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SYLLABLE CONTRACTION IN SPANISH DIALECTS AND B2 LEVEL HUNGARIAN LEARNERS OF SPANISH

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Abstract

In this study, we analyze the so-called "syllable contraction", that is, the reduction of a sequence of two identical /e/ vowels to the duration of a single sound, across word boundaries. We investigate the phenomenon in the semi-spontaneous speech of speakers of the following dialects of Spanish: Madrilenian, Andalusian, Mexican, and Rioplatense. Furthermore, we compare their results with the oral (also semi-spontaneous) production of B2 (CEFR) level Hungarian learners of Spanish. We raise the following research hypotheses: (i) syllable contraction is a common phenomenon in all of the four analyzed dialects; however, (ii) it does not appear (or only occasionally) in the speech of Hungarian learners. For our analysis, we used fifty recordings (interviews) of ninety-nine minutes in total, and we examined them in the phonetic-acoustic software *Praat*. Our results support both of the hypotheses marginally: (i) syllable contraction appears in all of the analyzed dialects, but only in less than half of the cases; (ii) although the phenomenon appears in the oral production of the Hungarian learners, we found only one example of syllable contraction in the Hungarian informants' L2 Spanish speech.

Keywords: Syllable contraction; Spanish dialects; Hungarian learners of Spanish; Oral production; Vowel reduction.

Contracció sil·làbica en dialectes de l'espanyol i en la producció oral d'estudiants hongaresos d'espanyol amb un nivell B2

Resum: En la present investigació, pretenem analitzar el fenomen de la "contracció sil·làbica", és a dir, la reducció d'una seqüència de dues vocals idèntiques /e/ a una de sola, que té lloc en la frontera entre paraules separades. Investiguem aquest tipus de contracció sil·làbica en la producció oral semiespontània de parlants dels dialectes de l'espanyol següents: madrileny, andalús, mexicà i rioplatense. A més, en comparem els resultats amb la producció oral, també semiespontània, d'estudiants hongaresos amb un nivell B2 (MECR) d'espanyol. Per a l'estudi, ens hem plantejat les següents hipòtesis de recerca: (i) la contracció sil·làbica és un fenomen comú en els quatre dialectes de l'espanyol analitzats; però, (ii) no està present (o només apareix esporàdicament) en la parla espanyola dels hongaresos. Per a l'anàlisi, hem utilitzat cinquanta enregistraments (entrevistes) de noranta-nou minuts en total, que hem analitzat en el programa fonètico-acústic *Praat*. Els resultats confirmen les dues hipòtesis parcialment: (i) la contracció sil·làbica està present en tots els dialectes analitzats, però només en menys de la meitat dels casos; (ii) el fenomen és poc freqüent en el corpus dels informants hongaresos, ja que només l'hem trobat en un sol exemple de contracció sil·làbica.

Paraules clau: Contracció sil·làbica; Dialectes de l'espanyol; Estudiants d'ELE hongaresos; Producció oral; Reducció vocàlica

Contracción silábica en dialectos del español y en la producción oral de estudiantes húngaros de español con nivel B2

Resumen: En la presente investigación, pretendemos analizar el fenómeno de la "contracción silábica", es decir, la reducción de una secuencia de dos vocales /e/ idénticas a una vocal sola, que tiene lugar en las fronteras entre palabras separadas. Investigamos la contracción silábica en la producción oral semiespontánea de hablantes de los siguientes dialectos del español: madrileño, andaluz, mexicano y rioplatense. Además, comparamos los resultados con la producción oral, también semiespontánea, de alumnos húngaros de nivel B2 (MCER) de español. Para llevar a cabo la investigación, nos planteamos las siguientes hipótesis de investigación: (i) la contracción silábica es un fenómeno común en los cuatro dialectos analizados; sin embargo, (ii) no está presente (o solo aparece esporádicamente) en el español de los estudiantes húngaros. Para el análisis, hemos utilizado cincuenta grabaciones (entrevistas) de noventa y nueve minutos en total, que hemos analizado en el programa fonético-acústico *Praat*. Los resultados confirman ambas hipótesis parcialmente: (i) la contracción silábica está presente en cada uno de los dialectos analizados, pero solo en menos de la mitad de los casos; (ii) el fenómeno es poco frecuente en el corpus de los informantes húngaros, ya que solo hemos encontrado un ejemplo de contracción silábica.

Palabras clave: Contracción silábica; Dialectos del español; Estudiantes de ELE húngaros; Producción oral; Reducción vocálica.

1. Introduction

Several studies have shed light on the importance of the native-like pronunciation of Spanish. For example, Baditzné *et al.* (2018) found that for native speakers of Spanish, good pronunciation and appropriate use of discourse markers can compensate even for grammatical errors, in terms of comprehensibility. According to Mátraházi's (2020) results, native Spanish teachers tend to evaluate the speech production of Hungarian learners at CEFR levels A2-B2 more strictly concerning fluency than Hungarian teachers (regardless of subjects taught). These native Spanish teachers highlighted speech and articulation rates (besides the use of pauses) as influential factors in their evaluation.

McBride (2015) asked native speakers of Spanish (Mexican and Argentinian university students) and American teachers of Spanish to evaluate the oral production of students of an American university (who were learning Spanish as a foreign language). The results of this investigation show that concerning comprehensibility, the American teachers marked problematic pronunciation features on the level of sounds (segmental level) while the native speakers of Spanish highlighted elements of the suprasegmental level (such as "fluency", speech and articulation rates, and pausing/hesitation) as disturbing factors. Both evaluator groups (either native speakers of Spanish or not) attributed more negative personality traits to those learners who had shown less native-like pronunciation.

Baditzné (2019) carried out an investigation in which native Spanish speakers evaluated the oral production of B2-level Hungarian learners. These native evaluators highlighted several suprasegmental features (such as the form of hesitation, speech rate, and linking of words) that they missed or did not find satisfactory in the Hungarian informants' speech. Furthermore, the native speakers of Spanish found those Hungarians whose oral productions they had considered insufficiently suitable only for professions of less social prestige.

We can see that native-like pronunciation and fluency may have importance even in the avoidance of negative linguistic bias. However, our previous investigations on the speech (Kovács, 2019) and articulation rates (Kovács, 2020) of Hungarian learners showed that in this area, development was needed even at B2 (CEFR) level because Hungarian learners of Spanish produced significantly slower speech and articulation rates compared to native speakers.

In this paper, we are going to analyze the presence and frequency of syllable contraction of identical /e/ vowels across word boundaries in four dialects of Spanish (Madrilenian, Andalusian, Mexican and Rioplatense) and in the speech of B2 (CEFR) level Hungarian learners of Spanish. We suppose that the possible lack of syllable contraction in the Hungarian learners' oral production plays a crucial role in the fact that the articulation rate of Hungarians (even at CEFR level B2) is slower than that of native speakers.

Syllable contraction (contiguous vowels either across word boundaries or within a word) is considered to be a troublesome feature of Spanish and can cause problems even when the given learner has already reached a "fairly good command of spoken language", as the perfect pronunciation of isolated sounds does not necessarily mean proper vocalic combinations, that is, "good" Spanish (Espinosa, 1924, p. 299-300). All this may be problematic in the case of situations in which listening comprehension is needed, since we do not usually hear separate words but they are rather linked, grouped in phonic blocks that may not coincide with the syntactic units with easily identifiable grammatical functions (Planas-Morales, 2013, p. 79-80). For this reason, at DELE Spanish language exams, for example, listening comprehension tasks are now worth more points than before (Planas-Morales, 2013, p. 78-79).

2. Theoretical background

2.1. Definition of reduction and its types

We can define phonetic reduction as a deviation in the pronunciation of a word and due to this, the given word may be unrecognizable in isolation, but we can identify it with the help of a context (Ernestus *et al.*, 2002; Xu, 1994). Reduction, in general, is a common phenomenon in many types of languages, from French to English or Korean (cf. Ernestus & Warner, 2011, p. 254).

Syllable reduction refers to all of the cases in which the actual number of the pronounced syllables is lower than the number determined based on the norms of the given language (Johnson, 2004). Besides syllables, sounds also can get reduced. For example, vowels are more likely to undergo reduction than consonants (Trouvain *et al*., 2001, p. 158). However, consonant reduction is more frequent in Spanish, and vowel reduction appears only marginally (Voigt & Schüppert, 2013, p. 319).

Sequences of two vowels that form different syllables can be pronounced in various ways. These options depend on the given speaker's stylistic preferences rather than on the structure of the vowel sequences (Aguilar, 2003, p. 2112; Bowen, 1956, p. 6). According to, for example, Aguilar (2005), pronouncing them as parts of two different syllables is formal, forming a diphthong is standard and the omission of a vowel can be considered informal.

In Spanish, we can pronounce vowel sequences either in one single syllable (as a diphthong or in the case of three vowels, as a triphthong) or in separate syllables (as a hiatus), based on the rules of the language (Hualde *et al.*, 2010, p. 90). Two identical vowels should be realized with a hiatus (Hualde *et al.*, 2010, p. 91-92) because both of the vowels form separate nuclei (Quilis, 1999, p. 179). However, there is a tendency of reducing hiatuses to one single syllable in fast speech (Hualde *et al.*, 2010, p. 98), and in Spanish, there is a preference for replacing hiatuses with a single syllable (Alba, 2006, p. 273; Navarro Tomás, 1977, p. 148, cited by Hualde, 2020, p. 175-176).

2.2. Influential factors concerning syllable reduction

The presence and frequency of syllable reduction depend on several factors. The following examples do not refer only to the Spanish language.

Based on the research of Ernestus & Warner (2011, p. 254) on Dutch, syllable contraction is more frequent in women's oral production than in men's speech, and we find this phenomenon more often in the case of young speakers than in the case of elderly people. Besides these, numerous studies affirm that syllable reduction is more common in fast speech when having faster speech rate (Burchfield & Bradlow, 2014, p. 274-275; Hoole *et al.*, 1994, cited by Tomaschek *et al.*, 2014, p. 429; Navarro Tomás, 1950, cited by Esgueva, 2004, p. 89; Navarro Tomás, 1977, p. 148-149, cited by Hualde, 2020, p. 170; Tsao *et al.*, 2006, cited by Santiago & Mairano, 2017; Voigt & Schüppert, 2013, p. 322; Wong, 2004;), because articulation is less clear and consequently, syllables get shorter or deleted (Voigt & Schüppert, 2013, p. 322).

Stress also influences reduction: generally speaking, stressed syllables are less likely to become reduced than unstressed ones (Aguilar, 2003, p. 2112; Alba, 2006, p. 277; Cuenca, 2000, p. 43; Navarro Tomás, 1977, p. 148-149, cited by Hualde, 2020, p. 170). More precisely, groups of two unstressed vowels tend to get reduced the most, followed by sequences of a stressed and an unstressed vowel (in this order), the combination of an unstressed and a stressed vowel, and finally, groups of two stressed vowels are the least susceptible to reduction (Aguilar, 2003, p. 2113; Alba, 2006).

It can also be said that syllable type too has an effect on reduction. However, concerning this matter, there is no agreement in the literature: according to Alba (2006, p. 278), closed syllables (that end in a consonant) are significantly more sensitive to reduction than open syllables (ending in a vowel), but Burchfield & Bradlow (2014, p. 270 and 274-275) found that open syllables get reduced more often than closed ones.

Previous studies, on the other hand, agree on the fact that more frequent words of a given language are more likely to suffer reduction than less common words (Bybee, 2000, p. 252, cited by Alba, 2006, p. 274; Bybee, 2002; Munson, 2007; Munson & Solomon, 2004 cited by Tomaschek *et al.*, 2014, p. 429). This can be linked to the automatization of articulation (Bybee, 2000, p. 252, cited by Alba, 2006, p. 274), that is, speech production requiring less effort and the (gradual) disappearance of "unnecessary" articulatory movements (Zipf, 1935, cited by Tomaschek, *et al.*, 2014, p. 429). Besides this, we must mention that normally we find significantly fewer examples of syllable reduction in lexical words than in groups of words that have only grammatical functions (Casali, 1996, 1997; Causley, 1999 and Jenkins, 1999, both cited by Alba, 2006, p. 279). Also, syllable reduction occurs more often in syntactically strictly linked structures (Hualde, 2014, p. 78).

Moreover, syllable reduction depends on vowel quality: the phenomenon is more frequent in the case of low or mid vowels and if the two vowels have similar qualities (Alba, 2006, p. 277-278). Also, if the given linguistic elements have already been mentioned during the ongoing conversation, they are more likely to undergo reduction (Jenkins, 1999, cited by Alba, 2006, p. 273).

We should also note that, according to Burchfield & Bradlow (2014, p. 274-275), language and speech style have no effect on reduction by themselves, and they can only exert influence in conjunction with other factors.

2.3. Syllable contraction: identical vowels across word boundaries

Our investigation focuses on syllable contraction of identical /e/ vowels across word boundaries in four dialects of Spanish and in the oral production of Hungarian learners of Spanish (of B2 CEFR level). For this reason, in the following section, we are going to present how the norms of the language define this phenomenon. As we have seen in the previous section, stress can influence syllable contraction. Therefore, in this study, we analyze the contraction of both tonic (stressed) and atonic (unstressed) vowels (the latter, in various positions).

According to the pronunciation features of Spanish, in the case of a sequence of two identical vowels, we should produce only one vowel because the two original sounds fuse into one (Bowen, 1956, p. 7; Contreras, 1969, p. 61; Hualde, 1994, cited by Román *et al.*, 2018, p. 155)[1]. Aguilar (2003, p. 2111-2112) calls this phenomenon "monophthongisation" and this author believes that fast but not emphatic speech style is needed for this. In general, unstressed vowels get contracted but stressed vowels can also suffer contraction, and in this case, stress gets lost (Hualde, 2014, p. 77).

Identical vowels require contraction also across word boundaries, which is traditionally called synalepha, mainly in poetry (Aguilar, 2003, p. 2111; Hualde, 2020, p. 165; Hualde *et al.*, 2010, p. 98; Navarro Tomás, 1977, p. 147-158, cited by Hualde, 2014, p.76). Indeed, this phenomenon occurs as a rule in Spanish if the two members of a vowel sequence belong to different words (Espinosa, 1924, p. 301-302). Thus, the two sounds will form one single syllable (Espinosa, 1924,

[1] We must, however, add that not all of the investigations carried out in this field agree with this: Aguilar (2003, p. 2112), for example, has found that in sequences of identical vowels, maintaining the hiatus is more common.

p. 302) and by this process, the duration of the vowels can be as short as the duration of a single vowel in the same context (Hualde, 1994, cited by Román *et al.*, 2018, p. 155; Hualde, 2014, p. 77; Hualde *et al.* 2010, p. 98; Monroy, 1980, p. 65, cited by Esgueva, 2004, p. 90). What is more, even three unstressed identical vowels can get reduced to the duration of one single sound (Hualde, 2014, p. 77).

Espinosa (1924, p. 302) calls this phenomenon "contraction" (in Spanish, "contracción") in the case of two identical vowels, however, Wong (2004) notes that if two syllables fuse into one, the duration of the vowel increases. Based on the definition of Planas-Morales (2013, p. 70), syllable contraction ("contracción silábica") has two types: reduction to one single sound and becoming a diphthong or triphthong.

For the sake of simplicity, we are going to refer only to the fusion of two identical vowels as syllable contraction, following Espinosa's (1924) terminology.

3. Hypotheses

We have seen in the previous section that the literature lists several pieces of general information about the characteristics of syllable contraction and influential factors relating to the phenomenon, without focusing on any specific language. As far as the Spanish language is concerned, previous studies present the phonetic rules that require the application of syllable contraction (or reduction) and those circumstances (such as speech style and stress) that affect the phenomenon in the language. However, none of these investigations deal with the possible dialectal differences of Spanish, and they only provide data obtained from native speakers.

For this reason, we carried out this analysis bearing in mind the following two hypotheses:

> (1) syllable contraction (in the case of the vowel /e/) is a common phenomenon in all of the selected Spanish dialects (Madrilenian, Andalusian, Mexican, and Rioplatense), and the duration of the sequences of identical vowels reduce to the duration of one single vowel (from now on, referred to as "total contraction");
>
> (2) however, the total contraction of identical /e/ vowels does not appear (or only occasionally) in the oral production of B2-level Hungarian students. That can be correlated with the lower articulation rate of Hungarian students of B2 (CEFR) level compared with the average rate of native speakers of Spanish (cf. Kovács, 2020)[2].

4. Corpus

4.1. The informants' profile

As already mentioned (see *1. Introduction*), in this paper, we compare the oral production of Hungarian learners of Spanish with the speech of native speakers of the same (target) language. For this reason, the basis of our investigation is a corpus of fifty authentic audio files (interviews) in total: ten recordings provided by ten Hungarian informants and forty interviews with forty native speakers of Spanish (ten speakers of each dialect).

All of the ten Hungarian informants were 20-25-year-old university students (born between 1993 and 1997), one male and nine females, and they spoke Spanish at B2 (CEFR) level at the time of recording the audio files (that is, they had already passed a B2 [CEFR] level exam but they had

[2] The duration of a reduced vowel sequence is shorter than the duration of a hiatus, and the duration of a single monophthong is even shorter (Aguilar, 2003, p. 2113).

not passed a C1 [CEFR] level exam yet). We chose the B2 (CEFR) level because according to the Common European Framework of Reference for Languages (Council of Europe, 2020, p. 72), at this level speakers "[c]an interact with a degree of fluency and spontaneity that makes regular interaction, and sustained relationships with users of the target language, quite possible without imposing strain on either party". We believe that the main aim of language teaching and learning is achieving this level.

It should be highlighted that almost all of the Hungarian language learners analyzed in this paper can be considered average speakers of their native language regarding speech and articulation rate – we also measured this aspect. To be more precise, two of the ten learners produced lower speech rate than the average rate of Hungarian (Bóna, 2014, p. 118), however, the difference was no more than 0,3 syllables/second. Concerning the target dialect of these learners of Spanish, we can say that two of the ten Hungarian informants spoke Madrilenian Spanish (they used the voiceless dental fricative sound /θ/ and their speech contained stable, unaspirated post-nuclear /s/ sounds), and the speech of seven learners displayed the characteristics of Mexican Spanish (stable, unaspirated post-nuclear /s/, no dental fricative. However, vowel reduction, which is typical of this variety, did not appear in their speech). In the case of one informant, it was impossible to determine their dialect because of their inconsistency in the use of the /s/ and /θ/ sounds (Hualde et al., 2010, p. 399-408).

The native Spanish informants represent four different dialects of Spanish (Madrilenian Spanish, Andalusian Spanish, Mexican Spanish, Rioplatense Spanish), ten speakers (five men and five women) of each. Concerning their profession, all of them are actors, chosen so that it would be easier to compare their speech. The age of the native Spanish speakers is shown in the following table. In each case, we determined the informants' age by comparing their date of birth to the publication date of the interviews.

	Madrilenian		**Andalusian**		**Mexican**		**Rioplatense**	
	Female	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**
AGE (years)	20	31	24	27	22	28	27	40,5[3]
	21	35	26	35	30	33	32	43
	25	40	33	36	36	40	41	44
	42	43	33	44	36	46	42	45
	45	49	35	48	43	53	48	46
MEAN	**30,6**	**39,6**	**30,2**	**38**	**33,4**	**40**	**38**	**43,6**
ST. DEV.	**11,97**	**6,99**	**4,87**	**8,22**	**7,86**	**9,98**	**8,4**	**2,11**

Table 1. The age of the native informants of Spanish.

All of the speakers of Madrilenian Spanish were born in Madrid, the Andalusian informants were born in Andalusia[4], and the Mexican speakers were born in Mexico City. As for the Rioplatense Spanish, four of its speakers (three women and one man) were born in Montevideo, while two women and four men were born in Buenos Aires.

[3] In the case of this speaker, we could not determine his exact age.

[4] One of the informants was born in the Valencian Community, however, her family is of Andalusian origin and she herself had lived in Andalusia from the age of six (cf. https://elpais.com/elpais/2013/11/15/eps/1384536050_832255.html; last visited May 24, 2021).

4.2. Audio files

For this investigation, we used audio files containing interviews that can be defined as a semi-spontaneous speech style. During the spontaneous speech, we do not produce a pre-formulated text (Gósy, 2004, p. 242), and the main characteristic of this style is that planning and speech production are parallel processes (that is, they happen at the very same time) and therefore speech becomes slower (Levelt, 1999, cited by Váradi & Beke, 2013, p. 26-27). In contrast, while reading, we do not have to pay attention to the form and the content, only to the articulation (Bóna, 2016, p. 166). We should also mention Markó's (2005) results, according to which articulation rate increases (compared to a spontaneous narrative) in a dialogue. Since in the case of an interview, the questions determine the topic and therefore the vocabulary of the discourse, we define this type of speech as semi-spontaneous.

The audio files we analyzed had two different sources. The interviews with the native speakers of Spanish were found on and downloaded from an online video sharing platform. These interviews were conducted as part of a talk show, in form of a video call, or filmed in a more relaxing atmosphere, such as in a café or in the home of the interviewer. The recordings containing the Hungarian students' speech production were recorded by us in a silent room of a university. During the recording process, only the informants (ten Hungarian students and the same interviewer speaking Andalusian dialect[5] in each case) were present in the room, besides the leader of the investigation, who remained silent throughout the process. The details and the aims of the analysis were unknown to the participants.

As we wanted to get as objective results as possible, we tried to exclude all of the factors that may have had an influence on the investigation's outcome. For example, in each case, we analyzed interviews, and the informants of the same group spoke the language at the same level (all of the Spanish participants were native speakers, while the Hungarian students all spoke Spanish at a B2 [CEFR] level at the time of the recordings). Taking into consideration our possibilities, we also tried to choose informants of the same (or nearly the same) age group, and the topics of the interviews were subjective, but not too personal (such as hobbies in the case of the Hungarians and their career in the case of the Spanish participants) so that emotions would not influence our results, either. The list of the interview questions of the Hungarian corpus is found in the Appendix 1.

5. Procedure

5.1. Editing and handling of the recordings

The audio files were edited in the phonetic-acoustic software *Praat* (version 6.1.16, Boersma & Weenink, 2020). From each of the recordings, we selected a segment that was not the very beginning nor the very end of the interview (so that nervousness or hurry would not have an influence on our results). Also, we cut several parts of the audio files that were irrelevant to our

[5] The Andalusian interviewer's speech proved to be significantly faster (speech rate: 5,3 syllables/second; articulation rate: 7,12 syllables/second) than the speech of the Hungarian learners (average speech rate: 2,9 syllables/second; average articulation rate: 4,58 syllables/second, cf. Kovács, 2019). Also, the native speaker applied consonant reduction and total syllable contraction of identical vowels in his questions (N= 8; 40%), and not only in the case of the vowel /e/.

purposes: the questions and interruptions of the interviewer and the silent periods[6] between questions and answers.

In this way, the average length of the analyzed interview segments in the case of the Hungarian learners was 78,86 seconds (the shortest was 56,21 seconds and the longest was 96,83 seconds long). From the interviews with the native speakers of Spanish, in each case, we chose a part that was at least two minutes long (based on Bóna, 2019): the average length of the analyzed segments was 128,27 seconds (shortest: 120,25 seconds; longest: 145,26 seconds). The lengths of the recordings are detailed in the Appendix 2.

5.2. Analysis of syllable contraction

This investigation focuses on the total contraction of identical /e/ vowels across word boundaries, and according to one of our hypotheses, the duration of the two vowels on the boundaries of separate words is reduced to the duration of one single vowel. To be able to analyze this possibility, we highlighted all of the positions in the transcription of the recordings that were compatible with the type of total syllable contraction we were looking for, that is, we marked all those word sequences in which the first word ended in and the second word began with the same vowel (for example, "que el" /kel/, which means "that the" in English). We found 411 cases of possible total syllable contraction in the Spanish and 17 in the Hungarian corpus.

We wanted to compare the possibly contracted vowels with single ones, however, the duration of a single vowel can be different in each individual's speech. To solve this problem, we selected in every informant's oral production three "control vowels" in all those positions (tonic, pretonic, posttonic, and atonic[7]) where we had found a possible total contraction environment. Tonic position refers to stressed vowels, we defined as pretonic those vowels that preceded the given word's stressed vowel and as posttonic those vowels that were pronounced after the word's stressed vowel. Finally, atonic position was found in words that did not contain at least one stressed vowel.

We segmented, that is, we set the beginning and the ending of the marked vowels and vowel sequences in the software *Praat*. In this way, we could determine with what duration the given speaker pronounces the single vowels, so we could compare their average duration with the possible total syllable contractions to decide if the realized vowel sequences can be treated as total contractions (reduction to the duration of a single vowel) or not.

The following table shows an example of the selection and the use of total contraction and control vowels. In the section "Possible Contraction", the first column ("Context") lists the word combinations in which total syllable contraction may appear in the given (pretonic) position, the second column ("Duration") contains the durations (in milliseconds) of the vowel sequences of the corresponding contexts, and the third column ("Total contraction?") shows if in the given context we find total syllable contraction or not, based on the control vowels. The section "Control Vowels" consists of three words containing the same vowel in the same position as the word combinations in the previous section.

[6] We call "silence" the mute segment between the turns of a conversation (Gallardo-Paúls, 1996, p. 66 and 74-75), while "pause" means a mute period within a given speaker's enunciation (Gallardo-Paúls, 1993, p. 195; Quilis, 1999, p. 416).
[7] For stress rules in Spanish cf., for example, Quilis (1999, p. 391-395).

POSSIBLE CONTRACTION (PRETONIC POSITION)		
Context	**Duration (ms)**	**Total contraction? (cf. control vowels)**
qu**e** **e**stamos /k**e**stámos/	41,45	no
qu**e** **e**stá /k**e**stá/	24,5	yes
MEAN (ms) / PROPORTION	**32,98**	**50%**
CONTROL VOWELS (PRETONIC POSITION)		
Context	**Duration (ms)**	
p**e**rsonajes /p**e**sonáxes/	25,69	
ord**e**nando /ord**e**nándo/	60,55	
d**e**jando /d**e**xándo/	35,88	
MEAN	**40,71**	

Table 2. Comparison of total syllable contraction with control vowels. We bolded the analyzed sounds and marked the word stresses in the phonemic transcription.

We decided to work only with the vowel /e/ because it turned out that the number of the contexts in which total contraction would have been possible was much higher in the case of the vowel /e/ than in any other vowel's case. We found only few possible contexts of total contraction concerning the rest of the vowels of Spanish (and therefore our analysis would have provided very few pieces of information). We also took into consideration the extension limits of this study, however, originally, we planned to analyze the total contraction of all of the vowels.

Similarly, since we wanted to get as objective results as possible, we analyzed only the unambiguous cases. For example, we excluded from our analysis those (word-final) vowels that (because of their very long duration) seemed to represent word-final lengthening rather than a "simple" sound (N= 8; 1,95%). We also had to exclude sounds that were hardly comprehensible due to too fast articulation and the vowel sequences found between two stresses (for example, "siempr**e** **e**stá" /sjémpr**e**stá/, meaning "is always"), because in this case, it would have been impossible to determine the category of its position (N= 22; 5,35%). Furthermore, we also left out those sequences (N= 56; 13,63%) in which two stressed vowels could be found next to each other (accent clash) because native speakers of Spanish intend to avoid this phenomenon, and one method to do this is stress replacement (cf. Almeida & San Juan, 2001 and Dorta & Hernández, 2007, p. 112-113). These problematic cases appeared only in the Spanish-speaking corpus, and after removing them, 325 contexts of possible total syllable contraction remained in the Spanish corpus.

6. Results

6.1. First hypothesis

In this section, we are going to summarize our results for the first hypothesis. Before starting the analysis, we supposed that syllable contraction (in our case, reduction of identical /e/ vowels across word boundaries) is present in all of the four analyzed dialects of Spanish, and the duration of the vowel sequences gets reduced to the duration of one single vowel of the same quality and position (total contraction).

The following table shows the proportions of total syllable contraction (number of produced total syllable contractions compared to the number of possible contexts, which is 325 possibilities in total). We measured the proportion and not the number of times total syllable contraction occurred because of the difference in length between the Spanish (native speakers) and the Hungarian (B2 CEFR level learners) corpora. However, note that the only cases treated as total syllable contraction were those in which the duration of a sequence of two vowels had been reduced to the duration of a single vowel or even shorter. Because of the limits of this study, we are not going to present the cases of vowel sequences that were somewhat reduced but remained longer than the duration of a single vowel.

Data is presented in respect of dialect. In the first column, we see in brackets the number of informants whose speech showed examples of possible total syllable contraction in the given category.

MADRILENIAN SPANISH	
Position	**Proportion of total syllable contraction (standard deviation)**
tonic (N= 9)	57,41% (43,39)
pretonic (N= 8)	42,5% (45,59)
posttonic (N= 5)	56,67% (43,46)
atonic (N= 7)	35,71% (47,56)
MEAN	**48,07%**
STANDARD DEVIATION	**10,72**
ANDALUSIAN SPANISH	
Position	**Proportion of total syllable contraction (standard deviation)**
tonic (N= 9)	44,39% (31,02)
pretonic (N= 10)	45,5% (42,59)
posttonic (N= 6)	66,67% (51,64)
atonic (N= 6)	41,67% (49,16)
MEAN	**49,56%**
STANDARD DEVIATION	**11,52**
MEXICAN SPANISH	
Position	**Proportion of total syllable contraction (standard deviation)**
tonic (N= 10)	52,67% (44,36)
pretonic (N= 9)	64,95% (41,75)
posttonic (N= 4)	25% (31,92)
atonic (N= 5)	20% (44,72)
MEAN	**40,66%**
STANDARD DEVIATION	**21,65**
RIOPLATENSE SPANISH	
Position	**Proportion of syllable total contraction (standard deviation)**
tonic (N= 10)	49,95% (24,71)
pretonic (N= 10)	37,24% (34,8)
posttonic (N= 7)	61,9% (48,8)
atonic (N= 4)	6,25% (12,5)
MEAN	**38,84%**
STANDARD DEVIATION	**23,94**

Table 3. The proportion of total syllable contraction according to dialect.

The following figure depicts the same results, the proportion of total syllable contraction in the four dialects of Spanish:

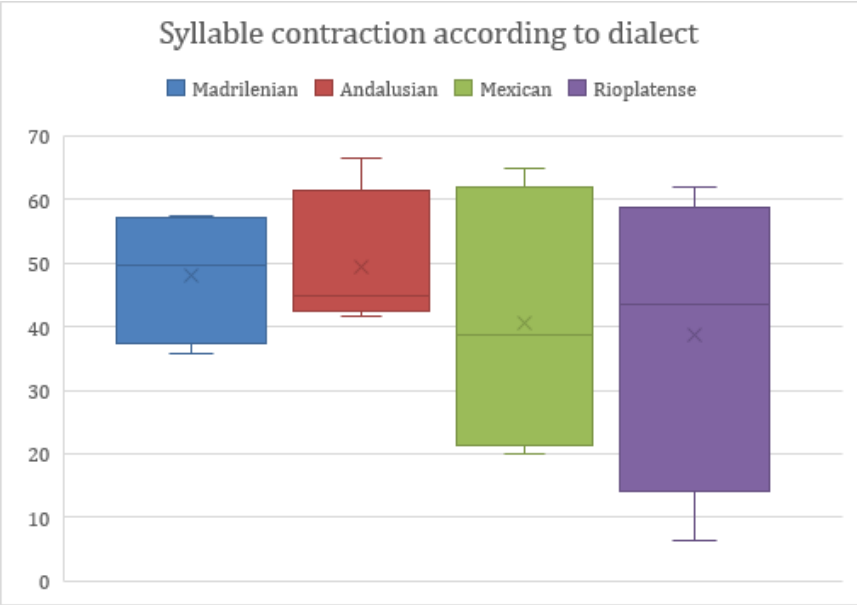

Figure 1. Total syllable contraction according to dialect.

As we can see, total syllable contraction appears in all of the Spanish dialects that we analyzed, it is the most frequent in the Andalusian variety (49,56%) and the least frequent in the Rioplatense dialect (38,84%). Therefore, we can say that our first hypothesis is partly supported by our results: not even in the case of Andalusian Spanish does the frequency of total syllable contraction reach fifty percent of the possible cases. Also, we must add that in a few speakers' speech total syllable contraction did not appear (more precisely, the vowel sequences did not get reduced to the duration of one single vowel) at all.

These results partly coincide with our previous results (Kovács, 2020) on articulation rate: we compared the articulation rate of four Spanish dialects (Madrilenian, Andalusian, Mexican, and Rioplatense) and found that Andalusian Spanish had the second highest articulation rate (6,42 syllables/second) and Rioplatense Spanish the second lowest articulation rate (6,22 syllables/second). Therefore, we can say that there may be a correlation between articulation rate and total syllable contraction: Andalusian Spanish seems to produce the highest numbers in both variables (first in total syllable contraction and second in articulation rate), while Rioplatense Spanish tends to be associated with lower figures (fourth in total syllable contraction and third in articulation rate).

In the following table, we can see our results according to position (tonic, pretonic, posttonic, and atonic). In the first column, we see in brackets the number of informants whose speech showed examples of total syllable contraction in the given category. Based on the literature (Aguilar, 2003, p. 2112; Alba, 2006, p. 277; Cuenca, 2000, p. 43; Navarro Tomás, 1977, p. 148-149, cited by Hualde, 2020, p. 170), we expected to have the lowest proportion of total contraction in tonic position, that is, in the case of stressed syllables. On the other hand, as in atonic position neither word in the sequence has stressed vowels, we supposed that total syllable contraction would appear the most frequently in this position.

TONIC POSITION	
Dialect	**Proportion of total syllable contraction (standard deviation)**
Madrilenian (N= 9)	57,41% (43,39)
Andalusian (N= 9)	44,39% (31,02)
Mexican (N= 10)	52,67% (44,36)
Rioplatense (N= 10)	49,95% (24,71)
MEAN	**51,11%**
STANDARD DEVIATION	**5,44**
PRETONIC POSITION	
Dialect	**Proportion of total syllable contraction (standard deviation)**
Madrilenian (N= 8)	42,5% (45,59)
Andalusian (N= 10)	45,5% (42,59)
Mexican (N= 9)	64,95% (41,75)
Rioplatense (N= 10)	37,24% (34,8)
MEAN	**47,55%**
STANDARD DEVIATION	**12,09**
POSTTONIC POSITION	
Dialect	**Proportion of total syllable contraction (standard deviation)**
Madrilenian (N= 5)	56,67% (43,46)
Andalusian (N= 6)	66,67% (51,64)
Mexican (N= 4)	25% (31,92)
Rioplatense (N= 7)	61,9% (48,8)
MEAN	**52,56%**
STANDARD DEVIATION	**18,82**
ATONIC POSITION	
Dialect	**Proportion of total syllable contraction (standard deviation)**
Madrilenian (N= 7)	35,71% (47,56)
Andalusian (N= 6)	41,67% (49,16)
Mexican (N= 5)	20% (44,72)
Rioplatense (N= 4)	6,25% (12,5)
MEAN	**25,91%**
STANDARD DEVIATION	**15,98**

Table 4. The proportion of total syllable contraction according to the position.

Again, the following figure represents our results concerning position:

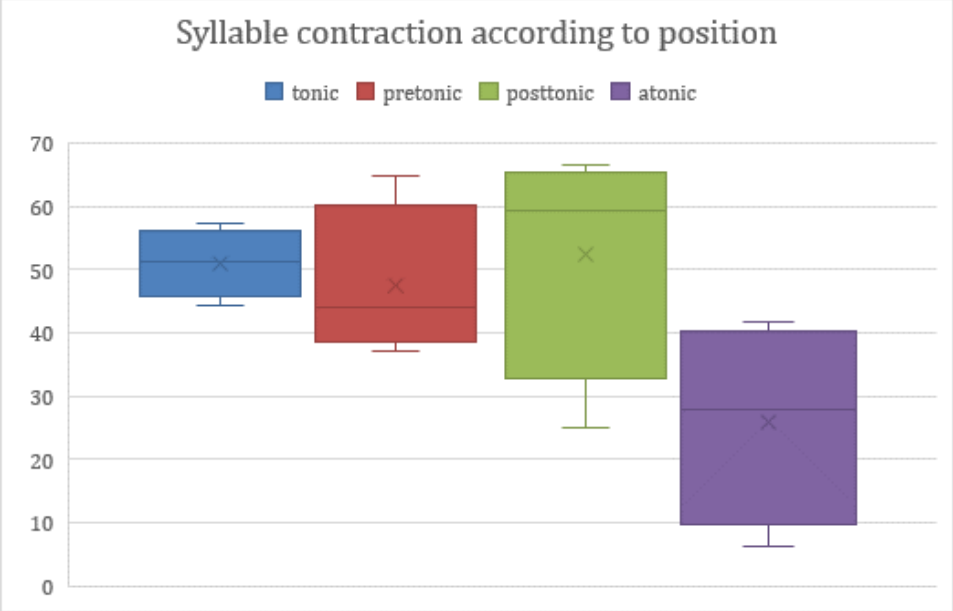

Figure 2. Total syllable contraction according to the position.

As far as position is concerned, it is notable that total syllabic contraction is the most frequent in the posttonic position (52,56%) and the least frequent in the atonic position (25,91%). Interestingly, our results do not coincide with the literature, according to which unstressed syllables get reduced more frequently than stressed ones (Aguilar, 2003, p. 2112; Alba, 2006, p. 277; Cuenca, 2000, p. 43; Navarro Tomás, 1977, p. 148-149, cited by Hualde, 2020, p. 170), because the results of this investigation have shown that total syllable contraction is the second most frequent (51,11%) in tonic position.

Note, again, that we treated only those cases as examples of total syllable contraction in which the duration of the two vowels was reduced to the duration of one single vowel (or less).

6.2. Second hypothesis

According to our second hypothesis, in contrast with the native speakers' speech, total syllable contraction does not appear (or only marginally) in the oral production of B2 (CEFR) level Hungarian learners of Spanish, and all this can contribute to the slower articulation rate of Hungarians compared to that of native speakers (Kovács, 2020).

Our second hypothesis can be marginally accepted based on the results, as we found an example of total syllable contraction in the B2 (CEFR) level learners' speech, but only one case (out of 17 possibilities), which means 5,88% in total. This single example of total syllable contraction appeared in the tonic position[8].

However, we must note that we found significantly fewer possibilities of total syllable contraction (that is, word sequences in which the first word ended in the same vowel as the first vowel of the

[8] In the case of this informant, we found two possible contexts of total syllable contraction in this (tonic) position, out of which only one turned out to be total contraction, meaning 50%.

following word) in the case of the ten Hungarian learners than in the speech of native speakers, shown in the following table:

POSSIBLE TOTAL SYLLABLE CONTRACTIONS	
Position	**Number of informants**
tonic	N= 3
pretonic	N= 4
posttonic	N= 4
atonic	N= 2

Table 5. Number of Hungarian informants in the speech of whom possible total syllable contraction was found in the given position.

We can see that not even possible total syllable contraction appeared in half of the Hungarian informants' speech in terms of a given position. In our opinion, all this is not due to a coincidence or to the fact that the recordings containing Hungarian learners' speech were shorter than the recordings of the native speakers (we measured proportion and not the number of total syllable contractions because of this difference). We believe that this is because in the Hungarian learners' production, there were many more pauses and hesitations than in the native speakers' speech. For this reason, the Hungarian informants pronounced significantly fewer word sequences (without pause or hesitation), which decreased the chance of possible total syllable contraction. Consequently, none of the four analyzed positions (tonic, pretonic, posttonic, atonic) appeared in the speech of all learners, and in the case of one Hungarian learner, there were no contexts of possible total contraction at all.

We should also mention, as pointed out in section *4.2. Audio files*, that in the speech of the native Spanish speaker who had conducted the interviews with the Hungarian informants, we could find several cases of total syllable contraction of identical vowels (N= 8; 40%), along with consonant reduction (such as aspiration or elision of /s/). However, the results suggest that it is not enough to be merely exposed to total syllable contraction, but rather direct instructions may be needed to improve the application of the phenomenon in the oral production of learners of Spanish.

7. Conclusion

In this study, we analyzed total syllable contraction of identical /e/ vowels across word boundaries. We compared four dialects of Spanish (Madrilenian, Andalusian, Mexican and Rioplatense) to see if there is a difference among them concerning the analyzed aspect. According to our results, there is a 10,72% difference between the dialect that showed the highest proportion of total syllable contraction (Andalusian, 49,56%) and the one that contained the lowest proportion (Rioplatense, 38,84%). Since all native Spanish informants of this investigation are actors, our results can reflect dialectal differences. However, the scope of the study should be expanded to be able to exclude (or reduce) individual differences within (and between) dialects.

We also measured the presence and proportion of total syllable contraction in the oral production of Hungarian learners of Spanish (of B2 CEFR level). Out of 17 possible contexts of contraction in total, we found only one example of total syllable contraction (5,88%) in the Hungarian learners' speech. Also, it has been demonstrated that even if non-native speakers have an

interlocutor who applies total syllable contraction, this does not necessarily mean that the non-natives will follow suit. For this reason, it would be useful to investigate the possible role of direct instructions in this situation, which we are planning to do in the future.

Our results let us suppose that there is a correlation between articulation rate and total syllable contraction, as the dialect that showed the highest proportion of total contraction in this investigation was found among the dialects with the fastest articulation rate in our previous study (Kovács, 2020), and the same correlation is shown in the case of the dialect with the lowest proportion of total contraction (it had ranked as the second slowest dialect in terms of articulation rate)[9].

Our results do not coincide with what the literature writes about Rioplatense Spanish: according to studies (Kaisse, 2001 and Sosa, 1999, both cited by Baditzné, 2020, p. 9), lengthened stressed syllables are common in this dialect. Based on this, we can suppose that the lengthened syllables impede the reduction of identical vowels across word boundaries to a duration of a single vowel. Our investigation, however, has found that the Rioplatense dialect shows only the second lowest proportion of total contraction in tonic position.

Therefore, we believe that it would be useful to carry out more investigations within this area of Spanish linguistics, considering other types of phonetic and syllable contraction too, such as the reduction of sequences of non-identical vowels. We could also get more detailed results if we used a broader definition of syllable contraction, and treated every vowel sequence whose duration gets reduced by any proportion as such. What is more, we can get more objective results in a future analysis if we use interviews recorded under more homogenous circumstances, as formal or informal recording processes may have had an influence on our results (see section *4.2. Audio files*), although, according to Burchfield & Bradlow (2014, p. 274-275), speech style tends to affect reduction in conjunction with other factors, rather than on its own.

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[9] We must note that, according to, for example, Tsao *et al.* (2006, cited by Santiago & Mairano, 2017), fast speech and articulation rates will result in reduction of vowel space. On the other hand, Mexican Spanish that we previously found to have the highest articulation rate (Kovács, 2020) in this investigation showed the second lowest proportion of total syllable contraction, compared to the three other dialects of Spanish.

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Appendix

1. Interview questions (Hungarian corpus)

In this section, we list the interview questions that appeared in the audio files used for our analysis.

¿Cómo sueles llegar a la universidad? / How do you get to the university?

¿Qué prefieres, una gran ciudad o un pueblo pequeño? ¿Por qué? / Which one do you prefer, a big city or a small village? Why?

¿Qué te gusta hacer en tu tiempo libre? / What do you do in your free time?

¿Qué te gusta más, leer, o ver, por ejemplo, películas [... o cine]? ¿Por qué? ¿Qué tipo de libro? / What do you like more, reading or watching, for example, movies [... or cinema]? Why? What kind of books?

¿De qué trata tu libro/película favorito/a? / What is your favorite book/movie about?

¿Qué tipo de libro o película te gusta? / What kind of book(s)/movie(s) do you like?

¿Qué tipo de música sueles escuchar? / What kind of music do you usually listen to?

¿Cuál es tu deporte favorito? / What is your favorite sport?

¿Haces (algún) deporte? / Do you do (any) sports?

¿Qué ventajas consideras que tiene hacer un deporte? / In your opinion, what are the advantages of doing sports?

¿Podrías mencionar unas ideas para tener una vida sana? / Could you mention some tips for leading a healthy lifestyle?

¿Y viajar, te gusta viajar? / And do you like traveling?

¿A qué lugar quisieras viajar? / Where would you like to travel to?

¿Dónde quisieras estar ahora? ¿Por qué? / Where would you like to be right now? Why?

Si tuvieras que trasladarte a otro país, ¿cuál elegirías? / If you had to move to a foreign country, which one would you choose?

¿Cuál era tu trabajo ideal cuando eras niño/a? / What was the ideal job for you when you were a child?

¿Y ahora haces algo semejante (o totalmente diferente)? / And now do you do something similar (or totally different)?

¿Qué es lo que harías si no tuvieras ni que trabajar ni que estudiar? / What would you do if you did not have to work nor study?

Si no tuvieras ningunos límites, ¿en qué te gustaría trabajar o estudiar? / If you did not have any limits, what would you study or do for a living?

¿Qué idiomas hablas? / Which languages do you speak?

¿Qué idiomas quisieras hablar? / Which languages would you like to speak?

¿Consideras que tienes alguna habilidad especial? / Do you think you have a special ability?

Si pudieras elegir una habilidad especial, ¿cuál elegirías? / If you could choose a special ability, which one would you choose?

¿Cuál es tu estación del año favorita? ¿Por qué? / Which is your favorite season? Why?

¿Qué significa la amistad (para ti)? / What does friendship mean (to you)?

2. Lengths of the recordings

The lengths of the audio files of the Hungarian corpus:

Informant	Length (sec.)
01_B2	94,31
02_B2	84,04
03_B2	74,4
04_B2	84,28
05_B2	73,57
06_B2	96,83
07_B2	77,06
08_B2	56,21
09_B2	76,35
10_B2	71,51
TOTAL	**788,56**
AVERAGE	**78,86**

The lengths of the audio files of the Spanish-speaking corpus ("inf." stands for informant and "L" stands for length):

Madrilenian		Andalusian		Mexican		Rioplatense	
Inf.	**L (sec.)**	**Inf.**	**L (sec.)**	**Inf.**	**L (sec.)**	**Inf.**	**L (sec.)**
EE	130,3	AV	121,5	AB	129,83	AT	123,75
EF	128,28	BC	136,56	AD	127,36	AV	138,8
FT	123,17	DR	125,48	AR	122,46	BA	120,48
LM	124,34	IC	125,19	CA	120,96	DR	134,41
MA	129,29	JM	121,9	FC	132,91	FA	134,15
MP	131,07	MC	125,48	GG	121,59	MM	129,53
NM	144,81	MD	121,53	JPM	124,17	NO	128,44
PO	129,9	MR	121,74	LH	121,18	PW	126,64
RF	123,09	MS	125,89	MP	141,42	SR	137,52
SM	123,98	NM	120,25	MR	136	VO	145,26
TOTAL	**1288,23**	**TOTAL**	**1245,52**	**TOTAL**	**1277,88**	**TOTAL**	**1318,98**
AV.	**128,82**	**AV.**	**124,55**	**AV.**	**127,79**	**AV.**	**131,9**