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Measuring resyllabification in Hungarian based on duration

A pilot study

Abstract

In this paper, I am focusing on the possible existence of resyllabification (linking) in the Hungarian language by looking for acoustic cues. Twenty-one Hungarian sentences have been read out loud by thirteen native speakers of the language. Following the method presented by Fougeron et al. (2003), the duration of the possibly resyllabified, word-ending consonants (derived onsets) has been measured and compared with the duration of word-initial consonants (canonical onsets), without possible resyllabification. The results of this study show the possible occurrence of linking in Hungarian (the phenomenon appeared in the 30,77–69,23% of the possible cases), regardless of the word types the analyzed contexts contain. On the other hand, it has been demonstrated that resyllabification is more frequent in the comment (at the end) of a sentence than in the topic (sentence-initial position). However, further investigations should be carried out in this field in the future, in particular, a prosodic analysis (based on intonation and stress) could shed light on more obvious patterns.
Keywords: acoustics, Hungarian, linking, resyllabification, speech analysis

1   Introduction

During the process of speaking, that is, when words get chained together and therefore different syllables become adjacent, the phenomenon called *resyllabification* (or *linking*[1]) can occur (Vennemann 1988, as cited in Dressler & Siptár 1989 and 1998). This term usually refers to the reorganization of the last consonant of a word (in coda position) to the initial (onset) position of the following word beginning with a vowel (Steriade 1988; Harris 1996, as cited in Him Fábrega 2015). For example, *chaque avion* ('every airplane' in French), pronounced and resyllabified as [ʃa.**k**a.vjɔ̃][2] or *el hombre* ('the man' in Spanish), uttered as [e.**l**om.bre] (examples of Spinelli et al. 2002 and Civit Contra 2018, respectively). It must also be pointed out that according to the definition provided by Dressler and Siptár (1989 and 1998), linking

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[1]   As several authors (cf., for example, Laeufer 1987; Šimáčková et al. 2014; Simões 2012; Scarpace 2017) use the term *linking* in relation with resyllabification (as its translation or synonym), the two words are going to be used as synonyms in this paper, as well. Although it is going to be highlighted throughout the study, it is important to state already at this point that I am not focusing on the phonological aspects of resyllabification but on its phonetic properties only.

[2]   From now on, those contexts (such as resyllabified or possibly resyllabified consonants) we are focusing on are going to be highlighted.

can also appear when the coda of the first word consists of two consonants, while the following word begins with one consonant, not less sonorant than the possibly resyllabified consonant. For example, Hungarian expression *mosd meg* [moʒ.**d** mɛg], 'wash it' (imperative).

Resyllabification is a basic feature of French and Spanish (Civit Contra 2018; Selting et al. 2019; Vogel 1991), but also appears in Italian, Dutch and Egyptian Arabic (Vogel 1991), while there is no agreement concerning the English language (Vogel 1991; Lahoz 2012).[3] Similarly, we find contradictory theories regarding the Hungarian language. Levin (1985, as cited in Törkenczy & Siptár 2000) emphasizes possible linking between a stem ending in a vowel and a suffix beginning with a consonant. On the other hand, based on their definition of resyllabification, Dressler and Siptár (1989 and 1998), for instance, mention certain cases in which the phenomenon cannot occur due to phonotactic constraints, as seen in the expression *mosd meg* ('wash it/that', imperative): resyllabification as [moʒ.**d** mɛg] would entail the consonant cluster [dm] not tolerated as an onset in Hungarian. Indeed, although connected speech (that is, linking or resyllabification) plays a crucial role in the way native speakers evaluate non-native oral production (Schairer 1992), studies carried out on spontaneous Spanish speech produced by Hungarian learners suggest that B1-B2 CEFR level Hungarian learners of Spanish lack this phenomenon in their utterances (Baditzné 2019 and 2020). As the author also indicates, this may be because the informants of the study produced segmented speech, in other words, they frequently used silent pauses and hesitation patterns, which impeded the application of linking. Nevertheless, another possible reason why Hungarian learners did not apply the linking is that perhaps it is a non-existent phenomenon in their native language.

This pilot study aims to look for acoustic cues in Hungarian speech to prove or refute the existence of resyllabification in the language, that is, I am approaching the topic from a phonetic point of view. I analyze the reading of sentences, some of which form ambiguous pairs based on the application or the lack of linking. Following the method used by Fougeron et al. (2003), the duration of resyllabified consonants (derived onsets, as in *a**n** aim*) and that of word-initial consonants (canonical onsets, as in *a **n**ame*) are to be measured and compared. In addition, I calculate the duration of the vowels preceding and following the consonants that may undergo resyllabification to compare it with the length of the neighboring vowels of the canonical onsets. Prior to analyzing the data, the following hypotheses have been formulated for this study:

(1) Although its status is not clear (Dressler & Siptár 1989 and 1988; Szépe 2006), resyllabification can occur in Hungarian (just like suggested by Levin 1985, as cited in Törkenczy & Siptár 2000), and will be detected in the speech of the informants of this study.

(2) The phenomenon is more frequent in (although not restricted to) expressions containing a function word than in sequences of two content words, since it has been demonstrated that content words are normally articulated more slowly than function words (Hegedűs 1957; O'Shaughnessy 1995, as cited in Dankovičová 1999). The same tendency has been found in a previous study of mine (Kovács 2023), regarding the perception of resyllabification (see Section 2).

(3) Linking will appear more often, that is, will be performed by more informants at the beginning of a sentence than at the end, due to the information structure of the sentences, strictly connected with word order in Hungarian (É. Kiss 1988 and 1992, as cited in Mády 2012; Mády 2012; Surányi & Pintér 2020). In other words, I have supposed that resyllabification appears

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[3] About resyllabification in different languages more in detail, cf. my summaries in Hungarian (Kovács 2022) or in Spanish (Kovács in press).

more frequently in the case of a sentence-initial topic (Nádasdy 2007, Tolcsvai Nagy 2008, Imrényi 2021) than in the comment, following the topic of the sentence (Rózsavölgyi 2002, Varga 2003) and containing information about it (Tolcsvai Nagy 2008, Imrényi 2021). This is expected because the topic expresses what the sentence is about, it refers to an already mentioned or known entity (Nádasdy 2007, Téglásy 2016 as cited in Imrényi 2021), and it is unstressed (Tolcsvai 2008) or at least „less" stressed than the comment (Nádasdy 2007) or has only „basic" stress (Téglásy 2016 as cited in Imrényi 2021). All these may imply less cautious articulation, supporting the application of resyllabification. In addition, independently of the information structure of a sentence, it has been proven that articulation rate, that is, the velocity of pronouncing or articulating sounds (Gósy 1997) is higher at the beginning of intonation units (Olaszy 2005, in the case of reading news), and syllables are pronounced more slowly at the end of utterances or before pauses (Hegedűs 1957; O'Shaughnessy 1995, as cited in Dankovičová 1997; Duez 1999). The velocity of articulation has an important role when it comes to measuring linking in terms of duration.

In the following sections, I am going to offer an overview on the presumed status of resyllabification in Hungarian, later, in Chapter 3, I elaborate on the methods and procedures used during this investigation. Firstly, the corpus and the material will be described, including the sentences analyzed in this project and the informants (native speakers of Hungarian) who read the sentences out loud. Then, I am presenting the program in which the acoustic analysis has been carried out, and the methods I have opted for using. Note, again, that this study focuses on the phonetic analysis of possible resyllabification and does not apply an approach based on phonological theory. In Section 4, the obtained data are going to be shown. Finally, this paper ends with the discussion of the results and with general conclusions and further plans for the future.

2   Literature review: resyllabification in Hungarian

In Hungarian, syllabification is continuous, and occurs from right to left, which means that it is applied again and again after morphological and phonological operations (Törkenczy & Siptár 2000). Resyllabification can occur in the language (Hayes 1989, as cited in Törkenczy & Siptár 2000), for example, the coda of the last syllable of the stem can be resyllabified if the attached suffix starts with a vowel (Levin 1985, as cited in Törkenczy & Siptár 2000). An example of this process can be the word *ablakok* ('windows'), which is syllabified as [ɒb.lɒ.**k**ok], although the original stem is *ablak* ('window'). It should be added that the syllabification of *ablakok* we have just seen is recognized by the Hungarian Academy of Sciences even in the orthography, when words are split or divided at the end of lines [1].

However, when it comes to resyllabification across word boundaries, the literature raises awareness to controversial cases. We should note that these studies do not suggest explicitly that resyllabification *across word boundaries* is problematic in the Hungarian language, but all the papers about this phenomenon I am going to present mention obstacles which seem to make it more difficult to treat linking as a general feature of Hungarian. Szépe (2006: 87), for instance, uses the expression *elviszlek a* ('I take you to the…')[4] to demonstrate the so-called *phonetic*

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4   In fact, the author mentions a whole sentence, but I have just cited a fragment of that sentence.

syllabification, which she interprets as a "sequence-organizing simplification mechanism",[5] setting out from the phonetic level. We can draw a parallel between this phenomenon and resyllabification, since according to Szépe (2006), the phonetic syllabification of *elviszlek a* is [ɛl.vis.lɛ.kɒ], placing the [k] segment, which is the starting point of simplification, into onset position. For this example, the author proposes the following hypothesis, although she finds it verifiable only with difficulties: the [k] sound in *elviszlek a* is phonetically resyllabified to the next syllable, more precisely, to the empty onset position of the article *a*. However, this interpretation raises a problem. The relocation of the [k] sound implies the shift of the morpheme boundary, as well. These rearrangement processes do exist in Hungarian,[6] as Szépe (2006) states, but their common characteristic is that on both sides of the new boundary, that is, even after applying the relocation, we find morphemes. Nevertheless, neither the incomplete *elviszle* (in English, similar to 'I take you t…'), nor *ka* ('…o the') with a filled onset meets this criterion. It may be important to add that Szépe (2006) mentions another example from her corpus, the expression *mert a Karcsi* ('because the Karcsi'). In this case, the author found a certain type of disfluency, according to which the consonant *cs* [t͡ʃ] spreads its features to the final consonant *t* of the word *mert* ('because'), forming an erroneous expression, "mercs a Karcsi". The phonetic syllabification (resyllabification), on the other hand, replaces this newly emerging coda to the onset position of the following syllable, having [mɛr.t͡ʃɒ. Kɒr.t͡ʃi] as the final result.

Dressler and Siptár (1989 and 1998) present examples and their reservation concerning possible resyllabification contexts containing consonant clusters. As they argue, syllable final /b d t/ consonants should be reorganized to the onset position of the following syllable, as in the example *mosd meg* ('wash it/that', imperative). However, the Hungarian language does not tolerate neither the /bm dm tn dl bf bv dv tm df/ sequences nor their voiceless equivalents at the beginning of a syllable. This conflict between the syllable-contact preference and the restrictions regarding the onset position can be resolved by omitting the problematic plosive consonant. In this way, linking automatically implies the deletion of the plosive at issue, more precisely, the deletion of the stop consonant (originally in coda position) that could undergo resyllabification. Still, this explanation also causes difficulties, because theories about linking should be applicable in the case of fricatives and affricates, as well. These sounds, however, never get eliminated, see the example *törzsvendég* ('regular guest'), in which all the consonants of the *rzsv* [rʒv] sequence are pronounced. Also, in sequences containing three consonants from which the first element is an /r/, the consonant /d/ can be omitted as a middle sound, but other plosives not, just like in the word *szerbtől* ('from Serbian'), pronounced as [sɛrp.tøl], after devoicing. As a conclusion, the authors propose the necessity of further investigation in the topic.

Because of the contradictory findings concerning the possible existence of resyllabification in Hungarian, I carried out an investigation based on the perception of native speakers of the language (Kovács 2023). I used a list of mainly ambiguous sentences (that partly coincide with the corpus of this study, see Section 3) that were read out loud by a 21-year-old woman, a native

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[5] My translation; original expression: "szekvenciaszervezési egyszerűsítő művelet" (Szépe 2006: 87).

[6] It is worth mentioning how Szépe (2006: 87) writes about the existence of the phenomenon (my translation): "Processes that introduce, insert or rearrange morpheme boundaries really exist not only in linguistic deviances but in data from folk-etymologies, as well". This process that we rather consider as resyllabification is connected with deviances in Szépe's article probably because the author analyzed linguistic errors and disfluencies.

speaker of Hungarian. These fifteen audio files were inserted in a randomized order into an online questionnaire. The questionnaire was filled in by 200 speakers of Hungarian, who were asked in every case to listen to the sentences one by one and then write down what they had heard. In addition, the informants evaluated the sentences based on several, either positive or negative adjectives, that is, they decided if the sentences are "natural", "un-Hungarian", "common", "acceptable", "strange", "incorrect" and/or "typical". According to the results, the respondents thought to have perceived the expressions *a zárban* ('in the lock'; heard by 61,17% of the informants) and *a zűrben* ('in the trouble'; 49,75%) beginning with a consonant, that is, with applied resyllabification, even if the sentences originally contained *az árban* ('in the price'; 33,83%) and *az űrben* ('in the space'; 40%), respectively. However, in the case of the pairs *akart enni / akar tenni* ('wanted to eat' / 'wants to do') and *miért akarod / miért takarod* ('why do you want [it/that]' / 'why are you hiding [it/that]'), the phrases without applied linking were proved to be more popular (*akart enni*: 79,5%; *miért akarod*: 84%). All this seems to suggest that resyllabification in Hungarian is more likely to appear in expressions containing an article (a function word) than in the case of two content words. However, to make sure about this theory, I also analyzed acoustically the sentences used in the questionnaire. Having used the methodology of Fougeron et al. (2003), the obtained data demonstrated that the reader of the sentences applied resyllabification only in the case of the last consonant of the definite article *az*, just like the results based on perception suggested.

The pair *az árban / a zárban* ('in the price' / 'in the lock') was also used in the questionnaire to analyze the possible effects of position, since these expressions were found in both sentence-initial and sentence-final position in my corpus. The collected data showed that the informants had heard the resyllabified expression *a zárban* more often at the end of the sentence (96,5%) than at the beginning (45%). In addition, the participants were asked to evaluate the sentences with the help of adjectives. The informants attributed mainly positive adjectives to the sentences they had heard, the proportion of positive adjectives was below 50% only in the case of the pair *az űrben / a zűrben* ('in the space' / 'in the trouble'), probably due to the less common words. These results made me conclude that resyllabification can indeed occur in Hungarian, and this phenomenon is not perceived as an unfamiliar feature by everyday speakers of the language. However, it must be added that the use of minimal or contrastive pairs has received criticism several times for failing to take into consideration the semantic context (Mattys et al. 2005). In other words, one member of those pairs will less likely to be chosen because it is less common or because in the given context (sentence) it sounds unusual (Lahoz-Bengoechea & Jiménez-Bravo, in press). This factor may have influenced the results of this previous project of mine (Kovács 2023), especially because the study was based on perception.

It should be mentioned that unlike in standard Hungarian, in which, as we have seen, the existence of linking is questionable, it seems that a variety of the language, called *Csángó*, possesses this phenomenon. The *Csángó* Hungarian is the dialect which differs the most from standard Hungarian (on every level), and this is the only variety that may not be intelligible for other native speakers of Hungarian (Juhász 2003). When it comes to *Csángó*, it has already been noted (Szarvas 1874; Gálffy 1964, as cited in Huszthy 2016) that in this dialect, the consonant of the definite article *az* ('the') can be resyllabified to the beginning of the next word (that is, to the onset position of the next syllable) in such a way that in pronunciation, this consonant is fused with the neighboring word as if it was part of the following word. An example from Huszthy's corpus (2016) is the expression *zeskolába*, which is *[a] ziskolába* ('to [the] school'), according to standard Hungarian. As we can see, the consonant *z* of the article

az ('the') is resyllabified to the beginning of the word *iskolába* ('to school'). However, in spite of the strong linking, Huszthy (2016) remarks that *Csángó* speakers are conscious about the fact that the sound [z] represents the definite article and does not belong lexically to the content word. Another argument against the possible lexicalization of [z] can be the phenomenon Huszthy (2016) found in his corpus: resyllabification can occur in other cases, as well, such as in the expression *egy izé* (similar to 'a thingy'), where the last consonant of the indefinite article, the [ɟ] sound is also resyllabified to the beginning of the next word.

In addition, it should be added that in relation to linking, there is another term used in the Hungarian literature. Pronunciation balances the chain-like sequence of discrete elements by transitions. If the utterance diverges from this balance, a new linguistic tool is created, the so-called *juncture* (Szende 1979). This phenomenon is considered to be a feature that shows the boundaries of breaking down the utterances (Szépe 2005 and 2008), in other words, it indicates the boundaries of morphemic elements (Szende 1979). According to Szépe (2005 and 2008), utterances without a focus (or comment) do not require the marking of the aforementioned boundaries, therefore, the less redundant elements of an utterance do not contain such signals of boundaries at all. As the author mentions, the only method of disobeying this rule is the information decrease, via producing acoustically the boundaries (by, for example, intonation, pause or juncture[7]).[8] However, the marking of boundary is not always an information-decreasing operation: in the sequence *hat#alma#sok* ('six apples [are] a lot'), it is not redundant to show the morphemic boundaries with juncture to, for example, distinguish it from the sequence *hatalmas#ok* ('huge/powerful reason').[9]

Szende (1979) distinguishes three types of juncture. *Internal* or *morpheme* juncture has the main role of identifying one or various morphemes between two word boundaries, as show the example *egészség* versus *egész|ség* ('health', in the latter, as the "|" sign also shows it, morpheme boundary is marked by juncture). *Terminal* juncture appears mainly between words – more precisely, between not bound morphemes (Bloomfield 1933, as cited in Szende 1979) –, therefore, in this case, the juncture's role of separating elements is fulfilled within a sequence of words. The example provided by Sweet (1892, as cited in Szende 1979) for this type is *seemable* versus *see Mable*. Finally, *external* juncture, as Szende (1979) explains, represents the same phonological level as terminal juncture, but it separates larger elements, since it appears in the case of interruptions in speech.

It is also important to highlight that in the Hungarian literature, juncture is interpreted as a deviance in certain cases. That is, the phenomenon called *open* juncture (a term used by Varga 1993: 43) means the break of the transition between neighboring sounds, which can be perceived as a pause applied in an inappropriate position, and can cause misunderstandings (V.

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[7]   It is important to distinguish *pause* and *juncture*: (1) unlike pauses, juncture focuses on the accomplishment of only morphemic or terminal boundaries; (2) the application of juncture only depends on syllable structure, therefore, it "deserves an independent status in the phonological system". Juncture has more limited roles than pauses, because it does not divide elements nor precede them; it can only mark or indicate something (Szende 1979: 32).

[8]   At this point, it should be added that segmental features can also highlight boundaries, since these elements, such as glottal stops, intend to block the utterance at the boundary by suspending the activity of the glottis (Szépe 2005).

[9]   Juncture marked by a pause already shows the boundary. If besides this, there is an additional sign of boundary (such as a glottal stop after the pause), it only strengthens the boundary without providing new information. In this way, the redundancy of the utterance increases, thus decreasing the information content (Szépe 2005 and 2008).

Raisz 2010). Adamikné (2006: 108–109) analyzed the speech of university students, and she determined resyllabification (in her words, "displacement of word boundary"[10]) as an error, which was found once in her corpus. On the other hand, according to Szépe (2005 and 2008), the operation of introducing or emphasizing a boundary by, for example, juncture, makes a word resyllabified in a way that a new morpheme boundary will be created at a point where the phonological representation originally would not require (or even would prohibit) a boundary. In this way, one word would be segmented as if several words had been pronounced. As Szépe (2005) adds, the highlighting of boundaries is a simplifying process, which appears with the highest frequency in deviant sequences. In this study, however, we will be focusing on the term *resyllabification* and not *juncture*.

3 Methods and procedure

3.1 Corpus and material

In this paper, twenty-one Hungarian sentences have been used to carry out an analysis on the potential application of linking in the language. The hypotheses of this study, besides (1) the possible existence of the phenomenon, refer to (2) the word type of the structure (that is, containing function words or content words) and (3) the information structure of the sentences, in other words, finding the resyllabification context in the topic or in the comment, or in initial or final position. For this reason, the list of the twenty-one sentences, which can be found in Table 1, are presented along with such complementary pieces of information related to the hypotheses. Firstly, the English translation is provided, then the possibility of resyllabification in the given sentence (yes/no), the position (initial/final) and information structure (topic/comment/focus) of the analyzed context of potential linking. Also, it is listed what type of words (function words or content words) form the possible resyllabification contexts, and further notes are also included (e.g. the aim of the sentence or potential influential factor).

	Sentence	**English translation**	**Possible resyll.**	**Position / inform. str.**	**Word types**	**Notes**
1.	Miér**t t**akarod ennyire?	Why are you hiding it this much?	no	initial / focus	CW-CW	ambiguous, role of cluster
2.	Miér**t** akarod ennyire?	Why do you want it this much?	yes	initial / focus	CW-CW	ambiguous
3.	E **gy**ér szakáll semmit sem ér.	This sparse beard is worth nothing.	no	initial / topic	FW-CW	ambiguous (only resyll. context)
4.	E**gy** ér ha elpattan, komoly gondot tud okozni.[11]	A vein, when it bursts, can cause a serious problem.	yes	initial / - (complex sentence)	FW-CW	ambiguous (only resyll. context)
5.	E **gy**ár sokat elmond a készülő termékről.	This factory tells you much about the	no	initial / topic	FW-CW	ambiguous (only resyll. context)

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[10] My translation, in Hungarian: "szóhatár eltolódása" (Adamikné (2006: 109)).

[11] I have not followed the Hungarian orthography intentionally in this sentence, because after the word *ér* ('vein') a comma should have been used, but it may have caused a pause, which would have impeded the application of resyllabification in the speech of the informants.

		product in preparation.				
6.	E**gy gy**ár sokat elmond a készülő termékről.	A factory tells you much about the product in preparation.	no	initial / topic	FW-CW	ambiguous, role of clusters
7.	A **z**árban benne van a kulcs?	Is the key in the lock?	no	initial / topic	FW-CW	ambiguous, role of position
8.	A**z** árban benne van a kulcs?	Is the key included in the price?	yes	initial / topic	FW-CW	ambiguous, role of position
9.	A kulcs benne van a **z**árban?	Is the key in the lock?	no	final / comment	FW-CW	ambiguous, role of position
10.	A kulcs benne van a**z** árban?	Is the key included in the price?	yes	final / comment	FW-CW	ambiguous, role of position
11.	A **z**űrben is összetartunk.	We hang together even in trouble.	no	initial / comment	FW-CW	ambiguous
12.	A**z** űrben is összetartunk.	We hang together even in the space.	yes	initial / comment	FW-CW	ambiguous
13.	A bajban is összetartunk.	We hang together even in trouble / misfortune.	no	-	-	distractor
14.	Nem tudom, mit akar **t**enni.	I don't know what he wants to do.	no	final / - (complex sentence)	CW-CW	ambiguous
15.	Nem tudom, mit akar**t** enni.	I don't know what he wanted to eat.	yes	final / - (complex sentence)	CW-CW	ambiguous
16.	Nem tudom, mit akar**t** inni.	I don't know what he wanted to drink.	yes	final / - (complex sentence)	CW-CW	similar but not ambiguous
17.	Nem tudom, mit akar csinálni.	I don't know what he wants to do.	no	-	-	distractor
18.	E**gy** alma van a fán.	There's an apple in the tree.	yes	initial / comment	FW/-CW	role of position
19.	A fán e**gy** alma van.	There's an apple in the tree.		middle / comment	FW-CW	role of position
20.	E**gy** körte van a fán.	There's a pear in the tree.	no	initial / comment	FW-CW	role of position (final cons.)
21.	A fán e**gy** körte van.	There's a pear in the tree.	no	middle / comment	FW-CW	role of position (final cons.)

Table 1. The list of sentences used in this investigation. Sentences 7–10. were inspired by the example provided at [2], while sentences 11–12. are based on Varga's example (1993: 43, as cited in V. Raisz 2010).

The sentences form three groups: (1) eight sentence pairs (sixteen sentences), (2) one triplet of sentences and (3) two distractors. The members of six pairs show ambiguity due to potential linking (see sentences *1–12.* in Table 1). For example, if the sound [z] in *az árban* ('in the

price') undergoes resyllabification, the expression is pronounced exactly the same way as *a zárban* ('in the lock'). The remaining two sentence pairs aim at providing an opportunity to investigate the role of position and to compare consonants in contexts with (sentences *18–19.*) and without (sentences *20–21.*) potential linking. In addition, a triplet of sentences (*14–16.*) has been included in the corpus, in which besides an ambiguous pair, a third sentence can be found, providing a similar but not the same context (containing a different vowel) with possible linking. Finally, sentences *13.*, *17.* serve as distractors meaning something similar to other sentences, so as to make it more difficult for the participants to find out the goal of this investigation.

The above presented sentences were read out loud by thirteen native (monolingual) speakers of Hungarian, who do not have any speech disorder or hearing impairment. The informants can be divided into two groups based on their age when participating in this investigation.[12] To the first group belong those eight speakers who were 21-30 years old when participating in the project, that is, they were born between 1992 and 2001. Their gender ratio is 50–50%, and their place of origin is either Budapest, the capital city of Hungary (*n=4*), Nógrád county (*n=2*), Pest county (*n=1*) or Heves county (*n=1*). They all speak at least two foreign languages (all of them speak English), and three informants have had training on linguistics during their studies and currently have a job related to speaking (such as working as a teacher or as a service desk agent). The second group of participants consists of five speakers, three women and two men, who were born between 1965 and 1972 and were 50–57 years old in the time of the recording. They come from Heves county (*n=3*) and Budapest (*n=2*), they all speak English, but only one of them speaks a second foreign language, as well. None of them has ever had training on linguistics and their job is not related to this field, either.

The data gathering itself took place in a silent room, where only the given informant and the author of this study were present. As first step, the participants were asked about personal data (see previous paragraph) for which they had signed a declaration of consent. In this document, they had consented to the use of their personal data and their reading (in form of an audio file) on the condition that their person would not be identifiable. After collecting personal data, the reading task was briefly explained: the participants knew that they would read out loud sentences in Hungarian, and they were asked to read in a natural way. It must be emphasized that the goals of this project remained unknown to the informants. The sentences used as the basis of this investigation were organized in a random order and placed in a simple *Power Point* presentation. More precisely, each sentence appeared in a separate slide, and it was important not to display two similar sentences (e.g. members of pair sentences) one after the other. During the sentence reading process, the slides appeared in presentation mode, and the informants could go to the next slides in their own pace. Their speech was recorded with a mobile phone (*iPhone SE 2020*) capable of recording high quality audio. Six of the informants read each sentence twice, while seven of them only once. To analyze homogeneous corpus, only the first reading was taken into consideration whenever it was possible. However, in the case of erroneous, inaccurate or unnatural reading (exaggerated intonation or stressing, for example), I analyzed only the second reading.

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[12] It should be stressed that I am not focusing on the role of age in terms of the application of resyllabification in this paper. The informants are divided into two groups just to make the presentation of their personal data easier.

3.2 Procedure of analysis

This study aims to analyze possible linking based on a phonetic approach, disregarding the phonological properties of the phenomenon. The corpus used in this investigation consists of thirteen audio files, and each recording contains the reading of twenty-one sentences by thirteen different informants. The audios were first converted into *.mp3* format at an online platform [3], which process did not have an influence on the quality of the files. Later, I analyzed the audios in the phonetic-acoustic program *Praat* (Boersma & Weenink 2021).

As already mentioned, the methods presented by Fougeron et al. (2003) in terms of measuring resyllabification in Swiss French were followed. The authors of this study created a corpus of triplets of sentences, the members of which shared the same segmental content (that is, sounds), but the identical sounds appeared in different contexts. The three contexts or conditions were (1) resyllabification across word boundary (VC#V, as in *an aim* /ən#eɪm/), that is, the consonant functions as derived onset (terminology used by Strycharczuk & Kohlberger 2016, for example). In condition (2), there was a lexical boundary before the consonant (V#CV, as in *a name* /ə#neɪm/), in other words, the consonant is a canonical onset, and resyllabification is impossible. In (3), the analyzed context was located within a word following the V.CV pattern, having the consonant as a syllabic onset (as in *abominate* /əbɑːmə.neɪt/, example found with the help of [4]).

According to the results of this study on French (Fougeron et al. 2003), based on the reading of eight informants, the duration of the consonant is conditioned by the context in which it appears. The resyllabified consonant – in context (1) – is significantly shorter than in the remaining two contexts; and the canonical onset, in other words, the word-initial consonant – context (2) – is significantly longer than the consonant within the word, context (3). However, these data hold only for stops, while in the case of fricatives, the authors found significant difference only between contexts (2) and (3), and the results show individual differences[13]. The duration of the vowel preceding the consonant (V1) also depends on the given condition. This vowel is significantly longer in contexts (1) and (2) than in (3), but the duration of V1 depends on the speaker[14]. On the other hand, the duration of the vowel following the consonant (V2) does not seem to be influenced by the condition it appears in. Rather, the consonant type shows an effect on the vowel: after a resyllabified consonant – in context (1) – V2 is significantly shorter after stops but longer after liquids, when compared to conditions (2) and (3). In the case of fricatives, no effect was found.
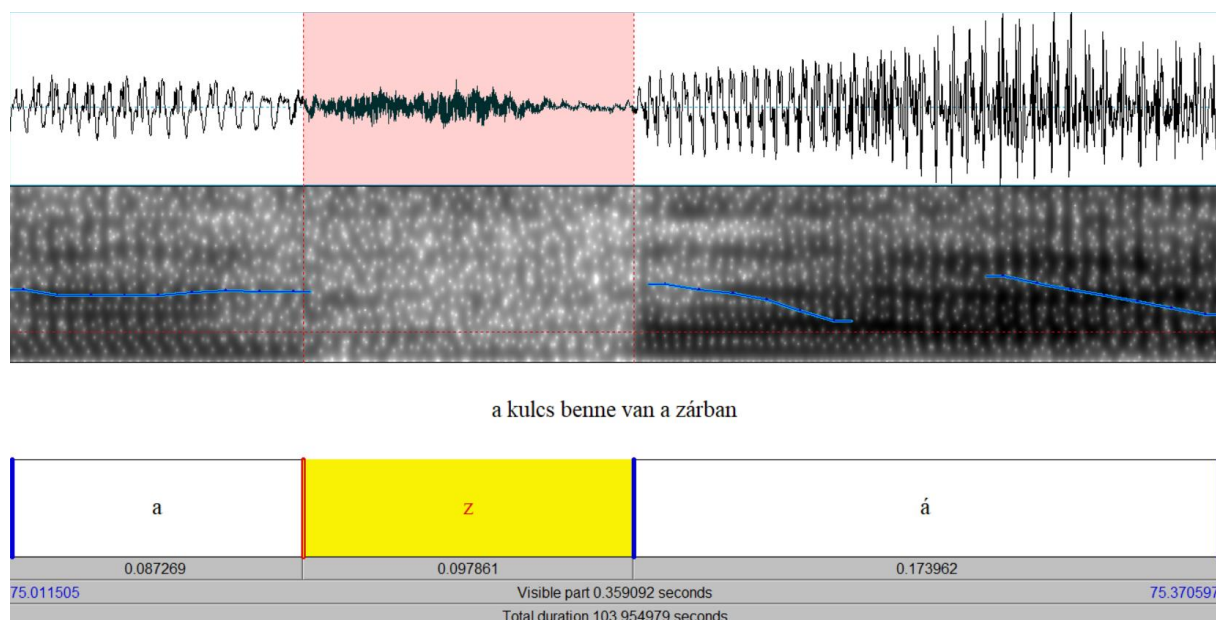
In this investigation, I only measure the duration of consonants that function as derived onsets or canonical onsets – these are conditions (1) and (2) in the study of Fougeron et al. (2003) –, and the duration of vowels preceding (V1) and following (V2) the consonants in these contexts. In other words, instead of triplets, I compare only two conditions, and although the

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[13] More precisely, Fougeron et al. (2003: 2259) found that the consonant in context (1) was shorter in the case of all informants but two, and this consonant was shorter than those in contexts (2) or (3) in the case of three informants, and shorter than consonants in context (2) in the case of three other participants. Significant difference between consonants in contexts (2) and (3) was found in the case of one informant only.

[14] The effect of the condition was proved to be significant in the case of five out of the eight informants: in the case of three speakers, V1 is significantly longer in conditions (1) and (2) than in (3); there is a difference only between contexts (1) and (3) in the case of one participant; and between conditions (2) and (3) in the case of another speaker. All in all, no significant distinction was found between contexts (1) and (2) for seven speakers out of eight, but V1 in context (2) is significantly longer than in condition (3) for half of the informants (Fougeron et al. 2003: 2258–2259).

authors cited above did not find a connection between the context and the duration of V2, I decided to include in the analysis this aspect, as well, since results in Hungarian may differ from those in French. On the other hand, it must be noted that the V1-C-V2 contexts do not appear in all of the sentences, as in, for example, *mit akar tenni* ('what he wants to do') / *mit akart enni* ('what he wanted to eat'), V1 cannot be measured, since the consonant in possible linking position is preceded by another consonant and not a vowel.

I have segmented and annotated the given consonants (C) and the neighboring vowels (V1 and V2) in the program *Praat*, that is, I have separated the analyzed sounds from the rest of the utterance to be able to measure their duration, and I have also labeled or transcribed these segments using the orthographical characters of Hungarian (Gósy & Menyhárt 2003, as cited in Bóna 2007). Segmentation has been carried out based on the perception of the sounds, their acoustic pattern on the spectrogram and their waveforms. Figure 1 shows an example of segmentation and annotation.

a kulcs benne van a zárban

a	z	á
0.087269	0.097861	0.173962

75.011505	Visible part 0.359092 seconds	75.370597
	Total duration 103.954979 seconds	

Figure 1. Segmentation and annotation in Praat. *The illustrated sentence means 'the key is in the lock'.*
(own image)

It should also be noted that voiceless stops or plosives (in this corpus, /t/ and /k/) have influenced the segmentation. As the vocal cords do not produce vibration when pronouncing these voiceless sounds, no "energy" can be found on the spectrogram during the occlusion, and only a mute, silent phase can be perceived (Hualde et al. 2010; Hualde 2014; Neuberger & Gráczi 2013; Quilis 1999). Even if it is not a pause but part of the articulation process, we might treat this phase as such because of the lack of acoustic representation; this misinterpretation happens especially in the case of a discourse, after a silent pause (Bóna 2007; Gósy 2004; Markó 2005; Tóth & Kocsor 2003: 137). Although in this study I do not analyze discourses, it is important to measure the exact duration of the sounds, including the silent occlusion phase. For this reason, based on the results obtained by Neuberger and Gráczi (2013), I have determined the starting point of the segments starting with a voiceless stop 30 milliseconds earlier than originally perceived. The authors analyzed the duration of the plosion of the consonant /t/ in

different contexts in the oral production of ten Hungarian informants. The mean duration they measured was between 21,4 and 31,3 milliseconds (Neuberger & Gráczi 2013: 166, Table 2). In this analysis, this modification has been carried out when an at least 30 milliseconds long pause has been perceived before the plosives.

Finally, it should be highlighted that as this investigation is based on the comparison of durations in two different conditions, I have focused only on the analysis of those sounds (consonants and their neighboring vowels) that have a counterpart in the contrasting context. For example, even if in the sentence *Az űrben is összetartunk* ('We hang together even in the space.') there are several possible contexts of linking (see highlighted consonants), I have only taken into account that of the sound [z], since this is the only consonant the duration of which can be compared with that of an identical consonant in a similar sentence, but in different context (see *A zűrben is összetartunk*, 'We hang together even in trouble.').

After analyzing the audio files with help of *Praat*, the durational data have been collected and stored in separate tables in Word document (*.docx* format). In each table, I have compared the length of the analyzed sounds (V1, C, V2) in pairs (or triplets) of sentences. The results are to be presented in the following section.

4　Results

In this chapter, I am going to present the results on resyllabification obtained after the acoustic analysis of twenty-one Hungarian sentences. Note that only general tendencies can be deduced since so far no statistical analysis has been carried out in this project. As already mentioned, the numerical data have been stored in separate tables, based on the types or groups of the sentences. For example, the members of the different pair sentences belong to the same table to facilitate the comparison of the durations of the different sounds. Such comparison has been carried out via a two-way, binary distinction, that is, when comparing the sounds, one has been labelled as shorter in duration, while its counterpart as longer. I have also color-coded this comparison, as shown in Table 2. Shorter segments have been highlighted in green and the longer counterpart in yellow.

Sentences 11-12	A zűrben is összetartunk. ('We hang together even in trouble.')			Az űrben is összetartunk. ('We hang together even in the space.')		
Informant	V1 (ms)	C (ms)	V2 (ms)	V1 (ms)	C (ms)	V2 (ms)
01	109,36	87,13	163,11	105,57	90,9	125,3
02	134,65	140,95	140,3	127,27	72,99	210,69
03	65,26	83,63	144,24	72,29	92,53	170,13
05	72,75	93,33	126,93	76,47	94,15	163,8
06	81,55	125,64	128,41	59,42	109,84	162,99
07	74,54	71,88	124,92	53,85	74,56	104,02

Table 2. A fragment of the comparison of duration via color-coding. The abbreviation ms *stands for milliseconds.*

After this introductory section, the results are going to be presented according to the three hypotheses I formulated at the beginning of this investigation. However, unlike the way it is shown in Table 2, in this paper, only mean values will be displayed, without paying attention to individual differences, so that it would be easier to see general tendencies.

4.1　First hypothesis

As first hypothesis, I have estimated that resyllabification is applied by the informants of this study. As this supposition refers to the possible existence of the phenomenon in Hungarian in general, in Table 3, we see all the sentences of the corpus (with their English translation) in which possible resyllabification can be measured with the help of Fougeron et al.'s (2003) method. In columns "Shorter V1 / C / V2", the proportion and number of those informants is given who have pronounced the particular sounds shorter in linking context than in its counterpart. In other words, durations in resyllabification condition (such as *az árban*) have been compared with the duration of the sounds in expressions without linking (e.g. *a zár*).

	Sentence	English translation	Shorter V1	Shorter C	Shorter V2
a.	A**z** űrben is összetartunk.	We hang together even in the space.	69,23%, n=9	61,54%, n=8 **(38,46%, n=5)**	30,77%, n=4
b.	A kulcs benne van a**z** árban?	Is the key included in the price?	38,46%, n=5	69,23%, n=9 **(53,85%, n=7)**	23,08%, n=3
c.	A**z** árban benne van a kulcs?	Is the key included in the price?	23,08%, n=3	61,54%, n=8 **(38,46%, n=5)**	23,08%, n=3
d.	E**gy** ér ha elpattan, komoly gondot tud okozni.	A vein, when it bursts, can cause a serious problem.	61,54%, n=8	53,85%, n=7 **(38,46%, n=5)**	15,38%, n=2
e.	Nem tudom, mit akar**t** enni.	I don't know what he wanted to eat.	-	**30,77%, n=4**	46,15%, n=6
f.	Nem tudom, mit akar**t** inni.	I don't know what he wanted to drink.	-	**69,23%, n=9**	69,23%, n=9
g.	Miér**t** akarod ennyire?	Why do you want it this much?	-	**69,23%, n=9**	46,15%, n=6
h.	E**gy gy**ár sokat elmond a készülő termékről.	A factory tells you much about the product in preparation.	15,38%, n=2	46,15, n=6 **(30,77, n=4)**	84,62%, n=11

Table 3. Proportion of shorter sounds and applied resyllabification ("Shorter C").

As it has already been mentioned (see Section 3.2), Fougeron and his colleagues (2003) concluded that the duration of the consonant can predict if linking has been applied: this sound was proved to be significantly shorter when it underwent resyllabification as a word-final consonant (derived onset) than when it stood at the beginning of a word (canonical onset). For this reason, this is the tendency we can rely on in this study, as well. However, it must be noted that in column "Shorter C" in Table 3, two values are depicted in the case of sentences *a.*, *b.*, *c.*, *d.* and *h*. This is because a pause, possibly a glottal stop following the lexical boundary has been perceived in the speech of a few informants in these contexts. These phenomena can impede resyllabification (Vroomen & de Gelder 1999; Lipski 2007; Michnowicz & Kagan 2016; Trawick & Michnowicz 2019), and for this reason, only the ratios highlighted in bold in Table 3 can be considered as cases in which resyllabification has occurred. In the light of all this, the application of linking in this corpus oscillates between 30,77–69,23%, meaning that at least one third of the informants of this investigation applied the phenomenon in all of the studied contexts, confirming the first hypothesis of this study.

Still, it is worth taking a look at the possible explanations of the appearance of pauses or glottal stops in resyllabification contexts. Firstly, the semantic conditions of the given expressions may have had an influence on the way the informants pronounced the sentences.

As in the case of the sentence pair *A kulcs benne van a zárban?* ('Is the key in the lock?') and *A kulcs benne van az árban?* ('Is the key included in the price?'), no informant produced a pause in the sentence with a canonical onset (that is, without possible linking), while two people did that in its pair (see Table 3, sentence *b.*).[15] It is possible that the speakers found less natural the combination of *kulcs* ('key') with the expression *az árban* ('in the price') than with *a zárban* ('in the lock'), and because of this, perhaps they wanted to emphasize and make clear this unusual expression. Indeed, as I have already mentioned (Section 2), the use of contrastive pairs has received criticism (Mattys et al. 2005; Lahoz-Bengoechea & Jiménez-Bravo, in press). Another possible reason why the informants produced a pause or a glottal stop is that they intended to avoid ambiguity. That is to say, it is probable that during the reading process, the participants noticed the similarities between the members of the sentence pairs, and therefore, certain speakers produced a pause (or a glottal stop) after the consonant to contrast or show the difference between the ambiguous or similar contexts. However, the results do not support this supposition in the case of every sentence.

On the other hand, besides the question of pauses or glottal stops, there are several further factors that should be taken into consideration when analyzing the obtained data. For example, the tendency of pronouncing resyllabified consonants significantly shorter than similar sounds without linking has been proved only in the case of plosives (Fougeron et al. 2003). The results of this investigation do not show a parallel with the data presented by the above cited study: resyllabification appeared with a frequency of 38,46-53,85% in the case of fricatives (sentences *a-c.*), and of 30,77–69,23% when the linking context contained a plosive (sentences *d-h.*). Nevertheless, it must be noted that I have not measured significant difference between the durations of derived onsets and canonical onsets but I have treated as resyllabification every case in which the derived onset was pronounced shorter than the canonical onset, no matter how small the difference was.

Similarly, a few particular cases (sentences or sentence pairs) should be elaborated on, as well, since their conditions may have had an influence on the obtained results. Firstly, in sentence *g.* (see Table 3), the derived onset context (*Miért akarod…*) has been compared with a canonical onset containing a consonant cluster across word boundary (*Miért takarod…*). Although the consonant in question is a plosive ([t]), and therefore, it cannot be prolonged, unlike a fricative (Hualde 2014), it is possible that this difference has had an influence on the results. It is also important to highlight that in sentence *d.* of Table 3 (***Egy ér** ha elpattan, komoly gondot tud okozni*, 'A vein, when it bursts, can cause a serious problem.'), and in its counterpart (***E gyé**r szakáll semmit sem ér*, 'This sparse beard is worth nothing.'), the sounds V1, C and V2 are identical, but their comparison cannot be absolute since they appear in different syntactical structure (*article + noun* versus *determiner*[16] *+ noun*), which may have had an effect on their articulation. The above mentioned factors hold also for the sentence beginning with *Egy gyár…* (sentence *h.*). However, in the possible linking context we find a consonant cluster, while in the canonical onset position not (*E gyár…*). On the other hand, again, the compared sounds do not form the same structure (*article + noun* versus *determiner + noun*). For this reason, the comparison of the two contexts cannot be accepted without reservation, either.

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[15] The same phenomenon has been noticed in *Az árban / A zárban benne van a kulcs?*; the only difference between the two pairs is their word order.

[16] It is also worth mentioning, that word *e* is a less common form of the demonstrative pronoun *ez* ('this'). This aspect may have had an influence on the informants, as well.

We should also have a look at sentences *e.* and *f.* (*Nem tudom, mit akart enni.* and *Nem tudom, mit akart inni.*'), which form a triplet with the sentence *Nem tudom, mit akar tenni* ('I don't know what he wants to do.'). In other words, the two resyllabification contexts have been compared with the same canonical onset, meaning that in one case, the analyzed V2 sounds were not identical. Based on this difference, it is interesting to see that in sentence *e.* (*akart enni*), linking occurred only in the 30,77% of the cases, while in *f.* (*akart inni*), this ratio is 69,23%. Besides the vowel quality, a possible explanation of this phenomenon may be the fact that since the sentence containing *akart inni* does not form a totally ambiguous sentence pair with any other member of the corpus, the informants may not have been eager to highlight potential contrast with another sentences, did not pay attention to careful articulation, and therefore, they pronounced the sounds shorter in this context.

Finally, we must remark on the vowel durations. According to results found by Fougeron et al. (2003), difference was found only between V1 before a derived onset or a canonical onset and V1 within a word – a context I have not measured in this study. Regarding the V2 sound, it does not seem to be affected by its condition but it is shorter when the resyllabified consonant is a stop and longer after a liquid, compared to canonical onset position (Fougeron et al. 2003). The data obtained in this project do not appear to support these findings, nor do they suggest any pattern. Note, however, that in the corpus of this investigation no liquids appear in the examined positions, and the authors did not find obvious tendencies concerning vowels, either.

4.2   Second hypothesis

According to the second hypothesis of this study, linking appears more frequently in the case of expressions that contain a function word. For this reason, the following table demonstrates the results based on the word types the resyllabification contexts hold. Firstly, those sentences are listed (and their English translation) which have been suitable for measuring the appearance of resyllabification. In column "Word types", it is seen if function words (FW) and/or content words (CW) appear in the analyzed expressions. Finally, the proportion of occurred linking is represented. In this case, the ratios refer to the proportion of derived onset consonants of a shorter duration, comparted to the same sounds in canonical onset position (see Fougeron et al. 2003), without a pause or a glottal stop.

	Sentence	**English translation**	**Word types**	**Resyllabification**
a.	Az űrben is összetartunk.	We hang together even in the space.	FW-CW	38,46%, n=5
b.	A kulcs benne van az árban?	Is the key included in the price?	FW-CW	53,85%, n=7
c.	Az árban benne van a kulcs?	Is the key included in the price?	FW-CW	38,46%, n=5
d.	Egy ér ha elpattan, komoly gondot tud okozni.	A vein, when it bursts, can cause a serious problem.	FW-CW	38,46%, n=5
e.	Nem tudom, mit akart enni.	I don't know what he wanted to eat.	CW-CW	30,77%, n=4
f.	Nem tudom, mit akart inni.	I don't know what he wanted to drink.	CW-CW	69,23%, n=9
g.	Miért akarod ennyire?	Why do you want it this much?	CW-CW	69,23%, n=9
h.	Egy gyár sokat elmond a készülő termékről.	A factory tells you much about the product in preparation.	FW-CW	30,77%, n=4

Table 4. The application of resyllabification based on word types.

Based on the data presented in Table 4, the second hypothesis is refutable, since no obvious tendency can be found concerning the word types the resyllabification context include. The proportion of applied resyllabification in expressions with a function word varies between 30,77% and 53,85%. Nevertheless, the two limit values in the case of the combination *content word + content word* are 30,77% and 69,23%. This means that the sentences of this second type (*e-f.* in Table 4) have shown bigger differences in terms of the frequency of linking. However, it must be noted that the *function word + content word* conditions contain the fricative [z] or the plosive [ɟ] (<gy>, according to the Hungarian orthography) as a possible derived onset, while all the *content word + content word* conditions have the plosive [t] as a derived onset. Since the analyzed consonants are not identical, it is difficult to carry out the absolute comparison of the two conditions.

4.3 Third hypothesis

As third hypothesis, I have supposed that linking occurs with a higher frequency in sentence-initial position, when it appears in the topic, than at the end of the sentence, functioning as comment. In Table 5, besides the proportion of occurred linking, the position (initial or final) and the information structure (topic or comment) of the resyllabification contexts are presented. To make the comparison easier, only simple sentences are analyzed in this case.

	Sentence	English translation	Position / information str.	Resyllabification
(1)	A**z** űrben is összetartunk.	We hang together even in the space.	initial / comment	38,46%, n=5
(2)	A kulcs benne van a**z** árban?	Is the key included in the price?	final / comment	53,85%, n=7
(3)	A**z** árban benne van a kulcs?	Is the key included in the price?	initial / topic	38,46%, n=5
(4)	Mié**rt** akarod ennyire?	Why do you want it this much?	initial / focus, comment (*miért*)[17]	69,23%, n=9
(5)	E**gy gy**ár sokat elmond a készülő termékről.	A factory tells you much about the product in preparation.	initial / topic	30,77%, n=4

Table 5. Application resyllabification according to position and information structure.

As it can be seen in Table 5, the reduced number of sentences, has resulted in an unbalanced corpus, meaning that in only sentence (2) can we find resyllabification context in sentence-final position. Rather, it is worth focusing on the topic-comment distinction, which suggests that linking is more frequent in the comment (38–46–69,23%), the focus showing the highest ratio, than in the topic (30,77–38,46%). It is important to highlight that except for their word order, sentences (2) and (3) are identical, making their comparison easier: these two sentences also support the likelihood of more cases of linking appearing in the comment. All in all, this tendency does not confirm the formulated hypothesis. However, no general trends can be deduced on the basis of five sentences.

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[17] In sentence (4), only the word *miért* ('why') is in focus position, which is part of the comment of the sentence.

Finally, there are two sentence pairs that have not been mentioned so far. This is because these sentences do not contain a derived onset – canonical onset contrast, making it impossible to measure the proportion of resyllabification with the help of the methods presented by Fougeron et al. (2003). Still, these sentences can be used to examine the possible role of position. In Table 6, these two sentence pairs are presented along with their English translation, the position and information structure the analyzed consonants appear in, and the duration of these sounds in the different sentences (in brackets, we see the standard deviations).

	Sentence	English translation	Position / information str.	C duration
(1)	E**gy** alma van a fán.	There's an apple in the tree.	initial / comment	74,54 ms (14)
(2)	A fán e**gy** alma van.		middle / comment	77,39 ms (11,75)
(3)	E**gy** körte van a fán.[18]	There's a pear in the tree.	initial / comment	74,13 ms (19,65)
(4)	A fán e**gy** körte van.		middle / comment	76,18 ms (20,46)

Table 6. The duration of the consonant in sentence pairs without derived onset – canonical onset contrast, based on position and information structure.

As Table 6 illustrates all the measured consonants appear in the comment of the sentences, therefore, only the position (initial or middle) can be counted on and not the information structure. When it comes to consonant duration, there is a visible pattern showing that these sounds have been pronounced longer in the middle of the sentence than at the beginning, both in a linking context (*egy alma*, 'an apple') and in an expression without resyllabification (*egy körte*, 'a pear'). However, it should be stressed that the differences based on position are of 2,05–2,85 milliseconds only, and the values show massive individual differences (standard deviation). It is also important to point out that the results may have been influenced by the fact that the two sentence pairs can be interpreted in different ways. More precisely, there are words that can be highlighted or that can have a contrastive role, which may imply different intonation or local articulation rate. For example, the words *alma* ('alma') and *körte* ('pear') can be emphasized, saying 'In the three, there's an apple / a pear and not any other kind of fruit'. Also, the word *egy* ('a/an' or 'one') can be interpreted as both as an article and as a numeral, and in the latter case, there may be a contrastive meaning: 'In the tree, there's one apple/pear and not more'. The possible effects of this phenomenon should be investigated more in detail in the future.

5   Discussion and conclusions

In this pilot study, I have examined the possible existence of resyllabification (regarding its phonetic aspects) in the Hungarian language, with the help of an oral corpus, based on the comparison of durational values of derived onsets (resyllabified consonants) and canonical onsets without possible linking (Fougeron et al. 2003). Based on the results of this paper, resyllabification occurred in the 30,77-69,23% of the cases. This means that linking can indeed appear in the language, even though the obtained data do not suggest an obvious pattern. Apart from the general occurrence of the phenomenon, two possible influential factors have been

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[18]   In sentences (3) and (4), the [ɟ] (<gy>) sounds are highlighted because they are the analyzed consonants, even though they are not in resyllabification context.

examined, as well: the word types the linking contexts contain (content words or function words), and the position (initial, middle or final) and information structure (part of the topic or part of the comment) of the analyzed expressions. While word types have not shown an effect on the application of resyllabification, results have suggested that the phenomenon is more frequent in the comment than in the topic of the sentences. Interestingly, this tendency contradicts to the previous results in this field, which showed fewer cases of perceived linking in the topic (Kovács 2023). A possible explanation of this may be that the topic is an entity "remaining in the center of attention for a longer period of time, having a central role in the linguistically mapped event" (Tolcsvai 2008: 471), because of which articulation may be more careful, producing a decreased number of resyllabification cases.

However, there are several general aspects that should be taken into consideration, because they may have had an influence on the results of this investigation. For example, in the case of sentence pairs, the order of the sentences could affect the way the informants read the sentences. In other words, they may have remembered having read a similar sentence, and therefore, they intended to highlight and differentiate the quasi-ambiguous expressions, such as in the case of *az árban* ('in the price') and *a zárban* ('in the lock'). Although in the six ambiguous sentence pairs (containing very similar expressions), the proportion of those pairs in which the sentence with a linking context was read first is exactly 50%, it is worth examining this factor in the future. Similarly, the number of syllables of a given sentence can have an influence on the pronunciation: according to the literature, articulation rate is higher in units (such as words or utterances) of more syllables than in shorter ones (cf. Hegedűs 1957; Dankovičová 1999; Sjons & Hörberg 2016). In the corpus of this study, out of the sentences I have analyzed (excluding the two distractors), twelve consist of eight syllables, the rest have six (n=4), thirteen (n=2) or fourteen (n=1) syllables. In this sense, the corpus is unbalanced, still, this aspect may be examined in the future. Finally, it must be mentioned that in the majority of the sentences, resyllabification contexts (and their counterparts) follow the basic syllable types (CV, V, VC, CVC) of Hungarian (Törkenczy 2006: 37-38), but there are two sentence pairs (more precisely, a sentence pair and a triplet) in which the derived onset is originally part of a complex coda: *Miért akarod…* ('Why do you want…') and *Nem tudom, mit akart enni/inni* ('I don't know what he wanted to eat/drink'). Two of these sentences have shown the highest ratios of occurred resyllabification (69,23% both), which may imply that this factor also had an effect on the results.

As it has already been pointed out, this is a pilot study aiming to examine the possible appearance of resyllabification in Hungarian. Although the obtained results let us draw conclusions, there are further projects to be carried out in this topic in the future. Firstly, this investigation should be repeated with more informants to be able to see clearer patterns. In this, way, the data could be verified by statistical methods, and it would be possible to analyze the possible effects of age and individual differences, as well. Also, the twenty-one sentences used as the corpus of this paper may be extended. For example, besides the expressions *e gyár* ('this factory') and *egy gyár* ('a factory'), a third one, *egy ár* ('a price'), with a possible linking context, could be added, forming a triplet with the other two. I have already analyzed the expressions *az árban* ('in the price') and *a zárban* ('in the lock') in sentence-initial and -final position (as a topic and as a comment, respectively), but these contexts could appear in other positions, as well. For example, possible sentences would be *A kulcs az árban / a zárban benne van?* or *Benne van az árban / a zárban a kulcs?*, having the contexts in question in middle position. In addition, these expressions can be placed in a focus position, as in the sentence *Az*

árban / A zárban van benne a kulcs? ('Is the key included in the price / lock [and not somewhere else]?').

Aside from the corpus, the methodology for measuring linking can be further expanded. As the methods used in this study (cf. Fougeron et al. 2003) are based on durational data, it seems to be obvious that resyllabification can be analyzed in connection with speech rate or articulation rate, especially because Gabriel and his colleagues (2018) also found a relation between these phenomena. Furthermore, an all-embracing prosodic analysis should be carried out, including intonation and stress patterns, because focus and contrastive topic, for example, are or can be marked by prosodic phenomena in Hungarian (Gécseg 2001; Surányi & Pintér 2020; Mády 2021). Another, more detailed acoustic analysis could also be useful, because, as Fougeron et al. (2003) states based on several studies (cf. Dumay et al. 1999 or Gaskell et al. 2002, for instance), the acoustic differentiation of a derived onset and a canonical onset shows if resyllabification is total or only partial in a language. Finally, the pauses that have been perceived in resyllabification contexts in this investigation can be explored. For example, measuring their duration can be useful for drawing further conclusions, but principally, it is important to distinguish pauses from glottal stops with the help of an acoustic analysis. It may be a key factor if we consider the fact that pauses can have only a physiological role (Gósy 2004), while glottal stops may have been applied consciously by the informants to differentiate ambiguous or similar contexts, showing the position of the lexical boundary.

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