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Features of Connected Speech in French-accented English

Jevy souvislé řeči v angličtině francouzských mluvčích



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Declaration of Authorship

Hereby I declare that this BA thesis is my own original work and that all sources and literature were properly cited. This thesis was not used for acquisition of any other university degree.

Prague, May 19, 2024

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Abstract and Key Words

This study investigates the occurrence of connected speech processes with an emphasis on linking in the French-accented pronunciation of English. In the theoretical section, a description of connected speech processes and the various sociolinguistic, linguistic, phonetic, and phonological factors influencing them will be provided. Furthermore, the reader will be presented with a brief examination of the relation between L2/L3 acquisition and connected speech. The empirical part of this study includes an analysis of recordings of 14 native French speakers of English. Each recording consists of two parts: the reading of a prepared text and a spontaneous unprepared conversation. The results of this research, which concentrate on general and individual tendencies indicate that French speakers are generally more likely to link than to glottalize words during connected speech. On the other hand, the occurrence of other connected speech processes (elision, assimilation) is much more varied. Different aspects of speech production have been considered in the span of this analysis, such as semantic word class, degree of word stress and final sounds distribution.

Key words: French, English, connected speech, linking, liaison, elision, assimilation, L2/L3 acquisition, rhythm, fluency.

Abstrakt a klíčová slova

Následující studie se zabývá jevy souvislé řeči ve výslovnosti angličtiny rodilými francouzskými mluvčími, přičemž důraz je kladen na vázání. Teoretická část práce se zaměří na popis jevů souvislé řeči a bude se věnovat popisu různých sociolingvistických, lingvistických, fonetických a fonologických faktorů, které je ovlivňují. Dále bude čtenář stručně seznámen se vztahem mezi osvojováním fonologie cizího jazyka a souvislou řečí. V experimentální části studie bude provedena analýza nahrávek anglického projevu 14 rodilých mluvčích francouzštiny. Každá z těchto nahrávek se skládá ze dvou částí. První část tvoří čtení připraveného textu a druhou spontánní rozhovor. Výsledky výzkumu této studie, které se zaměřují jak na obecné, tak na individuální tendence k vázání či glotalizaci, naznačují, že francouzští mluvčí obecně častěji během souvislé řeči slova váží, než mezi ně vkládají ráz. Výskyt ostatních zkoumaných jevů vázané řeči (elize a asimilace) zaznamenal vyšší variabilitu. Během analýzy byly zohledněny různé aspekty ovlivňující produkci řeči, například sémantická třída slov, míra přízvučnosti slov či distribuce koncových hlásek.

Klíčová slova: francouzština, angličtina, souvislá řeč, vázání v angličtině, vázání ve francouzštině, elize, asimilace, osvojování fonologie cizího jazyka, rytmus, plynulost.

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1. Introduction

The main subject of my bachelor's thesis is the prominence of connected speech processes in French-accented English with an emphasis on linking. Another possible interest, which is not however the main focus of this research, is the influence of the familiarity with a third language (Czech) on second language (English) acquisition. The choice of this topic is influenced by my personal background, as I am a true bilingual Czech and French native speaker, and my studies are focused on the English language and literature and French translation and interpretation. In the light of these circumstances, I am very much interested in the level of language interference during foreign language pronunciation and acquisition.

The theoretical part of this study will focus on a detailed description of the phenomenon of connected speech processes and their role in connected speech. Inevitably, in the span of this study this subject will require a further examination and a synthesis of the factors which play an important role in their production and in language production in general. Regarding this matter, a slightly extended background will be provided in order for the reader to gain a deeper understanding of the subject.

In this section of the study, the economy principle in speech production along with other different factors influencing both native and non-native English speakers will be discussed. Specifically, I will present an overview of sociolinguistic, linguistic, phonetic and phonological factors tied to connected speech, such as speech style, speech fluency (and its perception) along with the notion of rhythm in languages. Individual connected speech processes will be described as well, with an emphasis on English linking, including its impact on language learning, and French liaison. The other different connected speech processes which will be examined are elision and assimilation in English and their parallel principles in French. The last theoretical section will briefly concentrate on the relation between second (or third) language acquisition and its relation to connected speech.

In the empirical part of the research, the results of recordings of 14 French speakers will be analysed. These recordings include a text reading and a spontaneous conversation for each individual speaker. The analysis will concentrate on individual and general tendencies of connected speech production with regard to different aspects influencing linking and other connected speech processes, such as semantic word class, word stress and final sound distribution.

2. Connected Speech Processes

To offer the reader a proper and understandable analysis of certain pronunciation features in French-accented English, it is imperative to focus first on connected speech processes (CSPs). In this chapter of the study, I will briefly describe what is meant by the pronunciation of connected speech and in separate sections I will describe in more detail the individual processes of connected speech that will be of interest in this study.

Connected speech, as the name suggests, occurs when a speaker of a language pronounces words not separately but together with other words which follow and precede each other. Briefly speaking, we talk about connected speech in the context of pronunciation in everyday conversation or for instance while reading a text aloud. As Alameen and Levis (2015) put it, connected speech occurs in “words spoken in context” (p. 159). This leads to some specific changes which wouldn’t occur during an isolated pronunciation of words in their dictionary or citation form (Alameen & Levis, 2015, p. 159). These changes in pronunciation between words are what we call connected speech processes, and we distinguish several types of such phenomena. As the classification of CSPs is widely varied among specialists, Alameen and Levis (2015) propose a division into six main categories (linking, deletion, insertion, modification, reduction and multiple) which are then further subdivided (Alameen & Levis, 2015, p. 162). For the purposes of this study, only the category of linking and the subcategories of elision (from the deletion category) and assimilation (modification category) will be discussed in closer detail.

There are many factors that contribute to changes in pronunciation between words during connected speech. Alameen and Levis (2015) mention several such possible reasons for the occurrence of CSPs:

Once a word is spoken next to other words, the way it is pronounced is subject to a wide variety of processes. The changes may derive from linguistic context (e.g., *can be* said as *cam be*), from speech rate (e.g., *tomorrow’s temperature runs from 40 in the morning to 90 at midday*, in which *temperature* may be said as *tɛmp.ɪətʃə*, *tɛmpətʃə*, or *tɛmtʃə*, depending on speed of speech), or from register (e.g., *I don’t know* spoken with almost indistinct vowels and consonants but a distinctive intonation in very casual speech). When these conditioning factors occur together in normal spoken discourse, the changes to citation forms can become cumulative and dramatic. (p. 159)

Even though in some instances CSPs can influence the intelligibility of speech, connected speech itself is a common phenomenon and isn't necessarily to be considered inadequate, on the contrary it occurs naturally; probably in most languages (Alameen & Levis, 2015, p. 160). Further development of this thought, which might prove relevant to this study, is provided by Alameen and Levis (2015) who believe that "while these features of speech are likely to be universal, they are also language specific in how they are realized" (p. 171).

Now that the basis for understanding connected speech processes has been established, in the remainder of this chapter I will focus on the different factors influencing CSPs but also on fluency and rhythm and their relation to connected speech. Moreover, in the last subsections of this chapter, linking in English and in French along with the influence of English linking on second language acquisition will be discussed.

2.1. Factors

Bearing in mind the previously made observations, it is important to note that the factors influencing CSPs will differ in the speech of native speakers and non-native speakers of English (e.g. learners of English as a second language – L2). Nevertheless, a common factor influencing connected speech processes in both native and non-native speakers of English would certainly be the occurrence of the economy principle, which can essentially be summed up as a feature of communication reflecting the natural tendency that speakers have to "simplify" their pronunciation in order to produce the least effort possible in everyday communication while maintaining maximum efficiency. This means that they still need to be understood even though CSPs or other speech changes occur. Alameen and Levis (2015) mention the economy principle (or "economy law") as being one of the main functions of CSPs in English, while the primary function is according to Clark and Yallo (1995, as cited in Alameen and Levis, 2015) - "to promote the regularity of English rhythm by compressing syllables between stressed elements and facilitating their articulation so that regular running speech timing can be maintained" (p. 161). However, I feel it is necessary to point out that it is known today that no regularity in the timing of speech events exists and that "modelling the orderly use of time in the different layers of structure that make up speech is an immensely challenging task" (Nolan & Jeon, 2014, p. 1).

The observations about the economy principle strongly contributing to changes happening in connected speech are further supported by the writings of Shockey (2003) where "fast speech rules" are mentioned in relation to what Shockey calls casual speech processes (p. 11). According to Shockey (2003, p. 11) "results are not yet conclusive about whether increase in speech rate increases the amount of phonological reduction," we also learn that speech rate

itself is not the only contributing factor to connected speech as Shockey (1987, as cited in Shockey, 2003) believes that “fast rate is a sufficient cause for reduction, but not a necessary one” (p. 17). The occurrence of connected speech is strongly linked to cognitive factors as well, as we can observe it not only in fast casual conversation but also during slower and prepared speech (Shockey, 2003, p. 12.). Even though Shockey (2003, p. 13) dismisses “fast speech” as being the sole cause of change during CSPs, both of these influences – time rate impacting the vocal tract to a certain degree together with language specific habits of pronunciation (Shockey, 2003, p. 13) – could be considered as being included the principle of economy impacting CSPs. Succinctly, we have to take into consideration both cognitive and social properties.

Some details regarding the relevance of the speed of speech and its correlation to CSPs have already been discussed, however this topic needs subsequent development. To gain a more complex understanding of CSPs, it is imperative to inquire more consequently into the matter as to why according to Shockey (2003) “cognitive factors are more important than inertia” (p. 11) in the production of connected speech. Shockey (2003) develops this theory by suggesting that “the types of reduction which we have been looking at also occur in slow speech: if you say ‘eggs and bacon’ slowly, you will probably still pronounce ‘and’ as [m], because it is conventional – that is, your output is being determined by habit rather than by speed or inertia” (p. 13). It needs to be specified that “inertia” in this specific context is what Shockey (2003) summarizes as the notion that “phonetic undershoot takes place as less time is available for each linguistic unit” (p. 11). Not to cause any confusion, I feel the need to remind the reader that Shockey’s (2003) argumentation against the belief that fast speech is the only factor contributing to the occurrence of connected speech processes is not in contradiction with the relevance of the economy principle in this matter as the economy principle does not equal speed but includes various other motivations and it is inevitably tied to cognitive elements.

To follow up this matter, when describing the importance of cognitive influences on the production of speech, Shockey (2003) stresses that people have a life-long experience with communication (which is the primary goal of speech) and therefore they shape their utterances according to specific communicational contexts in which transmitting a certain message is always the main aim. It therefore would not “seem likely that anyone would run their vocal tract so fast that not all of the sounds in a message could be executed” (p. 11). Shockey (2003) finds her reflexions also on the fact that “the vocal tract is a very complicated device, and different parts of it can move simultaneously. The elements which comprise the vocal tract are of different sizes and shapes and have different degrees of mobility. The speech units which are

being produced are very different from each other” (p. 12). In this context the author believes it would be misguided to perceive the vocal tract as an ordinary machine which by working at a higher speed only “has to cut corners, so the gestures get less and less extreme” (p. 11) in order to cause reductions.

Additionally, Shockey (2003) suggests that we have to bear in mind that we have the possible capacity to some extent consciously influence the procedures occurring during the production of CSPs. By these procedures (or mechanisms) the authors means that “there are very distinct patterns of reduction in connected speech, related to type of sound and place of occurrence,” which leads to the realization that “we find specific types of sounds being under-executed, in predictable locations. And these ‘shortcuts’ are different from language to language as well” (p. 12). These observations suggest that CSPs are present in most languages under different forms and they will also inevitably prove to be of critical importance in my analysis, as they suggest that connected speech processes are a predictable feature of connected speech itself. This allows a meticulous examination of such phenomena in accented English. It might have been possible to reason this fact from the introductory part describing connected speech at the beginning of this chapter, however it is notable that now it has been clearly stated.

I propose to allow the reader further insight into this topic by providing a description of the important distinction Shockey (2003) makes between two types of reduction in connected speech: phonetic and phonological. These are tied to the cognitive factor and to the general principle of least effort with maximum efficiency of the economy law in speech production. The effect of the phonetic reduction which to a various degree probably occurs in all languages “can be described in terms of vocal tract inertia: since the topic is known, it is not necessary to make the effort to achieve a maximal pronunciation after the first token” (p. 3) To summarize; reduction might be more prominent during the repetition of a word after it has already been previously said during communication. What is also of interest to this study is the conception the author has of the phonological type of reduction of connected speech This type is not susceptible to a preceding introduction in communication and it includes “language-specific reductions which occur in predictable environments and which appear to be controlled by cognitive mechanisms rather than by physical ones” (p. 3).

Briefly said, this observation suggests that CSPs are also created by linguistic habits characteristic to specific languages, which again might prove relevant when analysing French-accented features of connected speech in English. It also brings us to the realization that if CSPs are common to all languages to a certain degree, they might also prove to be predictable in them.

Therefore, there arises the possibility to compare the predictions of occurrences of CSPs based on the characteristics of separate languages and the interference between the native language of a speaker and his production of English. Regarding the previously discussed matter, I feel the need to specify that the focus of this study is not to create a comparison or distinction between phonetics and phonology or of the specific cognitive factors influencing connected speech. Suffice to say, for the purposes of this thesis (bearing in mind its scope), we might assume that the phonetic and phonological principles as discerned by Shockey (2003) collectively contribute to the production of spoken English. Still, the theory behind these phenomena provides some relevant revelations about connected speech processes and the various approaches to understanding them while also uncovering new possibilities of their analysis.

The fact that CSPs are caused by a wide range of aspects issuing from different fields has already been stated; still, this notion requires an additional brief development. Shockey (2003, p. 14) mentions the not precisely predictable and “dynamic” aspect of non-formal speech. A more extended analysis of this topic would be beyond the scope of this study; however it is of interest to mention some of the linguistic and phonological factors – which Shockey (2003, p. 14) calls “dynamic” – that contribute to connected speech. Shockey (2003) provides a highly consequential explanation of CSPs stating that “conversational speech processes are partially conditioned by the phonetic nature of surrounding segments, but other factors such as stress, timing, syllable structure and higher-level discourse effects play a part in nearly every case” (p. 14).

One of those particular elements listed in the above given description will contribute in great part to my analysis of connected speech features in French-accented English. Specifically, I will be concerned with lexical stress. The reason as to why this feature plays such a highly important role when describing CSPs is owing to the fact that according to Shockey (2003) “position in another linguistic unit can influence the behaviour of a speech segment: stressed syllables show less reduction than unstressed ones, word/syllable-initial consonants show less reduction than word/syllable-final ones” (p. 18). In view of this observation, my study will i.a. focus on the impact of stress on CSPs in French-accented English (most importantly on linking).

As has been observed, connected speech features are influenced by many factors, both sociocultural and linguistic. Additionally, as has been previously hinted at, CSPs differ in formal (e.g., prepared speeches, read texts) and informal speech (everyday conversations), which influence native and non-native speakers alike (Alameen & Levis, 2015, p. 163). The findings mentioned in Alameen and Levis (2015, p.164) relating to the frequency of CSPs prove

that the number of instances of linking does not change significantly between the two styles of speech and between native and non-native speakers of English, despite the fact that previous studies also mentioned in Alameen and Levis (2015, p. 164) have shown that speech tends to be more reduced in casual conversation and that the degree of formality or style influences both native and non-native speakers.

Furthermore, Shockey (2003) provides supplemental valuable insight into this discussion, or rather on the topic of the degree of occurrence of connected speech in formal and informal speech. Initially, the degree of reduction in formal speech is described as possibly being “relatively low” and in informal speech as “likely, given the proper conditioning factors” (Shockey, 2003, p. 17). According to Shockey (2003) the degree of formality “seems to have little effect on unscripted speech.” (p. 17) Shockey states that “one finds the same types and nearly the same number of reductions in formal English as one does in casual speech. Most texts on unselfconscious speech take the commonsense position that as the situation becomes less formal, speech becomes more ‘sloppy’” (Shockey, 2003, p. 17). However, and this reflection might prove to be highly relevant in this study, Brown (1977, as cited in Shockey, 2003) believes that “common sense is misguided in this case” and adds that “there are differences in posture, gesture, and vocabulary choice, but little difference in phonological structure can be found,” and states that “since most connected speech phonology is subconscious, it is not changed in different styles” (p. 17).

Regarding this subject matter, Shockey (2003) explains that “the impression that formal speech is less phonologically reduced than casual speech is probably based on the fact that much of (if not most) formal speech is scripted rather than spontaneous” (p. 17). Furthermore, I must specify that Shockey (2003) is comparing changes happening in speech “which are likely to occur within a sociolect” (p. 17) based on the difference of pronunciation between isolated word forms and their connected forms in spontaneous speech. It is important to add that my study analyses data from recordings of non-native speakers of English (specifically of French speakers) reading a studied text and recordings of spontaneous conversations of those same speakers, therefore all of the above-mentioned findings might be of great interest for the purposes of this study. Nevertheless, let us not digress too notably as the topic of these findings will be further discussed in relation to the analysis of the data gathered in the scope of this study and to the results they indicate.

2.2. Fluency of Speech

As I have now attempted a closer explanation of various factors contributing to connected speech processes, there arises the question as to why it is necessary to dwell in such detail on connected speech in general. What is its specific relation to non-native (precisely, French) pronunciation of English? In the aim of clarifying this enquiry, I feel it necessary to elaborate on the importance of fluency of speech to which connected speech is inherently tied. The reason why this notion is of importance for this study and why it will be examined in this specific section is hence also owing to the fact that our perception of the degree of fluency in native or non-native speakers of English might correlate i.a. with the amount of occurrence of features of connected speech. In this context it is also important to note that “some learners of English as a second or even foreign language achieve a high degree of both general and specifically oral proficiency. Nonetheless, even such highly proficient learners are often rated as less fluent than native speakers” (Šimáčková & Podlipský, 2018).

Due to the fact that the notion of fluency might appear as quite broad, I feel compelled to specify that what will be meant in these circumstances is not necessarily only fluency as perceived by the listener but also its phonetic characteristics which include “aspects of utterance fluency measurable in speech recordings” (Šimáčková & Podlipský, 2018, p. 160). Even in this specific context, we can observe several factors contributing to the perception of fluency, which can be classified in various ways or let's say, from different perspectives. One way of looking at influences on the perception of fluidity is to take into account the time rate of delivery of spoken utterances and the occurrence of hesitations. (Šimáčková & Podlipský, 2018). To briefly summarize: „the temporal and occurrence measures reflect phenomena pervasive throughout spoken utterances: one speaks more or less slowly or fast, with or without pausing or hesitating” (Šimáčková & Podlipský, 2018, p. 161). The authors further develop that “in this sense the speed of delivery and the amount of hesitation have a global influence on the fluency of an utterance, affecting perceivers at any moment of their listening to second-language (L2) speech” (p. 161). In other words, what is in this regard important for any kind of speech to appear fluent is an adequate tempo and reasonable ratio of hesitation noises.

Although these temporal and occurrence measures will not be of utmost importance to this study in relation to its scope and the focus of its analyses, I felt it necessary to provide a more detailed background of the viewpoints on the perception of fluency to allow the reader a proper understanding of this phenomenon. Additionally, what might be considerably valuable to this study is the qualitative approach that includes “phonological processes which lead to

reductions, simplifications, and linking in connected speech” (Hieke, 1984 as cited in Šimáčková & Podlipský, 2018, p. 161). According to Šimáčková and Podlipský (2018) there are rather contradictory findings regarding the subjective assessment of speech fluency of non-native speakers. Some indicate that fluency perception is influenced by non-temporal factors - the most prominent one in this case would be pronunciation, or in other words, accent. On the other hand, other findings report a feeble link between the two. Nevertheless, these opposing results lead to a synthesis provided by the authors who believe that “it is likely that not all deviations from native pronunciation contribute to the perception of dysfluency” (p. 161) and who therefore propose that “the foreign accent features which matter to fluency are the phonetic realizations of segments at word boundaries” (p. 162).

In this context we finally arrive at the breaking point as to why it is of such importance to focus on the notion of fluency in regard to connected speech processes, which are the central point of this chapter. Paraphrasing Šimáčková and Podlipský (2018), the reason for that is that speech fluency and smoothness of speech perception are strongly affected by CSPs occurring between words in continuous speech. This passage concentrating on fluency will therefore allow me to describe in further detail the role that connected speech has in pronunciation of native and non-native speakers alike (with a more prominent focus on accented English). This statement is supported by the authors’ belief that “an experienced non-native speaker of English may produce speech that is continuous, i.e. fluent globally, but not smooth, i.e. dysfluent locally” (p. 162). Based on the previous descriptions, global fluency can be for the purposes of this study briefly summarized as comprising in the factors of time rate and hesitation occurrence, while local fluency consists, simply speaking, of connected speech processes.

A reinforcement of the statement that further comprehension of CSPs is provided by their participation in fluency perception is due to the fact that “in spoken English discourse, segments at boundaries of words which are tied together within a prosodic unit often undergo modifications which simplify the production of segment sequences, making the word boundary less audible and creating the impression of a smooth flow of speech” (Šimáčková & Podlipský, 2018, p. 162). The occurrence of this process - which is called connected speech in the span of this study - is according to Nespor and Vogel (1986, as cited in Šimáčková and Podlipský, 2018) “more likely to take place when the adjacent words do not straddle a strong prosodic boundary. In this way, boundary processes fuse together words that form prosodic chunks” (p. 162). Based on this definition, Šimáčková and Podlipský (2018) then proceed to suggest that in the speech of non-native learners of English, the occurrence of connected speech processes,

which derive from the above-described process, are less prominent or present than in native spoken English. According to the authors, this is, mostly caused by the fact that CSPs specific to English are not natural for non-native speakers; to reproduce them and to be able to render them automatic, they have to learn them in a precise manner. Additionally, as the authors believe, another factor influencing a reduced occurrence of CSPs in foreign-accented English is a slower speech rate common even among advanced learners of English – despite the fact that they have already acquired the knowledge of English specific CSPs.

Nevertheless, the understandability of accented utterances might be less clear even though they are pronounced continuously (rather quickly and without a disproportionate number of hesitations). In this context it is important to note that as Cebrian (2000, as cited in Šimáčková and Podlipský, 2018) suggest, CSPs happen more sporadically in foreign accented English also due to the influence of the native language of the speakers. This might be deriving from the fact that, non-native speakers occasionally pronounce words in an isolated way rather than in a connected way. The uneasy matter of acquiring the use of connected speech processes in foreign-accented English brings us to some discussions and findings from the field of applied linguistics and language learning.

Firstly, it needs to be specified that Munro and Derwing (1995) defined new aspects of the listener's understanding of speech which are central to modern applied linguistics. Briefly said, the authors distinguish between two main concepts: intelligibility and comprehensibility. Intelligibility concentrates on to the extent to which a listener is objectively capable of understanding a speaker's utterance. This implies that intelligibility might be measurable, e.g. by analysing the utterance transcriptions made by listeners (Kennedy & Trofimovich, 2008). the other hand, comprehensibility encompasses the (subjective) difficulties the listener has met while trying to understand a speaker's utterance. Unlike intelligibility, comprehensibility therefore concentrates more on perceptions than on definite understanding (Yazan, 2015). Nevertheless, intelligibility has a significant role in both speech perception and speech production learning (Levis, 2005, as cited in Šimáčková and Podlipský, 2018). Additionally, the authors mention a third term, accentedness, which is the listener's perception of "how closely the pronunciation of an utterance approaches that of a native speaker" (Munro & Derwing, 1995, as cited in Kennedy & Trofimovich, 2008, p. 461).

These distinctions are greatly relevant when considering the importance of studying CSPs in relation to perceived fluency. For instance, rather than to aim for a perfect native-like pronunciation, it is more pragmatic (and easier) for non-native speakers to achieve intelligibility

(Alameen & Levis, 2015). Furthermore, the authors suggest, that “results of the previous studies generally indicate that CSP instruction facilitated learners’ perception of connected speech” (p. 167). However, it must be mentioned that further data concerning “long-term effects of such training on learners’ perceptual accuracy” (p. 167) are sporadic. We also lack studies focusing on the impact of such training on the natural use of CSPs in previously unlearned situations.

In the light of this issue, Alameen and Levis (2015) mention studies which have attempted to fill these gaps in knowledge by focusing especially on the training of linking in the speech of non-native speakers of English. These findings support the above-mentioned statement as “after receiving instruction, the experimental group significantly improved their speech production and developed phonological awareness” (p. 169). Concerning the long-term effect of similar training, Alameen and Levis (2015) also provide some further commentary based on previous experimental studies. The findings of these studies report that we observe some specific features of learning, which can have either a positive or a negative influence on long-term amelioration. Nevertheless, generally “the results suggested that students maintained a significant improvement over time regardless of their native language, gender, and length of stay in the United States prior to instruction” (p. 169). In addition, the authors also stress that “CSPs can improve with training, but we do not know whether improvement increases intelligibility” (p. 171). Still, from the above-described observations regarding fluency it can be reasoned that CSPs production contributes to a pronunciation of native and accented English perceived as more fluent locally. Although this issue is not the focus of this study, I find it to be of great interest and it remains yet to be discussed. Be that as it may, this proves the importance of looking into CSPs and their connectedness to foreign language acquisition in further detail.

Taking into account these examinations, the slight digression into the details of the phenomenon of the perception of speech fluency has provided helpful insight into the importance of production of connected speech processes in English in general and its reflection on the acquisition of English as a foreign language. The observations made in the various above-mentioned studies might prove relevant in the further analyses provided by this study. Moreover, the background concerning fluency and its connectedness to CSPs allow the transition towards a further description of the production of connected speech and its relation to speech rate and rhythm.

2.3. Rhythm

To further develop the possibility of predicting reduction I will discuss one last aspect playing a role in connected speech. In the following section of this chapter the focus will be on the rather controversial topic of speech rhythm. In the past we used to talk about stress- or syllable-timed languages. Stress-timing would imply that the time between stressed syllables following each other is considered as equal (isochronous) while syllables themselves have different durations. On the other hand, in syllable-timed languages it is the syllables that would last about the same amount of time. Nevertheless, as it has already been mentioned, today the notion of speech being rhythmic has been dismissed (speaking in terms of time-based rhythm). According to Nolan and Jeon (2014) “that conceptualization is widely known and influential, as is by now the stubborn refusal of the data in a variety of languages to offer up straightforward confirmation of isochrony” (p. 2). To specify, isochrony represents the following concept:

A given repeated element or structural grouping of elements (e.g. syllable or foot) should always occupy the same time span. In the case of a group whose elements may vary in size or number, compensatory adjustments in durations would be needed to make those elements ‘fit’. (Nolan & Jeon, 2014, p. 2).

The authors believe that “speech is not incontestably rhythmic, and may even be antirhythmic” (p. 1). However, they also add that “its linguistic structure and patterning allow the metaphorical extension of rhythm in varying degrees and in different ways depending on the language, and it is this analogical process which allows speech to be matched to external rhythms” (p. 1).

Nolan and Jeon (2014) propose a view of rhythm in English that is not temporal according to the principle of isochrony. This type of temporal rhythm is also called periodic or coordinative and it implies “both repetition of a pattern and regularity of the interval taken by each repetition” (p. 2). However, there is the possibility to look at time in rhythm as being non-regular. Such rhythm is called “contrastive” and it is based on the alternation of stronger and weaker elements. In this kind of rhythm “stronger and weaker elements are constrained therefore by sequencing, and their strength or weakness may involve relative durations” (p. 2). Essentially, this means that these elements do not follow a pattern including repeated time spans of the same length while still remaining rhythmic. When applying this concept to the English language, the phenomenon of contrastive rhythm is translated by the “alternation of stressed and unstressed syllables” (p. 2).

It is also important to specify that, as Low (2015) point out, today we apply a different terminology when discussing rhythm in specific languages than in the past when rhythm was inherently tied to timing in speech. This is due to the fact that contrary to past beliefs, today's findings have proven that "rhythmic categorization was not related to timing units in speech" and "isochrony was then considered to be a tendency" (p. 126). In this context, we learn now about syllable- and stressed-based languages¹ rather than about stress- or syllable-timed languages as "empirical support for rhythmic categorization cannot be found by measuring timing units found in speech" (p. 126). It has now been established that the notion of a time-based rhythm is rather obsolete, yet we know that a perception of rhythm in languages still has to be considered. This is supported by the belief that "isochrony is better understood as a perceptual rather than an acoustically measurable phenomenon" (Couper-Kuhlen, 1990, 1993, as cited in Low, 2015, p. 126). Nevertheless, as Low (2015) specifies, further research of rhythmic (stress- and syllable-based) categorisation based on acoustic verification has been conducted on the basis of phonological, phonetic, syntactic and lexical properties of languages. According to Dauer (1983, 1987) and Dasher and Bolinger (1982), both cited in Low, 2015, these characteristics might be the cause of rhythmic structure and are "likely to affect the isochrony of speech units found in any language" (p. 127).

Succinctly, what is relevant to this study in the context of rhythm, which plays a crucial role in prosody and therefore in pronunciation, is that English falls under the category of stressed-based languages, which are essentially considered as leading to a more prominent reduction of vowels in speech. French on the other hand is syllable-based and should therefore show less vowel reduction. In the light of these observations, we could suppose that some (predictable) interferences occur in the pronunciation of French-accented English. This argument is further supported by Low's (2015) statement that "L2 rhythm is clearly influenced by L1 rhythm" (p. 132). It is also important to mention that in recent studies it has been clearly stated that "language-specific rhythm is facilitated by, among others, various connected speech processes" (Skarnitzl et al., 2022, p. 942). It must be stressed that rhythm is the product of the phonological structure of the language. For instance, in English and French, linking contributes strongly to how listeners perceive the rhythm of the given language. On the other hand, Czech is a language which does not favour linking at it is the glottalization between words that creates its specific rhythm and influences its perception.

¹ The category of mora-based languages will not be discussed as it is in no way relevant to this study.

To follow up, it has previously been hinted at that speech rhythm is also inevitably tied to the previously discussed matter of fluency and its acquisition by non-native speakers of English. Various existing studies mentioned by Low (2015) speculate that to adopt a more native-like fluency in English, learning about stressed based rhythm is of the essence. Among other things, this is due to the fact that, according to Cruttenden (2008, as cited in Low, 2015), “in native varieties of English, the presence or absence of reduced vowels forms the lowest level of the prosodic hierarchy” (p. 134). Pronunciation fluency can therefore be perceived as disrupted when non-native speakers (unconsciously) rely on a syllable-based native language. (Low, 2015). There are even earlier findings which support the importance of understanding the rhythm of English, as for instance Wong (1987, p. 21, as cited in Low, 2015) believes that it is one of the most significant “organizing structures that native speakers rely on to process speech” (p. 134).

Altogether, these observations show that language rhythm in general is an incredibly complex matter which penetrates various fields concerning language in general, but also its learning. Rhythm thus provides a vast range of subjects to be studied in greater detail, however, the scope of this study does not allow to dwell on this topic any longer, as further phenomena call for our attention.

In summary, the main aim of this chapter was to provide the reader a more detailed definition of connected speech in the context of English pronunciation. Hopefully, this intention has been achieved along with a slightly extended background regarding the factors contributing to the realization of connected speech processes. To follow up, the next section now calls for a description of the specific CSPs this study will be concerned with.

2.4. Linking in English

In the following subsection of this study the focus will be on linking which is one of the most prominent processes of connected speech. As the main topic of my thesis are features of connected speech in French-accented English, it will be necessary to provide the reader with a satisfactory description of linking in English, as well as a brief explanation of its concept in French (called “liaison”). Regarding linking in English, bearing in mind the further conducted analysis, it would be desirable to not only propose its definition but to also be concerned with the aspects of linking in relation to the native and non-native pronunciation of English. Furthermore, it will be of interest to concentrate on the occurrence of linking in different speech styles and forms.

It has already been made clear that linking belongs among connected speech processes. This fact implies that we are talking about a phenomenon occurring across word boundaries during speech production. As the name suggests, linking signifies that two words, out of which the latter begins with a vowel, are pronounced as tied together, i.e. such as in the English *my answer* [maɪ ʊˈɑːnsə]. To put it clearly, according to Skarnitzl et al. (2022), “linking refers to the situation where a vowel-initial word is connected to the preceding segment smoothly or through a transient vocalic element” (p. 942). When such segments are not pronounced as linked, glottalization occurs at the onset of the latter word. We distinguish various degrees of glottalization (or more precisely, different types of glottal gestures). Its most prominent form is the glottal stop which implying a full closure of the vocal folds followed by a short release burst. The intermediary instance is known as creaky voice. However, for the purposes of this study, the simple differentiation based on either glottalization or linking will suffice.

It is also important to note that we might look at linking under either a more narrow or a wider scope. The wider perspective can be found in Alameen and Levis (2015), for whom linking incorporates any process which results in a smooth pronunciation of two words. Specifically, they include a “geminated” pronunciation of a word-final and -initial sound (e.g., *miss Sarah* as [mɪs sɛ.ɪə]), or modifications such as glottalization for [t] (e.g., *hat band* realized as [hætʔbænd]). It is also worth mentioning that linking is not a phenomenon which happens solely in an isolated way in connected speech. As Alameen and Levis (2015) say:

Various types of CSPs occur together, not only in idiomatic lexical combinations but also in all kinds of language. This potentially makes connected speech sound very different from citation forms of the same lexical items. For example, the phrase *part of* is subject to both flapping and linking, so that its phonetic quality will be [p^hɑːr.rəv].” (p. 163).

Be that as it may, when considering linking in the analysis provided by this study, the focus will be on the smooth connectedness between two words out of which the latter begins with a pronounced vowel. This approach will include the notions of resyllabification (consonant-to-vowel linking) and hiatus (vowel-to-vowel linking) (Skarnitzl et al. 2022). Additional sounds, which Alameen and Levis (2015) also call insertions, will be considered as well.

The principle of addition occurs for instance when “in the phrase *so awful*, the linking [w] glide noticeably adds a segment to the pronunciation, i.e., [so^wɔːfəl]” (p. 162). Other examples of linking [w] include phrases like *go out* [gəʊ^waʊt] or *to all* [tuː^wɔːl]. Furthermore,

we distinguish two other similar linking sounds: intrusive [r], e.g. in the phrases *law and order*, which could be pronounced as [lɔːfæn_ˈɔːdə], or *saw in there* [sɔːfɪn ðeə], and linking [j] in phrases such as *the apple*, i.e., [ðiːˌæpəl] or *three elephants* [θriːˌɛlɪfənts]. Lastly, linking in English connected speech includes also the phenomenon of pseudo-resyllabification, during which new syllables can be formed at word boundaries. For instance, in the phrase *men and women* [mɛ.nænd ˈwɪ.mɪ.n] a new syllable is created by linking the word final consonant /n/ in *men* to the word initial vowel /a/ in *and*.

Overall, it should be said that a more detailed insight into the possible views on linking could not have been disregarded in order to gain an appropriate understanding of the matter. For all that, the main principles being described, let us move on to the following subject.

2.5. French Liaison

We have now discussed the process of linking in the English language, however, it is crucial for the purposes of this study to also focus on its existence in French. As I have already mentioned, linking in French is called “liaison” and it is an incredibly common feature of French pronunciation; it occurs approximately every 16 words (Boë & Tubach, 1992, as cited in Racine & Detey, 2015). This might be stating the obvious, however it needs to be clearly said that just as English linking, French liaison also belongs among connected speech processes as according to Chevrot et al. (2013), “in French, liaison takes the form of an alternation that can be observed at word boundaries” (p. 2).

However, the realisation of liaison is quite different from that of English linking as it implies the presence or absence of a consonant between two words which are pronounced together. This consonant would not appear at the coda of the first word or the onset of the second one in their isolated pronunciation/dictionary form (Racine & Detey, 2015). Similarly, as in English, liaison occurs when the initial sound of the second word is a vowel. We can observe it for instance in phrases such as *les avions* [lezavjɔ̃] or *un anniversaire* [œnɑnivɛʁsɛʁ]. In contrast, when the initial sound of the second word is a consonant, liaison does not occur, e.g.: *les voitures* [le vwatyʁ]. However, the matter is not that simple, as there is set of rules conditioning liaison. It is also worth mentioning, that although liaison in French appears to be mostly categorial, there are instances – mostly conditioned by sociolinguistic factors – where it is variable. (Chevrot et al., 2013). Bearing in mind the scope of this thesis, I will attempt to be as brief as possible while describing the rules and types of liaison without depriving the reader of a sufficient background concerning this subject.

Let us now focus on further details concerning the rules of liaison. First, it must not be omitted that we distinguish two types of liaison, one of which is called “enchaînée” (linked) and the other is called “non enchaînée” (un-linked). Two kinds of resyllabification are therefore differentiated in French (Oh et al., 2023). To simplify, the “liaison enchaînée” is the type of liaison that has been previously described, where the consonant is attached in most cases to the onset of the second word, as in, according to Racine and Detey, 2015, *les éléphants* [le.zɛ.lɛ.fɑ̃]. On the other hand, liaison “non enchaînée” implies the following resyllabification: [lez.ɛ.lɛ.fɑ̃] (p. 4). It is worth mentioning that the phenomenon of “liaison enchaînée” provides the ground for a stronger tendency towards CV syllables in French. Skarnitzl et al. (2022) support this finding and they add that “Romance languages are well known for their preference of CV syllables (i.e. syllables with an onset). As a result, in a C#V sequence, the word-final consonant will be resyllabified to the onset of the following syllable” (p. 943).

Let us dwell on the issue of enchaînement for just a little bit longer. Oh et al. (2023) also describe two types of French resyllabification. The first kind, which the authors call Liaison CV, is described as a type of French linking in which “a wordfinal liaison consonant, i.e., a latent consonant surfacing in some French words only when the following word starts with a vowel, can be resyllabified with the following word-initial vowel” (p. 1137). The authors provide the following formula and example for Liaison CV: /CV.CL#V/² - *petit ami* (boyfriend; masculine form) - /pəti # ami/ - [pə.ti.ta.mi]. If the masculine adjective *petit* were standing in an isolated way, its pronunciation would be [pəti]. In connected speech, in case it is followed by a word initial consonant, its pronunciation does not change, e.g. *petit bateau* [pəti bato]. Another example of Liaison CV would be for instance *maudit empire* (damned empire; masculine form) - /modit # ɑ̃pʁiʁə/ - [mo.di.tɑ̃.pʁiʁ].

Oh et al. (2013) call the second kind Enchaînement CV. In this type “an underlying [latent] word-final coda consonant can be resyllabified with the following word-initial vowel”; e.g.: /CV.C#V/ - *petite amie* (girlfriend; feminine form)- /pətit # ami/ - [pə.ti.ta.mi], (p. 1137). Unlike in the masculine form *petit*, in the isolated form the feminine counterpart *petite* the final consonant is pronounced [pətit] as it is during connected speech. A further example of Enchaînement CV is *maudite insomnie* (damned insomnia; feminine form) - /modit # ɛ̃sɔmni/ - [mo.di.tɛ̃.sɔ.mni]. The authors mention also a last possibility of liaison called Onset CV involving a “true word-initial onset consonant”; e.g.: /CV#CV/ - *petit tamis* - /pəti # tami/ -

² CL = latent consonant

[pə.ti.ta.mi], (p. 1137). Nevertheless, we must specify that, as Oh et al. (2013) state, these types of resyllabification are homophonous in French. For better clarity, we could perhaps draw a comparison between this phenomenon and the linking /r/ in British English. The linking /r/ operates on a similar principle as we can see for instance in the contrast between phrases like *far beyond* [fa: bi'ɒnd] and *far away* [fa:r_ə'weɪ].

To follow up, Racine and Detey (2015) mention cases where liaison can cause different kinds of modifications in pronunciation. Such phenomena impact the vowel preceding the linking consonant and can lead to the “opening” of the syllable (*syllabation ouverte*), which means the final sound of a word graphically ending with a consonant will be vocalic. This causes the feminine and masculine forms to sound the same, e.g. the masculine form *premier automne* [prəmjeɔtɔmnə] would be homophonous with the feminine *première*. This aspect of liaison can in some cases lead to what is in French referred to as denazalisation of the vowel preceding the linking consonant, e.g.: *bon ordre* [bonɔʁdʁə] instead of [bɔ̃nɔʁdʁə], and subsequently causes the homophony of feminine and masculine forms as well. However, the authors point out that these changes are not necessarily systematic.

These observations aside, let us summarize the discoveries made in this subsection which are the most important to understand for the purposes of this study. Briefly said, following Techer’s (2015) definitions, *liaison* describes the process where a consonant at the end of a word would be mute if the word is pronounced in an isolated way and it becomes pronounced in connected speech when preceding a word with an onset vowel, e.g. *trop aimable* [tʁo-pɛmablə]. On the other hand, in the process of *enchaînement*, the orthographic consonant would be pronounced even in the word’s dictionary form, e.g. *un bref instant* [œ-bʁɛ-fɛ̃stɑ̃]. The author points out that graphic representation of such a consonant is present in both of these cases and it is therefore crucial for the occurrence of liaison and enchaînement. The aim of this study will be to observe in which way these two principles of French linking will reflect in French-accented English.

2.6. Possible Influences of French Liaison/Enchaînement on French-accented English

As has been mentioned, the phenomena of liaison and enchaînement provide an explanation for the predilection of French for CV syllables and but also for the tendency for longer vowels, unlike English which tends towards close syllables, which might have a significant impact on the French pronunciation of English. For instance, Delattre (1953, as cited in Techer, 2015, p.3) suggests, that “intervocalic consonants in French are always syllabified as onsets.” Therefore, it is possible that in French-accented English “a French speaker would

not distinguish between *too late* et [and] *tool eight*” (p.3). Additionally, the data collected by Techer report that “French learners of English deeply alter the phonological system of the target language” (p. 6). According to the author, not only do French speakers subconsciously replicate rhythm specific to their native language when speaking English, but they also transfer some aspects of French resyllabification based on regular open syllable division. These findings might prove of great relevance for the purposes of my study.

Another factor which might impact the production of linking in French-accented English is stress. As Techer suggests, this is due to the fact that, in French, which we know is a syllable-based language, stress occurs regularly on the final syllable of a word in its dictionary form, however, it can occasionally shift during connected speech. In French, connected speech is therefore distinguished by the fact that “the notion of words disappears and speech only consists of series of syllables, the majority of them built after the CV pattern” (p. 27). English, as a stressed-based language, does not have fixed stress like French. On the contrary, each word behaves differently when stress is concerned. Additionally, the author points out that in English we observe a regular occurrence of stressed syllables, which does not take into account the interposing syllables. This leads to the observation that as has been previously mentioned, in English we use more often stress than syllables to segment connected speech. Moreover, we know that stress is tied to language rhythm and that speakers of a syllable-based language (like French) are inclined to reproduce this rhythm while speaking English.

As we can see, liaison in French is a very complex subject which could be discussed in a separate thesis alone. Yet, its basic properties have been described as thoroughly as possible while not forgetting to mention their possible impact on French pronunciation of English. Hopefully, the reader has acquired a sufficient knowledge of this issue for the purposes of this study and perhaps slightly beyond them. Nevertheless, to follow up some of the examinations made above, a further insight into the importance of English linking to language learning should be made in the following section.

2.7. Linking in English and Language Learning

Now that it has been established what is understood under the phenomena of English linking and French liaison, I intend to investigate why it is such an important feature of connected speech and what is its role in second language acquisition. These inquiries bring us back to the previously discussed matter of speech fluency and understandability in relation to CSPs. The reader most probably recollects that this matter is inherently tied to the production of both native and non-native pronunciation of English. Nevertheless, in relation to the

connection between CSPs, fluency and understandability, further commentary can be found. For instance, Skarnitzl et al. believe that “prosodic features and connected speech processes like linking specifically have been shown to be important for perceived comprehensibility and fluency” (p. 942). Furthermore, according to Dauer (1992, as cited in Alameen and Levis, 2015), “L2 problems in linking production can render production disconnected and choppy and, hence, difficult for NS [native speakers] to understand... unlinked speech can sometimes be viewed as aggressive and abrupt” (p. 169). The best way to obtain additional information regarding this subject, let us look into the findings of Alameen and Levis (2015) concerning studies about linking in native and non-native English speakers in different speech styles. I must stress the fact that these findings might be of great interest to the following analysis provided by this study.

First, what needs to be understood is that “linking as a phenomenon is prevalent in all speech styles, while other CSPs are more frequent in more informal styles, e.g., palatalization” (p. 169). Nevertheless, as has already been mentioned in the introductory chapter about CSPs, the findings regarding the degree of linking in formal and informal speech styles tend to differ. For instance, some studies discussed by Alameen and Levis (2015) show that both native and non-native speakers linked more prominently during casual speech than during more prepared formal occasions. These results would be supported among others by Hieke’s (1984, as cited in Alameen in Levis, 2015) observation that “in casual spontaneous speech, speakers pay less attention to fully articulating their words, hence reducing the distinctive features of sounds while connecting them” (p. 164).

However, more recent examinations suggest that the variation between the degree of linking in scripted and unscripted speech would not be nearly as prominent as it used to be believed. According to Alameen and Levis (2015), native speakers for instance “do not seem to know that they are producing speech that differs from citation form” (p. 164). Generally, a similar occurrence of linking in read and spontaneous speech has been observed today in both native and non-native speakers of English. The authors believe that this “indicates that a change in speech style may not entail a change in linking frequency” (p. 164). To further support this argumentation, I would like to mention the data collected by Melenca (2001, as cited in Alameen & Levis, 2015), which have shown that “the average percentages of linking while reading a text was at 67% and while speaking freely at 73%.” According to Alameen and Levis (2015), these results prove once more that “linking occurs with approximately equal frequency under both conditions” (p. 169).

One final subject remains to be briefly discussed regarding the occurrence of CSPs (including linking) in the speech of non-native speakers, which is their degree of proficiency in English learning. Alameen and Levis (2015) discuss the study made by Anderson-Hsieh et al. (1994), which focuses on different speech styles and CSPs production by high and intermediate-proficiency (HP and IP) non-native speakers. It should be mentioned that the native language of the speakers was Japanese, which is not prone to linking. Their results have shown that high proficiency speakers were close to native-like pronunciation (of connected speech), while the intermediate-proficiency speakers encountered substantially more difficulties. Furthermore:

An analysis of the reduced forms used revealed that the IP group showed a strong tendency to keep word boundaries intact by inserting a glottal stop before the word-initial vowel in the second word. The HP group showed the same tendency but less frequently (Anderson-Hsieh et al., 1994, as cited in Alameen & Levis, p. 168).

Moreover, Anderson-Hsieh et al.'s study (1994, as cited in Alameen & Levis, 2015) reinforces the previous observation as their results have not shown a considerable contrast between unprepared (spontaneous) and prepared (read) speech. Alameen and Levis (2015) also specify that "the study showed that native speakers linked more frequently towards function words than to content words" (p. 169). It should be mentioned that this observation is greatly relevant to this study as I will also focus on a similar differentiation in relation to the production of CSPs. To follow up, Alameen (2007) has conducted a similar survey as Anderson-Hsieh et al (1994), which was concerned solely with CV and VV linking. Alameen's (2007) findings also proved that non-native speakers displayed a remarkably lower amount of linking than native speakers. Nonetheless, in contrast with the previous examinations, these results were not significantly affected by the proficiency level of the speakers.

To conclude, the above-discussed observations will not only prove important for my analysis, but they will provide as well the required background to inquire in further detail into L2 and possibly L3 acquisition and its connectedness to CSPs in the following chapter. However, before we can discuss this matter, there remains a couple of features of connected speech that need to be briefly examined.

2.8. Elision

Hopefully, the various aspects of linking in English and the concept of French liaison have been explained in more detail. I will therefore be focusing on elision, which also belongs among connected speech processes. This phenomenon will be examined in the analytic section

of this study, therefore, it is necessary to describe its main characteristics in a few words. The reason why this particular CSP has been chosen for analysis in my study is owing to the fact that it has a significant role not only in connected speech but it might also be important in language learning. As Roach (2009) points out, “when native speakers of English talk to each other, quite a number of phonemes that the foreigner might expect to hear are not actually pronounced” (p. 113). Given this context, it should be noted that to foreign speakers, elision might not be an obvious factor of English connected speech. Therefore, their ignorance of it might impact both their pronunciation and perception of English.

Be that as it may, let us now proceed to the characterization of this connected speech process. As the name (and the previous observation) suggests, in the simplest way, elision designates the event when sounds disappear during connected speech. Alameen and Levis (2015) classify this CSP under the category “deletion” in which contraction of grammatical words is also included. However, it is important to note that elision does not necessarily imply a complete disappearance of a sound. To be more accurate, the degree to which it is articulated or realised varies, which might depend on the context of communication (elision will be different in isolated words and in casual speech and its multiple possible realisations). Nevertheless, be it on a certain scale, we can observe omissions of phonemes, but also of syllables. As Roach (2009) specifies, this only happens under multiple specific circumstances, some of which I will now describe.

Firstly, elision can occur inside of words. Such omissions occur when the weak (unstressed) vowel is lost after the voiceless consonants /p,t,k/, e.g. in words like *tomorrow* [tə'mɒr.əʊ] / [t^h'mɒr.əʊ], *parade* [pə'reɪd] / [p^h'reɪd], *collaborate* [kə'læb.ə.reɪt] / [k^h'læb.ə.reɪt]. Roach (2009) also mentions that elision happens when a weak vowel combined with /n, l, r/ becomes a syllabic consonant. The author provides the following examples: *tonight* [tʌɪt], *police* [pli:s], *correct* [kɹekt] (p. 114).

Secondly, what is relevant to this study, elision happens during connected speech at the boundary of words. According to Roach (2009), during casual speech elision occurs to avoid complicated consonantal cluster, similarly as for instance in the phrases *the first question* [fɜ:skwestʃən] (final /t/ elision) or *and happiness* [ænhæpɪnəs] (final /d/ elision). The final /t/ and /d/ are the ones that tend to disappear the most often and that is why I focused on these two sounds when analysing elision in the practical part of this study. Additionally, we can also observe among others the elision of the final /v/ in the word *of* preceding a word which begins

with a pronounced consonant in some variations of English, e.g. in the phrase *more of the same* [mɔːr ə ðə seɪm].

A few words should also be said about elision in French (*élision*), however, its concept is quite different than in English as it is more closely tied to linking (*liaison*). French elision, which occurs at word boundaries, implies the omission of a word final vowel if the onset of the following word is also a vocalic sound (Schane & Filloux, 1967). We can observe when phrases such **le arbre* are spelled as *l'arbre* and pronounced as [lɑʁbrə]. The process of elision is also applied in French between a word ending in a vowel and a word beginning with 'h' in orthography, which is always silent, e.g.: *l'heure* [lœʁ], where the article *le* (the) is shortened. In the phrase *le haricot* the pronunciation of the article can be both shortened [lʔaʁiko] or full [lə_aʁiko] during connected speech. As we can see, this phenomenon has different uses in French than in English. Therefore, the interference between French and English concepts of elision might not be as strong and presumably, the occurrence of native-like elision in French accented-English might be based on other factors. However, to acquire a proper background regarding the pronunciation of both languages, I felt it necessary to provide a description of this phenomenon in French as well.

To conclude, elision in English can take place in many forms and under various circumstances, both phonetic, regional, and sociolinguistic. Nevertheless, the aspect of elision, where it can be predicted due to consonantal clusters, that will be of principal interest in my analysis is its occurrence at word boundaries in connected speech.

2.9. Assimilation

As the characteristics of elision have been summarized in the previous subsection, one last feature of connected speech remains to be examined: assimilation. Just as elision, this CSP will, to some extent, be part of the analysis provided by this study, hence the need to provide the reader with a brief definition of its role in connected speech.

According to Alameen and Levis' (2015) categorization, the phenomenon of assimilation falls under the "modifications" group (together with palatalization, flapping and glottalization). The name of this category hints at the main characteristic of assimilation, as it implies a different realization of a phoneme. Roach (2009) specifies, that this phoneme modification occurs during connected speech, therefore we can observe a difference from the isolated pronunciation of a word. Such a modification, which we call assimilation, in connected speech is conditioned by the near presence of a different phoneme in the adjoint word. Similarly

to elision, the occurrence of assimilation also tends to be on a kind of scale, as Roach (2009) points out. It might appear as more or less prominent and is more or less frequent given the communication context (casual or prepared speech) and the speech rate.

According to Roach (2009), we most often observe assimilation at word boundaries with a CC syllable. Or to put it more clearly, between the final consonant and the initial consonant of two neighbouring words. However, the behaviour of the consonants might differ and therefore different types of modification occur. Based on these relations, Roach (2009) distinguishes three types of assimilation: regressive, progressive and coalescent. We talk about regressive assimilation if the final consonant is affected by the initial consonant to behave more like it. When, on the other hand, the initial consonant becomes more like the final consonant, we call this assimilation progressive. Coalescent assimilation, which is specific to English, implies a sort of merging of the final phonemes /t, d/ and the initial /j/, which become sounds like /tʃ, dʒ/, e.g.: *let you* might become [lɛtʃu:], *did you* could be pronounced as [dɪdʒu:]. However, for the purposes of this study, only the regressive and progressive types of assimilation will be of interest. It should also be specified that the assimilated consonants do not vanish. On the contrary, Roach (2009) suggests that “the duration of the consonants remains more or less what one would expect for a two-consonant cluster” (p. 111)

To follow up, Roach (2009) stresses that what is relevant in understanding the possible modifications happening during assimilation is to know the changes that apply to consonants. The main differences between consonants are between their manner and place of articulation and their voicing. Assimilation follows the same pattern. In concrete terms, if we follow Roach’s (2009) definitions, assimilation of place, which we observe in regressive assimilation, occurs most commonly if a final alveolar consonant is followed by an initial non-alveolar consonant. For instance, during connected speech, the final alveolar consonant /t/ in *that* [ðæt] can become /p/ if it precedes a bilabial initial consonant, i.e. *that problem* would be pronounced as [ðæp̄ prɒbləm]. If the /t/ is followed by a dental consonant, it might become a dental plosive, e.g. *get those* becomes [gēt̄ ðəʊz] (Roach, 2009, p. 111). This kind of assimilation can lead to dentalization with no audible release, e.g.: in the phrase *that there* [ðæt̄ ðeə].

Similarly, if the /t/ is followed by a velar consonant, it might change into /k/ (e.g.: *tight collar* [taɪk̄ kɒlə]). Noticeably, /t/ is not the only final consonant affected – the final consonantal /d/ can also be modified in such contexts, however, it will change into [b, ɟ, g], additionally, /n/ changes into [m, ŋ, ŋ]. Roach (2009) provides the following examples: “*good boy* [gʊb̄ bɔɪ], *bad thing* [bæd̄ θɪŋ], *card game* [kɑ:ḡ geɪm], *green paper* [gri:m̄ 'peɪpə], *fine thought* [faɪn̄ θɔ:t],

ten girls [tɛ̃ ɡɜ:lz]” (p. 111). The alveolar consonants /s, z/ on the other hand change into [ʃ,ʒ] respectively when they precede [ʃ] or [ʒ], e.g.: *this shrine* [ðɪʃ ʃraɪn], *his yard* [hɪʒ jɑ:d].

During assimilation of manner, which is also usually regressive but less prominent than assimilation of place, the speakers follow the economy principle. That is, as Roach (2009) points out, the tendency is towards the consonant whose pronunciation is simpler. We can observe the final plosive turning into a fricative or into a nasal, e.g. *good night* [ɡʊn naɪt], but this would not occur the other way around. Relevantly to this study, progressive assimilation of manner can also occur. In this case, the initial sound is the same as the final sound in manner, however it is dentalized. We can observe this when a final plosive or nasal is followed by an initial [ð] or [θ], such as in the phrases *let them* [let ðɛm], *win three matches* [wɪn θri: 'mætʃɪz] or *win the game* [wɪn θə ɡeɪm]. The scarce case of assimilation of voice is always regressive according to Roach (2009) and occurs only in one way: if the initial consonant is voiceless, whereas the final consonant is voiced, the final consonant becomes voiceless (Roach, 2009). For instance, when *as* in *was tired* is pronounced as [wəs taɪəd] instead of the canonical [wəz].

Hopefully, assimilation in English has been explained in sufficient detail. To conclude this section about individual connected speech process, a few words about assimilation in French remain to be said. The matter will be less complex, as the principle is similar in French as it is in English. Although evidently, the given examples of the individual types of assimilation will differ in French. However, it is not relevant to this study to dwell on them in such detail. Be that as it may, it might be interesting to mention that, according to Price (2005), the most common type of assimilation in French is the “regressive assimilation of voiced consonants, i.e. a voiced consonant becomes voiceless when in contact with a following voiceless consonant” (p. 124) and that it is often tightly connected to the “loss” of an unpronounced final /e/.

Now that a thorough examination of connected speech and its individual processes has been completed, we can move onto the next chapter, in which the reader will learn about further details regarding the matter of L2/L3 acquisition. Although the focus of this study does not require to dwell on this matter in such an elaborate way as on connected speech processes, it does nevertheless provide some interesting background, which is not negligible considering the analysed material in this study.

3. L2/ L3 Acquisition and Connected Speech

In the previous segments, I have inevitably approached multiple topics which discuss the acquisition of English as a second (or possibly third) language, henceforth abbreviated as L2 and L3, respectively. However, I felt it necessary to devote a separate chapter, although it will be brief, to the acquisition of L2/L3 in somewhat more general terms, albeit still considered from the perspective of connected speech processes. This is on the grounds of the fact that this matter might provide helpful insight into the possible intrusions happening in the pronunciation of connected speech by non-native speakers.

In order to get a better understanding of this issue, it might be useful to examine some of the aspects of the speaker's/listener's perception of the foreign language they are learning (as either an L2 or L3). This statement is supported by Alameen and Levis (2015), who suggest that "the perception of connected speech is closely connected to research on listening comprehension" (p. 165). Regarding this matter, the authors stress the fact that the phonology of the native language (L1) of a speaker might impact their perception of the L2. This is tied to the issue as to how speech is segmented by L2 listeners. Shockey (2003, as cited in Alameen and Levis, 2015) believes that non-native listeners experience a delay during perception "instead of processing language as it comes in" (p. 166). Such a slow-down arises from the fact that "in order to decipher connected speech, NNSs depend heavily on syntactic-semantic information, taking in a relatively large amount of spoken language to process" (p. 166). To be concise, the way L2 learners segment speech is based on lexical cues tied to their usual amount of occurrence, rather than on cues coming from connected speech features, such as the distribution of word boundaries and syllables. According to Alameen and Levis (2015), "this difference in strategy leads to greater difficulty in processing connected speech because of the relatively less efficient use of lexical cues" (p. 166). It could therefore be stated that in some cases an insufficient knowledge of connected speech features might cause "lexical ambiguity due to the mismatch between the lexical segments and their modified phonetic properties" (p. 166) during L2 perception.

What we can assume from these observations is that L2 learners generally have a stronger tendency to approach L2 (in this case English) perception as more disconnected than connected. Better said, L2 listeners look more for isolated word forms rather than for an overall perception of connected speech. It remains to be discussed whether this is due to their training during L2 learning. Be that as it may, it would be logical to presume that such a phenomenon in perception might reflect on the L2 learners' pronunciation of L2 and its general acquisition.

This would imply that L2 speakers would have a tendency to pronounce words in their isolated form, rather than to produce connected speech features. Moreover, as has been previously discussed, L2 acquisition is strongly influenced by the differences between the languages' rhythm, i.e. whether they are syllable-based or stress-based. It can be presumed that these factors, among multiple others, are most likely to create interferences/intrusions during L2 acquisition, its perception and pronunciation.

Furthermore, there arises the question whether L2/L3 might influence each other. Even though this specific inquiry might not be the main focus of my study (see section 5.1 for further information), it still could be of interest. Such contemplations allow me to make a transition to the following chapter, which will aim to acquaint the reader with the main issues this study will be concerned with in its analytic part.

4. Research Questions and Study Focus

We move now onto the experimental part of this study. In order to perform the upcoming analyses correctly, it is necessary to define the particular issues which will be of interest to us. For better clarity, let us first remind the reader, that the focus of this study is on the production of connected speech features in French-accented English, with an emphasis on linking.

On the grounds of the previously studied literature, it can be assumed that concerning linking, positive transfer will occur when native French speakers talk in English as both English and French rely on linking. Briefly said, the first research question asks whether French speakers will link words during connected speech in L2 English and our presumption regarding this question is positive.

Additionally, a second possible answer to the previous question that should be studied can be formulated on the basis of previous research (mostly on Techer, 2015), which is whether glottalization will occur in French-accented English. We presume that this will be the case, however the instances of glottalization will not be due to the specific character of the individual languages, but rather due to cognitive factors influencing the speakers. Such factors imply that non-native speakers often pronounce words in their isolated form (see chapter 3) in instances, where they should be pronounced as connected. Of course, this is not categorical, and neither is it in native speakers.

This subject is tied to another issue which is of concern to the experimental part of this study. In relation to this, I will be interested in drawing a comparison between the occurrence

of linking based major semantic classes, henceforth referred to as word type. Specifically, the focus will be on the linking of grammatical or lexical words in French-accented English during both prepared and spontaneous speech.

Lastly, it should be mentioned that all of the speakers who have been examined in this study have been living in the Czech Republic for a different amount of time and have a various degree of experience with Czech as L3. Regarding this matter, it is noticeable that while in French, linking (*liaison* and *enchaînement*) is strongly present – even though its principles differ from English linking, Czech speakers are known to glottalize and not link words in connected speech (Skarnitzl et al., 2022). As has been previously hinted at, it might therefore be interesting to observe, whether intrusion of language characteristic aspects can be observed through the spectrum of acquired foreign languages of a non-native speaker. Nevertheless, this will only provide an interesting broadening of the main studied issues and will not be the primary focus of the analysis.

5. Method

5.1. Speakers and Material

To pursue this experimental research, recordings of 14 native French speakers of English have been made. The choice of the speakers was based on convenience sampling. No specific criteria other than being an adult native French speaker with a sufficient knowledge of English to be able to carry a conversation in English and to perform a reading of a short text was not required. We could therefore estimate that the minimum desired proficiency was higher than elementary, meaning at least intermediate (B1). Although this characteristic was not measured in a precise way, no problems have arisen regarding proficiency. On that account the proficiency in English of the individual speakers does vary to a certain degree. The speakers also had a various degree of familiarity with Czech, which was not balanced in any way. This aspect is not the primary focus of the research, still the possible impact of Czech as L3 on L2 English of the French speakers remains of great interest to me.

The age of the speakers was between 23 and 54 and out of them 9 were female (F) and 5 were male (M). However, it should be specified that the gender and the age of the participants were not treated as factors in the research. Before performing the demanded recordings, each speaker was given a document to sign, which contained an informed consent with the participation in the research and processing of personal information. The speakers were informed about the research remaining anonymous and they had no previous knowledge of the

purposes of the study. Each participant was also presented with a questionnaire asking their name, age and the self-evaluation of their proficiency and use of French, English and Czech and how comfortable they felt using these languages. Moreover, in the questionnaire, the speakers were asked to specify whether they were bilingual or spoke other languages and to estimate their sensitivity for languages and their musical hearing. All of this information has been collected; however, no clear tendencies have emerged from the data and therefore I will not be treating this material in relation to the results of this study.

Aside the previous document signing and the filling of the questionnaire which preceded the recordings, each recording consisted of two parts. For the first part of the recording, the speakers were asked to read aloud a short text – a slightly adapted quote by George Mallory³ – used for diagnostic recordings of English at the Institute of Phonetics. This text proves useful for connected speech analysis as it contains a wide selection of multiple CSPs. The speakers were given the possibility to study the text briefly before the beginning of the recording and to ask questions in case something was unclear. The recordings of the read text are approximately 1.5 minutes long and will be further referred to as “reading”.

Then, in the second part of the recording, the speakers were asked to have a spontaneous conversation which was led with the experimenter or by the supervisor. During these conversations, simple questions concerning the work, life and hobbies of the speakers have been discussed. The length of the second recordings, which will be referred to as “conversation”, is about 5 minutes.

5.2. Analyses and Data Processing

The whole reading recordings have been used, while approximately 1,5-minute-long sections have been chosen from the conversation recordings. These sections have been transcribed using the OpenAI automatic speech recognition (ASR) system Whisper. These transcriptions of the selected sections have been then manually corrected. Automatic segmentation of the material has been applied. The analysis of various CSPs has been conducted using the phonetic analysis software Praat 6.1.54 (Boersma, Paul & Weenink, David, 2021) on the basis of careful listening (auditory analysis) while additionally observing the spectrogram and the waveform in Praat (visual analysis). Using these methods, the presence or absence of the following connected speech processes has been determined in the reading recordings:

³ The original recording of the quote by G. L. Mallory can be found for instance [here](#).

linking, elision, and different types of assimilation (no audible release in general, dentalization with no audible release, potential glottalization, long δ).

Linking was analysed between words with a final consonant and an initial vowel or with final and initial vowel. Transient sounds have been taken into account as well. The specific instances of CSPs other than linking, which we observe on the boundary of words with a final consonant and an initial consonant, were carefully chosen from the Mallory text based on the predictability of their occurrence. In total, 13 such examples of “consonantal” CSPs were picked out: 5 possible elisions (between the words *first question, and goes, and happiness, don't live, and make*), 3 dentalizations with no audible release (*that there, not the, that the*), 2 general no audible releases (*that can, out to*), 2 possible glottalizations (*not find, what we*) and finally one possible occurrence of long δ between the words *with that*. In the conversation recordings, only linking has been examined. Overall, 1480 cases of linking environments were examined compared to 180 contexts of other CSPs.

To describe the absence or presence of linking and other CSPs in the reading recording, labels have been manually assigned to point tiers in Praat. In the point tier called “link” linking between words was analysed in individual boundaries. The linking assessment in individual boundaries between words included labels designating the presence (marked as 2) or absence/glottalization (0) of linking and the stressing of the following and preceding word (s = stressed, u = unstressed, p = phrasal prominence). Occasionally, an asterisk (*) pointing out an unusual/interesting instance of pronunciation was added as a label in the boundary as well. The second tier, called “C” included all the other assessed CSPs. The absence of those phenomena was labelled as 0 and their presence as follows: elision = (e), no audible release in general = (unr), dentalization with no audible release = (unr), potential glottalization = (glot), long δ = (long). Three other individual point tiers were included. The first two (phones and words) were created using automatic segmentation. In the last one, the whole text could be found. A demonstration of this process can be seen in Figure 1. The analysis of the conversation recordings was similar, however it did not include a point tier for consonantal CSPs labels, as these phenomena were not examined in this case.

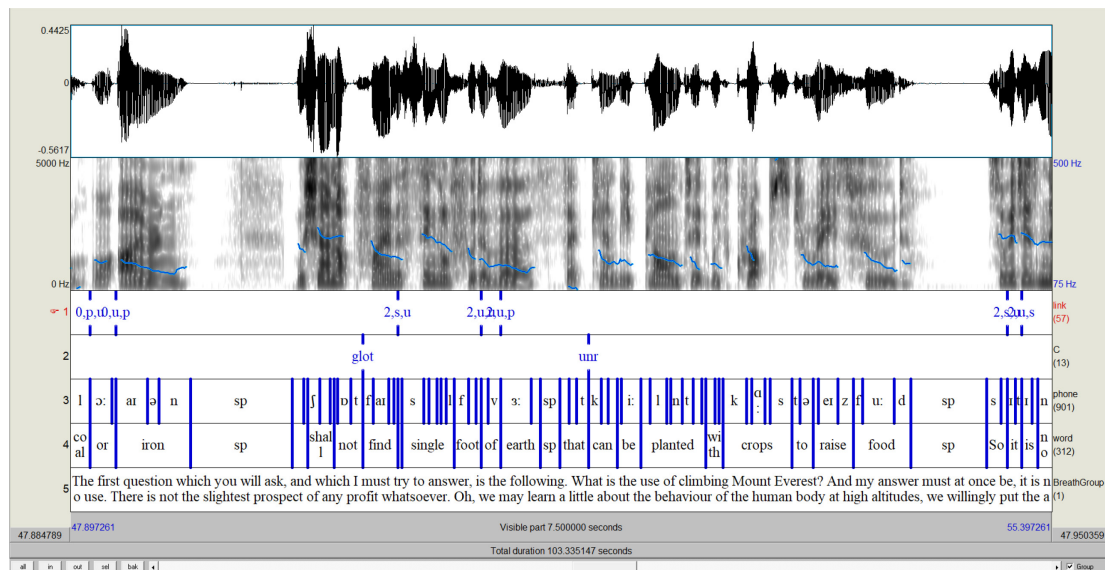


Figure 1. Example of reading recording analysis in Praat.

Once the assessment of all CSPs was completed, the data have been extracted using the R software and grouped in two excel spreadsheets – one with the analysis of linking from both speech styles, the other included all of the other CSPs from the reading recordings. Additionally, a new category called “word type” was created in which the manual differentiation between grammatical and lexical words was done. Based on this material, 17 graphs indicating the relations between multiple variables were generated using once more the R software. These figures were first created in order to analyse clearly the results which will be presented, described and commented upon in the following section of this study.

6. Results and Discussion

As the reader has been informed about the applied methodology, let us now turn to the findings this experimental study has shown. In the following subsections of this chapter, the focus will be on a general assessment of linking and glottalization, then on the differences between linking of grammatical and lexical words and on the degree of the final and initial word stress in relation to linking. We will also draw comparisons between the data collected for individual speakers and examine the occurrence of linking or glottalization based on the final and initial word sounds. Some interesting and unusual instances of pronunciation during connected speech production will be briefly mentioned as well. Finally, the occurrence of CSPs other than linking will be discussed. The results will be shown under the form of figures displaying either the number or percentage of the different variables.

6.1. Overview and Analysis of Linking Instances

Firstly, in Figure 2 we can observe the visualisation of all the collected data from both speech styles regarding linking environments. As has already been mentioned, the total number of analysed linking instances was 1480.

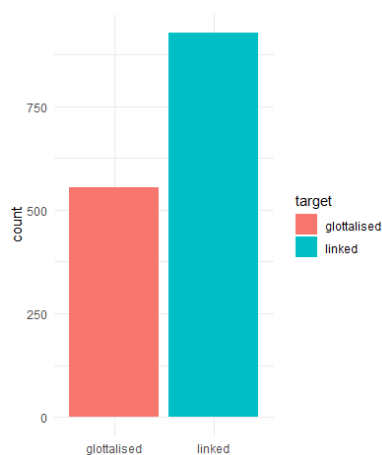


Figure 2. Number of linking instances from both reading and conversation classified as glottalized or linked.

Figure 2 indicates, that in over 800 of those cases, French speakers linked the words during reading and conversation instead of glottalizing them. To be specific, the amount of linked words is 61% compared to 39% of glottalized words. From these results it can be concluded that French speakers of English have a higher tendency to use linking rather than to glottalize, which corresponds to the presumption made while asking our research questions. In other words, positive transfer of this particular feature of connected speech occurs in French-accented English in over half of the studies linking context.

However, these results allow us to make only a general statement about linking in French-accented English. To gain further insight about the diversity of this phenomenon, let us look now into the differences of linking occurrences in the different speech styles analysed in this study. Considering the literature examined in the first chapter of this study, we can make the following assumption: the first recorded style was the reading of text aloud. Hence, we could classify it as a type of careful prepared speech. The second style was an unprepared conversation, which we can define as spontaneous speech.

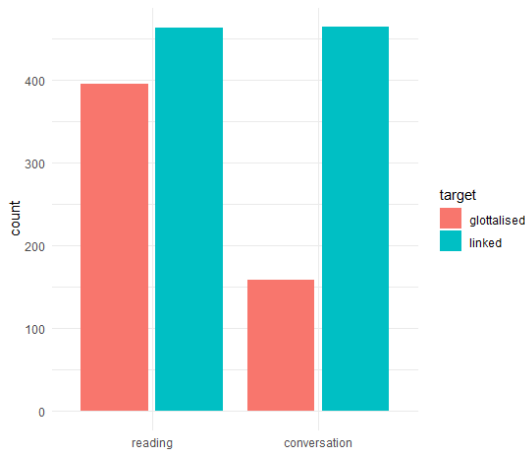


Figure 3. Comparison of all linking instances in reading and conversation in numbers.

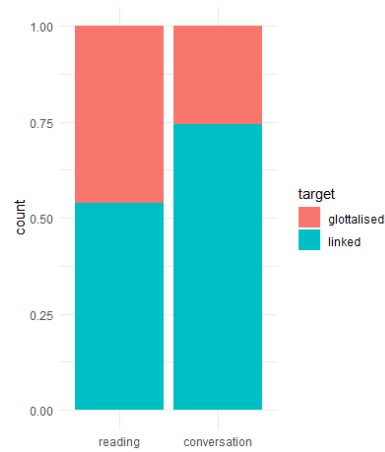


Figure 4. Percentual visualisation of the same data set.

It should be noted that the number of collected data from reading recordings is 857 (58% of all instances), while in conversations 623 (42%) linking environments were examined. From figures 3 and 4 we deduce that instances of linking and glottalization are balanced in prepared speech (reading). On the other hand, linking occurs more regularly and prominently in spontaneous speech (conversation) than in careful prepared speech.

These results more or less correspond to the findings of previous studies mentioned by Alameen and Levis (2015). To remind the reader, those findings suggest that unprepared spontaneous speech is more prone to reduction (and CSPs occurrence) than prepared speech. Although we bear in mind that the number of linking instances collected from reading was slightly higher than the number from the conversations data set, Figure 4 clearly shows that the ratio difference between linking and conversation is approximately 23%, which is significant. This might indicate that speakers are more likely to pronounce words in their isolated form in careful speech than in spontaneous speech.

6.2. Linking in the Context of Grammatical and Lexical Words

Let us now proceed to the analysis of linking contexts concerning the different semantic word classes of previous and following words. The types of words in both word 1 and word 2 that have been distinguished are grammatical words and lexical words. The previous and following words and their semantic word classes have been examined separately. Word 1 designates the previous word, to which is a vowel-initial word 2 is attached. Between word 1 and word 2 we observe either linking or glottalization.

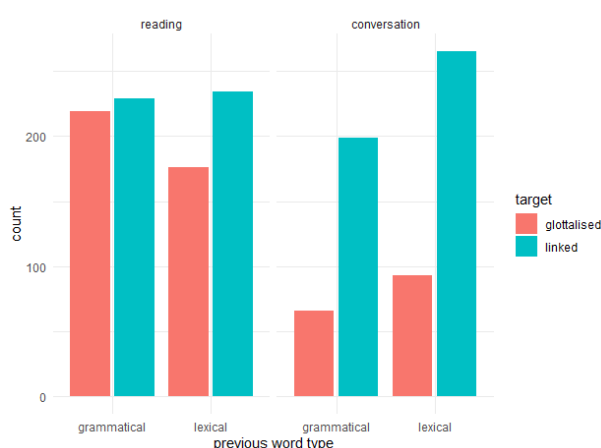


Figure 5. Number of linking instances in reading and conversation following word 1 based on semantic class.

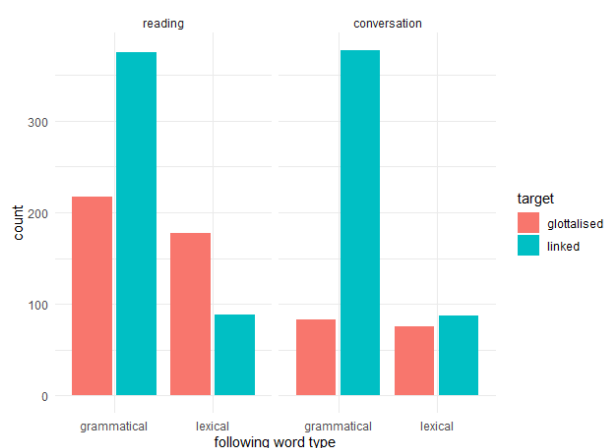


Figure 6. Number of linking instances in reading and conversation preceding word 2 based on semantic class.

Regarding word 1, the distribution of linking and glottalization in grammatical and lexical words is approximately balanced during reading, as Figure 5 indicates. We can observe that linking instances are slightly more frequent for word 1, especially if linking follows lexical words, but not in a significant way. By way of an example, our data suggest that sequences like *the apples* and *see apples* are both much more likely to be linked than glottalized. However, during spontaneous speech, linking of word 1 is remarkably more prominent when it follows both grammatical and lexical words. These results may be slightly surprising, nevertheless, they might again suggest that cognitive factors lead to the speakers' tendency to approach words in an isolated way more often in prepared speech (reading).

In Figure 6, which shows data for word 2, we can observe an inversion of the ratio of linking occurrences between grammatical and lexical words. Specifically, linking of word 2 during reading is much more prominent for grammatical words. Remarkably, lexical words 2 are more glottalized than linked in this speech style. It is notable that during conversations, the number

of linking of grammatical words 2 is significantly higher, whereas the ratio between linking and glottalization of lexical words 2 is more balanced.

6.3. Linking in the Context of Word Stress

During the analysis of linking in Praat, the stressing of previous (word 1) and following words (word 2) has also been examined in order to assess the influence of word stress on linking in French-accented English. The importance of stress in English in relation to language rhythm has been previously discussed. Three degrees of stress of previous and following words have been differentiated: stressed words, unstressed words, and prominently stressed words when a stressed word was in the nuclear position of an intonation phrase. Additionally, it should be noted that where previous words are concerned, either the last (linked) syllable or the whole word was stressed/prominent. Concordantly, in previous words, either the first (linked) syllable or the whole word was stressed/prominent.

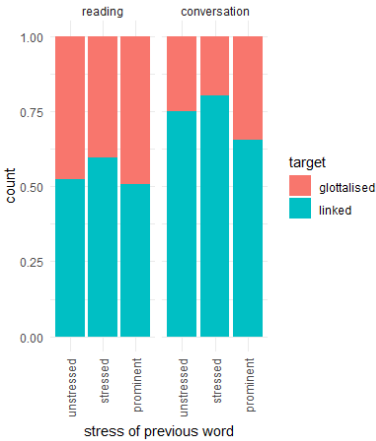


Figure 7. Proportion of glottalization and linking in word 1 based on the degree of stress for both speech styles.

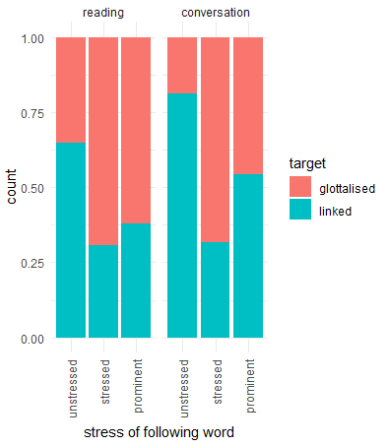


Figure 8. Proportion of glottalization and linking in word 2 based on the degree of stress for both speech styles.

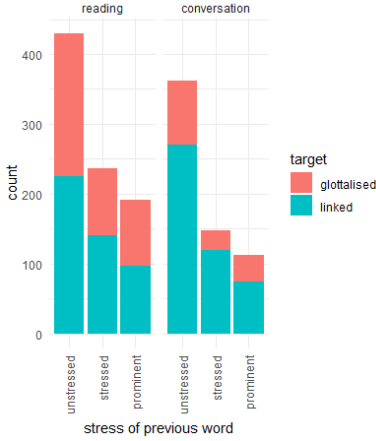


Figure 9. The same data as in Figure 6 represented in numbers for comparison.

As Figure 7 shows, the data set for prominently stressed words 1 from conversations displays a slightly more elevated percentage of glottalization than for unstressed and stressed words 1. This finding is in compliance with our hypothesis which presumed that prominently stressed words tend to be pronounced in their isolated way. On the other hand, in reading there is no notable difference between the proportions of linking and glottalization based on the degree of stress. Generally, we observe a higher percentage of linking in word 1 stressed words in both speech styles (ca 60% in reading and ca 80% in conversation are linked). This is a

remarkable contrast to the instances of linking of word 2 stressed words (Figure 8), which are glottalized in approximately 70% of the cases in both speech styles.

If we observe the data from Figure 8, globally, the tendencies between the speech styles appear to be similar. Specifically, for unstressed words 2 we observe more instances of linking. As we have mentioned, stressed words 2 tend to be more glottalized in both speech styles and prominently stressed words 2 are overall more glottalized in reading and then balanced in conversation. What is notable is that for unstressed words 2 we observe much less glottalization in conversation as approximately 80% of the instances are linked. These results indicate that speakers have a higher tendency to glottalize when the words display a higher degree of stresses, while linking is more frequent in unstressed words, which is agreement with the hypotheses of this study.

To conclude, the speakers displayed a general tendency to most prominently link stressed words 1 during both speech styles, while stressed words 2 display the highest amount of glottalization also in reading and conversation both. In comparison, it is the unstressed words 2 that are generally linked most frequently.

6.4. Individual Speakers and Final Sound (C/V) Linking Distribution

The tendencies concerning different aspects of linking and the factors which influence this feature of connected speech having been discussed in overviews including the results of all speakers, we should also examine the linking and glottalization ratio of each individual speaker. Additionally, we will investigate the distribution of linking and glottalization based on the final sounds on word boundaries in the predicted linking contexts for individual speakers during both reading and conversations. The final sounds were either vocalic or consonantal, while the initial sounds were always vocalic, they are therefore not shown in the following figures.



Figure 10. The percentage of linked or glottalized words in reading and conversation for each individual speaker.

First, let us concentrate on the data showing the occurrence of glottalization and linking during reading recordings and conversations produced by each speaker. Figure 10 indicates that each speaker tends to link words more during conversation than during reading, without exception. This confirms the tendency from Figure 4 which basically represents the mean of data depicted in this figure. It is interesting to note that speakers M3, F1, F8 display an approximately balanced and elevated number of linking instances. This might indicate a higher familiarity and experience with English. On the other hand, speakers F2, F3 and F7 show a higher general tendency to glottalize in both speech styles.

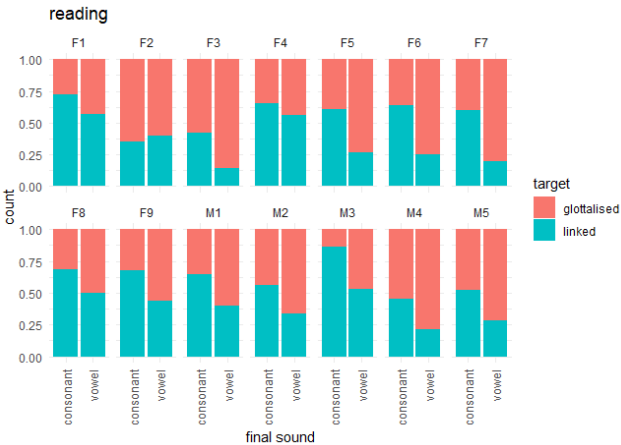


Figure 11. Percentage of linking and glottalized words depicting the type of final word sound (C/V) for each individual speaker during reading.

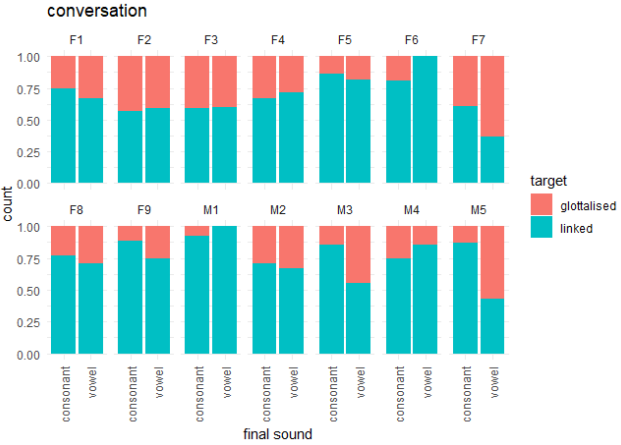


Figure 12. Percentage of linking and glottalized words depicting the type of final word sound (C/V) for each individual speaker in spontaneous speech.

As Figure 11 indicates, with the exception of F2, the proportion difference of linking and glottalization between final consonantal and vocalic sounds during reading are very similar between the individual speakers. Consequently, what is of interest is that in prepared speech (reading), words ending with a consonant are generally significantly less linked than words ending with a vowel. However, in spontaneous speech (conversation) the difference in the proportion between consonantal and vocalic final sounds is significantly less regular, as seen in Figure 12. Additionally, an interesting point is that speakers M1 and F6 have linked all of the instances where the final sound of the preceding word is a vowel during spontaneous speech but not during reading.

Generally, it should be noted that Figures 11 and 12 suggest once more that linking is more frequent during spontaneous speech than during reading, regardless of the final sound of the word. Notably, only speakers F1 and F7 have displayed a similarly balanced ratio of linking

and glottalization of vocalic and consonantal final sounds in both speech styles. Otherwise, all the other speakers linked final consonantal and vocalic sounds more often during conversations.

6.5. Unusual and Interesting Cases

Before we move onto the results concerning other CSPs, I would like to mention a few instances of unusual or interesting pronunciations which various speakers have produced, and which have caught my eye. These cases occurred during linking or instead of it on word boundaries.

Modification Type	Phrase	Transcription	Speaker	Style
t-glottalization	bit of	[bɪʔ ɒv]	F1	R
	cannot understand	[kænɒʔ ,ʌndə'stænd]	F6	R
	bit at	[bɪʔ æt]	F6	C
t-elision + transient [r]	but otherwise	[bʌ'tɪ.ɹ_ʌðəwaɪz]	M1	R
Linked with [ɹ]	there is	[zeəɹ_ɪz]	M2	R
	year and	[jɪəɹ_æɪn]	M2	C
	for it	[fɔ:ɹ_ɪt]	M2	R
Linking [z]	struggle is	[strʌgʌl zɪz]	F3	R
h-epenthesis	high altitudes	[haɪ 'hɑltɪtju:dz]	M1	R
	high altitudes	[haɪ 'hæltɪtju:dz]	M4	R
	high altitudes	[haɪ 'hɑltɪtju:dz]	M5	R
	after all	[ɑ:ftə hɔ:l]	M2	R
	will ask	[wɪl hɑ:sk]	F8	R

Table 1. Selected list of different types of unusual or interesting modifications from French-accented pronunciation in predicted linking environments.

Notes: R = reading. C = conversation. F = female speaker. M = male speaker

Table 1 represents a selection of the most interesting, unusual, or reoccurring phenomena, which were found pertinent to the subject of this research. In this subsection of my study, I will briefly inquire whether some of the special cases have common features and whether these are shared by more than one speaker. I also intend to describe the instances that only occurred during the speech of an individual speaker.

As we can observe in Table 1, the most frequent (5 instances) interesting feature the speakers have displayed is the addition of a superfluous /h/ sound at the initial position of the following word. The relatively high frequency of this phenomenon, called h-epenthesis, in our

recordings is not surprising as it is a commonly observed feature of French-accented English. It is usually believed to be due to hypercorrectness (John & Cardoso, 2008). To be precise, in French, most initial spelled ‘h’s (which are usually followed by a vowel) are mute unlike in English. This might be one of the reasons why French speakers unconsciously insert an additional /h/ sound before vowel-initial words. Although this is only speculation, it remains an interesting subject. Additionally, it is notable that three different speakers produced h-epenthesis in the same phrase (*high altitudes*), although the pronunciation of *altitudes* was slightly varied. The two other different instances of this phenomenon were each pronounced by different speakers. We might also notice that h-epenthesis was observed during reading (careful prepared speech) and not in the analysed portions spontaneous speech.

The second most usual features were t-glottalization and the linking of /r/ final words with a French /r/ pronunciation ([ʁ]) on word boundaries. T-glottalization was pronounced twice by the same speaker and once by a different one. It is interesting to note that both speakers displayed a higher English proficiency. Especially speaker F6 is influenced by environments using British English for which t-glottalization is typical in certain varieties. This speaker has used t-glottalization in linking context during both reading and conversation. Concerning linking using French [ʁ], all the instances (in both reading and conversation) were produced by one speaker (M2). No other speaker showed this tendency.

The first of the two remaining unusual instances can be described as t-elision in combination with the occurrence of transient [r]. This phenomenon has been observed only once (during reading) and it did strike me as quite unusual for French-accented English (although it has been reported in some native English varieties). The second remaining discrepancy which occurred in the examined linking environments was also pronounced only by one speaker. For the lack of terminology, I described this phenomenon as “linking [z]” as it worked similarly to the usual English transient sounds (linking [w], [j], [r]). This linking [z] occurred in the phrase (*the struggle is*). We might speculate that this case of linking [z] was caused by the fact that speaker F3 has pronounced the whole phrase as [zə strʌgʌl zɪz]. This modification of the expected pronunciation of [ð] to [z] (here in *the*) is another frequent feature of French-accented pronunciation of English and this interference between the two languages was found highly interesting.

6.6. Examination of Other CSPs

In the final subsection of this chapter, let us describe the results concerning the remaining CSPs analysed in the span of this study. As the reader already knows, we will be discussing elision and different types of assimilation. It should also be reminded that unlike linking, these CSPs occur solely on the boundary of words with a final and an initial consonant.

Firstly, we will concentrate on the results concerning elision. A detailed description of this feature of connected speech has been made in the second chapter of this study (see section 2.8). As has been explained in the chapter about the methodology applied in this study (see chapter 5), during the process of data analysis, 5 elision contexts have been chosen from the Mallory text which have ten been assessed in Praat in the reading recordings. It should be mentioned that such a small number of analysed instances does not allow us to make general assumptions. Additionally, elision contexts have been differentiated based on the final sound of the previous word, which was either /d/ or /t/.



Figure 13. Number of elided or kept instances on word boundaries based on the final sound (/d/, /t/) of the previous word for each speaker.

In Figure 13, we can observe whether the individual speaker have elided the final /d/ or /t/ sound in the chosen elision environments. It is notable that elision of the final /d/ sound overall did not occur only in 5 cases. Speaker M1 kept the final /d/ sound in all of the three examined instances, speakers F4 and M3 each kept one of them. All of the other speakers have elided the final /d/ sounds in all cases. The distribution of /t/ elision is much more regular and only speakers F2 and F8 have kept all of the final /t/ sounds. Generally, we can conclude that the final /d/ sound was much more often elided by the French speakers of English than the final /t/ sound. However, in all of the instances the chosen word 1 was the very common English word *and*, which might have an impact on the results. Bearing that in mind, it is still interesting

to note that the final /d/ was elided in 35 instances out of 42 which is in 83% of the cases, while the final /t/ sound has been elided in 12 instances out of 27, which is only in 44% of all cases.

Considering the notable difference between the principle of elision in English and in French, it is remarkable that we can observe such a high percentage of elision in Figure 13, especially where the final /t/ sound is concerned.

The second CSP other than linking that has been assessed was assimilation. As has been explained, different subtypes of assimilation were analysed (see section 5.2). The assimilation contexts have been chosen and examined in the same way as possible elision instances.



Figure 14. Number of released and unreleased assimilation instances based on the assimilation subtype (plain, dentalization, glottalization).
Notes: released = assimilation has not occurred. unreleased = assimilation has occurred

Figure 14 shows that in the case of dentalization with no audible release, 31 cases out of 42 have been released (73 %) and only 27% have been unreleased. Briefly said, this means that in most instances, dentalization with no audible release has not occurred and the total realization number of this assimilation subtype is markedly low. Similarly, we do not observe many occurrences of plain assimilation as 18 out of 27 cases (67%) have been released, while only ca 33% were unreleased. The assimilation subtype of possible glottalization occurred 3 times out of 28 – that is only in 11% of the cases. Interestingly, speakers F7, F9 and M5 have released absolutely all of the possible instances of assimilation, which means that in their case no assimilation occurred at all.

Finally, no additional figure is needed to comment upon the results concerning the last assimilation subtype, as only 5 out of the 14 speakers have pronounced a “long ð” in the phrase *with that*. It should be noted that this phrase was the only possible context for long ð in the text.

Generally, we can observe that the speakers had a particularly weak tendency to assimilate sounds at word boundaries during connected speech regardless of the assimilation type.

To summarize, these results appear to be rather thought-provoking. What these findings suggest is that although the phenomenon of assimilation is present in French and its basis is similar to assimilation in English, no positive transfer to French-accented English seems to have occurred when this CSP was examined in this study. If we consider the results relating to elision, we might arrive at precisely the opposite conclusion about it.

7. General Discussion

Overall, the results of this research indicate that French speakers of English incline more strongly towards linking than towards glottalization. This tendency can be observed in both analysed speech styles. When comparing the amount of instances of linking and glottalization in predictable environments, the speakers were more likely to link during spontaneous speech (58%) than in prepared speech (42%). As has been previously mentioned, these observations are comparable with previously conducted studies (Alameen & Levis, 2015; Shockey, 2003).

Moreover, if we consider the main research questions (see chapter 4), both proposed answers display a certain correspondence with the examined phenomena (see Figures 2 and 4). Simply put, the results suggest a balance of the occurrence of both a positive transfer between French liaison and English linking and of glottalization due to cognitive factors influencing the speakers, who are more prone to pronounce words in their isolated form during prepared speech and more likely to pronounce words in a connected way during spontaneous speech. Additionally, with a few exceptions in the conversation data set, the analysis of final C/V distribution in individual speakers suggested a higher linking frequency in resyllabification contexts (that is where we find a word-final consonant) than in V/V (vowel-to-vowel) instances (see Figures 11 and 12). This phenomenon was more prominent in the reading data set.

Furthermore, we have concentrated on the influence of the semantic class of previous and following words (grammatical or lexical) on linking and glottalization (see Figures 5 and 6). In this case, the linking tendency displayed by French speakers of English does not significantly incline towards any word class and takes more or less the form of a scale. To summarize, the semantic class of word 1 (be it lexical or grammatical) did not markedly influence the occurrence of linking or glottalization, however it did play a more significant role

for word 2 as during reading, word 2 tended to be linked more frequently in grammatical words, whereas it was more often glottalized in lexical words. As has been mentioned, the conversation data set indicated that the linking frequency of grammatical words 2 was significantly higher, while we could observe a more balanced ratio between linking and glottalization of lexical words 2. Another examined aspect of speech production which was assumed to have a possible influence on linking in French-accented English (due to its relation to speech rhythm) was word stress (see Figures 7 and 8). Generally, in both speech styles, French speakers showed a higher tendency to link previous stressed words. Contrariwise, generally, stressed following words were the ones to be glottalized the most frequently. The most balanced ratio of linking occurred for following unstressed words. As has been mentioned, this corresponds to our hypothesis that speakers display a higher tendency towards glottalizing stressed words than unstressed ones due to their inclination to unconsciously perceive such words in their isolated form.

Finally, two other CSPs other than linking have been briefly analysed, that is elision and three subtypes of assimilation (see Figures 13 and 14). We have already observed that the occurrence of elision seemed to be much more prominent than that of assimilation, although elision unlike assimilation occurs markedly differently in French than in English. However, it must be specified that the chosen possible predictable environments for elision included cases where elision is very common and usual in English, as it was composed of examples with final /t/ and /d/ deletion within consonantal clusters. On the other hand, the prediction and occurrence of assimilation is much more precarious in this regard due to the low number of items.

One of the aims of this study was to analyse the effect of Czech as an L3, however it was not possible to treat this as a factor, since the speakers were not balanced in this respect. In view of these circumstances, for further research I propose to develop the examination of L3 interference with L2 during the phonological acquisition of both languages. Namely, I find it of great interest to gather additional data from more native French speakers influenced to a significant degree by Czech. Consequently, one could observe whether higher familiarity with an L3, which does not use linking but has a higher tendency to glottalize (Czech) would influence the occurrence of linking in an L2 where linking is a markedly common phenomenon (English). In our research at least one of speakers (F7) has displayed such a tendency. Moreover, it would be interesting to examine the degree of interference between all three languages (L1, L2, L3) and whether the L2 and L3 proficiency level has a significant role in any possible phonological transfer.

8. Conclusion

The subject of this bachelor's thesis was to examine connected speech processes in French-accented English. To provide a sufficient background to conduct this experimental study, a wide range of literature has been discussed. Specifically, the theoretical part of my thesis concentrated in detail on the definition of CSPs while focusing on different factors which influence them in the context of connected speech and speech production in general. These factors ranged from sociolinguistic (cognitive) to linguistic and phonological (e.g. speech fluency and fluency perception or language rhythm and stress). A special interest has been accorded to the descriptions of linking, elision and assimilation in both English and French. Additionally, a few words have been said about the relation of connected speech to L2/ L3 acquisition.

The analytical part of this research described the applied methodology. Furthermore, the results provided by the collected data have been examined, commented upon and subsequently generally discussed.

The results of my study indicate that overall, French-accented English displays positive transfer of linking, which is more prominent in spontaneous speech than in careful prepared speech. Additionally, on the basis of some of the results reported by this research, it could be assumed that cognitive factors impact the speakers to pronounce words either in their isolated form or in a connected way based on speech style. The conducted analyses also suggested that various aspects of speech production, which are language specific, do influence the occurrence of linking and glottalization and other CSPs to a certain degree. This degree of influence has been found to vary aspect from aspect.

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10. Resumé in Czech

Tématem mé bakalářské práce byly jevy souvislé řeči v angličtině francouzských mluvčích. Zaměřila jsem se zejména na vázání v souvislé řeči s tím, že zkoumáno bylo i několik dalších, dále popsaných jevů. Výběr tématu byl ovlivněn jak zájmem o fonetický výzkum, tak důvody osobními, vzhledem k tomu, že jsem rodilou francouzskou i českou mluvčí a studijně se věnuji Anglistice-amerikanistice a francouzskému překladu a tlumočení. Důležitou motivací pro tento výzkum tvořil rovněž zájem o to, zda třetí cizí jazyk (čeština) ovlivňuje osvojování jazyka druhého (angličtiny). Tato motivace však nebyla hlavním výzkumným cílem mé práce. Souhrn těchto okolností mě přivedl k hlubokému zájmu o mezijazykovou interferenci, obvlášť co se týče výslovnosti a osvojování si cizí řeči. Tato práce obsahuje jak část empirickou, která shrnuje metodologii výzkumu, jeho výsledky a jejich následnou interpretaci, tak část teoretickou, která jí nutně předchází a poskytuje čtenáři potřebné znalosti nutné k pochopení prostudované problematiky.

V teoretické části této práce jsem se zaměřila na podrobný popis jevů souvislé řeči a na to, jaká je jejich úloha v rámci samotného principu souvislé řeči a v řeči obecně. V této části byly popsány sociolinguvistické, lingvistické, fonetické a fonologické faktory, které jevy souvislé řeči ovlivňují. Mimo jiné jsem podala definici souvislé řeči, kterou na základě prostudované literatury (zejména Alameen a Levis, 2015 a Shockey, 2003) popisují jakožto druh řeči, ve které nevyslovujeme slova rozděleně, nýbrž propojeně (tedy souvisle) na základě určitých kritérií či jazykových a sociolinguvistických zvyklostí.

Dále jsem se věnovala konkrétním aspektům, které jevy souvislé řeči ovlivňují a způsobují. Jedním z nich byl například princip jazykové ekonomie. Ten spočívá v tom, že mluvčí obecně vykazují tendenci volit co nejjrychlejší a nejjednodušší způsob výslovnosti tak, aby byl efektivně zachován hlavní cíl promluvy. Tím míníme zejména efektivní předání informace a smyslu s vynaložením co nejmenšího úsilí. V tomto kontextu jsem rovněž zmínila několik poznatků o tom, do jaké míry je relevantní rychlost promluvy během vázané řeči. S tím souvisel vliv kognitivních faktorů a specifických zvyklostí v jednotlivých jazycích na vázanou řeč. Jejich prostudování vedlo k poznatku, že jevy vázané řeči jsou v rámci promluv značně předvídatelné, což umožňuje podrobnější analýzu. Tato skutečnost byla velmi významná pro mé empirické i teoretické zkoumání angličtiny francouzských mluvčích.

Vzhledem k zvolené metodologii této studie a k jejím cílům bylo rovněž nezbytné věnovat se tomu, do jaké míry můžeme pozorovat vázanou řeč a její jevy v rozdílných typech

promluv. Konkrétně jsem se zajímala o vázanou řeč ve čtených (či připravených) promluvách a v promluvách spontánních (neformální každodenní konverzace). Dle prostudované literatury (Alameen & Levis, 2015) totiž tyto faktory značně ovlivňují výslovnost rodilých i nerodilých mluvčích. Starší studie se na jednu stranu klonily k názoru, že vázaná řeč je častější v běžné konverzaci, zatímco dle novějších studií (Alameen & Levis, 2015; Shockey, 2003) je poměr jevů vázané řeči v obou druzích promluv relativně vyvážený. Tyto poznatky byly značně založeny na analýze způsobu výslovnosti slov ve vázané řeči. Slova mohou být vyslovena buďto vázaně, či izolovaně (tedy ve slovníkovém tvaru).

Dalším významným faktorem ovlivňujícím vázanou řeč, kterému byla věnována podkapitola v této studii, je plynulost řeči. V této části jsem čerpala zejména ze studie Šimáčkové a Podlipského (2018). Hlavním důvodem, proč jsem se věnovala tomuto jevu, je provázanost adresátova vnímání plynulosti řeči mluvčího v souvislosti s mírou její vázanosti. Tento poměr byl pro naši studii relevantní zejména ve vztahu k percepci výslovnosti angličtiny u nerodilých mluvčích vzhledem k tomu, že výskyt jevů vázané řeči hraje významnou roli v našem vnímání plynulosti řeči obecně. V této části byla rovněž zdůrazněna závažnost vázané řeči v angličtině, z čehož vyplnulo, jak důležité je k tomuto fenoménu přihlížet během jazykového osvojování. Posledním faktorem ovlivňujícím vázanou řeč, na který jsem se v této práci soustředila, byl jazykový rytmus. Zkoumala jsem tedy jak jeho obecnější definice, tak jeho vztah k vázané řeči. V tomto kontextu jsem pak věnovala pozornost zejména přízvučnosti v jazycích, respektive typům jazyků (s důrazem na francouzštinu a angličtinu), dle úlohy, kterou v nich přízvuk má.

Následných několik podkapitol se soustředilo na popis principů jednotlivých jevů souvislé řeči, které byly dále zkoumány v analytické části této práce. Nejvíce prostoru bylo věnováno jevu vázání, které bylo pro mou studii ústřední. Prvně jsem popsala mechanismy tohoto fenoménu v angličtině. Následně jsem uvedla nezbytný výměr ekvivalentu tohoto jevu ve francouzštině (*liaison/enchaînement*), který se ukázal v mnoha věcech podobný, ale zároveň také velmi rozdílný. Zajímala jsem se rovněž o vliv francouzského vázání na vázání v angličtině a o úlohu anglického vázání v jazykové výuce. Na závěr jsem pomocí příkladů popsala jevy *elize* a *asimilace* v angličtině a jejich existujících ekvivalentů ve francouzštině.

V poslední kapitole teoretické části mé práce jsem vyzdvihla několik důležitých aspektů, které hrají roli v osvojování si druhého či třetího cizího jazyka. Tato kapitola nabízí relativně obecný pohled na věc, přičemž hlavní důraz byl kladen na provázanost dané problematiky s fenoménem vázané řeči. Důležitým poznatkem plynoucím z této kapitoly

bylo, že nerodilí mluvčí mají tendenci vyslovovat slova více izolovaně, než spojeně, a že charakteristické rysy jejich rodného jazyka (zejména přízvuchnost) mohou hrát důležitou roli v mezijazykové interferenci při výslovnosti v cizím jazyce. Obecně vzato, cílem teoretické části mé bakalářské práce bylo podrobněji seznámit čtenáře se studovanou problematikou a poskytnout mu základní (a místy rozšířenější) pozadí nutné pro uchopení tohoto tématu a následné pochopení analytického postupu a výsledků této studie.

V analytické části mé práce byla nejprve stanovena hlavní výzkumná otázka. Ptali jsme se, zda francouzští mluvčí budou užívat vázané řeči. Na základě prostudované literatury jsme předpokládali, že francouzští mluvčí budou ve větší míře vázat i v angličtině, vzhledem k tomu, že v jejich mateřštině je vázání běžné. Zároveň jsme předpokládali, že bude-li docházet ke glocalizaci, příčinou budou zejména kognitivní faktory ovlivňující mluvčí, kteří pak některá slova vysloví izolovaně a nikoliv vázaně. Dodali jsme, že tato úvaha není kategorická (ani v případech rodilých mluvčích). Rovněž bylo zmíněno na základě jakých kritérií budeme vázání analyzovat (zejména sématická třída slov). Závěrem jsem rovněž zmínila, že všichni vybraní mluvčí strávili různě dlouhé období v České republice a mají rozdílné znalosti češtiny, tudíž by bylo zajímavé sledovat míru jazykové interference mezi těmito třemi jazyky, přestože nejde o hlavní záměr mé studie.

Druhá část analytické části se věnovala popisu metodologie, kterou jsme zvolili a aplikovali v této studii. Pro účely této práce jsme nahráli 14 dospělých rodilých mluvčích francouzštiny hovořících anglicky. Výběr mluvčích neurčovala specifická kritéria, výzkum byl zcela anonymní a mluvčí neměli předchozí informace o studované problematice. Nahrávky se skládaly ze dvou částí. První tvořilo čtení krátkého textu, cca 1,5 minuty (text si mohli mluvčí předem přečíst) a druhou spontánní běžná konverzace s výzkumníkem, cca 5 minut. Data z nahrávek byla následně studována pečlivým poslechem s občasnou pomocí spektrogramu v softwaru určeném pro fonetickou analýzu Praat 6.1.54 (Boersma, Paul & Weenink, David, 2021). Ve čtených nahrávkách byla analyzována přítomnost vázání, elize a různé druhy asimilace. V nahrávkách konverzací, ze kterých bylo pomocí OpenQI Whisper transkribováno 1,5 minuty promluvy, jsem se zaměřila pouze na vázání.

Vázání bylo analyzováno mezi slovy končícími souhláskou a začínajícími samohláskou, či končících samohláskou a začínajících samohláskou. Pro průzkum ostaních jevů souvislé řeči byly z čteného textu vybrány případy, kde se daný jev dal dle fonologického kontextu předpokládat. Ozačení přítomnosti či nepřítomnosti všech jevů vázané řeči proběhlo manuálně v softwaru Praat. Zároveň byla také označena míra

přízvučnosti slov a neobvyklé případy vázání. Extrakce dat do excelových tabulek proběhla pomocí R softwaru. Zde byla manuálně označena sémantická třída slov (gramatická a lexikální). Na základě extrahovaných dat byly vytvořeny grafy, které jsou použity v mé práci pro ilustraci interpretovaných výsledků.

V následující části jsem se věnovala podrobné datové analýze a interpretaci výsledků mé práce. Nejprve jsem se zaměřila na celkový poměr vázání a glotalizace ve výslovnosti angličtiny francouzských mluvčích. Z výsledků bylo patrné, že mluvčí výrazně častěji v angličtině slova vázali, než glotalizovali, což bylo v souladu s naší hypotézou. Ukázalo se také, že vázání bylo podstatně častější v běžné konverzaci než-li v připraveném čtení textu, což potvrdilo domněnku, že mluvčí pravděpodobně častěji vyslovují slova v jejich slovníkovém (izolovaném) tvaru během připravené řeči než během řeči spontánní. Dále jsem se zaměřila na vliv sémantické třídy slova na míru vázání. Z těchto dat vyplynulo, že sémantická třída prvního slova nijak výrazně vázání neovlivnila, zatímco u druhého slova hrála významější roli.

Následně jsem analyzovala vliv míry přízvučnosti vzhledem k výskytu vázání. Tato data naznačila, že mluvčí nejméně vázali přízvučná slova ve druhé pozici, ale o něco více vázali přízvučná slova v první pozici. Obecně se však nejvyrovnanější poměr vázání a glotalizace vyskytoval u nepřízvučných slov ve druhé pozici. Tyto poznatky opět souhlasily s předpokladem, že mluvčí častěji glotalizují přízvučná slova vzhledem k tomu, že mají nevědomou tendenci vnímat je v jejich izolované formě. Dalším zkoumaným aspektem byla distribuce koncových a počátečních hlásek. V tomto případě jsme až na pár výjimek častěji pozorovali výskyt vázání, pokud první slovo končilo na souhlásku a druhé začínalo na samohlásku, než když první slovo končilo na samohlásku a první také na samohlásku.

Následující krátká podkapitola se věnovala vybraným neobvyklým a zajímavým případům vázání či jeho alternativ, které se objevili u francouzských mluvčích. Nakonec jsem se věnovala průzkumu dvou odlišných jevů vázané řeči, konkrétně elizi a asimilaci. Data týkající se těchto jevů naznačila, že elize se objevuje častěji než asimilace, nicméně velký vliv v tomto případě hrály kontrétní příklady a jejich kontext, přičemž vybraný počet vzorků byl příliš malý pro provedení obecných závěrů. V obecné diskuzi jsem poskytla souhrn poznatků plynoucích z analyzovaných výsledků a navrhla jsem možnost navazujícího výzkumu, který by spočíval v podrobnější analýze vlivu třetího cizího jazyka na výslovnost a osvojování druhého cizího jazyka.