Chapter XI

Pronunciation of consonant clusters in Spanish speakers based on the Czech read speech corpora

La pronunciación de los grupos de consonantes en hispanohablantes basándose en el corpus oral leído checo

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Abstract: The purpose of this study was to determine which Czech consonant clusters are difficult to pronounce for Spanish speakers, and identify the sound changes that are more frequent due to the difference in syllable structure between these two languages. A set of 26 consonant clusters in initial, medial and final word positions was selected. The 75 words containing the target clusters were included in a coherent text written in Czech (838 words long). Then, the speech of 13 Spanish speakers reading this text was recorded. Based on perceptual analysis, 27% of clusters were pronounced incorrectly. The number of correct items among the cluster types and within the types varied considerably. Substitution, elision and prothesis represented almost 90% of all the sound changes. Substitution, being the most dominant, affected all studied consonant cluster types.

Resumen: El propósito de este estudio fue determinar qué grupo de consonantes checas son difíciles de pronunciar para los hispanohablantes e identificar los cambios de sonido que son más frecuentes, debido a la diferencia en la estructura de las sílabas entre estos dos idiomas. Se seleccionó un conjunto de 26 grupos de consonantes en las posiciones inicial, media y final de la palabra. Las 75 palabras que contenían

los grupos de consonantes estudiados se incluyeron en un texto coherente escrito en checo (con 838 palabras en total). Luego, se grabó el discurso de 13 hispanohablantes que leían este texto y se realizó un análisis perceptivo. El 27% de los grupos de consonantes se han pronunciado incorrectamente. El número de grupos de consonantes pronunciados correctamente varió mucho entre los tipos de agrupaciones e incluso dentro de las propias agrupaciones. La sustitución, elisión y prótesis representaron casi el 90% de todos los cambios de sonido. La sustitución, que fue la más dominante, afectó a todos los tipos de grupos de consonantes estudiados.

1. Introduction

In recent years, the Czech Republic has been hosted to an increasing number of Latin American and Spanish people who usually work or carry out their studies at universities. Smaller Spanish-speaking groups regularly take part in summer Czech language schools for foreigners or attend preparatory courses aimed at potential international students at Czech universities.

However, there are a limited number of textbooks for Spanish speakers on the market. Available materials are often a translated version or an older edition. Regarding the Czech language of Spanish speakers, rather informal observations of teachers are available, but systematic data-based research has not been carried out.

Our experiment aims to contribute to the research of sound aspects of Czech in Spanish speakers. It focuses on one of the difficult areas, i.e., the pronunciation of consonant clusters. Perception analysis is based on recordings of Czech read speech in speakers with Spanish as a first language.

The difficulties of Spanish learners with the pronunciation of consonant clusters or consonants in the positions restricted in Spanish have been mainly evidenced by studies on the acquisition of English. Based on the review of literature, Moore and Marzano (1979) presented a list of possible errors of Spanish students learning English, including consonants and their clusters. Based on Helman (2004), some of these are possible adaptations of unfamiliar English consonant endings, the simplifying of a consonant cluster by deleting a consonant, substituting to create an ending permissible in Spanish or a change leading to a vowel ending. According to Magen (1998), initial schwa inserted by Spanish speakers in English syllable onsets formed by fricative + stop clusters and deleting of final /s/ belonged among factors listeners were sensitive to when they rated the extent of foreign accent. The application of Spanish phonological and orthographic rules on English is recog-

nized from spelling in written texts as well. (Fashola *et al.*, 1996; Sun-Alperin and Wang, 2008; Hevia-Tuero *et al.*, 2021)

The difficulties L2 learners may encounter are not only due to the influence of the L1 features on the target language. Piske (2001) provides an overview of factors that may affect the acquisition of L2 including pronunciation, e.g., the length of stay in the target country and the use of language, gender or existing or lacking formal instructions; the existence of the so-called critical period is widely discussed (comp. also Singleton, 2005; Rothman, 2008). Individual differences among learners might be caused, for example, by the cognitive and learning styles, language aptitude, motivation and personality (Ellis, 1985, pp. 639-723; Hummel, 2014, pp. 193-222). Regarding our speakers, we were mainly interested in circumstances related to staying in the Czech Republic, studying Czech and using Czech in daily communication; however, our research is not focused on examining the influence of any certain factor.

2. Theoretical framework

Sound characteristics distinguishing Czech and Spanish include syllabic structure and consonant clusters. The primary difference lies in the number of consonants within a single syllable, their frequency, and phoneme combinatory aspects including constraints in specified positions. In Czech, for example, some sonorants (mainly /l/ and /r/) may form a syllabic nucleus, unlike in Spanish.

Czech and Spanish syllables tend to be open. In both languages, the predominant syllable type is the CV type, which occurs in 59.76% in Czech (Těšitelová *et al.*, 1985, p.149) and in 55.81% in Spanish (Guerra, 1983, as cited in Quilis, 1993, p.370). However, a significant difference is the number of consonants within one syllable. In Spanish, onset and coda are usually formed by one, rarely two consonants, and thus the CCCV syllable type, for instance, containing three consonants in onset, is not present in Spanish, unlike in Czech in which it has a frequency of occurrence of 0.72% (Těšitelová *et al.*, 1985, p.149). CCVCC is the longest Spanish syllable type – occurrence of 0.01% (Guerra, 1983, as cited in Quilis, 1993, p.370), the same syllable type in Czech occurs with the higher frequency of 0.26% (Těšitelová *et al.*, 1985, p.149). Based on the analysed texts, the longest Czech syllable type is CCCVCC (ibid; Kučera & Monroe, 1968, p.47) with frequency of 0.08% (Těšitelová *et al.*, 1985, p.149); however, it is possible to find samples even for types with longer consonant sequences (Bičan, 2013, p.122) and the number of consonants in the onset may increase by including a non-syllable preposition.

In Czech, there are no such restrictions for one-segment or multi-segment onset and coda, as in Spanish. (Ludvíková & Kraus, 1966; Kučera & Monroe, 1968; Bičan, 2013) In the Spanish CC-onset in the initial word position there can be only combinations of obstruent and sonorant, namely 12 clusters /pr, br, fr, tr, dr, kr, gr, pl, bl, fl, kl, gl/ (Saporta & Olson, 1958, p.263; Quilis, 1993, p.381; Ríos Mestre, 1999, section 6.2.2.2.) and /tl/ in words of Náhuatl origin (Quilis, 1993, p.381; RAE, 2011, p.302-303). The loanwords containing initial /s/ followed by another consonant are adapted by a prothetic vowel, e.g., *escena* (RAE, 2011, p.305). In loanwoards, e.g., from Latin or Greek, other consonant groups such as *cn-, gn-, mn-, pt-* and *ps-* may occur in the initial position of the word. However, in Spanish, the groups remain preserved only in written form, the pronunciation is simplified (the first consonant is elided). Simplified forms appear even in written form as parallel variants, e.g., *gnomo – nomo, psíquico – síquico, ptolemaico – tolemaico* (RAE, 2011, p.304-305; RAE, 2021).

For the Spanish coda -C at the end of a word, studies present a limited set of phonemes as well. It is the loanwords that are the source of new codas including -CC in the word final position, otherwise unusual in Spanish (Saporta & Olson, 1958, p.266), e.g., *golf* or *vals* (RAE, 2011, p.315). However, there is a tendency towards simplification in pronunciation too. Parallel variants may occur, e.g., *cinc*/*zinc* is pronounced both with a full coda or without a final consonant, or only simplified pronunciation is used, e.g., *robots* with elision of /*t*/. (RAE, 2011, p.315-317).

The sequence of consonants may be increased by the contact of a coda and an onset in the medial position of a word. In Spanish, changes occur in those cases as well. For example, in the combination *bs* + consonant, /b/ is usually weakened or skipped. According to RAE (2011, p.320-321), nowadays it is possible to omit *b* not only in pronunciation but even in writing and the simplified spelling is primary; comp. e.g., *oscuro – obscuro, sustantivo – substantivo*, *sustituir – substituir* (RAE, 2021). The cause is mainly the syllable boundary. Unlike in Czech, where the position of the syllable boundary may vary to some extent (Palková, 1997; Šturm, 2018), in Spanish there are precise rules governing this process; the main rule is the permission or restriction of a fixed combination of sounds within a syllable. (Quilis, 1993, pp. 368-370; Ríos Mestre, 1999, section 6.2.3.) For example, the 12 clusters defined for the initial position of a word (see above) cannot be split within a word (Quilis & Fernández, 1979, p.140).

3. Methodological framework

3.1. Target consonant cluster set

In the first step, we determined a set of target consonant clusters. Since the aim was not to test the pronunciation of individual segments, but consonant groups as a whole, the condition was determined that consonants absent in the Spanish language would not be included in the consonant cluster set used for this research. Otherwise, any potential difficulties of speakers might be primarily related to the pronunciation of that segment, not to the combination of the given cluster as a whole. For example, clusters with a specific Czech vibrant fricative /r̝/ or with a laryngeal consonant [ɦ] (in Czech, unlike most languages, voiced), none of which have equivalent in Spanish, were not tested.

The starting point was a set of consonant clusters occurring in Spanish. Based on Quilis (1993), RAE (2011), and Čermák (2015), those consonant clusters were selected, whose pronunciation may differ between Czech and Spanish or those that may present difficulties for L2 Czech speakers with Spanish as L1 because of position restriction etc. Due to a large number of such clusters, another selection procedure followed. The set was limited to two-component clusters with an initial consonant [s], with an initial consonant [p], namely [pt], [ps], [pn], and the cluster [gn]. Three-component clusters [pst] and [psk] were also included. Those clusters were then systematically supplemented based on Czech language, e.g., by combinations containing voiced/voiceless counterparts.

In the S + consonant type, we tested all two-member combinations existing in Czech, the first member of which is the consonant [s] (with the exception of less common or problematic combinations such as [sf] or [st͡ʃ]). Those items were [s] + voiceless stops [p], [t], [c], [k], fricative [v], nasals [m], [n], [ɲ] and oral sonorants [l], [r], [j].

Due to the use of the nasal palatal [ɲ] in conjunction with [s], we decided to test the combination of the nasal [ɲ] with other initial consonants already used, i.e., the cluster [pɲ] and [gɲ] were added.

Due to the fact that in Czech the voicing opposition plays an important role, four more clusters [bn], [bɲ], and [kn], [kɲ] were added as voiced and unvoiced equivalents to the existing clusters [pn], [pɲ], and [gn], [gɲ]. In these nasal clusters, the voicing property of obstruents should be preserved.

Altogether, 23 clusters divided in 6 types were included in the experiment (see Table 1).

Table 1. Set of consonant cluster types.

2-consonant clusters	• consonant [s] combined with defined unvoiced obstruents, sonorants and [v] (S+cons) • [ps] • [pt] • obstruent bilabials [p], [b] and velars [k], [g], each combined with nasals [n] and [ɲ] (O+nas)
3-consonant clusters	• [pst] • [psk]

Note: In the following text, capital letters, i.e. [ps] PS are used, and palatals [ɲ] and [c] are written as Ň and Ť.

3.2. Target words set

A set of words containing the observed consonant clusters was created. For each consonant cluster, the position in the word selected for the test was established: initial – I, medial – M and final – F. The purpose of the experiment and the ideal number of tested units were taken into account.

In the S+cons type, we focused on the initial position, because that is where Spanish native speakers use a prothetic vowel, which is a significant difference compared to Czech. The originally determined nasal clusters PN and GN were tested in I and M positions. The groups with voicing counterparts and palatal [ɲ] were tested only in M position. For other types PS, PT and PST, PSK, an attempt to find a representative for all three positions was made.

The Index Database (Databáze heslářů) was used for searching suitable words. It contains over 900,000 entries from 14 Czech written sources with items from both older dictionaries and new vocabulary occurring in newspapers or magazines. In the process of creating the word sets, it was found that we could not always fill a defined I / M / F position. The PST, for example, appeared only in positions M and F. For some clusters, although lexemes were available, their occurrence was either restricted to scientific terminology, or very limited in general frequency. For that reason, the GŇ cluster was eventually excluded from the test. Regarding the type and position, 31 subgroups were defined.

To ensure that any errors would be a matter of personal pronunciation and not a case of ignorance of orthoepic rules, in S+cons, only words in which the graphic form and pronunciation of the target cluster did not differ due to voicing assimilation, as in the word *zkoušky* [sko͡uʃkɪ] (En. exams, Sp. exámenes), were tested eventually. The need to perform voicing assimilation occurs in our set in less frequent groups: a) in all five representatives of PST, in

graphic form of *bst*, e.g., *obstarávat* (En. to procure, Sp. procurar), b) once in PT in the M position (*drobty* (En. crumbs, Sp. pizcas) vs. *poptávka* (En. demand, Sp. demanda).

Table 2. Set of consonant clusters regarding word position with examples.
CC – consonant cluster, IMF – position in a word: I – initial, M – medial, F – final, N – number of words per cluster, Ť – [c], Ň – [ɲ], fem. – femininum, n. – noun, sust. – sustantivo. B – underlined – a graphic form of a consonant cluster does not correspond to the pronunciation, + the form of a Czech example is not a nominative case.

CC	IMF	N	Example	Pronunciation	In English	In Spanish
SP	I	2	**sp**ekulace	[**sp**ɛkulat͡sɛ]	speculation	especulación
ST	I	2	**st**udentka	[**st**udɛntka]	student (fem.)	la estudiante
SŤ	I	2	**st**ěží	[**sc**ɛʒiː]	hardly	apenas
SK	I	2	**sk**upina	[**sk**upɪna]	group	grupo
SV	I	2	**sv**obodu	[**sv**obodu]	liberty+	libertad+
SM	I	2	**sm**utná	[**sm**utnaː]	sad (fem.)	triste (fem.)
SN	I	2	**sn**ad	[**sn**at]	perhaps	quizas
SŇ	I	2	**sň**atek	[**sɲ**atɛk]	marriage	matrimonio
SL	I	2	**sl**unce	[**sl**unt͡sɛ]	sun	sol
SR	I	2	**sr**azila	[**sr**azɪla]	(she) crashed	chocó (fem.)
SJ	I	2	**sj**ezdu	[**sj**ɛzdu]	exit (n.)+	salida (sust.)+
PS	I	6	**ps**ala	[**ps**ala]	(she) wrote	escribió (fem.)
			psychologie	[**ps**ɪxologɪjɛ]	psychology	psicología
PS	M	7	na**ps**aly	[na**ps**alɪ]	(they) wrote (fem.)	escribieron (fem.)
			ka**ps**ičky	[ka**ps**ɪt͡ʃkɪ]	pockets	bolsillos
PS	F	2	kola**ps**	[kola**ps**]	collapse	colapso
PSK	M	3	Li**psk**a	[lɪ**psk**a]	Leipzig+	Leipzig+
PST	M	4	su**bst**anci	[su**pst**antsɪ͡]	substance+	sustancia+
	F	1	zá**bst**	[zaː**pst**]	to freeze	tener frío
PT	I	3	**pt**át	[**pt**aːt]	to ask	preguntar
	M	3	konce**pt**y	[kont͡sɛ**pt**ɪ]	concepts	conceptos
	F	3	rece**pt**	[rɛt͡sɛ**pt**]	recipe	receta
PN	I	3	**pn**ula	[**pn**ula]	twined (fem.)	se enroscó (fem.)
	M	3	oslepne	[oslɛ**pn**ɛ]	(it) will go blind	se quedará ciego
PŇ	M	3	tra**pně**	[tra**pɲ**ɛ]	embarrassingly	embazarosamente
BN	M	2	dro**bn**é	[dro**bn**ɛː]	change (n.)	cambio (sust.)
BŇ	M	2	bezchy**bně**	[besxɪ**bɲ**ɛ]	flawless	sin falta
GN	I	1	**gn**ómon	[**gn**oːmon]	gnomon	gnomon
	M	3	i**gn**orovat	[ɪ**gn**orovat]	to ignore	ignorar
KN	M	2	pě**kn**ou	[pjɛ**kn**oʊ̯͡]	beautiful (fem.)+	bella+
KŇ	M	2	baro**kn**í	[baro**kɲ**iː]	baroque	barocco

A list of words containing the selected clusters in defined positions was created. We assumed that a coherent text would be a better disguise for the target phenomenon and that a story would be easier to read than, say, single sentences without wider context. In order to examine as many items as possible while avoiding excessive text length, the following numbers of words were used: a) two words for each S+cons cluster, b) regarding PS, six clusters in I and 7 in M (and two in F) to obtain more items for comparison, c) for remaining clusters, an average of 2–3 words per cluster and position. The set of words examined also depended on the number of suitable candidates. In cases where the number of words of a certain type of cluster was insufficient in any of the I, M, F positions, we tried to increase the representation of the cluster in another position, e.g., the PST cluster was represented only by one word in F, but 4x in M. Where possible, a loanword was used for the given cluster and the position. Each word contained just one target consonant cluster, with the exception of two words – *skeptiků* (En. sceptics, gen., Sp. escépticos, gen.), *skepse* (En. scepticism, Sp. escepticismo) containing two examined consonant clusters. Table 2 presents the set of defined clusters according to their position and the samples of target words. A total of 73 different words (containing 75 target consonant clusters) were selected: 47 % words in I, 45 % words in M and 8 % in F. The most numerous were disyllabic (40.0%) and trisyllabic words (30.7%), then 4-syllabic (12, 16.0%). Monosyllables were represented by seven words and 5- and 6-syllabic items were attested in three cases altogether. A text – story (838 words long) was created. In order to prevent the spread of a consonant cluster across a word boundary, the I-cluster was preceded by a vowel, and a vowel followed the F-cluster, or it was assumed that a pause would be realized.

3.3. Speakers

The group of participants consisted of 13 speakers with Spanish as L1 who were either from the first author's circle of acquaintances or responded to requests on social media, through which the community of foreigners living in Prague was addressed. Women showed significantly less interest, which resulted in groups not being balanced by sex: 10 males and 3 females were eventually available for the experiment. There were 9 Latin Americans from six different countries and 3 Spanish, each coming from different cities in Spain. The length of stay of speakers in the Czech Republic (CR) ranged from 1.5 years to 9.5 years, for most speakers it was a continuous stay. Five speakers completed a one-year preparatory course in Czech, then they studied in the CR at technical universities. One speaker stated the study of Czech lasted 1.3 years. For other speakers, the study of Czech was shorter – from two weeks to six months, with the characteristic that those studies took place several years

ago, and in two cases it was self-study; the speaker declaring two-week study had lived in the CR for 1.5 year. Speakers also differed in the degree of use of Czech or the intensity of contact with the Czech environment – some speakers used Czech at work or in communication with their family or friends, while others did not use Czech in their daily life at all. With some exceptions, however, all indicated English as their primary language for communication. There was one more speaker, who might be considered bilingual. His father was from Peru and his mother was Czech. This speaker had a Czech and Spanish high school diploma and at the time of recording he was currently studying at a Czech university. According to his words, however, he started speaking Czech at a preschool age and he had not always felt confident in Czech in some respects. Throughout his life, he had been alternating between both Czech-dominated and Spanish-dominated environments. All speakers interested in participating were recorded including the bilingual one as his speech showed similar features to the rest of the speakers (see Table 3).

Table 3. Information about speakers.
F – female, M – male, es – Spanish, pt – Portuguese, cz – Czech, CR – Czech Republic, y./m./w. – year, month, week.

Speaker	F/M	Country	L1	Stay in CR (in years)	Study Czech (+University study)	Primary language used in daily life
S1	F	Paraguay	es, pt	8.5	1 y. (+6 y.)	es, cz
S2	F	Honduras	es	9.5	1 y. (+5 y.)	en
S3	M	Bolivia	es	8.5	1 y. (+5 y.)	en, cz
S4	M	Peru	es	8.5	1 y. (+5 y.)	en
S5	M	Colombia	es	8.5	1 y. (+4 y.)	en
S6	M	Peru	es	2	10 m.	en
S7	M	Spain	es	7	6 m.	en
S8	M	Spain	es	3	6 m.	en
S9	M	Honduras	es	2.5	3 m.	en
S10	M	Spain	es	1.5	3 m.	en
S11	F	Colombia	es	4.5	1 m.	en
S12	M	Ecuador	es	2.5	2 w.	en
S13	M	Peru/CR	es, cz	–	–	cz, es

3.4. Recording procedure

Reading of the Czech story by the 13 Spanish speakers were recorded individually in a sound-treated and sound-proofed room (AKG C 4500 B-BC microphone, sample rate 32 kHz, 16-bit depth). Their main task was to read the text. In a short introductory dialogue, relevant information regarding speakers' personal data and exposure to Czech lan-

guage was gathered. The form of a dialogue was preferred to a questionnaire in order to capture the circumstances of each individual speaker.

Before recording, each speaker had been given time to get accustomed to the text. All, but one speaker, were ready in less than 10 minutes. Only 4 speakers asked for a translation of some less frequent words. No speaker asked for guidance in pronunciation. During the recording, one of the authors was present in a soundproof room to reduce stress of speakers due to the unknown environment. Before reading the actual text, speakers introduced themselves shortly. This was done in order to ensure that the speaker started reading the text in their standard voice and got accustomed to being recorded. Based on an informal discussion following the recording, none of the speakers were able to identify the topic of the experiment.

3.5. Perception analysis

Perception analysis supported by acoustic representation was performed using Praat software (Boersma & Weenink, 2019). Target words were transcribed, and the following procedure was executed:

1. Presence or absence of intonation juncture between the target word and adjacent words was examined.
2. The fluency of the target word as a whole was assessed on the 4-point scale: 0 meant fluent pronunciation with 1–3 signalling degrees of dysfluency. Only words with 0 rating were processed further.
3. Intelligibility of words thus determined was assessed (5-point scale).
4. Further analysis concerned the target consonant clusters was performed in multiple steps.
   a. It was determined whether the cluster was pronounced correctly or incorrectly. During the analysis, cases emerged in which the decision-making was uncertain. Since this group was not large, we opted for the following solution: based on repeated listening, a consonant cluster with little inaccuracy was rated as correct, while clusters with greater inaccuracy were rated as incorrect.
   b. This rough categorization disregarded the fact that some pronunciation variants were less intelligible than others; therefore, we proceeded to the subsequent evaluation of that aspect (5-point scale).

   In case of incorrect realization,

   c. the type of sound changed and d) affected segments were determined.

The following sound changes were studied: substitution, elision, prothesis, epenthesis, metathesis, lengthening of the consonant, weakening. Based on the analysis, another type was added, namely splitting, i.e., the splitting of a word cluster into two parts. In some consonant clusters, multiple sound changes co-occurred. In cases where sound changes affected different segments, these changes were accounted for separately, e.g. [barokɲi:] → [baro(k)ni:] as weakening of [k] and substitution [ɲ] → [n]. Another typical example was the addition of a prothetic sound to a cluster and affecting a consonant simultaneously. The category of accumulation was newly introduced for cases where a consonant was affected by several sound changes [prokopskɛ:ɦo] → [prokops:(ʃ)skɛɦo], or when it was not possible to clearly determine the type of sound change, e.g. [sɲatɛk] → [stək].

In the following analysis we use the data obtained in step 2 and present the results of phase 4a, 4c and partially 4d.

4. Data analysis

4.1. Correctness rate: overview

The resulting set of 975 target clusters was analyzed (75 words x 13 speakers): 7.0% of target words were affected by slips of tongue, dysfluency (see step 2 above) or repetition and those items were excluded from further analysis, 65.7% of consonant clusters were pronounced correctly, 27.3% of them incorrectly.

Concerning the position within a word, the I, M, F positions did not differ in the number of excluded cases, ranging from 6.4% to 7.2%. The correctness rate in M and F was similar (M: 70.1%, F: 69.2%), in I it was a little bit lower (60.9%).

In the following sections 4.2 and 4.3, the results presented have already all the above-mentioned exclusions.

4.2. Correctness rate: consonant clusters

In this part, the results regarding consonant clusters are presented. Fig. 1 shows the number of correct variants of each cluster type (for types see section 3.1). Each type achieved at least 60% of correct realizations. The S+cons and O+nas types narrowly crossed this line. The greatest correctness rate was indicated in the PS and PSK types (about 85%). The PT and PST types were situated roughly in the middle of the range.

Nevertheless, these summarizing results may disguise differences within cluster types according to their phonetic composition or within the same consonant cluster according

to the positions I / M / F. Fig. 2 provides the comparison of correctness rate for consonant clusters in which different positions in the word were tested.

For the PS and PT types, all three positions were tested. The PS type achieved a very high correctness rate in M and F (slightly above 90%); the correctness rate was lower in I, but still very high (almost 80%). For PT, the correctness rate differed for all positions, decreasing in the direction I – M – F, the difference between I and F is about 20% (I: 86.1%, F: 64.9%).

In the other three consonant cluster types, only two positions were tested. The biggest difference between the positions was seen in the PN type, where the realization in M was very successful (86.8%). On the contrary, in I, incorrect realizations prevailed (the number of correct variants was only 34.3%). In another type with nasal GN, the M position was as successful as in PN (86.1%). In I, the correctness rate was slightly lower compared to M, however, unlike in PN, the correctness rate of M in GN was still relatively high (75.0%).

The three-segment cluster PST, similarly to PT, indicated a lower correctness rate in F compared to M. For PT, the difference between these positions was about 10%; for PST, it was even about 20% (M: 81.4%, F: 60.0%). The number of correct realizations of PSK, which was tested only in M, was similar to PST in this position (86.5%).

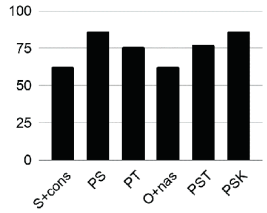

Figure 1. Correctness rate of consonant cluster types (in %).

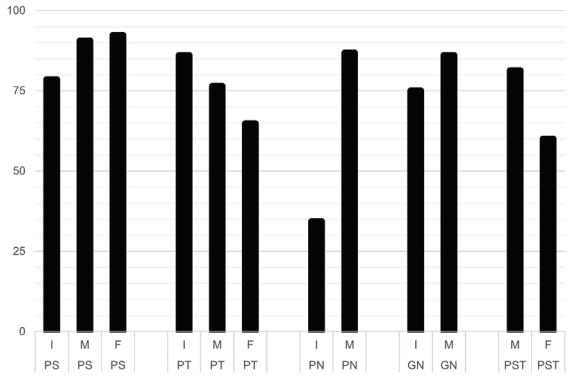

Figure 2. Correctness rate of consonant clusters tested in two positions in the word as minimum (in %).

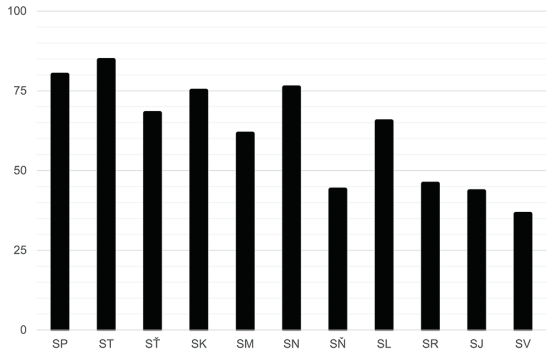

Figure 3. Correctness rate of S+cons clusters tested in the initial (I) position in the word (in %).

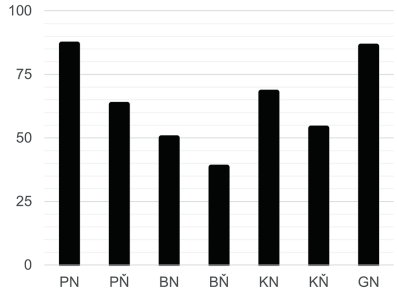

Figure 4. Correctness rate of O+nas cluster types tested in the medial (M) position in the word (in %).

Fig. 3 shows all two-segment clusters belonging to the S+cons type which was tested in the I position. The correctness rate of pronunciation was very high for clusters ST and SP (between 80% and 90%). In the next band (between 70% and 80%) there were SN and SK clusters. The limit of 60% was exceeded by three more clusters of the S+cons type – SŤ, SL and SM. The S+cons clusters can therefore be divided into two groups. There were seven clusters with the correctness rate of over 60%, representing four tested combinations of two obstruents (SP, ST, SŤ, SK), two combinations with nasals SN and SM and a combination with lateral SL. The remaining four clusters did not reach even 50% of correct variants – these were the remaining combinations with sonorants SR, SŇ, SJ and the cluster SV with fricative [v].

Fig. 4 compares the correctness rate of O+nas clusters in the M position, i.e., the combinations with palatal [ɲ] (occurred only in this position in our set) and the combinations with alveolar [n] (tested in the I and M positions, see above). As we have already shown in the previous explanation, the correctness rate of pronunciation was very high for clusters PN and GN in the M position (between 80% and 90%). Unlike them, the correctness rate

of BN cluster was very low (50%) and the rate of KN is situated roughly in the middle of the range (70%).

The PŇ type was the only combination with a nasal palatal in which the number of correct realizations exceeded 60%, for KŇ the number of correct realizations was around half of the cases, for BŇ it did not even reach 40% (GŇ was not eventually included in the set, see section 3.2). For all pairs of clusters N / Ň, the number of correct realizations was higher for the cluster with alveolar [n] than for the cluster with palatal [ɲ]; the highest difference was in the pair PN – PŇ (24%). The same observation was made for clusters SN – SŇ (32%) belonging to S+cons type.

4.3. Sound changes

4.3.1. Sound changes: overview

In this section, we provide an overview of sound changes that occurred in the set of incorrect pronunciation (step 4c, see 3.5).

Table 4. Sound changes according to their frequency. + the form of a Czech example is not a lemma.

Type of sound changes	Frequency (in %)	Example, correct pronunciation	Example, real pronunciation	In English	In Spanish
substitution	44.3	[ɪ**gn**orovat] →	[ɪ**xn**orovat]	to ignore	ignorar
		[pro**gn**o:zu] →	[pro**kn**o:zu]	prediction+	pronóstico+
		[**sl**ɛt͡ʃnu] →	[**ʃl**ɛt͡ʃnu]	young lady+	señorita+
elision	22.0	[su**pst**ants͡ɪ] †	[su**st**ants͡ɪ]	substance+	substancia+
		[**ps**ɪsko] →	[**s**ɪsko]	dog	perro
prothesis	20.2	[**st**at͡ʃɪlo] →	[ɛ**st**at͡ʃɪlo]	to be enough+	ser suficiente+
		[**sr**ovnala] →	[ɛ**sr**ovnala]	to compare+	comparar+
weakening	2.8	[krɛ**ps**ɪlonɛm] →	[krɛ**(p)s**ɪlonɛm]	crepe+	crepé+
epenthesis	2.1	[**pn**ɛumatɪka] →	[**psn**ɛumatɪka]	tyre	neumático
lengthening	1.7	[**ps**ɛm] →	[**ps**::ɛm]	dog+	perro+
metathesis	0.7	[**sj**ɛzdu] →	[**sɛ̆j**ʒdu]	exit+	salida+
accumulation	3.5	[proko**pske**:ĥo] →	[proko**ps:(ʃ)ske**ĥo]	Prokop+ (adj.)	Prokop (adj.)
splitting	2.8	[po**pt**a:fka] →	[po**p t**avka]	demand	demanda

Within the whole set, a multiple occurrence of incorrect realisations within the consonant group occurred in 19 cases. There was a co-occurrence of two changes, with the exception

of one case with three changes. The total number of sound changes was thus 20 higher than the number of incorrect implementations.

Among the types of changes, substitution was the most frequently represented (44.4%). The second most numerous were elision (22.0%), and prothesis (20.3%); their frequency was therefore about half that of substitution. The frequency of other types (weakening, epenthesis, lengthening, metathesis, and accumulation and splitting into two stress groups) did not reach 5% (see Table 4 for more details); their total share in the number of sound changes was 13.3%.

4.3.2. Sound changes in types of consonant clusters

In this section, the distribution of sound changes in consonant cluster types is presented. Based on previous findings, three most common types of changes, i.e., substitution, elision and prothesis, have been distinguished; the remaining changes are included in the group "others".

Fig. 5 shows two types of values for each type of consonant clusters. The first value represents the number of incorrect variants. Other values indicate the distribution of sound changes for a given cluster type.

It is obvious that the types of clusters differed in the types and the amount of sound changes they evoked. The most visible finding was that prothesis occurred only in S+cons. For this type, prothesis covered the entire half of all sound changes (51.8%). Another relatively common sound change in this type was substitution. However, the distribution of sound changes varied among single clusters of this type (see below).

Substitution was the most common sound change for O+nas, where it applied to ⅔ of all sound changes (67.6%). One-fifth of the sound changes in this type was elision. However, almost all the instances of elision appeared only in the I position of PN, which also contained a lot of incorrect realizations overall (the position I of GN was rather successful). In M, nearly all incorrect realizations were the matter of substitutions, regardless of the number of incorrect forms, or whether the cluster contained N or Ň.

Elision covered more than half of the sound changes for PS and PT (53.8%, 57.7%). However, in the case of PS it was elision in I, and in the case of PT the cluster in F was simplified. PS and PT types, compared to other cluster types, had relatively more sound changes included in the group "others" (for PS about 30%). These changes occurred mainly in M.

The figure does not include the types PST and PSK, for which there were only 12 and 5 sound changes respectively; in both cases, it was mainly a substitution, in M of PST elision as well.

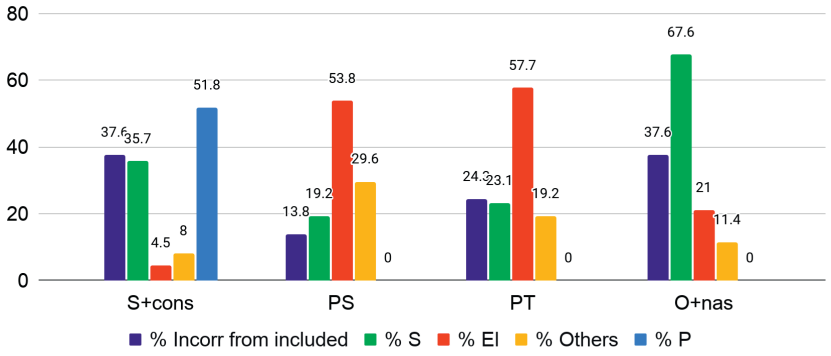

Figure 5. Distribution of sound changes within consonant cluster types (in %). Incorr – incorrect realizations, S – substitution, El – elision, P – prothesis.

Fig. 6 shows the number of incorrect realizations and the distribution of sound changes in consonant clusters of the S+cons type (the absolute values of). In two of the four least successful clusters SŇ and SV, there was a considerable number of substitutions; prothesis reached about half of the cases there. On the other hand, in the four most successful clusters, which were three obstruent clusters SP, ST, SK and SN, substitution did not occur at all (except for one occurrence in SN). For the remaining clusters, the number of instances of prothesis and substitution were either comparable or the number of substitutions was lower. Elision occurred only individually; changes included in the "others" were also limited and occurred in the least successful clusters with a sonorant.

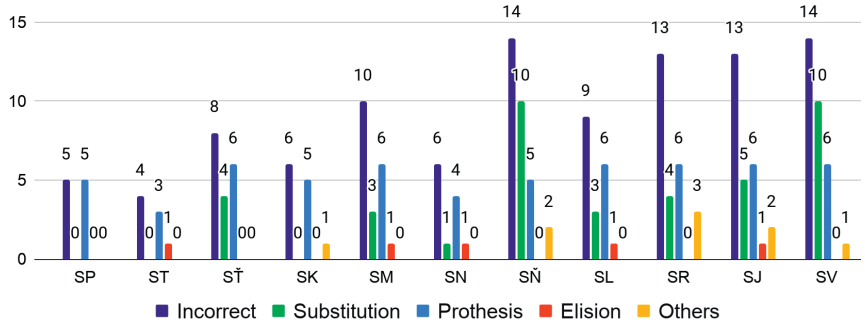

Figure 6. Distribution of sound changes in the S+cons type (absolute values).

4.4 Success rate and sound changes in individual speakers

Concerning individual speakers (see Table 5a), the number of correct forms ranged from 44.0% to 84.0%, while the number of incorrect forms ranged from 12.0% to 52.0%. Speakers also differed in the number of excluded cases that ranged from 1.3% to 13.3%. The number of excluded items did not correlate with the number of correct realizations (r=0.13, using Spearman's coefficient).

Table 5b indicates the number of incorrect realizations for each speaker and the distribution of sound changes. In the speech of speakers with fewer than 25 incorrect items (⅓ of all target clusters), it was substitution that prevailed, except S13, who tended to elision.

Table 5. a) Number of correct and incorrect realizations and excluded clusters regarding speakers (in %). b) Number of incorrect realizations and number and type of sound changes regarding speakers. Corr / Incorr – correct / incorrect realizations, Ex – excluded items, S – substitution, El – elision, P – prothesis.

	a)				b)					
Speaker	**Corr**	**Incorr**	**Ex**		**Incorr**	**S**	**El**	**P**	**Others**	**Total**
S1	80.0	12.0	8.0		9	6	1	0	2	9
S2	73.3	13.3	13.3		10	7	2	1	1	11
S3	77.3	13.3	9.3		10	5	3	2	0	10
S4	57.3	41.3	1.3		31	8	11	12	1	32
S5	53.3	34.7	12.0		26	19	3	0	7	29
S6	69.3	25.3	5.3		19	10	4	1	4	19
S7	62.7	33.3	4.0		25	16	7	1	2	26
S8	53.3	41.3	5.3		31	17	4	8	6	35
S9	69.3	20.0	10.7		15	8	4	1	4	17
S10	84.0	14.7	1.3		11	6	2	0	4	12
S11	50.7	40.0	9.3		30	11	8	14	1	34
S12	44.0	53.3	2.7		40	13	8	18	4	43
S13	78.7	13.3	8.0		10	1	6	0	3	10
				Sum	**267**	**127**	**63**	**58**	**39**	**287**
				%		44.3	22.0	20.2	13.6	100

A more detailed analysis was applied to speakers with at least 25 incorrect variants. These were six out of 13 analysed speakers (marked in grey in the Table 5a). The ratio between correct, incorrect and excluded cases in these speakers is clearly shown in Fig. 7. In one of these speakers, the number of incorrect realizations prevailed over the correct ones (S12 53.3% of incorrect variants). There were speakers with both the low number of excluded items (S4 1.3%) and the higher number of excluded items (S5 12.0%). The distribution of sound changes was to a large extent variable (see Fig. 8). Speaker S12 and S11 manifested

the largest number of prothesis (more than 40%). Unlike them, S5 had no prothesis, but dominated in the number of substitutions (65.5%); similar number of substitutions and almost no instance of prothesis were observed by S7. Speaker S4 applied elision to a larger extent than most of the others (34.4%). Speaker S5 had a noticeably higher number of "others" types of sound changes compared to most other speakers (24.1%). Possible influence of the factors we obtained (duration of stay in the Czech Republic, studying of Czech, etc.) on the correctness rate are discussed in the next section 5.

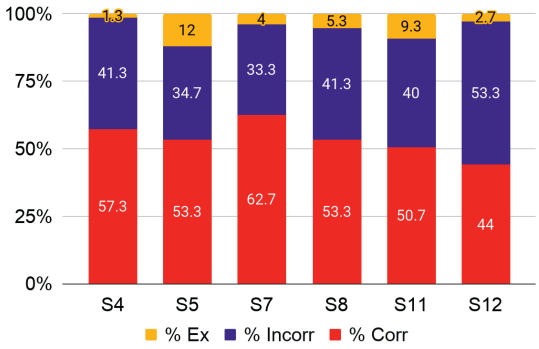

Figure 7. Number of correct (Corr) and incorrect (Incorr) realizations and excluded (Ex) items (in %) regarding six mostly unsuccessful speakers.

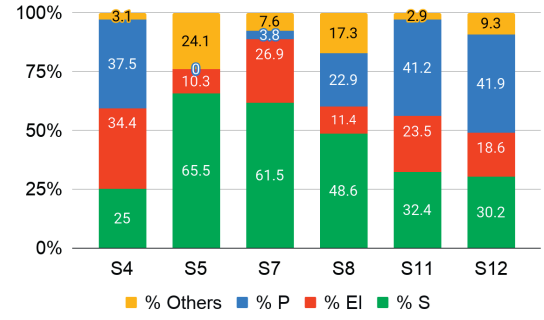

Figure 8. Distribution of sound changes regarding six mostly unsuccessful speakers (in %). P – prothesis, El – elision, S – substitution.

5. Discussion

Pronunciation of defined consonant clusters was proved to present difficulties for Spanish speakers, including the advanced ones. On average, ⅔ of realizations were correct, ⅓ contained errors, slips of tongue or dysfluency. It seems that the initial position was slightly

more difficult, however compared to M and F positions, the difference was not so remarkable. Nevertheless, we need to bear in mind that the clusters were not tested in a balanced way in I, M, F.

The correctness rate among the cluster types and within the types varied considerably. There was a tendency for clusters containing only obstruents to be more successful. This was evidenced by the number of correct realizations of both disyllabic clusters PS and PT, clusters of /s/ + stop – SP, ST, SŤ, SK, as well as three-syllable clusters PST and PSK. Even the least successful obstruent clusters achieved a correctness rate of over 60% (with the exception of the SV cluster, see below). Numerical values also indicated the tendency: clusters consisting only of obstruents had a correctness rate of 81.0%, clusters with nasals (O+nas and relevant clusters of S+cons type – SM, SN and SŇ) 62.0% and clusters containing oral sonorants SJ, SL, SR achieved the lowest correctness rate of 52.1%.

The SV cluster, indicating the lowest correctness rate of all the clusters tested – only 36.4%, was not included in the calculations above. In Spanish, [v] can be heard for example in the word *afgano* as the voiced variant of /f/ (RAE, 2011, p.186). In Czech, it functions as phoneme /v/, and phonetically, it is classified as a fricative, however, due to historical development, it behaves like a sonorant in certain positions. For example, it does not cause voicing assimilation of the previous unvoiced obstruent. So, in the SV cluster, [s] remains voiceless in Czech. Both analysed words containing SV, *sváteční* and *svobodu*, achieved the high number of incorrect forms (14/22). Substitution, namely sonorization [s] → [z], was very frequent (9/14). Prothesis was also relatively common (6/14), with one speaker combining both of these sound changes within a word. The incorrect realization of the SV words was caused by the application of the incorrect orthoepic rule and the sound change typical of the S+cons clusters following the structure of the Spanish syllable.

It was indicated that correctness rate may be influenced by the position of the cluster in the word. In I, M and F, two clusters PS and PT were tested. The correctness rate of PS was very high in all positions, in M and F of about 90%, in I slightly lower. In PT, the tendency was reversed and the difference between I and F was more evident: the I position was the most successful – 86%, F the least successful – 65%. Elision, namely that of [p], obviously prevailed among the incorrect realizations of PT and PS.

In the PT type, three words were tested in F. Two words *manuskript* and *položept* contained a greater number of incorrect realizations (14/24). This may be because these are trisyllabic words, less frequent, and the Spanish equivalent of *manuscrito* no longer contains the consonant cluster *pt*. The word *recept*, on the contrary, was relatively successful (incorrectness 3/13). It is a quite common disyllabic word; in Spanish, in addition to the

word *receta*, there is also *recepta*, which might encourage the preservation of the consonant cluster in pronunciation. This parallel could also be seen in tested PS words in F *biceps* and *kolaps* with a large number of correct realizations. Both words are loanwords and in Spanish spelling *bíceps*, *colapso* they have retained the consonant cluster.

For PS, a potential difference may be found between the pronunciation of native and loanwords in I. For the latter, the tendency towards elision seems stronger. In the words *psychologie* and *pseudogotický*, where it is possible to omit *p* in Spanish equivalents in writing as well, 8/22 incorrect realizations occurred. For native vocabulary, e.g., *psi*, *psala*, there were only 7/48 incorrect realizations. However, the word length might have affected pronunciation as well.

In I of PN, with a considerable number of incorrect realizations (23/39), this difference was not detected. The speakers pronounced both loanwords *pneumatika*, *pneumatiky*, whose Spanish counterpart is spelled only without *p* – *neumático*, and the native word *pnula* incorrectly. PN was also another example of a cluster with a significant difference between positions – unlike in I, the speakers were more successful in M (only 5/39 incorrect forms). In addition, substitution applied mostly in M, opposite to I where elision prevailed in both PS and PT.

An interesting tendency was noted regarding nasals – for the respective pairs PN – PŇ, BN – BŇ and KN – KŇ tested in M, the cluster containing an alveolar was always more successful than the one with a palatal. This applied not only to stop + nasal clusters, but also to SN – SŇ, for which the difference within the pair was most considerable. However, a more detailed word-level analysis will be required to account for possible factors. For instance, in the words *snubní* and *barokní*, substitutions [ɲ] → [n] was applied frequently. The impact of spelling on pronunciation cannot be excluded as a factor: In these words, the grapheme *n* is the part of the digram *ní*, which is pronounced as [ɲi:], not [ni:].

Regarding sound changes, substitution, elision and prothesis represented almost 90% of them. Substitution, which affected all analysed clusters, was the most frequent. This may have been caused by the fact that the category of substitution is very extensive and may include different types of processes (voicing assimilation, articulatory assimilation both in place and manner, etc.). In BN/BŇ, KN/KŇ and GN in M, substitution was obviously the dominant sound change, as it occurred at least in ¾ of realizations. Examination of the substitution types may help explain the low correctness rate of clusters containing /b/. In accordance with Spanish rules, Spanish L1 speakers often weakened the closure and pronounced the sound as an approximant or a fricative. The occurrence of substitution was also significant for PN in M (see above) and S+cons (about ⅓ of sound changes). In the

latter, the type of substitution may contribute to explaining the lower correctness of some clusters as well. For example, [s] followed by a sonorant was quite often assimilated to [z], similar as in SV (see above).

Elision appeared in both disyllabic and trisyllabic clusters, beginning with [p]; it was this consonant that was mostly elided. See the discussion on PS, PT and PN above. Unlike most of the other sound changes, prothesis was present only in S+cons, and it accounted for more than half of all changes in this type. This may be due to the /s/ + consonant group being widely spread in Spanish but not appearing as an onset at the beginning of a word. In this position, it is standardly divided into two syllables adding a vowel prior to the /s/ + consonant group.

The range of correctness rate in terms of speakers was relatively wide, which was not so surprising, given the composition of the speakers group and the interview data. Based on the correctness rate, the speakers were divided into two groups. Although the research did not focus on the possible influence of extralinguistic factors, we wondered if there were some common features within the groups. The obtained data did not allow for greater generalization; however, some findings may be presented.

Of the 13 speakers, only four regularly used Czech on a daily basis (S1, S3, S6, S13) with two of them working in Czech environment (S1, S3); a total of three mentioned Czech as one of the two languages they speak mostly (S1, S3, S13). All four speakers belonged to the group with higher correctness rates. However, as the example of the S13 speaker showed, active use, supported here by partial school attendance in Czech, was not a guarantee of mastering pronunciation at the highest level. Although this speaker mentioned Czech besides Spanish as his mother tongue, he did not deviate from other speakers with low frequency of incorrect forms.

Three speakers from a more successful group shared the experience of a one-year Czech preparatory course and subsequent study at a university in Czech (S1, S2, S3). However, even studying in Czech is not in itself a guarantee of a correct pronunciation, unless supported by other factors. Namely, speakers S4 and S5 also went through the same type of course and university, but practically didn't use Czech afterwards and, based on the analyses, they belonged to a less successful group. The same may be said about the period of stay in the Czech Republic – out of the whole group of respondents, all five named above stayed in the Czech Republic the longest (if S13 is omitted), around 9 years, but the correctness rate was different.

Speaker S10 is a very interesting case. He made a comparable number of errors as respondents who had graduated from a Czech university and used Czech regularly. However, S10 moved to the Czech Republic only a year and a half before recording and had only

three months of self-study. He mentioned that he loves literature, writes stories himself, and although he did not have particularly intense contacts with the Czech environment, he tried to listen to Czech as much as possible on the street and in the media.

Thus, it seems that the active use of Czech or an active approach and probably motivation are likely to be beneficial. Speakers in the less successful group mentioned English as the language of communication, some barely associated with Czechs and did not use Czech. When they did use it, it was a less frequent use in the city, listening to TV / radio or in meetings with Czech extended family.

6. Conclusion and perspectives

The presented experiment brought useful findings that can be followed up. Within the already analysed material, it would be useful to compare in more detail the realization and sound changes of individual words. Due to the length of the recordings, the already carried out analysis of 975 units could be expanded up to double in the framework of the current set of consonant clusters; however, because of unintentional occurrences, the balance of all clusters and positions is not guaranteed. Undoubtedly, it will be useful to expand the set of analysed consonant clusters, both in terms of segment combinations and their number. It will be appropriate to verify the identified tendencies on a larger number of respondents and to obtain a more balanced group of males and females. The analysis was performed on the read text, which posed both advantages (controlled occurrence of target clusters, by speakers no need to formulate themselves) and disadvantages (potential influence of the graphic form on pronunciation, more difficult vocabulary), so it will be appropriate to expand the research material with recordings of spontaneous speech. The rating of intelligibility processed by authors was for information only; perception tests focusing on the impact on a native speaker in terms of foreign accent, intelligibility and comprehensibility would also be beneficial. Recordings of Czech native speakers started to be gathered to compare native and non-native speech. In addition, it would be useful to analyse the production of consonant clusters in speakers of other L1s, which could not only enhance our theoretical knowledge, but also be beneficial for improving methods in teaching pronunciation of Czech as L2.

Acknowledgements

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Appendix

1. A sample of a Czech text that was read and recorded (the target clusters are indicated)

Sára, původem Švédka, začala spolu s rodiči žít v Praze krátce po sametové revoluci. Stěhovat se nejdřív nechtěla. Svoje priority si nicméně po**st**upně **sr**ovnala a později nelitovala. Odjakživa ji lákala **ps**ychologie, po maturitě proto skládala přijímací zkoušky na Filozofickou fakultu, bohužel neúspěšně. Nepochybně byla zklamaná, ale nerezignovala. Další rok se na vytoužené studium dostala. Byla nadšená, že si konečně plní své sny a jako **st**udentka poprvé v životě pocítila opravdovou **sv**obodu.

Diplomovou práci **ps**ala na téma psychologie skeptiků na území Evro**psk**é unie. V průběhu studia ji totiž zaujaly **sp**ekulace, které se týkaly vnímání **sk**epse a její různé kon**cept**y. Včera složila státnice. Byla nesmírně šťastná a ačkoli byla a**bst**inentka [pst], měla sraz s kamarády a šla slavit. Ti se jí smáli, když okolo ho**ps**ala a radovala se jako malá holka. I**gn**orovat ji nemohla ani skupina lidí stojících opodál. Blonďatá „Sněhurka" s modrýma očima, štíhlé sportovní postavy snadno přitahovala pozornost. Měla na sobě velice pě**kn**ou baro**kn**í [kɲ] sukni skořicové barvy a jemnou stylovou blůzu. Dokonalý **sv**áteční vzhled doplňovala bílá ma**gn**ólie, která se Sáře **pn**ula ve vlasech.

Kolem se šouralo nějaké **ps**isko s ježatými chlupy. Tohoto psa, u něhož lékařka vyslovila pro**gn**ózu, že brzo osle**pn**e, a který **st**ěží [sc] slyšel na jedno ucho, k sobě zavolala starší, **sm**utná paní. Dávala si v kavárně pozdní **sn**ídani [sɲ] – popíjela svou oblíbenou vídeňskou kávu s čerstvým meruňkovým koláčkem a četla další román Milana Kundery. Jakmile zahlédla Láru, začala ji pozorovat a bezchy**bn**ě [bɲ] odhalovat všechny dro**bn**é detaily její trochu extravagantní sukně. Například, že svrchní látka byla zhotovena z dvojvlákna, a spodní, která pomáhala sukni na**pn**out a udržet její tvar, byla jistě bavlna s krajkovou ozdobou dole a kre**ps**ilonem. Sukně byla tak dlouhá a splývavá, že v ní člověka **sn**ad ani nemohlo zá**bst** [pst].

2. English translation of the Czech text sample

Sarah, originally from Sweden, started living with her parents in Prague shortly after the Velvet Revolution. At first, she didn't want to move, however, she gradually put her priorities straight and later did not regret it. She has always been attracted to psychology, so after graduating from high school she attended the entrance exams to the Faculty of Arts, but unfortunately was not accepted. No doubt she was disappointed, but she did not give up.

The next year she got into the university. She was excited that she was finally fulfilling her dreams and, as a student, for the first time in her life she felt real freedom.

She wrote her diploma thesis on the topic of psychology of skeptics in the European Union. During her studies, she became interested in speculations concerning the perception of skepticism and its various concepts. Yesterday she passed the state exam. She was extremely happy and although she didn't drink, she met her friends and went to celebrate. They laughed at her as she jumped around and rejoiced like a little girl. Even a group of people standing nearby could not ignore her. A blond "Snow White" with blue eyes and slender athletic figure would easily attract attention. She was wearing a very nice baroque cinnamon color skirt and a delicate stylish blouse. The perfect festive look was complemented by a white magnolia, which decorated Sarah's hair.

An older, sad-looking lady called a rough-looking dog that was running around to come close to her. It could barely hear in one ear and a doctor warned that it would go blind soon too. The lady was having a brunch in the café; she was sipping her favorite Viennese coffee with a fresh apricot pie and reading another novel by Milan Kundera. As soon as she spotted Sarah, she began to observe her, precisely revealing all the small details of her somewhat extravagant skirt. For example, the top fabric was made of double fiber, and the bottom fabric, which helped tighten the skirt and maintain its shape, was certainly cotton and crepe with a lace ornament at the bottom. The skirt was so long and flowing that you definitely wouldn't feel cold in it.

3. Spanish translation of the Czech text sample

Sarah, nacida en Suecia, comenzó a vivir con sus padres en Praga poco después de la Revolución de Terciopelo. Al principio no quería mudarse, sin embargo, gradualmente puso sus prioridades en orden y no se arrepintió. Siempre le atraía la psicología, por lo que después de realizar el bachillerato asistió a los exámenes de ingreso a la facultad, pero lamentablemente no fue aceptada. Sin duda, estaba decepcionada pero no renunció y al año siguiente ingresó a la universidad. Estaba emocionada de que finalmente estaba cumpliendo sus sueños y, como estudiante, por primera vez en su vida sintió verdadera libertad.

Escribió su trabajo fin de grado sobre el tema de "La psicología de los escépticos dento la Unión Europea". Durante sus estudios, se interesó por las variantes de la percepción del escepticismo y sus diversos conceptos. Ayer aprobó el examen estatal y estaba extremadamente feliz. Aunque no bebía alcohol se fue a celebrar con sus amigos. Se rieron de ella mientras saltaba y se regocijaba como una niña, incluso un grupo de personas que estaban

cerca no podían ignorarla. Una rubia "Blancanieves" con ojos azules y una figura atlética esbelta fácilmente llamaba la atención. Llevaba una falda estilo barroco muy bonita de color canela y una blusa elegante y delicada. El look festivo perfecto se complementó con magnolia blanca, que decoraba el cabello de Sarah.

Una señora mayor y con aspecto triste llamó al perro con pelo de punta que se movía de un lado a otro para que se acercara a ella. El perro apenas oía por un oído y el veterinario advirtió que pronto tambien se quedará ciego. La señora estaba tomando un brunch en el café, bebía su café vienés favorito con una tarta de albaricoque recién hecho y leía otra novela de Milan Kundera. Tan pronto como vió a Sarah, comenzó a mirarla, observando con precisión todos los pequeños detalles de su falda tan extravagante. Notó que la tela superior estaba hecha de doble fibra y la tela inferior, que tensaba la falda y mantenía su forma, era de algodón y crepé con un adorno de encaje en la parte inferior. La falda era tan larga y fluida que una seguramente no tendría frío con ella puesta.

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