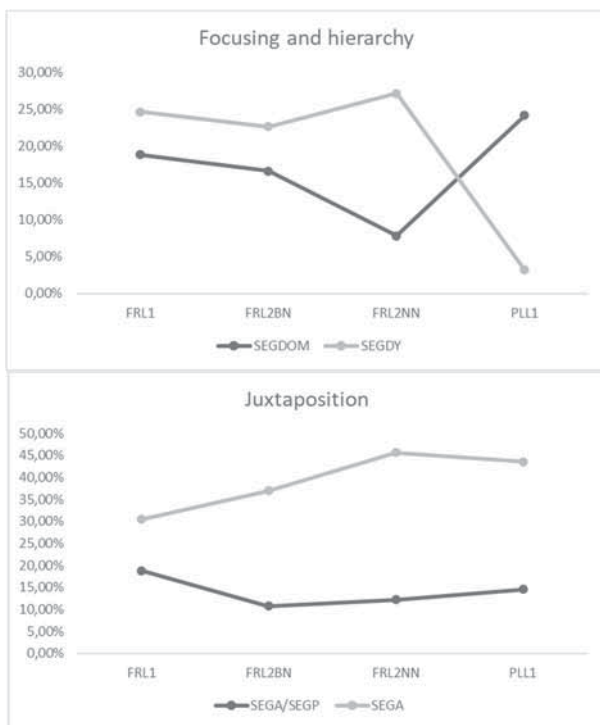


Figure 15. Distribution of two categories of segmentation principles (Segmentation in the context of intonational dominance (SEFDOM) & (SEGDY) Segmentation in the context of dynamic contour) as well as segmentation principles based on syllable lengthening (SEGA) without and with the pause (SEGA/ SEGP).

#### 4.4.3. Prosody-meaning interface

The congruence between the stages of the cognitive schema of the narrative and the intonational period remains in the majority throughout the corpus. (Figure 11).

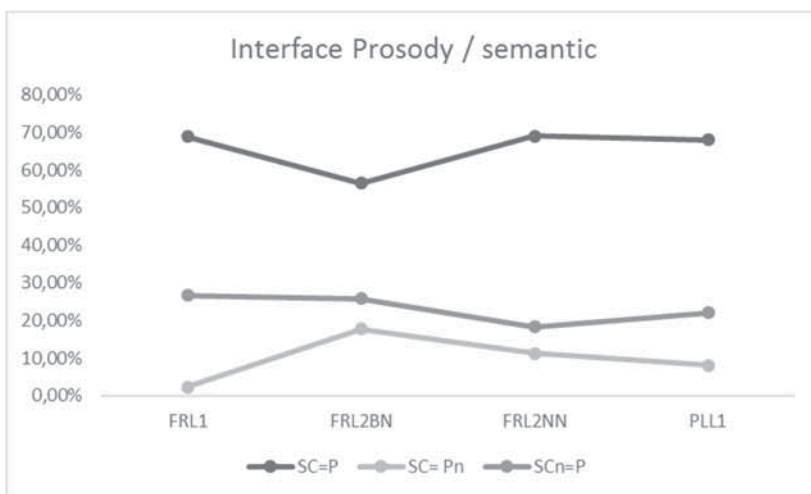


Figure 16 Constructions at the interface of prosody and CS expressed as a percentage (vertical) across the 4 groups (horizontal). SC=P represents an alignment between cognitive structure and intonational period, SC= Pn represents the absence of alignment where a cognitive stage of the narrative is instantiated by at least of 2 intonation periods; SCn=P refers to a construction where several constructional stages are contained in a single period.

However, bilinguals seem to be more concerned with constructions where the expression of a stage of the narrative extends over two or more periods. We distinguish two categories of constructions: i) a semantically empty periodic component (P0), whose content is a reformulation or a precision of already known information (more frequent) (Example 1): ii) a construction with a fine semantic granularity (analytical mode) (Example 2):

- 1) P8 : [et au moment où elle s'enfuit / en fait elle tombe dans les bras de / de Charly Chaplin / qui apparaît d'un autre côté / à l'autre bout de la rue]  
P9 [ou de passage plutôt] (P0)  
*P8: [ and as she runs away / in fact she falls into the arms of / Charly Chaplin / who appears on the other side / at the other end of the street ]*  
*P9 [or rather, passing by] (P0)*
- 2) P19 [euh et là / euh toujours la même/ jeune dame très bien habillée]  
P20 [euh intervient / à nouveau]  
P21 [et explique / au boulanger / que c'est la jeune fille /qui a /volé / la baguette] (Obstacle)

*P19 [uh and there / uh still the same / very well dressed young lady]*

*P20 [uh intervenes / again]*

*P21 [and explains / to the baker / that it was the girl / who / stole / the baguette]*

*(Obstacle 3)*

#### 4.4.3.1 Circumstantial components

The expression of three circumstantial components: Complication, Attempt and Consequence was analysed at the interface of the intonational period (Figure 17).

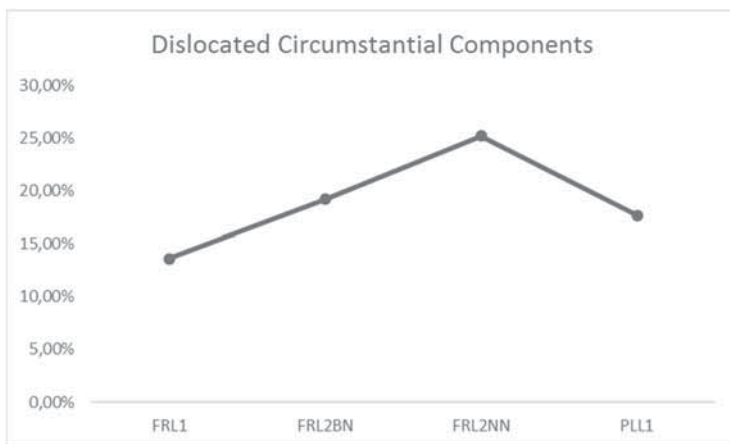


Figure 17. Distribution of the expression of circumstantial components in an autonomous period (figurative modality) across the speakers of 4 groups.

The result shows that the figurative expression of these components distinguishes non-native speakers in prosody (example 3, 4).

3) *P8 [il y a une grosse/dame derrière/ qui qui qui qui qui voit la scène]*  
(Obstacle 2)

*P9 [elle la poursuit]* (Complication)

*P8 [there's a big lady/who's behind/who's who's who's who's seeing the scene]* (Obstacle 2)

*P9 [she is chasing her]* (Complication)

4) P2 [y a / f futur amie de / de Charly /euh elle a volé une baguette] (Trigger Event)

P3 [en / elle est partie/ en courant] (Attemp 1)

P2 [y a / f future friend of / of Charly /euh she stole a wand] (Trigger Event)

P3 [in / she left / running] (Attemp 1)

The FRL1 group differs from the other French speakers by the more frequent expression of circumstantial components in "integrated", i.e. in the same intonational period as the main proposition. Like NNs, native bilinguals also show a higher percentage in the "isolated" mode compared to monolingual French and similar to Polish monolingual.

FRL1 : 4P [euh dans la confusion/donc une euh une / passante/a dénoncé / la jeune fille/ au livreur/ qui a couru/ après la jeune fille] P = [Obstacle2 +Conséquence OB2] (FRL1AN).

*FRL1: 4P [uh in the confusion/ so a uh a /bystander/ reported/ the girl/ to the delivery man/ who ran/ after the girl] P = [Obstacle2 +Consequence OB2] (FRL1AN).*

## 5. Discussion

### 5.1. Perception

In the light of the perceptual results, we can suggest that prosodic proficiency would differentiate competent speakers from learners. The results suggest that the assessment of prosody can be comparable between native and bilingual L2 French speakers, independently of the age of exposure (AOA) in the most optimal acquisition context, marked by a high social demand.

However, despite the expertise of the judge-rater, the experimental prosodic morphing device posed evaluation difficulties, highlighted in particular by the high inter-judge dispersion and the scores below those of monolingual natives. This difficulty seems to have weakened the certainty of the evaluators, by reducing the % of extreme responses (0 and 4) which only represent 30,1% of the total responses. (respectively 11% for certainly not native prosody and 19, 8% for certainly native prosody). Furthermore, the difficulty in evaluating the samples may also stem from the unbalanced distribution between the categories (8,5% L2, 14,2% FRL1) compared to 77.1% bilinguals pre-selected according to the criterion of assimilation to natives in daily exchanges. This imbalance in favour of almost all high-

performing samples may have constituted an assessment bias as the contrast was probably very insufficient. The small number of assessors also did not help the reliability of the result.

## 5.2. Production

Despite reservations about the perceptual task, careful analysis of the whole narratives of the strongest (BNL2) and weakest (NN) speakers seems to confirm the perceptual result, without showing a result of bilinguals in absolute conformity to the L2. In line with Mennen (2014), the multidimensional analysis revealed an interdependence of different dimensions of prosody, which given the small size of our cohort, and the purely exploratory purpose of our analyses, does not lend itself to credible statistical analysis. The interdependence in question is illustrated here by the use of a succession of narrative closure periods marked by the falling contour, in accordance with the L2. This process resulting from the high-level processing has a cascading effect at the systemic level by increasing the use of the descending gestures at the intonation period boundary at the group level, as well as at the realization level by generating a reduction in the values of the detection parameters (Jump and Gesture).

Without taking the context into account, this use of the falling gesture at the end of the period could have been wrongly attributed to interlanguage.

Our analysis also suggests a relationship between prosodic structure and L2 production constraints. It is manifested in speakers with native prosody by traces of finer prosodic fragmentation at the interface of the cognitive structure of the narrative such as semantically incomplete periods (P0-SC), exoperiods but also by constructions where several periods instantiate a stage of the cognitive scheme of the narrative. While intosyntactic congruency in the expression of complex sentences is largely superior in this group, we cannot rule out the idea that alignment with even complex syntax constitutes a facilitating effect. This type of congruency is more frequent in L2 speakers than in monolinguals. Moreover, the % of encompassing periods is smaller than in FRL1. These traces of residual decomposition with a finer prosodic granularity do not only concern the macrostructural level. Insofar as the internal structure is homogeneous in FRL1, in order to prioritise within the period, NLs will resort to the principle of intonational dominance, as in L1, in order to make up for the lack of means in L2. This process of fragmenting content through prosody hardly seems to us to be attributable to a failure in the mastery of prosody. It is rather a discrete consequence of the impact of specific cognitive processing,

generated by the production in L2. Contrary to the literature on fine syntactic granularity in L2 (Bartning 2012), the fragmentation of content by prosody would be a consequence of the cognitive load, and not a strategy for its reduction. It remains to be seen whether it is plausible that L2 language activity in a bilingual, native-like speaker requires additional cognitive effort, or whether processing mechanisms might be less efficient. In second language acquisition, only one study (Flege and McKay 2004) suggests the existence of a cognitive effect on sentence production time in both early and late Italian-English bilinguals living in Canada for 20 years and using English regularly. The observed effect cannot be explained either by the lack of automation of language processes or by the instability of articulatory patterns. The durations reflect, according to the authors, differences in the processing resources that bilinguals must expend to inhibit their L1.

The link between prosody and the automation of language production processes is even more apparent in non-native speakers of prosody. The emergence of prosodic structure is a function of segmental content construction and rapid coordination between conceptualisation, formulation and articulation. However, one of the characteristics of L2 productions is the often excessive presence of verbal disfluencies of all kinds, and a drop in fluency, which reflect difficulties in formulation but also in content elaboration. Hastily interpreted as a prosodic failure (Huang and Jun 2011), these difficulties result in a reduction of the semantic content of the intonational period at the interface of the cognitive structure. The production of isolated periods is accompanied by a semantic impoverishment, as each period is articulated around a component of the cognitive pattern. This type of intono-semantic structuring has the peculiarity of being devoid of prosodic hierarchy, as each informational input is materialized in the same, most optimal way (periodic boundary) with the same semantic weight. The fragmentation of syntax by prosody (dislocating constructions) also illustrates this. Similarly, the internal organisation of the period is based more on segmentation. In line with Rasier and Hilgsmann (2007) our results suggest that the use of salient markers creating a sense of over-emphasis within the period would be due to a highlighting of lexical items which are not accessible automatically but require controlled and laborious access. In other words, the difficulties of formulation are reflected in the prosodic structuring, highlighted in particular by the significant melodic variations within the intonation period which lower the value of the Gesture parameters. Moreover, these perceptually salient melodic variations are not deployed for linking or grouping. Instead, they are rather suites of intonational groups, prosodically marked, highlighting each stage of construction,



illustrated in particular by the segmentation strategies in the dynamic context. Perceptual salience is not used for prosodic cohesion and hierarchy, which seem to be absent from speakers' productions with non-native prosody. In keeping with Mennen (2014), the main function of prosody is to signal groupings of segments that go together. The occasional use of grouping principles suggests that this process is still being acquired at this stage.

We hypothesize that prosodic structuring more complex than the basic pattern of marking the intonational group boundary can only emerge with the release of cognitive resources, supported by the automation of low-level processes. As long as lexical access requires latencies and the formulation process consumes all attentional resources, it does not seem conceivable for an L2 speaker to proceed by "idea unit" in the construction of his discourse but by lexical unit only. Only when lexical access is no longer controlled, and attention can be focused on the content to be expressed, can the prosodic structure emerge.

## 6. Conclusion

This experimental and exploratory study on the acquisition of prosodic mechanisms of discourse structuring in French as a second language provides evidence in favour of the successful acquisition of this skill, in the context of a highly demanding socio-professional environment. It shows that prosodic organisation is particularly sensitive to the implementation of cognitive processes. The greatest difficulty that can be recognised in the acquisition of L2 prosody is the cognitive cost that is too great to allow the emergence of a prosodic structure that conforms to the L2 before the highly advanced stage. It seems to be the last skill to be acquired, whose use in context requires a very advanced level of L2. It is a final stage of L2 acquisition.

## References

- Avanzi, Mathieu. "Rattachement et fragmentation de la syntaxe par la prosodie." *Travaux de linguistique* 60, no.1 (2010) : 145-166.  
<https://doi:10.3917/tl.060.0145>.
- Bartning, Inge. "Synthèse rétrospective et nouvelles perspectives développementales. Les recherches acquisitionnelles en français L2 à l'Université de Stockholm." *LIA* vol.3, (1) (2012) : 7-28.
- Bijeljac-Babil, Ranka. "Acquisition de la phonologie et bilinguisme précoce." In *L'acquisition du langage. Le langage en émergence. De la*

- naissance à trois ans*, edited by Michèle Kail and Michel Fayol, vol.1, 169-192. Paris: PUF, 2000.
- Birdsong, David. "Plasticity, Variability and Age in Second Language Acquisition and Bilingualism." *Frontiers in Psychology* 9, 81 (2018) : [https://doi : 10.3389/fpsyg.2018.00081](https://doi.org/10.3389/fpsyg.2018.00081)
- Braun, Bettina, Dainora, Audra, Ernestus, Mirjam. "An unfamiliar intonation contour slows down online speech comprehension." *Language and Cognitive Processes* 26, (2011): 350 – 375.
- Cook, Vivian. *Effects of the Second Language on the First*. Clevedon: Multilingual Matters, 2003.
- De Leeuw, Esther, Mennen, Ineke, Scobbie, James M. "Singing a different tune in your native language: first language attrition of prosody." *International Journal of Bilingualism* 16, (2012) : 101 –116.
- Di Cristo, Albert. "La problématique de la prosodie dans l'étude de la parole dite spontanée." *Revue parole* 15/16 (2000) : 189-249.
- Di Cristo, Albert. *La prosodie de la parole. Voix, parole, langage*. Bruxelles : De Boeck Supérieur, 2013.
- Grosjean, François. "Neurolinguists, beware! The bilingual is not two monolinguals in one Person." *Brain and Language* 36, (1989): 3-15.
- Flege, James E, Mackay, Ian R A. 2004. Effects of the age of second language learning on the duration of first and second language sentences: The role of suppression." *Applied Psycholinguistics* 25 (3), 373-396, DOI: 10.1017.S0142716404001171
- Gut, Ulrike. *Non –native speech. A corpus-based analysis of phonological and phonetic properties of L2 English and German*. Frankfurt: Peter Lang, 2009.
- Huang, Becky H. and Jun, Sun-Ah. "The effect of age on the acquisition of second language Prosody." *Language and Speech* 54, (2011) : 387-414.
- Hyltenstam, Kenneth, Abrahamsson, Niclas. "Âge de l'exposition initiale et niveau terminal chez des locuteurs quasi-natifs du suédois L2." *AILE* 18, (2003): 99-127.
- Jilka, Matthias. "*The Contribution of Intonation to the Perception of Foreign Accent*." PhD diss., Dissertation, University of Stuttgart, 2000.
- Jilka, Matthias. "Testing the Contribution of Prosody to the Perception of Foreign Accent." In *Proceedings of New Sounds 2000*, (4th International Symposium on the Acquisition of Second Language Speech) edited by Allan James and Jonathan Leather, 199-207. Amsterdam: University of Klagenfurt. 2000.
- Jilka, Matthias. "Different manifestations and perceptions of foreign accent in intonation." In *Non-Native Prosody. Phonetic Description and*

- Teaching Practice*, edited by J. Trouvain and U. Gut, 77-96. Berlin: Mouton de Gruyter, 2007.
- Jun, Sun-Ah, OH, Mira. "Acquisition of second language intonation." *Proceedings of International Conference on Spoken Language Processing 4*, (2000): 76-79. Beijing, China.
- Kakouros, Sofoklis, Salminen, Nelli, Räsänen, Okko. "Making predictable unpredictable with style – Behavioral and electrophysiological evidence for the critical role of prosodic expectations in the perception of prominence in speech." *Neuropsychologia* 109, (2018): 181–199.
- Klein, Wolfgang. *L'acquisition de langue étrangère*. Paris : Colin, 1989.
- Lacheret – Dujour, Anne, Victorri Bernard. "La période intonative comme unité d'analyse pour l'étude du français parlé : modélisation prosodique et enjeux linguistiques." *Verbum* XXIV no 1-2, (2002) : 55-72.
- Lacheret – Dujour, Anne. *La prosodie des circonstants*. Louvain : Peeters, 2003.
- Lacheret – Dujour, Anne. "Prosodie-discours : une interface à multiples facettes." *Cahiers de Linguistique française* 28, (2007) : 7-40.
- Lacheret – Dujour, Anne, Avanzi, Mathieu, Victorri, Bernard. "Schématisation discursive et schématisation intonative : question de "genre" ?" In *Approches sémantiques de l'oral* edited by Régis Missire, no 14, 39-70. Academia / L'Harmattan, Sciences du langage, carrefours et points de vue, 978-2-8061-0163-1. (hal-01083874), 2014
- Luk, Gigi, Bialystok, Ellen. "Bilingualism is not a categorical variable: Interaction between language proficiency and usage." *Journal of Cognitive Psychology* 25, (2013): 605–621.  
<http://dx.doi.org/10.1080/20445911.2013.795574>
- Mandler, Jean M, Johnson, Nancy S. "Remembrance of things parsed: story structure and recall." *Cognitive Psychologie* 9, (1977): 111-151.
- Mcgory, Julia Tevis. "Acquisition of intonational prominence in English by Seoul Korean and Mandarin Chinese speakers". PhD. Diss., Ohio State University, 1997.
- Mennen, Ineke. "Bi-directional interference in the intonation of Dutch speakers of Greek." *Journal of Phonetics* 32, (2004): 543–563.
- Mennen, Ineke. "Phonetic and Phonological influences in non-native intonation: an overview for language teachers." In *QMUC Speech Science Research Centre Working Papers WP-9* edited by James. M Scobbie, Ineke Mennen and Jocelynne Watson. Edinburgh: Queen Margaret University College, 2006.
- Mennen, Ineke. "Beyond segments: towards a L2 intonation learning theory in prosody and language." In *Prosody and Language in Contact. L2 Acquisition, Attrition and Languages in Multilingual Situations* edited

- by Elisabeth Delais-Roussarie, Mathieu Avanzi and Sophie Hermet, 169-186. Berlin: Springer, 2014.
- Mennen, Ineke, Chen, Aaju, Karlsson, Fredrik. "Characterising the internal structure of learner intonation and its development over time." In *Proceedings of New Sounds 2010 (6th International Symposium on the Acquisition of Second Language Speech)* edited by Katarzyna Dziubalska-Kolaczyk, Magdalena Wrembel and Malgorzata Kul, 319-324. Poznan: Adam Mickiewicz University, 2010.
- Mennen, Ineke, Schaeffler, Felix, Docherty, Gerard. "Cross-language differences in fundamental frequency range: A comparison of English and German." *Journal of the Acoustical Society of America* 131, (2012): 2249 – 2260.
- Mennen, Ineke, De Leeuw, Esther. "Beyond Segments. Prosody in SLA." *Studies in Second Language Acquisition* 36 no 2, (2014): 183 – 19.
- Mertens, Piet. 1987. "*L'intonation du français. De la description linguistique à la reconnaissance automatique.*" PhD. Diss., Université de Leuven, 1987.
- Moyer, Alene. *Age Accent and Experience in Second Language Acquisition. An Integrated Approach to Critical Period Inquiry.* Clevedon: Multilingual Matters, 2004.
- Moyer, Alene. "What's age got to do with it? Accounting for individual factors in second language accent." *Studies in Second Language Learning and Teaching* 4 no 3, (2014): 443-464. [http:// doi: 10.14746/ssl.2014.4.3.4](http://doi.org/10.14746/ssl.2014.4.3.4).
- Nickels, Stefanie, Opitz, Bertram, Steinhauer, Karsten. "ERPs show that classroom-instructed late second language learners rely on the same prosodic cues in syntactic parsing as native speakers." *Neuroscience Letters* 557, (2013) : 107– 111.
- Piaget, Jean. *Six études de psychologie.* Folio essais, Paris : Denoël/Gonthier, 1964.
- Rasier, Laurent, Hiligsmann, Philippe. "Prosodic transfer. Theoretical and Methodological Issues." *Nouveaux cahiers de linguistique Française* 28, (2007) : 41-66.
- Santiago-Vargas, Fabian, Delais-Roussarie, Elisabeth. 2014. "The acquisition of question intonation by Mexican Spanish Learners of French." In *Prosody and languages in contact: L2 acquisition, attrition, languages in multilingual situations* edited by Elisabeth Delais-Roussarie, Mathieu Avanzi and Sophie Herment. New-York: Springer Verlag, 2014.

- Schwab, Sandra. "Do Native Spanish Speakers Transfer Accentual Acoustic Properties from Spanish to French L2." In *Proceedings of the 6th International Conference on Speech Prosody* edited by Ma Qiuwu, Ding Hongwei and Daniel Hirst, vol. 1, 330-333. Shanghai: Tongji University Press, 2012.
- Tremblay, Annie, Broersma, Mirjam, Coughlin, Caitlin E, Choi, Jiyoun. "Effects of the Native Language on the Learning of Fundamental Frequency in Second-Language Speech Segmentation." *Frontiers in Psychology* 7, (2016). <https://doi.org/10.3389/fpsyg.2016.00985>
- Ueyama, Motoko, Jun, Sun-Ah. "Focus realization in Japanese English and Korean English intonation." *Japanese-Korean Linguistics* 7, (1998): 629-645.
- Wennerstrom, Ann. "Intonational meaning in English discourse: A study of non-native speakers." *Applied Linguistics* 15, (1994): 399-420.
- Wieden, Wilfried. 1993. "Aspects of acquisitional stages." In *Current Issues in European Second Language Acquisition research*, edited by Bernhard Kettemann and Wilfried Wieden, 125-135. Tübingen: Gunter Narr Verlag, 1993.

## CHAPTER 3

# A REPORT ON HOW RUSSIAN SPEAKERS PERCEIVE THE [θ] AND [ð] SOUNDS

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### Abstract

This study aims to provide preliminary insights with respect to the assimilation of the Greek [θ] and [ð] sounds to the Russian phonological categories. Russian speakers participated in a battery of computer-based assimilation tests and upon listening to the target sounds, they were asked to map these sounds to their L1 phonological categories. The results portrayed that the most selected L1 category for [ð] was the Russian [z], while participants perceived the [θ] sound as a between instance of the Russian [f] and [s]. The variation for the selection of L1 categories might be explained due to the learners' dialectal background, their knowledge of other foreign languages, and differences in their cognitive functions.

*Keywords:* speech perception, assimilation, Greek sounds, Russian speakers, variation

### 1. Introduction

Speakers' first language (L1) is often illusory for the acquisition of nonnative sounds. In many cases, speakers do not perceive much phonetic dissimilarity between an L1 and a second language (L2) sound and thus realize them as acoustically similar (Flege 1995). Empirical evidence for this difficulty is provided for both vowels (e.g., Georgiou 2021a, 2021b; Georgiou and Themistocleous 2021; Tyler et al. 2014) and consonants (e.g., Georgiou et al. 2020; Lengeris and Nicolaidis 2016).

Although there is plenty of work on how Russian speakers acquire the [θ] and [ð] sounds, these findings are not consistent. For example, Weinberger (1988) reported that the sounds [θ ð] are merged with the dental stops [t d] respectively, while Teasdale (1997) argued that they are merged with [s z]. Anastasiadi-Simeonidi et al. (2010) pointed out that the [θ] sound is often perceived as the Russian [f] by Russian speakers. Georgiou et al. (2020) investigated the assimilation of the Greek consonants [θ t ð d ʝ g ç x] to the native categories of Russian speakers. The authors found, among others, that the speakers assimilated the Greek consonants [θ ð] to the Russian categories [f z] respectively.

The purpose of this study is to provide insights into how Russian speakers perceive consonants that are not present in their native phonological inventory. This study offers complementary findings to the study of Georgiou et al. (2020). Specifically, it concentrates on the assimilation of only two consonants, namely [θ] and [ð], which are challenging for Russian speakers. Specifically, these Greek consonants were presented to the Russian speakers, and they were asked to assimilate them to their native phonological categories.

## 2. Procedure

We recruited 16 Russian speakers (two males and fourteen females) who were students at the Department of General and Russian Linguistics of RUDN University, Moscow; the same participants of Georgiou et al. (2020). Their age ranged from 19 to 26 years and they originated from different regions of Russia. They did not have any knowledge of Greek. Also, they had a basic knowledge of English and other foreign languages (for example, Georgian, Azerbaijani, Chinese), and they had never lived for more than one month in a foreign country. All participants had normal hearing and never faced any auditory or language disorder.

Participants were involved in a battery of forced-choice assimilation tests set up on a PC. They listened through the PC loudspeakers to Greek syllables embedded in /aC/ and /Ca/ context, with C (Consonant) to represent eight Greek consonants. All stimuli were provided in random order through a set of headphones, and participants were told to mouse-click on the most appropriate Russian consonantal category that the Greek consonant matched to. The response alternatives were 22 Russian consonants, namely, б бь, в вь, г ги, д дь, з зь, к ки, п пь, с сь, т ть, ф фь, х хи. Then, they were asked to rate how good exemplar the Greek consonant was to the Russian category that they chose, by clicking on a one-to-five Likert-point scale (one=very poor, five=very good). Each participant assimilated a total of 48 items (8

consonants  $\times$  2 positions  $\times$  3 repetitions). However, for the purpose of the present study, we have analyzed only the assimilations related to [θ] and [ð].

### 3. Results

The results demonstrated that the most selected Russian phonological category for the Greek [θ] sound was [s] ( $M=3.03$ ,  $SD=1.21$ ), followed by [f] ( $M=3.13$ ,  $SD=1.11$ ) and [fʰ] ( $M=3.15$ ,  $SD=1.35$ ). The Greek consonant was a moderate exemplar of the selected categories. Paired sample *t-tests* showed there was not any significant difference in the assimilation of [s] and [f] ( $p > .05$ ), yielding that the [θ] sound was perceived as belonging in between the Russian [s] and [f] categories.

The most selected Russian category for the Greek [ð] sound was [z] ( $M=3.2$ ,  $SD=1.25$ ), followed by [v] ( $M=3.36$ ,  $SD=1.21$ ) and [vʰ] ( $M=3.27$ ,  $SD=1.19$ ); this Greek sound was a moderate-to-good exemplar of the selected categories. Paired *t-tests* revealed that there were significant differences between the first and the second most selected categories ( $p < .05$ ) and, therefore, the Greek [ð] was consistently perceived as an instance of the Russian [z]. Figures 1 and 2 illustrate the percentages of assimilation of the three most selected Russian responses for the Greek [θ] and [ð] sounds respectively.

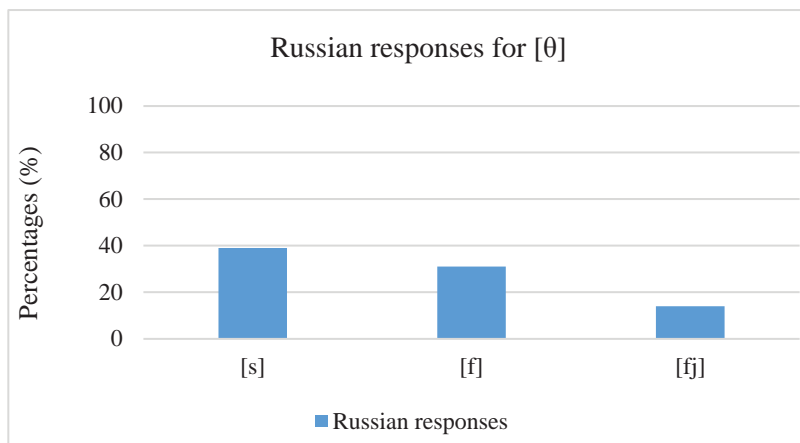


Figure 1: The three most selected L1 responses for the [θ] sound



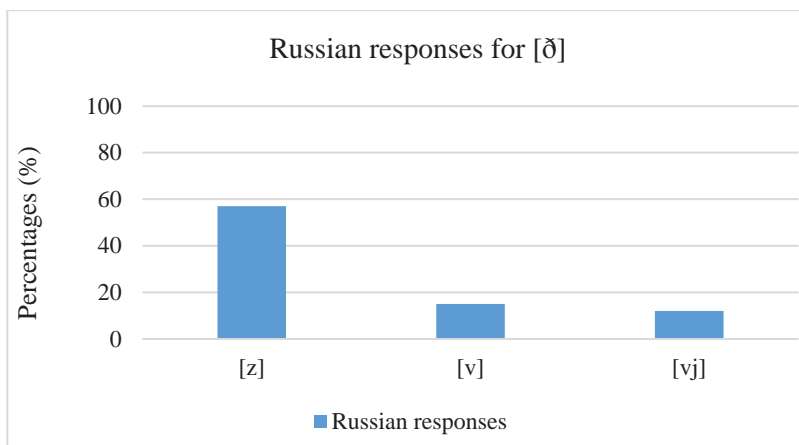


Figure 2: The three most selected L1 responses for the [ð] sound.

## 4. Conclusions

Our findings corroborate earlier findings that support the merging of the [θ] sound with either the Russian [s] or [f], and the merging of [ð] sound with the Russian [z]. Surprisingly, the Russian [t] and [d] were not among the three most selected responses for the [θ] and [ð] sounds respectively. A variation in the selection of responses was detected. This was evident even for the [ð] sound since although [z] was the most selected category, the other two sounds were selected for 15% and 12% of the responses. Three possible explanations can be given for this variation. First, speakers do not originate from the same area but they come from different regions of Russia. It is possible that the knowledge of any local dialects might have affected their sound perception. Second, the knowledge of other languages apart from their native language is a factor that might have shaped the perception of unfamiliar sounds. We remind that speakers reported that they have basic knowledge of several foreign languages. Third, we assume that subject-internal cognitive abilities might have affected the representation of mental phonological categories in their mind. Therefore, cognitive functions might explain better this perceptual sound variation rather than linguistic and sociolinguistic factors.

Future studies should take into consideration these differences in order to draw conclusions about the variation in the perception of sounds that are not present in the Russian phonological system by Russian speakers.

## References

- Anastasiadi-Simeonidi, Anna, Ekaterini Zuravliova, Maria Mitsiaki, and Georgia Fotiadou “Τα φωνολογικά λάθη στη Διαγλώσσα των Ρωσόφωνων μαθητών της Ελληνικής ως Δεύτερης/Ξένης Γλώσσας” [Phonological errors in the inter-language of Russian learners of Greek as a second/foreign language]. In *Proceedings of the 14th International Conference: Advances in Research on Language Acquisition and Teaching*, 53-64. Thessaloniki: Aristotle University.
- Flege, James E. “Second language speech learning: Theory, findings, and problems.” *Speech perception and linguistic experience: Issues in cross-language research* 92 (1995): 233-277.
- Georgiou, Georgios P. “Toward a new model for speech perception: the Universal Perceptual Model (UPM) of second language.” *Cognitive Processing* (2021a): 1-13.
- Georgiou, Georgios P. “Effects of Phonetic Training on the Discrimination of Second Language Sounds by Learners with Naturalistic Access to the Second Language.” *Journal of Psycholinguistic Research* 50, no. 3 (2021b): 707-721.
- Georgiou, Georgios P., Natalia V. Perfilieva, Vladimir N. Denisenko, and Natalia V. Novospasskaya. “Perceptual realization of Greek consonants by Russian monolingual speakers.” *Speech Communication* 125 (2020): 7-14.
- Georgiou, Georgios P., and Charalambos Themistocleous. “Vowel learning in diglossic settings: Evidence from Arabic-Greek learners.” *International Journal of Bilingualism* 25, no. 1 (2021): 135-150.
- Lengeris, Angelos, and Katerina Nicolaidis. “The identification and production of English consonants by Greek speakers.” *Selected papers on theoretical and applied linguistics* 21 (2016): 224-238.
- Teasdale, Allison. “On the differential substitution of English [θ] A phonetic approach.” *Calgary Working Papers in Linguistics* 19 (1997): 71-85.
- Tyler, Michael D., Catherine T. Best, Alice Faber, and Andrea G. Levitt. “Perceptual assimilation and discrimination of non-native vowel contrasts.” *Phonetica* 71, no. 1 (2014): 4-21.
- Weinberger, Steven Howard. "Theoretical foundations of second language phonology." PhD diss., University of Washington, 1988.

## CHAPTER 4

# THE ROLE OF MEMORIZATION IN THE ACQUISITION OF ENGLISH REGULAR PLURAL FORM BY TUNISIAN YOUNG EFL LEARNERS

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### Abstract

The present study investigates the role of memorization and orthography in the acquisition of inflectional [s], the English regular plural marker morpheme, by Tunisian EFL learners. Using flashcards and wordlists, data are gathered from 39 young EFL learners by means of speech signal processing software recordings (PRAAT). In order to check the effect of memorization, data from the first group of participants made of 20 pupils are collected after 55 hours of formal instruction, while data from the second group are collected only after two hours of academic learning. The recordings are analyzed via the segmentation of speech sounds carried out on PRAAT spectrograms and waveforms. The effect of orthography is assessed by the differences in pronunciation between a reading-aloud task and a picture-naming activity. Results show that the first group of participants, who have been studying English for at least seven months, perform better than those who have just started learning English only in the pronunciation of words they are familiar with. Overall, results reveal that both memorization and orthography significantly affect the pronunciation of English plural [s].

*Keywords:* memorization, orthography, inflectional morpheme, pronunciation, young EFL learners

## 1. Introduction

Child language has consistently been at the heart of linguistic research. To explore the acquisition of English plurals by foreign language learners for instance, many researchers have focused on young learners. Unlike native speakers of English, EFL learners often show difficulties in acquiring the English plural form especially when their own language does not mark the plural morphemically. (Jia 2003, 1309) supported this assumption when conducting a longitudinal study to examine the acquisition of English plural –s by Chinese learners. Her results revealed that both children and adults' acquisition was very slow. It was also suggested that plural –s would be difficult for Japanese learners of English to acquire since their L1 does not have a specific morpheme to mark the plural as well (Shintani and Ellis 2010, 610). In fact, studies on the acquisition of inflectional morphology asserted that the absence of one specific feature in L1 may cause considerable constraints when it comes to L2 acquisition. The process is even subject to a critical period after which accessibility to certain morphosyntactic features may not be available, as pointed out in (Hawkins and Chan 1997, 190). For (Wolfram 1997, 116) difficulties to apply certain rules in L2 can be explained by process of consonant cluster reduction. When the morpheme [s] occurs after two consonants for instance, EFL learners tend to omit the second consonant, fuse two consonants into one, or insert a vowel between two consonants according to the preferred syllable structure of their L1. These findings are supported in (Schwabe 1978, 19) and (Young 1993, 76-77). (Berko 1958, 166) claimed that children have knowledge of morphological rules. According to her, correct forms of plural words are processed by the internalization of one form and its overgeneralization to new words, as indicated in the Item-And-Process (IP) model of inflectional morphology acquisition. Plural morpheme [s] for instance can be morphophonemically rewritten by means of process rules producing a set of alternants /θZ/, /s/ and /Z/ depending on the phonological environment of [+ SIBILANT ], [- VOICE] and [+ VOICE] respectively.

## 2. Motivation for the present study

The IP model has received a lot of criticism. (Rumelhart & McClelland 1986, 203-204) argued that children do not really learn abstract rules and symbols when acquiring morphemes. Acquisition is rather believed to be motivated by cognitive mechanisms such as memorization. The extent to which the IP rules are valid for the acquisition of English as a foreign language is the core of the present study. It is true that plural [s] in English

has different phonetic realizations which a language learner or speaker may not be aware of. Given the various factors which may affect the process of language perception and production, the present research investigates the role of memory and orthography in shaping Tunisian EFL learners' oral production of English plural [s] by either supporting or refuting the following hypotheses:

1. When acquiring English plural [s], correct pronunciation is resulted from the internalization of adequate classroom input.
2. Orthography plays a significant role in the oral production of plural [s] by Tunisian learners of English.

### **3. Methodology**

#### **3.1. Setting and participants**

Two groups of Tunisian young EFL learners have participated in this research study which took place in a public primary school in Ariana City, Tunis. In the Tunisian national public schools, English is basically taught to pupils aged between 10 and 12, enrolled in either the fifth or sixth year of primary education. At this level, young EFL learners are regarded as complete beginners. The first group consisted of 20 informants who have been learning English at school for about seven months with an average of eight hours a month. Put differently, they have received about 55 hours of formal instruction in the English language. At their level, they are exposed to a limited range of vocabulary along with simple grammar rules such as the regular plural marking. Methods used to teach English to young learners are based on practising drills to name objects, to retain new vocabulary items and to internalize the pronunciation of words. The second sample, used as a control group, included 19 participants who have just started learning English at school and attended only one session during which they practised drills on "How to say Hi" in English, as their teacher confirmed.

#### **3.2. Data collection materials and procedure**

Data were collected by means of flashcards and word-lists, and recorded on a PC using the speech signal processing software PRAAT. Engaging the participants in a naming animals' activity through flashcards was used as a method to assess their oral production of plural [s]. The animals to be named through the ten flashcards were cats, dogs, elephants, lions, chickens, horses, monkeys, snails, butterflies, and bees. These words are supposed to

be acquired during the months of formal instruction informants of the first group have received. The word-lists however, included words ending in plural [s] with an increasing difficulty to read. In fact, the list consisted of fifteen words where five non-sense words were placed. (Appendix B). The aim behind this categorization was to explore the manner how young EFL learners come to pronounce the final grapheme of words they may know, words they have never encountered, and words which eventually do not exist in the English language. Comparing the recordings of the naming animals' activity with those of the word-lists is a tool to assess the effect of orthography in pronunciation.

#### 4. Data analysis: results and discussion

A total number of 60 recording files were obtained from participants of the first group. As mentioned in the data collection procedure, complete beginners had to pronounce the name of 10 animals then read them from a word-list. Decision on correct pronunciation of plural [s] was made by means of a binary marking. Manually analysed, code '0' was attributed to cases of mispronunciation and code '1' to each correct pronunciation of a word's ending. In percentages, results of Activity 1 are displayed in the following figure.

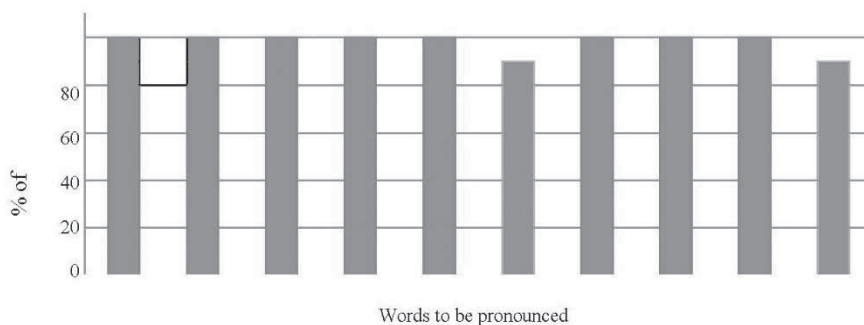


Figure 1. Results obtained from the activity of naming animals

It is easy to understand from the figure that young EFL learners under investigation have appropriately pronounced the sound /s/ being suffixed to singular nouns with significantly high percentages. As demonstrated in figure 1, final /s/ was mispronounced by only two participants in the words "horses" and "bees" where it has not received voice. However, all the plural nouns were accurately pronounced. This finding can be explained by the

methods involved in the teaching-learning process. In the Tunisian elementary educational system, the English language is generally taught to young learners through repetition drill-based tasks.

The acquisition of regular plural marking for instance takes place in the language classroom by repeating the pronunciation of each new noun occurring in the plural form. The role of the teacher at this level is to provide EFL complete beginners with a correct pronunciation of words without specifying the rule to be applied given their level of education which does not allow such kind of information. Young language learners practise the pronunciation of plural nouns in a systematic process based on a mere repetition of the input. Memory seems to have played a central role in this study.

### *Hypothesis 1: The role of memorization in pronunciation*

To check if memorization has an impact on the pronunciation of regular plural [s], the same participants (group 1) had to read aloud words they know and others they had never been exposed to. Analysis of the recordings is summarized in Figure 2.

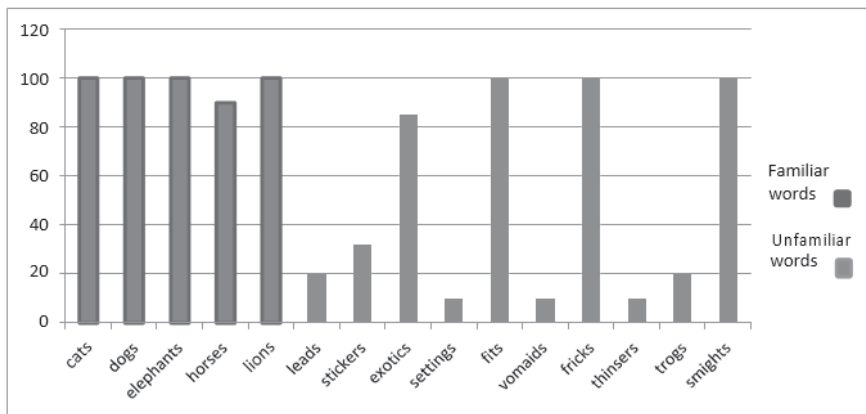


Figure 2. First group accuracy rates in the reading aloud's activity

Results show that the percentages of final [s] correct pronunciation of words which have already been pronounced in the naming animals' activity remained the same. However, lower accuracy rates have characterized the pronunciation of words participants are unfamiliar with. This can be explained by the role memorization plays in the acquisition of new input

generated by the classroom-teacher. When adequate input is provided, enhanced by means of mere repetition, it is internalized then retrieved the way it has been acquired and memorized. As shown in figure 2, when complete beginners were required to read words they have never encountered before, they failed to correctly utter final [s] in most of the cases. To this extent, the statement of Berko (1958, 172) that correct forms of plural words are processed by the internalization of one form and its generalization to new words is questionable since it is not the case of Tunisian learners of English according to the findings of the present study. Results obtained from the control group recordings should confirm this. Given that participants of this second group have not started learning English yet, the effect of memorization is believed to be reduced if not absent.

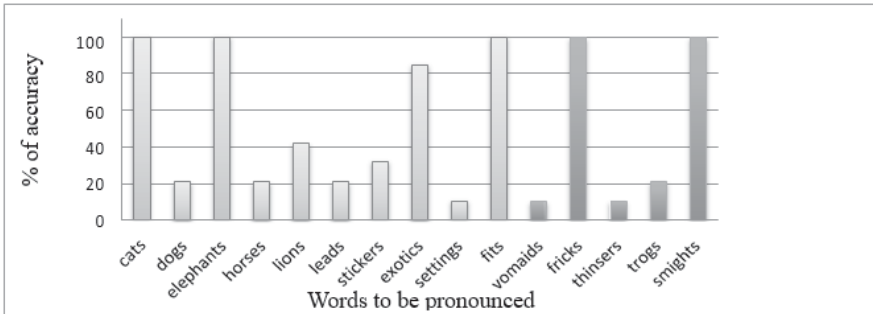


Figure 3. Second group accuracy rates in the reading aloud's activity

A simple comparison between figures 2 and 3 shows that difference between the two groups' accuracy rates is clear only in the first five words of the list; words the first group of beginners have been practising during months of formal instruction. The accuracy rate in this study is calculated through dividing the total number of correctly pronounced words' ending by the total number of words to be read.



**Table 1: Compared accuracy rates of appropriately pronounced plural [s] among the two groups of Tunisian EFL young learners.**

	First group	Second group
Number of participants	20	19
Number of words per each participant	5	5
Total number of utterances	100	95
Number of mispronounced plural [s]	1	41
<b>Accuracy rate (%)</b>	<b>99</b>	<b>56</b>

The clear discrepancy between the two percentages can therefore be explained by the variable of memorization. To this extent, research hypothesis 1 is partially confirmed. It implicates that correctly pronounced words are words which learners have acquired through an adequate input provided by their language teacher, stored, and then retrieved. However, stating that correct pronunciation of English plural [s] is resulted from the internalization of adequate classroom input is subject to further investigation since correct pronunciation can also be the outcome of other factors.

*Hypothesis 2: The role of orthography in pronunciation*

Since the grapheme [s] in English has different realizations in word final position, the effect of orthography was hypothesized. It was believed that when reading, Tunisian EFL learners stick to the written text. In fact, figure 3 confirms this. It shows that the accuracy rate of the words "cats, elephants, fits, fricks, smights" which end in a voiceless /s/ has reached 100% though "fricks" and "smights" are nonsense words. However, words ending with the sound /z/ are characterized by lower accuracy rates and are generally mispronounced. A detailed analysis of the second group of EFL young learners revealed that plural [s] was 96.5% appropriately produced in the words where its [-VOICE] property must be kept. On the other side, it was only 17.5% well-pronounced in the environment where it should become /z/. Put differently, whenever final [s] should be voiced, it is pronounced the way it is written rather than /z/ or /Iz/. Comparing the pronunciation of the

words “dogs” and “trops” by participants of the first group, it is surprising to find that all the participants correctly pronounced the plural [s] in the word “dogs” but only 4 participants out of 20 have correctly pronounced the final [s] in “trops” though both words share the same consonant cluster [gs] word-finally. This is also true for the pronunciation of “settings” which is characterized by a very low accuracy rate. In the nonsense words, participants failed to pronounce the voiced /z/ and /ʒ/ as well. As a variable, orthography seems to have played a significant role. To further confirm this, the words ending in voiceless /s/ were excluded from the analysis to reduce the effect of orthography, and only accuracy rates of words ending in voiced /z/ and /ʒ/ were calculated. The results are presented in the following figure.

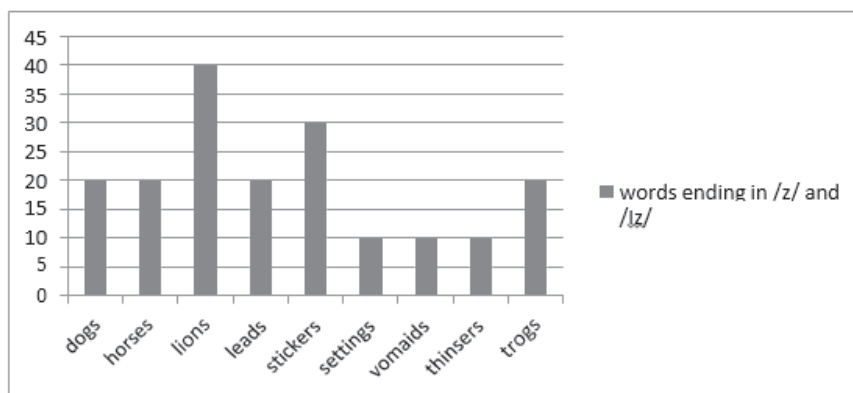


Figure 4. Second group’s Accuracy rates of finally voiced words.

It is easy to notice that young EFL learners tend to deviate the final [s] in words they know, words they are unfamiliar with, and words they have never encountered. However, as demonstrated above, in the cases where final [s] remains voiceless, accuracy rates reach 100%. To this extent, the second research hypothesis is confirmed; orthography seems to clearly affect the pronunciation of plural [s].

## 5. Conclusion

The present study investigated the oral production of English plural [s] among two groups of Tunisian young EFL learners. The effects of memorization and orthography were assessed and results showed that both variables have a significant impact on the pronunciation of words’ final [s].

Participants who have been studying English for at least seven months performed better than those who have just started learning English only in the pronunciation of words they are familiar with, words they practised in the language classroom by means of repetition drills. Discrepancy between the pronunciation of words participants know and words they have never encountered before unfolds the interference of orthography with the oral production of sounds. Nevertheless, it is still possible to account for these results in terms of the factors involved in the acquisition of a foreign language such as attitudes towards the target language, attitudes towards the language teacher, the methods used in teaching as well as the nature of the environment where the learning process takes place. Regarding the findings, it is strongly recommended that deficiencies in the teaching-learning process be repaired from beginner levels in order to avoid problems of fossilization.

## References

- Berko, Jean. 1958. "The child's learning of English morphology". *Word* 14, no. 2: 150-177.
- Hawkins, R., and Cecilia Yuet-hunganan, Chan. 1997. "The partial availability of universal grammar in second language acquisition: the failed functional features hypothesis." *Second Language Research* 13, no. 3: 187-226.
- Jia, Gisela. 2003. "The Acquisition of English plural morpheme by native Mandarin Chinese- Speaking Children." *Journal of speech, Language, and Hearing Research* 46, no. 2: 1297-1311.
- Rumelhart, David., and McClelland, James. "On learning the past tenses of English verbs. Implicit rules or parallel distributed processing?" In *Mechanisms of language acquisition*. Edited by Brian MacWhinney, 195-248. NJ: Lawrence Erlbaum Associates, Inc, 1987.
- Schwabe, Tippy. "Oral differences in English and Arabic: A view from the ESL teacher's". California Association of Teachers of English to Speakers of Other Languages (*CATESOL Occasional Papers*, 7: 14-33, 1978.
- Shintani, Natsuko., and Ellis, Rod. 2010. "The incidental Acquisition of English Plural -s by Japanese Children in comprehension-based and production-based lessons". *Studies in Second Language Acquisition* 32, no. 4: 607-637.
- Wolfram, Walt. "Dialect in Society". In *The Handbook of Sociolinguistics*, Edited by Florian Coulmas, 107-126. Oxford: Blackwell, 1997.
- Young, Richard. 1993. "Functional Constraints on Variation in Interlanguage Morphology". *Applied Linguistics* 14, no. 1: 76-97.

## Appendix (A): Flashcards



## Appendix (B): Wordlist 1

Cats / Dogs / Elephants / Lions / Chickens / Horses / Monkeys / Snails /  
Butterflies / Bees

## Appendix (C): Wordlist 2

Cats	Leads	Vomaidis
Dogs	Stickers	Fricks
Elephants	Exotics	Thinsers
Horses	Settings	Trogs
Lions	Fits	Smights

## CHAPTER 5

# “I THINK I SPEAK EUROPEAN!”: TRACING THE INFLUENCE OF IMMIGRANT IDENTITIES IN SCOTLAND

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### Abstract

In this chapter, I introduce how national identities among long-term immigrant women shape the concept of their language. Specifically, I argue that national identities play an important role in immigrants’ lives, and their association is often attributed to their networks they are exposed to. The results show that with increased integration with Scottish culture, Slovak immigrants produced more monophthongal vowel realisations, with vowel productions closer to those made by their native Scottish peers. Immigrants’ self-ratings for the *Scottish*, *Slovak*, and *European* identities proved to be important predictors in their accent acquisition. Immigrants who did not hold strong familial ties to the local speech community, e.g., via marriage or partnership, predominantly favoured being labelled as *European* or *Slovak* instead of *Scottish*. The findings suggest that these “international women” (Block, 2008) maintained professional ties with the Scottish community while also keeping close social ties to their home country, as well as to other international residents in the host country. I argue that the present study further highlights the interconnected nature of these relationships, with connections visualised via an identity-pronunciation model.

*Keywords:* national identity, Slovak immigrants, European, Scottish, vowels, speech style

## 1. Introduction

Sociolinguistic research has only recently begun to explore immigrants’ acquisition of Scottish English varieties, with Meyerhoff, Schlee, and Clark’s (2009) study on Slavic immigrants in Edinburgh having laid the foundation for this research by addressing immigrants’ speech productions in Edinburgh. Before then, the variation documented on Edinburgh English was mainly limited to observations of L1 speakers of English (e.g., Esling 1978; Görlach 1985; Scobbie, Hewlett, and Turk 1999; Speitel and Johnson 1983). Meyerhoff *et al.*’s study on immigrants in Scotland’s capital city shed light on Scottish language communities by considering their pronunciation patterns, and their later research (Clark and Schlee 2010) explored immigrant Polish adolescents’ language attitudes while learning English in the UK. This chapter contributes to the sociolinguistics of migration studies in Scotland by exploring long-term adult migrants’ identities and how these are associated with immigrants’ experiences and productions with respect to two phonetic variables, FACE and GOAT. I present data from conversations, a reading passage, and a word list from 20 adult Slovak immigrant women, showing how these women align with their newly-found identities as well as with variables found in Scottish English. This study was part of a larger project (Elliott 2018) that includes discussion of the immigration experiences ranging from language attitudes to lexical awareness, incorporating data from Scotland and Slovakia. This chapter focuses on the speech production data and identity measurements of immigrant and native residents in Edinburgh.

Due to its political and social significance as the capital of Scotland, Edinburgh is home to many standard and non-standard speech communities. It has been argued that Edinburgh is home to more near-RP speakers than Glasgow, with Anglo English having a more visible presence in Edinburgh than in the rest of Scotland (Meyerhoff and Schlee 2014, 103; Scobbie *et al.* 1999, 242; Schützler 2011). The prevalence of both Scottish Standard English and Southern Standard British English (SSBE) as “standard” varieties may create some variation among native Scottish residents as well as among visitors who adapt to its community. The variability of linguistic influences in Edinburgh impacted the choice of linguistic factors under investigation in the present study. Vowels in the FACE and GOAT lexical sets (Wells 1982) demonstrate consistent trends across English and Scottish accents: vowels in both sets exhibit diphthongal realisations in Southern Standard British English (SSBE) but have monophthongal realisations in Scottish English variants (e.g., Stuart-Smith

2008), including Standard Scottish and Edinburgh Englishes (Schützler 2014, 2015).

Current trends in migration studies may acknowledge that language plays a role in migrants' integration with their host countries, but even studies that examine this integration in detail (see Bechhofer and McCrone 2010; Duchêne, Moyer, and Roberts 2013) tend not to rank language high as a factor in cultural migration and tend to fail to investigate linguistic matters further. The contributions of the present study are best seen as highlighting the need to change these trends, and to place greater emphasis on the role of language as both a tool for cultural integration and a reflection of personal identity. The present study is particularly interested in aspects of identity that are associated with nationality, as opposed to aspects of personal identity associated with gender, class, or age (Bidzinska 2013; Kobiałka 2016; Regan 2013). As data collection took place in 2015–2016, ending a few months before the Brexit referendum, results from the present study represent opinions regarding national identities expressed almost immediately before the UK's decision to withdraw from the EU.

While this chapter explores variables acquired among immigrant women and compare them to their locally-born Edinburgh speech community, it also reflects on the way immigrants process their identities, including how they negotiate their self-image as well as the expectations of native Scottish speakers. Previous studies on language acquisition among second-language learners (Flege and MacKay 2011; Mougeon, Rehner, and Nadasdi 2004; Moyer 2014, 2018; Regan 2013) have shown that native-like pronunciation is hypothetically attainable after the onset of puberty, though such achievement is rather rare. The present study acknowledges the difficulty for second-language speakers to achieve native-like pronunciation, and it focuses on salient sociophonetic features, which may sidestep what is traditionally considered a disadvantage for adult L2 learners (Flege and MacKay 2011; Ryan 2018). However, investigations into how the identities or language attitudes influence this variation among long-term immigrants, and how they shift in response to their pronunciation, remain relatively understudied in sociolinguistic research (Moyer 2014). This chapter aims to fill this knowledge gap by reporting how non-native speakers process socially stratified input with respect to their identities and language acquisition.

In all, this chapter provides a foundation on which sociolinguistic researchers can investigate connections between Slovak immigrants' identity and acquisition of local variation in Edinburgh, Scotland. It introduces the reader to Slovak language communities, which have received less attention in sociolinguistic research than other Slavic groups, i.e., Polish

communities. The research questions explore how immigrants’ identities and experiences can illuminate the linguistic outcome of language contact with their Scottish peers.

1. To what extent do Slovak immigrants acquire local language norms similar to their Scottish peers?
2. What is the role of identity in women’s adaptation to the local language community?

In addressing these questions, I offer some observations about the immigrants’ acquisition of local language norms and the kind of processes that influence this variation. I will show that the immigrants present different strategies in acquiring these norms depending on the complexity of the constraints on variables (Meyerhoff and Schleeff 2014, 105), and that these norms are shaped in the process of identity formation, within both “individual and societal” levels (Bidzińska 2013, 74).

## 2. Identity

Whilst identity formation on “individual and societal” levels (Bidzińska 2013) has long been a subject of interest to researchers, recently more studies have emerged to explore immigrants’ identity formations in Scotland (e.g., Kriukow 2017; Martinez-Callaghan and Gil-Lacruz 2017; Meyerhoff and Schleeff 2014; Ryan 2018). Therefore, an introduction of the identity concept as it is relevant to immigrants is necessary before continuing further.

Previous research suggests that identity shifts, or the gradual change of preferences or affiliations in response to outside stimuli, occur along multiple lines of social and cultural connections (see e.g., Moore 2011). In the case of immigrants, one key identity shift would be the gradual change of association from one’s home country to one’s host country. Maintaining local social contacts is well-known to be one such connection, but integration strategies in the form of assimilation, preservation, and adaptation also have effects on identity. Sharing public spaces with local community speakers also causes immigrants’ identities to shift, whether consciously or unconsciously. In other words, immigrants’ desire for integration and their individual motivations help them to absorb new cultural and linguistic behaviours, and measuring these connections may shed more light on the question towards the relationship between pronunciation and identity.



Pre-immigration identities continue to shape language attitudes after immigration, even for long-term immigrants. Kerswill (2006) found evidence to suggest that this is because many immigrants continue to hold close links to their home countries, regardless of their length of stay in the host country. These links are almost entirely separate from social and familial bonds, as immigrants who move long distances are likely to break existing social ties with their home countries. An alternative hypothesis is that social ties are dynamic, and that social circles shift and change over time (Smout 1994, as cited in Braber 2009, 308). Under this theory, immigrants in particular would have highly expansive social circles, with social ties strengthening or weakening with changes to geographic location, and McCrone (2002) suggested that immigrants would have multiple identities based on which social ties are “closest” in any given situation. Alternatively, immigrants may adopt wider non-national identities (i.e., European) as a utilitarian means of navigating difficulties with dual national assignments or with low perceived value of specific national identities (Duchêne-Lacroix and Koukoutsaki-Monnier 2015). Despite differing theories on the relationship between social ties and national identity, it is clear that personal factors – e.g., motivations to integrate – may have effects on identity that are at least as strong as effects from interpersonal factors such as social bonds. Continued attachment to one’s home country despite the changes associated with immigration is especially remarkable given how identity shifts in response to these changes.

Recent events have made identity a particularly salient question for European immigrants residing in Scotland. The mid-2010s saw two major political movements that directly engaged the public – the Scottish independence referendum in 2014, and the Brexit referendum in 2016 – and both campaigns encouraged both native Scottish and immigrant populations across Scotland to consider distinctions between Scottish, British, and European identities. For the Slovak immigrants in the present study there was the added factor of connections to their homeland in Slovakia. During data collection in 2015, many immigrants sought a wider European identity, encouraged by then-assured and widely available connections to mainland Europe. The data represents a picture of high speculation about the future, especially as immigrants witnessed the rhetoric of the period but were denied a voice in the Brexit referendum outcome. Considering current constraints on immigrants with the UK’s withdrawal from the EU, the present study provides context for a reappraisal of how immigrants feel about their local Scottish neighbours and the meaning of national identity labels.

### 3. The FACE & GOAT variables: previous research

The two linguistic variables under investigation were chosen because they both exhibit the same type of variation in SSE and Scots (i.e., across a continuum of Scottish pronunciation) to control for Scottish variation as much as possible. Vowels in FACE and GOAT lexical sets are consistently realised as monophthongal [e(:)] and [o(:)] across the continuum (Macafee 2005; Maguire 2012; Watt and Milroy 1999, 32), and so they were selected as key independent variables in measuring immigrants’ productions. Other studies on immigrant speech in Scotland (see e.g., Lawrence 2013; Martinez-Callaghan and Gil-Lacruz 2017; Meyerhoff and Schleeff 2014; Ryan 2018; Schleeff, Meyerhoff and Clark 2011) have also set aside distinctions within the continuum to focus on features which are present in most Scottish varieties. Whether the immigrants find themselves in a working-class Scots-speaking community, or in a middle-class SSE-speaking community, they are likely to be equally exposed to [e] in FACE and [o] in GOAT. However, in the established middle-class speech and areas with high numbers of non-Scottish speakers, [eɪ] and [əʊ] are also fairly common (for the discussion on SSE and SSBE see, e.g., Schützler 2011, 2014, 2015). As the immigrant participants in this study have found themselves in approximately middle/upper working-class occupations and areas, they were probably exposed to the Scottish variants [e] and [o] most of the time from native Scottish English speakers. However, immigrant participants did not report using a great deal of Scots pronunciation, and during interviews they did not use Scots terms, e.g., ‘stane,’ ‘bane,’ ‘nae,’ ‘baith,’ etc. Based on this evidence, it is therefore assumed that immigrants in the present study have more or less SSE lexical distributions of vowels. Although factors such as age and social class may affect how native Scottish speakers realise vowels to an extent (Esling 1978; Schützler 2015), monophthongal vowel realisations are consistent enough across the Scottish English continuum that diphthongal realisations will be associated with non-Scottish English (i.e., SSBE) in the present study.

These two linguistic variables were coded initially using a Praat script developed for recording formant values (Maguire, 2014) and subsequently checked in forced-aligning software FAVE (Rosenfelder *et al.* 2011).

### 4. Methodology

The data for this study were collected in Edinburgh, Scotland. Volunteering at the local Czech and Slovak Children’s Club, I connected with Slovak

immigrant mothers and their Slovak-born friends who met on a bi-weekly basis and during the seasons' celebrations. The club served as an opportunity for mothers to meet and converse in Slovak, Czech, and Scottish English. The vast majority of its members had Scottish spouses, while others were single or married to other nationals. The opportunity to interview people at this club allowed for a comprehensive overview of the sociological processes that were happening within this community. By volunteering at the club and talking with its members casually, many became comfortable talking with me even during later testing, which helped participants to share their views during the semi-structured interview investigating immigrants' identities and language attitudes. Club members made up the foundation of my participant base, and my involvement with the club led to wider participant recruitment.

Participants for the present study included 20 first-generation female immigrants from Slovakia, all of whom were English-Slovak bilinguals. Also included were 8 native Scottish English-speaking women, all of whom were local to Edinburgh and provided input on speech production and identity; and 6 Slovak-born English bilingual women in Trnava, Slovakia, who provided data for speech production only. All participants were recorded individually in sessions including a semi-structured interview, a reading passage, and a word list, a combination of tasks to compare differences in vowel realisation across speech styles (Labov 1972). The different styles were also used to ensure enough tokens for study: while token counts in the interview varied for each participant, the reading passage was designed to elicit 30 FACE and 48 GOAT tokens per participants, and 30 FACE and 30 GOAT tokens for the wordlist task (Schützler 2015). The recordings were transcribed orthographically using Praat (Boersma and Weenink 2010) and ELAN (Brugman and Russel 2004). Personal information and language identities were collected via a short questionnaire, which was recorded as part of the semi-structured interview. The conversation with each participant lasted approximately one hour, forming 45 minutes of usable material. The present study collected words in stressed position in order to fully capture FACE and GOAT vowels, so function words were barred from token selection (Schützler 2015). Additionally, any tokens compromised by interference or overlap were excluded.

The immigrant Slovak participants were aged between 22-42 (mean 33.0, SD 5.81), and had lived in Edinburgh between 5-18 years (mean 9.2, SD 3.77). Though all were adults living in Edinburgh and were fluent in English, their backgrounds varied in terms of age, length of residence, amount of formal English instruction, and occupation. They all received

English language instruction in Slovakia prior to arriving to Scotland, averaging 11 years’ formal instruction per participant. Vowel realisations were treated as the dependent variable in mixed-effect multiple regressions using Rbrul (Johnson, 2009).

Earlier study by the author (Elliott, 2018) explored monophthongal and diphthongal patterns of Slovak vowels and their vowel counterparts. There are long mid vowels in Slovak, /e:/ and /o:/ (<é> and <ó>), but leveraging them into English pronunciation is problematic because they are phonetically different from RP FACE and GOAT diphthongs. Independent observations revealed that RP is the learning accent used in Slovak EFL courses, so Slovak learners would probably not be exposed to English varieties that realise FACE and GOAT vowels as long monophthongs (e.g., /e:/ and /o:/ in SSE), nor would they produce long monophthongs in place of FACE or GOAT lexical sets. Two other options exist: that Slovak English language learners would leverage Slovak diphthongs to English pronunciation, or would combine two Slovak monophthongs to create an English-like diphthong. Since Slovak has phonetic diphthongs /ei/ and /ou/, spelled <ej> and <ou/ov>, which could be more feasible analogues to FACE and GOAT lexical sets, the former option seems easier and thus more likely to be implemented. Although the lexical sets do not themselves exist in Slovak phonology, Slovak ELLs have phonetically similar productions to leverage into their pronunciation. The analysis also provides the argument that if Slovak immigrants in Scotland do produce monophthongal realisations of vowels in FACE and GOAT lexical sets (cf. Schützler 2011), then this variation would not find its source in L1 influence.

#### 4.1. Recording identity

A further factor for analysis includes national identity scores, where immigrant Slovak and native Scottish residents in Edinburgh provided self-ratings for a series of national identity labels, *Scottish*, *English*, *European*, and (for immigrants) *Slovak*. These results were compared between the groups, but they also were used as independent factors in vowel analysis. The choice to refrain from including *British* as a label stem from close associations between *British* and *English* labels that do not appear to be present between *British* and labels for other devolved countries in the UK. Bechhofer and McCrone (2010) performed extensive analysis of cultural associations between identity labels in the UK, citing earlier work claiming that classical definitions “often fail to understand how the two [English and British] can be contrasted at all,” and even that “Englishness and Britishness seem inseparable” (Barnett 1997, 223, as cited in Bechhofer and McCrone

2010). Their study found that participants native to Scotland were more likely to self-identify as *Scottish* than *British*, even while residing in England. English natives living in England, in contrast, were equally likely to self-identify as *English* or *British*, while English natives living in other UK countries were more likely to identify as *British*. Later work by McCrone and Bechhofer (2015, 129) re-visited this topic, this time using free-choice questionnaires that permit participants to associate with multiple identities. Using this tool, a greater proportion of all participants indicated association with the British identity, although “more than two-thirds” of the English sample self-identified as British compared to only half of the Scottish sample. The evident and consistent links between *English* and *British* identities complicates the use of *British* as an option for identity in the present study. The decision to include *English* and not *British* as identity choices was made to avoid having two identity choices in the task that were strongly associated with England and English culture.

To measure identity, this study used a Relational Analogue Scale (Figure 1) that was previously used by Watt and Llamas (2014) in the Accent and Identity on the Scottish English border (AISEB) project. This methodology was chosen as the best possible option to explore and uncover what participants thought about what it means to have both European and Scottish identities during their long-term stay in Scotland, while also marking Slovak and English identities as potentially associated with their home-country and education respectively.

Vertical ticks were placed on the line, one representing each identity, and labelled each mark accordingly. Marks placed closer to the right-hand end of the line indicated participants’ closer association with that identity, and marks placed on the left half of the line indicated identities that were less associated or less “important” for the respondents.

As the scale was a 10cm line, each mark was quantified by its measurement in millimetres from the left pole of the scale, resulting in a score of 0-100 for each identity.

Discussions during the interview covering immigrants’ time in the UK, their social networks, and their identity provided ample opportunity to record qualitative data regarding participants’ experiences as long-term immigrants in the UK. The following results section begins with a review of the qualitative results on identity, then presents quantitative results to further explore ideas the immigrant participants raised in discussion.

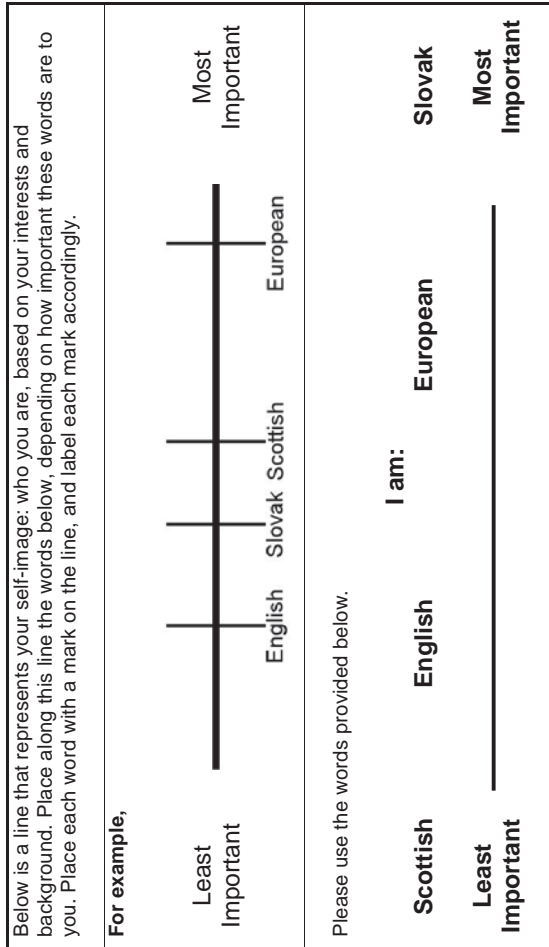


Figure 1: Self-reported identity instrument for Slovak immigrants.

## 5. Results

### 5.1. Identity

Participants were most forthcoming with comments about national identity when placing marks on the Relational Analogue Scale described earlier, so excerpts from the interview are presented alongside each respective

participant's identity scores. Each score's range was from 0-100, and each participant's name was a pseudonym drawn from common female names for each nationality (i.e., Slovakia and Scotland).

My first area of interest was immigrants' attachment to their home country. Kristína, for example, strongly identified as Slovak despite residing in Scotland for over a decade. Her identity scores appeared to reflect this opinion, with very high SLOVAK ID scores, followed by near-equal EUROPEAN ID and SCOTTISH ID scores. Michaela shared Kristína's sentiment despite having lived in Scotland for a comparatively shorter period, and though she recognised the benefits of having immigrated she expressed an unwillingness to call the country home.

Excerpt 1: Interview on 16 Nov 2015

**Kristína**

LOR:	13	I am a really, really proud Slovak. I don't like when people mix up when they hear me first and then judge you straight
years		
Scot:	68	away like, 'Oh you're from...XYZ!', No-no-no-no, I am
Eng:	38	not from there, I am from Slovakia! And, I am not from
Eur:	71	where the Prague is, I am from where the Bratislava is!
SK:	90	Lately, I am very proud to be Scottish a little bit, I have to say!

Excerpt 2: Interview on 13 Nov 2015

**Michaela**

LOR:	5.5	Many people admire me to come here [to Edinburgh], get
years		the education, find the job, but I still feel proud of who I
Scot:	10	am. I still feel European, because I know that I can travel
Eng:	18	within Europe and it feels like home, but it never feels like
Eur:	70	home. That's why Slovak [identity] is the most important
SK:	92	for me.

However, more common were comments that indicated a combination of national identities. The identity task did not force participants to make exclusive rankings, and this allowed the immigrant participants to discuss the varying influences on their identities. In some cases, this led to an ambivalent middle point between national identity choices, where participants did not feel comfortable claiming a specific identity. Júlia, for example, felt pulled between her host and home country even after nine years' residence in Scotland. All four of her identity scores were among the lowest of all

participants, suggesting that she resisted claiming any identity based on her influences as an immigrant.

Excerpt 3: Interview on 01 Dec 2015

**Júlia**

LOR: 9

years

Scot: 60

Eng: 1

Eur: 23

SK: 32

When [an]other country becomes your home...you really lose big part of your old identity, so now I don't really feel Slovakian and neither fully Scottish!

An alternative approach resisting a specific national identity was to explicitly claim a pan-European identity that favoured participants' status as immigrants rather than adherence to a single nation. For some this was a practical choice, highlighting the ease of travel and close connections between the UK and Slovakia in 2015. Vilma highlights this choice in particular, even going on to explain that her learning English was a means of accessing routes of travel and employment unavailable in a Slovak-only environment.

Excerpts 4-5: Interview on 30 Oct 2015

**Vilma**

LOR: 5

years

Scot: 50

Eng: 23

Eur: 83

SK: 67

I think now the world is really small so, I see myself rather European, because I can go anywhere I want, hopefully for a while, still.

Everywhere I would speak English since I don't know other languages fluently, so I see myself as European... and Slovak pretty much equally, but I couldn't really use [Slovak] language [...], and Scottish, it's sort of half way because I live in Scotland so I understand the culture, understand the history, I see myself in a way becoming Scottish because I live and I talk to people and I have friends who are from here, and English, just because of the language, but I don't really go to England, so it would be probably least important [part of my identity].



Zora offered similar comments to Vilma's, indicating that separation from her home country was mitigated by the ease of travel between Slovakia and the rest of the EU, at the time.

Excerpt 6: Interview on 22 Oct 2015

**Zora**

LOR: 5.5 I feel European quite a lot, because it's amazing how we  
years can travel in Europe and you can see so much stuff, and  
Scot: 24 there're cheap flights, people are almost the same  
Eng: 0 everywhere so I feel that Europe is kinda like US in a  
Eur: 71 way... and I feel a bit Scottish, kind of, because I've been  
SK: 96 here for 5 years, if I didn't like it at all, I wouldn't be here!

For others, a European identity was the gateway to enjoying a new national identity. Participants such as Lenka rejected a Slovak identity and were more likely to claim a European identity in its place. Participants such as Marta claimed a strong Scottish identity, supplementing this with a strong European identity score as well. While their European identity choice may have been influenced by practical aspects such as travel throughout the EU, these participants appeared to adopt a European identity in solidarity with other immigrants, rather than in solidarity with members of their home country or current local communities.

Excerpt 7: Interview on 08 Dec 2015

**Lenka**

LOR: 13 Living here I mostly feel myself as European, because  
years although I am from Slovakia, now it seems to me not as  
Scot: 59 important as being from the continental Europe. I've been  
Eng: 13 influenced by also other countries living around, so now  
Eur: 91 Slovakia doesn't seem to me as important as being part of  
SK: 79 the Central European community, travelling around and  
being influenced by cultures and TV. That's how I feel the  
difference between [being] British and European, and I  
identify myself more European rather than British.

Excerpt 8: Interview on 13 Oct 2015

**Marta** The most important is the European [identity], because I  
 LOR: 11 see myself as European. I am not... I don't see myself  
 years strong as Slovak citizen or Slovak person, the Slovak  
 Scot: 85 nationality is not important for me, just came from... my  
 Eng: 11 parents are Slovak, my family are Slovak, most of my  
 Eur: 100 family are in Slovakia, but my identity is NOT Slovak! I  
 can't see myself... that the mentality, the kind of problems  
 SK: 70 people have in Slovakia [...] with the corruption, the  
 problems they have, I just don't understand how the things  
 like that are actually... how it's possible that the things like  
 that are happening, and they can't deal with them in a nice,  
 civilised way.

The ideas posed in interviews prompted further investigation via quantitative research. In addition to reviewing participants' identity scores, the present study uses these scores as independent factors when modelling sociolinguistic effects on language production.

## 5.2. Quantitative analysis of identity

European identity scores were consistently high among all immigrant participants, and for some this identity received higher scores than Scottish or even Slovak identities. These findings support qualitative results revealing that many immigrant participants believed that feeling European maintained both the importance of living abroad as well as a connection to their home country and Slovak heritage. This finding corresponds to Block's (2008) study, where he found that first-generation immigrants tend to preserve their L1 identity, while over their period of residence developing ties in their host country.

Comparisons between the participant groups demonstrated significant between-groups differences for the self-reported Scottish ID and European ID. It is evident that Slovak immigrants prefer to self-identify primarily as European and Slovak. Comparisons between the participant groups demonstrated significant between-groups differences for the self-reported Scottish ID ( $t(20.8) = 7.20, p < .001$ ) and European ID ( $t(26) = 2.11, p = .045$ ). There was no statistical difference for English ID between both language groups, and Slovak ID was for the immigrant group only. Figure 2 shows the self-reported identity for both language groups. From the mean scores it is evident that Slovak immigrants prefer to self-identify primarily as European (72%) and Slovak (79%). The Scottish participants approached

a ceiling effect when identifying themselves with the Scottish identity (95%).

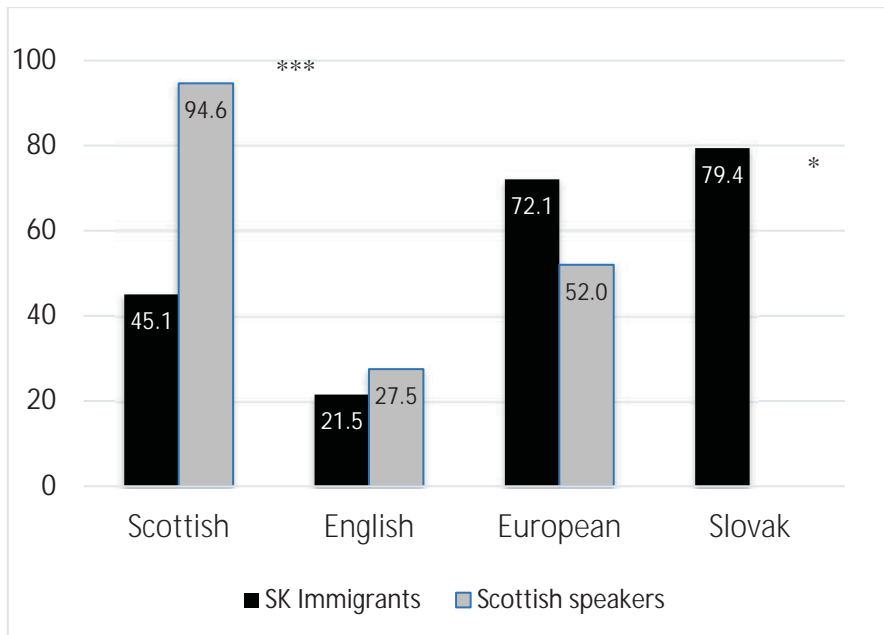


Figure 2: Mean self-reported identity scores for both immigrant Slovak and native Scottish participants.

Analysis also revealed notable within-group differences for the immigrant group. Most of the immigrant participants in the present study were collected from the Czechoslovak Children's Club, which represents a community that reinforces Slovak traditions in Edinburgh. The results showed that while club members preferred Scottish and English identities, an independent-samples *t*-test indicated that only the means for the Scottish ID score were statistically significant ( $t(0, 1) = -2.58, p < .05$ ). The results suggest that while participants who were not part of the club may have had fewer opportunities to socialise with other Slovak immigrants, the club may have actually been a means for its members to feel more comfortable, and therefore more integrated, with their host community. Figure 3 displays the mean identity scores between the immigrant sub-groups.

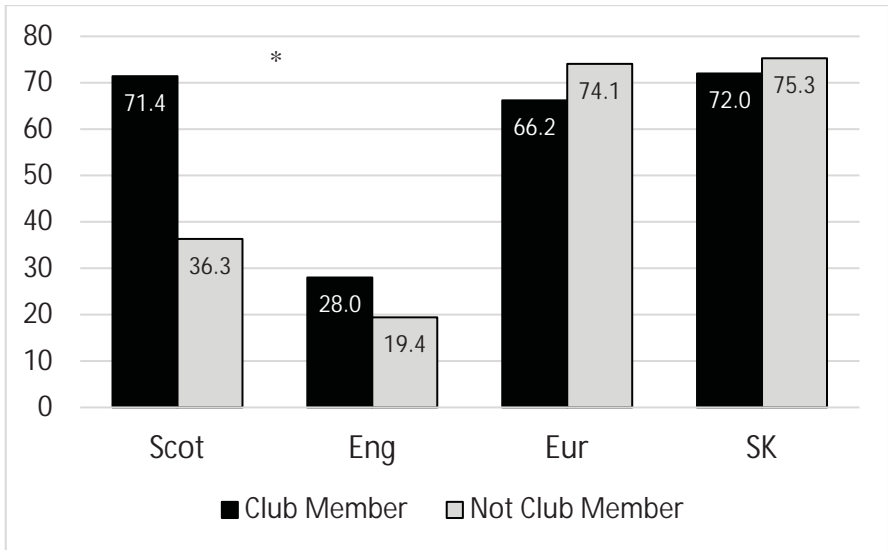


Figure 3: Mean self-reported identity scores between immigrant participants who were part of the Czechoslovak Children’s Club (n = 5), and immigrant participants who were not club members (n = 15).

Given that quantitative analysis of identity appears to confirm trends found in qualitative assessment of participants’ interviews, these results will serve as independent factors in sociolinguistic speech analysis.

### 5.3. Speech style

This section begins by exploring how speech style plays a role in participants’ productions, as the different levels of formality in the tasks meant that participants paid different levels of attention to their speech. Across the non-immigrant groups, native Slovak participants in Slovakia produced highly diphthongal pronunciations whilst native Scottish participants produced highly monophthongal pronunciations. However, both non-immigrant groups exhibited similar tendencies: STYLE was not a statistically significant predictor for Euclidean Distance for either group. For the immigrant Slovak group, in contrast, STYLE had the largest effect of all categorical variables (see Table 1). The immigrants’ STYLE effect was strong enough that it emerged as a statistically significant factor in the overall ANOVA across participants.

**Table 1: Two-way ANOVA summary analysis**

Effect	Df	SumSq	MeanSq	F value
STYLE	2	2.3412	1.17058	84.759
GROUP	2	1.6255	0.81276	58.850
STYLE:GROUP	4	2.3252	0.58129	42.090

Results from the ANOVA suggest how immigrants vary their pronunciations across different styles, that they produced the most diphthongal realisations in the formal style with tokens in more structured and formal contexts (*WORDLIST*) and the most monophthongal realisations in the informal style (*INTERVIEW*). Their differences are emblematic of the Scots-SSE(-RP) continuum explored earlier. Aitken (1979, as cited in Lawson 2014, 3) explored that in Scotland the continuum allows for changes of pronunciation in different social contexts, and Corbett and Stuart-Smith (2012) recognised that the shifts may occur to avoid using stigmatised versions in more formal contexts. The sampled immigrants in the present study may have used a similar sociolinguistic continuum that prompted the shifting vowel realisations in different contexts. The results for speech style indicate a strong effect that will be explored further as an independent factor in the regression model mapping immigrants' speech.

#### 5.4. Speech modelling

Immigrants' speech production was modelled using Rbrul (Johnson 2009) to create a multiple regression model with WORD and PARTICIPANT as random intercepts, to get a sense of which social factors were effective at predicting speech production. In addition to biographical and immigration-related factors obtained from the interview, identity and speech style were included as categorical independent variables. Identity was set as an ordinal factor: the continuous scores obtained from participants were grouped into 25-point ranked categories, and this grouping was performed to better understand general trends (Elliott, 2018).

Participants' FACE and GOAT vowel realisations were modelled on square-root transformed data to account for positive skewness, and after transformation the data were normally distributed (Elliott, 2018). The model includes both categorical factors, with separate levels having a defined impact on overall pronunciation; and continuous factors, with scores along a range having varied impact on the overall model. The dependent variable in the model is Euclidean distance, or the overall difference in vowel quality between the onset and glide for each token. This metric does not measure

direction, but as this study is measuring how diphthongal each token is realised the direction is less important than the difference in overall vowel quality. The analysis focuses on statistically significant ( $p < .05$ ) factors in the model, using coefficients as indicators of their effect.

For immigrants, significant continuous factors included age at testing, age of arrival to the UK, age at beginning English language instruction, and perceived English proficiency at arrival. Table 2 outlines which factors have positive coefficients, and which have negative coefficients in the immigrants’ model.

**Table 2: List of coefficients for statistically significant continuous factors for immigrant Slovak participants**

Positive coefficients			Negative coefficients		
Factor	Sig. level	Coefficient	Factor	Sig. level	Coefficient
Age	$p < .001$	0.007	Age of arrival	$p < .001$	-0.004
Eng. proficiency at immigration	$p < .001$	0.006	Age of instruction	$p < .001$	-0.002

Older participants appeared to have relatively more diphthongal vowel realisations, although immigrants who were older at the time of their immigration were predicted to have relatively more monophthongal vowel realisations. Results for language instruction and proficiency are complementary: participants who started language instruction later in life would have had less exposure to standard language models before immigration, and therefore would have had decreased English proficiency at immigration. These results were associated with relatively more monophthongal vowel realisations than were participants with higher exposure to standard (i.e., diphthongal) language models, and therefore increased English proficiency, before immigration.

Among factors with defined levels, statistically significant factors included speech style and all four identity scores. Results for fixed factors are outlined in Table 3.

**Table 3: List of coefficients and token counts for each level of statistically significant fixed factors ( $p \leq .05$ ) for immigrant Slovak participants**

Factor	Coefficient	Tokens	Factor	Coefficient	Tokens
Style			Scottish ID		
Interview	-0.040	743	0-25	0.065	1176
Reading	-0.006	1369	26-50	0.042	972
Word list	0.046	1217	51-75	-0.016	485
			76-100	-0.091	696
English ID			Slovak ID		
0-25	0.058	2346	0-25	0.075	292
26-50	-0.033	832	26-50	0.025	298
51-75	--	--	51-75	-0.018	367
76-100	-0.025	151	76-100	-0.082	2382
European ID					
0-25	-0.109	140			
26-50	-0.001	333			
51-75	0.058	1215			
76-100	0.053	1641			

Results for speech style reinforce what was described earlier. The interview style was associated with relatively more monophthongal pronunciation, and the word list style was associated with more diphthongal pronunciation. The reading passage had a relatively neutral effect in this model. In general, results for speech style indicate that immigrant participants defaulted to relatively more diphthongal vowel realisations in situations where they paid more attention to their speech.

For ease of description, the present analysis focuses primarily on identity scores indicating strong personal association with the given identity, with score values of 75 to 100. For immigrants' identity scores, high European ID scores were also associated with more diphthongal vowel realisations, and these scores were more widespread across participants. High Scottish ID scores were associated with relatively more monophthongal vowel realisations. High Slovak ID scores had comparatively little effect on the model: the >75 category had a positive coefficient, but the coefficient

was so small as to have minimal effect on overall vowel realisation. This low coefficient was due likely to the fact that the vast majority of immigrant participants indicated that they retained high solidarity with their Slovak national identity. Only one participant had an English ID score among the top two categories, so wider trends are difficult to ascertain.

The model for native Scottish participants had fewer significant factors, though fewer factors overall were tested. Age and word frequency were the only continuous factors significant at the  $p \leq .05$  level, and their coefficients indicated opposing effects on the model. Older participants were predicted to have relatively more monophthongal vowel realisations, whilst more frequent words were predicted to incur more diphthongal vowel realisations. However, the coefficient for each factor was quite low, indicating a small effect on overall speech. Table 5 outlines results for both continuous factors.

**Table 5: List of coefficients for statistically significant continuous factors for native Scottish participants**

Positive coefficients			Negative coefficients		
Factor	Sig. level	Coefficient	Factor	Sig. level	Coefficient
Frequency (log10)	$p < .05$	0.008	Age	$p < .001$	-0.002

Statistically significant factors with fixed effects included European ID and following phonetic environment. Similar to results from the immigrant group, high strong European identity scores ( $\geq 75$ ) were associated with relatively more diphthongal vowel realisations. Unlike the immigrant participant group, following environment proved to be a significant factor in the model. Vowels followed by plosives were associated with relatively more diphthongal vowel realisations, with [t] having the highest positive coefficient of the group. In contrast, vowels with no following consonant were associated with relatively more monophthongal realisations. Table 6 outlines the model results in greater detail.



**Table 6: List of coefficients and token counts for each level of statistically significant fixed factors ( $p \leq .05$ ) for immigrant Slovak participants**

Factor	Coefficient	Tokens	Factor	Coefficient	Tokens
Following environment			European ID		
[t]	0.024	251	0-25	0.026	193
[d]	0.007	415	26-50	-0.022	538
[k]	0.002	316	51-75	-0.024	569
#	-0.033	519	76-100	0.020	201

The Scottish Vowel Length Rule (SVLR) indicates that open vowels have longer durations than vowels followed by /d/, /t/, or /k/ in particular (Watt and Ingham, 2000). Like the effects from pre-fortis clipping, any variation to vowel length would likely have effects on vowel production – in this example, that the effects may exaggerate any hint of diphthongal productions as vowel length increases. The combination of effects from the SLVR and from pre-fortis clipping influenced the choice of following environments to examine in the present study, and for this reason the four contexts are separate variables when analysing vowel production. However, the model in the present study suggests the opposite effect. The difference is due likely to the small sample selected in the present study, where participants were selected from immigrant participants' social circles rather than from across Scotland as a whole. The implications of results from both participant groups are described in the following section.

## 5.5. Discussion

The results provide evidence that FACE and GOAT vowels experience some variation in relation to immigrants' identities. In general, it is evident that results from this study support those by Mougeon *et al.* (2004) and Moyer (2014) in that it is evident that speech patterns by non-native speakers (NNSs) are variable and rarely attainable in regard to the acquisition of their native-speaking (NS) peers. For the most part, the speech models support this theory as there were few factors that had similar effects across both models. European identity was the only instance high scores were associated with relatively more diphthongal vowel realisations in both models. However, the most shared factors that were significant in the immigrants' model were not significant in the natives' model, or vice versa. Speech style had an especially notable effect: immigrants' vowel realisations were

closest to native participants’ pronunciation with the interview style but became significantly more diphthongal in more scripted speech styles.

The present study also confirms results from Meyerhoff and Schleeff’s (2014) study, which found that lexical frequency plays little if any role in constraining the variation in both non-native speakers (NNS) and native speakers (NS) in productions of word-final (t) and (ing) in Edinburgh, with similar findings for (e) and (o) variants in this study. Lexical frequency was a statistically significant factor in the model for native Scottish participants, but the coefficient was low enough that the factor had little effect on overall results. Similar to results by Schützler (2015), (e) and (o) vowels were previously found to be universally monophthongal in Scottish English regardless of lexical frequency. Schützler also reports that the onset of (e) tends to be more central due to higher lexical frequency and increased vowel trajectory length. The variable (o) undergoes similar process to (e), which can be interpreted as lenition (99-100). These results highlight a potential limitation of the present study, as Euclidean distance measurements indicate overall vowel movement but do not provide insight into the direction of vowel trajectory.

Meyerhoff and Schleeff (2014, 121) provide a possible explanation into why lexical frequency was not a significant factor in the immigrants’ model. Their results suggested that lexical frequency is not a cognitive process where learners fall back on to when they acquire a new variable. Rather, language learners view frequency as variation, but the perspective is tied to social and linguistic complexity as the learners become familiar with language and the variable.

Self-reported identity proved to play a role in vowel quality for both immigrants and Scottish participants. It is evident that immigrants with strong sense of Scottish identity were observed to produce more monophthongal speech patterns. Immigrants with strong Slovak and European national identities were found to produce diphthongal variants often found in SSBE, i.e., vowels with long qualitative trajectories. Identity scores had a reduced effect on the other group. All native Scottish participants scored Scottish ID within the top category, and with no variance their scores were removed from the model as a factor; and they all scored English ID within the bottom two categories, so variation was not enough to be significant in the model. European ID was the only ID score with an effect on the native Scottish model, and like the model with immigrant participants high European ID scores were associated with relatively more diphthongal vowel realisations.

That European ID was a significant factor in both immigrant and Scottish participants’ models suggests that European identity is likely at

least a supplementary label for both native and immigrant participants. These results may be interpreted under at least two lenses, as proposed by Duchêne-Lacroix and Koukoutsaki-Monnier (2015). Adopting a European identity while rejecting specific national identities, as evident in Lenka's and Marta's opinions, may be a means of avoiding difficulties when claiming a single nationality, or it may be a means for rejecting national identities with little perceived value. A less utilitarian but no less significant perspective is that participants may adopt a European sub-identity, supplementing their specific national identities. As the present study did not force participants to make a ranked choice, either option may be at work in driving attitude statements. However, it is clear that claiming a European status has an impact on social identity, which in turn is reflected in speech production.

A factor that was considered in the present study but ultimately discarded was a possible L1-L2 processing differences for the Slovak immigrants. Although all participants reported having received English language instruction prior to their arrival to the UK, additional steps were taken to explore any potential L1 transfer. In my previous work (Elliott 2018) I suggested that although diphthongal variants of (ei) and (ou) might potentially find their analogues in SSBE to some degree, direct shifts between diphthongal and monophthongal variants do not occur in Slovak. L1 transfer on the grounds that immigrants might be using interlanguage forms a result of stylistic resource (see, e.g., Flege and MacKay 2011; Moyer 2014) was therefore ruled out in this case, and the addition of NS variants in NNSs' speech was determined to have been the result of influence from local language communities in Edinburgh.

The native Scottish speakers' model demonstrated a number of factors that were significant for immigrant participants but not for the Scottish participants. Key among these was speech style, with styles ranging from the unscripted interview task to the more scripted reading and word list tasks. Style appeared to be a significant NNS constraint, though it was not a significant predictor in the speech of Scottish peers. This suggests that the style for the immigrant participants might represent a potential form of transformation resulting in a novel and community-driven variants. A further NNS-only factor was reported self-proficiency in English. High levels of education in Slovakia were associated with relatively more diphthongal (e) and (o) vowel realisations, whereas reduced levels of instruction were associated with relatively more monophthongal realisations. Results from immigrants' proficiency levels demonstrate how levels of exposure to different variants during formative periods affect immigrants' English production in the long term, even if high-proficiency and low-

proficiency immigrants spend relatively similar periods in similar language communities.

The combination of linguistic and non-linguistic factors in the immigrants’ regression model opens the way for comparison between the two types of factors. Meyerhoff and Schlee (2014, 122) suggested that acquiring non-linguistic constraints is a more difficult process than the linguistic constraints because immigrants would need to acquire “(a) variants and their relative frequencies, (b) the independent linguistic and non-linguistic factors constraining those variants, (c) the ordering of specific constraints in those factors, but also (d) the stances, acts, activities, and styles.” Social contrasts such as age, identity, and style are more salient social factors, and therefore more likely to constrain NNS speech, than are more subtle linguistic constraints. This distinction between groups provides an explanation for why linguistic factors were notable in the NS model but not in that for the immigrant participants.

## 6. Conclusion

The present study explored the constraints on variation of FACE and GOAT vowels among long-term Slovak immigrant women, in contrast to similar variation among native Scottish peers. The data presented here compare constraints on NS and NNS language models, predominantly focusing on the impact of self-reported identity scores on both models, and they supplement these models with qualitative analysis of immigrants’ attitudes and identity. In addition, I explored social factors associated with the immigrant experience, including foreign language instruction and age of arrival, as well as linguistic factors such as following environment and word frequency. I have found that to a limited extent, immigrants are in the process of acquiring the monophthongal variation of (e) and (o) vowels produced by their Scottish peers, but they still seem to be aware of the forms that they’ve learned via previous language instruction. The acquisition process varies, and immigrants’ speech production predominantly depends on the type of constraint as well as its character and complexity.

Learners appear to be dealing with alternative strategies to navigate levels of vowel realisations that were under this investigation. This study explored linguistic variation among Slovak young immigrant women in Edinburgh to provide a larger picture of cross-cultural interaction in a language contact setting among minorities living in Scotland. Results from the present study support the previous findings which show that L2 speakers acquired only a limited number of their local variants, regardless of their length of stay in their host country. The immigrants’ mean vowel realisations

were significantly different from the native Scottish participants (monophthongal realisations) and fluent native-Slovak bilinguals in Slovakia (diphthongal realisations). The key finding in regard to accent acquisition was the effect of speech style, where changes to speech style were strongly associated with relatively predictable shifts to vowel productions but for the immigrant group only.

During the course of the study, a picture emerged of the connections between accent acquisition and identity. With increased integration with Scottish culture, immigrants produced more monophthongal vowel realisations. Immigrants' self-ratings for the *Scottish*, *Slovak*, and *European* identities proved to be important predictors in accent acquisition and language attitudes. Qualitative findings showed that these "international women" (Block 2008) maintained professional ties with the Scottish community while also keeping close social ties to their home country, as well as to other international residents in the host country. These concepts thus deepen our understanding in the variational sociolinguistics capturing migrants in the study of language contact and identity and contribute towards exploring the innovation in language change in Scotland. Future studies on language identity might further examine identity by supplementing self-reported scores with choices and attitudes observed during an ethnographic approach. The years following data collection in 2015-2016 demonstrate how quickly a political landscape can shift, and although the present study captures participants' attitudes at a single point in their lives it fails to evaluate how these participants react to these changes. Nonetheless, results from the present study crystallise immigrants' pre-Brexit attitudes toward Europe and the UK, and these results provide a foundation from which post-Brexit evaluations can be compared.

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## References

- Bechhofer, Frank, and David McCrone. "Choosing national identity." *Sociological Research Online* 3, no. 14 (2015). Accessed February 14, 2021. <http://www.socresonline.org.uk/15/3/3.html>.
- Bidzinska, Barbara. "The Polish diaspora in Austria: Mutual attitudes, processes of integration and identity formation among immigrant Poles," in *Linguistic and cultural acquisition in a migrant community*, eds. David Singleton, Vera Regan, and Ewelina Debaene (Bristol: Multilingual Matters, 2013), 73-84.
- Block, David. *Multilingual identities in a global city: London stories*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2008.
- Boersma, Paul, and David Weenink. "Praat: doing phonetics by computer [Computer program]." Version 5.3.55, 2010. Accessed September 20, 2013. <http://www.praat.org/>.
- Braber, Natalie. "“I am not a fanatic Scot, but I love Glasgow”: Concepts of local and national identity in Glasgow," in *Identity: An International Journal of Theory and Research* (2009): 307-322.
- Brugman, Hennie, and Albert Russel. "Annotating multi-media/multi-modal resources with ELAN," in *Proceedings of the 4th International Conference on Language Resources and Language Evaluation*, eds. M. Lino, M. Xavier, F. Ferreira, R. Costa, and R. Silva, 2065-8. Paris: European Language Resources Association, 2004.
- Clark, Lynn, and Eric Schlee. "The acquisition of sociolinguistic evaluations among Polish-born adolescents learning English: evidence from perception." *Language Awareness* 19 (2010), no. 4, 299-322.
- Corbett, John, and Jane Stuart-Smith. "Standard English in Scotland". In *Standards of English: Codified varieties around the world*, ed. Raymond Hickey, 72-95. Cambridge: Cambridge University Press, 2012.
- Duchêne, Alexandre, Melissa Moyer, and Celia Roberts. "Introduction: recasting institutions and work in multilingual and transnational spaces." In *Language, migration and social inequalities a critical sociolinguistic perspective on institutions and work*, ed. Alexandre Duchêne, Melissa Moyer and Celia Roberts. Bristol: Multilingual Matters, 2013.
- Duchêne-Lacroix, Cedric, and Angeliky Koukoutsaki-Monnier, "Mapping the social space of transnational migrants on the basis of their (supra)national belongings: the case of French citizens in Berlin." *Identities* 23 (2016): 136-154.

- Elliott, Zuzana. *Sociolinguistic variation among Slovak immigrants in Edinburgh, Scotland*. The University of Edinburgh: Unpublished PhD Thesis, 2018.
- Esling, John H. *Voice Quality in Edinburgh: A Sociolinguistic and Phonetic Study*. Ph.D. dissertation, University of Edinburgh, 1978.
- Flege, James Emil, and Ian R. A. MacKay. "What accounts for "age" effects on overall degree of foreign accent?" In *Achievements and perspectives in SLA of speech, New Sounds*, vol. II, Peter Lang, 2011.
- Görlach, Manfred. *Focus on Scotland*. Amsterdam/Philadelphia: John Benjamins, 1985.
- Johnson, Daniel E. "Getting off the GoldVarb standard: Introducing Rbrul for mixed-effects variable rule analysis." *Language and Linguistics Compass* 3 (2009): 359-383.
- Kerswill, Paul. "Migration and language." In *Sociolinguistics/Soziolinguistik. An international handbook of the science of language and society* (2nd ed., vol 3), eds. Klaus Mattheier, Ulrich Ammon and Peter Trudgill, 2271-2285. Berlin: De Gruyter, 2006.
- Kobiałka, Ewa. "Language, identity and social class among Polish migrants in Ireland." In *Language, identity and migration: Voices from transnational speakers and communities*, ed. Vera Regan, Chloe Diskin and Jennifer Martyn, 191-216. Bern: Peter Lang, 2016.
- Kriukow, Jaroslaw. "I can express myself, but not my self" – *Investigating the English language identity of Polish migrants in Scotland*. The University of Edinburgh: Unpublished PhD Thesis, 2017.
- Labov, William. "Hypercorrection by the lower middle class as a factor in linguistic change." In *Sociolinguistic patterns*, ed. William Labov, 122-142. Philadelphia: University of Pennsylvania Press, 1972.
- Lawrence, Daniel. *Fitting in: Adult migrants' acquisition of sociolinguistic variation in Edinburgh English*. The University of Edinburgh: Unpublished MSc. Dissertation, 2013.
- Lawson, Robert. "Introduction: An overview of language in Scotland." In *Sociolinguistics in Scotland*, ed. Robert Lawson, 1-14. Houndmills, Basingstoke, Hampshire: Palgrave MacMillan, 2014.
- Llamas, Carmen, and Dominic Watt. "Scottish, English, British? Innovations in attitude measurement." *Language and Linguistic Compass* 8 (2014): 610-617.
- Macafee, Caroline. "Scots and Scottish English." In *Legacies of colonial English: Studies in transported dialects*, ed. Raymond Hickey, 59-81. Cambridge: Cambridge University Press, 2005.

- Maguire, Warren. “English and Scots in Scotland.” In *Areal features of the Anglophone world*, ed. Raymond Hickey, 53-78. Mouton de Gruyter, 2012.
- Martinez-Callaghan, Jordi, and Marta Gil Lacruz. “Developing identity, sense of belonging and social networks among Japanese immigrants in Scotland and Spain.” *Asian and Pacific Migration Journal* 26 (2017), no. 2, 241-261.
- McCrone, David, and Frank Bechhofer. *Understanding national identity*. Cambridge: Cambridge University Press (2015). Accessed online on March 18, 2018. <https://doi.org/10.1017/CBO9781316178928>.
- Meyerhoff, Miriam, Eric Schlee, and Lynn Clark. “Becoming local: Exploring adolescents’ sociolinguistic limits and potential.” In *Proceedings of the BAAL annual conference*, ed. Martin Edwardes, 93-97. London, 2009.
- Meyerhoff, Miriam, and Eric Schlee. “Hitting an Edinburgh target: Immigrant adolescents’ acquisition of variation in Edinburgh English.” In *Sociolinguistics in Scotland*, ed. Robert Lawson, 103-128. Basingstoke: Palgrave Macmillan, 2014.
- Moore, Emma. “Variation and identity.” In *Analysing variation in English*, eds. April McMahon and Warren Maguire, 219-236. Cambridge: Cambridge University Press, 2011.
- Mougeon, Raymond, Katherine Rehner, and Terry Nadasdi. “The learning of spoken French variation by immersion students from Toronto, Canada.” *Journal of Sociolinguistics* 8 (2004): 408-432.
- Moyer, Alene. “What’s age got to do with it? Accounting for individual factors in second language accent.” *SSLT* 4, no. 3 (2014): 443-464.
- Moyer, Alene. “An advantage for age? Self-concept and self-regulation as teachable foundations in second language accent.” *The CATESOL Journal* 30 (2018): 1-18.
- Regan, Vera. “The bookseller and the basketball player: Tales from the French Polonia.” In *Linguistic and cultural acquisition in a migrant community*, eds. David Singleton, Vera Regan, and Evelina Debaene, 28-48. Bristol: Multilingual Matters, 2013.
- Rosenfelder, Ingrid, Josef Fruehwald, Keelan Evanini and Jiahong Yuan. “FAVE (Forced Alignment and Vowel Extraction) Program Suite (2011).” Accessed June 20, 2020. <http://fave.ling.upenn.edu>
- Ryan, Sadie. D. *Language, migration and identity at school: a sociolinguistic study with Polish adolescents in Glasgow*. Unpublished PhD thesis, University of Glasgow, 2018.
- Scobbie, John M., and Alice Turk. “Standard English in Edinburgh and Glasgow: The Scottish vowel length rule revealed.” In *Urban Voices*:



- accent studies in the British Isles*, eds. Paul Foulkes and Gerard Docherty, 230-245 London: Arnold, 1999.
- Schleef, Eric, Miriam Meyerhoff and Lynn Clark. "Teenagers' acquisition of variation: A comparison of locally-born and migrant teens' realisation of English (ing) in Edinburgh and London." *A Journal of Varieties of English* 32, no. 2 (2011): 206-236.
- Schützler, Ole. "Charting vowel spaces in Edinburgh middle-class speech." *English World Wide* 32 (2011): 24-45.
- Schützler, Ole. "Vowel variation in Scottish Standard English: accent-internal differentiation or anglicisation?" In *Sociolinguistics in Scotland*, eds. Robert Lawson, 129-152. Houndmills, Basingstoke: Palgrave Macmillan, 2014.
- Schützler, Ole. *A sociophonetic approach to Scottish Standard English*. Amsterdam/Philadelphia: John Benjamins Publishing Company, 2015.
- Speitel, Hans, and Paul A. Johnston. "Sociolinguistic Investigation of Edinburgh Speech." *Final Report to ESRC* (Grant 000230023). Unpublished ms, 1983.
- Stuart-Smith, Jane. "Scottish English: Phonology." In *Varieties of English 1: The British Isles*, eds. Bernd Kortmann and Clive Upton, 49-70. Berlin/New York: Mouton de Gruyter, 2008.
- Thomas, Erik, and Tyler Kendall, adapted by Warren Maguire. *Vowel\_data\_captureERTnew – 205080 PRAAT script*, 2014. Accessed September 15, 2014.
- Watt, Dominic, and Caterine Ingham. "Durational evidence of the Scottish vowel length rule in Berwick English." In *Leeds Working papers in Linguistics* (2000), 8, 205-228.
- Watt, Dominic, and Leslie Milroy. "Patterns of variation and change in three Newcastle vowels: Is this dialect levelling?" In *Urban voices: Accent studies in the British Isles*, eds. Paul Foulkes and Gerard Docherty, 25-46. London: Arnold, 1999.
- Wells, John C. *Accents of English* (vol. 1). Cambridge: Cambridge University Press, 1982.

# CHAPTER 6

## THE INFLUENCE OF THE NATIVE LANGUAGE ON THE ACQUISITION OF ITALIAN PREPOSITIONS

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### Abstract

This chapter investigates native English and English-Spanish learners' L1 (first language) influence on the acquisition of L2 (second language) Italian prepositions, and the effect of increased L2 (length of exposure) on the acquisition of Italian prepositions by comparing the beginning and intermediate level learners' performances. The chapter also established whether there are any gender differences in the learning outcomes. The findings show that both L2 experience and L1 background play an important role on the acquisition of L2 Italian prepositions while gender does not represent an influencing factor. The errors analysis shows that the effect of L1 negative transfer decreases with an increased L2 proficiency level. Finally, the task types do not affect the learning outcomes and transfer patterns.

*Keywords:* language transfer, L1 interference, L2 Italian, prepositions

### 1. Introduction

For almost a century, crosslinguistic influence (CLI) or language transfer has been a central issue in the field of second language acquisition (SLA), applied linguistics, and language pedagogy (e.g., Gass 1984; Gass and Selinker 2008; Lado 1957; Odlin 1989, 2003; Richards 1974; Selinker 1972, 1983). A fundamental aspect of SLA is first (L1) or native (NL) language

influence on the second language (L2). The transfer may affect any aspect of the linguistic repertoire such as syntax, vocabulary, phonology, etc. It can be positive or negative: it is positive (facilitation) when “the use of the first language (or other languages known) in a second language context” results “in a target-like second language form”, it is negative (interference) when “the use of the first language (or other languages known) in a second language context” results in “a non-target-like second language form” (Gass and Selinker 2008, 520).

The purpose of this study is to investigate the degree of crosslinguistic influence in the use of L2 Italian prepositions, and to identify factors related to language transfer. The study also compares the influence of two L1s, English and Spanish, on the acquisition of L2 Italian prepositions. English and Spanish have different language distance to L2 Italian: Italian and Spanish are Romance languages while English belongs to the Germanic languages.

## 2. Rationale of the Study and Research Questions

The current study examines the effect of the first language (English, Spanish) transfer in the acquisition of L2 Italian prepositions. Italian, English, and Spanish belong to the Indo-European language family but the distances among them are different: while Italian and Spanish are part of the Romance sub-family, English is a part of the Germanic one. Therefore, the effect of transfer (or CLI) in the acquisition of L2 Italian prepositions might differ (Jarvis 2000). Katerinov's (1975) frequency lists of errors show that the use of prepositions is one of the most problematic area of Italian grammar for the English and Spanish speaking students. The hypothesis is that the difficulty in the use of Italian prepositions stems from L1 negative transfer.

In the recent past, a remarkable number of studies in applied linguistics have investigated the effect of L1 transfer on second language acquisition. The majority of these studies has focused on the acquisition of English as a second language while only a few dealt with the learning of Italian prepositions. These studies on L2 Italian prepositions included speakers of different L1 background (Polish, Spanish, and Italian dialects) and also adopted different methods (oral and written tests, a translation task, a writing assignment) in assessing the learning outcomes. Very few studies have investigated native English learners' acquisition of L2 Italian. In searching for more comprehensive and effective assessment tasks that are appropriate for both beginning and intermediate learners' performance, this study includes four tasks to assess the cross-linguistic transfer patterns in

acquisition of L2 Italian prepositions by English and Spanish-English learners at different stages of learning the target language. Moreover, this study investigates the role of gender in the acquisition of L2 Italian prepositions. Finally, the pedagogical implications of the present study will be explored, and curriculum recommendations and classroom-based instruction suggestions will be made based on the findings.

The research questions are:

1. How do native English monolingual and English-Spanish bilingual learners' first language(s) influence the acquisition of L2 Italian prepositions?
2. How does L2 experience influence the acquisition of L2 Italian prepositions?
3. Does gender affect the acquisition of L2 Italian prepositions?
4. How do task types affect the learning outcomes and transfer patterns?

### 3. Methods

#### 3.1 Participants

The participants were 48 students (24 males, 24 females, mean age = 19.3, age range 18-22) enrolled in the first-, second-, third-, and fourth-semester Italian courses in a public university in the United States. The participants were divided into groups according to their level of L2 experience: 12 low-beginners (1<sup>st</sup> semester), 12 high-beginners (2<sup>nd</sup> semester), 12 low-intermediate (3<sup>rd</sup> semester), and 12 high-intermediate (4<sup>th</sup> semester). All participants were born and raised in the United States and reported speaking English as their native language. 50% of participants in each group reported speaking Spanish along with English as their first languages. All Spanish-English participants were early bilinguals. Twelve L1 English participants reported having studied Spanish or French as their second language in foreign language courses, but they had less than two years of language experience and were not fluent in these L2s. All participants received the communicative approach instructions. At the point of data collection, the participants were about three months into the 16-week semester and all had learned and practiced L2 Italian simple prepositions.

### 3.2 Materials

For the purpose of checking students' language background, an online language background questionnaire was administered before data collection began. Translation, fill-in-the-blank, multiple-choice, and grammaticality judgment tasks were used to gather the data. An excerpt of each task is shown in Table 1. Each task contained 18 questions with similar and different uses of prepositions. The selection of prepositions in these tasks is based on differences and similarities in Italian and English (Spanish) usage.

**Table 1. Sample Questions for Each Task**

Tasks	Sample question
Translation task	1. I live in Rome
Fill-in-the-blank task	1. Vivo _____ Roma
Multiple-choice task	1. Vivo _____ Roma 1. in 2. a 3. no preposition 4. per
Grammaticality judgment tasks	1. Vivo in Roma 1. completely grammatical 2. seems grammatical 3. not sure 4. seems ungrammatical 5. completely ungrammatical

The prepositions were divided in the following way:

- I. The use of prepositions is similar, so transfer or direct translation is possible (positive transfer is expected).
- II. The use of prepositions is different, so direct translation is not possible (negative transfer is expected).

This selection, which is based on differences and similarities in usage, allows a more accurate analysis of instances of negative transfer from the first language and intralingual interference.

### 3.3 Procedure

The experiment was conducted during normal class time with the permission of the instructor and the materials were presented online via Qualtrics (due to the COVID-19 situation, original plans for visits to the classrooms for data collection were modified). First of all, the participants were informed of the purpose of this research project and the confidentiality of its results, and were asked to complete an online consent form. Following that, the language background questionnaire and four tasks, Translation (Task 1), Fill-in-the-blank (Task 2), Multiple-choice (Task 3), and Grammaticality judgment (Task 4), were delivered in the order of tasks 1 to 4. This sequence does not give the participants the chance to use any clues they may get from multiple choice or grammaticality judgment tasks in the other two tasks, translation and the fill-in-the-blank. Moreover, the questions were randomized within each task to eliminate the order bias. During the process, the instructor stayed in the Zoom online class to monitor the test and to answer questions. It took about 35 minutes for the participants to complete all the tasks.

## 4. Results

A binary scoring system was used to evaluate the participants' responses in Translation, Fill-in-the-blank, and Multiple-choice tasks (1 – for a correct response, 0 – for an incorrect response). For the grammaticality judgment task, the score was 0 or 1 – for response “Extremely appropriate/Extremely inappropriate,” 0.5 – for response “Neither appropriate nor inappropriate,” 0.25 or 0.75 – for response “Somewhat appropriate/Somewhat inappropriate.”

SPSS was used to perform all the statistical analyses. A series of one-way analysis of variance (ANOVA) was conducted to determine whether there is any statistically significant difference between the groups on the mean percentage accuracy scores. ANOVA tests showed that there was no significant difference between low and high beginning groups [ $F(1,22)=1.556, p=.225$ ] and low and high intermediate groups [ $F(1,22)=1.669, p=.209$ ]. Therefore, the low and high beginning groups were combined to form the beginning level group and the low and high intermediate groups were merged as the intermediate level group. Each

group consisted of 24 participants and their characteristics are shown in Table 2.

**Table 2. Participants' Characteristics (F=12, M=12 per group)**

Groups	Beginning (1st year learners)	Intermediate (2nd year learners)
L1 English	12	12
L1 Spanish- English	12	12
Mean age	18.7	19.8
Age range	18 - 22	18 - 22

The overall mean percentage accuracy scores across the four tasks by each group are presented in Table 3. The intermediate level group outperformed the beginning level group by 13%. Spanish-English bilinguals outperformed English monolinguals by 10%. Finally, female participants outperformed male participants by 2%. A series of one-way ANOVA tests were conducted to determine if the differences on the mean accuracy scores between proficiency level, L1 background, and gender groups were significant. The results showed that the differences between beginning and intermediate groups [ $F(1,46)=32.378, p=.000$ ], and between L1 English and Spanish-English groups [ $F(1,46)=10.374, p=.002$ ] were significant. However, the difference between male and female groups [ $F(1,46)=12.000, p=.628$ ] was not significant. Therefore, both proficiency level and language background, but not gender, play a significant role in the acquisition of Italian simple prepositions.

**Table 3. The Mean Scores by Proficiency Level, L1 Background, and Gender Groups**

Participants	Proficiency level		L1 background		Gender	
	Beginning	Intermediate	English	English- Spanish	Female	Male
Score	57%	70%	59%	69%	64%	62%

Prepositions in each of the four tasks were divided into two types: the first type (type 1) are L1 and L2 prepositions acting similarly (positive transfer is possible) and the second type (type 2) are L1 and L2 prepositions acting differently (negative transfer is possible). The mean percentage scores for preposition type 1 and type 2 are shown in Figure 1. A one-way repeated ANOVA (also known as a within-subjects ANOVA) was also carried out to

examine the effect of Preposition Type, if any. The results showed the difference on preposition types [ $F(1,47)=202.969, p=.000$ ] was significant. Therefore, overall, across the groups, the participants performed significantly better on Type 1 prepositions (possible positive transfer type) than on Type 2 prepositions (possible negative transfer type).

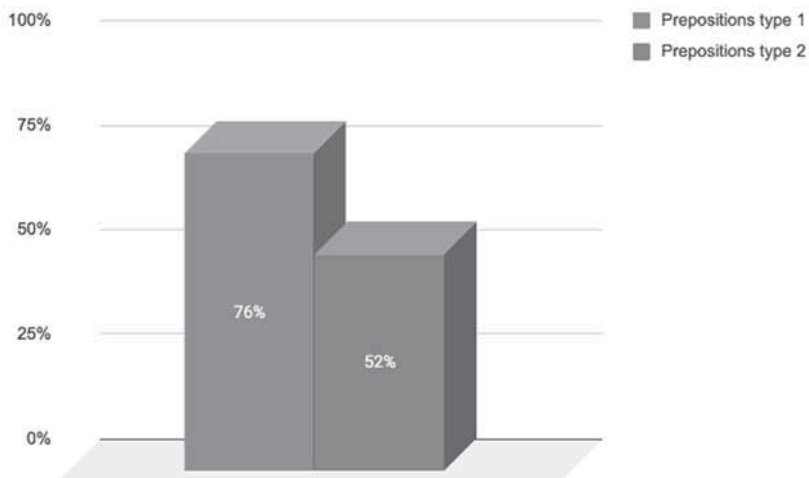


Figure 1. The Mean Percentage Scores for Preposition Type 1 and Type 2

A reliability test was carried out to assess intraclass correlation between task types. The result showed a high degree of intraclass consistency among the four tasks. The average measures for Intraclass Correlation was 0.88 with a 95% confidence interval from 0.818 to 0.929 [ $F(47,141) = 8.571, p=.000$ ]. Thus, overall, across the groups, participants' performance was consistently similar on each task type. A Pearson correlation test on preparation types revealed a moderate level of correlation between the participants performance on two types of prepositions [ $r(48)=0.49, p=.000$ ].

The mean percentage scores on preposition types (2) and task types (4) by beginning and intermediate groups are shown in Figure 2 and Figure 3, respectively. Both groups performed better on preposition type 1 (where L1 and L2 prepositions act similarly). Intermediate level participants outperformed beginning participants on each task.



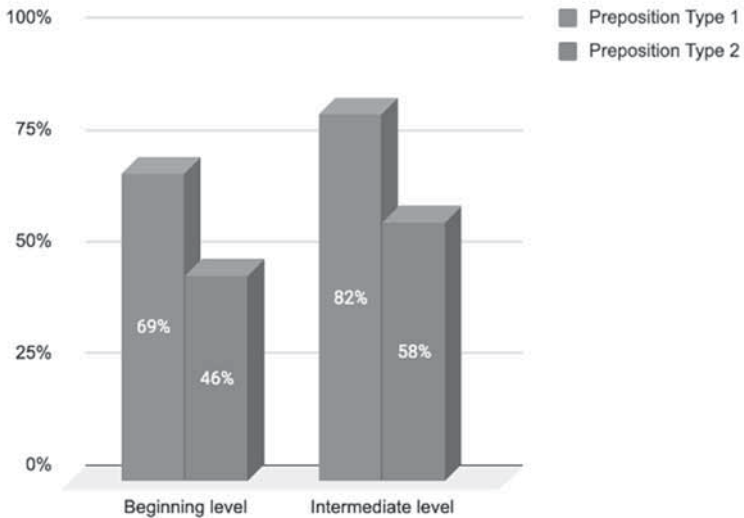


Figure 2. The Mean Percentage Scores on Preposition Types by Beginning and Intermediate Levels

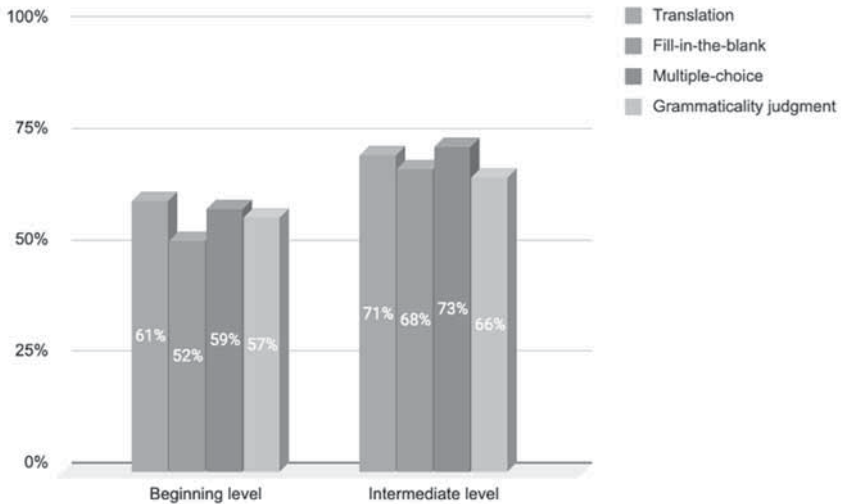


Figure 3. The Mean Percentage Scores on Task Types by Beginning and Intermediate levels

The mean percentage scores on preposition types (2) and task types (4) by L1 English and Spanish-English groups are shown in Figure 4 and Figure 5, respectively. Spanish-English bilinguals outperformed English monolinguals on each task. Both groups with L1 English and L1 Spanish-English background performed better in the sentences where L1 and L2 prepositions act similarly.

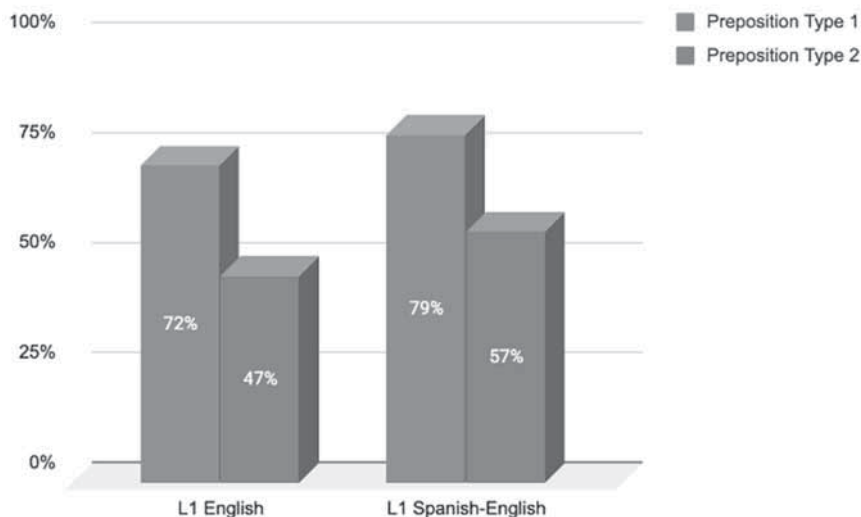


Figure 4. The Mean Percentage Scores on Preposition Types by L1 English and Spanish-English Groups

A MANOVA test with Proficiency Level (beginning, intermediate) and L1 Background (English, English-Spanish) group as fixed factors and Task Type (4) and Prepositions Type (2) as dependent variables established significant differences between the beginning and intermediate groups on all four tasks: Task 1 [F(1,44)=32.126,  $p=.000$ ], Task 2 [F(1,44)=32.987,  $p=.000$ ], Task 3 [F(1,44)=26.946,  $p=.000$ ] and Task 4 [F(1,44)=15.806,  $p=.000$ ] as well as on preposition types: Type 1 [F(1,44)=39.583,  $p=.000$ ] and Type 2 [F(1,44)=16.049,  $p=.000$ ]. The same test also revealed an effect of L1 background on all four tasks: Task 1 [F(1,44)=21.053,  $p=.000$ ], Task 2 [F(1,44)=13.251,  $p=.002$ ], Task 3 [F(1,44)=11.014,  $p=0.01$ ], Task 4 [F(1,44)=6.114,  $p=.017$ ], and an effect of preposition types: Type 1 [F(1,44)=11.604,  $p=.001$ ], Type 2 [F(1,44)=13.572,  $p=.001$ ]. However,

there was no effect of interaction between proficiency level and L1 background [ $F(6,39)=0.578$ ,  $p=0.745$ ]. The results showed that across the board, in terms of task type and preposition type, the intermediate group outperformed the beginning group and the English-Spanish group outperformed the English monolingual group.

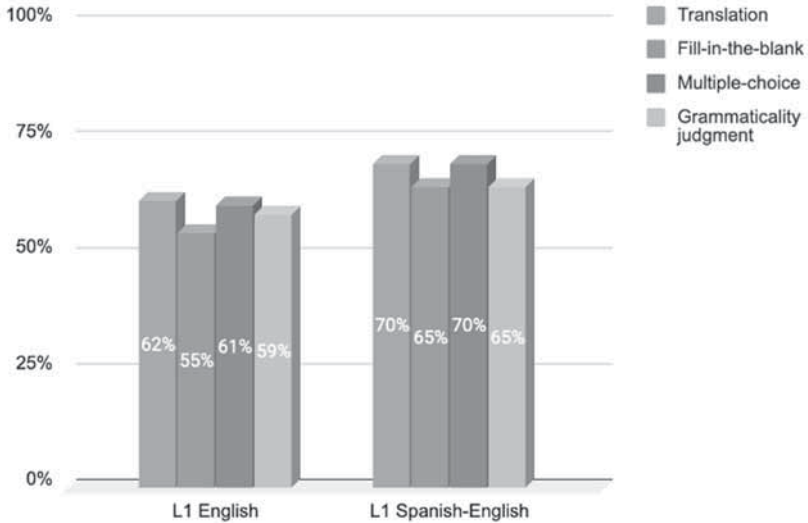


Figure 5. The Mean Percentage Scores on Task Types by L1 English and Spanish-English Groups

To further explore the transfer patterns, if any, participants' error patterns were analyzed. The participants made substitution, omission, and addition errors which both can or cannot be associated with their L1. A substitution error is the replacement of the correct preposition with the wrong one (see examples 22a, 22b). An omission error is the deletion of a required preposition (22a, 22b). An addition error is the insertion of a preposition where it is not required (23). Examples includes actual errors that the students made in the data sample.

(22a) Substitution error: the use of preposition *a* instead of *in*.

*Sono	a	cucina
(I) be	in	kitchen

'I am in the kitchen'

The error in example (22a) is not associated with L1 because both languages require the preposition *in*.

(22b) Substitution error: the use of preposition *in* instead of *a*.

	*Sono	in	Fresno
(I)	be	in	Fresno

'I am in Fresno'

The error in example (22b) is associated with L1 because the L1 preposition *in* was used instead of the L2 preposition *a*.

(23a) Omission error: the use of  $\emptyset$  instead of *in*.

	*Sono	$\emptyset$	cucina
(I)	be	in	kitchen

'I am in the kitchen'

The error in example (23a) is not associated with L1 because the L2 preposition was omitted even if L1 requires one.

(23b) Omission error: the use of  $\emptyset$  instead of *da*.

	*Io	esco	$\emptyset$	casa.
I	leave	$\emptyset$	house.	

'I leave the house.'

The error in example (23b) is associated with L1 because L1 does not require a preposition and the L2 preposition *da* was omitted.

(24) Addition error: the use of preposition *per* instead of  $\emptyset$ .

	*Aspetto	per	mio	marito.
(I)	Wait	for	my	husband

'I am waiting for my husband.'

The error in example (24) is associated with L1 because L2 does not require a preposition and the L1 preposition *for=per* was added in the sentence.

The substitution and omission errors of preposition Type 1 (where L1 and L2 prepositions act similarly) were combined for calculation because neither one is associated with L1 (see examples 21a and 22a). The addition error does not apply to preposition type 1 because both L1 and L2 require a preposition. The mean percentage scores of errors and correct answers on preposition type 1 by proficiency level and L1 background

groups are shown in Figure 6. A series one-way ANOVA tests showed that there was significant difference between English and English-Spanish beginning groups [ $F(1,22)=7.404$ ,  $p=.012$ ] but not between English and English-Spanish intermediate groups [ $F(1,22)=3.004$ ,  $p=.097$ ]. While the performances of English and English-Spanish intermediate groups were similar on preposition type 1, English-Spanish beginning learners outperformed English beginning ones. The participants across each proficiency level and language background made errors that are not associated with L1 (not systematic developmental errors) even if the use of L1 and L2 prepositions are similar.

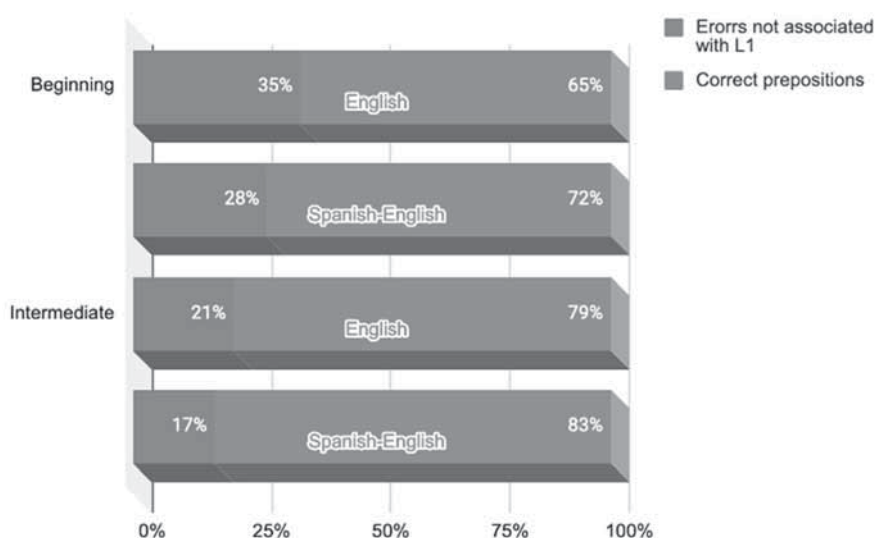


Figure 6. The Mean Percentage Accuracy Scores and Errors of Prepositions Type 1 by Proficiency Level and L1 Groups

The distribution of errors on prepositions type 2 (where L1 and L2 prepositions act differently) was calculated on the base of L1 and the possibility of negative transfer (see Figure 7). The first case is when L1 (English or Spanish) does not have prepositions but L2 does (see example 22b), so omission errors are expected due to the possibility of negative transfer. Therefore, in the first case, omission errors were associated with L1 while other errors were not associated with L1. The second case is when L1 and L2 have different prepositions (see example 21b), so substitution

errors are expected due to the possibility of negative transfer. Thus, in the second case, substitution errors were associated with L1 while other errors were not associated with L1. Finally, the last case is when L1 has prepositions but L2 does not (see example 23), so addition errors are expected due to the possibility of negative transfer. Hence, in the third case, addition errors were associated with L1 while other errors were not associated with L1. The errors were combined into two groups: errors associated with L1 (substitution, omission, and addition), and errors not associated with L1.

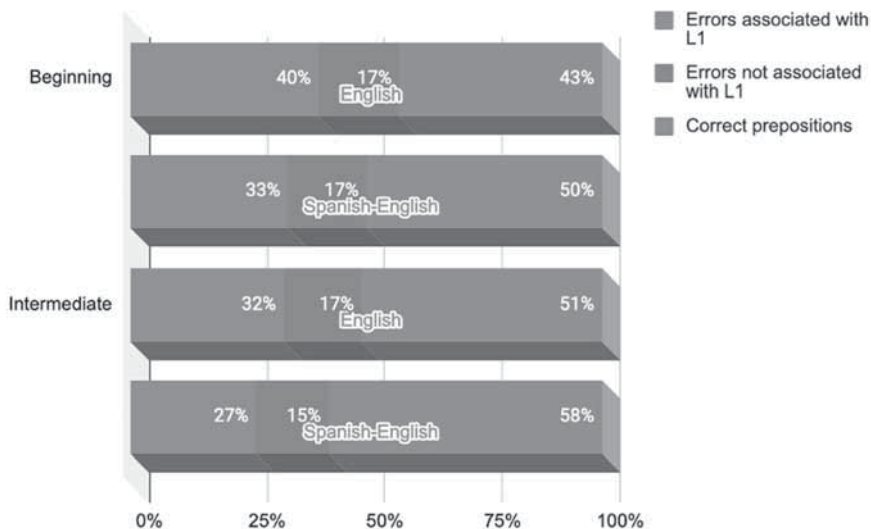


Figure 7. The Mean Percentage Accuracy Scores and Errors of Prepositions Type 2 by Proficiency Level and L1 Groups

To explore whether the participants performed differently on the error types (errors associated with L1 and errors not associated with L1) of preposition type 2 by Proficiency Level (beginning, intermediate) and L1 Background (English, English-Spanish) groups, a one-way MANOVA was carried out. The result showed an overall effect of error types [ $F(2,43)=263.359, p=.000$ ], and an effect of Proficiency Level [ $F(2,43)=7.675, p=0.001$ ]. The effect of L1 Background just reached the threshold of significance [ $F(2,43)=3.272, p=0.048$ ]. However, there was no effect of interaction between Proficiency Level and L1 Background [ $F(2,43)=0.347, p=0.709$ ]. Results of the analysis of between-subject effects revealed that the significant differences on Proficiency Level was on errors that are

associated with L1 only [ $F(1,44)=9.752, p=.003$ ], but not on errors not associated with L1 [ $F(1,44)=2.33, p=.134$ ]. Similarly, the same analysis showed that the significant differences on L1 Background was on errors that are associated with L1 only [ $F(1,44)=5.899, p=.019$ ] but not on errors not associated with L1 [ $F(1,44)=0.48, p=.828$ ].

The results across each proficiency level and language background were similar: errors that are associated with participants' L1 (negative transfer errors) are significantly more frequent than other errors that are not associated with L1 (developmental errors). Negative transfer errors decrease with increased proficiency level for both L1 backgrounds, but developmental errors tend to be more consistent for both L1 backgrounds at each proficiency level. Spanish-English beginners' performance is similar to English participants' performance at the intermediate level.

## 5. Discussion and Conclusion

The current study investigated native English-speaking and English-Spanish bilingual learners' difficulties with L2 Italian prepositions to fill a gap in the research and to further explore the nature of L1 influence on the acquisition of L2 Italian prepositions by comparing learners with different L1 background. Furthermore, by including learners at different stages of learning, this study also examined the effect of increased L2 experience on the acquisition of Italian prepositions. Additionally, by controlling the same number of male and female learners in each L1 and L2 proficiency level group, this study also investigated whether there are any gender differences in learning L2 Italian prepositions.

The participants' test scores and transfer patterns in the use of L2 Italian prepositions were assessed through four tasks: translation, fill-in-the-blank, multiple-choice, and grammaticality judgment. To explore both positive and negative L1 effects on the acquisition of L2 Italian prepositions, each task type included two different types of L2 Italian prepositions: prepositions type 1, where L2 and L1 prepositions act similarly, and consequently where L1 positive transfer is expected, and prepositions type 2, where L2 and L1 prepositions act differently and consequently where L1 negative transfer is expected.

The results showed significant differences on the mean accuracy scores between beginning and intermediate groups, and between L1 English and Spanish-English groups, but not between male and female groups. Thus, both proficiency level (length of Italian instructions) and language background play a crucial role in the acquisition of L2 Italian prepositions while gender does not represent an influencing factor. The correlation

analysis on task types revealed that overall the participants' performance was consistent on the four different tasks. In terms of preposition types, the participants' performance was significantly better on type 1 prepositions (possible positive transfer type) than on type 2 prepositions (possible negative transfer type). The results of error analyses showed that across each proficiency level and language background errors associated with the participants' L1 (negative transfer errors) were more frequent than other errors that are not associated with L1 (developmental errors).

To revisit the research questions of this study, the first research question addressed how native English monolingual and English-Spanish bilingual learners' first language influence the acquisition of L2 Italian prepositions. Previous research has reached the consensus that the learners' L1 background plays an important role in L2 acquisition (e.g., Jarvis 2000; Llach 2010). The current findings not only confirmed the effect of L1 on L2 acquisition but also provided important new data on the acquisition of L2 Italian preposition by comparing two different L1 groups. The results show that English-Spanish bilinguals outperformed English monolinguals in accuracy scores by 10% [ $F(1,46)=10.374, p=.002$ ]. This L1 effect was observed for both beginning and intermediate level groups, indicating that the first language influence was present at the initial stage of learning and was still existent after over a year of studying the L2. The subsequent analysis on the participants' performances on the two different types of prepositions showed that the accuracy scores of Spanish-English bilinguals were significantly higher than those of English monolinguals on both types of prepositions (Type 1 [ $F(1,44)=11.604, p=.001$ ], Type 2 [ $F(1,44)=13.572, p=.001$ ]). The difference on prepositions type 1 was not expected because L1 and L2 prepositions act similarly but the participants made nonsystematic developmental errors that are not due to L1 influence. Regarding prepositions type 2, one of the explanations for the differences can be due to the language distance between the target and the native languages. Specifically, as a Romance language, Spanish is much closer to Italian (also in the Romance language group) than to English (in the Germanic language group). The findings are in agreement with the results of earlier studies showing that the language distance between the target and native languages affect the L2 acquisition process (Andersen 1983; Jarvis 2000; Kellerman 1995; Ringbom 1987). The present study provides new data to the acquisition of L2 Italian prepositions by comparing learners with different L1s, English and English-Spanish, that differ in distances to L2 Italian. In this aspect, the close distance between Spanish and Italian prepositions provides a similar function offered by Ringbom's "pegs" (2007). Ringbom coined this expression to define those L1 words or uses



“on which the learner can hang new L2-words” and employed this expression in reference to the cognate words between two languages (Ringbom 2007, 75).

The effect of L1 transfer was also analyzed by comparing two different types of prepositions. The results showed that both native English and English-Spanish bilingual groups performed better on prepositions type 1 than on prepositions type 2 (see Figure 4). While the learners’ better performance on preposition type 1 may not be related solely to positive L1 transfer, the main source of type 2 preposition errors could be attributed to L1 negative transfer, as indicated by the error analysis. Indeed, in the sentences where L1 and L2 prepositions act differently (preposition type 2), the participants had significantly more errors associated with the native language or interlingual errors than intralingual or developmental errors. Overall, 76 % of English monolinguals’ errors was associated with their L1 and 24% of errors was not. For the Spanish-English bilinguals, the numbers were 70% and 30% respectively. While developmental or intralingual errors do not have a systematic source other than that they are not due to L1 influence, interlingual errors have a systematic source. Error analysis revealed that L1 transfer patterns were obvious in all three types of errors: substitution, omission, and addition by both English monolinguals and English-Spanish bilinguals. Learners made substitution errors when they replaced the correct L2 preposition with the incorrect L1 counterpart. They made an omission error when they deleted a L2 required preposition that does not have L1 counterpart. Finally, learners made an addition error when inserting the L1 counterpart preposition even where it is not actually required in L2. For example, English learners substituted Italian *a* with English *in* in the sentence “I live in Venice”. They omitted Italian *da* in the sentence “I leave the house” where English does not need a preposition, and they inserted English *for* in the sentence “I am looking for a bus” where Italian does need a preposition. Both English and Spanish-English groups had about 70% of omission, substitution, and addition errors associated with L1 and less than 30% not associated with L1. These numbers suggest that participants transferred the use of prepositions from their L1 to the use of prepositions in L2, the negative transfer leading to all three types of errors: substitution, omission, and addition. Previous studies on the acquisition of L2 Italian with L1 Polish, Spanish, and Italian dialects reported similar L1 transfer patterns (Mosca 2018; Martínez 2013; Citraro 2018). However, Mosca’s and Martínez’s studies did not include all simple prepositions and focused on *a*, *in*, *per*, *tra* and *a* respectively, while Citraro’s study focused on all prepositions but preposition types were not controlled. The current

study provided new evidence showing the effect of errors associated with L1 English and L1 English-Spanish on all simple prepositions.

It is also interesting to note that the bilinguals are influenced by both native languages in the acquisition of Italian prepositions. For example, some English-Spanish speakers inserted the English equivalent *per – for* in the Italian sentence meaning “I am looking for an autobus” even though neither Italian nor Spanish needs a preposition in this sentence. So, early bilinguals are influenced by both languages in learning another language but the closest L1 to L2 predominate. The findings are in agreement with Kellerman’s notion of “psychotypology” (1979, 1983) which highlights learners’ perceptual language distance between L1 and L2. The learners tend to be influenced more by the language they perceive closest to the target language. Moreover, several English speakers with some experience in L2 Spanish (but not fluent) substituted the Italian preposition *in* with Spanish *en*, or Italian *per* with Spanish *por* in the translation and fill-in-the-blank tasks where they had to produce the prepositions. These findings also suggest that previously studied languages influence the acquisition of Italian prepositions. However, the current study did not include enough participants with L1 English and late L2 Spanish background to run statistical analysis and provide stronger evidence.

To answer research question two which asked how L2 experience influence the acquisition of L2 Italian prepositions, the results showed that overall the intermediate level participants outperformed the beginners on L2 Italian prepositions by 13%, indicating increased L2 learning experience makes a difference in the acquisition of L2 Italian prepositions. The current data also showed the factor of L2 experience on learning was significant for both English and English-Spanish bilingual groups. Therefore, increased learning experience help to improve learning outcomes of Italian prepositions regardless of the learners’ L1 background. The findings confirm Jarvis’s (2000) and Llach’s (2010) observations about the importance of the proficiency level (length of Italian instructions) on the acquisition of Italian prepositions.

The effect of L1 transfer by each proficiency level was also analyzed by comparing two different types of prepositions. The results showed the intermediate level group performed significantly better than the beginning level group on both preposition type 1 and type 2. The intermediate level group performed quite well on the prepositions in the sentences where L2 and L1 prepositions act similarly (82%), but they have to develop language fluency where L2 and L1 prepositions act differently (58%). The beginning level learners also performed better on prepositions that act similarly than on prepositions that act differently (69% and 46%

respectively) and have to develop language fluency on both types of prepositions. The findings suggest that preposition types (related to L1) influence the L2 acquisition at different stages of learning and this influence decrease with increased L2 experience. To prove that this influence is caused by L1 negative transfer, L1 transfer patterns (errors associated with L1) on preposition type 2 by beginning level and intermediate level groups were analyzed. The L1 transfer patterns were obvious in all three types of errors (substitution, omission, and addition) for both beginning and intermediate level groups. Overall, the intermediate level group made less L1 transfer errors than the beginning group by 33%. Both beginning and intermediate level groups had about 70% of omission, substitution, and addition errors associated with L1 and less than 30% not associated with L1. Therefore, the majority of errors is caused by L1 negative transfer and L1 negative transfer decreases with increased L2 proficiency level. Research on acquisition of L2 Italian prepositions is very limited. In particular, the studies on the use of L2 Italian prepositions did not compare the learning outcomes at different stage of learning. Three previous studies did report that L1 transfer decreases with increased L2 proficiency (Bu 2012; Chen 2007; Phoocharoensil 2013). The current study offers new findings on the acquisition of L2 Italian prepositions by beginning and intermediate level learners. The results also suggest that even if L1 interference decreases with increased L2 experience, L1 to L2 negative transfer patterns are similar in both groups.

Revisiting research question three, which asked if gender affects the acquisition of L2 Italian prepositions, the results showed that female participants slightly overperformed male participants (2%) but the difference was not statistically significant as determined by one-way ANOVA [ $F=12.000, p=.628$ ]. Therefore, gender does not play a significant role in the acquisition of L2 Italian prepositions and does not influence L1 transfer. The finding is consistent with earlier studies by Cheng (2001) and Rostami Abusaeedi and Boroomand (2015), who investigated the influence of L1 transfer in the L2 acquisition. This study provides new evidence demonstrating that the reliance on L1 in the acquisition of L2 Italian prepositions does not depend on gender.

The current study included four different tasks: translation, fill-in-the-blank, multiple-choice, and grammaticality judgment to assess the learners' acquisition of L2 Italian prepositions. The results provided data to answer research question four which asked whether different tasks affect the participants' performance outcomes and their L1 transfer patterns.

Overall, the participants' performance on the four tasks were consistent, as indicated by the correlation tests (intraclass correlation was

0.88 with a 95% confidence interval from 0.818 to 0.929,  $F(47,141) = 8.571, p=.000$ ). Therefore, task types do not affect the learning outcomes and transfer patterns in the acquisition of L2 Italian prepositions. The participants consistently applied L1 negative transfer in the use of L2 prepositions across tasks. The learners' consistent performance across tasks can be explained on account of the similar complexity of all tasks. The test items for each task included simple sentences only in order to accommodate both the beginning and intermediate level participants in terms of L2 Italian sentence structure and vocabulary size. Therefore, the more active task such as translation at a simple sentence level is comparable to three other tasks. Moreover, the lack of major differences in performing different tasks also suggests that the assessment method was both comprehensive and effective, which was a major methodological concern for the test design. Previous studies on L2 Italian prepositions did not use a variety of tasks. Thus, the present study provides new data regarding the tasks' effect on the acquisition of L2 Italian prepositions.

To conclude, the findings in this study showed an important role played by proficiency level (length of Italian instructions) and language background on the acquisition of L2 Italian prepositions. On the contrary, gender does not represent an influencing factor. L2 Italian learners consistently applied their L1s in the use of prepositions across tasks by making substitution, omission, and addition errors. The analysis of those errors showed that the effect of L1 negative transfer decreases with an increased L2 proficiency level. Finally, task types administered to the participants do not affect the learning outcomes and transfer patterns in the acquisition of L2 Italian prepositions. The present study contributed to the second language acquisition research and provided new data on the role of the native language on the acquisition of L2 Italian prepositions.

The findings of this study have pedagogical implications. The current data showed that L2 Italian prepositions are difficult for both L1 English and Spanish-English learners and the learners' poor performances are mostly caused by negative L1 transfer. As reported earlier, the participants in this study were not explicitly taught for the possibilities of positive transfer, nor were they taught to avoid negative transfer from their native languages in learning Italian prepositions. So, positive transfer is not guaranteed if the learners did not automatically make the connections. Explicit instruction is required to help the learners to make the connections for positive transfer. Similarly, explicit instruction is also required to avoid negative transfer from L1 to L2. According to Cummins (2013) and Göbel with Vieluf (2014), teaching about L1 interference can improve learners' achievement in L2 settings. Moreover, the performances of English-Spanish

bilinguals and English monolinguals were significantly different. Therefore, having separate courses for these learners may accelerate instructions for Spanish speakers. Some universities in the U.S. already offer L2 Italian language courses for Spanish speakers using the similarities between Italian and Spanish in grammar and vocabulary to accelerate the L2 acquisition (Dolci and Tamburri 2015; Donato 2016).

The current study has two limitations. It did not include a systematic investigation of the use of prepositions due to verb-specific structure nor did it examine the semantics of different prepositions. These limitations were mainly due to the low-level students that have not acquired yet a variety of different verbs for controlling the experiment data. Future studies need to control the verb choice and examine the effect of syntactic and/or semantic verb differences on the use of prepositions.

## References

- Andersen, Roger. 1983. "Transfer to Somewhere." In *Language Transfer in Language Learning*, edited by Susan M. Gass and Larry Selinker, 177–204. Rowley, MA: Newbury House.
- Bu, Jiemin. 2012. "A Study of Relationships between L1 Pragmatic Transfer and L2 Proficiency." *English Language Teaching* 5, no. 1: 32-43.
- Chen, Fred Jyun-Gwang. 2007. "The L2 Acquisition of Information Sequencing in Chinese: The Case of English CSL Learners in Taiwan". *Electronic Journal of Foreign Language Teaching* 4, no. 2: 170-191.
- Cheng, Yong Kien. 2001. "First Language Transfer amongst Malay Students in National Primary Schools." Unpublished Master's Diss., University of Malaya. <http://studentsrepo.um.edu.my/id/eprint/2416>
- Citraro, Cinzia. 2018. "Il caos preposizionale: analisi dell'errore e didattica [The prepositional chaos: error analysis and pedagogy]." *Italica Wratislaviensia* 9, no. 2: 81-92.
- Cummins, Jim. 2013. "Current research on language transfer. Implications for language teaching policy and practice." In *Multilingualism and Language Diversity in Urban Areas: Acquisition, Identities, Space, Education*, edited by Peter Siemund, Ingrid Gogolin, Monika Schulz and Julia Davydova, 289-304. Amsterdam; Philadelphia: John Benjamins Publishing Company.
- Dolci, Roberto, and Anthony Tamburri, eds. 2015. *Intercomprehension and Multilingualism: Theory and Practice for Teaching Romance Languages*. New York: Queens College's John D. Calandra American Institute. <https://www.qc.cuny.edu/Academics/Centers/Italian/Pages/default.aspx>

- Donato, Clorinda. 2016. "The Future is Multilingual: French, Italian, and Portuguese for Spanish Speakers." *ADFL Bulletin* 44, no. 1: 112-127.
- Gass, Susan M. 1984. "A Review of Interlanguage Syntax: Language Transfer and Language Universals." *Language Learning* 34, no. 2: 115–132. <https://doi.org/10.1111/j.1467-1770.1984.tb01007.x>
- Gass, Susan M. and Selinker, Larry, eds. 2008. *Second Language Acquisition: An Introductory Course* (3rd ed.). London: Routledge.
- Göbel, Kerstin and Svenja Vieluf. 2014. "The Effects of Language Transfer as a Resource in Instruction." In *Plurilingual Education: Policies – Practices – Language Development*, edited by Patrick Grommes and Hu Adelheid, 181-196. Amsterdam: John Benjamins Publishing Company.
- Jarvis, Scott. 2000. "Methodological Rigor in the Study of Transfer: Identifying L1 Influence in the Interlanguage Lexicon." *Language Learning* 50, no. 2: 245-309.
- Katerinov, Katerin. 1975. *L'analisi contrastiva e l'analisi degli errori di lingua applicate all'insegnamento dell'italiano a stranieri* [Contrastive analysis and analysis of language errors applied to the teaching of Italian to foreigners]. Perugia: Guerra.
- Kellerman, Eric. 1979. "Transfer and Non-transfer: Where We Are Now". *Studies in Second Language Acquisition* 2, no. 1: 37-57.
- Kellerman, Eric. 1983. "Now You See It, Now You Don't." In *Language Transfer in Language Learning*, edited by Susan M. Gass and Larry Selinker, 112-134. Rowley, MA: Newbury House.
- Kellerman, Eric. 1995. "Crosslinguistic Influence: Transfer to Nowhere?" *Annual Review of Applied Linguistics* 15: 125-150.
- Lado, Robert. 1957. *Linguistics Across Cultures*. Ann Arbor: University of Michigan Press.
- Llach, María Pilar Agustín. 2010. "An Overview of Variables Affecting Lexical Transfer in Writing". *International Journal of Linguistics* 2, no. 1: 2-17.
- Martínez, Carmen Solsona. 2004. "La preposición *a* ante el objeto directo en italiano/LE: ¿fosilización por interferencia o error de competencia? [The preposition *a* before the direct object in Italian / LE: fossilization due to interference or proficiency error]." *Cuadernos de investigación en Filología* 29-30: 269-284.
- Mosca, Monica. 2018. "Preposizioni *a*, *in*, *per*, *tra*. L'italiano L2 di parlanti polacchi. [Prepositions *to*, *in*, *for*, *between*. The L2 Italian of Polish speakers]." *Italica Wratislaviensia* 9, no. 2: 195-218.
- Odlin, Terence. 1989. *Language Transfer: Crosslinguistic Influence in Language Learning*. Cambridge: Cambridge University Press.

- Odlin, Terence. 2003. "Crosslinguistic influence." In *Handbook of Second Language Acquisition*, edited by Catherine J. Doughty and Michael H. Long, 436-486. Blackwell Publishing.
- Phoocharoensil, Supakorn. 2013. "Cross-linguistic Influence: its Impact on L2 English Collocation Production". *English Language Teaching* 6, no. 1: 1-10.
- Richards, Jack C. 1974. *Error Analysis: Perspectives on Second Language Acquisition*. London; New York: Longman.
- Ringbom, Håkan. 1987. *The Role of the First Language in Foreign Language Learning*. Clevedon, England: Multilingual Matters.
- Ringbom, Håkan. 2007. *Cross-linguistic Similarity in Foreign Language Learning*. (Vol. 21, Second language acquisition). Clevedon, England: Multilingual Matters.
- Rostami Abusaeedi, Ali Asghar and Farzam Boroomand. 2015. "A Quantitative Analysis of Iranian EFL learners' Sources of Written Errors". *International Journal of Research Studies in Language Learning* 4, no. 1: 31-42.
- Selinker, Larry. 1972. "Interlanguage." *IRAL-International Review of Applied Linguistics in Language Teaching* 10, no. 1-4: 209-232.
- Selinker, Larry. 1983. "Language Transfer." In *Language Transfer in Language Learning*, edited by Susan M. Gass and Larry Selinker, 33-68. Rowley, MA: Newbury House.
- Sharafutdinova, Elena. 2020. "L1 Influence on the Acquisition of L2 Italian Simple Prepositions." Unpublished Master's Diss., California State University, Fresno.

## CHAPTER 7

# ACADEMICS' CODE SWITCHING IN THE TERTIARY EFL CLASSROOM IN GREEK-SPEAKING CYPRUS: ATTITUDES AND FUNCTIONS

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### Abstract

Code switching is a common language phenomenon in multilingual and multicultural societies such as Greek-speaking Cyprus affecting different domains of everyday life. An example refers to the domain of education, in which the use of code switching constitutes a highly debatable issue. There are several L2 approaches and methods in language teaching methodology that favour or disfavour the use of L1 in the L2 classroom context. In several tertiary level institutions, code switching is discouraged since both the teacher and the learners should not switch in-between L1 varieties as well as in-between the L1 and L2 but use the preferred language when communicating especially in formal environments. Nonetheless, in most cases these swifts occur without conscious thought by both parties at various levels of language since the speakers understand both or all languages in use. When code switching is used as a learning strategy and a tool for teaching rather than a handicap, it can help L2 acquisition. In this study, academics' opinions concerning the use of code switching in the EFL classroom are addressed to investigate the attitudes and functions of this language phenomenon in tertiary level education. 51 academics from a private English-speaking university were asked to fill in a 30-item questionnaire addressing the use of code switching in the classroom context. The findings indicate that academics hold neutral opinions about code



switching in class; however, when code switching is used, it can have pedagogical, administrative and interactional functions.

*Keywords:* code switching; EFL classroom; tertiary level education; attitudes; functions

## 1. Code switching in the L2 classroom context

A plethora of different approaches and methods are available when it comes to L2 (second language) teaching and acquisition (Brown 2006). These methods/approaches, however, give different weight to the use of L1 (first language) in classes involving L2 instruction. One view supports that the use of L1 in the classroom context should be avoided (Cummins 2008; Cook 2001; Richards and Rogers 2001; Yu 2000; Skinner 1985). In such contexts, code switching (CS) that refers to the use of L1 at a word, phrase or sentence boundary in the classroom environment should not be encouraged. Avoiding CS minimises errors of omission, overgeneralisation and transfer (Ellis 1997). As a consequence, L2 instruction should be best conducted only through the L2 in order to obtain ‘direct association between concepts and the new language’ (Butzkamm 2013). Along the same lines, Auerbach (1995) suggests that the only way to acquire an L2 efficiently is when learners are forced to use it. Some of the methods/approaches supporting the exclusive use of the L2 involve the Direct Method, Berlitz Method, Suggestopedia, Audio-lingual Approach, Natural Approach, Total Physical Response, Communicative Language Teaching, Task-based language teaching and Content-based language teaching. For these methods/approaches, the use of the L1 and L2 must remain separate (Cummins 2008, 2005a; Cook 2001), a notion that is based on coordinate bilingualism stating that the two language systems occupy distinct compartments of the learners’ minds (Weirein 1953 in Cook 2001).

L1 avoidance, therefore, constitutes the one view put forward while the second view supports that not using the L1 in the classroom context is not feasible while the teaching manuals scarcely mention the ‘no L1 use’ rule (Cook 2001). Even though L2 exposure is very important, it is not adequate to achieve learner engagement or successful language learning (Cook 2001; Turnbull 2001; Van Lier 2000; Butzkamm 1998; Ellis 1994). Learners have to understand and internalise the L2 input (Turnbull and Dailey-O’Cain 2009) extracting patterns and extrapolating the rules necessary for L2 acquisition (Butzkamm 2011; Butzkamm and Caldwell 2009).

Concerning the notion that the two languages occupy distinct compartments in the learners' minds, 'total separation is impossible since both languages are in the same mind' (Cook 2005, 7). Therefore, learners have a unique competence (multicompetence concept - Cook 2001) that differs from that of native speakers. L2 instruction should aim at producing proficient L2 users 'incorporating goals based on L2 users in the outside world, bringing L2 user situations and roles into the classroom, deliberating using the students' L1 in teaching activities' (Cook 1999, 185). In such contexts, the use of the L1 should be encouraged in L2 instruction (Auerbach 1994; Lucas and Katz 1994; Stern 1992). Emphasis should be placed on the learning goals, the learners' previous L2 experience, the context of learning as well as the teachers' capability (Stern 1992; Lucas and Katz 1994).

### **1.1. Academics' attitudes toward code switching**

According to Richards (1998), educators' beliefs can be defined as 'the information, attitudes, values, expectations, theories and assumptions about teaching and learning that teachers build up over time and bring with them to the classroom' (66). These beliefs guide their thought and behaviour (Borg 2001; Pajares 1992) and influence the decisions they make about classroom practices (Turner, Christensen, and Meyer 2009; Johnson 1994; Pajares 1992; Shavelson and Stern 1981).

With reference to CS in the L2 in-class context, there are several studies supporting that educators' attitudes are the result of a number of factors. These may include their prior learning experiences since in the cases educators were exposed to CS as learners, they were more positive toward this practice (McMillan and Turnbull 2009; Borg 2003; Macaro 2001). A second factor refers to the educators' professional experience since having more experiences suggests that they be more unwilling to use CS in class (Xu 2012; Phipps and Bord 2009; Corcoran 2008; Breen et al. 2001). Further factors affecting educators' attitudes involve pre-service education (Borg 1999) as well as the socio-cultural and institutional contexts and the classroom environment in which educators work (Cross 2010; Borg 2009, 2006; Johnson 2009). However, these studies did not deal with CS in the classroom context.

Macaro (2009) distinguishes three theories concerning CS to L1 that refer to the virtual, maximal and optional position. The first theory, the virtual position, suggests that the classroom context should involve the exclusive use of the L2, that is, L1 avoidance should be favoured. CS, as a result, could only cause interference and confusion (McMillan and Turnbull

2009). The maximal position argues that the L1 has no pedagogical value even though educators may employ CS in class. Nonetheless, they feel guilty about reverting to the L1 (Macaro 2000; Mitchell 1988). Finally, the optimal position encourages the use of CS in class (McMillan and Turnbull 2009; Bateman 2008; Kim and Elder 2008) specifically in the cases in which educators want to assist students' comprehension, communicate aspects of classroom discourse effectively and facilitate the relationships between educator-learner.

With reference to comprehension, educators may employ CS in the cases they feel that the learners did not understand their lecture in the L2. Therefore, by using CS they address this issue (Gauci and Grima 2013; de la Campa and Nassaji 2009; Bateman 2008; Kim and Elder 2008). This strategy is usually employed to achieve linguistic accuracy as when dealing with complicated linguistic terms referring to grammatical structures in the L2 or when dealing with abstract lexical items in the target language. CS may also be employed to enable cross-cultural comparisons (House 2009; Stiefel 2009; Bateman 2008) or to explain subject content (Mafela 2009; Probyn 2001) such as difficult points, clarifying important points and citing local examples.

Communicating aspects of classroom discourse such as giving instructions is further facilitated by CS (McMillan and Rivers 2011; Then and Ting 2011; Al-Nofaie 2010). Based on educators' attitudes, learners engage faster in the activities through CS. This allows more practice opportunities and keeps learners on task. Further beliefs involve CS encouraging learners' participation in activities such as asking questions, allowing the control of the speed of classroom interactions, keeping the lesson moving in the L1 and effectively emphasising specific teaching points. Moreover, this strategy allows to deal with discipline problems more efficiently (Cheng 2013; Ramos 2005) and helps with time management since it is more effective for outlining procedures (Cheng 2013; Bateman 2008; Kim and Elder 2008).

CS may aid educators establish personal connections with students and signal group membership (Cheng 2013; Gauci and Grima 2013; McMillan and Rivers 2011; Bateman 2008). This may involve making jokes or socialising with them that is particularly useful when giving positive feedback and encouragement. Using CS may help in keeping the learners' interest and increase the motivation for learning.

The present study aims at investigating academics' attitudes toward CS at tertiary level education and the functions it serves when used in the Cypriot-Greek (CG) EFL (English as a Foreign Language) context. The languages under investigation are the L1 CG, SMG (Standard Modern

Greek) and L2 English. Even though CG is acquired as the L1 in Greek-speaking Cyprus, its use is confined to less formal occasions such as everyday communication. SMG is acquired through schooling and is used in more formal situations while it is considered the superposed variety. Moreover, the English language has an extensive use and functions in the society, and it is a compulsory subject at schools from first grade onwards. This linguistic situation of Greek-speaking Cyprus is, therefore, of special interest since it consists of elements of town speech (urban CG *koiné*), village speech (localised Cypriot varieties), Greek, and English the use of which depends on context (Kkese and Lokhtina 2017; Terkourafi 2001). In the classroom context, CG use is avoided since educators explicitly correct the students when using the L1 while they use SMG to assert authority. However, CS is evident in the cases in which informal communication is taking place as in encouragement or commenting (Kkese and Lokhtina 2017; Sophocleous and Wilks 2010; Ioannidou 2009; Yiakoumetti 2007; Papapavlou and Pavlou 2005).

Although CS is a very common practice, it has not been studied at a tertiary education level while most research involves CS between SMG and CG. In tertiary education, though, lectures could be delivered in SMG or L2 English, depending on the university. A study conducted at the tertiary level, which investigated students' attitudes toward CS, indicated that students perceive academics' CS as a source of support for students' learning process as well as a learning resource for content ensuring students' comprehension and learning (Kkese 2020). The present study, however, aims at investigating academics' attitudes toward CS between English and CG (the language of instruction and the L1, respectively) at tertiary level education and the functions it serves when used by them as it was conducted in an English-speaking university.

## 2. Research Methodology

For the purpose of this study, the attitudes of academics to CS are investigated to find out how they view this language alternation with CG in the EFL classroom as well as when and why they switch codes and what are the most frequent functions that CS fulfils. The study, therefore, addresses the following research questions:

- 1) What attitudes do academics have toward code-switching in the EFL classroom?
- 2) What functions does code-switching fulfil in the L2 classroom context?

For this study, a self-completion questionnaire was developed aiming at providing a measure of the social phenomenon under study (Creswell 2003) and specifically of the academics' attitudes toward CS in the EFL classroom. The questionnaire was approved by the Rector and Heads of the three different Schools of the private English-speaking University, in which the collection of data took place. It consisted of three sections and was developed by the researcher; special emphasis was given to question wording and content, response format, and the sequence of questions. The study involved 51 part-time and full-time academics from all ranks; this involved special teaching staff, lecturers, assistant, and associate professors who ranged between the ages of under 25-above 60.

The questionnaire consisted of thirty statements/questions with the first part emphasising on personal information about the participants while the other two sections focused on the academics' attitudes toward CS in class and on the functions this linguistic phenomenon serves in the classroom. The questionnaire was written in English; reliability of the questionnaire was obtained through a small pilot testing (N=3) aimed at providing information on which items (words, sentences, and instructions) needed rewording or even removal from the questionnaire (Bryman 2008). Based on the pilot study, some improvement-points were made; these involved Question 17, which originally involved four categories but based on the feedback received via the pilot study, the categories were reduced to three as the respondents found it particularly difficult to deal with similar percentages. Given the fact that no other significant changes were suggested by the participants as part of the pilot study, the researcher initiated the main study using the same questionnaire. The results of the pilot study were not used in the present research.

Section A aimed at collecting demographic information about the participants and involved fourteen closed-ended questions, which were either dichotomous or gap-filling. Questions addressed the participants' linguistic and teaching practices as well as their teaching experience. The last question of this section was asking the participants whether they perceived themselves as monolingual, bilingual or multilingual. Section B consisted of six questions addressing the participants' attitudes toward CS in the EFL classroom; specifically, this section was asking the participants whether they code-switch, if they are aware of it and the extent to which they do as well as their impressions when they and/or their students code-switch. Section C involved ten questions addressing the functions CS fulfils in the EFL classroom. Overall, the questions were designed to be short, simple, and comprehensible, avoiding ambiguous and vague questions (Bryman 2008).

The research period was between January and May 2021. Questionnaires were both distributed and/or sent electronically; participants could fill them in anonymously on a voluntary basis and had the right to withdraw at any time. The questionnaires were left on the researcher's office to ensure the anonymity of the participants while some chose to send these back electronically. In the latter case, these were printed while after the collection of all the questionnaires, these were coded and then the data was entered into the statistical analysis software package IBM SPSS, version 23.0 (Statistical Package for Social Sciences). This procedure was followed for the ethical criteria of the research to be assured and not to allow identification of the participants; for this study, descriptive analyses were applied.

At this stage, several restrictions need to be acknowledged. The most significant involves sample size; the study reflects the intent to develop insights rather than generalisations. Thus, the study is limited to the selected random sample, the research instrument used in the study, which could include more open-ended questions to gain more useful insights into the linguistic phenomenon under investigation in terms of the academics' attitudes and the functions it fulfils in the EFL classroom as well as the time of the research. Concerning the latter, collection of data was severely affected by the COVID-19 pandemic and the University's decision to go online following the guidelines of the Cyprus Ministry of Education, Culture, Sport and Youth. A significant number of questionnaires were not returned since academics did not have the time to fill these in due to the new situation caused by the pandemic and the need to deliver classes online implying extra pressure on them. Nonetheless, the researcher decided to use the small number of questionnaires that were collected as a pilot study enabling an insight into academics' CS.

### **3. Results**

#### **3.1. Demographic profile of the participants**

Section A of the questionnaire consisted of fourteen questions/statements referring to the participants' age, nationality, education and linguistic background. Overall, the questionnaire was answered by 51 academics, out of which 35.29% (18 participants) were men and 64.71% (33 participants) were women. With reference to age, half of the participants were between the ages of 30-39 (54.9%). Concerning the rest of the participants, 23.53% were between the ages of 40-49, 11.76% were between the ages of 25-29,

5.88% were between the ages of 50-59 while 1.96% of the participants were under 25% and 1.96% provided no answer.

Most of the participants were academics of a CG nationality (82.35%); 7.84% were of a Greek nationality, 5.88% answered that they were of another nationality while 3.92% of the participants provided more than one answer. Cyprus was the country of origin for most of the participants (80.39%); 3.92% of the answers involved countries such as Greece, Poland/Russia, and Russian Federation; 1.96% of the answers referred to countries such as England and Australia; 3.92% of the participants provided no answer.

In terms of the linguistic background of the academics, most participants were native speakers of CG (80.39%); only 19.61% answered differently to this question. Answers other than CG involved English (9.8%), Russian (5.88%), SMG (1.96%), and Bulgarian (1.96%); 1.96% reported that their native dialect was Cypriot not clarifying whether this was CG. When asked about what other languages they speak beside their first language, most of the participants reported English confirming the assumption that the language is widely used in Greek-speaking Cyprus; specifically, English was reported by 56.8% of the participants; this was followed by English and another language (21.57%), Greek (9.8%), English and two additional languages (5.88%), English and three more languages (1.96%) or English and four more languages (3.92%). Concerning the languages in which participants were exposed to as university students, these were English (58.82%), English and Greek (25.49%), Greek (5.88%), more than one language (7.84%) or other languages (1.96%).

With regard to the academics' educational background, it was revealed that the majority had obtained a PhD (56.86%); less participants had an MA degree (33.33%) or a PGCE (1.96%). 3.92% was reported for more than one option and 1.96% for other qualifications and/or no answer.

Concerning working experience, most of the participants answered that they work at a university (98.04%) while only one participant reported working at a college (1.96%). A large percent of the participants (60.78%) provided Larnaca as the city in which they work; 13.73% of the answers involved participants working in Limassol and participants working in more than one city; 7.84% were working in Nicosia, 1.96% provided France as their answer and 1.96% provided no answer. With reference to the years of overall working experience, the participants reported that they have been working as an academic for 1-5 years (41.18%). 29.41% of the participants reported that this ranged between 6-10 years, 11.76% between 11-15 years as well as between 16-20 years; only 5.88% of the participants reported that their teaching experience was more than 20 years.

Concerning the language used when delivering a lecture, most of the academics answered that this is English (78.43%). Only a small percentage of the participants reported using other linguistic means in their lectures; specifically, 9.8% reported using English and SMG, 5.88% reported using SMG, 1.96% reported using CG and 3.92% provided no answer to this question.

The last question of this section was asking the participants whether they perceive themselves as monolingual, bilingual or multilingual (Figure 1). 72.55% of the participants reported being bilingual speakers and, therefore, able to use two languages. 15.69% perceived themselves as monolingual speakers and 11.76% answered that they were multilinguals.

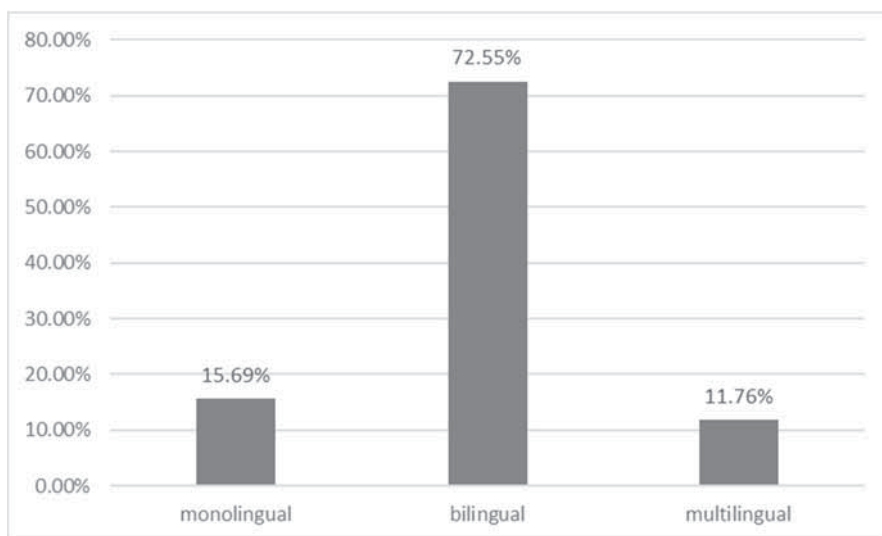


Figure 1. Academics' perceptions of linguistic proficiency.

### 3.2. Academics' attitudes toward code-switching in the classroom context

Section B of the questionnaire consisted of six questions in an effort to examine the participants' attitudes toward CS in the classroom context. The emphasis was on CS by academics and/or students. Specifically, the first question (Question 15) asked if academics code-switch in class (Figure 2). The majority of the participants responded that they do not (56.86%) while a smaller percentage reported that they do (43.14%). Even though most of



the participants reported that they do not code-switch, 56.8% of them responded that they are aware that they do code-switch in class (Question 16); 23.53% responded that they do not code-switch in class while 19.61% provided no answer (Figure 3). Referring to the extent to which academics code-switch in class (Question 17), participants provided interesting findings since they responded that CS could account for less than 10% (74.51%); others argued that it could be between 40-60% (7.84%) and 17.65% provided no answer (Figure 4).

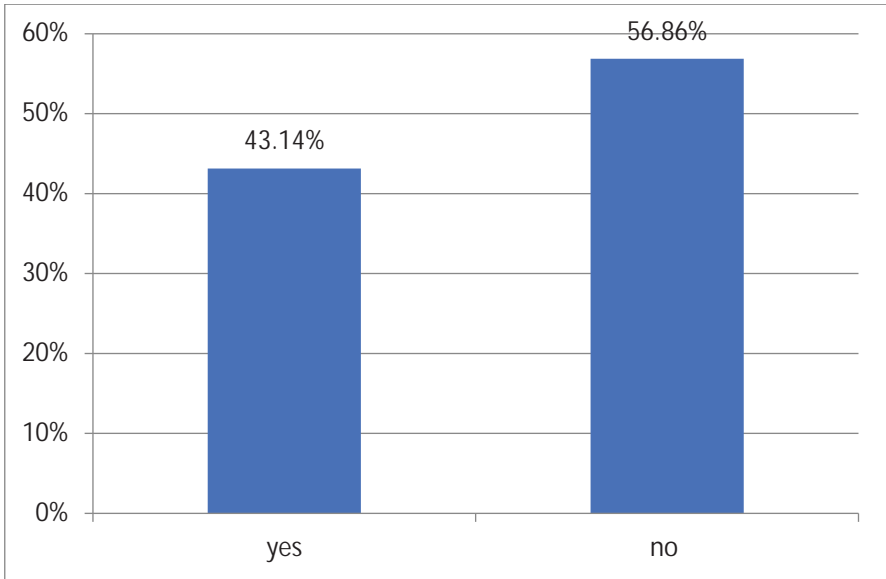


Figure 2. Academics' code switching in the EFL classroom.

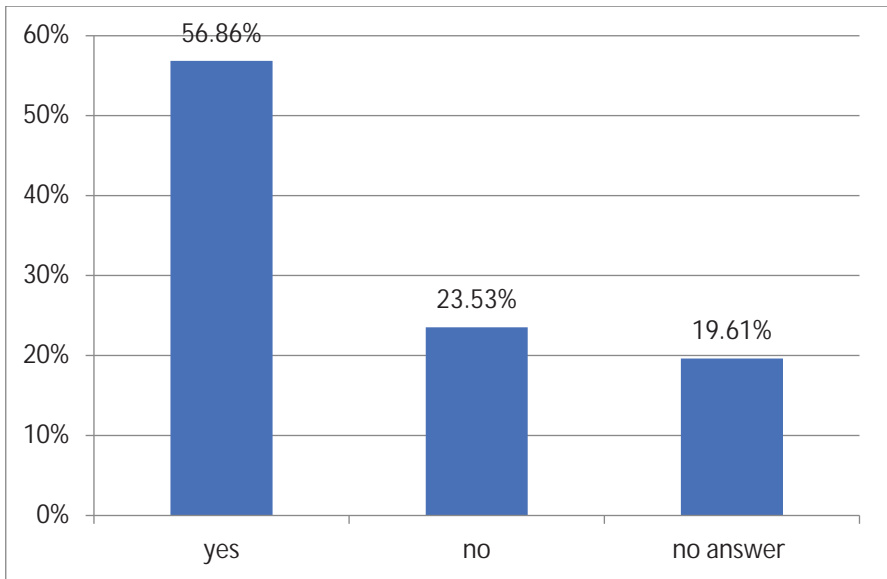


Figure 3. Academics' awareness of code switching in the EFL classroom.

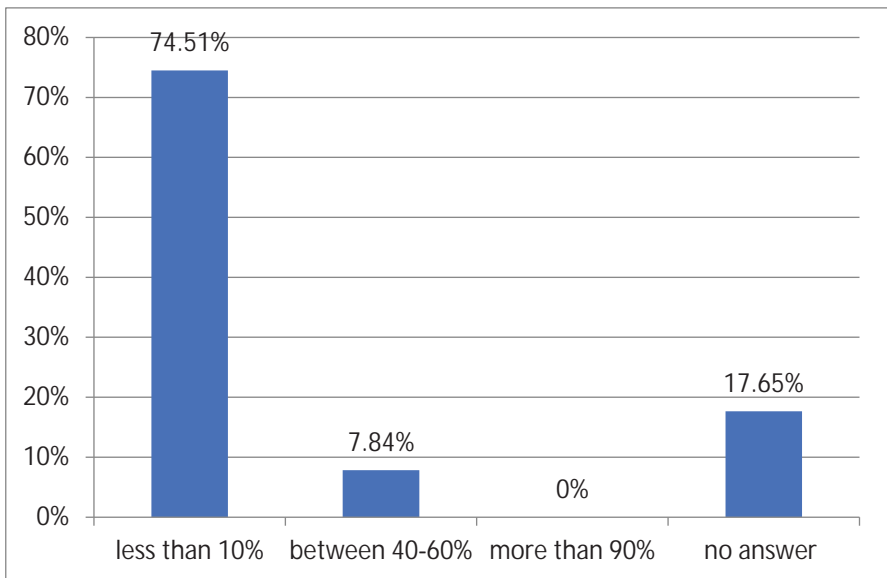


Figure 4. Academics' extent of code switching in the EFL classroom.

The next question (Question 18) indicated that students have a neutral impression when academics code-switch in class (35.29%). Some students are quite positive about this (25.49%) and a smaller percentage has a negative impression (15.69%); however, 21.57% of the participants provided no answer (Figure 5). The same pattern was observed for the next question as well (Question 19) asking participants about what they believe when students code-switch (Figure 6). The majority replied that they had neutral impressions (58.82%); negative impressions received 25.49% and positive impressions 5.88%; 9.8% provided no answer. Overall, for the last question (Question 20) participants responded that their general opinion toward CS as a linguistic phenomenon was ambiguous as the percentages were quite close; most of them said that these were also neutral (31.37%); positive opinions were at 29.41% while negative impressions received 27.45% (Figure 7).

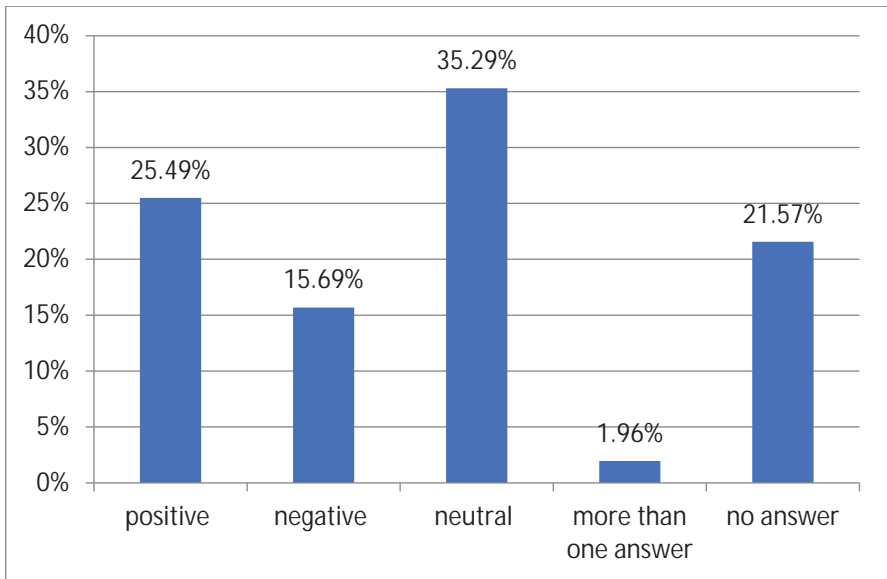


Figure 5. Students' impressions regarding academics' code switching.

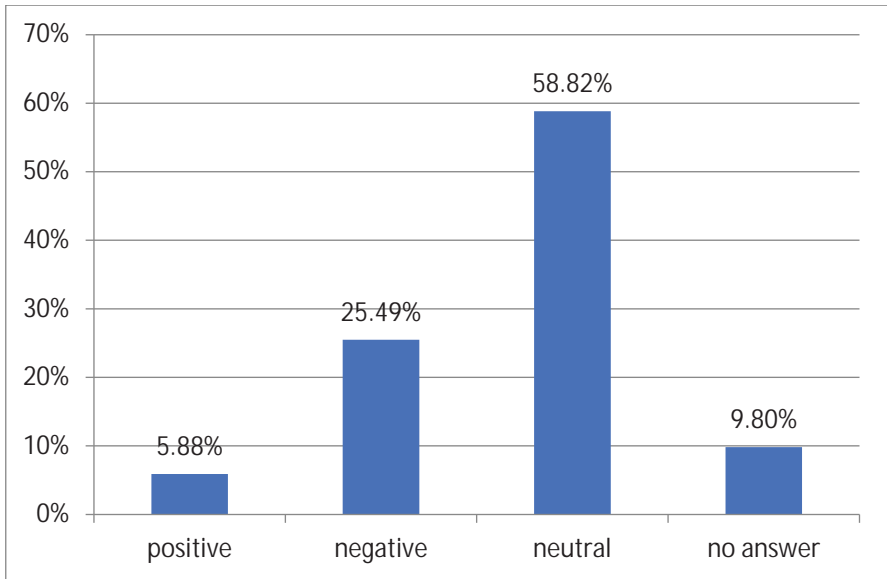


Figure 6. Academics' impressions regarding students' code switching.

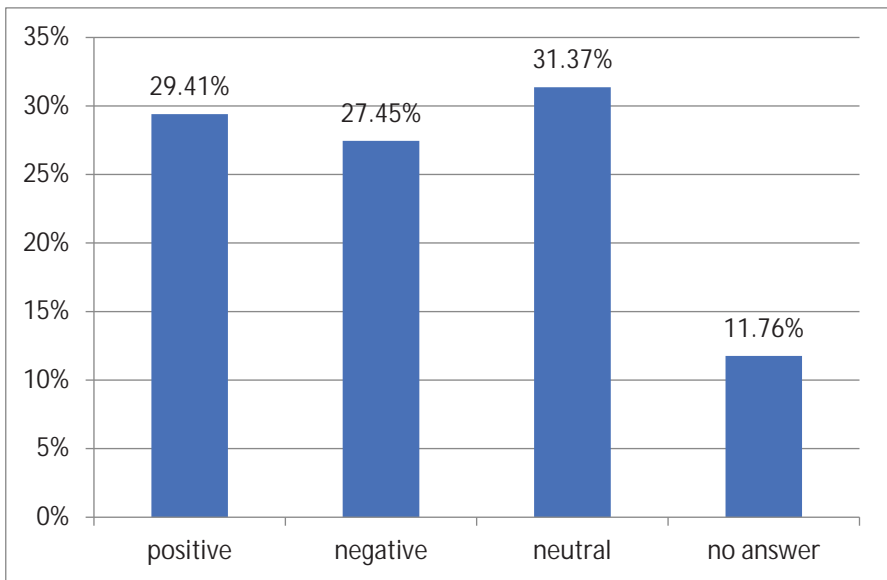


Figure 7. Academics' opinion toward code switching as a linguistic phenomenon.

### 3.3. Functions of code-switching in the classroom context

Section C of the questionnaire aimed at obtaining academics' attitudes using a five-point Likert scale section. Participants had to indicate whether they agree or disagree with the statements provided, by ticking one of the five boxes for each statement as appropriate. They had an option from 1-5, in which 5 was for 'strongly agree' (SA), 4 was for 'agree' (A), 3 was for 'neutral/I don't know' (N), 2 was for 'disagree' (D), 1 was for 'strongly disagree' (SD). The responses are presented in Table 1, which summarises the main findings of this section.

By studying Table 1, it is indicated that most of the participants hold positive views regarding the use of CS in the EFL classroom; negative attitudes were elicited by considerably less participants while neutral views were expressed for none of the ten statements provided. Generally, academics were found to agree that CS could be used to clarify task instruction (33.33% SA, Statement 23), joke around with students/lighten the atmosphere (50.98% A, Statement 25), encourage students to participate (39.22% A, Statement 26), illuminate cultural points (41.18% A, Statement 27), clarify the lesson content (39.22%, Statement 28), make up for their deficiencies in one of the two languages (41.18% A, Statement 29) as well as express themselves easily and clearly in both languages (41.18% A, Statement 30). Participants were found to disagree with the use of CS to engage students' attention (33.33% D, Statement 21), to discipline the students (39.22% D, Statement 22), and/or to pollute the dialects/languages (31.37% D and 39.22% SD, Statement 24).

Attitudes to CS in relation to academics' persona, involved Statements 24, 29 and 30. Statement 24 elicited opinions from the participants about whether their CS in class pollutes the dialects and/or languages. About 70.59% of the participants disagreed or strongly disagreed with the opinion on the question. Nonetheless, 9.8% agreed with this statement and 17.65% were not sure of it. This could be attributed to the fact that 'pollute the dialects/languages' was not quite clear to them or because the proficient L2 participants disagreed even though some may code switch in the EFL classroom. For Statement 30, 64.71 percent of the participants agreed or strongly agreed that academics who code switch in the EFL classroom can express themselves easily and clearly in both languages. Less than 20 percent (15.68%) of the participants disagreed or strongly disagreed with the opinion on this question. About 17.65 of the participants were not sure about this opinion on the question. This positive interrelationship is probably because CS is accessible to those who had sufficient English schooling to be able to switch codes in their verbal behaviour, as indicated through Section A. Opinions to Statement 29 point to an unexpected result

since participants reported that CS may be an indicator of academics' deficiency in the use of one of the two languages. 62.75 percent of the sample agreed or strongly agreed with this statement; only 15.69% disagreed or strongly disagreed with it and 19.61% were not sure. This finding seems to contradict the attitudes gathered through this section suggesting that 'far from being an indicator of deficiency in the use of one or both languages, switching codes requires high levels of bilingual proficiency.' (Ferguson, 2003: 45)

Statements referring to CS in relation to classroom management included Statements 23, 22 and 21. With reference to Statement 23, CS may help academics better clarify task instruction. 74.51 percent of the sample expressed agreement or strong agreement whereas only 7.84 percent disagreed or strongly disagreed, and 15.69 of the participants were uncertain. To Statement 22, suggesting that CS can better discipline the students, 23.53 percent expressed agreement, whereas 13.73 percent expressed disagreement and 39.22 percent took no extreme sides. In response to Statement 21 in which CS can be used to engage students' attention, 37.25 percent disagreed or strongly disagreed while 35.25 percent agreed or strongly agreed and 25.49 percent were not certain. This suggests that academics may use CS to keep students' interest and increase their motivation for the lesson.

CS could further be used in relation to subject access as indicated through statements 27 and 28. Academics may use CS to illuminate cultural points better (Statement 27). 56.87 percent of the sample agreed or strongly agreed with the point in the question. 21.57 percent disagreed or strongly disagreed, and 17.65 percent were uncertain. For Statement 28, concerning the use of CS to clarify the lesson content, 62.75% expressed agreement or strong agreement whereas a lower percentage (11.76%) expressed disagreement and 15.69% were uncertain.

Two statements aimed to elicit attitudes to academics' CS in relation to interpersonal relations. In responding to Statement 25, 68.63 percent of the participants expressed agreement or strong agreement and only 9.8 percent showed disagreement or strong disagreement; 19.61 percent were not sure about this statement. With regard to Statement 26 eliciting attitudes to academics' CS as to encourage students to participate, responses tilted toward agreement: 58.83% expressed agreement or strong agreement whereas 19.61% expressed disagreement or strong disagreement; 19.61% expressed uncertainty.

**Table 1. Attitudes of academics toward CS in EFL classroom.**

Statements	SA	S	N	D	SD	No answers
21. Engage students' attention.	9.8	25.49	25.49	33.33	3.92	1.96
22. Discipline the students.	0	23.53	21.57	39.22	13.73	1.96
23. Clarify task instruction.	33.33	41.18	15.69	5.88	1.96	1.96
24. Pollute the dialects/languages.	0	9.8	17.65	31.37	39.22	1.96
25. Joke around with students.	17.65	50.98	19.61	7.84	1.96	1.96
26. Encourage students to participate.	19.61	39.22	19.61	15.69	3.92	1.96
27. Illuminate cultural points.	15.69	41.18	17.65	17.65	3.92	3.92
28. Clarify the lesson content.	29.41	39.22	15.69	11.76	0	3.92
29. Make up for their deficiencies in one of the two languages.	21.57	41.18	19.61	13.73	1.96	1.96
30. Express themselves easily and clearly in both languages.	23.53	41.18	17.65	9.8	5.88	1.96

The questionnaire also included a 'Comments' section in which the academics could provide additional observations about the structure and/or the wording of the questionnaire. The comments received (29.41%) expressed the academics' views toward CS; specifically, most of the academics expressed a neutral opinion suggesting that CS should be avoided in the EFL classroom as it is not needed even though most of them admitted switching codes in less formal situations in everyday life. However, in the EFL classroom, CS should not be permitted as L2 students tend to understand most of the discussion even when they are not proficient in English, because of the foreign students attending the EFL classroom and/or the university's policy. Other comments referred to the functions that CS

can have in the EFL classroom as academics may use CS when a student does not understand the relevant terminology or when a student asks for the translation of a word; however, this happens without context. Some academics suggested that they code switch only before or after the class as they feel that by CS, they seem more approachable and make the students more comfortable to ask questions, clarify instructions and/or fully understand the conveyed message. One participant suggested a generally positive predisposition toward academics' CS but not toward students' CS; two participants expressed negative views toward this linguistic phenomenon as it can indicate academics' lack of vocabulary while it may be perceived as impolite and disrespectful behaviour.

#### 4. Discussion of the findings

Given the lack of empirical studies at a tertiary level, this study aimed at providing a close insight into academics' CS as well as the attitudes and functions it can serve in the EFL classroom. In an effort to achieve that, the first research question addressed the attitudes held by academics with reference to the CS. Overall, the findings of this study with reference to the first research question *What attitudes do academics have toward code-switching in the EFL classroom?* suggest that according to the participants, students hold neutral attitudes toward CS by academics in the classroom context (35.29%). The interesting finding, though, is that a considerable amount of the academics were found to hold positive attitudes (25.49%) while no answers received 21.57%. Nonetheless, when academics were asked if they code switch in class, most of them answered negatively (56.86%). When asked whether they are aware that they code switch, they provided interesting findings as 56.86% answered that they do; 43.14% provided a negative answer. Out of the 43.14%, 23.53% said that they are not aware that they code switch while 19.61% provided no answer. With reference to the extent to which academics code switch in the EFL classroom, most of the participants responded that this is less than 10% (74.51%). Only a few participants reported that they switch codes more often and specifically between 40-60% while no participants answered that they code switch more than 90% (0%); No answers obtained only 17.65%.

The same pattern was observed when students switch codes in class as academics reported a neutral attitude. Specifically, neutral attitudes obtained a high percentage (58.82%) and negative attitudes only 25.49%. Overall, academics seem not to be very certain about their opinion toward CS as a linguistic phenomenon. Neutral attitudes received 31.37%; however, the percentages for positive and negative impressions were very



close. Positive impressions received 29.41% and negative impressions obtained 27.45%.

Concerning the second research question *What functions does code-switching fulfil in the L2 classroom context?*, the findings indicate that academics use CS for a variety of reasons in the EFL classroom and this may stress the effectiveness of the CS practice (Guo 2007). In Section B, most of the participants (56.86%) reported that they do not use CS in the L2 classroom or when they do, this happens at a minimum extent (less than 10%); these answers give rise to the virtual position (Macaro 2009). However, their answers in Section C and in the Comments indicated a different behaviour as it was revealed that academics do code switch and when this occurs, it is because they want to assist students' comprehension, communicate the aspects of classroom discourse effectively and facilitate the relationship between academics-students. These findings support the optimal position that encourages the use of CS in class (Macaro 2009; McMillan and Turnbull 2009; Bateman 2008; Kim and Elder 2008).

The first category involving the most typical functions of CS in the EFL classroom aims to assist students' comprehension and achieve linguistic accuracy in the L2. Functions included Statement 28 referring to explaining the lesson content (68.63% SA/A) and which supports studies such as Mafela (2009) and Probyn (2001) and Statement 27 referring to illuminating cultural points (56.87% SA/A), a finding that is in accordance with previous studies (House 2009; Stiefel 2009; Bateman 2008). Further uses of CS to ensure comprehension include Statement 30 in which academics may use CS to express themselves easily and clearly in both languages (64.71% SA/A), Statement 29 referring to the use of CS to make up for teachers' deficiencies in one or the two languages (62.75% SA/A) as well as Statement 24 referring to the use of CS to pollute the dialects/languages (9.8% SA/A). The second category of CS functions aims to communicate aspects of classroom discourse; this category involved Statement 21 referring to engaging the students' attention (35.29% SA/A), Statement 22 dealing with disciplining the students (23.53% SA/A), which agrees with the studies of Cheng (2013) and Ramos (2005) as well as Statement 23 referring to clarifying task instructions (74.51% SA/A). The third category involved using CS to facilitate the relationship between academics-students such as establishing personal connections and signalling group membership (Cheng 2013; Gauci and Grima 2013; McMillan and Rivers 2011; Bateman 2008). Concerning the third category, functions included Statement 25 referring to joking around and creating a lighter atmosphere (68.63% SA/A) as well as Statement 26 referring to encouraging students to participate (58.83% SA/A). Table 2 is a summary of the functions

facilitated by academics' CS in the EFL classroom in order of importance as these were revealed through the participants' answers in Section C.

**Table 2. Functions of CS in the EFL classroom.**

<i>Functions</i>	<i>Percentages</i>
1. clarify task instruction	total: 74.51% (A: 41.18%; SA: 33.33%)
2. (a) joke around/lighten the atmosphere (b) clarify the lesson content	total: 68.63% (A: 50.98%; SA: 17.65%); total: 68.63% (A: 39.22%; SA: 29.41%)
3. express themselves (academics) easily and clearly in both languages	total: 64.71% (A: 41.18%; SA: 23.53%)
4. make up for teachers' deficiencies in one or the two languages	total: 62.75% (A: 41.18%; SA: 21.57%)
5. encourage students to participate	total: 58.83% (A: 39.22%; SA: 19.61%)
6. illuminate cultural points	total: 56.87% (A: 41.18%; SA: 15.69%)
7. engage students' attention	total: 35.29% (A: 25.49%; SA: 9.8%)
8. discipling the students	total: 23.53% (A: 23.53%; SA: 0%)
9. pollute the dialects/languages	total: 9.8% (A: 9.8%; SA: 0%)

Drawing on Table 2, it seems that academics' CS mainly serves multifold purposes such as pedagogical, administrative and interactional functions.

## 5. Conclusion

This paper focused on the opinions about CS in the EFL classroom in tertiary level education, as perceived by a sample of 51 academics. It aimed to find out academics' attitudes on when and why they switch codes in the EFL classroom and for what functions. Even though academics reported that CS is not a strategy that they commonly use in the EFL classroom, or when they do, this occurs at a minimum extent, their answers to Section B and C indicated that they are not negatively predisposed to CS from the L2 English to the L1 CG and that this strategy could be used for different purposes in the classroom (Kkese 2020; Macaro 2009).

Overall, academics were found to switch codes in the EFL classroom to assist comprehension, communicate aspects of classroom discourse and facilitate the relationship with their students. CS by academics was identified as a source of support for classroom management as they reported using it mainly for communicating aspects of classroom discourse; the most common function involved clarifying task instruction (74.51% A/SA). Additional functions aiming to communicate classroom discourse involved engaging students' attention and disciplining the students; these functions, however, were identified as the seventh and eighth most important functions (engage students' attention: 35.29%; discipline students: 23.53%) by the academics.

CS was further identified as a source of students' comprehension and learning as the second most important function identified by the academics was clarifying the lesson content (68.83%). CS is believed to have a facilitative role in comprehension when it is used to help academics express themselves easily and clearly in both languages (64.71%), to make up for their deficiencies in one of the two languages (62.75%), to illuminate cultural points (56.78%), and to pollute the dialects/languages (9.8%) identified as the third, fourth, sixth, and ninth most important functions respectively.

Finally, CS was seen as a source of promoting interpersonal relations between academics-students. By using CS, academics could create a low-stress atmosphere as they could joke around with students (68.83%) and encourage them to participate (58.83%). With reference to the former, this function was identified as the second most important obtaining the same percent of responses as clarifying the lesson content, which is a function aiming to facilitate students' comprehension. The difference lies in that the function aiming at interpersonal relations obtained 50.98% of agreement and 17.65% of strong agreement whereas the function aiming at comprehension received 41.18% of agreement and 21.57% of strong agreement. Using CS as a function to encourage students' participation was identified as the fifth most important function.

It can, therefore, be concluded that CS in the EFL classroom may have a plethora of pedagogical, administrative and interactional functions aiming to assist both the academics and the students. CS in the EFL classroom should not be viewed with suspicion and academics should acknowledge its use as it is a usual linguistic phenomenon when two or more languages or varieties are into contact. The present study indicated that even though academics reported that they do not use CS in their EFL classroom, most of them expressed neutral opinions toward this by themselves and/or their students whereas when asked about the different functions they employ

CS for, they provided interesting findings. This leads to the conclusion that CS should be used in the EFL classroom as another useful teaching tool, but it should not overtake the target language in the EFL classroom.

## Bibliography

- Al-Nofaie, Haifa. 2010. "The attitudes of teachers and students towards using Arabic in EFL classrooms in Saudi public schools - A case study". *Novitas-Royal - Research on Youth and Language* 4 (1): 64-95.
- Auerbach, Elsa Roberts. 1995. "The politics of the ESL classroom: Issues of power in pedagogical choices". *Power and Inequality in Language Education*, 9-33.
- Auerbach, Elsa Roberts. 1994. "The author responds...". *TESOL Quarterly* 28: 167-161.
- Bateman, Blair E. 2008. "Student teachers' attitudes and beliefs about using target language in the classroom". *Foreign Language Annals* 41 (1): 11-28.
- Borg, Michaela. 2001. "Key concepts in ELT. Teachers' beliefs". *ELT Journal* 55 (2): 186-188.
- Borg, Simon. "Language teacher cognition". In *The Cambridge Guide to Second Language Teacher Education*, edited by Anne Burns and Jack C. Richards, 163-171. Cambridge: Cambridge University Press, 2009.
- Borg, Simon. *Teacher Cognition and Language Education: Research and Practice*. London: Continuum, 2006.
- Borg, Simon. 2003. "Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do". *Language Teaching* 36 (2): 81-109.
- Borg, Simon. 1999. "Studying teacher cognition in second language grammar teaching". *System* 27 (1): 19-31.
- Breen, Michael P., Bernard Hird, Marion Milton, Richard Oliver, and Anne Thwaite. "Making sense of language teaching: Teachers' principles and classroom practices". *Applied Linguistics* 22 (4): 470-501, 2001.
- Brown, Douglas. *Principles of Language Learning and Teaching*. Harlow, Essex: Pearson Education, 2006.
- Bryman, Alan. *Social Research Methods*. New York: Oxford University Press, 2008.
- Butzkamm, Wolfgang. 2013. "Monolingual principle". In *Routledge Encyclopedia of Language Teaching and Learning*, edited by M. Byram and A.Hu, 471-473. Routledge: Taylor & Francis Group.
- Butzkamm, Wolfgang. 2011. "Why make the crawl if they can walk? Teaching with mother tongue support". *RELC Journal* 42 (3): 379-391.

- Butzkamm, Wolfgang, and John Caldwell. *The Bilingual Reform. A Paradigm Shift in Foreign Language Teaching*. Tübingen: Narr Francke Attempto Verlag, 2009.
- Butzkamm, Wolfgang. 1998. "Code-switching in a bilingual history lesson: The mother tongue as a conversational lubricant". *International Journal of Bilingual Education and Bilingualism* 1 (2): 81-99.
- Cheng, Xiaoli. 2013. "Research on Chinese college English teachers' classroom code-switching: Beliefs and attitudes". *Journal of Language Teaching and Research* 4 (6): 1277-1284.
- Cook, Vivian. "Basing teaching on the L2 user". In *Non-native Language Teachers: Perceptions, Challenges and Contributions to the Profession*, edited by Enric Llurda, 47-62. New York: Springer, 2005.
- Cook, Vivian. 2001. "Using the first language in the classroom". *Canadian Modern Language Review* 57 (3): 402-423.
- Cook, Vivian. 1999. "Going beyond the native speaker in language teaching". *TESOL Quarterly* 33 (2): 185-20.
- Corcoran, James Nicholas. "L1 in the L2 classroom: Framing Brazilian Teacher Beliefs and Practices" MA diss., University of Toronto, Canada, 2008.
- Creswell, John. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage Publications, 2003.
- Cross, Russell. 2010. "Language teaching as sociocultural activity: Rethinking language teacher practice". *The Modern Language Journal* 94 (3): 434-452.
- Cummins, Jim. "Teaching for transfer: Challenging the two solitudes assumption in bilingual education". In *Encyclopedia of Language and Education*, edited by Jim Cummins and Nancy Hornberger. New York: Springer Science, Business Media LLC, 2008.
- Cummins, Jim. 2005a. "A proposal for action: Strategies for recognizing heritage language competence as a learning resource within the mainstream classroom". *The Modern Language Journal* 89: 585-592.
- de la Campa, Juliane, and Hossein Nassaji. 2009. "The amount, purpose, and reasons for using L1 in L2 classrooms". *Foreign Language Annals* 42: 742-759.
- Ellis, Rod. *Second Language Acquisition*. New York: Oxford University Press, 1997.
- Ellis, Rod. *The Study of Second Language Acquisition*. Oxford: Oxford University Press, 1994.
- Ferguson, Gibson. "Classroom code-switching in post-colonial contexts. Functions, attitudes and politics". In *AILA Review. Africa & Applied*

- linguistics*, edited by Siffree Makoni and Ulrike Meinhof, 38–51. Amsterdam: John Benjamins Publishing Company, 2003.
- Gauci, Hertian, and Camilleri Grima. 2013. “Code switching as a tool in teaching Italian in Malta”. *International Journal of Bilingual Education and Bilingualism* 16 (5): 615-631.
- House, Juliane. *Translation*. Oxford: Oxford University Press, 2009.
- Ioannidou, Elena. 2009. “Using the ‘improper’ language in the classroom: the conflict between language use and legitimate varieties in education. Evidence from a Greek Cypriot classroom”. *Language and Education* 23 (3): 263–278.
- Johnson, Karen. *Second Language Teacher Education. A Sociocultural Perspective*. New York: Routledge, 2009.
- Johnson, Karen. 1994. “The emerging beliefs & instructional practices of presence English as a second language teachers”. *Teaching & Teacher Education* 10 (4): 439-452.
- Kim, Sun, and Catherine Elder. 2008. “Target language use in foreign language classrooms: Practices and perceptions of two native speaker teachers in New Zealand”. *Language, Culture and Curriculum* 21 (2): 167-185.
- Kkese, Elena, and Irina Lokhtina. 2017. “Insights into the Cypriot-Greek attitudes toward multilingualism and multiculturalism in Cyprus”. *Journal of Mediterranean Studies* 26 (2): 227-246.
- Kkese, Elena. 2020. “The role of teacher code-switching and its functions in the L2 English classroom: insights into CG students' attitudes at tertiary level education”. *Journal of Mediterranean Studies* 29 (1): 95-120.
- Lucas, Tamara, and Anne Katz. 1994. “Reframing the debate: The roles of native languages in English-only programs for language minority students”. *TESOL Quarterly* 28 (3): 537-561.
- Macaro, Ernesto. “Teacher use of code switching in the second language classroom: Exploring ‘optimal’ use”. In *First Language Use in Second and Foreign Language Learning*, edited by Miles Turnbull and Jennifer Dailey-O’Cain, 35-49. Bristol: Multilingual Matters, 2009.
- Macaro, Ernesto. 2001. “Analysing student teachers' code switching in foreign language classrooms: theories and decision making”. *The Modern Language Journal* 85 (4): 531-548.
- Macaro, Ernesto. “Issues in target language teaching”. In *Issues in Modern Foreign Languages Teaching*, edited by Kit Field, 171-189. London: Routledge/Falmer, 2000.

- Mafela, Lily. 2009. "Code switching in Botswana history classrooms in the decade of education for sustainable development". *Language Matters* 40 (1): 56-79.
- McMillan, Brian, and Damian Rivers. 2011. "The practice of policy: Teacher attitudes toward "English-only" policy". *System* 39: 251-263.
- McMillan, Brian, and Miles Turnbull, M. "Teachers' use of the first language in French immersion: Revisiting a core principle". In *First Language Use in Second and Foreign Language Learning*, edited by Miles Turnbull and Jennifer Dailey-O'Cain. Bristol: Multilingual Matters, 2009.
- Mitchell, Rosamond. *Communicative Language Teaching in Practice*. London: CILT, 1988.
- Pajares, Frank. 1992. "Teachers' beliefs and educational research: Cleaning up a messy construct". *Review of Educational Research* 62 (3): 307-332.
- Papapavlou, Andreas, and Pavlos Pavlou. "A review of the sociolinguistic aspects of the Greek Cypriot dialect". In *Contemporary Sociolinguistic Issues in Cyprus*, edited by Andreas Papapavlou, 15-25. Thessaloniki: University Studio Press, 2005.
- Phipps, Simon, and Simon Borg. 2009. "Exploring tensions between teachers' grammar teaching beliefs and practices". *System* 37 (3): 380-390.
- Probyn, Margaret. 2001. "Teachers' voices: Teachers' reflections on learning and teaching through the medium of English as an additional language in South Africa". *International Journal of Bilingual Education and Bilingualism* 4 (4): 249-266.
- Ramos, Francisco. 2005. "Spanish teachers' opinions about the use of Spanish in mainstream English classrooms before and after their first year in California". *Bilingual Research Journal* 29 (2): 411-500.
- Richards, Jack, and Theodore Rodgers. *Approaches and Methods in Language Teaching*. Cambridge: Cambridge University Press, 2001.
- Richards, Jack. *Beyond training: Perspectives on Language Teacher Education*. Cambridge: Cambridge University Press, 1998.
- Shavelson, Richard, and Paula Stern. 1981. "Research on teachers' pedagogical thoughts, judgements, decisions, and behaviour". *Review of Educational Research* 51: 455-498.
- Skinner, David. 1985. "Access to meaning: The anatomy of the language/learning connection". *Journal of Multilingual and Multicultural Development* 6 (5): 369-388.
- Sophocleous, Andry, and Clarissa Wilks. 2010. "Standard Modern Greek and Greek-Cypriot dialect in kindergarten classroom interaction:



- Teachers' and learners' language attitudes and language use". *Language, Culture and Curriculum* 23 (1): 51-69.
- Stern, Hans. *Issues and Options in Language Teaching*. Oxford: Oxford University Press, 1992.
- Stiefel, Lisa. "Translation as a means to intercultural communicative competence". In *Translation in Second Language Learning and Teaching*, edited by Arnd Witte, Theo Harden and Alessandra Ramos de Oliveira Harden, 99-118. Bern: Peter Lang, 2009.
- Terkourafi, Marina. "Politeness in Cypriot Greek: A Frame-Based Approach". PhD diss., University of Cambridge. 2001.
- Then, David Chen-On, and Su-Hie Ting. 2011. "Demystifying the notion of teacher code switching for student comprehension". *Journal of English as an International Language* 5: 182-197.
- Turnbull, Miles, and Jennifer Dailey-O'Cain. *First Language Use in Second and Foreign Language Learning*. Bristol: Multilingual Matters, 2009.
- Turnbull, Miles. 2001. "There is a role for the L1 in second and foreign language teaching, but...". *Canadian Modern Language Review* 57 (4): 531-540.
- Turner, Julianne, Andrea Christensen, and Debra Meyer. "Teachers' beliefs about student learning and motivation". In *International Handbook of Research on Teachers and Teaching*, edited by Lawrence Saha and Antony Dworkin, 361-371. New York: Springer, 2009.
- van Lier, Leo. "From input to affordance: Social interactive learning from an ecological perspective". In *Sociocultural Theory and Second Language Learning: Recent Advances*, edited by James Lantolf, 245-259. Oxford: Oxford University Press, 2000.
- Xu, Li. 2012. "The role of teachers' beliefs in the language teaching-learning process". *Theory and Practice in Language Studies* 2 (7): 1397-1402.
- Yiakoumetti, Androula. 2007. "Choice of classroom language in bidialectal communities: To include or to exclude the dialect?" *Cambridge Journal of Education* 37 (1): 51-66.
- Yu, Weihua. "Direct method". In *Routledge Encyclopedia of Language Teaching and Learning*, edited by Michael Byram, 176-178. New York: Routledge, 2000.



## CHAPTER 8

# THE ROLE OF HERITAGE AND (POTENTIAL) NEW SPEAKERS' MOTIVATIONS TO LEARNING A LANGUAGE: THE CASE OF SANNA

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### Abstract

This study explored the motivational factors characterizing the choice of the Sanna minority speakers in Cyprus to learn their heritage language through education as adults. While heritage language study has focused on identifying the sociolinguistic and grammar factors involved in assigning these speakers a different status, this work highlights the label of 'new speaker' in minority heritage language contexts through the study of the attitudes of the speakers. An online questionnaire was completed by 90 participants. The results show that while Sanna minority speakers associate themselves with the identity, culture, and heritage of the community, they lack instrumental motivation to learn and use their language. The novelty of this work is to document this observation and inform about the linguistic and educational consequences of this tendency.

*Keywords:* heritage, language revitalization, motivation, new speaker

### 1. Introduction

The 21st century “will see either the death or doom of 90% of mankind’s languages” (Krauss 1992, 7). Efforts to revitalize endangered languages require dedication, effort, as well as time and money from those involved. Recent work (Bayram et al. 2021) suggests that within the context of

language revitalization and adult education, there is need to focus on pedagogical approaches similar to those used in societies with dialect variation. This suggests that research on language revitalization efforts will have to consider the different linguistic trajectories of speakers which may not be homogeneous. This requires an understanding of the overlaps and mismatches between what empirical research on grammar shows and the beliefs that heritage speakers or their educators have about the language and their efforts to learn it. To contribute to this work, we believe it is necessary to study the factors that can secure the success of language revitalization.

Studying the reasons why someone decides to learn a language means studying their motivations for doing so. As Dörnyei (1998) argues, it is motivation that “provides the primary impetus to initiate learning the L2 and later the driving force to sustain the long and often tedious learning process; indeed, all the other factors involved in L2 acquisition presuppose motivation to some extent” (p. 117). While studies on motivation in SLA literature abound (e.g., Gardner and Wallace 1972; Dörnyei and Ushioda 2011; Dörnyei 1998), not a lot of studies examine the motivations of those who are trying to learn their heritage language (Te Huia 2015). Nevertheless, it is clear from the literature that researchers have started taking interest in this topic (e.g., Bocale 2019; Sheyholislami and Sharifi 2016; Ortega et al. 2015; Jaffe 2015; Mori and Calder 2015).

This paper aims to gauge the attitudes and motivations of members of the Maronite community in Cyprus towards learning Cypriot Maronite Arabic, also known as Sanna; the latter is what this language is commonly called by many members of the community. Sanna is a variety that is unique to Cyprus (Borg 1985). It is now classified as a severely endangered and understudied oral Arabic variety in the UNESCO Atlas of the World's Languages in Danger. Crucially, it is estimated that it will have just one terminal speaker by 2074 (Karyolemou 2010). In 2007, the Government of Cyprus recognized Cypriot Maronite Arabic as a minority language, protected as a regional language by the Council of Europe. Since then, the Cyprus Ministry of Education and Culture has funded projects to document and revitalize the language, create an archive of oral traditions, standardize the alphabet and generate teaching materials aimed at children and adults. The teaching of Cypriot Maronite Arabic has been included in the list of the classes offered in educational programs of the Cyprus Ministry of Education and Culture, in the All-day Primary School “Agios Maronas” and the annual summer camp that takes place in the village of Kormakitis.

Maronites share the common belief that they moved to Cyprus at the beginning of the seventh century, possibly after moving from Syria to Attalia. Subsequent immigrations led to a population growth of 80,000

people across sixty villages (Karyolemou 2010). Currently, according to the latest population census (2011), there are 3,656 Maronites living in Cyprus.<sup>1</sup> The community is currently undergoing a language shift with Sanna losing ground to Cypriot Greek (henceforth CG), the native language of the Greek Cypriot community (for an up-to-date description of the sociolinguistic profile of this community see Fotiou and Ayiomamitou 2021; Grohmann et al. 2020; Tsiplakou and Armostis 2020). The process of Maronite assimilation into mainstream Greek Cypriot culture and language was set in motion after the Turkish invasion of Cyprus in 1974 when many Maronites were uprooted from their villages and resettled in towns in the part of the island controlled by the Republic of Cyprus. As a result, Maronite children were enrolled in Greek Cypriot schools while mixed marriages in the community rose (Karyolemou 2019).

A number of villages are considered to have been the biggest settlements of Maronite Arabs throughout the years: Kormakitis, Karpasia, Asomatos, and Agia Marina Skillouras. Sanna was only spoken in Kormakitis (Karyolemou 2019). Kormakitis is the current place of residence of most speakers who did not move south in 1974 and, as such, it is the place where the community's most competent speakers reside. These speakers are fully competent in both Sanna and CG. They speak Sanna daily with each other and switch to CG when conversing with (non-Maronite) Greek Cypriots visiting the community.

While there have been some studies on the community in recent years (Karyolemou 2009; 2010; 2019; Hadjidemetriou 2009a; 2009b), the role that motivation to learn Sanna plays in the current revitalization efforts has remained largely unexplored to our knowledge. Studies with this focus are important because “[o]ne possible way of assisting the process of language revitalization is through understanding the motivations of individuals who hold an ancestral connection to the language” (Te Huia 2015, 610). We are aware of only one study that reported on Maronites' attitudes towards Sanna, namely Hadjidemetriou (2009a), which analyzes excerpts of interviews that were conducted with Maronite speakers. The author does not provide information on the nature of those interviews or when the data were collected but, given the year that the study was published (i.e., 2009), we assume that the data were collected before any efforts to revitalize the language began. Hadjidemetriou (2009a) notes that the speakers she interviewed were proud of their language especially so due to its uniqueness and long history but at the same time they were also pointing out how they

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<sup>1</sup> This is the latest official record of how many people reported to belong in this community. The census is now ten years old hence this number may not be accurate for 2021.

viewed their language as 'not real Arabic' since it was not a standardized or a written variety (see Hadjidemetriou 2009a, 344). Crucially, the participants in their study did not exhibit negative attitudes towards the majority language or community.

This study is the first to our knowledge that aims to reveal the community's attitudes and motivation towards their ancestral language after the revitalization efforts commenced in 2007. The study can guide researchers working on revitalization, linguists, and educators on comprehending the factors involved in the learning of Sanna by members of the Maronite Arabic community and extending the implications of the findings to other similar contexts. A second aim of the study is to introduce the notion of the 'new speaker' as a possible sociolinguistic indicator for the community of Maronite Arabic speakers for the part of the population that may not count as heritage speakers, since they might not have been raised in homes where Sanna was spoken as a home language. These are speakers who are the younger generations of families with a Maronite Arabic origin who may have left the village of Kormakitis and moved to parts of Cyprus where the dominant language is CG.

The rest of the paper is structured as follows: Section 2 provides an overview of some of the work conducted to identify speakers as heritage or 'new' speakers, which are notions, as we argue, that apply to different categories of speakers in this community, depending on the exposure that they have had to their heritage language. Section 3 reviews the literature on motivation to learn a heritage language while section 4 presents the methodology adopted in the current work. Section 5 focuses on the results of the study while section 6 provides the discussion and conclusion of the paper.

## **2. Definitions**

### **2.1. Defining the heritage speaker**

The definition of 'heritage speaker' has been a controversial issue that has been approached by a number of scholars (Benmamoun, Montrul, and Polinsky 2013; Boers et al. 2020; Lohndal et al. 2019; Montrul 2008; 2015; Polinsky 2018; Rothman 2007; 2009; Polinsky 2008). While some definitions narrow the set of those speakers that can be identified as heritage to the origin of the speakers, other definitions focus more on the language development and its special status within the bilingualism/multilingualism literature.

According to Polinsky (2014), heritage speakers are individuals who grew up in homes in which a language different than the dominant language in their community was used and, as a result, they became bilingual in both languages. The notion also applies to people who once lived where the heritage language was the dominant language but upon migrating to another place shifted to the dominant language of that place. In both cases, what is important is that the speakers began acquiring the heritage language before or along with the language that later becomes their dominant language.

In later work, Polinsky (2018) identifies three groups of speakers that relate to a heritage language. Based on this, the definition of a *heritage* language speaker is identified as a simultaneous or sequential (successive) bilingual, whose weaker language is a minority language and whose stronger language is the dominant language of a given society. The definition of a *baseline speaker* is based on the language of the adult first-generation immigrants, which becomes the input to heritage learners. This diaspora baseline can be compared to the *homeland* language variety, which is the variety spoken in the country or region of origin. The latter may not always be available depending on the speech community studied.

According to Rothman (2007), heritage speakers are defined as a type of bilingual speakers whose sociolinguistic circumstances, such as the language acquisition development, the effect of the dominant language and the maintenance of the heritage languages, in their respective community categorizes them as such. In later work, Bayram et al. (2021) agree that heritage speakers—being a kind of native speaker of their respective home or minority languages (as discussed in Rothman and Treffers-Daller 2014)—show differences in terms of their linguistic competence and performance when compared to other native speakers whose acquisition takes place in a context where that language is the only language(s) of the greater society. Lohndal et al. (2019) assume a heritage speaker to be someone who actively speaks a minority language in a national environment, and they have at least one parent or grandparent who speaks/spoke this language to them as a primary language in young childhood.

Factors explaining the emergence of a dominant language are also mentioned in Pavlou and Grohmann (to appear), who suggest that *linguistic hegemony* and *co-overt prestige* may also explain the status of the different languages as heritage. The identification and labeling of varieties as heritage languages relies on the careful examination of grammatical and other factors that characterize each case, such as in cases of *transfer* or *divergent attainment* Polinsky (2018). The grammar in these populations may show an interplay between the learner's first (heritage) language and the dominant

language. Concerning divergent attainment, new emerging phenomena in grammar appear as innovations and language changes appear in the heritage language, as they also discuss in their paper.

All in all, the way a heritage speaker is defined by the various scholars cited above assumes some level of competence in the heritage language at the very least. Lohndal et al.'s definition of heritage speakers seems to be the most relevant to the Sanna speakers in that the oldest speakers of the community were introduced to Sanna by grandparents or other native speakers in their home environment. This makes them substantially different from speakers of younger generations who did not learn the language in the same way and, as this study suggests, may qualify for a different label to characterize their linguistic status. This is what the next section focuses on.

## **2.2. Defining the New Speakers**

The 'new speaker' label refers to people with little to no home or community exposure to a minority language, who are given the opportunity to acquire this language through participation in educational programs and revitalization projects as adult language learners (O'Rourke et al., 2014). In other words, these speakers '(re)learn' their community language after language shift occurred in the community usually through formal training or from older speakers in their community (O'Rourke and Ramallo 2014, 1; Bocale 2019, 88; Ortega et al. 2015). While speakers in communities of endangered languages who are undergoing revitalization have often been perceived in a negative light as speakers who lack proficiency, the category of 'new speaker' highlights and legitimizes their linguistic competences and practices and views them in a more positive light as legit learners of the language (Ó Murchadha et al. 2018; Bocale 2019; Jaffe 2015). As an important part of efforts in reversing language shift, "the term 'new speaker' simultaneously describes and creates its objects: speakers, languages and contexts of use" (Jaffe 2015, 42). Of course, as O'Rourke and Ramallo (2014, 2) claim "there are clear parallels between 'new speakers' and 'heritage speakers'". For example, Jaffe (2015, 22) notes in their study that potential 'new speakers' can include 'heritage learners' in cases the latter do not actively make use of the language because of lack of opportunities to do so and have various levels and types of both active and passive linguistic competence.

### 3. Motivation to learn a heritage language

In this section, we concentrate on several studies that examine speaker motivations for learning a heritage language. What will become apparent is the diverse realities of each situation and how these affect the likelihood of a heritage language's survival despite efforts to revitalize it. Motivation is a complex, dynamic and highly situated construct phenomenon (Lightbown and Spada 2013; Ellis 2015) which “like the concept of gravity, is easier to describe [...] than it is to define. Of course, this has not stopped people from trying it” (Covington, 1998, 1 cited in Jeongyi 2005, 19). For example, Gardner (1985, 10) has defined motivation as “the combination of effort plus desire to achieve the goal of learning the language plus favorable attitudes toward learning the language” while Dornyei (1998) listed it “as one of the key factors that influence the rate and success of second/foreign language (L2) learning (p. 117).

To start with, Bocale (2019) examined the motivations of Italian new speakers in Crimea with data from participant observations and interviews with students, teachers and community organizers of a school run by volunteers in Kerch. Four recurring themes emerged from the data: repair and connection, community and social network, Italian culture and employment opportunities. When it comes to the first theme, for many of these new speakers desire to reconnect with their imagined heritage was one of reasons why they began to learn Italian. Another contributing factor for learning the language was the feeling of forming a community with other people attending their language classes and other related activities. Another motivational factor concerns popular elements of Italian culture such as songs, TV series and movies. Finally, learning Italian improved one's employment opportunities in Crimea since knowledge of a foreign language gives them advantage in the job market.

Sheyholislami and Sharifi (2016) examined the motivations for learning Kurdish in the US using a mixed-methods approach with reviews of literature and media, interviews with community members and a survey. The participants cite several reasons for learning the language such as their identity, culture and maintaining a sense of community. However, it is also noted that while almost all second-generation community members state that they were encouraged to use the heritage language at home with their parents, the latter were too busy in establishing themselves in their new home. Thus, the young people interacted more with their peers and ended up using the dominant language of their new community (Sheyholislami and Sharifi 2016, 94). On top of that, delivering language classes in this community “seems to be a daunting task”; one of the reasons why is that

various Kurdish varieties are not mutually intelligible while there are also different opinions when it comes to which alphabet to use in the classes (Sheyholislami and Sharifi 2016, 95). Finally, there is lack of financial and political support because the Kurdish community does not have a state of its own anywhere in the world (ibid). Consequently, the authors paint a rather grim picture of the future of Kurdish as a heritage language in the USA (ibid.).

In a study by Ortega et al. (2015) the attitudes and motivations of Basque new speakers were examined through focus groups and interviews. Their participants were divided into two age groups: those over the ages of 35-40 who learned the language as adults in schools and those under that age who learned the language at school in early partial or total immersion models. Important differences were noted between these two groups. The older group reported that their motivation for learning Basque was linked to their identity or political affiliations and was important for their integration to the community and their culture. At the same time, instrumental reasons, such as employment in the public sector, are also becoming common (Ortega et al. 2015, 90). When it comes to the younger group, it was noted that they take their learning of Basque for granted and they do not value it as much. They also do not think that Basque is in a vulnerable situation and they are not greatly committed to using the language in their everyday life (Ortega et al. 2015, 91). Finally, the lack of opportunities to use the language was also noted (ibid., 92).

Finally, Jaffe (2015) studied the motivations of Corcicans for learning Corcican in Corcica and concluded that the language was positively linked with heritage and identity but was seen as an 'added value' of their identity rather than a core element of it while any expected domains of using this language in the future were usually rather indeterminate (Jaffe, 2015, p. 35).

If there is one common denominator behind heritage speakers' motivation to learn a heritage language is their identity as heritage speakers, their heritage culture and the sense of community that is created by learning the language. Other factors, which are more instrumental in nature, such as employment opportunities, are not important in all communities. However, despite the fact that in many cases speakers seem to be motivated to learn the heritage language for one reason or another, there are difficulties in doing so which range from the pressure from the dominant language to lack of domains where speakers can use their heritage language as well as difficulties in the actual teaching (e.g., lack of funding, support or consensus on what is going to be taught).



## 4. Methods

### 4.1. Design and procedure

Research on motivation has concentrated on several variables to understand what it is that maintains people's motivation to learn a language. To study Maronites' motivation to learn Sanna, we adapted a questionnaire used in Jeongyi (2005) which, in turn, was based on several established motivation questionnaires. We decided to base our questionnaire on the following motivational variables—the definitions of 1-5 are adapted from Jeongyi (2005, 6):

1. Instrumental orientation i.e., reasons for learning the language for practical gain;
2. Integrative orientation i.e., reasons for learning the language for interacting with members of the same group;
3. Expectancy motivation i.e., their belief that they will do well in a course or how easy they think it will be;
4. Heritage language orientation i.e., their connection with the language as part of their cultural heritage;
5. Affect i.e., their feelings when using the language;
6. Learner identity i.e., whether they believe they are members of the Maronite community;
7. Interest in foreign languages and cultures, i.e., interest in learning foreign languages and meeting people from different cultures.

Below the reader may find the items that were used in the questionnaire and the motivational variables they correspond to.

The questionnaire was administered online using Google forms. It was piloted first with a few members of the community who helped us adapt some of the questionnaire's items they had found to be unclear. Then, it was distributed to the community via two channels: the 'friend of a friend' approach and by Facebook posts to two groups of the Maronite community. The raw data were then downloaded as an Excel file, coded independently by both authors with a 100% agreement rate and analyzed in Excel. It should be noted that even though in the literature the items illustrated in the table correspond to certain motivational factors, the pairwise correlation coefficients in a correlation matrix showed a weak correlation between the items in each factor except the strong positive correlation in factors 2 and 4 (integrative orientation and interest in foreign language above) in which cases correlation coefficients' magnitude was between 0.5 and 0.7 ( $r = 0.7660$ ,  $r =$

**Table 1. Questionnaire Items**

Motivational Variables/Factors	Questionnaire Items
Heritage Language Orientation	Sanna is important to me because it is part of my culture.
	Sanna is part of my identity.
Integrative orientation	Speaking Sanna gives me the opportunity to talk with those that speak it.
	I like to speak Sanna when I go to my village.
Learner identity	I consider myself to be a Maronite.
Interest in foreign languages and cultures	Learning new languages is important.
	Learning new languages helps you become acquainted with other cultures.
Instrumental orientation	Sanna is important to my career.
	Speaking Sanna will improve my social status.
	If I learn Sanna, I will have financial gains.
Expectancy motivation	I believe it will be easy to learn Sanna.
	I believe I will do very well in my lessons.
Affect	I feel comfortable when speaking Sanna.
	I am not ashamed to speak Sanna.

0.7692 correspondingly)<sup>2</sup>. This analysis was not conducted during the pilot stage of our research because the population is a very small community, and

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<sup>2</sup> Very weak negative correlations were also observed between the interest in foreign language factor ( $r = -0.0550$ ), heritage language orientation ( $r = -0.05949$ ), integrative

it was not possible to administer this questionnaire in two stages and maintain the rate of participation in both. This issue is also discussed further below.

## 4.2. Participants

When studying heritage languages, a small population size may inevitably lead to a small sample size. Further, as Leivada, D'Alessandro, and Grohmann (2019) point out, studying small and non-standard varieties, such as Sanna, can be challenging due to inter- and intra-speaker variation. Depending on the task and the society studied, there may be inter- and intra-speaker variation to varying degrees as variables *that exist in that context* (i.e., *Sanna community*) (re)determine the linguistic effect.

According to the latest population census (2011), there are currently 3,656 Maronites living in Cyprus. Since 90 people responded to the questionnaire—which amounts to 2.5% of the population—we can consider the sample targeted in the study to be representative of the population despite that fact that it is a small number. According to Dörnyei (2019, 62), anything between 1%-10% of the population is considered to be the ‘magic sampling fraction’. The sample size was determined to capture an accurate estimation of effect size and individual variation that may affect the result, since in large trials any effect will be neutralized, and the sample will capture a bigger percentage of the phenomenon in the population. It must be noted that we assume that our participants are a mixture of both heritage speakers and perhaps (potential) new speakers of Sanna. The reason we did not attempt to differentiate between the two categories in our study is quite simple: it is very difficult to do so in the context of a study based on questionnaire data.

We divided our participants into three age groups: 18-35, 35-50, and 50+<sup>3,4</sup>. The sample is balanced in terms of the participants’ reported sex: 53% are women and 47% men. Most of them (83.3%) reside in the capital of Cyprus, Nicosia, while only 6.7% live in Kormakitis. The rest live in

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( $r = -0.07053$ ) and expectancy and expectancy and affect ( $r = -0.0947$ ). No negative correlation was reported for any of the items belonging in the same factor.

<sup>3</sup> Standard Deviation between participants is not reported as they reported their age on the basis of age range, not their actual age.

<sup>4</sup> The reason we did not have any participants under the age of 18 is because no one of and under that age completed the questionnaire. This may be the result of the main medium through which we decided to distribute our questionnaire (i.e., Facebook). Evidently, younger generations use other social networking sites and, unfortunately, we did not take this into account in this study. Another possible reason might be their lack of interest in the matter under study.

other areas of Cyprus. Just over 80% of them claim to have a very close and frequent contact with the Maronite community, almost 7% of them meet once a month, while one tenth meet only when on holidays. Only 1 participant noted that they never meet anyone from the community. Further, many of them (43.3%) visit Kormakitis every week or at least three times a month, just over a third (35.6%) visit the village only when on holiday, 15.6% visit the village once or twice a month and 5.6% never do.<sup>5</sup> The table below illustrates the aforementioned information in a more detailed way.

**Table 2. Participants**

<b>Factors</b>	<b>Categories</b>	<b>Raw numbers</b>	<b>Percentages</b>
<b>Age</b>	18-35	25	28%
	36-50	31	34%
	50+	34	38%
<b>Reported Sex</b>	Female	48	53%
	Male	42	47%
<b>Place of residence</b>	Nicosia	75	83%
	Kormakitis	6	7%
	Lemesos	5	6%
	Larnaca	3	3%
	Other areas—besides Kormakitis—in northern territory of Cyprus	1	1%
<b>Intensity of contact with Maronite Community</b>	Every week or a least three times a month	74	82%
	Once a month	6	7%
	Only on holidays	9	10%
	Not at all	1	1%
<b>Frequency of visiting Kormakitis</b>	Every week or a least three times a month	39	43%
	Once or twice per month	14	16%
	Only on holidays	32	36%
	Not at all	5	6%

<sup>5</sup> Since not all Maronites come from Kormakitis, we have no way of knowing that those who say do not visit the village have actual ties with it or that those who do visit the village are from there.

For the statistical analysis, the data were analyzed with the Analysis ToolPak (Microsoft Excel), version 16.54. The percentages of the responses based on descriptive statistics were extracted and are presented in Section 4 below. A Kruskal-Wallis H test<sup>6</sup> was employed for identifying differences between the responses of the three age groups of Sanna speakers (AG1=18-35, AG2=35-50, AG3=50+) and based on the ordinal 5-point dependent variable (Likert scale responses). The Kruskal-Wallis test is a non-parametric method to test whether two or more independent variables, even of different samples sizes, have statistically significant differences on a dependent variable. Following the descriptive statistics reported above, 90 speakers filled out the questionnaire and their responses were grouped according to the average score of their answers.

## 5. Results

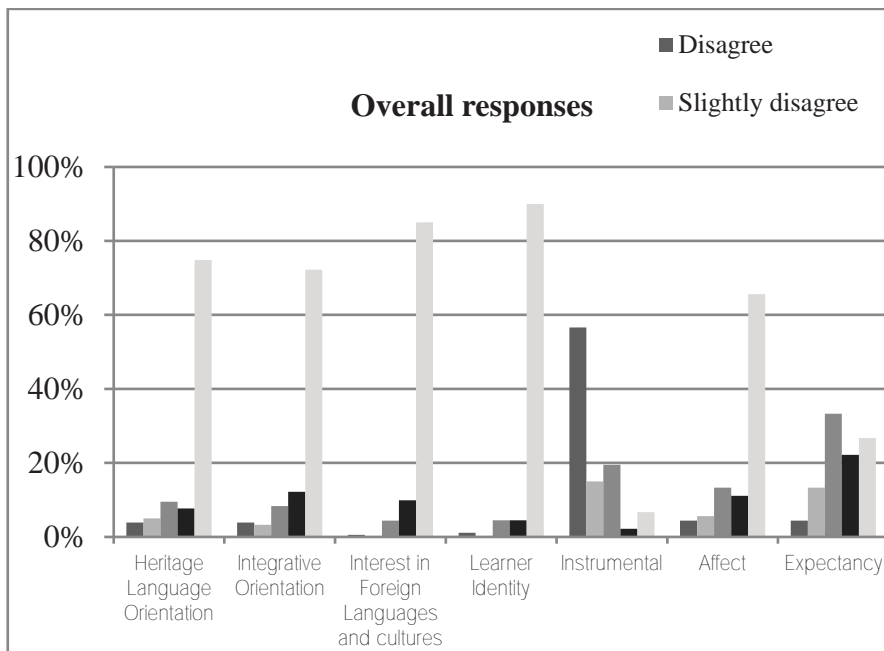
Speakers of all ages, when asked about the factors of heritage language orientation, integrative orientation, interest in foreign languages, and learner identity reported that they agreed that learning new languages is important and helps them learn about different cultures (85%), that Sanna is part of their culture and identity (74.8%), that knowing Sanna helps them interact with others in the community (72.2%) and that they identify with the Maronite identity (65.6%). The instrumental factor was strongly denied as a reason for learning Sanna among the participants (56.6% as disagree and 15% as slightly disagree). In this sense, the participants do not find Sanna important for their career, their social status, or their financial prospects. When it comes to affect, a lower positive score was documented, suggesting that there may be some level of anxiety among the participants. Table 3 and figure 1 below summarize the results of the questionnaire according to each of the motivational factors under study.

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<sup>6</sup> Although conceptually a Likert scale is ordinal, Norman (2010) argues that there is no guarantee that the true distance between the Likert points is relevant to the analysis of the data. If the numbers are reasonably distributed, inferences about their underlying differences in the Likert numbers are invalidated conclusions. Based on this, a multiple linear regression was also employed but is not reported here since the scope of the paper is not the debatable nature of Likert scales that the comparison of the two tests could contribute to.

**Table 3. Overall Results**

	<b>Disagree</b>	<b>Slightly disagree</b>	<b>Neither agree nor disagree</b>	<b>Slightly agree</b>	<b>Agree</b>
<i>Heritage Language Orientation</i>	3.89%	5%	9.5%	7.7%	74.8%
<i>Integrative Orientation</i>	3.9%	3.3%	8.33%	12.2%	72.2%
<i>Interest in Foreign Languages and cultures</i>	0.56%	0%	4.4%	9.9%	85%
<i>Learner Identity</i>	1.1%	0%	4.5%	4.5%	90.0%
<i>Instrumental</i>	56.6%	15%	19.5%	2.2%	6.7%
<i>Affect</i>	4%	6%	13.3%	11.1%	65.6%
<i>Expectancy</i>	4.4%	13.3%	33.3%	22.2%	27%



**Figure 1. Overall responses**

Regarding the performance of the participants with respect to their age groups, the older speakers performed slightly different from the other two age groups in the sample. Specifically, in the ‘Interest in Foreign Languages’ older participants almost fully agreed (94.3%), while in the ‘Heritage Language Orientation’ mostly agreed (81.4%). In relation to the Integrative factor, the AG3 agreed at 81.4% and in relation to the Affect factor, they agreed at 72.9%. For the ‘Learner’s Identity’, the performance was at ceiling at 97.1%.

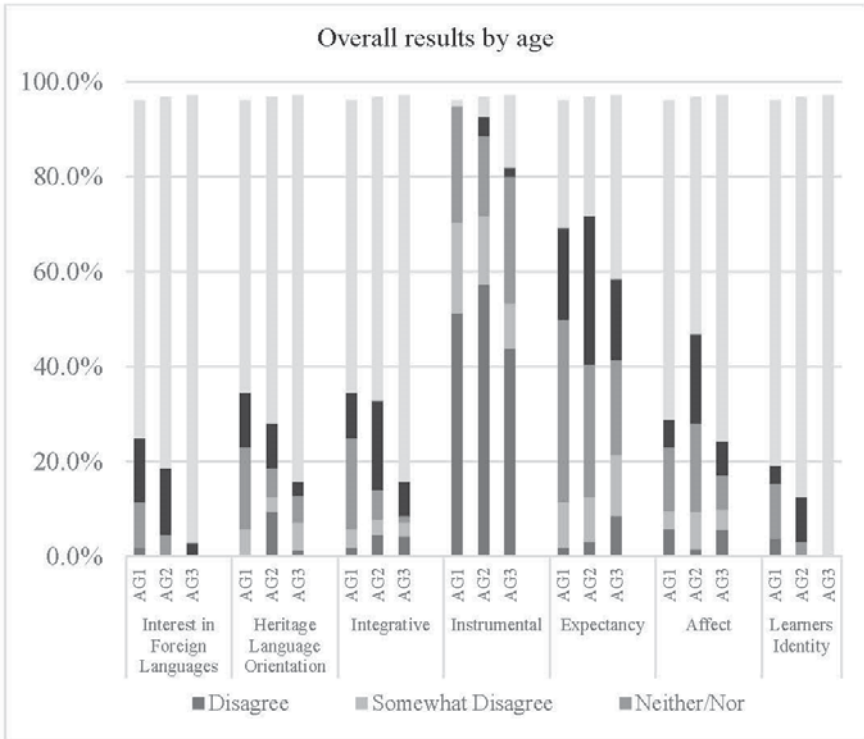


Figure 2: Overall results by age

Since the items chosen for some of the factors did not have a strong positive correlation as noted in section 4.1, the table below also presents the results for each item separately. To see what the numbered items correspond to the reader is directed to Table 1.

**Table 4. Response rates per item**

	Interest in Foreign Languages		Heritage Language Orientation	
	Item 1	Item 2	Item 1	Item 2
<b>Disagree</b>	1.1%	0.0%	3.3%	4.4%
<b>Somewhat Disagree</b>	0.0%	0.0%	4.4%	5.6%
<b>Neither/Nor</b>	5.6%	3.3%	8.9%	10.0%
<b>Somewhat Agree</b>	7.8%	12.2%	6.7%	8.9%
<b>Agree</b>	85.6%	84.4%	76.7%	71.1%
	Integrative		Affect	
	Item 1	Item 2	Item 1	Item 2
<b>Disagree</b>	1.1%	6.7%	7.8%	1.1%
<b>Somewhat Disagree</b>	3.3%	3.3%	10.0%	1.1%
<b>Neither/Nor</b>	10.0%	6.7%	20.0%	6.7%
<b>Somewhat Agree</b>	6.7%	17.8%	14.4%	7.8%
<b>Agree</b>	78.9%	65.6%	47.8%	83.3%
	Expectancy		Learner Identity	
	Item 1	Item 2	Item 1	
<b>Disagree</b>	4.4%	5.6%	1.1%	
<b>Somewhat Disagree</b>	13.3%	8.9%	0.0%	
<b>Neither/Nor</b>	33.3%	24.4%	4.4%	
<b>Somewhat Agree</b>	22.2%	24.4%	4.4%	
<b>Agree</b>	26.7%	36.7%	90.0%	
	Instrumental			
	Item 1	Item 2	Item 3	
<b>Disagree</b>	43.3%	31.1%	82.2%	
<b>Somewhat Disagree</b>	13.3%	20.0%	10.0%	
<b>Neither/Nor</b>	31.1%	31.1%	7.8%	
<b>Somewhat Agree</b>	2.2%	4.4%	0.0%	
<b>Agree</b>	10.0%	13.3%	0.0%	

A Kruskal-Wallis Test (following Sincich, Levine, and Stephan 2002) was performed to determine if the median response was the same for the three age groups. A total of 42 observations were used in the analysis depicting the average values for each questionnaire item in each age group. The test



revealed that the median response on the Likert scale was similar ( $H=1.538$ ,  $p=0.05$ ) among all age groups. That is, there was not a statistically significant difference in median response on the Likert scale among two or more of the age groups. Thus, we cannot reject the null hypothesis that the median responses between the age groups are the same. A longer questionnaire with a larger number of items per factor or with speakers under 18 could possibly alter this result.

## 6. Discussion and Conclusion

The participants of our study consider Sanna to be part of their identity, culture and heritage and as an important language in their repertoire in order to communicate with members of their community. They also demonstrate positive attitudes towards learning languages. Further, they seem to be a close-knit community according to their reported frequency of contact with members of the community. However, they do not seem to find value in their language when it comes to instrumental reasons for using it: Sanna is not an important language for their career prospects and advancement, their social status, or the state of their finances. So, the question that inevitably arises is whether the potential new speakers of this community will choose to learn their heritage language now that efforts to revitalize it have been under way. In other words, are the motivational factors related to identity, culture, heritage, and integration in the community enough to guarantee the survival of this endangered language given that this language is not important to this community for instrumental reasons? Unavoidably, this question also brings us to another factor that is usually detrimental when it comes to the survival of endangered languages: the lack of domains of use (see also Ortega et al. 2015; Jaffe 2015; Sheyholislami and Sharifi 2016 for similar remarks in other heritage communities). Each heritage community is different and must overcome different hurdles in their effort to preserve their identity for which language is usually an integral part. This linguistic community must deal with the fact that even though they can visit their village, this has been under the administration of the Turkish authorities since 1974. One participant commented at the end of the questionnaire in the space dedicated for any questions the participants may have had the following:

I am a native speaker of Sanna. I've been using this variety with my family since the day I was born. I have never been ashamed of my identity as a Maronite. I am a Cypriot citizen; proud of my village, my community, and my roots. But to survive, Sanna needs Kormakitis. Without it, it is a matter of time before not only our language is lost but the whole community is

assimilated [to the majority community in Cyprus]. (Study participant, 2021)

Most importantly, the paper draws a distinction between heritage speakers and 'new speakers' in that heritage speakers, who are already exposed in the language at home, may not share strong opposition to the heritage language related to its practical use since the language is already used in the family context and has its role in their life as such. On the contrary, 'new speakers' share experiences and practices different in nature from heritage speakers, as they may not have been exposed in the language at home and have to find the motivation to learn it in a classroom. In this sense, the educator who may interact with both kinds of speakers should bear this distinction in mind and apply the relevant educational practices to engage both in the lesson in the same way. For example, Jaffe (2015) suggests that native speakers can act as interlocutors and contribute to changing the negative attitudes towards novice speaker efforts. In some contexts, the negative attitude may include shame about speaking the language with errors, while in the Sanna case here the negative attitude is with respect to its actual use and importance in the society. Last, it is necessary for the identity factor to become the motivating reason for learning Sanna for the speakers to choose attending classes as adults.

As this is a preliminary study of this topic, future work should delve into the matter deeper by employing qualitative and experimental methods of data collection and analysis which would give one the opportunity to expand our understanding of linguistic communities and personal diverse experiences with various linguistic repertoires.

## References

- Bayram, Fatih, Maki Kubota, Alicia Luque, Diego Pascual y Cabo, and Jason Rothman. 2021. 'You Can't Fix What Is Not Broken: Contextualizing the Imbalance of Perceptions About Heritage Language Bilingualism'. *Frontiers in Education* 6: 60. <https://doi.org/10.3389/educ.2021.628311>.
- Benmamoun, Elabbas, Silvina Montrul, and Maria Polinsky. 2013. 'Heritage Languages and Their Speakers: Opportunities and Challenges for Linguistics'. *Theoretical Linguistics* 39 (3–4): 129–81. <https://doi.org/10.1515/tl-2013-0009>.
- Bocale, Paola. 2019. 'Language Shift and Language Revival in Crimea'. *International Journal of the Sociology of Language* 260: 85–103.
- Boers, Ivo, Bo Sterken, Brechje van Osch, M. Carmen Parafita Couto, Janet Grijzenhout, and Deniz Tat. 2020. 'Gender in Unilingual and Mixed

- Speech of Spanish Heritage Speakers in The Netherlands'. *Languages* 5 (4): 68. <https://doi.org/10.3390/languages5040068>.
- Borg, Alexander. 1985. *Cypriot Arabic: A Historical and Comparative Investigation into the Phonology and Morphology of the Arabic Vernacular Spoken by the Maronites of Kormakiti Village in the Kyrenia District of North-Western Cyprus*. Stuttgart: Franz Steiner.
- Dörnyei, Zoltán. 1998. 'Motivation in Second and Foreign Language Learning'. *Language Teaching* 31 (3): 117–35. <https://doi.org/10.1017/S026144480001315X>.
- . 2019. *Questionnaires in Second Language Research: Construction, Administration, and Processing*. 2nd edition. New York, NY: Routledge.
- Dörnyei, Zoltán, and Ema Ushioda. 2011. *Teaching and Researching: Motivation*. 2nd edition. London: Routledge.
- Ellis, Rod. 2015. *Understanding Second Language Acquisition*. 2nd edition. Oxford: Oxford University Press.
- Fotiou, Constantina, and Ioli Ayiomamitou. 2021. "'We Are in Cyprus, We Have to Use Our Language, Don't We?'" Pupils' and Their Parents' Attitudes towards Two Proximal Linguistic Varieties'. *Linguistics and Education* 63: 100931. <https://doi.org/10.1016/j.linged.2021.100931>.
- Gardner, Robert. 1985. *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*. London: Edward Arnold.
- Gardner, Robert, and Lambert Wallace. 1972. *Attitudes and Motivation in Second Language Learning*. Rowley, MA: Newbury House.
- Grohmann, Kleanthes K., Maria Kambanaros, Evelina Leivada, and Natalia Pavlou. 2020. 'On "Free" Grammatical Variation in a Mixed Lect: Clitic Placement in Cypriot Greek'. *Zeitschrift Für Sprachwissenschaft* 39 (3): 275–98. <https://doi.org/10.1515/zfs-2020-2016>.
- Hadjidemetriou, Chryso. 2009a. 'A Sociolinguistic Profile of the Armenian and Maronite Arabic Linguistic Minorities. S'. In *The Minorities of Cyprus: Development Patterns and the Identity of the Internal-Exclusion*, edited by Marina Elia, Nicholas Coureas, and Andrekos Varnava, 337–60. Newcastle: Cambridge Scholars Publishing.
- . 2009b. 'The Consequences of Language Contact: Armenian and Maronite Arabic in Contact with Cypriot Greek'. University of Essex.
- Jaffe, Alexandra. 2015. 'Defining the New Speaker: Theoretical Perspectives and Learner Trajectories'. *International Journal of the Sociology of Language* 2015 (231): 21–44. <https://doi.org/10.1515/ijsl-2014-0030>.
- Jeongyi, Lee. 2005. 'Conversations between Adult Learners of Korean and Their Native Korean-Speaking Conversation Partners: Motivation of Heritage Language Learners and Non-Heritage Language Learners'. PhD Thesis, Athens, Georgia: The University of Georgia.

- Karyolemou, Marilena. 2009. 'Minorities and Minority Languages in Cyprus'. In *The Minorities of Cyprus: Development Patterns and the Identity of the Internal-Exclusion*, edited by Marina Elia, Nicholas Coureas, and Andrekos Varnava, 316–36. Newcastle: Cambridge Scholars Publishing.
- . 2010. 'The Demographics of the Cypriot Maronite Community and of Cypriot Arabic Speakers'. In *Empowerment through Language Revival: Current Efforts and Recommendations for Cypriot Maronite Arabic*, edited by Brian Bielenberg and Costas Constantinou, 1–7. Nicosia: PRIO Cyprus Centre.
- . 2019. 'A Story at the Periphery: Documenting, Standardising and Reviving Cypriot Arabic'. *International Journal of the Sociology of Language* 2019 (260): 1–14. <https://doi.org/10.1515/ijsl-2019-2045>.
- Krauss, Michael. 1992. 'The World's Languages in Crisis'. *Language* 68 (1): 4–10.
- Leivada, Evelina, Roberta D'Alessandro, and Kleanthes K. Grohmann. 2019. 'Eliciting Big Data From Small, Young, or Non-Standard Languages: 10 Experimental Challenges'. *Frontiers in Psychology* 10: 313. <https://doi.org/10.3389/fpsyg.2019.00313>.
- Lightbown, Patsy M., and Nina Spada. 2013. *How Languages Are Learned 4th Edition - Oxford Handbooks for Language Teachers*. 4th edition. Oxford University Press.
- Lohndal, Terje, Jason Rothman, Tanja Kupisch, and Marit Westergaard. 2019. 'Heritage Language Acquisition: What It Reveals and Why It Is Important for Formal Linguistic Theories'. *Language and Linguistics Compass* 13 (12): e12357. <https://doi.org/10.1111/lnc3.12357>.
- Montrul, Silvina. 2008. 'Second Language Acquisition Welcomes the Heritage Language Learner: Opportunities of a New Field'. *Second Language Research* 24 (4): 487–506. <https://doi.org/10.1177/0267658308095738>.
- . 2015. *The Acquisition of Heritage Languages*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781139030502>.
- Mori, Yoshiko, and Toshiko M. Calder. 2015. 'The Role of Motivation and Learner Variables in L1 and L2 Vocabulary Development in Japanese Heritage Language Speakers in the United States'. *Foreign Language Annals* 48 (4): 730–54. <https://doi.org/10.1111/flan.12159>.
- Norman, Geoff. 2010. 'Likert Scales, Levels of Measurement and the "Laws" of Statistics'. *Advances in Health Sciences Education: Theory and Practice* 15 (5): 625–32. <https://doi.org/10.1007/s10459-010-9222-y>.
- Ó Murchadha, Noel P., Michael Hornsby, Cassie Smith-Christmas, and Máiréad Moriarty. 2018. 'New Speakers, Familiar Concepts?' In *New*

- Speakers of Minority Languages: Linguistic Ideologies and Practices*, edited by Cassie Smith-Christmas, Noel P. Ó Murchadha, Michael Hornsby, and Máiréad Moriarty, 1–22. London: Palgrave Macmillan UK. [https://doi.org/10.1057/978-1-137-57558-6\\_1](https://doi.org/10.1057/978-1-137-57558-6_1).
- O'Rourke, Bernadette, and Fernando Ramallo. 2014. 'Neofalantes as an Active Minority: Understanding Language Practices and Motivations for Change amongst New Speakers of Galician'. *International Journal of the Sociology of Language* 2015 (231): 147–65. <https://doi.org/10.1515/ijsl-2014-0036>.
- Ortega, Ane, Jacqueline Urla, Estibaliz Amorrortu, Jone Goirigolzarri, and Belen Uranga. 2015. 'Linguistic Identity among New Speakers of Basque'. *International Journal of the Sociology of Language* 2015 (231): 85–105. <https://doi.org/doi:10.1515/ijsl-2014-0033>.
- Pavlou, Natalia, and Kleantes K. Grohmann. n.d. 'Heritage Languages in Southeastern Europe.' In *The Cambridge Handbook of Heritage Languages and Linguistics*, edited by Silvina Montrul and Maria Polinsky. Cambridge Handbooks in Language and Linguistics. Cambridge: Cambridge University Press.
- Polinsky, Maria. 2008. 'Gender under Incomplete Acquisition: Heritage Speakers' Knowledge of Noun Categorization'. *Heritage Language Journal* 6 (1): 40–71.
- . 2014. 'Heritage Languages and Their Speakers: Looking Ahead'. In *Innovative Approaches to Heritage Languages: From Research to Practice*, edited by Marta Fairclough and Sara M. Beaudrie. Washington, D.C.: Georgetown University Press. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:33946918>.
- . 2018. *Heritage Languages and Their Speakers*. Cambridge Studies in Linguistics. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781107252349>.
- Rothman, Jason. 2007. 'Heritage Speaker Competence Differences, Language Change, and Input Type: Inflected Infinitives in Heritage Brazilian Portuguese'. *International Journal of Bilingualism* 11 (4): 359–89. <https://doi.org/10.1177/13670069070110040201>.
- . 2009. 'Understanding the Nature and Outcomes of Early Bilingualism: Romance Languages as Heritage Languages'. *International Journal of Bilingualism* 13 (2): 155–63. <https://doi.org/10.1177/1367006909339814>.
- Rothman, Jason, and Jeanine Treffers-Daller. 2014. 'A Prolegomenon to the Construct of the Native Speaker: Heritage Speaker Bilinguals Are Natives Too!' *Applied Linguistics* 35 (1): 93–98. <https://doi.org/10.1093/applin/amt049>.

- Sheyholislami, Jaffer, and Amir Sharifi. 2016. “‘It Is the Hardest to Keep’:  
Kurdish as a Heritage Language in the United States.’ *International  
Journal of the Sociology of Language* 2016 (237): 75–98.  
<https://doi.org/doi:10.1515/ijsl-2015-0036>.
- Sincich, Terry L., David M. Levine, and David F. Stephan. 2002. *Practical  
Statistics by Example Using Microsoft Excel and Minitab*. 2nd edition.  
Upper Saddle River, NJ 07457: Prentice-Hall, Inc.  
<https://www.pearson.com/content/one-dot-com/one-dot-com/us/en/higher-education/program.html>.
- Te Huia, Awanui. 2015. ‘Exploring Goals and Motivations of Māori  
Heritage Language Learners’. *Studies in Second Language Learning  
and Teaching* 5 (4): 609–35.
- Tsiplakou, Stavroula, and Spyros Armostis. 2020. ‘Survival of the  
“Oddest”? Levelling, Shibboleths, Reallocation and the Emergence of  
Intermediate Varieties’. In *Intermediate Language Varieties: Koinai  
and Regional Standards in Europe*, edited by Massimo Cerrutu and  
Stavroula Tsiplakou, 203–30. *Studies in Language Variation* 24.