# The Native Language Influence on English Pronunciation: A Comparison of Czech and French 

Pavla Trávničková

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#### Abstract

ABSTRAKT Tato bakalářská práce se zamě̌̌uje na vliv rodného jazyka na anglickou výslovnost českých a francouzských mluvčích. České a francouzské systémy samohlásek a souhlásek jsou popsány a porovnány se systémy anglickými. Ve srovnávacím výzkumu, který se skládal z audio nahrávek a dotazníků, jsou analyzovány odlišnosti ve výslovnosti rodilého mluvčího, Čechů a Francouzů. Práce definuje anglické hlásky, které českým a francouzským mluvčím způsobují největší problémy a příčiny jejich nesprávné výslovnosti jsou vysvětleny na základě vlastností rodného jazyka mluvčích.


Klíčová slova: vliv rodného jazyka, anglická výslovnost, francouzští rodilí mluvčí, čeští rodilí mluvčí, samohlásky, souhlásky


#### Abstract

This bachelor's thesis focuses on the native language influence on English pronunciation of Czech and French speakers. Czech and French vowel and consonant systems are described and compared to the English systems. Differences in pronunciation of a native speaker, Czech and French speakers are analysed in comparative research consisting of voice recordings and questionnaires. The most problematic English phonemes for Czech and French speakers are defined and causes of their mispronunciation are explained based on features deriving from speakers' native language.


Keywords: native language influence, English pronunciation, French native speakers, Czech native speakers, vowels, consonants

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## CONTENTS

INTRODUCTION ..... 10
I THEORY ..... 11
1 GENERAL TERMS ..... 12
1.1 Pronunciation in general ..... 12
1.2 Classification of speech sounds ..... 12
1.2.1 Basic units of speech sounds ..... 12
1.2.2 Vowels and consonants ..... 13
1.2.3 Diphthongs and triphthongs ..... 16
2 INTRODUCTION TO SYSTEM OF VOWELS ..... 17
2.1 Quality and quantity of vowels ..... 17
2.2 English vowel system ..... 17
2.3 Czech vowel system ..... 19
2.4 French vowel system ..... 20
3 SUMMARY OF MAIN DIFFERENCES IN CZECH, FRENCH AND ENGLISH VOWEL SYSTEMS ..... 22
3.1 Vowel quality ..... 22
3.2 Vowel length ..... 22
3.3 Vowel production ..... 23
4 INTRODUCTION TO SYSTEM OF CONSONANTS ..... 24
4.1 Voice of consonants ..... 24
4.2 Place of articulation ..... 24
4.3 Manner of articulation ..... 26
4.4 English consonant system ..... 26
4.5 Czech consonant system ..... 28
4.6 French consonant system ..... 28
5 SUMMARY OF MAIN DIFFERENCES IN CZECH, FRENCH AND ENGLISH CONSONANT SYSTEMS ..... 30
5.1 Consonant pairs ..... 30
II ANALYSIS ..... 31
6 INTRODUCTION ..... 32
6.1 Methodology ..... 32
6.2 Methodological limitations ..... 34
6.3 Material ..... 34
7 ANALYSIS OF THE RESEARCH ..... 35
7.1 Czech speakers' background information. ..... 35
7.2 Analysis of voice recordings of the text by Czech speakers ..... 37
7.3 Analysis of voice recordings of the pairs by Czech speakers ..... 38
7.4 Analysis of self-evaluation of Czech speakers ..... 43
7.5 French speakers' background information ..... 44
7.6 Analysis of voice recordings of the text by French speakers ..... 46
7.7 Analysis of voice recordings of the pairs by French speakers ..... 47
7.8 Analysis of self-evaluation of French speakers ..... 51
8 SECOND LANGUAGE ACQUISITION ..... 53
CONCLUSION ..... 54
BIBLIOGRAPHY ..... 56
LIST OF ABBREVIATIONS ..... 58
LIST OF FIGURES ..... 59
LIST OF TABLES ..... 60
APPENDICES ..... 61

## INTRODUCTION

Pronunciation of every person is characterised by its uniqueness (Jones 2002, 3). Even when comparing native speakers of one specific language, they do not pronounce exactly alike. As English has become one of the most widespread languages, many varieties of English pronunciation have appeared in countries where English is not a mother tongue. They can be classified as undistinguishing mixtures combining features from different varieties of English, especially the best-known American and British English; the features from native languages of speakers are also present. According to Gimson (1980, 3) learners of a foreign language are "subject to resistances and prejudices deriving from the framework of their original language" contrary to e.g. bilingual children who acquire a second language rapidly by imitation sounds they are exposed to. Thus when analyzing the mixtures in more details remarkable differences among groups of people whose native language is the same can be found. These speakers tend to substitute phonemes which do not occur in their first language. Consequently, the aim of this thesis is to prove that English pronunciation of non-native speakers (in this case Czech and French) is influenced by their first language; at the same time its effects can be minimised especially with a great deal of conscious and analytical effort. This thesis also aims to prove that excellent knowledge of English is not in proportion to excellent knowledge of English pronunciation.

The thesis also maps how exactly English pronunciation of Czech and French speakers is influenced. It describes the most problematic phonemes of English pronunciation. BBC English, which is "widely understood pronunciation" (Jones 2002, 4) and which is often recommended for foreigners (Roach 2009, 3), is used as a standard in the thesis. As the thesis deals with comparing Czech and French with English, it also works with standard varieties of Czech and French languages in order to get the most objective results of their comparison. Additionally, for objective comparison of transcription in mentioned languages, the International Phonetic Alphabet (IPA), which is nowadays widely used, is respected throughout the thesis.

## I. THEORY

## 1 GENERAL TERMS

### 1.1 Pronunciation in general

Wrong or unnatural pronunciation of a speaker's native or learned language can lead to misunderstanding. It also diverts attention away from decoding a language. Consequently, a hearer has to put more effort into a process of decoding and the meaning becomes quickly forgotten (Bázlik 2012, 13). According to Jones (2002, 4), this corresponds to "bad" pronunciation which differs from "good" one by not being "clearly intelligible to all ordinary people".

As a result, studying theoretical background of pronunciation enables students of a foreign language to understand a spoken language better and to speak in a way which is more likely to be understood especially by native speakers. Interlanguage speech intelligibility benefit is a tendency which occurs during a conversation of non-natives speakers with a native one and it states that a native speaker faces difficulties in understanding meaning of utterances of non-native speakers while non-natives understand each other without problems (Petráž 2014, 1). Although the theory concerns mainly accented speech, "good" pronunciation is the key for being understood both by native and non-native speakers.

### 1.2 Classification of speech sounds

"Language starts with the ear" (O’Connor 1980, 1). Students of a foreign language often tend to mispronounce its troublesome sounds by those which are familiar to them. It means they replace them with similar sounds of their native language. Gilbert $(2008,1)$ explains that one of the reasons is experiencing feeling described as "sounding foreign to oneself". Although the feeling is unconscious, in most cases just being aware of it might lead to faster adaptation and better results in pronunciation in comparison to other students (Gilbert 2008, 1). Thus examination of speech sounds in Czech, French and English is beneficial to every student, but before doing so it is essential to describe them in more general way which provides an overview needed for their comparison.

### 1.2.1 Basic units of speech sounds

Equally as some of languages have their alphabets consisting of letters (basic units in written language), a phonemic system which consists of phonemes occurs on level of speech sounds. By definition, phonemes are abstract units which are "basis of our speech"
(Roach 2009, 32). The finite number of phonemes in one particular language is the important feature (Krčmová 2009, 116) even though the frequency of their distribution in a language can vary depending on its dialects

Most of phonemes are represented by one grapheme. Different realizations of one phoneme which do not change a meaning of a word are called allophones (Jones 2002, 172). Even though most of the scientists emphasize the ways of realizations of one phoneme as a base for differentiating it into allophones, Carr (2013, 30-31) widens the theory with term predictability. Although, he agrees with phonetic distinction and phonological equality of allophones, he stresses that allophones are principally "realizations of a phoneme which are entirely predictable from context". Consequently, speakers who unconsciously know rules of their native language do not face challenges with their pronunciation and in some cases they are not even aware of allophones as such since they pronounce them habitually.

### 1.2.2 Vowels and consonants

Phonemes are traditionally divided into consonants and vowels which differ in the way of their realization and their functions. However the division into two groups is often a subject of a discussion among scientists and many theories concerning this topic have already appeared, yet only two of them are considered the most vital - phonological and phonetic definitions. Gimson $(1980,27)$ explains that a phonological definition which concentrates on functioning of sounds in syllables is more traditional and characterizes consonants as the segments "at the edges of syllables" while vowels occur at the centre of it. On the other hand a phonetic theory defines vowels as sounds which are not obstructed while the flow of air passes from the larynx to the lips (Roach 2009, 10). As a result, phones which are blocked during their production are consonants. Yet, both Gimson (1980, $28)$ and Roach $(2009,10)$ warn that cases when the phonological vowels/consonants do not correspond to ones according to the phonetic theory and vice versa might appear. Consequently using one of these definitions is vital and this thesis respects the phonetic one. In addition to the theories, some vowels are closer to consonants than others and third group of phonemes called semivowels occurs (Skaličková 1982, 31). In English /j/ and /w/ belong to this group as they on the one hand never appear in the middle of a syllable, which is a reason why they are referred to be more consonants than vowels, but on the other hand their articulation is almost identical with /i/ and /u/ which is the reason why they are
considered to be more vowels than consonants (Roach 2009, 50). One of the best-known solutions of not correspondence of phonetic and phonological theories is the one of K. L. Pike. He suggested that the term 'consonant' should be reserved for the phonological level of analysis and terms 'contoid' and 'vocoid' should be introduced for the phonetic level (Crystal 2003, 98). However, this theory is not generally used and only terms consonants and vowels appear in most of works.

Syllables, which are in majority of cases combinations of vowels and consonants, are basic units of words. Even though linguistics elements - vowels and consonants - are on the same level, consonants contribute more in process of making sense of words:

$$
\begin{aligned}
& \text { ‘C-n y-- pl--s- -p-n th- w-nd-w?' } \\
& \text { 'a- -ou --ea-e o-e- --e -i-o-? }
\end{aligned}
$$

This easy experiment, where the sentence 'Can you please open the window' is rewritten, demonstrates and confirms that written words with omitted vowels are far more likely to be understood than a text consisting of words with omitted consonants (O'Connor 1980, 24). Although greater emphasis is laid on consonants while referring to semantics of words, scientists put more emphasis on defining pronunciation of vowels. Gimson (1980, 35) explains that describing pronunciation of vowels has always been considerably difficult as for instance differences among varieties of accents in French, English and Czech result mainly from different pronunciation of vowels. Moreover Melen $(2010,12)$ sees the reason of vowel complexity in their abstraction as they almost never appear alone as a single word. As a result, their pronunciation is influenced by preceding and following phonemes or syllables as a whole. In addition, Jones $(2002,18)$ assumes that the pronunciation of vowels is individual and its description based on experience of one speaker may be misleading for many others. Contrary to consonants which can be subdivided based on the place and manner of articulation, the manner of articulation of vowels is the same (Millward 1996, 27-29). Due to a complexity of the pronunciation of vowels, Jones defined a scheme of cardinal vowels (Gimson 1980, 35) which is defined as a set of vowels sounds which are selected as convenient "points of references" and other vowels can be measured from them/compared to them (Jones 2002, 18).

Figure 1. Cardinal vowels


Where symbols appear in pairs, the one to the right represents a rounded vowel.
(The International Phonetic Alphabet, 2005) ${ }^{1}$ The quadrilateral shape of the diagram corresponds to the shape of articulators - the palate, the upper surface and the tongue. Moreover, the place of articulation of individual vowelssounds is defined by the shape and position of the tongue. While the height of the tongue defines close, close-mid, open-mid and open vowels, the location of the highest part of the tongue in the mouth determines whether a vowel is front, central or back (Millward 1996, 29).

Even though most of languages contain more consonant than vowels, vowels and consequently their articulation is believed to be more difficult to be explained, described and finally acquired by non-native speakers. In case of consonants, the general subdivision into several categories based either on manner of their articulation or its place can be found. The following table shows summary of pulmonic consonants, which are initiated by airflow from the lungs (Crystal 2003, 380) and in most of world languages just pulmonic consonants are found.

[^1]Figure 2. Pulmonic consonants

|  | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Uvular | Pharyngeal | Glottal |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plosive | p b |  |  | t d |  | d d | C J | k g | q G |  | ? |
| Nasal | m | m |  | 11 |  | $\eta$ | J1 | $1]$ | N |  |  |
| Trill | B |  |  | r |  |  |  |  | R |  |  |
| Tap or Flap |  | V |  | ¢ |  | , |  |  |  |  |  |
| Fricative | $\phi \beta$ | f V | $\theta$ ठ | S Z | $\int 3$ | S Z | ç j | X X | $\chi$ Б | ћ I | h h |
| Lateral fricative |  |  |  | 13 |  |  |  |  |  |  |  |
| Approximant |  | $v$ |  | I |  | - | j | U |  |  |  |
| Lateral approximant |  |  |  | 1 |  | l | $\Lambda$ | L |  |  |  |

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.
(The International Phonetic Alphabet, 2005) ${ }^{2}$

### 1.2.3 Diphthongs and triphthongs

Complex sounds of the vowel type which consist from either two or three vowels are called diphthongs and triphthongs. Triphthongs do not even appear in some languages and if so, they are often considered as the most complicated vowel sounds in a language. Both diphthongs and triphthongs are produced very rapidly as a fluent glide with no interruption from one vowel to another (in case of triphthongs to a third one) (Roach 2009, 17-18). Even though these complex sounds are represented by two or three letters and they "act like one of the long, simple vowels" (O'Connor 1980, 84), all of the vowels within a diphthong and triphthong are not equal. In case of diphthongs the first vowel, called pure vowel, (Roach 2009, 17) is stronger and longer than the second one (Hála 1962, 290) which "indicates the direction of movement" (Jones 2002, 22). On the other hand, in case of triphthongs the last vowel is not the weakest one and Roach $(2009,18)$ explains that recognizing of triphthongs in a language is not easy because the middle vowel can be hardly heard.

Even though it might seem that every sequence of vowels corresponds to either diphthongs or triphthongs, it is not correct. Diphthongs are vowels which change their quality within a syllable yet vowels in hiatus are "two adjacent vowels belonging to different syllables" (Crystal 2003, 217). Concerning triphthongs the situation is more complex as Roach (2009, 19) warns triphthongs do not collectively act as either monosyllabic or disyllabic and it leads to increasing their complexity.

[^2]
## 2 INTRODUCTION TO SYSTEM OF VOWELS

The quality of a tone which is created in a cavity depends mainly on shape and size of the cavity and its orifice. Therefore concerning the quality of vowels, which are all tones, the main aspects are position of the tongue and the shape of lips (Palková 1994, 68). Consequently definitions of vowels in a concrete language can be demonstrated by a quadrilateral scheme which corresponds to the tongue position of a vowel and mouth. Yet Ashby (2015, 70-71) warns that even though in the past this scheme was believed to be a scheme describing exact pronunciation of vowels, nowadays scientists admit that quality of vowels is influenced by the whole configuration of vocal tract. Palková $(1994,69)$ likewise highlights the importance of additional features such as its length (quantity), nasality, liprounding, tension. However, the scale of their influence upon vowels varies from one language to another.

### 2.1 Quality and quantity of vowels

As mentioned quantity of vowels is one of their main features. Yet it is not possible to generalise its scale upon vowels in all languages. There are some languages (including Czech) where vowel pairs based on their quantity can be found, nevertheless in most of the languages members of the vocalic pairs are also differentiated by their quality (tongue position) (Ashby 2015, 68-69). Quality and quantity of vowel can be in some languages such as Czech visualised when transcribing a text. Phonemes themselves are symbols determining their quality yet quantity is marked by a colon which follows a vowel phoneme.

### 2.2 English vowel system

In English vowel system, it is the quality feature which plays the most important role. Melen $(2010,13)$ describes the quantity of vowels in English as relative. He explains that dividing vowels into vocalic pairs based on their quantity is meaningful only in very similar environment for the pronunciation of its both members. However in English it is voice which significantly influences pronunciation of vowels as their quantity is a result of a following consonant (voiced/voiceless). If a vowel is followed by a voiceless consonant $/ \mathrm{p}, \mathrm{t}, \mathrm{k}, \mathrm{t} \int, \mathrm{f}, \theta, \mathrm{s}, \mathrm{f} /$, the pronunciation of the vowel is shortened even though it concerns the
long vowel, if a consonant is voiced $/ \mathrm{b}, \mathrm{d}, \mathrm{g}, \mathrm{d}, \mathrm{v}, \mathrm{\delta}, \mathrm{z}, \mathrm{3}, \mathrm{m}, \mathrm{n}, \mathrm{y}, \mathrm{l} /$ a vowel is not shortened $^{3}$ (Melen 2010, 14). Consequently, Melen (2010, 13) assumes that the very similar environment for comparing the quantity of vowels in English can be rarely found. On the contrary, Roach $(2009,26)$ characterises long vowels as vowels "which tend to be longer than the short vowels in similar context". One may now ask what the similar environment or context actually is if for one scientist it is impossible to find such conditions but for another the requirements are obviously not so demanding which finally leads to finding these conditions. Carr $(2013,19)$ likewise agrees with Melen and shares the same idea about a relative manner of vowel length but he similarly as Roach explains that referring to a vowel by 'long' or 'short' is not meant its duration in milliseconds, it rather means that it is long or short "in relation to other vowels." Moreover, he highlights the importance of phonemic transcription as "the ': ' diacritic denotes vowel length" (Carr 2013, 22). Yet, on the contrary Skaličková insists on non-correspondence of terms 'long' and 'short' vowels with their actual characteristics in English. She warns that these terms are confusing for foreign speakers especially of native languages where the system of long and short vowels actually exists such as an example of the Czech language. Consequently Czech speakers tend to acquire the pronunciation according to their native language and ignore for instance shortening or lengthening of vowels based on voice of the following consonant (Skaličková 1974, 10-17). As a result, this might be of the reasons of bad vowel pronunciation resulting in misunderstanding.

Defining the final number of English vowels might be problematic as every single detail of their creation is important and also because of the length issue which is described above. This thesis follows the idea of Skaličková and assumes that the English language has 12 mutually different pure vowels: /ı, i:, e, æ, a:, $\Lambda, ~ p, ~ o:, ~ v, ~ u:, ~ ə, ~ з: / ~ 8 ~ d i p h t h o n g s / a r, ~$ eı, эı, au, ә兀, гә, еә, шә/ and triphthongs as combination of closing diphthongs $+/ \partial /$ (Melen 2010, 12).

[^3]Figure 3. English cardinal vowels

Front Central Back

(Roach 2009, 13-16)
While producing English vowels, the tongue does not touch any of the articulators. The tip of the tongue is free and it directs upwards which means that it regulates the size of the mouth cavity. Consequently, the smaller the size of the cavity is, the higher tone is produced (Melen 2010, 15). Therefore, most of the English vowels would have a higher tone than similar vowel in a different language for instance Czech because here the tongue almost always touches some part of the mouth cavity and enlarges its size.

### 2.3 Czech vowel system

Czech vowel system has a very simple structure. It contains 5 vowel pairs /a, a:, $\varepsilon, \varepsilon$ :, $\mathrm{I}, \mathrm{i}$, $\mathrm{o}, \mathrm{o}:, \mathrm{u}, \mathrm{u}: /$ based on vowel quantity which means there is a stable rate (1:2) between a short and long vowel (Melen 2010, 13). However, in case of vowel pair / I , $\mathrm{i}: /$ the difference is also in their quality (Ashby 2015, 69). It is a reason why both phonemes are not marked by the same symbol and also the difference in their production is visible in the quadrilateral scheme below. Nevertheless, this feature is not related with Czech graphemes〈i〉 and $\langle\mathrm{y}\rangle$ whose pronunciation is actually the same (Krčmová 2008, 136).

On the contrary to English, timbre differences in Czech vowel pairs are minimal, yet surprisingly the scale of the quality differences is prominent as quality does not play such an important role in the Czech language. As a result, individual pronunciation of Czech speakers varies substantially and some phonemes might be in some cases closer to corresponding English vowels and vice versa (Skaličková 1982, 65).

The Czech language contains also three diphthongs /au, ou, ev/. Phoneme /o:/ is said to be at the periphery of the Czech language together with two diphthongs /au, ev/ because
they appear in words which are not originally Czech or they are just emotional expressions (Krčmová 2008, 128). However, it can be expected than more loanwords with peripheral phonemes will become part of the Czech language with evolution of technology as well as globalisation. Therefore, it cannot be stated that Czech peripheral phonemes are becoming rarer and finally extinct feature of the Czech language.

Figure 4. Czech cardinal vowels

(Šturm, 2016)

### 2.4 French vowel system

French vowel system is definitely more complex than the Czech or even English systems. One of the reasons is the vowel system itself as it contains 16 tones which are $/ \mathrm{i}, \mathrm{e}, \varepsilon, \mathrm{a}, \mathrm{y}$,
 pronunciation and even small nuances in pronunciation of French vowels lead to misunderstanding of speakers as phonetic boundaries among individual vowels are very thin (Dohalská 2015, 71). Furthermore, French pronunciation is not codified as Czech or English one and there are many handbooks which deal with proper pronunciation, yet their approaches are different, some belonging to traditional and some to modern ones (Dohalská 2015, 65-66).

Figure 5. French cardinal vowels
Front Central Back

(Delbecque 2006, 151)
When comparing French vowel system to others, some similarities with for instance English can be found, yet still the French language is in many areas unique. Likewise English, length or quantity of vowels does not have any functional character and quality is much more important feature. However it does not mean that speakers can absolutely ignore vowel quantity as it would disrupt the rhythm of an utterance. Even though quantity of French vowels is not influenced by voice of following consonant, they might be lengthened in case of stressed syllables, on the contrary to unstressed syllables where they might be short or semi-long at the most (Dohalská 2015, 75).

French also contains three semivowels $/ \mathrm{j}, \mathrm{w}, \mathrm{\varphi} /$ which combine with another vowel and never appear at the core of the syllable alone (Janešová 1995, 101). Furthermore, it might be due to the richness of pure vowels in the French vowel system, that French does not contain any diphthongs or triphthongs (Dohalská 2015, 45). Moreover, French vowels are not only oral; a quarter of French vocalic inventory is composed by nasal vowels. Nasal vowels are created when the soft palate is lowered as in case of breathing. In this case air flow under pressure does not pass through the mouth but through the nose and a phoneme is nasalised (Palková 1994, 62).

## 3 SUMMARY OF MAIN DIFFERENCES IN CZECH, FRENCH AND ENGLISH VOWEL SYSTEMS

As discussed in the preceding chapter, Czech and French vowel systems substantially vary from the English one. This thesis concentrates on influence native language upon English pronunciation, therefore typical English features will be discussed in this chapter and it will enable its comparison with Czech and French languages at the same level.

### 3.1 Vowel quality

In general, quality feature of vowels is very important in languages which contain many vowels. English is a language which is rich in a number of vowels and even small nuances in their creation might result in misunderstanding. One would say that French speakers, who are able to produce 16 different vowel sounds, are trained to hear and finally recognise differences in vowel quality much better than Czech speakers whose vowel system is not so rich. Yet Capliez $(2012,5)$ explains that French speakers tend to misuse stressed vowels instead of unstressed $/ \partial /$, pronounce all vowels as short and finally they often tend to pronounce English words, which come from French, as French. As a result they can absolutely ignore English pronunciation. Czech speakers face difficulties while speaking English as well, especially concerning unstressed / $2 /$ which do not occur in Czech

Overall, just brief look at schemes of cardinal vowels in English, Czech and French provide clear demonstration of their varieties and consequently their non-correspondence. In English 12 monophthongs, 8 diphthongs and 5 triphthongs can be found. On the other hand Czech vowel system contains 10 pure vowels and 3 diphthongs and French vocalic inventory contains 16 pure vowels.

### 3.2 Vowel length

The importance and relevance of the feature of vowel quantity differs in all analysed languages. In English we cannot divide vowels into short and long as their length is influenced mainly by the voice of the following consonant. It means that four milestones exist on the scale of English vowel length - combinations of relatively short and relatively long vowels followed by either a voiced or voiceless consonant. As a result, this feature is very problematic for both French and Czech native speakers. In French only short vowels can be found but the quantity of vowels is also influenced by stress - vowels in stressed syllables are longer than in unstressed ones. On the contrary, vowel length is very
important feature in the Czech vocalic inventory. It contains 5 vowel pairs of short and long vowels with the same quality with a little exception of $/ \mathrm{I} /$ and $/ \mathrm{i}: /$. The stable rate between short and long vowel is 1:2.

### 3.3 Vowel production

English vocalic inventory includes only oral vowels. It means that the tongue and the lips are one of the most important articulators and their position remarkably influences the vowel production. In general, while producing English vowels the tip of the tongue almost never touches other articulators e.g. teeth or gums; in other words the tongue is freely placed in the oral cavity. In comparison to Czech vowels, where only oral vowels can be found too, the tip of the tongue usually touches one of the other articulators. French vowel system differentiates from two above mentioned in containing nasal vowels. Moreover, tension is fundamental feature for French vowels.

## 4 INTRODUCTION TO SYSTEM OF CONSONANTS

In comparison with vowels, consonants can be defined by their place of articulation as well as manner of their articulation (Millward 1996, 27). O’Connor (1980, 24) describes consonants as sounds "made by a definite interference of vocal organs with the air stream". Jones $(2002,12)$ defines consonants with the help of vowels; he states that consonants are other articulated sounds than continuous voiced sounds produced without obstruction in the mouth unaccompanied by any frictional noise. The air stream can be impeded or modified at any place from the larynx up through the nose or lips (Millward 1996, 22). As a result, the portfolio of consonants in all languages is really wide as there are many combinations of either voiced or voiceless consonants, manner and place of articulation. Consequently, also consonants cause difficulties for non-native speakers since the same grapheme does not have to correspond to the same phoneme in different languages. Moreover the correlation 1:1 between phoneme and letter is not always relevant because one phoneme can be realised by more letters (Melen 2010, 26).

### 4.1 Voice of consonants

In general, consonants are divided into voiced or voiceless based on the behaviour of the vocal folds while producing them. However it might be rather difficult to accurately state which consonant is voiced because "initial and final position they are scarcely voiced at all" (Roach 2009, 28). Therefore consonants can be divided into two different groups based on the force which is needed to produce them: lenis and fortis. Lenis refer to 'weak' consonants and fortis to 'strong' (Bázlik 2012, 48-49). Yet, Roach (2009, 28-29) points that no scientific evidence demonstrates how much force is needed for producing consonants as the way how to measure it does not exist.

### 4.2 Place of articulation

Place of articulation refers to "the points at which the flow of air can be modified" (Carr 2013, 2). Modification happens when articulators get closer to each other; according to Ashby $(2015,39)$ the process usually involves two articulators from which one, passive, is stable and does not move while the second one, active, moves towards the first one. In general, the passive articulator is placed at the upper part of the vocal tract and the tongue plays an active role. As a result, a consonant is called by the passive articulator (Krčmová

2008, 142). This characteristic cannot be applied in every case though, sometimes both articulators are active and this division becomes irrelevant.

Based on the place of a constriction, Ashby (2015, 39-41) distinguishes 11 types of consonants:

- Glottal
- a constriction by the vocal folds
- Bilabial
- a constriction between the lower and the upper lips
- Labio-dental
- a constriction between the lower lip and the upper teeth
- Dental
- a constriction between the tip of the tongue and the upper teeth
- Alveolar
- a constriction between the blade or tip of the tongue and the alveolar ridge
- Post-alveolar
- a constriction between the blade of the tongue and the palate-alveolar (or post-alveolar) region
- Palatal
- a constriction between the front of the tongue and the hard palate
- Velar
- a constriction between the back of the tongue and the velum
- Retroflex
- a constriction between the tip of the tongue and the hard palate
- Uvular
- a constriction between the back of the tongue and the uvula
- Pharyngeal
- a constriction between the root of the tongue and pharynx

Even though many different divisions can be found, this thesis follows the one according to Ashby as those consonants are the most frequent in analysed languages.

### 4.3 Manner of articulation

A descriptive parameter of manner of articulation of a consonant is identified by different degree of constriction: complete closure, close approximation and open approximation (Carr 2013, 6). Plosives (stops) are consonants produced by total stricture of the air stream and then fully releasing it (Roach 2009, 38). Fricatives are consonants produced by impeding the stream of air and a narrow passage causes a hissing sound (Milward 1996, 27). On the contrary to plosives, fricatives are continuant consonants; which means it is possible to pronounce them as long as the air is in the lungs (Roach 2009, 51). Affricates are more complicated sounds since they are combination of plosives and fricatives. While pronouncing them, firstly the stream of air is briefly stopped and then is released and accompanied with friction (Millward 1996, 28). Also approximants occur very often. Car $(2013,7)$ defines approximants as sounds produced when articulators come close together and cause a constriction. This constriction is not sufficient to create friction though. In addition to oral consonants, nasal consonants are often inevitable part of a language. In this case the air stream escapes through a nose (Ashby 2015, 53).

Each language contains also some consonants whose manner of articulation differs from above mentioned ones. Moreover, the pronunciation of each person is unique which means that individuals may produce sounds in a bit different way than is ordinary in their native language.

### 4.4 English consonant system

English consonant system contains 24 phonemes (Skaličková 1982, 110).
Table 1. Chart of English consonant phonemes

|  | Bilab. | Labioden. | Dent. | Alveol. | Postalveol. | Palat. | Vel. | Glot. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plosive | p b |  |  | td |  |  | k g |  |
| Fricative |  | fv | $\theta$ б | s z | $\int_{3}$ |  |  | h |
| Affricate |  |  |  |  | t d ${ }^{\text {d }}$ |  |  |  |
| Nasal | m |  |  | n |  |  | y |  |
| Lateral approximant |  |  |  | 1 |  |  |  |  |
| Approximant | w |  |  |  | r | j |  |  |

In the table above Roach $(2009,52)$ divides all English consonants based on the manner and place of articulation. In the general, English consonant system does not contain many unique sounds, but it may be still problematic for non-native speakers. Skaličková (1974, 62) claims that problematic sounds are not only consonants which do not occur in different languages, but also consonants which are relatively the same because they often have different functions, frequency, distribution,... in analysed languages. Based on the theoretical assumptions the most problematic English consonants for Czech and French speakers might be as following.

Dental fricatives $/ \theta$, $\delta /$ do not occur neither in Czech nor in French and they are considered as very hard to be acquired. Bázlik (2012, 59-61) explains that the pronunciation of $/ \theta, \delta /$ is rather unnatural than difficult. The pronunciation of these dental fricatives is often misled by teachers who explain it as if the tongue was placed between the teeth (Melen 2015, 34). The correct pronunciation is when the tongue is placed behind the teeth though.

In English the velar nasal $/ \mathfrak{y} /$ appears only within or at the end of a word. It can be preceded only by the vowels and it generally cannot be syllabic. Due to its historical development $/ \mathrm{g} /$ substituted $/ \mathrm{g} /$ "at the end of either a word or a stem followed by a suffix such as -er or -ing" where combination $n g$ appears (Ladefoged 2011, 67).

English /r/ is often a subject to many variations from which the most recommended for foreign learners is non-rhotic BBC /r/. While pronouncing the post-alveolar approximant $/ \mathrm{r} /$, the tongue is curled back into the mouth and lips are usually slightly rounded. As a result, small children not able to pronounce correct $/ \mathrm{r}$ / often mispronounce $/ \mathrm{r} /$ for a phoneme /w/ (Roach 2009, 49-50).

According to Roach $(2009,42)$ English glottal /h/ is voiceless "with the quality of the voiced vowel that follows it". In an initial position or between vowels if preceded by a voiced consonant, the voice of $/ \mathrm{h} /$ might more or less sonorize (Melen 2010, 36) which might lead to its omission especially in non-initial unstressed pronunciations of words such as her or have (Roach 2009, 42). As a result, Czech speakers who consider /h/ to be the voiced opposite of voiceless /x/ sound unnatural when speaking as well as French speakers who tend to omit / $\mathrm{h} /$ at the beginning of words as it is usual in French.

### 4.5 Czech consonant system

Czech consonant system includes 27 phonemes which are in general divided into plosives, fricatives and affricatives (Krčmová 2008, 138-142). In Czech, voice is the main feature which has influence upon the speech as a whole as all secondary features are subordinate to it (Skaličková 1982, 112-113). Consequently, Czech consonant system consists of pairs of consonants (obstuents) which have the similar place of articulation, the same manner of articulation but they differ in voice (Palková 1994, 213). However sonorants, which do not create consonant pairs and they are all voiced, are an important part of Czech language too.

Naturally, Czech and English consonant systems differ on the level of individual consonants. Learning their correct English pronunciation might be challenging for Czech speakers, it is not the most problematic part of acquiring correct English pronunciation though. Based on their native consonant system, Czech speakers tend to assimilate consonants; which influences not just individual consonants but the speech as a whole. Unfortunately, the process of assimilation in Czech is unconscious and most of the speakers have to learn its rules to understand what they should prevent while speaking English. The issues connected to assimilation while speaking English are either following Czech rules or exaggerating non-assimilation rules which might stress voiceless consonants and sometimes even create parasitic $/ \partial /$ in the final position (Melen 2010, 72).

In Czech, assimilation of consonants is very important feature as sonorants $/ \mathrm{l}, \mathrm{r}, \mathrm{m}, \mathrm{n}$, ň, $j$ / are the only consonants which do not cause assimilation (Melen 2010, 31). Regressive assimilation appears in Czech consonant clusters, which means that one obstruent defines assimilation characteristic of the preceding obstruent. As a result the consonants clusters tend to have the same voice characteristics. Obstruent clusters are not limited by borders of a word because the obstruent in the initial position might influence the final obstruent of the preceding word (Skarnitzl 2011, 122-123). Moreover, final devoicing might be considered as a kind of assimilation which appears in Czech because the voiced obstruent in the syllable coda or in the final position of a word becomes voiceless (Melen 2010, 31).

### 4.6 French consonant system

In general, scientists do not agree on the same final number of French consonants, this thesis follows opinion of Dohalská $(2015,136)$ and number of 19 consonants though. French consonant system is the least complicated system from afore-mentioned. Walker $(2001,119)$ states that French consonant system is clearly understandable and the only
difficulties which might arise are created not on the segmental level but "in the behaviour of word-final consonants".

Place of the articulation of the French consonants is in majority of cases similar or the same to English consonants. On the contrary, manner of articulation divides French consonants only into two groups: fricatives and plosives which can be subdivided into nasals and orals (Dohalská 2015, 136). It might be a reason why French native speakers pronounce consonants very accurately and with more tension then e.g. Czech speakers (Dohalská 2015, 137). Likewise in English, voice is very important feature and voice of final consonants has an ability to distinguish words. Consequently, assimilation of voice appears mainly within a word as in the case of English.

## 5 SUMMARY OF MAIN DIFFERENCES IN CZECH, FRENCH AND ENGLISH CONSONANT SYSTEMS

In the preceding chapter, the main general differences among Czech, French and English consonant systems were described. Likewise vowel systems, consonant systems differ not only in range of phonemes. Moreover individual pronunciation of consonants does not cause as many difficulties as when it is combination with other phonemes. In this case, phonemes influence each other and it is reflected by a bit different pronunciation of the phoneme than in the case it stands alone. In addition, the same symbol representing a phoneme does not represent exactly the same pronunciation. Consequently, if one consonant appears in all three systems, its pronunciation is likely to be at least slightly different usually in its place of articulation or manner of articulation.

### 5.1 Consonant pairs

Consonant pairs are two phonemes which have the same or almost the same place of articulation and also manner of articulation but they differ in another characteristic (Melen 2010, 28). There are many primary features based on which consonants pairs are created: voice, tension of articulation, quantity,... Even though these features are integrated, one is always considered as the primary one (Melen 2010, 28-29).

The primary feature in English is quantity, either quantity of a consonant as such or quantity of the preceding vowel (Melen 2010, 29). Therefore, dividing English consonants into voiced and voiceless is meaningless and some authors tend to substitute these terms by lenis and fortis concerning the primary feature of English consonants. The terms voiced and voiceless are still often used, yet non-native English speakers should realise that the voiced and voiceless consonants may behave differently in their native language and in English. Melen $(2010,29)$ and Dohalská $(2015,138)$ claim that in Czech and French consonant systems, it is voice which is the primary feature and consonants are divided and they behave based on it.

The aim of the theoretical part was to summarise basic features of English, French and Czech phonemes as those are the objects of the practical part found below.

## II. ANALYSIS

## 6 INTRODUCTION

Based on the theoretical part of the thesis, the aim of this part is to analyse how exactly English pronunciation of Czech and French speakers is influenced by their first language. The first attempt of collecting data needed for the analysis was done through two simple questionnaires. One was devoted to French native speakers and second one to Czech native speakers. In the original questionnaire (appendix P I), respondents were asked to answer questions about their attitude to pronunciation in general and also to make self-reflection of their level of English pronunciation by marking what features are the most difficult for them. However with increasing number of responses it became clear, that data were not relevant for the thesis. First of all, self-reflection without provided evidence in a form of voice recordings was not sufficient. Secondly, covering both segmental and supersegmental levels of English was too broad topic and it had to be specified. Thirdly, 65 out of 77 Czech respondents were students or graduates from fields related to English linguistics, which means that they were supposed to be trained to define correct pronunciation. Consequently, analysing only data from these questionnaires would have resulted in excluding "natural" pronunciation which means not well-trained pronunciation influenced by a native language. Moreover, the thesis would not have analysed a native language influence on English pronunciation but the level of the knowledge of the correct English pronunciation of Czech and French native speakers. Therefore the whole concept of the practical part of the thesis was changed into more complex analysis and the whole thesis concentrates only on segmental level of pronunciation.

### 6.1 Methodology

In Huang's (2014) research of second language acquisition and the effects of age on grammar and speech production, methodological limitations of studies which have been already done are mentioned. As the author compares results of several studies, she argues that "task type and task stimuli significantly impacts participant performance" (Huang 2014, 401). For instance a paragraph text allows researchers to better assess pronunciation of speaker's second language because pronunciation of isolated words might be misleading and participants might sound more native-like. Therefore research in this study was divided into four parts in order to cover whole hypothesis and to get as relevant and objective data as possible. Another part of the analysis deals with the Huang's research, which shows connection between levels of speech production and grammar of speaker' second language.

Even though it concerns second language, the significant similarities with acquiring foreign language can be found and therefore it is a part of this thesis.

1. A questionnaire, which served as a source of background information about speakers, was given to all participants. The main point was to provide space for participants where they could subjectively evaluate their pronunciation.
2. Participants were also recorded while reading a paragraph text which contained simple words and all English phonemes. This task provided general overview of the level of their English pronunciation and it mapped the most common mistakes which appeared during their fluent speech.
3. Afterwards, participants were recorded while reading minimal or similar pairs of words containing different vowels or consonants. Speakers were firstly asked to read the words without being exposed to pronunciation of a native speaker. After a voice recording by a native speaker was played as a suggestion for the correct English pronunciation and participants were asked to repeat it. This task enabled to compare "natural" pronunciation which showed what English phonemes are the most difficult for the speakers. Moreover, after being exposed to the native speaker's pronunciation it was visible whether it is possible to minimise the effects of native language on English pronunciation or the phoneme would remain still problematic.
4. Finally, participants were allowed to modify the answers from the questionnaire which was given in the first task. It served as retrospection on their pre-self-assessment task.

All 10 French and 10 Czech participants were approached individually and the whole assessment usually took around 25 minutes. They filled the questionnaire in online which enabled to analyse data more effectively. Later they were recorded either in a small quiet room or in the library without headphones. Personal computers were used for both playing the audio units by Windows Media Player and different recording programs were used for recording the pronunciation of speakers. A native speaker's pronunciation of minimal pairs or very similar words in mp3 format was recorded from Cambridge online dictionary ${ }^{4}$ and British pronunciation for the words was selected.

[^4]
### 6.2 Methodological limitations

Since the author is not a native English speaker, the analysis of the research might be a subject of objections about its objectiveness and correctness. Nevertheless, being aware of this fact some preventive actions were taken in order to achieve objective results. Firstly, the thesis concentrates only on segmental features which can be analysed much easier than suprasegmental ones. Secondly, analysis of the text was not meant as a source for detailed analysis of a speaker's pronunciation, on the other hand it was supposed to provide the author with the general overview of a speaker's pronunciation and to find common features of speakers from one analysed language. The theoretical part of the thesis served as a guide and enabled to concentrate on the suggested problematic features. Mistakes which were audible in a fluent and most of the time rapid speech were later elaborated in the analysis of pairs of words. Thirdly, online applications such as http://audio-joiner.com/ were used during the analysis of the voice recordings of pairs as waveforms visualised differences between before and after hearing the suggested pronunciation by a native speaker.

### 6.3 Material

All materials used for the research are to be found in the appendices, namely the questionnaire, the paragraph text and the list of minimal or similar pairs. The voice recordings used as a suggestion for the correct English pronunciation as well as recordings of Czech and French speakers are to be found on the CD, which is attached to the thesis.

## 7 ANALYSIS OF THE RESEARCH

In order to be able to compare differences of Czech and French language influence upon English pronunciation, analysis was divided into two separate parts (French and Czech speakers). All voice recordings and related answers from the questionnaires were analysed individually and co-created conclusion for the influence of the analysed native language. Even though the number of analysed speakers was not sufficient for scientific research, substantial similarities among native speakers of one language were found. Moreover, the attention was mainly paid to features described in the theoretical part.

### 7.1 Czech speakers' background information

Analysed Czech speakers were people aged from 21 to 38 years old who have studied English for 10 years on average (from 4 to 14 years). None of them was aware of any predispositions to English such as English relatives or being bilingual. Yet speakers No. 1, 2, 7 and 9 were students or graduates of English for Business Administration at TBU in Zlín and $40 \%$ of speakers spent some time in an English speaking country, namely No. 1, 7 and 9 who attended English language courses in the UK. Speaker No. 10 spent the longest time in an English speaking country, precisely one year in the US. Based on these data, it was observed that there is rather correlation between the level of speaker's pronunciation and the time spent in an English speaking country than between level of pronunciation and the English study period. Consequently, the level of English pronunciation of speaker No. 3 who has been studying English for the shortest period of 4 years and speaker No. 10 who studied English for 6 years but lived in the US were substantially different.

In general, speakers expressed positive attitude towards English as such with exception of speakers No. 3 and 6 who feel under pressure when being active participants in a discourse. Moreover, these speakers were the only ones who evaluated their own pronunciation as 'very bad', while $70 \%$ of participants selected 'good' on a scale. Interestingly, it was not proved that speakers who consider the correct pronunciation as important do have better English pronunciation than the rest of speakers. While speakers No. 7 and 9 consider correct pronunciation to be very crucial and they are the only ones who use either some of the IPA symbols or all of them while transcribing words, it is not possible to state that their level of English pronunciation is unachievable for other analysed speakers, namely speakers No. 2, 5 and 10.

Lastly, $80 \%$ of speakers admitted that their pronunciation can be characterised as an undistinguished mixture. Even though some of them are willing to master a specific English variety, none of them achieved it in their speech. The reason might be a way of teaching English language at Czech primary and secondary schools where British English is often compulsory for pupils. ${ }^{5}$ Due to it pupils usually tend to British English grammar and vocabulary while there is no such a focus on British pronunciation. Being often influenced by American movie production, their English becomes a mixture of varieties.

Table 2. Czech speakers' data analysis

| No. | Eng | Age | ELSP | AT | SA | PRED | ICEP | LSEP | DEV | CEV | IPA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | YES | 22 | 13 | + | YES | NO | 2 | 2 | BrE | MIX | NO |
| 2 | YES | 21 | 13 | + | NO | NO | 2 | 2 | NO | AmE | NO |
| 3 | - | 21 | 4 | - | NO | NO | 4 | 4 | AmE | MIX | NO |
| 4 | NO | 23 | 12 | + | NO | NO | 2 | 3 | NO | MIX | NO |
| 5 | NO | 21 | 10 | + | NO | NO | 2 | 2 | NO | MIX | NO |
| 6 | NO | 21 | 12 | - | NO | NO | 2 | 4 | NO | MIX | NO |
| 7 | YES | 23 | 11 | + | YES | NO | 1 | 2 | AmE | MIX | SOME |
| 8 | NO | 21 | 12 | + | NO | NO | 2 | 2 | BrE | AmE | NO |
| 9 | YES | 23 | 14 | + | YES | NO | 1 | 2 | BrE | MIX | YES |
| 10 | - | 38 | 6 | + | YES | NO | 2 | 2 | AmE | MIX | NO |

The table above represents summary of the most important information from the personal part of the questionnaire. All the abbreviations are to be found in List of abbreviations and were created for the aim of this thesis. Numbers in columns "ICEP" and "LSEP" were chosen from a scale 1-4 with 1 standing for the best/most.

After collecting all the responses it was observed that some questions did not prove to be relevant for the research hence they do not appear in Table 2. Namely, no correlation of gender and a level of pronunciation was observed; and the purpose of a question about native language was to assure the author about relevant target group. Besides, question No. 3 dealing with a speaker's studies should have mainly specified respondents who study/have studied fields related to English linguistics or English language as such. As a

[^5]result, the table provides information about this fact by "YES" standing for English related studies. Furthermore, some of the open questions were also skipped from the table as their main purpose was to provide further explanation for the author and they are described in the text.

### 7.2 Analysis of voice recordings of the text by Czech speakers

Concerning vowels, less experienced speakers No. 3 and 4 tended to ignore sounds $/ 2 /$ and /3:/ which were often mispronounced as stressed Czech vowels /a, $\varepsilon, \varepsilon: /$. In addition, all speakers with exception of No. 7 and 10 mispronounced centring diphthongs at least once. They were pronounced either as Czech diphthongs e.g. in $g o$ */gou/ or long vowels e.g. in tour */tu:r/ or beer */bi:r/. English vowel /æ/ was also a subject to many modifications. In general, less experienced speakers pronounced it as $/ \varepsilon /$ while more experienced who still struggled with its correct form, pronounced it as /a/ or /a:/. In comparison to mentioned vowels, Czech speakers did not face such difficulties when pronouncing sound $/ \mathrm{p} /$.

Concerning consonants the most problematic ones proved to be dentals $/ \theta /$ and $/ \delta /$. Apart from speaker No. 7 each speaker mispronounced / $\theta /$ with phoneme /f/ or /t/ at least once. It was observed that $/ \theta /$ at the beginning of words is not as problematic as in the middle e.g. in Gothic /gdyrk/ or at the end e.g. with /wi $\theta /$. Moreover if a word which contained sound $/ \theta /$ appeared in a sequence of words including dentals, this combination was often mispronounced, for instance these things into three /ði:z $\theta \mathrm{mg} \mathrm{gz}$ into $\theta \mathrm{ri}: /$. Interestingly, the first dental sound was usually pronounced in a better way than following ones which were often completely mispronounced. Dental / $\delta /$ proved to be even more problematic. As it appears in the definite article the / $\partial \partial /$ its distribution in speech is very common. The voice recordings showed that tempo of speech either slowed when / $/ \mathrm{d} /$ was pronounced correctly as speakers really concentrate on it or stayed stable in case it was mispronounced for instance as phoneme /d/. Moreover, the same feature as in case $/ \theta /$ applied and $/ \delta /$, so being the first phoneme it was not mispronounced as often as in different distribution within a word.

Aspirated plosives /p, t, k/ were another group of problematic consonants whose wrong pronunciation was obvious even in a fluent speech. While less experienced speakers No. 3, 4 and 6 absolutely ignored their aspiration, different problem appeared among more experienced speakers. Subjects No. 1, 2, 5, 8 and 9 pronounced aspirated /t/ and /p/ instead of their non-aspirated allophones /t/ and /p/ even in words store /sts:/ and spoon /spu:n/
where aspiration does not occur because of preceding /s/. It was also observed that once a speaker pronounces correctly one of the aspirated plosives, it does not necessarily mean that s/he is able to pronounce all of them correctly. 7 Czech speakers pronounced aspirated $/ \mathrm{p} /$ correctly, while 6 of them /t/ and only 3 demonstrated proper pronunciation of aspirated $/ \mathrm{k} /$. Interestingly, even speakers who did not pronounce $/ \mathrm{k} /$ as aspirated managed its correct aspirated form in a word Kate /kett/ except of mentioned subjects No. 3, 4 and 6.

Another problematic feature for Czech speakers was connected to assimilation of voice. While reading a text, speakers very often assimilated final consonants which became voiceless. However due to the rapid speech, this feature is elaborated in the next chapter.

Last but not least, the combination of letters $n g$ was a source of pronunciation mistakes. Even though phonemes $/ \mathrm{g} /$ and $/ \mathrm{y} /$ standing on their own are not supposed to be problematic for Czech speakers as they exist in Czech language too, it seemed that most of the analyzed speakers did not know rules connected to their correct pronunciation. Consequently pronunciation of words bring and going as */bring, gəorng/ was not rare.

### 7.3 Analysis of voice recordings of the pairs by Czech speakers

1. 'put'/put/ 'pot'/ppt/

Correct pronunciation of aspirated plosive /p/ was not acquired by speakers besides No. 7 and 10 whose pronunciation was almost native like during the first recording. On the contrary, speakers No. 3, 4 and 6 ignored aspiration even after being exposed to the recording of a native speaker. Moreover speaker No. 9 is an example of exaggeration of the aspiration because a consonant $/ \mathrm{ph} /$ was pronounced when repeating a suggested pronunciation. Overall, it was observed that almost all speakers at least tried to pronounce $/ \mathrm{p} /$ as more aspirated in the second round of voice recordings. Concerning plosive /t/ its pronunciation became clearer and more audible when this pair was repeated for the second time.

As for phonemes $/ \mathrm{v} /$ and $/ \mathrm{p} /$, it was audible that not skilled speakers did not concentrate on quality of vowel sounds and pronounced them as their Czech alternatives. It might be due to their concentration on $/ \mathrm{p} /$ as for unskilled English speakers the difference between aspirated and non-aspirated allophones of $/ \mathrm{p} /$ is better audible than difference in the vowel quality. On the contrary, experienced speakers No. 2,5 and 9 were able to acquire the proper quality of these English vowels after listening to the recording of a native speaker.
2. 'cut' /kst/ 'cat' /kæt/

Similarly to /p/, aspirated $/ \mathrm{k} /$ was not originally pronounced correctly by all the speakers. Some of them, namely No. 3, 4, 6 and 8 had not pronounced $/ \mathrm{k} /$ in its aspirated manner but after listening to a native speaker all of them except of No. 4 tried to acquire aspirated pronunciation. Interestingly, it was observed that analysed people were not able to determine a level of aspiration they were going to produce as aspirated pronunciation is unnatural for Czech speakers. Consequently, mentioned subjects who had not aspirated /k/ at the beginning, tried to acquire correct pronunciation but the level of the aspiration was marginal. On the other hand, a speaker No. 10 who originally had pronounced this pair almost native like, over-aspirated pronunciation as */khıt, khæt/. Additionally, speakers tended to aspirate a word cut much more likely than cat.

Vowels $/ \Lambda, æ /$ proved to be also very problematic. Less than half of the speakers pronounced both vowels correctly from the beginning. They were mostly mispronounced as */kat/ in cut and */ket/ in cat, yet unusual forms as */kud/ and */ka:t/ appeared too. Overall, it was observed that Czech speakers in reality do not know the correct pronunciation of these vowels but when they hear a native speaker they are able to get closer to their correct forms. Nevertheless, the native voice suggestion might be also misleading since speaker No. 2 mispronounced his originally correct pronunciation of cat after being exposed to it.
3. 'bit' /bit/ 'bet' /bet/

As for this pair, no substantial differences between first and second recordings were found. These English vowels do not remarkably differ from their Czech phonemes; which means that even if a speaker pronounces Czech $/ \varepsilon /$ or $/ \mathrm{I} /$ instead of English ones, their quality is almost identical and very difficult to be distinguished. Further, a consonant /b/ is a bilabial plosive in both Czech and English and as it is not aspirated, Czech speakers do not face any problems while pronouncing it.
4. 'bad' /bæd/ 'bed' /bed/

As in 3rd pair, /b/ did not cause any problems while differentiating of vowels /æ/ and /e/ was a subject for hesitation. Unlike in 2nd pair, this time $/ æ /$ was substituted also by a long vowels / $\varepsilon: /$ and $/ a: /$. Current or former students of English related fields showcased that theoretical background of correct pronunciation of vowel /æ/ or living abroad for some time as speaker No. 10, is needed for acquiring its correct pronunciation, because their pronunciation was more native like than in the rest of the group.

This pair was the first one where final phoneme was voiced which results in prolonging a vowel which precedes it. Since in the Czech language final voiced consonants are pronounced as voiceless, /d/ was in most of the cases mispronounced as /t/ and therefore the length of preceding vowels was not prolonged. As both analysed words contained a voiced final consonant, the speakers did not have an opportunity to compare effects of voiced and voiceless final consonants on the length of a preceding vowel. Consequently, it is believed that they most likely did not even notice the slight difference in a vowel length and concentrated rather on quality than quantity of analysed vowels.

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5. 'mess'/mes/ 'mass' /mæs/
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Due to the same manner and place of articulation of phonemes $/ \mathrm{m}, \mathrm{s} /$ in both Czech and English, their pronunciation was smooth and correct. However, the purpose of this pair was to demonstrate whether speakers who did not pronounce English vowel/æ/ correctly, would tend to mispronounce it as one specific phoneme all the time. Interestingly, it was observed that substitutes for $/ \mathfrak{\not} /$ remarkably varied from the ones in the preceding pair which confirms the idea that Czech speakers are not aware of its correct pronunciation.

## 6. 'but' /bst/ 'put' /put/

This pair enabled speakers to hear a difference in pronunciation between aspirated plosive $/ \mathrm{p}$ / and non-aspirated bilabial plosive /b/. It was observed that the number of speakers ignoring aspiration reduced by 2 with speakers No. 4 and 6 being the only ones who did not even try to acquire this feature.

## 7. 'heart' /ha:t/ 'hard' /ha:d/

Starting with this pair, speakers should have become aware of the difference in vowel quantity influenced by their following consonant. During the first round, less experienced speakers, who were looking for the difference in pronunciation of those words, concentrated on vowel quality and pronounced vowel sounds in these words in a different manner. On the contrary, speakers with linguistic background who were aware of difference between voiced and voiceless consonants, modified vowel quantity even in cases when their pronunciation of hard was */ha:rt/. This pair also proved that none of the subjects spoke British English.

Moreover, a waveform proved that Czech speakers pronounced sound /h/ more voiced than a native speaker. Even though this might not be a noticeable difference for Czech people, native speakers who are more sensitive to differences in pronunciation would notice it immediately

## 8. 'league’ /li:g/ ‘leak' /li:k/

A native voice recording of these words is a great example of different vowel length due to voice of its following consonant. It was again proved that speakers usually ignore the quality of final phoneme and they rather concentrate on vowel quality. Consequently, these words were often pronounced identically during the first recording, yet after being exposed to the native pronunciation, the vowel quantity was modified. Nevertheless the voice of the final consonant often remained the same and speakers influenced by their native language did not concentrate on it.
9. 'caught' /ko:t/ 'cord'/ko:d/

A word caught was a subject to many pronunciation variations */kavf, kautf, kut/ as obviously speakers had not known its correct pronunciation. Therefore it would be irrelevant to analyse length of vowels in the first round of recordings. In addition, most of the speakers pronounced cord as /ko:rd/ so the vowel was not directly influenced by voiced consonant /d/. Yet still differences in vowel quantity were found. When imitating a native speaker, each of participants except of No. 3 acquired correct vowel length even though all of them did not pronounce voiced final consonant correctly. Further, it was observed that speakers again ignored the aspirated pronunciation of sound $/ \mathrm{k} /$ and pronounced it as its non-aspirated allophone.
10. 'rude' /ru:d/ 'root' /ru:t/

Speakers tended to modify vowel length, but they were not able to pronounce fully voiced /d/ at the end of a word rude. Moreover even if speakers No. 2, 7 and 9 pronounced /d/ sound correctly in this task, this feature was not acquired in their fluent speech as it was observed from analysis of their text recordings. Concerning sound /r/ some of the speakers pronounced it as its rhotic allophone while most of experienced speakers as an alveolar approximant.
11. 'rope' /rəup/ 'robe' /rəub/

The most remarkable mistake concerning this pair was mispronunciation of /roup/ since speakers tended to substitute English diphthong with Czech/ou/. However the difference between first and second recordings was substantial and it proved that acquiring its correct pronunciation is not as hard as proper production of final voiced consonants, which caused problems also in this case.

## 12. 'think' $/ \theta_{\mathrm{mjk}}$ 'sink’/siyk/

Quite surprisingly, 6 speakers were able to pronounce phoneme / $\theta /$ correctly already in the first recording. Two more speakers made an effort while pronouncing it for the second time, yet unsuccessfully. Compared to the fluent text, it was observed that individual sound $/ \theta /$ is not so complicated but speakers often failed to pronounce it in a fluent speech where it was often mispronounced as /f/. Obviously the substitution of phonemes concerned also this pair of words. Further, since the Czech language contains a nasal $/ \mathfrak{y} /$ as an allophone of $\mathrm{ln} /$ preceding $/ \mathrm{k}, \mathrm{g} /$, speakers did not encounter any difficulties with its pronunciation in this case.
13. 'day'/deI/ 'they'/ðeı/

Based on the research, sound $/ \delta /$ can be characterized as the most complicated since all the speakers except of No. 7 failed its pronunciation. Consequently, the pronunciation of these two words was in most cases identical. Nevertheless, speakers No. 3 and 8 mispronounced $/ \delta /$ sound in a different way, this time as */th/.
14. 'van'/væn/ 'one'/wnn/

Even though sound /v/ exists in Czech language and speakers usually do not encounter any difficulties with its pronunciation, in this case its proper articulation was very rare. Only speakers No. 2, 5, 7 and 9 distinguished $/ \mathrm{v} /$ and $/ \mathrm{w} /$, while the rest pronounced $/ \mathrm{w} /$ in all the cases. As discussed in pair No. 2, participants faced difficulties with vowels $/ \Lambda$, æ/ and consequently pronunciation of van was surprisingly identical with one /wan/.
15. 'singer'/sıyə/ 'finger'/finga/

Similarly to the pair No. 12, in finger nasal $/ \mathrm{y} /$ precedes sound $/ \mathrm{g} /$ which is common combination in Czech language and does not cause problems. However speakers faced difficulties when pronouncing singer. On one hand, most of them did not make any difference between singer and finger except of the first consonant. In this case, both words contained sound $/ \mathrm{gg} /$. On the other hand, subjects No. 2 and 5 omitted $/ \mathrm{g} /$ in both words but they kept nasal sound $/ \mathrm{y} /$. In the second round of recordings, more problems appeared as most of those who omitted $/ \mathrm{g} /$ in singer according to a native speaker, substituted nasal for $\mathrm{m} / \mathrm{sound}$. As a result, almost none of the speakers was able to pronounce this word correctly.
16. 'hungry'/hıygri/ 'angry' /ængri/

As described in preceding pairs, distinguishing vowel sounds was very problematic for the speakers and pronunciation as */hengri, engri, aŋgri/ appeared. Another problematic feature
was connected to /h/ sound which was more voiced than in English. Some speakers also pronounced /i/ sound with a higher pitch than in Czech which made them sound more native like.

## 17. -19. 'pet' /pet/ 'bet' /bet/, 'die' /dai/ 'tie' /tai/, 'pie' /pai/ 'bye' /bai/

On the contrary to pair No. 6, more confident attitude towards aspiration was audible in these 3 pairs as speakers already got to know how much force is needed for it proper production. It means that speakers who did not ignore aspiration already managed to pronounce plosives in a manner that aspiration was audible however the frequency of exaggerating by adding sound $/ h^{h} /$ became higher than in preceding pairs.
20. 'vet'/vet/ 'wet'/wet/

On the contrary to pair No. 14 where speakers substituted $/ \mathrm{v} /$ for $/ \mathrm{w} /$, this time the difference between these phonemes was clearly audible especially in the second round of recordings. In general, both pairs proved that sound $/ \mathrm{w} /$ does not cause any difficulties to participants of the research.
21. 'hand' /hænd/ 'and' /ænd/

Voiced final consonant as well as vowel /æ/ proved to be very complicated sounds for Czech speakers so even this pair was not an exception. Concerning /h/ sound, in most of cases its pronunciation slightly differed from English glottal but none of the speakers omitted it or pronounced it only as an aspirated sound.
22. 'hour' /avə/ 'our' /avə/

Triphthong sound /ava/ did not cause any remarkable problems to Czech speakers. All of them pronounced it in American English and complicated sound $/ 2 /$ was in some cases partially reduced as /r/ sound was more audible. Even though none of them pronounced $/ \mathrm{h} /$ sound in hour, speakers No. 4 and 5 slightly aspirated and produced illusion of /h/ sound in hour during the second round of recordings.

### 7.4 Analysis of self-evaluation of Czech speakers

Based on the analysis, plosives and dentals proved to be one of the most problematic English phonemes for Czech speakers. This statement is partially supported by selfevaluation made by speakers themselves. Most of them evaluated sounds $/ \partial, \theta /$ as one of the most difficult ones on the contrary to plosives which were considered as one of the easiest English consonants. The reasons for this evaluation might be as following:

- while learning English more attention is paid to phonemes $/ \delta, \theta /$ which do not have similar sounds in Czech;
- aspirated plosives $/ \mathrm{p}, \mathrm{t}, \mathrm{k} /$ have non-aspirated allophones, which means a meaning is not misleading when non-aspirated forms are pronounced instead of aspirated ones;
- phonemes $/ \mathrm{p}, \mathrm{t}, \mathrm{k} /$ have the same symbols as Czech letters $p, t, k$.

Speakers also evaluated phonemes $/ \sqrt{ }, 3, \mathfrak{t}$, ds/ as difficult even though they did not encounter any difficulties with their pronunciation in the text. This evaluation is considered to be misleading because only speakers who do not use IPA symbols and who are not students or graduates of English related studies chose this option. Consequently, it might be argued that these speakers were confused by symbols representing phonemes as they do not occur on the level of letters and they might have evoked impression of unknown sounds.

In addition, phoneme $/ \mathrm{y} /$ was marked as one of the most difficult since 4 speakers chose 'very difficult' option for its evaluation. In this and other cases of phonemes which were evaluated by mark 3 at least once $/ \mathrm{s}, \mathrm{z}, \mathrm{b}, \mathrm{g}, \mathrm{d} /$ it is believed to be not because of the manner of their individual pronunciation but because of the way how their pronunciation is influenced or influences its neighbour sounds and their (non)assimilation.

Concerning vowels and diphthongs, speakers were able to evaluate the most problematic phonemes more objectively than in case of consonants. Based on the voice recordings, phonemes $/ æ, ə, з$ :, เə, еә, шә/ were sources of most difficulties and exactly these phonemes were chosen by the speakers. Also in this case, these are phonemes which do not occur in Czech language and most of foreign language speakers concentrate on these "unknown" sounds. However, as it was observed speakers actually do not know the correct pronunciation of these forms.

As for post-evaluation, only four speakers modified their responses. In all the cases the changes concerned marking some phonemes as more difficult. These phonemes were schwa, centring diphthongs and consonants $/ \mathrm{g}, \mathrm{w}, \mathrm{h}, \mathrm{j}, \mathrm{r}$ / which were marked as 'very difficult' on the contrary to original 'easy' option.

### 7.5 French speakers' background information

Analysed French speakers were people from 19 to 35 years old who have studied English for 10 years on average (from 2 to 12 years). Speakers No. 9 and 10 were bilingual and speaker No. 4 described herself as "having facilities to learn languages" In addition, this speaker was the only student of English related field from the group. Moreover, all of the
speakers except of No. 6 and 7 spent some time in an English speaking country, No. 4 and 10 did their internship there for a period of 1 and 3 months. Further, speaker No. 9 was on exchange in the US for 1 year. Speaker No. 8 was 2 months in Ghana and India where she volunteered. The rest of the people spent around 10 days of travelling in some of English speaking countries. However it was observed that none of these factors had more remarkable influence on speakers' pronunciation than the others.

All the speakers expressed positive attitude towards English as it is in most of the cases their hobby and they use it for everyday communication. Compared to Czech speakers, more subjects considered English pronunciation as important with only 2 marking 'rather not important'. Further, $60 \%$ of participants evaluated their English pronunciation as 'bad', $30 \%$ 'good' and one person 'very good'. Interestingly, none of two speakers who use some of IPA symbols when transcribing, did not consider correct pronunciation as important and vice versa none of those who considered it as important use IPA symbols.

Lastly compared to Czech speakers, less French speakers characterised their pronunciation as undistinguished mixture as they considered their pronunciation as British (No. 3) or American (No. 5, 7, 9 and 10). Moreover in comparison with Czech speakers where 4 people did not want to master any from English varieties, in French group only speaker No. 7 chose this option.

Table 3. French speakers' data analysis

| No. | Eng | Age | ELSP | AT | SA | PRED | ICEP | LSEP | DEV | CEV | IPA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | NO | 19 | 2 | + | YES | NO | 2 | 3 | BrE | MIX | NO |
| 2 | - | 35 | 10 | + | YES | NO | 3 | 2 | AmE | MIX | SOME |
| 3 | NO | 20 | 10 | + | YES | NO | 3 | 3 | BrE | BrE | NO |
| 4 | YES | 21 | 10 | + | YES | FAC | 2 | 3 | BrE | MIX | SOME |
| 5 | NO | 22 | 12 | + | YES | NO | 2 | 2 | AmE | AmE | NO |
| 6 | NO | 22 | 6 | + | NO | NO | 1 | 3 | AmE | MIX | NO |
| 7 | NO | 22 | 12 | + | NO | NO | 1 | 3 | NO | AmE | NO |
| 8 | NO | 24 | 7 | + | YES | NO | 2 | 3 | AmE | MIX | NO |
| 9 | NO | 20 | 10 | + | YES | BIL | 1 | 2 | AmE | AmE | NO |
| 10 | NO | 23 | 12 | + | YES | BIL | 1 | 1 | BrE | AmE | NO |

### 7.6 Analysis of voice recordings of the text by French speakers

Concerning vowels, French speakers encountered severe difficulties with their pronunciation. As 16 vowels are to be found in French, one would say that in this case acquiring another vowel sound would be easier than for Czech speakers. However, all of the speakers except of No. 10 whose pronunciation was native like, had to very concentrate on producing vowel sound in order to remove their native language influence. Firstly, French does not contain any long vowels which might result in ignoring the vowel length. Speakers No. 6 and 7 were extreme examples as almost no long vowel was found in their speech. Moreover, even short vowel sounds were pronounced shorter than they were supposed to be.

Secondly, French speakers often mispronounced diphthongs sounds since they do not exist in French. While speakers No. 5, 6, and 7 pronounced takes as */teks/, it was observed that centring diphthongs were not as problematic and for instance beer was often pronounced correctly as /bror/ since sound $/ 2 /$ is also French phoneme. The exception was found in case of words tour and bear which were mispronounced by all speakers except No. 1 and 10 as */taur, toər, tauər, bi:r, be:r/. Nevertheless, it is believed that it was rather due to not being aware of their correct pronunciation than not being able to pronounce such a sequence of phonemes. Although speakers showed their ability to pronounce sound $/ \partial /$ at the end of words, if being a first phoneme of a word they faced remarkable difficulties. Consequently, majority of speakers mispronounced words such as exam */egzam, ıgzam, ıgzem/. Thirdly, phoneme /æ/ was often mispronounced and words slab, can and snack became */slab, ken, snek/.

Fourthly, /p/ was another vowel which caused problems to French speakers. Figure No. 5 representing French cardinal vowels clearly shows that French vowels $/ \mathrm{o} / \mathrm{and} / \mathrm{u} /$ are closer to each other than English /p/ and /v/. Consequently, vowel sounds in words bottle, to or two were not clearly intelligible and in case of /t/ preceding it, sound /j/ was also audible /*tju:/.

Fifthly, vowel $/ \Lambda /$ was another source for hesitation. As there is no open central vowel in French, they mispronounced this sound very often. Quite surprisingly, they did not replace it only as /a/ sound but also as /e/ in case of hurry */heri/ where 6 speakers were not able to produce sound $/ \mathrm{N} /$ correctly.

Concerning consonants, aspirated plosives $/ \mathrm{p}, \mathrm{t}, \mathrm{k} / \mathrm{can}$ be described as the most often mispronounced sounds. In fact, all speakers except No. 10 absolutely ignored this feature
of aspiration and did not show any effort for its creation. The wrong pronunciation of phoneme /t/ was even emphasised by adding sound $/ \mathrm{j} /$ resulting in its softening.

Dentals $/ \theta /$ and $/ \delta /$ proved to be another group of problematic consonants. The only speaker who acquired their correct pronunciation was No. 10. Apart from her, every subject mispronounced it at least once. It was observed that phoneme /s/ was more often produced than sound $/ \mathrm{f} /$ instead of $/ \theta /$. However in case of wrong production of sound $/ \delta /$, the phoneme $/ \mathrm{z} /$ did not appear at all. The distribution of dentals in individual words did not play an important role as its correct pronunciation was rather rare.

Interestingly, it was observed that consonant sounds at the beginning of words did not cause such problems as in different position within a word. Phoneme /ds/ in word juice /dju:s/ was in $100 \%$ cases pronounced correctly in comparison to word suggest/ss'djest/ where it was often preceded by sound /k/ and mispronounced in $90 \%$ recordings. In combination with inability to pronounce unstressed syllable at the beginning of a word, */sakdjest/ the most likely appeared. In addition, any speaker did not encounter any difficulties in words as Gothic or go where $/ \mathrm{g} /$ appears as the first phoneme. As French language is rich for nasals, words bring or going were pronounced correctly as /brig, goin/ and $/ \mathrm{g} /$ sound was omitted. However, its omission appeared also in words where $/ \mathrm{g} /$ was supposed to be pronounced as frog /frog/.

Another problematic sound is phoneme $/ \mathrm{h} /$ as it does not exist in French. Even though it occurs as a letter, it is always silent and therefore French speakers tend to omit it. While reading the text, it was observed that letter $h$ in the initial position is very confusing. Majority of speakers pronounced it correctly in words such as hope or hurry, but omission of /h/ sound was common in her as well as pronouncing actually silent $h$ in hours.

### 7.7 Analysis of voice recordings of the pairs by French speakers

## 1. 'put' /pot/ 'pot'/ppt/

While French speakers ignored aspiration of /p/ in the text, this task demonstrated that they are able to at least get closer to its correct pronunciation after being exposed to a native speaker. Being aware of not native accent of their /p/ sound, speakers No. 6 and 8 tended to pronounce phoneme $/ \mathrm{p} /$ louder than other phonemes in the words instead of aspirating it. During the second round of recordings, speakers also concentrated on vowel quality and the vowels became more intelligible. Speakers No. 1, 4 and 5 corrected the originally wrong pronunciation of put as /pət/ and French /o/ was often replaced by English /p/.

## 2. 'cut' /kst/ 'cat' /kæt/

French speakers struggling with aspirated plosives demonstrated that aspirated $/ \mathrm{p} /$ is easier to be acquired than $/ \mathrm{k} /$. Consequently, it was observed that during the second recordings subjects made an effort to pronounce $/ \mathrm{k} /$ sound correctly, yet */kh $\Delta$, khæt/ were often audible. Concerning vowel sounds, in case of No. 3, 5 and 7 both words were originally pronounced identically as */ket/. In general, / $\Lambda /$ sound was substituted for $/ \mathrm{e} / \mathrm{or} / 2 /$ apart from speakers No. 2 and 10 and phoneme $/ æ /$ as $/ \mathrm{e} /$. Nevertheless, after the native speaker's recording, the quality of vowels improved and got closer to the native sounds.
3. 'bit' /bit/ 'bet' /bet/

As for this pair, French speakers did not face any difficulties while pronouncing them. In fact, no differences between the first and second recordings were found and all the speakers pronounced them exactly alike.
4. 'bad' /bæd/ 'bed' /bed/

Being the first pair of words containing the voiced final consonants, the analysis of these words concentrated mainly on the vowel length. As French speakers did not face any difficulties with the voice of final consonant and /b/ sound was clearly audible, they also prolonged the length of preceding vowel. Concerning the vowel quality, originally only 5 speakers pronounced bad correctly. However this number increased with the second recordings when all the speakers apart from No. 1, 6 and 7, who pronounced it as /ba:d/, achieved correct quality of $/ æ /$ sound.
5. 'mess’/mes/ 'mass'/mæs/

Speakers pronounced phonemes $/ \mathrm{m}, \mathrm{s} /$ correctly without any difficulties due to the same manner and place of their articulation in both French and English. However on the contrary to the preceding pair where speakers show the ability to repeat/æ/ sound correctly, this time 8 speakers pronounced mass in both cases identically as */mas/ with French quality of vowel, as such a sound does not occur in English.

## $6 . \quad$ 'but' /bst/ 'put' /put/

Even though the purpose of this pair was to enable speakers to hear a difference in pronunciation between aspirated plosive $/ \mathrm{p} /$ and non-aspirated plosive $/ \mathrm{b} /$, only 4 speakers modified their non-aspirated pronunciation after the native speaker recording in addition to No. 10 who pronounced it correctly already during the first round. Moreover, this pair also demonstrated that French speakers were not sure with the quality of vowels and majority of them did not produce these sound correctly even in the second recording.

## 7. 'heart' /ha:t/ 'hard' /ha:d/

This pair was the first one where voice of the final consonant was different in each word. As it was observed already, French speakers did not face difficulties with differentiating pronunciation of fortis and lenis consonants and adapting the length of preceding vowel to it. Yet the length of /a:/ sound was in majority of recordings shorter than in the native speaker's recording.

Surprisingly, none of the speakers mispronounced /h/ sound in these words. Even though a pause preceded their pronunciation as speakers had to concentrate more on it, they were all able to pronounce it correctly. Moreover this pair also proved that none of the subjects spoke British English.

```
8. 'league' /li:g/ 'leak' /li:k/
```

French speakers were able to pronounce these two words correctly from the beginning therefore no difference between the first and second recordings was audible apart of No. 7 who modified originally wrong vowel length in league.
9. 'caught' /ks:t/ 'cord'/ks:d/

The analysis of this group of words proved to be misleading as only speakers No. 1, 2, 4, 9 and 10 were able to pronounce a right vowel sound. In other cases forms as */kəutf, kavt, kauft, kav $\theta /$ appeared even after being exposed to the native speaker. Yet a difference between /d/ and /t/ was audible and all speakers who properly pronounced vowel sound, aspirated phoneme $/ \mathrm{k} /$ as well
10. 'rude' /ru:d/ 'root' /ru:t/

Even this group of words was not problematic for speakers and they pronounced both words correctly already during the first recording. Speaker N. 5 who in the second recording prolonged the length of /u:/ in /ru:t/, was the only exception of absolutely correct pronunciation. Interestingly, no problems were observed concerning /r/ production as French sound /r/ differs from the English one. However it seems that French speakers do not have problems with acquiring its English variety.

## 11. 'rope'/rəup/ 'robe'/rəub/

This time French speakers had to deal with diphthong which proved to be complicated for them. However all speakers except of No. 5, 6 and 7 who ignored the suggested pronunciation by a native speaker and they were almost never able to modify their pronunciation according to it, managed to produce /əv/ sound correctly. As usually, voice of final consonants was clearly audible as well as the difference in the vowel length.

## 12. 'think' $/ \theta_{\mathrm{mjk}}$ 'sink’/siyk/

In the voice analysis of the text it was observed that dentals are quite problematic for French speakers and they often mispronounced it. Although in majority of cases dental / $\theta /$ was replaced with $/ \mathrm{s} /$, such a substitution did not appear at any recording in this task. It might be due to comparison of sounds $/ \theta /$ with $/ \mathrm{s} /$ so speakers might have tried to pronounce both phonemes in different ways and /f/ occurred instead of /s/. Overall, the correct pronunciation of $/ \theta /$ was rather rare even though some speakers made an effort to pronounce it, they were mostly unsuccessful. Concerning the vowel sound $/ \mathrm{y} /$ no problems occurred.
13. 'day'/deI/ 'they'/ðeI/

Six speakers managed to pronounced these two words correctly already in the first recordings. Three more speakers adapted their pronunciation and got closer to the correct quality of dental / $\delta /$ after being exposed to a native speaker. As a result, speaker No. 2 was the only one who mispronounced it even though she tried to achieve its right quality. Concerning diphthong /eI/ no problems with its pronunciation were observable.
14. 'van'/væn/ 'one'/wan/

As for pronunciation of word one, no speaker encountered difficulties with it. However speakers hesitated in case of van, where it was a vowel which was mispronounced. Each of the speakers was able to differentiate sounds $/ \mathrm{v} /$ and $/ \mathrm{w} /$ clearly and finally all speakers besides No. 3, 6 and 9 produced vowel sounds correctly.
15. 'singer' /sıyə/ 'finger'/finga/

While pronouncing these two words, there was $100 \%$ match in all recordings (from each speaker and both before and after a native speaker) which means that all were pronounced exactly alike. Although word finger was pronounced correctly, speakers pronounced sound /g/ also in word singer. Concerning speaker No. 10, it was the only mistake in her pronunciation which occurred during all voice recordings. This pair also proved that nasal $/ \mathrm{n} /$ is easy to be produced so no speakers substituted it for $/ \mathrm{n} /$ sound.
16. 'hungry' /hıygri/ 'angry'/ængri/

As for the consonants in these words, all of them were pronounced correctly with the main focus on $/ \mathrm{h} /$ sound in hungry. Concerning vowels, more experienced speakers No. 1, 8, 9 and 10 pronounced them correctly from the beginning while the others tended to produce the same sound in both words, meaning that either combination */hængri, æygri / or
*/h^ŋgri, sŋgri/ occurred. Apart from No. 5 and 6, the rest of speakers corrected their pronunciation in the second recordings.
17. -19. 'pet' /pet/ 'bet' /bet/, ‘die’/dai/ 'tie' /tai/, 'pie' /pai/ 'bye' /bai/

As French speakers struggled mainly with aspirated plosives, these three pairs were intended to enable them to hear aspiration in such a sequence of words. Comparing to the first recordings where only minority of speakers pronounced $/ \mathrm{p}, \mathrm{t}, \mathrm{k} /$ as aspirated, in the second recordings frequency of aspiration sounds was higher. The most often aspirated plosive was /t/ although speakers were exposed to aspirated /p/ in two out of these three pairs. However with every pair, aspiration became more automatic and sounds /p, t, k/ became more natural.
20. 'vet'/vet/ 'wet'/wet/

Similarly to pair No. 14 no difficulties with pronunciation of consonants $/ \mathrm{v} /$ and $/ \mathrm{w} /$ occurred. It seems that French speakers considered these two phonemes absolutely different and it is rather rare to substitute one with another.
21. 'hand' /hænd/ 'and'/ænd/

It was already observed that sound $/ æ /$ caused problems to French speakers and also in this case, less experienced speakers mispronounced it as phonemes /e/ or / $\Lambda /$. However, combination of letters an proved to be confusing for speakers No. 5 and 6 who pronounced word hand with French nasal vowel /ã/ */hãd/.
22. 'hour' /ava/ 'our' /avə/

Even though all speakers learnt correct pronunciation of $/ \mathrm{h} /$ phoneme, its occurrence in the initial positions of words proved to be very misleading for them. As observed from the text, they sometimes accidentally did not pronounce it in the fluent speech as in her, but this pair of words demonstrated that in fact they do not respect silent $h$ and tend to pronounce it in every initial position. Consequently, even after being exposed to the native pronunciation, none of them besides No. 10 pronounced word hour correctly.

### 7.8 Analysis of self-evaluation of French speakers

Based on the analysis of voice recordings, it was observed that plosives and dentals are the most problematic English consonants for French speakers. However this fact was not reflected in the self-evaluation part of the research. In general, French speakers overestimated their pronunciation abilities and the mark 4 standing for the most problematic phonemes appeared only in few examples and in majority of cases in answers
of speaker No. 6. Speakers considered dentals $/ \delta, \theta /$ as the most difficult sounds while plosives were mostly evaluated by the mark 1 . Phonemes /p, g/ were even marked as the easiest as no other mark than 1 appeared in their evaluation. This might be an answer why almost none of the speakers except of No. 10 aspirated plosives in the voice recordings of the text and first round of pairs as they were not aware of the correct pronunciation. Surprisingly, none of the speakers changed the mark given to plosives in the postevaluation task even though they were exposed to their correct pronunciation. As a result, the question whether French speakers consider aspiration as an essential part of pronunciation of plosives might arise. Interestingly, phoneme $/ \mathrm{h} /$ which is often considered as the most demanding for French speakers, which was also supported by comments of some of the analysed speakers in the questionnaire, was evaluated as rather easy to be pronounced.

Concerning vowels and diphthongs, they were in general evaluated as more difficult than consonants. However their evaluation still did not reflect the reality observed in the voice recordings. Diphthongs, which do not appear in French, were evaluated as the most demanding with /ea, və/ on the top of the scale. Overall it seems that analysed speakers were not aware of the proper vowel sounds as these sounds were the most often mispronounced phonemes in the voice recordings. Moreover, they usually marked their own pronunciation as 'rather bad' but they did not support this fact by evaluation of individual phonemes especially vowels which are in fact the main reason of the level of their pronunciation.

As for post-evaluation, only two speakers modified their responses. In all the cases the changes concerned marking some phonemes as more difficult sometimes with extreme differences from mark 1 to 4 as in case of /eo, vo, $\theta /$.

## 8 SECOND LANGUAGE ACQUISITION

For this part of the analysis the Huang's (2014) research and its results were used because it provides complex and detailed information on this topic. Firstly, around 120 speakers were recorded and analysed. Secondly, evaluation was done through high-tech devices and by native speakers who were either linguistics-related majors or former ESL (English as a Second Language) teachers. Consequently, achieving results on the same level of analysis as the one of Huang would be impossible for the author and therefore Huang's research was used as additional material to author's research.

The research consisted of three main parts: speech production, grammar and language background survey. The aim of the research was to analyse effects of age on second language (English) grammar and speech production. As the research concerned non-native speakers who migrated into the US, the results proved that effects of native language upon English are mostly influenced by age of their arrival (AoA) into the country (Huang 2014, 408). Nevertheless, more relevant outcome for this thesis is that there is no strong correlation between speech production and grammar level. This had been proved also by other researchers e.g. Pulvermuller and Schumann who stated that plasticity of phonological mechanism is lost sooner than plasticity of syntax organ (Huang 2014, 414). In particular, speakers whose AoA was from 5 till 15 years, were relatively well rated concerning both their pronunciation and grammar. Nevertheless, the ratio later changed and speech production was evaluated substantially worse with speakers' increasing AoA while grammar abilities decreased less comparing to it. Overall, only 2 out of the 118 participants received a comparable score to native speakers concerning speech production while 22 speakers performed as native in grammar outcomes (Huang 2014, 410). Consequently, it proves that the level of speaker's pronunciation and grammar might be substantially different and that there are multiple critical periods for different domains in second language acquisition which is obvious even when learning English as a foreign language.

Even though the aim of the thesis was to prove that effects of the speaker's first language can be minimised with a great deal of conscious and analytical effort, now it is obvious that cases when it happens are rare especially concerning people who learn English as a foreign language which means that they are surrounded by their native language. This outcome is also supported by author's research which showed that only French speaker No. 10 achieved the level of her English pronunciation which would allow her to ignore the rules and phonemes from her native language.

## CONCLUSION

The aim of this thesis was to prove that English pronunciation of Czech and French speakers is influenced by their first language but at the same time its effects can be minimised especially with a great deal of conscious and analytical effort. This thesis also aimed to prove that excellent knowledge of English is not in proportion to excellent knowledge of English pronunciation. The outcome of this thesis aimed at clearly naming the differences between English pronunciation of Czech and French speakers.

In the theoretical part, the general terms concerning speech sounds were given as well as the English, Czech and French phonetic systems were described. Furthermore, the description was divided into two parts; one representing consonants and second one devoted to vowels. The summary where either the Czech and French vowel or consonant systems were compared to the English one appeared after each part.

In the practical part, a research of 10 Czech and 10 French speakers was conducted in a form of voice recordings and questionnaires followed by an analysis of the pronunciation errors. The analysis proved that sounds which do not occur neither in French nor in Czech, namely aspirated plosives and dentals, are problematic for both groups of analysed speakers. However, while speakers were aware of mistakes in pronunciation of dentals and hesitation or pause before pronouncing these sounds appeared during the voice recordings, this was not the case of aspirated plosives. Subjects of the research considered aspirated plosives as one of the less demanding sounds but they failed their pronunciation in majority of cases.

Differences between French and Czech native languages influence on English pronunciation became more significant when comparing others most frequent mistakes which appeared in the voice recordings. While Czech speakers struggled with voiced consonants in the final position within a word which led into mispronouncing the whole word and having a severe effect on speaker's intelligibility, intelligibility of French speakers was often influenced by mispronouncing vowel sounds. Whereas Czech speakers encountered difficulties mainly with vowels $/ \mathfrak{y}, ~ ə /$; diphthongs, long vowels and $/ æ, \Lambda, \mathrm{p} /$ caused problems to French speakers.

Moreover, the remarkable difference between the level of individual phonemes and their application into a fluent speech was observed as the results of the self-evaluation tasks in the questionnaires did not reflect the reality of voice recordings. Furthermore, it was observed that most of speakers who were not students or graduates of English related
studies were not familiar with the theoretical background of the production of particular sounds. In other words they were aware of their wrong pronunciation but they did not realise its causes and therefore they could not concentrate on them. Interestingly, most of the speakers considered correct English pronunciation as important, but they made no effort to achieve it. Furthermore, majority of the speakers did not consider IPA symbols as essential for achieving correct pronunciation. This was supported also by the research as it was observed that speakers who use at least some of IPA symbols did not necessarily pronounce phonemes in a better way than those who did not use it at all.

It can be also concluded that the length of speakers' English studies did not have a direct impact on the speakers' pronunciation unless the basics of phonetics and phonology were involved in it. A contact with English native environment proved to be more relevant. As observed from the comparison of voice recordings before and after being exposed to a native speaker, both Czech and French speakers were able to minimise mistakes which had occurred in their pronunciation. However, it is very demanding to eliminate native language influence on speaker's pronunciation and this level is achieved only rarely even though speakers can master English grammar. This was supported by Huang's research which proved that there is no correlation between levels of speaker's English pronunciation and grammar.

It is important to stress that differences which were uncovered in this thesis might not apply to every Czech and French speaker. However based on both theoretical and practical parts it was observed that these features are most likely to influence English pronunciation of speakers of analysed languages. Therefore it is firmly believed that the outcome of the thesis might help Czech and French speakers to better acquire English pronunciation as being aware of the predispositions consequent from their native language is the first step towards minimising them.

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## LIST OF ABBREVIATIONS

IPA International Phonetic Alphabet.
AoA Age of arrival.
Eng English related studies.
ELSP English language study period.
SA Stay abroad.
PRED Predispositions for English.
ICP Importance of correct pronunciation
LSEP Level of speaker's English pronunciation.
DEV Desired English variety.
CEV Current English variety
FAC Facilities to learn languages.
BIL Being bilingual.

## LIST OF FIGURES

Figure 1. Cardinal vowels ..... 15
Figure 2. Pulmonic consonants ..... 16
Figure 3. English cardinal vowels ..... 19
Figure 4. Czech cardinal vowels ..... 20
Figure 5. French cardinal vowels ..... 21

## LIST OF TABLES

Table 1. Chart of English consonant phonemes................................................................. 26
Table 2. Czech speakers' data analysis .............................................................................. 36
Table 3. French speakers' data analysis ............................................................................. 45

## APPENDICES

P I Original questionnaire for Czech speakers
P II Questionnaire for Czech speakers
P III Text used in voice recordings
P IV Pairs used in voice recordings

## APPENDIX P I: ORIGINAL QUESTIONNAIRE FOR CZECH SPEAKERS

Hello!
I am a student of English for Business Administration at TBU in Zlín. This questionnaire is a part of research for my bachelor thesis:
"Native Language Influence on the English Pronunciation: Comparison of Czech and French."

To complete my research I need your help.
Thank you for your time!

* Required

1. What is your gender? *

O Male
O Female
2. What is your native language? *

C Czech
C Slovak
3. What do you study at your university? *

C Philology (English language and literature)
C Others
4. In which grade are you? *

- Bachelor

O Master
O Doctoral
C Other
5. Is correct English pronunciation important for you and your personal use of English *

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| very important for me | C | C | C | C | not important for me |

6. What do you think of your own English pronunciation? *

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| very good | C | O | O | O | very bad |

7. Which English variety would you love to master? *

O BrE
C AmE
O Other
8. Which English variety do you really speak? *

C BrE
C AmE
O Other English variety
An undistinguished mixture
9. Comment on your preference for the English variety. Why did you choose it? *
10. Were you pushed at secondary school to use one given variety of English? *
C Yes (they forced me to use BrE )
O Yes (they forced me to use AmE)

- Yes (they forced me to other English variety)

No (I was free to speak as I wished)
11. Do you use the symbols of IPA (International Phonetic Alphabet) when writing down the pronunciation of English words? *
C I only use the IPA
O I use some of the IPA symbols
I use only letters of alphabet

| It | I |  | U | U | 12 | eI |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| e | ว |  | 31 | I | ひ | OI | כ |
| æ | $\Lambda$ |  | at | D | еә | aI | av |
| p | b | , | ${ }_{\text {d }}^{\text {Past }}$ | + | d | k | $g$ |
| ${ }_{\text {Eli }}$ | V80 | ${ }^{\text {zıME }}$ | ¢ | Urald | rubar | do | 60 |
|  | yerz | тимk |  | ${ }_{\text {gx }}$ | 200 | shlort |  |
| m | n | 1 | h | 1 | r | W | j |

12. When speaking English, how problematic are for you: *

CONSONANTS (DoG, HouSe, CHuRCH, CHiLD, eTHiCal, WiTHouT, PuSH,...)

| 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- |

easy $\bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad$ very difficult

VOWELS (Act, fOOd, fOOt, mIlk, bUt, cOUrt, AlphAbEt,...)

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| easy | C | C | O | C | very difficult |

DIPHTHONGS (mOUse, rOAd, mIne, vOIce, pAId, tOUr, bEArd,...)

$$
\begin{array}{llllll}
\text { easy } & \bigcirc & \bigcirc & \bigcirc & \bigcirc & \text { very difficult } \\
\hline
\end{array}
$$

TRIPHTHONGS (plAYEr, fIre, rOYAl, lOWEr, pOWEr, hOUr,...)

| 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- |


| easy | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | very difficult |
| :--- | :--- | :--- | :--- | :--- | :--- |

STRESS (CONduct vs. conDUCT, DEsert vs. deSSERT)

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| easy | C | C | C | C | very difficult |

ELISION - In rapid speech some phonemes that would normally be pronounced may get lost. $\left(\frac{\text { potato }=>}{1}\right.$ p'tato, police $=>$ p'lice $)$
$\begin{array}{llllll}\text { easy } & \bigcirc & \bigcirc & \bigcirc & \bigcirc & \text { very difficult }\end{array}$

LINKING - Disappearing of word boundaries. (peace/talks or pea/stalks)

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| easy | 0 | 0 | 0 | 0 | very difficult |

ASSIMILATION - Changing of a phoneme under the influence of another. (that person => thapperson, dog => dock, sag => sack)

|  |  | 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| easy | C | C | O | O | very difficult |

RHYTHM ('walk 'down the 'path to the 'end of the ca'nal)

| easy | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | very difficult |
| :--- | :--- | :--- | :--- | :--- | :--- |

INTONATION (example below)

|  | 1 | 2 | 3 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| easy | O | C | O | O | very difficult |

You're hungry, aren't you?

13. In general, which of these consonants do you consider the most problematic in English pronunciation for Czech native speakers?
(!! means that the given consonant is not pronounced in the example) * 1 - easy, 4 - very difficult

|  | 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- | :--- |
| t (church, cheek) | 0 | 0 | 0 | 0 |
| r (crop, !!girl) | 0 | 0 | 0 | 0 |
| $\theta$ and ð (with, without) | 0 | 0 | 0 | 0 |
| h (hotel, hungry, !!hour) | 0 | 0 | 0 | 0 |
| y (going, bank) | 0 | 0 | 0 | 0 |
| g (finger, !!wrong) | 0 | 0 | 0 | 0 |
| w (well, !!wrong) | 0 | 0 | 0 | 0 |

14. In general, which of these vowels do you consider the most problematic in English pronunciation for Czech native speakers? *
1 - easy, 4 - very difficult

|  | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: |
| æ (bad) | 0 | 0 | 0 | 0 |
| i (bit) | 0 | 0 | 0 | 0 |
| $\Lambda$ (but) | 0 | 0 | 0 | 0 |
| e (bet) | 0 | 0 | 0 | 0 |
| o (Alike) | 0 | 0 | 0 | 0 |
| v (put) | 0 | 0 | 0 | 0 |
| p (pot) | 0 | 0 | 0 | 0 |
| $3:($ bird) | 0 | 0 | 0 | 0 |

## APPENDIX P II: QUESTIONNAIRE FOR CZECH SPEAKERS

Hello!
I am a student of English for Business Administration at TBU in Zlín. This questionnaire is a part of research for my bachelor thesis:
"The Native Language Influence on the English Pronunciation: A Comparison of Czech and French"

Your answers serve as a source for background information needed for proper analysis of your recordings.

Thank you for your time.

* Required

1. What is your gender? *

C Male
$\bigcirc$ Female
2. What is your native language? *

C Czech
O Slovak
O Other
3. What do you study? (field and grade) *

If you are not a student, please write "NO"
4. How old are you? *
5. How long have you been studying English? *
6. What is your general attitude towards English? *
7. Have you spent some time in an English speaking country? *

If yes, please specify the amount of time, place of the stay and its purpose.
8. Would you say you have some predispositions for English? *

O I have English speaking relatives.
O I am bilingual.
My parents have a good command of English.

C I am not aware of any.
O Other:
9. Is correct English pronunciation important for you and your personal use of English? *

| 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- |

very important for me $\bigcirc \bigcirc \bigcirc$

## 10. What do you think of your own English pronunciation? *

| 1 | 2 | 3 | 4 |  |
| :---: | :---: | :---: | :---: | :---: |
| very good $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | very bad |

11. Please comment on your evaluation in the preceding question. *
12. Which English variety would you love to master? *

C British English (BrE)
C American English (AmE)
I do not prefer any
O Other:
13. Which English variety do you really speak? *

O BrE
O AmE
O Other English variety

- An undistinguished mixture

14. Do you use the symbols of IPA (International Phonetic Alphabet) when writing down the pronunciation of English words? *
O I only use the IPA
I use some of the IPA symbols

- I use only letters of alphabet

| It | I |  | U | Ui | İ | eI |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\underset{\text { MEN }}{\mathrm{e}}$ | $\stackrel{\partial}{\text { AMERC }}$ |  | $\underset{\text { wogd }}{3!}$ | $\underset{\text { sort }}{\text { Ot }}$ | ひə | $\mathrm{OI}_{\text {gor }}$ | $\underset{\text { O\% }}{ } 0$ |
| æ | $\wedge_{\text {gur }}$ |  | $\underset{\text { Past }}{\text { at }}$ | $\underset{\text { nor }}{\text { D }}$ | eə | $\underset{\text { mı }}{\text { al }}$ | Qu |
| P | ${ }_{\text {b B }}$ | ${ }_{\text {tine }}$ | d | f | $\mathrm{d}$ | k | g |
| $f_{\text {EVE }}$ | $\underset{\text { yerr }}{V}$ | $\theta$ | す | $\underset{\text { gix }}{\text { S }}$ | $\underset{z 00}{Z}$ | $\int_{\text {short }}$ | 3 |
| $\mathrm{m}_{\text {MLK }}$ | $\mathrm{n}_{\text {yo }}$ | $\underset{\text { sing }}{\square}$ | h | ${\underset{\mathrm{LVVE}}{ }}^{2}$ | $\underset{\text { BEAD }}{1}$ | $\underset{\text { whubow }}{\mathrm{W}}$ | ${ }_{\text {y }}^{\text {y }}$ S ${ }^{\text {d }}$ |

15. Which of these English phonemes are the most problematic for you? * 1 - easy, 4 - very difficult

|  | 1 | 2 | 3 | 4 |
| :---: | :---: | :---: | :---: | :---: |
| p (price, slope) | C | $\bigcirc$ | 0 | 0 |
| b (bakery, urban) | $\bigcirc$ | C | C | C |
| t (trash, front) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| d (dentist, mood) | 0 | $\bigcirc$ | 0 | 0 |
| k (kit, lake) | 0 | $\bigcirc$ | 0 | 0 |
| g (finger, game) | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ |
| f (fresh, uniform) | $\bigcirc$ | C | 0 | 0 |
| v (voice, wave) | $\bigcirc$ | C | C | C |
| $\theta$ (think, with) | 0 | $\bigcirc$ | 0 | 0 |
| ¢ (that, without) | 0 | $\bigcirc$ | 0 | 0 |
| s (size, person) | 0 | $\bigcirc$ | 0 | 0 |
| z (zoo, whose) | $\bigcirc$ | C | 0 | 0 |
| $\int$ (shine, smash) | 0 | $\bigcirc$ | 0 | 0 |
| 3 (garage) | 0 | $\bigcirc$ | 0 | 0 |
| h (hotel, hungry) | $\bigcirc$ | C | C | O |
| t (church, cheek) | 0 | $\bigcirc$ | 0 | 0 |
| ds (jeans, orange) | 0 | $\bigcirc$ | 0 | $\bigcirc$ |
| m (mother, slum) | $\bigcirc$ | $\bigcirc$ | 0 | 0 |
| n (nickname, print) | $\bigcirc$ | $\bigcirc$ | 0 | 0 |
| y (going, bank) | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ |
| 1 (love, cloud) | $\bigcirc$ | $\bigcirc$ | C | 0 |
| w (well, one) | 0 | $\bigcirc$ | 0 | 0 |
| r (crop, root) | $\bigcirc$ | $\bigcirc$ | 0 | 0 |
| j (you, onion) | $\bigcirc$ | C | 0 | O |

16. Which of these English phonemes are the most complicated for you? * 1 - easy, 4 - very difficult

|  | 1 | 2 | 3 | 4 |
| :---: | :---: | :---: | :---: | :---: |
| I (bit) | 0 | $\bigcirc$ | $\bigcirc$ | 0 |
| i: (feel) | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| e (bet) | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| æ (bad) | 0 | 0 | $\bigcirc$ | 0 |
| a: (car) | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| $\Lambda$ (but) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| p (pot) | 0 | 0 | $\bigcirc$ | $\bigcirc$ |
| ): (abroad) | $\bigcirc$ | O | $\bigcirc$ | $\bigcirc$ |
| $v$ (put) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| u : (moon) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| ว (Alike) | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| 3: (bird) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| ar (fly) | 0 | 0 | 0 | 0 |
| el (day) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| э (boy) | 0 | 0 | $\bigcirc$ | 0 |
| av (how) | 0 | 0 | $\bigcirc$ | 0 |
| əu (phone) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| ıә (beer) | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| eə (bear) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| ขว (tour) | - | C | C | $\bigcirc$ |

17. Do you want to change any of your answers?

## APPENDIX P III: TEXT USED IN VOICE RECORDINGS

Please call Stella. Ask her to bring these things with her from the store: Six spoons of fresh snow peas, one can of Czech beer, and a bottle of wine, five thick slabs of blue cheese, one orange, apple juice, a bottle of vodka, and maybe snacks for her siblings, John and sister Kate. We also need a small plastic snake and bear; as well as a big toy frog for the kids. Stella can place these things into three yellow bags, which are in our garage. She does not need to hurry, we will go meet her on Wednesday at the train station and then go on a tour around the city like every week. I suggest going around the river which usually takes two hours or more if we visit the Gothic church there. Anyway, how was your exam? I crossed my fingers for you. I hope luck was on your side this time.

## APPENDIX P IV: PAIRS USED IN VOICE RECORDINGS

1. put pot
2. cut cat
3. bit bet
4. bad bed
5. mess mass
6. but put
7. heart hard
8. league leak
9. caught cord
10. rude root
11. rope robe
12. think sink
13. day they
14. van one
15. singer finger
16. hungry angry
17. pet bet
18. die tie
19. pie bye
20. vet wet
21. hand and
22. hour our

[^0]:     předpisů, § 47b Zveřejňováni závěrečných praci:
    (I) Vysoká škola nevýdĕlečně zveřejn̆uje disertační, diplomové, bakalářské a rigorózní práce, u kterých proběhla obhajoba, včetně posudkủ oponentủ a výsledku obhajoby prostřednictvím databáze kvalifikačnich praci, kterou spravuje. Zpuisob zveřejnění stanovi vnitřni predpis vysoké školy.

[^1]:    ${ }^{1}$ Used under a Creative Commons Attribution-Sharealike 3.0 Unported License.

[^2]:    ${ }^{2}$ Used under a Creative Commons Attribution-Sharealike 3.0 Unported License.

[^3]:    ${ }^{3}$ Phonemic transcription, which is simple in comparison to phonetic one, does not contain symbols which are related to quality of vowels based on voice. Thus, English phonemic transcription might be misleading as in instance of bid and beat where pronunciation of vowel /I/ followed by voiced consonant /d/ in bid is longer than in the vowel /i:/ followed by voiceless /t/ in beat. However phonetic transcription contains special symbols which are able to distinguish 4 possibilities of length of vowels (Melen 2010, 14).

[^4]:    ${ }^{4}$ http://dictionary.cambridge.org/

[^5]:    ${ }^{5}$ Based on the data from the original questionnaire ( $42 \%$ of Czech respondents were forced to use British English at primary or secondary school).

