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Anita Buczek-Zawiła
https://orcid.org/0000-0002-4179-0219
Pedagogical University in Kraków

Phonological Awareness of L1 Systemic Segmental Contrasts among Advanced ESL Speakers with Varied L1 Backgrounds

Abstract: The paper explores the phonological awareness of L1 among advanced adult speakers of EFL in the context of L2 pronunciation training. The subjects are students of English with Polish, Spanish, Turkish and Russian L1 background. All subjects have participated in intensive English pronunciation instruction as part of their degree training, in the English Department at the Pedagogical University in Kraków. Two aspects are targeted for examination: perception of sound contrasts and awareness of contextual variants in L1, mostly those pertaining to the consonantal and vocalic inventories, all related to their L2 (English) production goals. The material is based on longitudinal examination of course test results over the span of 3 years. The analysis reveals low sound discrimination skills in the subjects' L1, largely based on letter-to-sound correspondences and inability to see beyond print. Through explicit training in their L2 they become more sensitive to the inventory and the details of their L1 sound system, the awareness they can use to the advantage when targeting L2 sound production.

Keywords: phonological awareness, pronunciation, Formal Instruction, First Language, Second Language, Cross-Linguistic Influence

1. Introduction

The relationship between the second language (L2) learners' general language awareness and the quality of their L2 pronunciation has been noticed in a number of studies, with the claim that pronunciation instruction can promote learners' awareness of the spoken L2 and of their own learning (Kennedy and Trofimovich 2010, 173). Their awareness of the L2 language sound system, on the other hand, may provide some insights and inform their learning and pronunciation

achievement. The area infrequently addressed is the students' awareness of their native language phonological system characteristics which may affect and actually facilitate their L2 pronunciation. Phonological awareness, i.e. "conscious knowledge of the sounds, syllable structure, phonotactics and prosody of the target language" (Venkatagiri and Levis 2007, 265) has long been observed to play a major role, for example, in learning to read individual words, sentences and paragraphs in any particular language. Native sounds, contextual variants, syllables and prosody can be successfully manipulated when working on the recognition of target language phonological system properties and then moving onto the ability to produce the target elements themselves.

The present paper does not focus solely on those L1s characteristics, nor on the role of language awareness in L2 pronunciation learning in general. It fundamentally attempts to verify how much students' L1 phonological awareness pertaining to the consonantal (Polish, Spanish, Turkish) and vocalic (Russian) inventories ESL users actually possess and whether that knowledge can be meaningfully manipulated to be turned into their advantage when trying to improve English pronunciation.

To that end, we observed and examined students of English with Polish, Spanish, Turkish and Russian L1 background who have been participants of intensive formal instruction (henceforth FI; Carlet and Kivistö de Souza 2018) in English pronunciation as part of their degree training, being (foreign exchange) students in the English Department at the Pedagogical University in Kraków (henceforth PUK for convenience). Pronunciation FI at PUK is combined with activities that aim at raising learners' awareness of the cross-linguistic features between the L1 and L2 (Carlet and Kivistö de Souza 2018). The students, both Polish and foreign, are training to become EFL teachers, translators or specialists in English for Specific Purposes.

In terms of native accents of the participants, the Polish students represent an amalgam of standard and regional accents of Polish, most notably General Polish and Kraków-Poznań Speech (Ostaszewska and Tabor 2000; Dunaj 2006), with several representatives of local Podhale dialects. Students from Spain predominantly come from two main dialect areas: the Andalusian and the Castilian Spanish (Hualde 2005; Ruiz-Sanchez 2017), with a few isolated instances of Canary Island Spanish (2 students) and, recently, from Latin America, Salvador (1 student). The Turkish students in their overwhelming majority come from Adana, the Çukurova University, yet identify themselves as speakers of Istanbul Turkish, the pan-Turkish educated standard, with some of them admitting certain regional bias (Göksel and Kerslake 2005). The Russian participants speak their native tongue with a standard Moscow accent, though it has been claimed that in contemporary Russian the two competing standards of Moscow and St. Petersburg have merged so that the 21st century witnesses the emergence of a general pronunciation standard (Yanushevskaya and Bunčić 2015). In any of these cases, as per personal communication

with the participants, the differences in their native varieties are not substantial enough to guarantee a conspicuous influence on the matters investigated in the paper. The groups are heterogeneous in terms of gender, with more female participants in most L1 groups, save among students from Turkey, yet no relation has been observed between the genders in terms of their L1 awareness. The paper builds on the assumption that the perception of the native language signal (the segments and their variants) can significantly facilitate target phonology acquisition, first in perception and ultimately in production. The research material is focused on certain segmental aspects of pronunciation, therefore the conclusions are limited in scale by definition.

The paper is organized as follows: we begin by briefly discussing the state of the art knowledge about the role of first and second language phonologies in positive or negative transfer. This is followed by describing the rationale and the methodology of the study, while the data from the tests are presented and analysed subsequently. Discussion of emerging trends and observations concludes the paper.

2. Phonological awareness and Cross-Linguistic Influence: literature review

Transfer in adult language learning is normally taken to mean the effects of the native language (or some previously learned languages) on the acquisition and use of a second (or next) language (Pavlenko and Jarvis 2002, 190). Claims are made that it can simultaneously work both ways, with L1 influencing L2 and vice versa. Cross-Linguistic Influence (CLI) may then be assumed to be a process whereby the learner makes use of linguistic resources other than the knowledge of the language in which communication takes place (Ringbom 2006, 38). Therefore, such a strategy becomes a regular fixture in the context of learning the target language. Where similarity can be perceived between existing categories and structures, a general facilitating effect for comprehension and learning is assumed to occur.

> Everybody is aware that the items are different in languages other than the L1, but tends to assume that the procedures and underlying systems are basically the same in the target language as in L1, or some other language known, unless they have been shown to be different. (Ringbom 2006, 37)

Systematic differences between L1 and foreign language may naturally lead to interference in the learner's performance (Rojczyk and Porzuczek 2012, 109), though claims to the contrary have also been made, for example, that phonological learning is fundamentally guided by the learners' perception of the foreign language. As a result, learners can more easily acquire foreign sounds which are notably different from the L1 categories (so-called "new sounds"), while they experience difficulties with those sounds/elements that are similar to those of their L1 and

are thus not perceived as different (Gabriel and Thiele 2017, 80). In his review of research on transfer in second language phonology, Major (2008) notes the following:

> A great deal of research has demonstrated that similar sounds tend to be more difficult than dissimilar sounds. The reason seems to be that because that the larger the differences are, the more easily they tend to be noticed; therefore, learning is more likely to take place. In contrast, minimal differences often go unnoticed, resulting in non-learning, that is, transfer persists. (Major 2008, 72)

Ringbom (2009, 62), in turn, underlines the common instances where L1 phonological rules regularly interact with L2 rules, such as Final Obstruent Devoicing in some languages (for our study: Polish and Russian, Turkish to some extent) and claims that this L1 regularity is seldom consciously realised. When discussing phonological transfer, Escudero (2007, 112) states directly that "there is nowhere else in the learner's L2 where L1 influence is more obvious". However, the claim that the influence is always undesirable is exaggerated, as discussed below. Instances of phonological transfer are researched and documented widely (Jarvis and Pavlenko 2008).

Combined with the above notions of Cross-Linguistic Influence (CLI) is the concept of metalinguistic knowledge, defined as explicit and verbalisable knowledge about language which has been demonstrated to have facilitative effects in the acquisition of implicit knowledge by focusing on features of linguistic input (Ammar et al. 2010). The overview of research on metalinguistic awareness, conceptualised as "the ability to focus attention on language as an object in itself, or to think abstractly about language and, consequently, to play with and manipulate language" is provided in Jessner (2006, 42). It is a trait present in the linguistic behaviour of monolinguals and multilinguals, yet these groups make different use of it, both in extent and nature. The degree of metalinguistic awareness utilisation is contingent on learning strategies informing and guiding the learning process, both for perception and production. SLA learners have to take account of the knowledge of the relationships between one's two languages: "The metalinguistically aware multilingual learner explores and analyzes points of commonality between her or his language systems to obtain the target language item" (Jessner 2006, 70). This is the assumption behind the instructional practices employed during explicit L2 phonetic training that Polish and foreign students experience at PUK. The necessary pre-condition for any role that metalinguistic (phonological) awareness may potentially play is that students are able to notice patterns and paradigms. This noticing hypothesis stipulates that conscious awareness (noticing) is essential for the development of L2 (and, presumably, L1) proficiency (Venkatagiri and Levis 2007, 265), to the effect that learners' awareness of the disparity between the input and their current interlanguage enhances learning.

Available research posits that phonological awareness skills already developed in the acquisition of the first language, including knowledge of the phonological

system of the L1, will be transferred to the second language (le Roux et al. 2017). Put differently, learners come into the new language(s) with patterns from their first tongue already fixed in place (Levis and McCrocklin 2018, 78). Via extensive explicit training in the phonetics of L2, both form-focused and communicatively-based (Arteaga 2000), learners apply the known to the new, using L1 competence and familiarity as a reference point (Carey et al. 2015). The approach, known as *An L1 point of reference approach* initially develops the learner's physical awareness of their L1 phonology as a scaffold towards developing an acceptable approximation of the target speech sounds. During classes run at PUK, students are referred to L1 phonological rules, such as e.g. FOD in Polish, Russian or to a certain extent in Turkish, vowel reduction – the *ikanye* or *akanye* in Russian, or voiced stops spirantization in Spanish (Gonzáles 2006), with the hope to sensitise students to the phenomenon of transfer, negative and positive. Importantly, the learner becomes metalinguistic about their pronunciation needs (Carey et al. 2015, A27) and more aware of the L1 rules and the problems they entail.

This becomes particularly relevant when one realises that the students are reported to believe that their main problems were spelling discrepancies, lack of fluency and individual segments, they have a negative view of the role of pronunciation in their textbooks, and desire to have other types of pronunciation activities (Calvo-Benzies 2013, 46-47). Calvo-Benzies (2013) interviewed Spanish ESL learners, yet the results appear to have a universal appeal, especially in the light of the research reported below and in Buczek-Zawiła (2020; in press). It makes pedagogical sense, then, to try and sensitise students to their own potential as active participants in the studying process, drawing constant attention to their individual resources and emphasising speech awareness (Morley 1991, 493). Arteaga (2000, 343), quoting Estarellas, points out the following: "if a listener is completely unprepared for the sequence of speech sounds that he hears, his ability to mimic the sound is greatly reduced."

Most of the research that has examined learners' awareness of their L1 on L2 processing has been carried out with adolescent and adult students, and the present study is in line with that trend.

3. The study

The subject literature consistently highlights the benefits of pronunciation instruction, especially once we realise that students are routinely tested through activities such as oral exams or in-class presentations, where comprehensibility and/or fluency contribute to the grade (Steed and Delicado Cantero 2018, 104). Hardly surprising, then, is the ongoing popularity of courses dedicated to improving it, especially among (Erasmus) foreign exchange students coming to PUK. Beginning in 2015, foreign exchange students coming to the English Studies Department at PUK, apart from attending regular courses with their Polish friends

(for whom English Pronunciation course is mandatory), can participate in extra classes of different subjects. One of those, called Remedial Pronunciation Classes (for Speakers of ...) involves intensive explicit pronunciation training (FI) geared towards students of homogenous L1 background, and thus likely to experience similar systematic difficulties in their L2 oral performance. The most numerous L1 groups were Spanish and Turkish students. In recent years, more students with Russian as L1 have been joining the classes as a result of bi-lateral exchange agreements between PUK and their respective institutions. Polish students as per curriculum have 90 hours of the course called Phonetics, spanning two semesters in Year 1 and involving intensive formal instruction in English pronunciation. In either of the courses, some degree of metalinguistic ability in the L2 is promoted by classroom attention to the formal system of English. The accent taught both in regular curricular classes for Polish students and in courses designed for Erasmus students is the British Received Pronunciation. The phono-didactic materials used with students are consistent with the accent choice.

Participants of these courses provided the research material. This paper reports on the analysis of part of the material, the analysis of the whole was first attempted in Buczek-Zawiła (2020). The division of the research material was prompted by a change in course assessment protocols for foreign students, from self-reports and essays to written tests and oral production assessment. Since Polish students have been taking intra-and end-of-semester tests for many years, it seemed like a logical step to combine their results with those of the foreign learners.

The study reported on in this paper is an investigation into the extent to which adult proficient Spanish-, Turkish-, Russian- and Polish-speaking users of English as a Second Language are aware of (1) their own L1 phonological systems with segments and their variants and peculiarities; (2) of the influence (positive or adverse) of their first language segmental phonologies on the processing and producing their target language forms. The main framework behind these investigations is student multicompetence, as it offers a much broader perspective for investigating Cross-Linguistic Influence in its positive and adverse effects.

4. The material: the tests

The data for the analysis were collected primarily via two paths: experimental elicitation data (i.e. guided linguistic performance, such as elicited imitation, (oral and pen-and-paper) tests of reception and production), and self-report data (i.e. introspection and retrospection essays) (Jarvis and Pavlenko 2008). The self-reports have been analysed elsewhere (Buczek-Zawiła; in press), this paper examines the results of the tests taken by course participants. The tests were not introduced with research in mind, they form part of the evaluation procedures for course participants. The study is cross-sectional in nature.

> By way of definition, (...) a *cross-sectional* study of CLI [...] is one in which performance data are collected from individual language users at a single point in time, with no attempt made to track how CLI might change in relation to changes in the individuals' knowledge of their languages. It is relevant to point out that (...) cross-sectional research tends to be intersubjective. (Jarvis and Pavlenko 2008, 32)

The oral and pen-and-paper tests, both intra-semester and final examinations, are focused on a number of problematic areas in teaching and learning English pronunciation. Every such test comprises, among other types, a selection of "true/false" tasks, where some of the statements given target issues that are linked to the L1 sound system. These statements are designed to check whether learners are aware that certain sounds are actually present in the native sound system, even if only at the level of phonetic realisations. Secondly, the test items verify whether students can consciously identify certain patterns that may be/have been transferred and manifest themselves in their target language production. To avoid burdening students with having to remember and apply technical terminology, the questions are worded in a straightforward but non-technical manner. Examples are cited below, four test items for each L1 group of participants, the correct answer is marked in bold[1]:

(1a) Polish

The Polish word *łeb* and the English word *web* sound the same.	T	**F**
The Polish word *ręka* in natural speech has the same nasal consonant as the English *rank.*	**T**	F
The initial consonants of *tynk* (Polish) and *think* (English) have the same place of articulation.	**T**	F
The last two sounds in the Polish borrowing *mastermind* and the English source word *master-mind* do not sound the same.	**T**	F

(1b) Spanish

Spanish has more nasal consonants than English.	**T**	F
In Spanish, the "b" sounds the same in *blanco* and in *cantaba*.	T	**F**
In Spanish, the "g" sounds the same in *pagar* and in *ganas*.	T	**F**
In the Spanish words *saber* and *jóven*, the middle consonants sound the same.	**T**	F

(1c) Russian

In Russian, vowel reduction is reflected in the spelling.	T	**F**
The initial vowels in the Russian words *ягода* and *ягнёнок* sound the same.	T	**F**
In Russian, there are not so many vowels as in English.	**T**	F
Vowel length is not a distinctive feature in Russian.	**T**	F

(1d) Turkish

In Turkish, all voiced plosive consonants become voiceless when word final.	**T**	F
In Turkish, the "r" sounds the same in *Ankara* and in *Izmir*.	T	**F**
In the Turkish name *Bilal*, the two "l's" sound different.	T	**F**
The word *film* sounds the same both in English and in Turkish.	T	**F**

5. Results and analysis

While the test questions for foreign exchange students are a recent addition to the class procedures (3 years, 5 cycles of class), the ones for regular Polish students in the Department of English Studies have been used at least for 7 consecutive years. For the purposes of this study, a random selection of responses has been prepared for analysis, spanning the period of the last three academic years: 2017-18, 2018-19 and 2019-20.

Most of the test items deal with details of L1 consonantal inventories, but when preparing the tests for students with Russian as L1, the decision was made to select those that concern vowels. The primary reason for that move was that these features of Russian are universally valid, irrespective of the students' accent and vowels are where they experience the greatest interference problems. Moreover, since Russian applies unstressed vowel reduction, quite unlike the other native languages of the participants, the assumption was that this L1 property can potentially have a facilitative effect on the performance in the target system.

Table 1 shows the data for the foreign participants; there, one finds the number of participants taking the test questions (N) for each group, the number of tokens of answers and the ratio of good to bad answers. The data in this table are not broken down to individual items, since each L1 group questions targeted L1 specific phonological properties. All tests were taken at the end of the course.

Table 1. Foreign exchange students' test results

	Spanish	**Russian**	**Turkish**
N (total)	22	4	13
Tokens (4 qs x N)	88	16	52
Good answers	66	15	33
Wrong answers	22	1	19
Chi-square	6.085		
DF	2		
P-value	0.0477		

Table 2 provides the data relating to Polish students. Here, the relevant cells show results for each of the questions separately, as not all of them were used in the same number of tests, by the same number of trainees and on the same occasion.

Table 2. Polish students' test results

	The *leb* question	The *tynk* question	The *ręka* question	The *mastermind* question
N (total)	431	431	190	72
N Finals & resits	292	292	82	---
N Intra-semester	139	139	108	72
Overall good answers	223	369	89	26
Overall wrong answers	208	62	101	46
Mean	51%	85%	46%	36%
Mean total	63%			

While the data in Table 1 provide some support for the claim that as a result of training, FL learners of different L1 background have become more aware of certain features of their respective phonologies, the data for Polish students are less encouraging in this respect. The item that proved particularly problematic is the one that tackles the issue of FOD (Final Obstruent Devoicing) transfer from Polish into English (*łeb* and *mastermind*). This Polish (and Russian, for that matter) phonological pattern is regularly described in class meetings, to make students aware of the rule and the negative transfer that may result from it. They are actively encouraged through material selection and classroom practice to avoid the transfer. Yet, one could ask rather rhetorically: How can you avoid word final devoicing if you cannot identify it?, which seems to be the case with Polish participants. A significantly large number of wrong answers to this question may be interpreted as a failure to hear what they audibly produce, namely the final [p] and [t].

The inability to equate the place of articulation in the *tynk/think* pair, which essentially share the dental place (Cruttenden 2008; Rogerson-Revell 2011), confirms two assumptions: (1) that even advanced adult ESL users think graphemically rather than phonetically, and (2) that they did not engage in any cognitive effort to go beyond print. During explicit class instruction, the students are encouraged to experiment with tongue movements and lip shapes to better understand both the mechanisms of speech production and articulation in either language. At the start of the course, they may be advised to perform a more interdental articulation for the English consonant, but as the course progresses, they are instructed and expected to follow the dental (near-)contact, as advised in Kelly (2001, 55).[2] Apparently, no cognitive focus on the pronunciation features and system was implemented in this case, no metalinguistic reflection occurred.

The velar nasal occurrence in *ręka* 'hand' was not identified either. L2 learners fail to identify this realisation of a so-called "nasal e" vowel [ẽ] as a sequence of an oral vowel [e] followed by a nasal, in turn followed by a voiceless velar plosive, though they consistently pronounce them in such a manner. They blindly follow the orthographic hints and rely on the L1 transparent grapheme-to-phoneme relationship in Polish (Śpiewak and Gołębiowska 2001). Interestingly, the data from self-reports (Buczek-Zawiła 2020; in press) confirm that also foreign students, most notably Turkish and Spanish ones, in their submitted self-reports would insist on the absence of [ŋ] in the phonological systems of their respective L1, despite cases of homorganic nasal-to-stop assimilation, within words or across word boundaries:

(2a) Spanish *tengo* ['teŋgo] 'I have', *domingo* [do'miŋgo] 'Sunday' and *un caso* [uŋ 'kaso] 'a/one case' (Arteaga 2000; Coe 2001; Kochetov and Colantoni 2011)
(2b) Turkish *mangal* ['maŋgal] 'barbecue', *banka* ['baŋka] 'bank', *Ankara* ['aŋkara] (Thomson 2001; Yavuz and Balcı 2011)

The velar nasal was not targeted in the case of Russian speakers, since Russian lacks a phonemic or allophonic [ŋ] (Walczak 2018). The velar nasal in English words is usually replaced by a [g] or a dental [n] (Monk and Burak 2001, 147).

The analysis of responses from foreign participants demonstrates that, after intensive perceptual and articulatory training in English phonetics supplemented with performing written consciousness-raising tasks pertaining to their first language phonologies, they have become more familiar with their respective phonological background, though not all to the same degree. At the same time, all the probe questions emphasise again the importance of phonetic/phonological environment in which speech sounds occur, focusing on important sound-spelling relationships (Morley 1991).

Table 3. Spanish students' test results

	The *blanco*/*cantaba* question	**The *pagar*/*ganas* question**	**The *nasals* question**	**The *saber*/*jóven* question**
N (total)	22	22	22	22
Overall good answers	21	20	8	17
Overall wrong answers	1	2	14	5
Mean	95%	90%	36%	77%
Mean total	74.5%			

To begin with Spanish students (Table 3), the answers given generally reveal their understanding that same spelling does not always mean same pronunciation,

even in their own language. Pairs like *blanco*/*cantaba* and *pagar*/*ganas* illustrate the case in point – the stop ([b/g]) vs. the approximant ([ß/ɣ]) realisation. The pair *saber*/*jóven* represent the reverse case – different spellings stand for the same sound, the approximant [ß] (Coe 2001, 92; Gonzáles 2006; Nowikow 2012). The question pertaining to the number of nasal consonants in Spanish targets their perceptual sensitivity to contextual variants, as with the contextually present [ŋ] in *tango* ['taŋgo] and the phonemic palatal [ɲ] in *caña* ['kaɲa] 'cane' or the allophonic one in *banyo* ['baɲdʒo] 'banjo', Spanish outnumbers English when it comes to nasal segments (Hualde 2005; Nowikow 2012). To be able to handle the questions successfully, the respondents needed to approach them metacognitively, admitting that what you actually hear or say may be effectively different from what you expect from the written form, especially so because in Spanish one can normally predict the pronunciation of a Spanish word by its spelling, while in English the situation can be markedly different (Calvo-Benzies 2019).

Table 4. Russian students' test results

	The *vowel reduction* question	**The *ягода*/*ягнёнок* question**	**The *number of vowels* question**	**The *vowel length* question**
N (total)	4	4	4	4
Overall good answers	4	3	4	4
Overall wrong answers	0	1	0	0
Mean	100%	75%	100%	100%
Mean total	93.7%			

Russian students (Table 4), apart from sharing the transfer of word-final obstruent devoicing with Polish learners (Monk and Burak 2001), additionally experience problems with vowel reduction, absent from any of the remaining L1s discussed here. The process of reduction of unstressed vowels does not exist in Spanish, Polish or Turkish. In Russian it does, but the orthography does not mark it in any way (Yanushevskaya and Bunčić 2015; Walczak 2018). That is why the first two questions proved problematic during class practice, though it appears that students succeeded in assimilating this piece of their L1 phonologies. The questions relatively less problematic turned out to be those that dealt with the inventory numbers and vowel length as a contrastive property. Here, much like in Polish, the students rightly noticed the absence of long vowels from the phonology of Russian. And following awareness-raising class activities, just as with the Spanish speakers, the Russian students were able to notice that not only do the vowels differ in number but, also, there is technically no vowel that is identical in the two languages compared. In L1 Russian, Spanish or Polish, vowels are relatively short but maximally distinct (Arteaga 2000, 344).

The L1-reference test questions selected for Turkish participants represent the

problem areas pertaining to features that can be labelled "pan-Turkish". They will be characteristic not just of standard Turkish accent (Istanbul Turkish) but also of other varieties, most notably Southern and Western Anatolian (e.g. Adana), where the overwhelming majority of students come from.

Table 5. Turkish students' test results

	The *final plosives* question	**The *Ankara/Izmir* question**	**The *Bilal* question**	**The *film* question**
N (total)	13	13	13	13
Overall good answers	10	8	8	12
Overall wrong answers	3	5	5	1
Mean	76%	61%	61%	92%
Mean total	73%			

The Turkish ESL students (Table 5) surprisingly showed good handling of word final devoicing of stop consonants, they knew that words in Turkish do not end in a voiced plosive [b, d, g] or a voiced affricate [ʤ] and even the presence of a corresponding grapheme in the written form of words would probably signify that the word is a borrowing and thus alien to the Turkish system (Thomson 2001, 216; Göksel and Kerslake 2005; Yavuz and Balcı 2011, 48; Rogerson-Revell 2011, 289). The more problematic turned out to be the instances of variants of [r] and [l] sounds. Turkish /l/ has two allophones [l] and [ɫ], used in mutually exclusive contexts, the same is true about the /r/-type sounds (Thomson 2001, 216). Exactly why it is that in these cases the overwhelming influence of orthography is so powerful remains unclear. Dealing with the word-final cluster *-lm-* in *film* was only mildly problematic. When the students were able to disassociate themselves from the written form, they noticed that indeed this consonant combination in Turkish is not permissible and is broken by an epenthetic vowel (Thomson 2001, 216; Yavuz and Balcı 2011, 48).

These results on their own perhaps do not reveal much, yet the implications, coupled with the data from self-reports (Buczek-Zawiła 2020; in press) and (admittedly partially anecdotal) class observations tendencies, reveal certain patterns. These are discussed in the following section.

6. Discussion

The data obtained and analysed above essentially indicate that advanced learners of ESL perceive the target and the native language sound system phonemically and may be guided in their perceptions by the phonological rules applicable in their

L1. The spelling conventions of the participants' native language appear to play a role, too, at least at a superficial "first glance" level. The *web/łeb* pair illustrates this point: although speakers of Polish do not pronounce the voiced [b] in *łeb* as a result of the rule of Final Obstruent Devoicing, upon seeing the word spelt with the <b> grapheme, they immediately assume that the grapheme must stand for the /b/ phoneme and thus they equate the pronunciation of the two words. A similar case is reported for Turkish ESL learners: in Turkish, there is a substantial degree of regularity in terms of orthography and pronunciation, therefore "when Turkish EFL learners first encounter words in English in their written forms, they tend to pronounce these words as they are represented on paper" (Bardakçi 2015, 2375). Individuals vary in their ability to notice actual pronunciation details and foreign language learners vary in the amount and depth of their (non-) verbalisable knowledge about both their L1 phonology and L2 pronunciation. It has been argued before that for ESL learners to be able to create new L2 phonetic/phonological categories, they must first be able to perceive the cross-linguistic difference or similarity and link those to achieve accuracy in L2 production (Arteaga 2000, 346). An awareness of similarities and/or differences between languages can also be raised through direct instruction and, therefore, formal class instruction, executed in all types of pronunciation classes at PUK might be a mediating variable that facilitates cross-linguistic positive influence (Melby-Lervåg and Lervåg 2011).

It transpires from the data that adult advanced ESL learners to a large extent rely on rules and categories of their own language when learning to perceive and ultimately produce target language sounds. That inevitably leads to inaccuracies, as L1 categories are replicated and adjusted so that they can fit into the L2 systemic contrasts, to take the example of transfer of word final obstruent devoicing pervading the phonological systems of, among others, Polish and Russian, and to some extent Turkish, which seems non-detected until specifically and straightforwardly pointed out during consciousness-raising tasks and productive practice (Buczek-Zawiła 2015). The test results obtained by Polish Advanced ESL speakers on recognition tests (the *web/łeb* or *mastermind* assumed equivalence) clearly show that in cross-linguistic contexts the FOD fails to be identified. This, in turn, is related to the next group of problematic areas. One of these is that there are some persistent issues in understanding the concepts of the English sound system when teaching the language, resulting in "fossilised habits of articulating certain sounds due to factors ranging from little awareness of the importance of pronunciation training during learning to orthographic structure difference between Turkish and English language" (Geylanioğlu and Dikilitaş 2012, 49). These remarks appear to be pertinent also to speakers of Polish, Russian and Spanish.

Another factor is the relative insensitivity to allophonic variants which are generally not reflected in the spelling. The insistence on the actual isomorphy of [b] and [v] in all contexts in Spanish, on the absence of [ŋ] in Turkish or Polish, on one and unchanging quality of some vowel sounds (most notably [a] and [o]) in Russian – all

this testifies to strong resistance on the part of adult advanced ESL students to incorporate contextual influence on sound perception and production. The awareness that what are contextual variants in L1 can actually function as contrastive segments in the target language phonology can effectively facilitate the mental adjustment to the perceived impossibility of pronouncing them well. When they develop fine recognition skills, the students become better able to organise and manipulate the contextual variants as required by the target phonological system. Part of the variation in L2 phonological awareness could be explained with differences in L1 phonological awareness, either implicit, developed through language contact and use, or explicit through instruction, consciousness-raising activities and contact with the written script (Kivistö de Souza 2015). That idea receives support in the test data, which show a better, more conscious understanding of the L1 systems as a result of specific classroom task demands. The results also testify to the developing ability to apply L1 phonological awareness to the system of L2. By asking students to compare elements of their respective native languages and English, we effectively engage them in performing meaningful analysis that fosters active access to the target system.

Classroom practice as well as the tests results provide ample evidence that in the speakers' minds both first and foreign languages are represented graphically. Polish, Russian, Spanish and Turkish ESL students begin their linguistic experience in a linguistic system with transparent regular spelling systems. Therefore, one of the greatest areas of difficulty they face is to be able to disassociate themselves from the evidence of orthography. That is not to say that spelling information cannot and should not be utilised in adult ESL pronunciation training. It can, as long as through meaningful activities, e.g. think-aloud protocols, classroom data analysis, students are made aware that near-religious adherence to what spelling offers can lead to intelligibility problems. When, for example, every letter is faithfully reproduced (Spanish, Russian) or the grapheme-to-phoneme relationship in English is different than in L1 (Turkish 'j' = [ʒ]), severe distortion in the speech signal may occur.

All this suggests that L2 experience alone might not be enough to develop the awareness of L2 phonological rules to be transformed into actual use. Kivistö de Souza (2015) observes that aspects of L2 pronunciation are not easily noticed and identified by students on their own or only through exposure to L2. Therefore, it appears that before most L2 language learners can accurately identify phonological variances, they require specific training or the use of consciousness-raising activities or input enhancement. It is also possible that part of the variation in L2 phonological awareness could be explained with differences in L1 phonological awareness, where instruction about L1 phonology could be employed as an aid in L2 pronunciation teaching.

7. Conclusion

The paper attempts to demonstrate how the concepts of cross-linguistic similarity along with students' phonological awareness of their first language are relevant to foreign language phonological acquisition. The role played by such perceived similarity – or lack thereof – will differ both qualitatively and quantitatively, being contingent on the learners' awareness of L1 phonological system intricacies.

Such awareness is not easily acquired. It requires implementing active consciousness-raising and noticing tasks. Such an approach would initially involve developing the learner's awareness of their own L1 phonology as a scaffold towards developing an acceptable approximation of the target speech sounds while taking into account learner needs (Carey et al. 2015). Admittedly, the focus of the study was on the segmental portion of both L1 and L2 phonological systems. However, it is entirely feasible that similar treatment is needed in the case of the suprasegmental domain, frequently argued to be the desirable starting point in developing and improving English oral skills (Morley 1991; Carey et al. 2015; Levis and McCrocklin 2018).

In the teaching of a foreign language, teachers consistently assume that explicit teaching of the L2 system, whether grammatical or phonological, will facilitate both what is learned and how quickly it is learned (Venkatagiri and Levis 2007). This paper argues that mastering of the phonological rules of English and their practical application can additionally be supported through raising and manipulating learners' awareness of their native phonologies.

Notes

1 For the Spanish, Russian and Turkish examples, I am greatly indebted to both my colleague, Piotr Okas, IFA, PUK as well as former students who consulted their relevance and suggested adjustments.

2 Kelly (2001, 55) gives us some suggested ways of explaining how to form these two TH consonants: "For the articulation of the [ð] and [θ] sounds: Put the front of your tongue against the back of your top teeth. Let the air pass through as you breathe out. Don't use your voice. Hold the sound, and add your voice".

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ANITA BUCZEK-ZAWIŁA is Assistant Professor in the Department of English Linguistics at the Pedagogical University in Kraków, Poland. Her research interests cover CAPT, sound systems interactions and language prosody.