UNIVERZITA KARLOVA

Pedagogická fakulta

BAKALÁŘSKÁ PRÁCE

The influence of Czech on the production of English consonant clusters by Vietnamese EFL learners living in the Czech Republic

Vliv češtiny na produkci anglických souhláskových shluků u vietnamských mluvčích anglického jazyka žijící v Čechách

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Study subjects: English and German

2021

I hereby declare that this bachelor thesis was written only by me and that no sources were used other than those listed in the works cited section.

Prague, 2021 Nguyenová Thi Lam

Acknowledgements

I would like to give my most sincere thanks to my thesis supervisor Mgr. Kristýna Červinková Poesová, PhD for all her helpful comments and especially for her supportive approach through the creation of this work. I would like to thank all the respondents who participated in the experiment.

Abstract

The aim of this Bachelor thesis is to find out whether the knowledge of the Czech language influences the production of consonant clusters by Vietnamese speaking EFL learners living in the Czech Republic. The theoretical part focuses on the phenomenon of language transfer and compares English, Vietnamese and Czech syllable structure and consonant clusters. The practical part contains a perceptual analysis of recordings produced by two groups - EFL learners living in Vietnam and Vietnamese EFL learners living in the Czech Republic.

Key Words

Language transfer, third language acquisition, consonant clusters, syllable

Abstrakt

Cílem této bakalářské práce je zjistit, jaký vliv má znalost češtiny na proces osvojování anglického jazyka u vietnamských žáků žijících v České republice, a to konkrétně při produkci souhláskových shluků. Teoretická část se věnuje popisu jazykového transferu, poté se zabývá slabikou, souhlásky a souhláskovými shluky v anglickém, českém a vietnamském jazyce. V praktické části budou analyzovány a porovnávány nahrávky vietnamských žáků žijící ve Vietnamu a vietnamských žáků žijících v České republice.

Klíčová slova

Jazykový transfer, osvojování třetího jazyka, souhláskové shluky, slabika

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List of Abbreviations

EFL English as a Foreign Language

ESL English as a Second Language

L1 Language One (native language)

L2 Language Two (second language)

L3 Language Three (third language)

LT Language Transfer

NL Native Language

TL Target Language

SLA Second Language Acquisition

1. INTRODUCTION

English is indisputably one of the most widely spoken languages along with Chinese and Spanish, and its power has reached an unprecedented level. Therefore, it is commonly referred to as "a global language" or "lingua franca". English is nowadays the language not only of science, politics, economics, and technology, but also of the press, internet, and entertainment. According to Graddol's survey, which was reported by the British Council, the number of second-language English speakers surpassed those of native speakers. To be precise, Crystal asserts that there are 326 million speakers who have learned English as their first language and around 430 million speaking English as their second language. (69) This study focuses on the Vietnamese speaking EFL learners living in Vietnam and in the Czech Republic and aims to explore the field of language transfer from the Czech language (L2) to English (L3).

The reason I chose the influence of Czech on the pronunciation of consonant clusters by Vietnamese-speaking EFL learners to be the focus of my bachelor thesis was my personal experience with the incorrect pronunciation of consonant clusters produced by Vietnamese students living in Vietnam, which often led to confusion and misunderstanding. Referring to the views of Khanbeiki and Abdolmanafi-Rokni, in terms of communication, I also believe that it is essential to master the pronunciation of a target language since, in many cases, the mispronunciation of one sound will result in changes in meaning, hence affecting the flow of communication. (1)

One of the causes of their mispronunciation might be the inferior quality of Vietnamese English language teachers. Huynh, principal of Nguyen Du High School, stated[1] in his interview for VnExpress: "The recruitment process for teachers is truly arduous, and yet those that are good at English can easily make use of that skill to work for other companies to earn a much higher income. In fact, those who choose to become teachers are not as bright as those who choose other careers." Vietnamese English teachers may seem, therefore, unsuitable models for correct pronunciation.

[1]https://e.vnexpress.net/news/news/learning-english-at-school-a-mandatory-chore-that-leads-nowhere-4163391.html

Another potential wellspring Vietnamese EFL speakers' intelligibility might be the domination of the Grammar Translation Method which focuses on grammatical rules, translation, reading, writing, and vocabulary. Skills such as speaking and listening are considered to be subsidiary. Therefore, students have only little opportunity to practice their pronunciation.

The obstacle that will be discussed in more detail further in this study is the extreme dissimilitude of Vietnamese and English language structure. To be more precise, this study focuses on the pronunciation of consonant clusters. This topic has received special attention from linguists all over the world, and several studies have been conducted. Researchers (Khanbeiki and Abdolmanafi-Rokni 2015, Yuliati 2014, Choi 2016, Jurado 2005, Nguyen 2019) show that most speakers whose native language does not contain complex consonant clusters tend to have difficulties and are apt to simplify the pronunciation when pronouncing English consonant clusters (further discussed in chapter 2.5). Nevertheless, I have noticed that Vietnamese students who moved to the Czech Republic and attended school there for a particular time have improved their speaking skills compared to those who studied English in Vietnam.

This study aims to investigate the cross-linguistic influence of Czech on the pronunciation of English consonant clusters produced by Vietnamese EFL speakers living in the Czech Republic.

This study comprises four major sections: introduction, theoretical part, practical part, and conclusion. The theoretical part is then subdivided into six chapters. In Chapter 2.1, the phenomenon of language transfer and its occurrence in the third language acquisition is described. The following Chapter 2.2 provides information about the general characteristics of researched languages. Chapters 2.3 and 2.4 are devoted to the description of syllable structures and consonant clusters of each language.

The theoretical part closes with Chapter 2.6. which presents previously conducted research concerning the acquisition of English consonant clusters by EFL speakers.

The practical part is divided into six chapters. The hypotheses are proposed in Chapter 3.1. The information about the subjects, testing instrument, and data analysis is provided in chapters 3.2, 3.3, 3.4. The results are analysed and presented in chapter 3.5. The discussion in chapter 3.6 closes the practical part.

2. THEORETICAL PART

This section acquaints the readers with the background information and serves as a foundation for the practical part. Firstly, the phenomenon of language transfer as well as the third language acquisition is introduced. In Chapter 2.2, general information about the examined languages - English, Vietnamese, and Czech - is provided. The theoretical part further continues with the description of the syllable (Chapter 2.3), the sound system and consonant clusters of each language (Chapter 2.4). The last chapter of the theoretical part is devoted to the previously conducted research concerning the acquisition of English consonant clusters.

2.1 Language transfer and its occurrence in L3 acquisition

The issue of cross-linguistic influence has long been a crucial topic of foreign language acquisition. In order to be able to understand it properly, it is essential to survey its research developments and its definitions.

Despite the fact that the field of cross-linguistic influence research is developing rapidly, linguists have not reached a consensus on its definition and the process by which it works. In 1881, Whitney referred to cross-linguistic influences as language transfer (further in this study as LT) which was later commonly used by many linguists. (Whitney in Lu 4) Nevertheless, many others believe that the terminology is not accurate and thus may lead to various conceptions. As an example of the early perspective, the term *interference* was coined by Weinreich and initially used to describe "instances of language deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language." (Weinreich in Murphy 3)

Yet, Weinreich's definition, which focuses on the negative influence of a language, was refuted by subsequent research showing that the influence is not always negative. As a result, the term *interference* was replaced with *transfer*. (Murphy 3) Another definition was given by Lado (1957) and Fries (1945), who defined transfer as the imposition of native language information on a second language utterance or

sentence. (Lado and Fries in Dost 166) Odlin (1989), on the other hand, defined transfer as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired." (Odlin in Murphy 3)

Most research concerning LT focuses mainly on the influence of L1 on L2 in SLA, and in the course of analysing and exploring the phenomenon, various perspectives have been developed. The behaviourist view suggests that learning is simply a habit formation process (Karim and Nassaji 118) and equates learning a language to verbal behaviour. (Skinner in Nor 162)

In other words, behaviourists such as Skinner believe that language can be observed like any other behaviour and that learners' active and repeated responses to stimuli would promote learning. A positive response would be rewarded and praised, and a negative response would lead to punishment. Nevertheless, this simplistic view was heavily criticized. (Lu 5) Thus, an important question whether the L2 is acquired in the same way as L1 or whether the acquisition is influenced by L1 emerged. Behaviourists suggest that L2 acquisition differs from L1 acquisition since L2 learners already have a set of well-established language habits from their L1. L2 learners are therefore believed to acquire language by imitating what they hear, in other words, by routine practice. (Shormani 79) To what extent the learners will have difficulties when learning L2 is determined by the similarity and difference between the native and the target language. Based on this assumption, Lado proposed a theory called Contrastive Analysis Hypothesis (CAP), which asserts that "The level of difficulty experienced by the learners will be directly related to the degree of linguistic differences between L1 and L2," and "Difficulty will manifest itself in errors: the greater the difficulty, the frequent the errors." (Lado in Lu 5)

In contrast, the cognitive view of transfer proposes that learning a language involves the same mental processes as learning other types of knowledge such as perception, memory, problem-solving, etc. (Lu 7) Many attempts to indicate the conditions under which LT is likely to occur have been made. For instance, Kellerman detected three factors that determine whether the learner transfers or not. Firstly, it is their psychotypology. To put it another way, LT depends on how the learner organizes

his or her NL. The second factor is the perception of NL and TL distance, and lastly, the actual knowledge of TL. (Kellerman in Drier 119)

According to Wode, LT may be a "developmental phenomenon in that it only occurs when the learner reaches a natural stage of acquisition which bears a crucial similarity to some native language structure". (Wode in Ellis 29) Nevertheless, many linguists, especially those who hold an innatist view of language acquisition, do not concur that L1 influences L2 in any significant way. (Murphy 3) The innatist theory was partially inspired by Chomsky, who formulated a concept of Universal Grammar (UG), suggesting that humans are "biologically equipped to learn a language using the language faculty or the Language Acquisition Device (LAD), which is responsible for the initial stage of language development". (Chomsky in Rashid 163) In order to trigger the LAD, only the input is required. (Shormani 27) Chomsky defines UG as "a set of principles, conditions, and rules that are elements or properties of all human languages not merely by accident but by necessity". (Chomsky in Shormani 25)

Dulay and Burt (1974) conducted research which showed that young ESL learners made similar grammatical errors to young first English language learners. The participants (Spanish-speaking, English-speaking, and Chinese-speaking) were given questions based on colourful cartoon pictures. Dulay and Burt concluded that some grammatical errors were influenced by the native language of participants; however, English-speaking students demonstrated the same majority of grammatical errors as ESL students. (Bulay and Burt in Mulyani 15)

In terms of LT types, many linguists distinguish between positive transfer, negative transfer and zero transfer. Positive transfer occurs in cases where the NL and TL structures are similar since habits used in L1 easily transfer to the L2. Negative transfer emerges when there are dissimilarities between NL and TL resulting in errors making since learners use the habits of NL in TL, especially those that do not exist in TL. (Shormani 80) The term zero transfer is used when there is no relation between the two languages. (Dost 167)

Several studies regarding L3 acquisition and the influence of former knowledge of different languages have also been conducted. Before subjecting L3 acquisition and

its transfer to examination, it is necessary to see how linguists perceive L3 and to have a look at its definition. Many linguists such as Singh and Carroll, Mitchell, and Myles (in Bilous and Schutz) asserted that there is no difference between SLA and TLA and that any non-native language should be considered "the second language". On the other hand, Hufeisen, Lindemann, Cenoz, Herdina and Jessner claim that learning L2 differs from learning L3 in many respects and that L3 acquisition is much more complex. (Bilous and Schutz) Nevertheless, Hammemberg is of the opinion that: "In dealing with the linguistic situation of a multilingual, the term third language (L3) refers to a non-native language which is currently being used or acquired in a situation where the person already knows one or more L2s in addition to one or more L1s". Rast adds: "Most importantly, L3 does not refer to the third language acquired in a linear or chronological sense." (Hammemberg in Rast 161)

The question of how languages interact with each other has drawn undivided attention. Amaro et al. suggest one of the possibilities of L1, L2, and L3 interaction. In the initial stages of L3 acquisition, L1 serves as the L3 initial state. For example, a L1 Spanish and L2 English speaker's behaviour in the initial stages of L3 French acquisition should be similar to the behaviour of a L1 Spanish learning French as L2. (Amaro et al. 4) Bardel and Falk offered a different suggestion. They asserted that the initial state of L3 is not L1 but L2 and coined the term L2 Status Factor. L2 is in this model perceived as a source of transfer since both L2 and L3 are considered to be non-native languages. This idea is based on Paradis' (2004) Procedural/Declarative model, which claims that native and non-native languages are stored in different ways. "Native languages are stored in procedural memory, whereas non-native languages are learned skills that utilize declarative memory." In this case, the initial state of L3 acquisition is the same for learners with the same L2, notwithstanding their L1. (Paradis in Amaro et al. 5) Another model called Cumulative Enhancement Model (CEM) was constructed by Flynn et al. (2004), who suggest that all languages (both native and non-native) may act as a source for transfer; nevertheless, the L2 replaces the L1 when the particular structure is not present in the L1. (Flynn et al. in Bardel and Falk 474)

Freundlich and Murphy compiled lists of factors that affect transfer in the third language production. Murphy divides these factors into two groups: Learner-based

variables and language-based variables, which are independent of the individual learner. The learner-based variables include proficiency, amount of target language exposure and use, language mode, linguistic awareness (e.g., psychotypology), age, educational background, and context. Language-based variables encompass language typology, frequency, word class, and morphological transfer. Linguists achieved a consensus that language transfer L2→ L3 is more likely to occur when L3 is at lower proficiency levels. (Odlin, 1989; Poulisse & Bongaerts, 1994; among others in Murphy 7) In addition, L2 proficiency has to be at a sufficient level. (Williams and Hammamberg in Freundlich 14) LT is further influenced by language exposure and use. If the speaker is exposed to L3 in a more significant extent, there is a slighter possibility of LT. Freundlich also included frequency, and according to Hammamberg, language is activated more easily if the speaker has used it recently. (Hammamberg in Freundlich 14) Murphy also mentions age as a variable. Nevertheless, he further states that recent studies largely ignore the age factor since a survey made by Cenoz (2001) explored the influence of age among 90 school children from different grades. He found out that older children showed more instances of language transfer. Cenoz attributes this difference to the "higher metalinguistic awareness among the older subjects that makes transfer possible". (Cenoz in Murphy 12) The rest of the mentioned factors is closely scrutinized in Murphy's study called *Second language transfer during third language acquisition.*

In this study, the field of negative transfer from L1 Vietnamese and positive transfer from L2 Czech will be explored.

2.2 General description of the researched languages

This chapter describes the general characteristics of the target languages and further provides information on the position of English in Vietnam and in the Czech Republic.

2.2.1 The English language

English belongs to the branch of West Germanic languages and it was brought to Britain by Anglo-Saxons in the 5th century. (Algeo 49) The language history of English is classified into three periods – Old English, Middle English, and Modern English. The Old English covers the period from the 5th century to the 11th century, and it was characteristic for its influence by Celtic, Scandinavian, and Latin. (Algeo 78) Middle English dates from 1100 to 1450. It was a period of Norman Conquest, which resulted in a significant number of French borrowings, and of English language standardisation by Geoffrey Chaucer. Modern English can be further divided into early and late Modern English. Early ME lasted from 1500 till 1800, and it was a time of the English language development as literacy in England increased. The late ME refers to the period from 1800 till the present, and it is a time of English language expansion - firstly, by British colonization, and in the present day by American engagement in world affairs. (Algeo 181)

The renowned linguist Kachru divided countries into three concentric circles, which represent the spread of the usage and the role of English:

"*The inner circle* refers to the traditional bases of English, where it is the primary language: it includes the USA, UK, Ireland, Canada, Australia, and New Zealand.

The outer or extended circle involves the earlier phases of the spread of English in non-native settings, where the language has become part of a country's chief institutions and plays an important 'second language' role in a multilingual setting: it includes Singapore, India, Malawi and over fifty other territories.

The expanding or extending circle involves those nations which recognize the importance of English as an international language, though they do not have a history of colonization by members of the inner circle, nor have they given English any special administrative status. It includes China, Japan, Greece, Poland and (as the name of this circle suggests) a steadily increasing number of other states. In these areas, English is taught as a foreign language. (The term 'expanding' reflects its origins in the 1980s:

today, with English recognized virtually everywhere, a tense change to an expanded circle would better reflect the contemporary scene.) "(Kachru in Crystal 60)

2.2.2 The Vietnamese language

Vietnamese is the official language of Vietnam and it is spoken by nearly 98[2] million people, and it has its place among the Mon-Khmer languages, a sub-branch of the Austroasiatic language family. (Alves 104) The Mon-Khmer group, which is widely spoken in Southeast Asia, includes three languages: Vietnamese, Khmer, and Mon. (Ngo 3.1.2). Nevertheless, opponents suggest that Vietnamese should be grouped with Austronesian, Tai-Kadei, or Chinese groups. This discrepancy was caused by "the rich lexical array of Vietnamese vocabulary that has roots in Austroasiatic, Chinese, Tai-Kadai, and, to a lesser extent, Austronesian" and in addition, linguistically, Vietnamese is a monosyllabic and tonal language. In contrast, other Mon-Khmer languages are nontonal and bisyllabic. (Alves 104)

During the years from 111 BC to 939 AD, Vietnam was ruled by China, and consequently, Chinese became the official language of administration and education. Despite gaining independence from China in the tenth century, Vietnam still used classical Chinese called chữ Hán by the royals, scholars, and poets until the twentieth century. (Ngo 3.2.1) Present-day Vietnamese uses the Latin alphabet based on Roman languages (which were devised by Portuguese Catholic missionaries at the end of the sixteenth century) with additional diacritics indicating tones. In general, Ngo asserts that the modern Vietnamese alphabet is very stable since one grapheme corresponds to one phoneme in most cases. (Singer 1, Ngo 6)

The Vietnamese language does not have a standard pronunciation. However, the northern speech, which is commonly used in the media, represents the phonetic system of the language most accurately. The other dialects are central and southern.

> "The northern speech, according to this characterization, is marked by sharpness, or choppiness, with greater attention to the precise distinction of tones. In addition to certain uniform differences from the northern speech in the pronunciation of

[2] https://en.wikipedia.org/wiki/Vietnam

consonants, the southern speech does not distinguish between the hoi and nga tones; and it is felt by some to sound more laconic and musical. The speech of the Center, on the other hand, is often described as being heavy because of its emphasis on low tones.[3]"

As for the circles proposed by Kachru, Vietnam has its place among the countries of the expanding or extending circle. Vietnam is a developing country where English proficiency is perceived to be a means to elevate social and economic status, and therefore it has become an indispensable part of Vietnamese people's lives. As stated by the UK's Daily Mail newspaper, more than half (53,81%) of the population speaks English[4]. As for the English language learning and teaching in Vietnam, English is mandatory from the third grade of primary school. Nevertheless, it is very trendy for pre-school children to attend English classes in language centres in the present day.

2.2.3 The Czech language

The Czech language, in the past also known as Bohemian, is the official language of the Czech Republic. It is spoken by 10 million people in three historical regions of Bohemia, Silesia, and Moravia. Czech has its roots in West Slavic language family along with languages such as Slovak, Polish and Serbian. (Bartoň, Cvrček, Čermák, Jelínek, & Petkevič in Šturm, 124) The oldest evidence of the Czech language written in a work is Czech glosses occurring in German and Latin texts of the 12th century. Even though the Czech language was not standardized during the 11th and 14th century, it can be said that during the Middle Czech period (15th – 16th century), the literary language was relatively uniform thanks to Jan Hus and his innovations[5].

The Czech Republic undoubtedly belongs to the expanding or extending circle. According to a survey carried out by the Czech Statistical Office[6] in 2006, nearly every second citizen can speak English. However, only 10% can use English at the minimal level and 14% at the basic level. 15% of the population can fluently communicate in English, and 7% master their English at a very advanced level. Concerning English

[3] http://simonlovesvietnam.blogspot.com/2011/05/introduction-to-vietnamese-language.html
[4] http://english.vietnamnet.vn/fms/travel/166894/vietnam-among-easiest-countries-for-english-speakers-to-visit.html
[5] https://www.britannica.com/topic/Czech-language
[6] https://www.statistikaamy.cz/2017/10/17/ctyri-z-peti-cechu-se-domluvi-cizi-reci/

teaching in the Czech Republic, it is nowadays promoted to teach English at the youngest age possible. Children usually encounter English in kindergartens at the age of 5; however, some kindergartens offer English lessons at the age of 3. Nevertheless, the compulsory teaching of English begins in the third grade of elementary school.

2.3 The syllable

To fully understand consonant clusters and their nature, it is essential to comment on syllable and its structure in general first. The term syllable has existed since ancient times, and many attempts to define the syllable have been made; nevertheless, each linguist describes the syllable from a different point of view. Palková represents the syllable as "the basic unit of continuous speech and the smallest unit in speech production and perception. It is exclusively a sound unit, regardless of the phonetic or phonological point of view. Syllables are formed by a chain of segments arranged according to sound principles. The intuitive awareness of a speaker of each language is very strong: a native speaker can separate words into syllables of their mother tongue without any difficulty." (Translated from Palková 152) From the phonological point of view, the syllable is the basic unit at the prosodic level, which bears suprasegmental features such as stress, quantity, tone and rhythm. Phonetically, syllables are described as consisting of a centre that has little or no obstruction to airflow and which is perceived as very sonorous. Moreover, at the margins, there might be consonants that are created by an obstruction. As a consequence, these parts of the syllable are less sonorous. (Cruttenden 50) According to Kreidler, the function of the syllable is twofold: to provide a basis for distinctive prosodic features and to account for constraints on possible phoneme sequences; this will be further discussed in the view of each language in the following chapters. (Kreidler 25)

2.3.1 English syllable structure

The basic elements of the syllable are the onset and the rhyme, which further consists of the peak (or nucleus), and the coda. Figure 2.1 shows the visual representation of the English syllable structure.

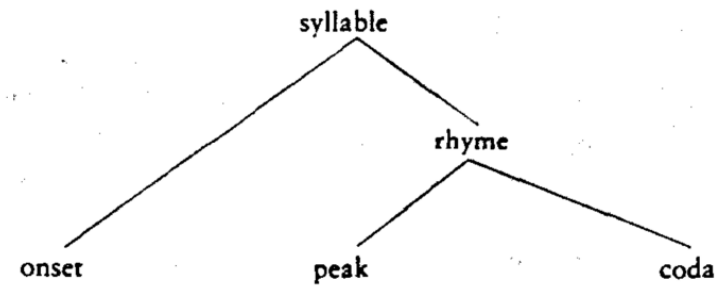

Figure 2.1 The syllable structure (Roach 60)

The centre of the syllable is called a peak or a nucleus, and it is usually occupied by a vowel. English encompasses 12 pure vowels and eight diphthongs. Based on the vowel length, RP distinguishes 7 short vowels /ɪ/, /e/, /æ/, /ʌ/, /ɒ/, /ʊ/, including /ə/; 5 long vowels /ɑ:/, /ɛ:/, /ɪ:/, /ɔ:/, /u:/; 3 centring diphthongs /ɪə/, /ʊə/, /eə/; and 5 closing diphthongs /eɪ/, /aɪ/, /ɔɪ/, /əʊ/, /aʊ/. The most complex vocalic sounds are triphthongs which are composed of closing diphthongs and the sound /ə/. (Cruttenden 96) Nevertheless, it has to be noted that English contains syllabic consonants, which can also occupy the peak. These consonants are, for example, /l/ as in the word *cattle* and /n/ as in the word *threaten*. (Roach 68) According to the phonotactical rules of distribution, the peak is the only obligatory part of the syllable, and in cases where the onset and the coda are not present, it is invariably created by either a long vowel or a diphthong, for instance: are / ɑ: /, or / ɔ: /, eye /aɪ/. If the peak is a short vowel, it has to be followed by a coda. The English syllables can have the following forms: CV, CVC, VC, V, CVCC, CCVC, CCV, VCC, CCVCC, CCCVC, CCCVCC, CVCCC, CCVCCC, CCCV. (Choi 49). The maximum number of consonants in the onset is three, and in the coda four, thus the utmost structure of an English syllable is CCCVCCCC. (Ashby and Maidment 147)

2.3.2. Vietnamese syllable structure

Vietnamese is a monosyllabic language. Nevertheless, Thompson asserted that Vietnamese speakers scarcely speak in monosyllabic utterances, and they tend to use phrases, compounds, and derivations. (Thompson in Hwa-Froehlich et al. 265) The syllable is in the Vietnamese language, "the minimal meaningful unit that cannot be

divided into smaller meaningful parts". (Ngo 7) Ngo presented the structure of the Vietnamese syllable as follows:

T	O	N	E
INITIAL CONSONANT	LABIALIZATION	NUCLEAR VOWEL	FINAL CONSONANT/ SEMIVOWEL

Figure 2.2 Vietnamese syllable structure (Ngo 7)

The compulsory parts of the syllable are the tone and the nuclear vowel. The initial consonant, labialization, and the final consonant are optional. Ngo also explains that labialization does not occur only in the syllables that contain a rounded vowel, but it also can be found in syllables with no rounded vowels. The labialization is represented either by grapheme <u>, when preceding vowels i, ê, ơ, â, or grapheme <o> in syllables with vowels *e, a*, *ă* and lastly, labialization is present in syllables where <q> is followed by <u> as in word *quả*. (Ngo 8)

Nguyen et al. present the structure of Vietnamese syllable in a slightly different way. The syllable is divided into five parts: initial part, medial part, nucleus part, ending part and tone. The nucleus is the central part of the syllable, and it is always occupied by a vowel or a diphthong. (see Figure 2.3.)

Vietnamese monophthongs	front monophthongs /i/; /e/; /ɛ/ back unrounded monophthongs /ă/; /ɤ̆/; /ɑ/; /ɤ/; /ɯ/ back rounded monophthongs /u/; /o/; /ɔ/
Vietnamese diphthongs	/i͡e̯/; /u͡o̯/; /ɯ͡ɤ̯/

Figure 2.3. Vietnamese monophthongs and diphthongs. Adapted from Slowik. (24)

Vietnamese vowels and consonants can be combined in the Vietnamese syllable as follows: V, VV, CV, CVV, CVC, CVVC, VC, VVC, wV, wVV, wVC, wVVC,

CwV, CwVV, CwVC, CwVVC, /w/ is a semi-vowel which might follow the initial consonant or precede the peak. (Nguyen in Hwa-Froehlich et al. 265)

2.3.3 Czech syllable structure

Just like in English and Vietnamese, the basic and the only obligatory element of a syllable in Czech is the nucleus which is formed by a sonant, a sound capable of creating a syllable. The sonants of the syllable are vowels, monophthongs and diphthongs, as well as sonorants /l/, /r/ in words such as /sḷza/, /bṛko/, /viːtṛ/, /nesḷ/ (Krčmová, 4.3) and /m/ as in /sedṃ/, /osṃ/. Czech vowels include short vowels /i /, /e/, /a /, /o /, /u/, long vowels /ē/, /ī /, /ā /, /ō/, /ū / and diphthongs /ë /, /ä /, /ö/ corresponding to [eu], [au], [ou]. (Bičan 2010, 59)

In the Czech language, it is possible to have up to five consonants in the onset and three consonants in the coda. The maximum syllable structure is CCCCVCC. (Bičan 2015, 1) Nevertheless, such syllable structures are rare and scarcely used in everyday speech. Ludvíková (1987) attested the presence of thirteen syllable types in Czech. The most common structures were CV, CVC, CCV, V, CCVC, VC, CVCC, CCCV, CCCCV, CCCVC, CCVCC, CVCCC, and CCCVCC occurred less frequently. (Ludvíková in Churaňová 80)

2.3.4. Comparison of English, Vietnamese and Czech syllable structure

Since consonant clusters are a vital part of a syllable, it is essential first to examine and highlight the similarities and differences between the syllable structures of the three languages. The only obligatory part of a syllable in all languages is the peak; nevertheless, in Vietnamese, it is occupied by vowels only, while Czech and English further allow syllabic consonants (Czech /r/, /l/, /m/ in both stressed and unstressed positions; English /l/, /n/, /m/).

When the syllable contains the centre without the onset and the coda, the peak has to be created by a long vowel or a diphthong in English. Whereas in Vietnamese

and Czech, the peak can be occupied by a short vowel. Czech has the most complex syllable structure of the three languages. As already noted above, the maximum number of consonants in the onset is five, such as in the word *vzkvět* /fskvjet/, and up to three consonants can occur in the coda, for example, vojsk /vojsk/. (Bičan 61)

The English phonotactics allows up to three consonants to occur in the onset and four in the coda. While both English and Czech syllables contain consonant clusters, Vietnamese does not. Thus a consonant in Vietnamese is invariably preceded or followed by a vowel.

2.4 Consonants and consonant clusters

2.4.1 English consonants and consonant clusters

English contains 24 consonants, and they are divided into categories according to their place or manner of articulation. Based on the manner of articulation, English distinguishes six groups of consonants: plosives /p, t, k, b, d, g/, fricatives /f, v, θ, ð, s, ʃ, z, ʒ, h/, affricates /tʃ, dʒ/, nasals /n, m, ŋ/, lateral /l/, and approximants /r, w, j/. (Cruttenden 30)

The onset and the coda are composed of consonants; nevertheless, their selection is also limited. For example, / ŋ/ never stands in the onset and sounds such as /h/, /r/, /w/, /j/ never occur in the coda (r is allowed only in rhotic accents). (Ashby and Maidment 146)

Two or more consonants can form both onset and the coda. In such case, this construction is called a consonant cluster. Initial CC (two-consonant) clusters are divided into two types. The first sort begins with *s* and is followed by one of a small set of consonants: voiceless plosives /p/, /t/, /k/ or liquid or glide /r/, /l/, /w/ as in words such as *splash*, *stay*, *sky*, *sweet*. (Yule 46) Roach further adds nasals /m/ and /n/ as in *small*, *snake* and /f/ as in *sphere*. In this type of clusters, the /s/ is referred to as the pre-initial consonant, and the following consonant is the initial consonant. (Roach 57) The other type of initial CC cluster consists of a plosive or fricative followed by /r/, /l/, /w/, /j/, e.g., *black*, *fly*, *pray*, *please*, *cry*, etc. (Carr 148). In this type of cluster, Roach calls

the first consonant the initial consonant and the second the post-initial. The clusters mentioned above are shown in Table 2 and 3. (Roach 57)

Pre-initial s followed by:																
								INITIAL								
p	t	k	b	d	g	f	θ	s	ʃ	h	v	ð	z	ʒ	m	n	ŋ
spɪn	stɪk	skɪn	–	–	–	sfɪə	–	–	–	–	–	–	–	–	smel	snəʊ	–

Table 2. Two-consonant clusters with pre-initial s. (Roach 58)

		p	t	k	b	d	g	f	θ	s	ʃ	h	v	ð	z	ʒ	m	n	ŋ	l	r	w	j
POST-INITIAL	l	pleɪ	–	kleɪ	blæk	–	glu:	flaɪ	–	slɪp	–	–	–	–	–	–	–	–	–	–	–	–	–
	r	preɪ	treɪ	kraɪ	brɪŋ	drɪp	grɪn	fraɪ	θrəʊ	ʔ[1]	ʃru:	–	–	–	–	–	–	–	–	–	–	–	–
	w	–	twɪn	kwɪk	–	dwel	ʔ[2]	–	θwɔ:t	swɪm	ʔ[3]	–	–	–	–	–	–	–	–	–	–	–	–
	j	pjɔ:	tju:n	kju:	bju:ti	dju:	ʔ[4]	fju:	ʔ[5]	sju:	–	hju:dʒ	vju:	–	–	–	mju:z	nju:z	–	lju:d	–	–	–

Table 3. Two-consonant clusters with post-initial l, r, w, j. (Roach 58)

The largest onset cluster allowed in English consists of three initial consonants (CCC), and its rule of distribution is closely related to the two sorts of CC consonant clusters. Examples of three consonant clusters are *splash, spring, strong, scream,* and *square*. (Yule 46) The first consonant is always the pre-initial /*s/* which is followed by initial /*p*, *t*, *k/* and the /*l*, *r*, *w*, *j/* are post-initial. (Roach 57)

It is generally recognized that the maximum English syllable formula is CCCVCCCC. In other words, the coda can encompass up to four consonants. Almost every consonant is permitted to appear as word-final, except for /h/, /j/, /w/ and /r/ in rhotic accents. (Ashby and Maidment (146)) Roach further divides CC final clusters into two groups: "one being a final consonant preceded by a pre-final consonant and the other a final consonant followed by a post-final consonant." (57)

The pre-final consonants set consists of /m, n, ŋ, 1, s/, which can be seen in words such as *bank*, *belt*, *ask* and the other set of post-final consonants are: / s, z, t, d, θ/. As in words *beds*, *backed*, *eighth*. (Roach 59) The CCC final clusters also form two groups. The formula of the first type is pre-final+final+post-final, e.g., clusters /lpt/ as in *helped*, /ŋks/ as in *banks*, /ndz/ as in *bonds*, and lastly /lfθ/ as in *twelfth*. The second type consists of one final and two post-final consonants. The second post-final is again /s, z, t, d, θ/. To give an illustration, examples of the second type of CCC final cluster are: /fθs/ in *fifths*, /kst/ in *next*, /pst/ in *lapsed*. Similarly, as CC and CCC clusters, CCCC clusters are also divided into two groups. The first type of final four consonant cluster can be analysed as formed of a final consonant preceded by pre-final and

followed by two post-final consonants. The second type, which appears more rarely, consists of the final consonant followed by three post-final consonants. (Roach 60)

As can be seen, English has quite complicated consonant clusters. Yule commented on this matter: "It is quite unusual for languages to have consonant clusters of this type" since the syllable structure of many languages is mainly CV. He further asserts that in a casual conversational speech, the speakers tend to reduce the large consonant clusters. (Yule 46) P Carr is of the same opinion as Yule, and as an example, he uses Japanese, which does not allow for branching onsets. Japanese speakers are thus apt to insert a vowel after each consonant in the consonant cluster. This process is known as epenthesis. (Carr 148) (see Chapter 2.5)

2.4.2 Vietnamese consonants and consonant clusters

According to Thompson, in Vietnamese there are eighteen initial consonants in the standard dialect: /tʰ/; /t/; /tʃ/; /k/; /ɓ/; /ɗ/; /m/; /n/; /ŋ/; /ɲ/; /f/; /s/; /z/, /x/; /h/; /v/; /ɣ/; /l/. (Thompson in Slowik 25) Kirby further adds /w/ as a labial approximant. (Kirby 382) The central accent allows /ʃ/. As for /p/, there is a disagreement. Ngo classifies /p/ as both an initial and final consonant; however, Nguyen argues that all consonants can stand in the onset except for /p/. (4) According to Slowik, initial /p/ appears only in a limited number of lexical borrowings, but only rarely. Therefore, /p/ is not considered a native sound. (25) The final consonants are on the other hand more restricted, these consonants are: voiceless plosives /p/, /t/, /k/, /ʈ/ and nasals /m/, /n/, /ŋ/, ɲ/. As has been mentioned above, the Vietnamese language does not have any consonant clusters or blends. (Cheng, Thompson in Hwa-Froehlich et al 265)

2.4.3 Czech consonants and consonant clusters

Czech contains consonant clusters, and many of them are very complex. Up to five in the onset and four consonants in the coda might appear. Bičan uses the term *distribution unit*[7] to characterize Czech consonant clusters. The distribution unit can be explained as a bundle of positions that are distinguished into two types: nuclear and non-nuclear. Based on the position, the phonemes are divided into three groups:

[7] My own translation

consonants, occurring only in non-nuclear positions; vowels, standing in the nuclear position and lastly, semi-consonants which can occupy both positions (*r* and *l*). While Bičan considers /r/ and /l/ semi-consonants, many linguists place the sounds under liquids. Furthermore, he considers consonant <č> as a combination of two consonants /tš/ whereas many works transcribe this consonant as /t͡ʃ/. For the purpose of this study, /t͡ʃ/ will be used.

		labial	alveolar	palatal	velar	glottal
stop	voiceless	p	t	c (ť)	k	
	voiced	b	d	ɟ (ď)	g	
affricate	voiceless		t͡s (c)	t͡ʃ (č)		
	voiced					
fricative	voiceless	f	s	ʃ (š)	x (ch)	
	voiced	v	z	ʒ (ž)		ɦ
nasal		m	n	ɲ		
liquid		l, r, r̝ (ř)				
glide			j			

Table 7. Classification of Czech consonants according to the manner and place of articulation[8]

As has already been mentioned above, the distribution unit is defined as a bundle of positions that have to be either occupied by one phoneme or none. One of the positions of the distribution unit is called nuclear, and this position has to be occupied in any case. Moreover, the phoneme in the nuclear position is not dependent on any other phonemes in remaining positions, whereas phonemes in non-nuclear positions are determined by their surrounding phonemes. Each position can be filled with specific phonemes, which Bičan divides into groups known as *positional class*es, which are shown in Table 8. As already noted, the maximum number of the position in the onset is five (an example of such onset are words *vzkvět* /fskvjet/ and stkvěl /stkvjel/). These positions are called pre-nuclear or also explosive. Bičan describes the first two positions as pre-nuclear (pre1, pre2) and the following three as explosive (e1, e2, e3). It should be

[8] https://fonetika.ff.cuni.cz/o-fonetice/foneticka-transkripce/czech-sampa/

noted that pre-nuclear positions can be filled only when at least one explosive position is occupied. Positions of coda are called implosive. (i1, i2, i3, i4) (Bičan 61)

<table>
<tr><th>pre2</th><th>pre1</th><th>e3</th><th>e2</th><th>e1</th><th>n</th><th>i1</th><th>i2</th><th>i3</th><th>i4</th></tr>
<tr><td rowspan="4">P T K
F S Š X
r l j M
∅</td><td rowspan="4">T
S Š
ř
∅</td><td rowspan="2">k g x h
t d
s z š ž
∅</td><td rowspan="2">v
M
∅</td><td colspan="2">r l</td><td rowspan="4">m n ň
r l j
∅</td><td>P T K
Š
∅</td><td>T S
ř
∅</td><td rowspan="3">K T Ť
Š
∅</td></tr>
<tr><td rowspan="3">m n ň
r l
j ř
∅</td><td rowspan="4">i e a
o u
ī ē ā
ō ū
ë ä ö</td><td colspan="2" rowspan="2">F X</td></tr>
<tr><td colspan="2">p b f</td></tr>
<tr><td colspan="2">ť ď</td><td colspan="3">m n ň</td></tr>
</table>

Table 8. Positional classes according to Bičan. (Bičan 62)

Šturm and Lukeš investigated types of Czech consonant clusters and their occurrence in spoken Czech. Since their research was based on the corpus of spoken Czech, it can be said that the results provide a complex image of spontaneous everyday life speech. In the onset, there are 126 types of CC clusters and the most frequently used clusters were /pr/, /mň/, /př/, /st/, /tř/, /gd/, /sm/. Then 40 CCC clusters were detected. The most common clusters were /str/, /dvj/, /vžd/, /stř/, /štv/. Only two types of CCCC clusters were found, and those are: /skvj/ as in word *skvělý* and /vzhl/ as in word *vzhled*. As has been mentioned above, the maximum number of consonants in the onset is 5. Example of such words are: *vzkvět* /fskvjet/ or *stkvěl* /stkvjel/. In terms of consonant clusters in a coda, Šturm and Lukeš detected 37 CC clusters and 2 CCC clusters. The most frequently used CC clusters were /st/, /kt/, /rt/, /ct/, /jt/ and the CCC clusters were /kst/ as in *text*, /rkt/ as in *infarkt*. (Šturm and Lukeš 99-118)

2.4.4 Comparison of consonants and consonant clusters of researched languages

As has been noted in the introductory section of this thesis, English has achieved enormous popularity, resulting in the rapid mushrooming of language centres far and wide across the whole of Vietnam and the Czech Republic. Moreover, English proficiency has become a vital requirement for employment. Nevertheless, despite the

demand, the incorrect pronunciation of English words still causes complications for EFL speakers. Ha asserts that in order to produce sound peculiar to the new language, it is essential to learn a new way of using the speech organs; however, this process can be challenging since some of the speech organs are not visible, and moreover, their movements are far back in the pharyngeal cavity thus difficult to control. (Ha 1). The phonetical differences between the languages are likely to affect not only how EFL learners produce the sounds but also how English speakers perceive the sounds. (Hwa-Froehlich 266) This section will therefore be focusing on the comparison of English, Vietnamese, and Czech consonants.

English only	/θ/, /ð/, /dʒ/
Vietnamese only	/tʰ/ /ɣ/ /ʈ/
Czech only	/t͡s/, /ɟ/, /c/, /r̝/
Shared sounds (all three languages)	/p/, /t/, /k/, /b/, /d/, /f/, /v/, /s/, /z/, /ʃ/ (only central Vietnamese), /tʃ/, /n/, /m/, /l/, /j/, /h/ (in Vietnamese considered as semi-vowel)
Shared sounds (English and Vietnamese only)	/ŋ/, /w/
Shared sounds (English and Czech only)	/g/, /ʒ/, /r/
Shared sounds (Vietnamese and Czech only)	/ɲ/, /x/

Table 9. Comparison of consonants of English, Vietnamese and Czech.

From the table above, it can be seen that each language contains sounds that occur only in that language and are foreign to the rest of the languages. As for English, there are three sounds: /θ/, /ð/, /dʒ/. The production of /θ/ and /ð/ is often described as if the tongue were placed between the upper and lower teeth; however, the truth is that the

tongue is placed behind the teeth with the tip touching the lower teeth, and the air escapes through the gap between the tongue and upper teeth. (Roach 41)

The pronunciation of these two sounds is very problematic for EFL speakers whose native language does not contain these sounds. As a result, some speakers tend to substitute the unknown sounds with sounds they are familiar with. For example, Czech speakers tend to pronounce /d/ or /dz/ instead of /ð/ and /f/ or /s/ instead of /θ/[9]. As for /dʒ/, this sound sometimes occurs in Czech as a consequence of assimilation of voicing.

In terms of Vietnamese, the unique sounds are /tʰ/, /ɣ/, /ʈ/. In Vietnamese, /t/ and /tʰ/ are two different phonemes and they change the word-meaning, for instance: ta (we) ≠ tha (to forgive), tơ (silk) ≠ thơ (poetry). (Ngo 15) Whereas, in English, the unaspirated /t/ and the aspirated /tʰ/ are allophones of the phoneme /t/ (e.g., aspirated /tʰ/ is allowed to stand only in the onset and unaspirated /t/ occurs in the other positions). /ɣ/ is a voiced velar fricative, usually represented by graphemes <g, gh>. /ʈ/ is a voiceless retroflex plosive.

With regard to Czech, consonant phonemes which are unusual for Vietnamese and English are: /t͡s/, /ɟ/, /c/, /r̝/. /ts/ is a voiceless alveolar fricative, and its written form is <c>, /ɟ/ is voiced (alveo-)palatal plosive, which is represented by grapheme <ď>, /c/ is a voiceless (alveo-)palatal plosive represented by <ť>, and /r̝/ is a voiced alveolar fricative trill, and its grapheme is <ř>. Despite several distinctive sounds, all three languages share a great number of consonantal phonemes e.g, /p/, /t/, /k/, /b/, /d/, /f/, /v/, /s/, /h/, /ʃ/ (only in central Vietnamese), /tʃ/, /n/, /m/, /l/, /j/ (in Vietnamese considered as semi-vowel). The sounds which are shared only by Vietnamese and English are /w/ and /ŋ/. /w/ is by many Vietnamese linguists considered a semivowel; nevertheless, for example, Kirby places the sound under approximants. Although /ŋ/ is not a part of the Czech consonantal system. It is an allophonic variant of /n/, which occurs when preceding /k/ as in words *banka* (bank), Lenka (a Czech name). The sounds which occur only in English and Czech are: /g/, /ʒ/, /r/. /ʒ/ is in Czech represented by grapheme <*ž*>, and in English by <*g*>; nevertheless, <g> is pronounced as /ʒ/ only when it stands word-initially and in words of French origin, e.g., *genre*. (Cruttenden 260) Furthermore, lastly, sounds that are shared by Czech and Vietnamese are: /ɲ/, /x/. /ɲ/ is a voiced

[9] https://sandymillin.wordpress.com/2011/06/18/pronunciation-problems-for-czech-speakers-of-english/

(alveo-) palatal nasal, which is in Czech represented by grapheme <ň> and in Vietnamese <nh>. The second sound is /x/, and it is a voiceless velar fricative, in Czech as grapheme <ch>, in Vietnamese <kh>. Another presumable obstacle besides the unfamiliarity with the sounds of the target language is the uncommon position of certain sounds.

	ENGLISH	VIETNAMESE	CZECH	SHARED SOUNDS
ONSET	/p/, /t/, /k/, /b/, /d/, /g/, /f/, /v/, /θ/, /ð/, /s/, /ʃ/, /z/, /ʒ/, /h/, /tʃ/, /dʒ/, /n/, /m/, /l/, /r/, /w/, /j/	/tʰ/, /t/, /tʃ/, /k/, /ɓ/, /ɗ/, /m/, /n/, /ŋ/, /ɲ/, /f/, /s/, /x/, /h/, /v/, /ɣ/, /l/, /p/	/p/, /t/, /c/, /k/, /b/, /d/, /ɟ/, /g/, /t͡s/, /t͡ʃ/, /f/, /s/, /ʃ/, /x/, /v/, /z/, /ʒ/, /m/, /n/, /ɲ/, /l/, /r/, /r̝/, /j/, /h/	/t/, /k/, /b/, /d/, /f/, /v/, /s/, /h/, /t͡ʃ/, /n/, /m/, /l/, /z/, /p/
CODA	/p/, /t/, /k/, /b/, /d/, /g/, /f/, /v/, /θ/, /ð/, /s/, /ʃ/, /z/, /ʒ/, /tʃ/, /dʒ/, /n/, /m/, /l/, /ŋ/	/p/, /t/, /k/, /ʈ/, /m/, /n/, /ŋ/, /ɲ/	/p/, /t/, /c/, /k/, /ɟ/, /t͡s/, /t͡ʃ/, /f/, /s/, /ʃ/, /x/, /m/, /n/, /ɲ/, /l/, /r/, /r̝/, /j/	/p/, /t/, /k/, /m/, /n/

Table 10. Comparison of English, Vietnamese, Czech consonants based on their position in a syllable.

From the table above it can be seen that all languages permit the following sounds to stand syllable-initially: /t/, /k/, /b/, /d/, /f/, /v/, /s/, /h/, /t͡ʃ/, /n/, /m/, /l/, /z/ and /p/ (as has been mentioned above, /p/ occurs initially in Vietnamese only in lexical borrowings) and further /ʃ/ which occurs only in central Vietnamese. Nevertheless, Dinh and Nguyen commented that /p/ and /k/ are unaspirated in Vietnamese and Czech therefore it may be confused with /b/ or /g/ to an English speaker. (Dinh and Nguyen in Tang 6) In the syllable-final position, all three languages permit the consonants: /p/, /t/, /k/, /m/, /n/. As for Czech final consonants, it has to be noted that the voiced variants are

omitted since they are always potential, and their production is based on the voice assimilation across the word boundary. (Šturm 25)

In order to determine whether the knowledge of the Czech language might influence the acquisition of English consonant clusters by Vietnamese EFL, it is essential to draw a comparison between English and Czech consonant clusters. Vietnamese is not going to be compared as its syllable structure lacks consonant clusters. Nevertheless, firstly, the two languages are compared based on their general characteristics. Both English and Czech belong to the family of Indo-European languages. However, English is encompassed in the sub-branch of West Germanic languages, whereas Czech has its place along with the Western Slavonic languages.

Based on the morphological typology of languages, English is a fusional language slightly leaning towards analytic languages. In other words, English has very little inflection left and has been becoming increasingly analytical, although words may contain many derivational affixes. (Manker) Czech is, on the other hand, an inflectional or synthetic language. To put it in a different way, synthetic languages are known for their stem alternation. Single suffixes can express various grammatical connections and functions, and as a result, the sentence word order is not so fixed as in analytical languages. (Kyzlinková 31). It can be seen from the data in table 11 that English and Czech share many types of consonant clusters. Nevertheless, there is a large number of consonant clusters that are typical only for English and do not occur in Czech. One can presume that English consonant clusters which do not appear in Czech will pose an obstacle to Czech learners of English, in our study, to Vietnamese learners of English with the knowledge of the Czech language.

Since certain clusters occur less frequently and seem uncommon, Cruttenden found it appropriate to comment on some of those. Combinations of a consonant and sound /w/ appear in words of French origin, e.g. puissance /pwiːsəns/. Consonant clusters /vl-/, /vr-/, /sr-/, /sf-/, /sv-/, /ʃl-/, /ʃw-/, /ʃp-/, /ʃt-/, /ʃm-/, /ʃn-/ usually appear only in words of foreign origin. The initial sequence /smj-/ is represented by a single word *smew* (name of a bird). In respect of final consonant clusters, it has to be mentioned that /-lʃ/ occurs only in *Welsh*. (Cruttenden 261-263)

	Shared clusters (English and Czech)	English only
CC initial clusters	/pl/, /pr/, /pj/, /bl/, /br/, /bj/, /tr/, /dr/, /kl/, /kr/, /gl/, /gr/, /fl/, /fr/, /fj/, /vj/, /vl/, /vr/, /sl/, /sr/, /sj/, /sp/, /st/, /sk/, /sm/, /sn/, /sf/, /sv/, /ʃl/, /ʃr/, /ʃp/, /ʃt/, /ʃm/, /ʃn/	/pw/, /bw/, /tj/, /tw/, /dj/, /dw/, /kj/, /kw/, /gj/, /gw/, /mj/, /mw/, /nj/, /lj/, /nw/, /θr/, /θj/, /θw/, /sw/, /ʃw/, /hj/
CCC initial clusters	/spl/, /spr/, /str/, /skr/, /sfr/, /skl/	/skw/, /skj/, /smj/
CC final clusters	/pt/, /ps/, /ts/, /kt/, /ks/, /mp/, /mf/, /nt/, /ntʃ/, /ns/, /lp/, /lt/, /lk/, /lm/, /lf/, /ls/, /lʃ/, /ft/, /st/, /sk/, /ʃt/	/pθ/, /tθ/, /bd/, /bz/, /dθ/, /dz/, /gd/, /gz/, /tʃt/, /dʒd/, /md/, /mθ/, /mz/, /nd/, /ndʒ/, /nʒ/, /ŋd/, /ŋk/, /ŋz/, /lb/, /ld/, /ltʃ/, /ldʒ/, /ln/, /lv/, /lθ/, /lz/, /fθ/, /fs/, /vd/, /vz/, /θt/, /θs/, /ðd/,/ðz/, /sp/, /zd/, /ʒd/
CCC final clusters	/pst/, /tst/, /kst/, /mpt/, /nts/, /lts/	/pts/, /pθs/, /fθs/, /dst/, /kts/, /ksθ/, /mps/, /mfs/, /ntθ/, /ndz/, /ntʃt/, /ndʒd/, /nθs/, /nst/, /nzd/, /ŋkt/, /ŋks/, /ŋst/, /ŋkθ/, /lpt/, /lps/, /lbz/, /ldz/, /lkt/, /lks/, /lʃtt/, /ldʒd/, /lmz/, /lnz/, /lfθ/, /lfs/, /lvd/, /lvz/, /lθs/, /lst/, /fts/, /fθs/, /spt/, /sps/, /sts/, /skt/, /sks/

CCCC final clusters	none	/mpts/, /mpst/, /lkts/, /lpts/, /lfθs/, /ntθs/, /ksts/, /ksθs/

Table 11. Comparison of Czech and English consonant clusters. Adapted from Bičan and Cruttenden (2011, 2014)

2.5 Previously conducted research concerning the acquisition of English consonant clusters

Many studies concerned with ESL learners and their pronunciation of consonant clusters have been carried out by linguists all over the world. For instance, Khanbeiki and Abdolmanafi-Rokni undertook a research study to investigate, firstly, the pronunciation of consonant clusters by Persian ESL learners, more specifically the vowel insertion, and secondly, the effect of L1 on their pronunciation. They discerned that in 88% of the cases, the sample inserted vowels in the initial consonant clusters. In contrast, the vowel insertion in the final consonant clusters occurred only in 16% of the cases.

The smaller amount of vowel insertion in the final position can be explained as positive L1 transfer since Persian allows two consonant clusters in the final position. The only final consonant clusters which underwent vowel insertion were "those containing dental fricatives such as /θ/ and /ð/ followed by /s/ and /z/, respectively (as in the words *strengths*, *depths*, *twelfths*, *truths*, *breathes*) ". (Khanbeiki and Abdolmanafi-Rokni 2015)

Another case study was done by Yuliatti, who aimed to scrutinize the final consonant clusters simplification by Indonesian learners of English and its intelligibility in the international context. In her study, she summarized previous studies regarding Indonesian learners to reflect the acquisition of consonant clusters in the final position. She observed that the most frequent simplifications made by Indonesians are devoicing and deletion of some features. Devoicing is mainly applied to obstruents (e.g., voiced consonants /b/ and /g/ is produced as /p/, /k/). When Indonesian learners pronounce final consonant clusters, they tend to delete one of three consonants. (Yuliati 2014)

Choi also dealt with the production of onset consonant clusters. He focused on the phonological acquisition of English /s/ + consonant onset clusters by Korean-speaking EFL learners. The participants were twenty-eight secondary school students who were divided into two groups (low and high achievement groups). Since Korean syllable does not allow any consonant clusters, Choi predicted that participants would tend to insert vowels, also known as vowel epenthesis. According to the Sonority Sequencing Principle (SSP), /s/ + nasal clusters should be more complicated than /s/ + liquid clusters for the Korean speakers; however, the SSP was not congruous with this study. The results demonstrated that the /s/ + liquid clusters were more difficult than /s/ + nasals, which cause lies in the absence of distinction of /r/ and /l/ in Korean. In the matter of three-consonant clusters, the most problematic area was the pronunciation of /s/+ stop + liquid. (Choi 2016)

Besides Asian linguists, Jurado researched Spanish speakers and their acquisition of English consonant clusters. Similarly, as Choi, Jurado also divided his participants into two major groups based on their language proficiency. Eight participants were presented with a sheet of paper with three tasks. While being recorded, they were asked to read eight isolated words, ten sequences of words were next, and as the last task, they had to read five sentences. In a similar way as the previous studies, it was predicted that the participants would employ two repair strategies, namely consonant reduction and vowel epenthesis, since in Spanish, there are only two-consonant clusters in the onset, and coda clusters hardly ever occur (only in borrowings). The findings showed that vowel epenthesis was used mainly in the onset clusters, to be more specific, when the first consonant was /s/ and in terms of the consonant reduction, it was employed in clusters in final positions, both results can be explained on the grounds of Markedness Differential Hypothesis and Contrastive Hypothesis. Nevertheless, in some cases, the two theories could not be applicable. For instance, clusters consisting of two plosives as in *slept* were supposed to be difficult; however, these clusters did not pose any problems. Moreover, clusters as consonant + /s/ also were not problematic. Nonetheless, the researcher did not provide any reason. (Jurado 2005)

There are several studies regarding Vietnamese difficulties when pronouncing English consonants; however, there is a very small number of pieces of research concerning consonant clusters. One of the Vietnamese studies was carried out by Vi-Thong Nguyen, whose aim was to "investigate the strategies of pronouncing the final consonant clusters in English by a group of Vietnamese L1 speakers". (Nguyen 20) Nguyen carried out his research at a Taiwanese university in which students participated (all those students were Vietnamese L1 speakers). He observed that the Vietnamese ESL learners were apt to simplify their pronunciation by five main strategies: deletion, voicing, devoicing, ə-insertion, and featural change. The most systematic strategy employed by the participants was the deletion of one or more consonants in a final consonant cluster. To be more precise, the group that underwent the deletion most frequently was lateral-nasals. Featural changing was the second most used strategy, and it concerned mostly the fricative-stop. In most cases, the alveolar /t/ was changed into dental stop /t̪/ while post-alveolar /ʃ/ was changed into alveolar /s/. Voicing also occurred occasionally, not so often as two previous strategies, but the findings indicated that only /b/ and /t/ were pronounced as /p/ and /d/, respectively. Vowel insertion of /ə/ was found when the word ended with a stop as /t/, /t̪/, or /k/ (Nguyen 2019)

One of the most employed strategies used to simplify the pronunciation of consonant clusters, is epenthesis. Epenthesis is described as the insertion of a phoneme in order to simplify the transition from one phoneme to another. (Penny 36) As mentioned above, most speakers tend to insert vowels (e.g., Spanish-, Korean-, Vietnamese-speaking EFL learners); nevertheless, some speakers of certain languages insert consonants to make the English consonant clusters more similar to the clusters in their native language, e.g., Arabic speakers. (Pigorova 22)

3. PRACTICAL PART

This chapter describes the methodology of this study. First of all, two hypotheses are introduced. Furthermore, information about the respondents, the testing instrument, and the results is provided.

3.1. Hypotheses

This study focuses on the pronunciation of consonant clusters by Vietnamese EFL speakers since many of the speakers seem to struggle with the correct production of English consonant clusters. Different explanations have been offered, such as the low quality of English teachers or invariability of teaching methods in Vietnamese schools. However, this study examines the cross-linguistic influence of Czech on the pronunciation of English consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

As shown in chapter 2.3.4, Nguyen's study demonstrated that Vietnamese speaking EFL learners living in Vietnam are apt to cope with these problematic instances through various strategies such as deletion, voicing, devoicing, ə-insertion, and featural change. The aim of the current study is twofold: first, to detect and compare which type of consonant clusters tend to cause trouble and which coping strategy is implemented by Vietnamese EFL speakers living in Vietnam and in the Czech Republic most frequently and second, to ascertain whether cross-linguistic transfer (from Czech to English) takes place in the acquisition of pronunciation of consonant clusters by Vietnamese EFL speakers living in the Czech Republic.

Two hypotheses were formulated:

1. Vietnamese EFL speakers living in Vietnam have difficulties pronouncing any type of consonant cluster.

2. Vietnamese EFL speakers living in the Czech Republic with a comprehensive knowledge of the Czech language make no or minimal errors when pronouncing English consonant clusters due to the positive language transfer.

The first hypothesis is based on the presumption that Vietnamese EFL speakers cannot pronounce English consonant clusters correctly since Vietnamese does not allow any consonant clusters. The second hypothesis is constructed on the basis of positive language transfer from L2 to L3, where L2 is Czech, and L3 is English. Nevertheless, positive language transfer may not be applicable in several instances. Examples of such cases are clusters containing the sounds which do not occur in Czech, such as /θ/, /ð/ and /w/.

3.2. Subjects

The research was carried out by comparing two groups of subjects. The main criterion for selecting the subjects was their B2 English level. The first group is represented by five subjects who live and study in Vietnam, and all of them are at the age ranging from nineteen to twenty-three, both men and women. They all studied English from the third grade of elementary school until the twelfth grade (last grade of high school); however, while their reading and grammatical skills are considered to be satisfactory, most of them are not confident speaking English. One of the reasons they mentioned was the lack of practice of speaking skills at schools since the Grammar Translation Method is the prevailing teaching method of foreign languages in Vietnam.

The second group consists of five subjects of Vietnamese nationality; nevertheless, they moved to the Czech Republic. One of the criteria for selection of the subjects was that they had to move to the Czech Republic at a certain age (age of adolescence) in order to preserve Vietnamese as their L1 and Czech as their L2 since many Vietnamese who move to the Czech Republic at an early age tend to be more proficient at Czech than at Vietnamese mainly due to a higher level of language exposure to Czech, e.g., in kindergartens or schools. Furthermore, consider Czech as their native language. The second criterion for group 2 was the B1 level of Czech since Williams and Hammamberg asserted in Freundlich that in order for language transfer to take place, it is essential for L2 to be at a sufficient level. All respondents are at the age

of twenty to twenty-three and both men and women as well. Based on the presumption that the intensity of language transfer is partly conditioned by the Czech language proficiency and other factors, it is appropriate to describe the subjects individually.
Subject six is a female (age twenty) who has been living in the Czech Republic for eight years. She attended high school in Prague and considers her Czech to be above average, to be more accurate, corresponding to CEFR C1level[10]. Subject seven (age twenty-three), male, has been living in the Czech Republic for eleven years and regards his Czech skills as proficient (C2). Subject eight (age twenty-three) is a male living and working in the Czech Republic. He moved to the Czech Republic at the age of fourteen and considers his Czech to be at the upper intermediate level (B2). Subject nine (age twenty-three) is a male who has been residing in the Czech Republic since he was seventeen and attended Czech high school in Pilsen. He allegedly did not devote much time to English learning in Vietnam and commenced studying English more extensively at a Czech high school. He finds his Czech to be at a mediocre level (B1). Subject ten (age twenty-three) is a male who was born in the Czech Republic. Nevertheless, he moved to Vietnam as an infant and returned back at the age of fifteen. He claims to have an intermediate level of Czech (B1). To sum up, the first three respondents have a comprehensive knowledge of the Czech language while subjects 9 and 10 find their Czech sufficient for everyday usage.

3.3. Testing instrument

In order to identify problematic consonant clusters and to determine the presence of language transfer, the participants were sent via email a document containing two tasks: to read aloud a list of words and to read five sentences. They were further asked to record their reading by means of a voice recorder in Facebook Messenger. Prior to commencing the recording, the respondents were questioned about their age, sex, Czech language proficiency (based on self-assessment), and their experience with English and Czech.

[10] The Common European Framework of Reference for Languages operates with 6 Levels (A1-C2)

The first task was to read a list of forty-two isolated words, which were divided into five groups: words containing initial CC, initial CCC, final CC, final CCC, and final CCCC consonant clusters. The words were extracted from various textbooks designed for students learning English as EFL/ESL.

The list covered vocabulary corresponding to the B1-B2 level since it was essential for the participants to be familiar with the pronunciation of the words. All the words which were used in task 1 are presented in Table 13.

initial CC	**initial CCC**	**final CC**	**final CCC**	**final CCCC**
blouse	spring	lamp	helped	texts
clean	strong	bank	banks	attempts
draw	scream	belt	hands	
group	street	ask	fifθs	
plate	strange	pens	next	
snow	stress	beds	cleansed	
traffic	screen	baked	text	
still	straight	eggs	ends	
skate	strawberry	nest	grounds	
clever	splash	kicked	asks	

Table 13. List of isolated words used in task 1.

The second task was to read five sentences that contained words with consonant clusters, and this task was created so as to see how participants would produce the problematic words in context.

Sentence 1: The train leaves at six o'clock.
Sentence 2: I usually drink seven cups of milk.
Sentence 3: There is a small square in our city.
Sentence 4: She had to take a few tests before she got the job.
Sentence 5: I have learned a lot about computers since I started work here.

3.4. Data analysis

The analysis of the acquired data encompassed two stages: auditory analysis of the recorded material and the overall evaluation and comparison of group 1 (Vietnamese speaking EFL learners living in Vietnam) and group 2 (Vietnamese speaking EFL learners living in the Czech Republic). In the first stage of the study, each of the individual recordings was subjected to thorough scrutiny by the researcher. Nonetheless, the recordings were examined for the second time by another assessor so as to avoid dubiety and inaccuracy since the data were analysed based on human perception, which is somewhat subjective.

In all cases, a mutual consensus was reached. Twenty tables were created (ten for each group) for marking the pronunciation of consonant clusters, five for the isolated words and five for the sentences. Each table included the columns for marking the correct (✔) or incorrect pronunciation (✖). To give a visual presentation, Table 12 is offered. All tables with the completed data are attached in Appendices.

✔	correct
✖	incorrect

Table 14. Marking the correctness of pronunciation of consonant clusters.

3.5. Results

This section provides information about the analysis results of the pronunciation of consonant clusters produced by the subjects. The results are divided into two groups according to the occurrence of clusters: clusters in isolated words and in sentences.

3.5.1. Consonant clusters in isolated words

Firstly, the errors made within the words in isolation will be described. The table below illustrates the obtained results and compares the performance of group 1 and group 2 in task 1.

	Group 1 – Vietnamese in Vietnam	Group 2 – Vietnamese in the Czech Republic
CC initial	94%	100%
CCC initial	66%	96%
CC final	52%	94%
CCC final	30%	88%
CCCC final	10%	45%

Table 15. Rate of the correct pronunciation of consonant clusters occurring in isolated words.

Based on the overall results, it can be observed that group 2 achieved a more successful outcome than group 1. Nevertheless, both groups experienced difficulty with the same types of clusters. In general, initial consonant clusters were seen as easier than final consonant clusters. Moreover, according to Table 14, it can be said that with the growing number of consonants, the level of difficulty increased. In other words, final consonant clusters containing four consonants were the most problematic ones. The detailed performances of each participant are shown in Charts 1 and 2 below.

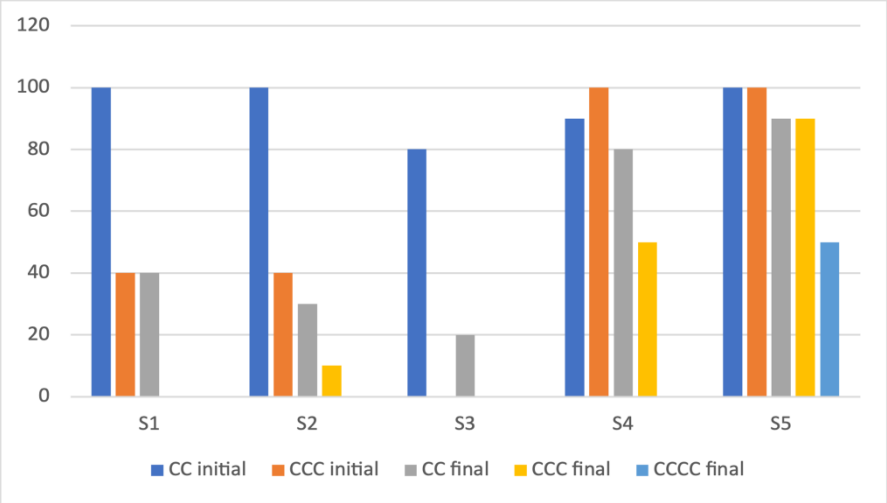

Chart 1. The correct pronunciation of consonant clusters produced by group 1 (Vietnamese in Vietnam) in task 1 (production of isolated words). The numbers show percentages.

Looking more closely at the data, the earlier mentioned suggestion that the level of difficulty rises with the number of consonants in clusters seems to be disapproved in several cases since S4 achieved better results in CCC than in CC initial consonant clusters. Furthermore, S5 delivered an identical performance in CC and CCC final cluster.

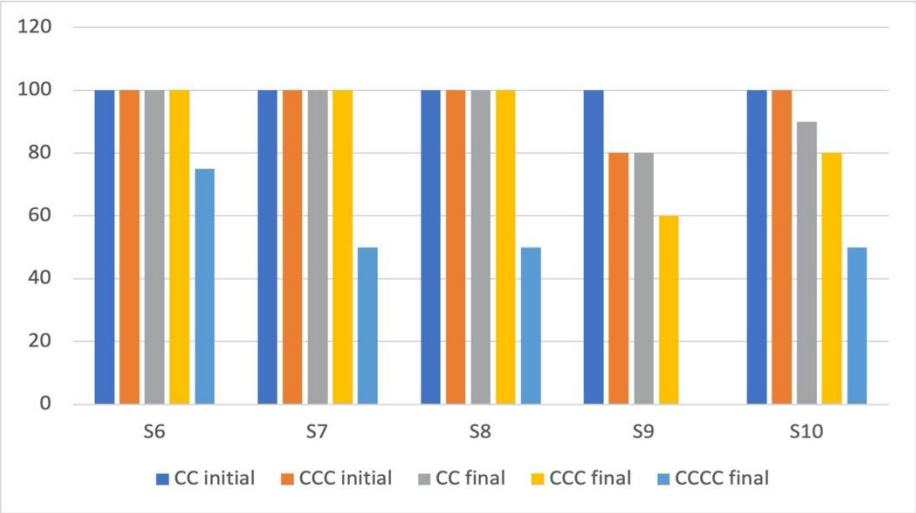

Chart 2. The correct pronunciation of consonant clusters produced by group 2 in task 1. (percentage data)

It can be seen from the graph above, S6, S7, S8 did not have any difficulties with CC initial, CCC initial, CC final, and CCC final consonant clusters. The area which turned out to be the most difficult for group two was the CCCC final. Five strategies to ease

the pronunciation, which were suggested by Nguyen in his study, were also examined in this research. Strategies employed by group 1 are presented in the pie chart below:

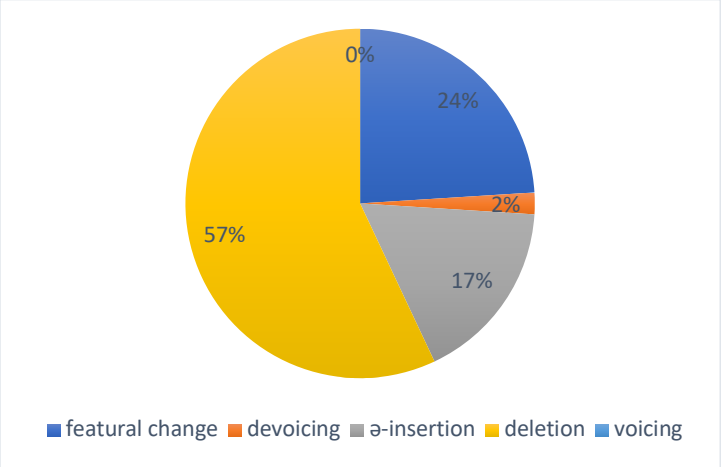

Chart 3. Strategies employed by group 1 (Vietnamese in Vietnam) in task 1 (isolated words).

The primary strategy which was adopted by the first group was a deletion of one or more consonants. The second most applied strategy was featural change. The next was ə-insertion and lastly devoicing.

Voicing did not appear in any instances of this experiment. While group one implemented various strategies, group two employed just deletion.

3.5.1.1 Initial consonant clusters - CC

Regarding the CC initial consonant cluster, the results for all the respondents in the experiment were the following:

WORD	GROUP 1	GROUP 2
blouse	100%	100%
clean	100%	100%
draw	100%	100%
group	100%	100%
plate	100%	100%
snow	100%	100%
traffic	80%	100%
still	100%	100%

skate	80%	100%
clever	80%	100%

Table 16. The comparison of group 1 and group 2 performance in task 1 - CC initial consonant clusters.

Consonant clusters with two consonants in the onset did not cause any problem to both groups except for S3 and S4. The first error was the sequence of /*s/* +/*k/* as in *skate,* which was produced as [ʃəˈkærɪ]. /s/ was pronounced as /ʃ/, and the sound /ə/ was inserted. Furthermore, word *traffic* was mispronounced. The sequence /tr/ was produced as a voiceless affricate /tʃ/ resulting in [tʃæfɪk]. *Clever* was also produced incorrectly since one subject inserted /ə/ after /k/.

3.5.1.2. Initial consonant clusters – CCC

WORD	GROUP 1	GROUP 2
spring	80%	100%
strong	40%	100%
scream	80%	100%
street	40%	100%
strange	40%	80%
stress	40%	100%
screen	80%	100%
straight	40%	80%
strawberry	40%	100%
splash	80%	100%

Table 17. comparison of the performance of group 1 and group 2 in task 1 CC initial consonant clusters

The data in Table 16, shows that the sequence of /str/ caused difficulty in group 1. In this consonant pattern, the respondents from group 1 used the strategy of ə-insertion in 12 cases (/ə/ following /s/). Interestingly, the occurrence of epenthetic /ə/ was accompanied by featural change. S3 had the same tendency to pronounce /s/ as /ʃ/ and /t/ + /r/ as /tʃ/ as in CC initial consonant clusters. The usage of featural change and

epenthesis lead to the production of *strong*, *street*, *stress*, *straight*, *strawberry* as [ʃəˈtʃɒŋ], [ʃəˈtʃiːt], [ʃəˈtʃes], [ʃəˈtʃeɪt], [ʃəˈtʃɔːberɪ].

Another type of featural change was identified in the /str/ sequence. The cluster /tr/ was produced as a sound similar to the Czech voiceless fricative /r̥/, which exists only in accented Vietnamese. The problem seems to lie in difficulty for speakers from central Vietnam to distinguish English and Vietnamese pronunciation of the cluster /tr/. The word *strange* was problematic as well since it contains three consonants in the onset and two consonants in the coda. However, in this part of task 1, the focus was put on the consonants in the onset. In the erroneous instances, *strange* was pronounced either as /ʃəˈtʃen/ or /səˈtr̥en/. Words such as *spring*, *scream*, *screen, splash* also underwent a featural change of /s/ into /ʃ/. As far as group 2 is concerned, only two errors were made in straight and strange in which schwa was inserted after /s/.

3.5.1.3. Final consonant clusters – CC

WORD	GROUP 1	GROUP 2
lamp	80%	100%
bank	80%	100%
belt	60%	100%
ask	60%	100%
pens	60%	100%
beds	40%	100%
baked	40%	60%
eggs	40%	80%
nest	20%	100%
kicked	40%	100%

Table 18. Comparison of performance of group 1 and group 2 in task 1 CC final consonant clusters

The main obstacle for group 1 in the pronunciation of the CCC final consonants was word-sized which was in 3 of 4 erroneous cases pronounced as /net/. In the fourth case, the last consonant was omitted, resulting in /nes/. Another problematic word was eggs. In order to simplify the pronunciation, the subjects from group 1 deleted one of the consonants and pronounced this word either as /e:z/ or /e:k/. The deletion of consonant s also occurred in one instance produced by a subject from group 2. The

results of group 1 of beds and pens are quite similar to the results of eggs due to the usage of the same strategies (deletion of /s/ or other consonant and devoicing). Beds was pronounced as /be:z/ or /bes/ and pens as /pen/ or /pes/. The cluster which apparently carried some complexity was the sequence of plosives /k/ + /t/ as in *baked*, *kicked*. These words were pronounced correctly only by two subjects from group 1. The rest of the subjects dropped the /t/.

Surprisingly, two subjects from group 2 seem to have struggled with baked but pronounced kicked correctly, which does not suggest any reasonable explanation other than that it was a slip of the tongue rather than an error of competence. The words *lamp*, *bank*, *belt* were all pronounced without the last consonant.

3.5.1.4. Final consonant clusters – CCC

WORD	GROUP 1	GROUP 2
helped	20%	60%
banks	40%	100%
hands	40%	100%
fifths	40%	80%
next	40%	80%
cleansed	20%	100%
text	40%	80%
ends	40%	100%
grounds	0%	100%
asks	20%	60%

Table 19. Comparison of performance of group 1 and group 2 in task 1 CCC final consonant clusters

What stands out in the table is the word *grounds* which was mispronounced in all cases in group 1. Interestingly, each subject from group 1 pronounced the word differently, to be more precise, each subject omitted different consonant as can be seen in the following instances: [graʊz], [graʊ], [graʊd], [graunz], [graʊn]. Despite the fact that the words *hands* and *ends* contain the same cluster as *grounds*, these two words were pronounced correctly by two subjects. In comparison to group 1, group 2 did not have any difficulties with this type of consonant cluster. Nevertheless, what caused

trouble to both groups the cluster /sks/ was in *asks*. While two subjects from group 2 mispronounced the word identically as [ɑːsk], subjects from group 1 pronounced the word in varied ways. 2 subjects eliminated cluster /ks/ and pronounced the word as /ɑːs/, one subject omitted the pre-final /s/ and the fourth subject deleted the post-final /s/. *Helped* was pronounced correctly by only one subject from group 1 and by three subjects from group 2. All four subjects from group 1 who mispronounced *helped* dropped /l/ and /t/, whereas subjects from group 2 dropped only the consonant /t/. Another problematic cluster was /kst/ as in the *text*, *next* which was in all cases of group 1 produced as [tek] and [nek]. Only one subject from group 1 mispronounced the words as [teks] and [neks]. As far as word *fifths* is concerned, the subjects from group 1 tended to delete /f/, whereas a subject from group two eliminated /θ/.

While three subjects from group one produced *banks* incorrectly, group two managed to pronounce it without any error. *Banks* was pronounced as following: [bæŋ], [bæŋk], [bæŋs].

3.5.1.5. Final consonant cluster – CCCC

It is obvious from this table that clusters containing four consonants carry more complexity than any other clusters. None of the subjects pronounced the word *texts* with all four consonants. In all cases, one or more consonants were omitted. All subjects from group 1 pronounced word *texts* as /teks/, and subjects from group 2 dropped the final /s/. The only subject who managed to pronounce the cluster /mpts/ in *attempts* was S6. Similar to the word *texts*, each group dealt with the word differently. While group 1 produced only one sound /m/ from the cluster, group two dropped a different part of the cluster and pronounced the word as [əˈtems].

WORD	GROUP 1	GROUP 2
texts	0%	0%
attempts	0%	20%

Table 20. The comparison of the performance of group 1 and group 2 in task 1 CCCC final consonant clusters

3.5.2. Consonant clusters in sentences

In the second task, the participants were asked to read aloud sentences including one or more words containing a consonant cluster. In this part, we are going to present the results of the analysis focusing on consonant clusters produced in read-aloud sentences.

(1) *Sentence number 1*: The train leaves at six o'clock.

There are two main problems in this sentence: *leaves* and *six*. In the case of the word *leaves*, three subjects from group 1 were not able to produce the word correctly since they omitted the last sound. The word *six* seems to pose an even more significant obstacle as four subjects from group 1 and one subject from group 2 did not pronounce the final /s/.

(2) *Sentence number 2*: I usually drink seven cups of milk.

In this sentence, the difficulty seems to arise when pronouncing the words *drink*, *cup*, and *milk*. There are two clusters in *drink*. Unsurprisingly, as has been observed in the first task, final consonant clusters tend to be more problematic. Four subjects (all from group 1) did not pronounce the final /k/ of the sequence. The word *cup* was mispronounced by only one subject from group 1, who omitted the last sound. As for *milk*, there is a rather unexpected outcome. Four subjects from group 1 pronounced the word as /mɪʊ/, which does not suggest any reasonable explanation. Group 2 did not make any errors in sentence 2.

(3) *Sentence number 3*: There is a small square in our city.

This sentence was designed to test the pronunciation of the words *small* and *square.* All subjects pronounced the words correctly.

(4) *Sentence number 4*: She had to take a few tests before she got the job.

There are two words that contain a consonant cluster: *few* and *tests.* Whereas *few* was produced correctly in all cases, only three subjects (all from group 2) managed to pronounce *tests* correctly. Four subjects (all from group 1) pronounced the word as /tes/, while three subjects (one from group 1, two from group 2) omitted only the final /s/ in *tests*.

(5) *Sentence number 5*: I have learned a lot about computers since I started work here.

This sentence was chosen so as to investigate whether there is also any difference in rhoticity of the subjects from group 1 and group 2. As could be predicted, all subjects from group 1 are non-rhotic speakers.

The reason is quite simple. Since Vietnamese do not have any consonant clusters, it is for group 1 more natural not to insert any more consonants. As far as group 2 is concerned, four subjects were rhotic speakers, and one was non-rhotic.

group 1	group 2
tests (0%)	tests (60%)
milk (20%)	six (80%)
six (20%)	milk (100%)
drink (20%)	drink (100%)
leaves (40%)	leaves (100%)
train (80%)	train (100%)
cups (80%)	cups (100%)
small (100%)	small (100%)
clock (100%)	clock (100%)
square (100%)	square (100%)
few (100%)	few (100%)

Table 21. Rate of the correct pronunciation of words occurring in sentences from the words with the highest amount of errors to the least erroneous words. Words from sentence five are not included since the focus was laid on the rhoticity.

Table 21 presents the rate of correct pronunciation of words with consonant clusters, which occurred in task 2. The most difficult word for both groups the word *tests,* which was produced correctly only by three subjects from group 2. The words which all respondents from both groups managed to pronounce correctly are *small*, *clock*, *square*, *few*.

The rest of the words were mispronounced by at least one of the respondents from group 1. In comparison with the production of a consonant cluster in isolated words, the performance of all subjects in task 2 was very similar to their performance in

task 1. In both tasks, CC initial clusters were nearly in all cases unproblematic, and CC final clusters proved a hindrance.

3.6. Discussion

After examining the pronunciation of English consonant clusters produced by Vietnamese EFL learners, the overall results suggest that the most difficult clusters for both groups were CCCC final clusters. Then CCC final, CC final, CCC initial and the least challenging were CC initial consonant clusters. In comparison with the study conducted by Nguyen, which indicated five strategies used to simplify the production of final consonant clusters, our study detected only two strategies in the final clusters – deletion of a sound and devoicing. Vowel epenthesis and featural change occurred mainly in clusters standing in the onset. Voicing was not observed in any case. In line with another study carried out by Jurado, Spanish speakers also reduced consonants in final clusters.

Nevertheless, while Spanish speakers did not face any difficulty when pronouncing final clusters containing two plosives, Vietnamese speakers seem to find these types of clusters problematic. As for Vietnamese EFL learners living in the Czech Republic, it can be said that they demonstrated better results than Vietnamese EFL learners living in Vietnam in all cases. One interesting finding is that the respondents who live in the Czech Republic did not encounter any problems when pronouncing initial consonant clusters. Therefore, strategies such as featural change of vowel insertion were not observed. In terms of final clusters, they used identical strategies as group 1.

4. Conclusion

The main goal of this bachelor thesis was to investigate the influence of the knowledge of the Czech language on the pronunciation of English consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic. In this respect, an investigation was carried out.

The subjects were divided into two groups. The first group was represented by five Vietnamese-speaking EFL learners in the age ranging from 19 to 23, both men and women. The second group consisted of five EFL learners living in the Czech Republic and of a similar age as group 1. Then the recordings were carefully analysed and evaluated. Two hypotheses were proposed in chapter 3.1.

The first hypothesis suggests that Vietnamese EFL speakers have difficulties pronouncing any type of consonant clusters. The results of the research partly confirmed the hypothesis that Vietnamese EFL speakers face difficulty when pronouncing consonant clusters; nevertheless, it seems that they have problems only with clusters of a more complex structure and especially those which stand in the final position. The clusters which do not seem to pose an obstacle were those containing CC initial consonant clusters, which were pronounced correctly in 94% of the cases (group 1). With reference to the strategies used for simplifying the pronunciation, consonant deletion was used most frequently. In terms of the clusters which were problematic for group 1, initial clusters which contained /s/ created difficulties the most. Most errors were made by the featural change of /s/ into /ʃ/. The explanation lies in the fact that most of the subjects were from central Vietnam, where the grapheme <s> represents the sound /ʃ/ and as a consequence, they were apt to produce /s/ as / ʃ/.

The second hypothesis suggests that Vietnamese EFL speakers who live in the Czech Republic make no or minimal errors when pronouncing English consonant clusters due to the positive language transfer from L2 (Czech) to L3 (English).

The overall results indicate that Vietnamese EFL speakers who live in the Czech Republic are able to pronounce English consonant clusters more correctly than Vietnamese-speaking EFL learners who live in Vietnam. It was presumed that

consonant clusters that occur in both Czech and English should not create any difficulty for Vietnamese-speaking EFL learners with the knowledge of Czech due to the positive transfer. Nevertheless, the most surprising result is that group 2 was also able to produce some of the consonant clusters, which occur only in English.

It has also been proven that there is a correlation between the language proficiency of L2 and the language acquisition of pronunciation of L3 since those subjects (from group 2) who are at a higher level of Czech language seem to have achieved better results than those who have a lower Czech language proficiency. Nevertheless, the findings of this study have to be seen in the light of some limitations. The first limitation concerns the constrained sample size for statistical measurement since there is a small number of Vietnamese-speaking EFL learners living in the Czech Republic who have B2 English and at least B1 level of Czech. Moreover, as has been noted in chapter 3.2, another criterion for the selection was that the subjects had to move to the Czech Republic at a certain age in order to preserve Vietnamese as their L1 and Czech as their L2 since many Vietnamese who move to the Czech Republic in early age tend to be more proficient at Czech than at Vietnamese (due to higher level of language exposure to Czech, e.g., in kindergartens, schools etc.) and many of them consider Czech as their native language. Provided that the research sample was more extensive, more complex results would be achieved.

Another potential limitation is that the testing instrument was entirely based on reading activity which allowed the subjects to be more focused on their pronunciation. Consequently, a complex image of the pronunciation of English consonant clusters in spontaneous speech cannot be provided.

Thirdly, the study does not take into consideration factors such as learner-based (e.g., language mode, linguistic awareness, educational background, context, etcetera) and language-based variables (e.g., word class, morphological transfer), which were proposed by Murphy. (see chapter 2.5)

Despite its limitations, the study certainly adds to our understanding of the third language acquisition and the cross-linguistic influence of the Czech language on the

pronunciation of English consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic and its nature.

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Appendices

Appendix 1

List of words and sentences used in the practical part:

Please read the following words aloud and slowly.

1.

Blouse, clean, draw, group, plate, snow, traffic, still, skate, clever

2.

Spring, strong, scream, street, strange, stress, screen, straight, strawberry, splash

3.

Lamp, bank, belt, ask, pens, beds, backed, eggs, nest, kicked

4.

Helped, banks, hands, fifths, next, cleansed, text, ends, grounds, asks

5.

Texts, attempts

The train leaves at six o'clock.

I usually drink seven cups of milk.

There is a small square in our city.

She had to take a few tests before she got the job.

I have learned a lot about computers since I started work here

Appendix 2

The pronunciation of CC initial consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

	S1	S2	S3	S4	S5
blouse	✔	✔	✔	✔	✔
clean	✔	✔	✔	✔	✔
draw	✔	✔	✔	✔	✔
group	✔	✔	✔	✔	✔
plate	✔	✔	✔	✔	✔
snow	✔	✔	✔	✔	✔
traffic	✔	✔	✔	✖	✔
still	✔	✔	✔	✔	✔
skate	✔	✔	✖	✔	✔
clever	✔	✔	✖	✔	✔

Appendix 3

The pronunciation of CCC initial consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

	S1	S2	S3	S4	S5
spring	✔	✔	✖	✔	✔
strong	✖	✖	✖	✔	✔
scream	✔	✔	✖	✔	✔
street	✖	✖	✖	✔	✔
strange	✖	✖	✖	✔	✔
stress	✖	✖	✖	✔	✔
screen	✔	✔	✖	✔	✔
straight	✖	✖	✖	✔	✔
strawberry	✖	✖	✖	✔	✔
splash	✔	✔	✖	✔	✔

Appendix 4

The pronunciation of CC final consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

	S1	S2	S3	S4	S5
lamp	✔	✔	✖	✔	✔
bank	✔	✔	✖	✔	✔
belt	✔	✖	✖	✔	✔
ask	✖	✔	✖	✔	✔
pens	✖	✖	✔	✔	✔
beds	✖	✖	✖	✔	✔
baked	✖	✖	✔	✖	✔
eggs	✖	✖	✖	✔	✔
sized	✖	✖	✖	✔	✖
kicked	✔	✖	✖	✖	✔

Appendix 5

The pronunciation of CCC final consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

	S1	S2	S3	S4	S5
helped	✖	✖	✖	✖	✔
banks	✖	✖	✖	✔	✔
hands	✖	✔	✖	✖	✔
fifths	✖	✖	✖	✔	✔
next	✖	✖	✖	✔	✔
cleansed	✖	✖	✖	✖	✔
text	✖	✖	✖	✔	✔
ends	✖	✖	✖	✔	✔
grounds	✖	✖	✖	✖	✖
asks	✖	✖	✖	✖	✔

Appendix 6

The pronunciation of CCCC final consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

	S1	S2	S3	S4	S5
texts	✖	✖	✖	✖	✖
attempts	✖	✖	✖	✖	✖

Appendix 7

Pronunciation of CC initial consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

	S6	S7	S8	S9	S10
blouse	✔	✔	✔	✔	✔
clean	✔	✔	✔	✔	✔
draw	✔	✔	✔	✔	✔
group	✔	✔	✔	✔	✔
plate	✔	✔	✔	✔	✔
snow	✔	✔	✔	✔	✔
traffic	✔	✔	✔	✔	✔
still	✔	✔	✔	✔	✔
skate	✔	✔	✔	✔	✔
clever	✔	✔	✔	✔	✔

Appendix 8

Pronunciation of CCC initial consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

	S6	S7	S8	S9	S10
spring	✔	✔	✔	✔	✔
strong	✔	✔	✔	✔	✔
scream	✔	✔	✔	✔	✔
street	✔	✔	✔	✔	✔
strange	✔	✔	✔	✖	✔
stress	✔	✔	✔	✔	✔
screen	✔	✔	✔	✔	✔
straight	✔	✔	✔	✖	✔
strawberry	✔	✔	✔	✔	✔
splash	✔	✔	✔	✔	✔

Appendix 9

Pronunciation of CC final consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

	S6	S7	S8	S9	S10
lamp	✔	✔	✔	✔	✔
bank	✔	✔	✔	✔	✔
belt	✔	✔	✔	✔	✔
ask	✔	✔	✔	✔	✔
pens	✔	✔	✔	✔	✔
beds	✔	✔	✔	✔	✔
baked	✔	✔	✔	✖	✖
eggs	✔	✔	✔	✖	✔
sized	✔	✔	✔	✔	✔
kicked	✔	✔	✔	✔	✔

Appendix 10

Pronunciation of CCC final consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

	S6	S7	S8	S9	S10
helped	✔	✔	✔	✖	✖
banks	✔	✔	✔	✔	✔
hands	✔	✔	✔	✔	✔
fifths	✔	✔	✔	✖	✔
next	✔	✔	✔	✖	✔
cleansed	✔	✔	✔	✔	✔
text	✔	✔	✔	✖	✔
ends	✔	✔	✔	✔	✔
grounds	✔	✔	✔	✔	✔
asks	✔	✔	✔	✖	✖

Appendix 11

Pronunciation of CCCC final consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

	S6	S7	S8	S9	S10
texts	✖	✖	✖	✖	✖
attempts	✔	✖	✖	✖	✖

Appendix 12

Pronunciation of sentences containing words with consonant clusters produced by Vietnamese speaking EFL learners living in Vietnam.

Sentence 1

	S1	S2	S3	S4	S5
train	✔	✔	✔	✖	✔
leaves	✖	✖	✖	✔	✔
six	✖	✖	✖	✖	✔
clock	✔	✔	✔	✔	✔

Sentence 2

	S1	S2	S3	S4	S5
drink	✖	✖	✖	✖	✔
cups	✔	✔	✖	✔	✔
milk	✖	✖	✖	✖	✔

Sentence 3

	S1	S2	S3	S4	S5
small	✔	✔	✔	✔	✔
square	✔	✔	✔	✔	✔

Sentence 4

	S1	S2	S3	S4	S5
few	✔	✔	✔	✔	✔
tests	✖	✖	✖	✖	✖

Appendix 13

Pronunciation of sentences containing words with consonant clusters produced by Vietnamese speaking EFL learners living in the Czech Republic.

Sentence 1

	S6	S7	S8	S9	S10
train	✔	✔	✔	✔	✔
leaves	✔	✔	✔	✔	✔
six	✔	✔	✔	✖	✔
clock	✔	✔	✔	✔	✔

Sentence 2

	S6	S7	S8	S9	S10
drink	✔	✔	✔	✔	✔
cups	✔	✔	✔	✔	✔
milk	✔	✔	✔	✔	✔

Sentence 3

	S6	S7	S8	S9	S10
small	✔	✔	✔	✔	✔
square	✔	✔	✔	✔	✔

Sentence 4

	S6	S7	S8	S9	S10
few	✔	✔	✔	✔	✔
tests	✔	✖	✔	✖	✔

Appendix 14

Information on subjects.

	gender	age	residence outside of Vietnam	Czech language proficiency level
S1	male	19	Never left	X
S2	male	21	Never left	X
S3	female	23	Never left	X
S4	male	21	Never left	X
S5	female	21	Never left	X
S6	female	20	8 years	C1
S7	male	22	11 years	C2
S8	male	23	9 years	B2
S9	male	23	6 years	B1
S10	male	23	8 years	B1