

UNIVERZITA PALACKÉHO V OLOMOUCI

Filozofická fakulta

Katedra anglistiky a amerikanistiky

CZECH LEARNERS' IMPLICIT KNOWLEDGE OF
ENGLISH PRONUNCIATION

Bakalářská práce

Autor:

Adam Král

Vedoucí práce:

Mgr. Václav Jonáš Podlipský, Ph.D.

Olomouc 2015

Prohlašuji, že jsem tuto bakalářskou práci vypracoval samostatně a uvedl úplný seznam citované a použité literatury.

V Olomouci dne 9.12. 2015

.....

Acknowledgements

I would like to thank my supervisor, Mgr. Václav Jonáš Podlipský, PhD., for his kind support and valuable advice throughout the process of writing this thesis.

I would also like to thank the students who took part in the research and my girlfriend Peny, friends and family for their support.

Table of Contents

1	Introduction.....	6
2	Methods for predicting the respondents' answers.....	8
2.1	Introduction.....	8
2.2	Explicit instruction	9
2.2.1	Teacher.....	9
2.2.2	Textbook	9
2.3	Implicit knowledge.....	10
2.3.1	Speech Learning Model	10
2.3.2	Perceptual Assimilation Model.....	11
2.3.3	Acoustic salience	11
2.3.4	Functional load	12
3	Phonemic differences between English and Czech	13
3.1	Vowels	13
3.1.1	Description of English and Czech vowel sounds.....	13
3.1.2	Pairs of vowel sounds examined in the questionnaire	15
3.1.3	Table of vowel pairs	20
3.2	Consonants	20
3.2.1	Description of English and Czech consonants.....	20
3.2.2	Pairs of consonants examined in the questionnaire	22
3.2.3	Table of consonant pairs	24
4	Allophonic processes of English and Czech.....	25
4.1	Introduction.....	25
4.2	Allophonic processes of vowels	25
4.2.1	Vowel duration	25
4.3	Allophonic processes of consonants.....	27
4.3.1	Aspiration of voiceless stops	27
4.3.2	Changes of voicing	29
4.3.3	The release stage of stops	30
4.3.4	Assimilation of place of articulation.....	31
4.3.5	Assimilation of manner of articulation	32
4.3.6	Velarization of /l/	32
4.3.7	Ng coalescence	33

4.4	Table of allophonic differences	34
5	The sample questionnaire in practice	35
5.1	Sample questionnaire	35
5.2	Results analysis	35
6	Conclusion	41
7	Resumé.....	42
8	Works Cited.....	43
9	Appendix.....	45
9.1	Part 1 – Open questions.....	45
9.2	Part 2 – Differences in pronunciation of given pairs of words	45
9.2.1	Phonemic and allophonic differences between English and Czech.....	45
9.2.2	Differences in pronunciation within English	46

1 Introduction

The aim of the present thesis is to compare pronunciation of English and Czech in terms of phonemic and allophonic differences and make a research proposal investigating what future students of English at a university level know about pronunciation of English. The author focuses mainly on Received Pronunciation and Standard Czech. The sample questionnaire is designed, asking the respondents about differences in pronunciation of similar English and Czech words. The present thesis focuses on differences in pronouncing separate words. The suprasegmental features of speech including stress and intonation are not examined.

The first chapter presents methods that are used for predicting the respondents' answers. The author divides acquisition of students' knowledge into two groups – explicit instruction and implicit knowledge. This means that learners acquire their knowledge either from being explicitly told about a pronunciation rule or by perceiving the spoken language and making up their own implicit knowledge of the sounds of that particular language. Learners are usually explicitly instructed and taught by teachers and textbooks at school or courses of English. The implicit knowledge is formed while listening to the foreign language. This process is heavily influenced by a number of factors playing role in second language pronunciation acquisition. These factors are described in the chapter and referred to later in the text.

Chapter *Phonemic differences between English and Czech* provides phonemic inventories of Received Pronunciation and Standard Czech. Individual phonemes are sorted by place and manner of articulation and an example word for each phoneme is shown. Then the comparison of selected phoneme pairs follows. The author lists a number of English vowels and consonants and for each of them, a similar Czech phoneme is shown along with a word pair examining such difference from the present questionnaire. The probability of each distinction to be recognized by the respondents is predicted and all the phoneme pairs are summarized in a table.

Chapter *Allophonic processes of English and Czech* compares selected allophonic processes of English and Czech that are relevant for the purpose of the present thesis and examined in the present questionnaire. The differences and similarities are discussed. Allophonic processes concerning vowels are not discussed as deeply as those concerning consonants. Vowel duration in English plays an essential role in

distinguishing meaning of words. On the other hand, Czech vowels do not get much influenced by the surrounding allophones, as Palková (1994, 170) claims.

The present questionnaire is described in chapter *The sample questionnaire in practice* along with the results of testing the questionnaire with three respondents. The sample questionnaire consists of two parts – open questions and the practical part. First, students are asked about their previous studies of English, methods that they use to learn pronunciation and finally, they are asked to present their ideas about differences in pronunciation of English and Czech. In the second part, the respondents' task is to read aloud pairs of similar English–Czech words and think about sounds in which they differ. The present questionnaire is first focused on differences in pronunciation of similar English and Czech words and then on the pronunciation distinctions within English, only. The allophonic transcription is shown for each word. The transcriptions are focused mainly on RP but words requiring GA transcription are also transcribed in GA. The transcriptions will not be shown to the respondents of the present questionnaire.

The software *Praat* (Paul Boersma and David Weenink) was used to draw waveforms and spectrograms of the analysed sound recordings. All the recordings that were used for the purpose of the present thesis are attached on the CD, in folder '*sound files*'. Abbreviations used are RP (Received Pronunciation), GA (General American), VOT (Voice Onset Time), IPA (International Phonetic Alphabet), L1 (native language), L2 (second language), F1 (first formant frequency), F2 (second formant frequency) and EFL (English as a foreign language).

2 Methods for predicting the respondents' answers

2.1 Introduction

One of the linguistic sub-areas that a learner of a foreign language has to deal with is pronunciation. According to Hummel (2014, 145), acquiring pronunciation of a foreign language is usually the most difficult step in the process of learning a new language and at the same time it is the most apparent indicator of nonnativeness. Foreign accent is a phenomenon that may cause various misunderstandings when talking to a native speaker of that particular language. When perceiving or producing sounds of L2, learners use phonemic inventory of their native language. In her *Introducing Second Language Acquisition*, Hummel quotes famous Russian phonologist Trubetzkoy:

The sounds of the foreign language are given an incorrect phonological interpretation, since they are filtered through the 'phonological sieve' of one's own language. (Hummel 2014, 145)

This could mean that while perceiving L2, learners tend to replace the sounds of L2 with the closest sounds of L1.

The relation between perception and production of L2 has been discussed in numerous studies and researches. According to Hummel, in majority of cases, perception of L2 is usually more accurate than its production (2014, 145). Cruttenden talks about minimal general intelligibility which is described as the lowest requirement for being comprehensible. If a learner of a foreign language does not fulfil this requirement, he is likely to be incomprehensible to listeners outside of his own region (Cruttenden 2001, 298).

Speaking of second language pronunciation acquisition, we can say that there are two ways how the knowledge of sounds of L2 is acquired. Students learn either from **explicit** instruction or by forming **implicit** knowledge when listening to the language. These two ways of acquiring L2 pronunciation are described in the following sections. Furthermore, the author of the present thesis introduces models and ideas that will help support the author's assumptions presented in the following chapters. It is apparent that the respondents will more easily recognize the difference in pronunciation of particular sounds that they have been told about by a teacher or any other explicit source.

A minority of author's assumptions will be based on the author's experience from listening to English language learners and analyzing their inaccuracies in pronunciation.

2.2 Explicit instruction

By explicit instruction, the author means all kinds of sources including a teacher, textbook or a native speaker explaining a rule to the learner. When the instruction is made clear and coherent, there is a chance that the learner will remember it and use the acquired knowledge appropriately after some practice.

2.2.1 Teacher

Considering the experience of the author of the present thesis, high school teachers do not pay much attention to teaching English pronunciation. Students are taught mainly about phonemic features of English, including approximants /ɹ/ and /w/, dental fricatives /θ/ and /ð/ and vowel /æ/. Allophonic processes of English are not sufficiently explained and therefore students tend to make mistakes mainly in aspiration, voicing and other pronunciation phenomena.

2.2.2 Textbook

Czech students of English at a high school level are taught about basic symbols of IPA. For example, *New Headway Intermediate Maturita Student's Book* (Soars and Soars and Paulerová 2012) shows the English phonemic inventory including both consonants and vowels on the inner front cover. At the end of the book, we can find a dictionary that includes phonemic transcriptions of the listed words. A few inaccuracies can be found, including symbol /ɹ/ as the English rhotic approximant instead of /ɹ/ or vowel /e/ instead of /ɛ/. English textbooks also show most tense vowels as long which might give an incorrect impression of their actual acoustic properties.

Textbooks for learning English usually contain a dictionary with phonemic transcriptions of words. Phonetic transcriptions are not present in those books, generally. Thus it is highly probable that students' awareness of allophonic processes is not as developed as of phonemic principles of English pronunciation.

A tendency is that textbooks, for example *New Headway Pre-Intermediate Student's Book* (Soars and Soars and Wheeldon 2007) and *New Opportunities*

Intermediate Student's Book (Harris and Mower and Sikorzyńska 2006), dedicate much space to explaining suprasegmental features of English pronunciation.¹

2.3 Implicit knowledge

When listening to the sounds of L2, learners' perception is heavily influenced by the knowledge of phonemic and allophonic rules of their mother tongue. Section 2.1 talks about Trubetzkoy's theory of phonological sieve. As an example of L2 learners incorrectly perceiving sounds of the language, we can mention Chinese learners of English having difficulties telling the difference between English /i/ and /ɪ/. It is because this contrast has no such equivalent in Chinese (Swan and Smith 2001, 311).

Learners' knowledge of L2 usually improves with time spent listening to the language. In Flege's research study from 1980, he examined VOT of voiceless stops as produced by Saudi Arabians. Groups of speakers that participated in the experiment were native American speakers, Saudis living in the US less than one year and Saudis living in the US for more than two years. According to the results, generally, the VOT was longest when produced by native Americans, next longest when produced by Saudis living in the US for more than two years and shortest when produced by Saudis living in the US less than one year (Flege 1980, 123).

The following sections are aimed at specific models and ideas that play an important role in predicting the respondents' answers.

2.3.1 Speech Learning Model

Flege's **Speech Learning Model** (SLM) is concerned with speech perception and production. It predicts that sounds of L2 that are similar to those in L1 are more difficult for a learner to perceive and produce than those that differ extensively (Hummel 2014, 145). To support this idea, example word in (1) can also be used. The low back vowel /ɒ/ is not included in the Czech vowel chart (see *Table 1* in section 3.1.1) and Czech learners of English usually tend to replace it with mid-high back vowel /o/. These vowels are both rounded and back so they can be considered similar in a way, making it difficult for a learner to distinguish between them. Another example is a study by Flege which showed that even native speakers of English with high experience in French as L2 had problems producing unaccented French /u/ sound but at the same time they

¹ For example, section "Music of English" showing the basics of intonation in English is included in each chapter of *New Headway Pre-Intermediate Student's Book* (Soars and Soars and Wheeldon 2007).

managed to produce French /y/ sound perfectly although it is not present in the English phonemic inventory (Flege 1987).

(1) *pot* /'pɒt/

2.3.2 Perceptual Assimilation Model

Perceptual Assimilation Model (PAM) coined by Catherine T. Best in *A Direct Realist View of Cross-Language Speech Perception* predicts that

non-native segments (...) tend to be perceived according to their similarities to, and discrepancies from, the native segmental constellations that are in closest proximity to them in native phonological space. (Best 1995, 193)

In other words, it is true that any two languages have a number of segments in common. On the other hand, a lot of segments that are present in L2 cannot be found in L1 and are therefore called non-native segments. When perceiving L2, these non-native segments get assimilated to the nearest native segments.

According to Best, there are three ways how non-native segments can assimilate to native segmental constellations – assimilation to an existing native category, as an uncategorizable speech sound or as a nonspeech sound (Best 1995, 194–195). In the present thesis, only the first two patterns are taken into consideration since we can say that no English speech sound is perceived as a nonspeech sound by a Czech learner of English. As an example of a non-native segment assimilating to an existing native category, we can say that English [ʃ] sound may be perceived as [ʃ] by a Czech learner of English. An example of an uncategorizable English speech sound for Czech learners could be phoneme /ð/ which is usually correctly perceived as a new sound that is not part of the phonemic inventory of Standard Czech.

2.3.3 Acoustic salience

To some extent, we can say that L2 sounds with noticeably different acoustic properties than those of L1 can be recognized more easily by a learner. Considering frequency, the higher the frequency rate of that particular sound is, the more probable it is that the learner will recognize the distinction between that sound and the closest sound of L1. The same can apply to duration of the sound, for example.

2.3.4 Functional load

When talking to a native speaker of L2, difficulties in understanding may arise when the learner pronounces a specific word wrong way. In such case, the learner may not be explained the proper pronunciation of the word by the native speaker and may continue to mispronounce the word.

Robert King talks about **functional load**, describing it as “a measure of the number of minimal pairs which can be found for a given opposition” (King 1967, 831). This concept can be dealt with in our case – we can say that some phonemic and allophonic rules of a language are not “as important” for understanding the message as others. For example, if the word *bill* is pronounced with [ɪ] instead of [ɪ̥] as the final sound, therefore ['bɪl], it is highly probable that the meaning of the word will be understood by the receiver of the message (e.g. a native speaker). Opposite to that, devoicing at the end of English words may cause crucial misunderstandings. As an example, we can use the word *dog* which, when pronounced with /k/ as the final sound instead of /g/, would change to *dock*, pronounced /'dɒk/.

3 Phonemic differences between English and Czech

Considering origin of the two languages, English and Czech, the fact that they belong to different language groups must be kept in mind. While English is a Germanic language, Czech belongs to Slavic languages. When it comes to comparing sounds of these two languages, it is obvious that they are different in many ways but still have a lot in common.

This chapter shows phonemic inventories of both languages and lists pairs of English–Czech phonemes that are, according to the author of the present thesis, likely to be confused. The evaluation of probability of each pair to be confused is supported by the methods described in chapter *Methods for predicting the respondents' answers* and subsequently displayed in a table – *Table 3* in section 3.1.3 for vowel pairs and *Table 6* in section 3.2.3 for consonant pairs. For each phoneme pair, a pair of English–Czech words with such difference is shown and eventually used in the present questionnaire.

3.1 Vowels

First, the author describes vowel charts of each language and then the list of “similar” vowels follows, along with hierarchy of probability of each distinction to be mentioned by the respondents. The hierarchy is shown in *Table 3*, in section 3.1.3.

3.1.1 Description of English and Czech vowel sounds

RP has twelve vowels occurring as **monophthongs**. Front vowels /i/, /ɪ/, /e/ and /æ/ are pronounced in words in (2), respectively. Vowels /ɜ/ and /ʌ/ are classified as central vowels and are pronounced in words in (3), respectively. Central vowel /ə/ occurs in unaccented syllables only (Cruttenden 2001, 93). An example of such word with /ə/ as the initial sound is shown in (4). Back vowels /u/, /ʊ/, /ɔ/, /ɒ/ and /ɑ/ are pronounced in words in (5), respectively. *Figure 1* shows the English vowel chart.

(2) *meat, bit, set, hat*

(3) *bird, mud*

(4) *about*

(5) *food, foot, caught, knock, part*

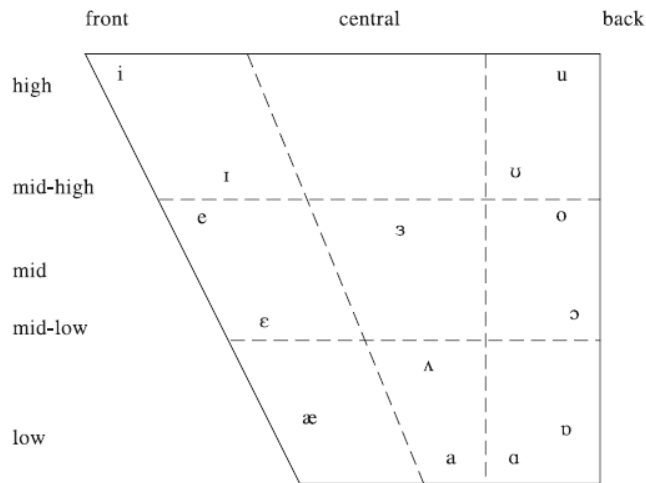


Figure 1: English vowel chart²

In **Standard Czech**, most monophthongs have their long variation. Phonemes /ɛ:/, /e/, /a/, /a:/, /o/, /o:/, /u/ and /u:/ are pronounced in example words in (6), respectively. Vowel /i:/ is pronounced in example words in (7) and unlike vowels mentioned above, it is always long in Standard Czech. Vowel /ɪ/ is pronounced in words in (8) and does not have its long variation. *Table 1* shows monophthongs of Standard Czech and their basic characteristics.

(6) *lék, pět, pat, dát, shon, tón, puk, úl*

(7) *mít, být*

(8) *byt, div*

Tongue position	front	center	back
High	/i:/, /ɪ/		/u/, /u:/
mid-high/mid-low	/ɛ:/, /ɛ/		/o/, /o:/
low		/a/, /a:/	
Lip-rounding	unrounded		rounded

Table 1: Monophthongs of Standard Czech³

Despite being transcribed with the same symbol, the quality of an English vowel sound as part of a **diphthong** is different when compared to the same vowel sound

² Figure 1 was borrowed from Ladefoged and Johnson (2011, 44).

³ Table 1 was borrowed from Palková (1994, 171).

occurring as a **monophthong** . This difference is described by Ladefoged and Johnson who say that

in English, the first part of a diphthong is usually more prominent than the last. In fact, the last part is often so brief and transitory that it is difficult to determine its exact quality. Furthermore, the diphthongs often do not begin and end with any of the sounds that occur in simple vowels. (Ladefoged and Johnson 2011, 92)

RP contains the following nine **diphthongs** – /ɪə/, /eə/, /ʊə/, /aɪ/, /eɪ/, /ɔɪ/, /əʊ/, /aʊ/ and /ju/ pronounced in example words in (9), respectively. They are all falling diphthongs except for one and that is the diphthong /ju/ (Ladefoged and Johnson 2011, 92-93).

(9) *here, there, pure, line, plane, boy, show, how, cute*

Only three **diphthongs** occur in the Czech language. These are /ou/, /au/ and /eu/, pronounced in words in (10). Words containing sequence *eu* might be pronounced either with diphthong /eu/ or as separate vowels /ɛ/ and /u/, each being part of a different syllable. This distinction depends on the speaker's point of view. Diphthong /ou/ is the only diphthong that is used in original Czech words. The other two diphthongs /au/ and /eu/ are used in borrowed words only (Palková 1994, 172).

(10) *kout, faul, feudál* /'feuda:l/, /'fɛ.uda:l/

3.1.2 Pairs of vowel sounds examined in the questionnaire

This section presents eleven pairs of different English–Czech vowel sounds that will be examined in the present questionnaire, ordered from front to back and high to low. The author of the present thesis matches each English vowel to its Czech “counterpart” – a Czech vowel that the respondents will probably think of when hearing the English vowel. The degree of probability is expressed by dividing the vowel pairs into three groups – high, middle and low. When referring to the methods that are presented in chapter *Methods for predicting the respondents' answers*, we can say that most of them can be applied to support the predictions. Though, acoustic salience does not play a major part regarding the vowel phonemes.

The vowel pairs are created mainly on the basis of similarity of their F1 and F2 values. These values are shown in *Table 2*. The mean formant values of English (RP)

vowels were taken from *Formant frequencies of RP monophthongs in four age groups of speakers* (Hawkins and Midgley 2005, 195) except for the mean formant values of schwa that were taken from *The phonetics of schwa vowels* (Flemming 2009, 3). The mean formant values of Czech vowels were taken from *Referenční hodnoty vokálních formantů pro mladé dospělé mluvčí standardní češtiny* (Skarnitzl and Volín 2012, 10). The age group of RP speakers is 20–25 years (Hawkins and Midgley 2005, 195) and the age group of Standard Czech speakers is 20–30 years (Skarnitzl and Volín 2012, 7). The reason the author of the present thesis cites research studies with subjects under 30 years of age is that the subjects of the present questionnaire will be 19 to 20-year-old high school graduates.

	EN			CZ	
Vowel	F1	F2	Vowel	F1	F2
/i/	276	2338	/i:/	280	2260
/æ/	917	1473	/ɛ/	570	1550
/ə/	665	1772	/a/, /a:/	670	1250
/ʌ/	658	1208	/u/	360	940
/u/	289	1616	/u:/	300	770
/ɔ/	413	1285	/o/, /o:/	470	1040
/ɔ̃/	392	630			
/ɒ/	484	865			
/ɑ/	604	1040			

Table 2: F1 and F2 values of selected vowels of RP and Standard Czech in Hz⁴

English vowel /i/ will most probably be recognized as /i:/. Vowel quality /i/ is present only in its long version in Standard Czech. Moreover, in English textbooks, most tense vowels are always transcribed as long, therefore /i:/, /u:/, /a:/ and /ɔ:/. Thus it is very common that students think of these sounds as long and do not consider the surroundings that affects the vowel duration.⁵ It is also important to say that vowel /i/, in its short version, is not a part of the Czech phonemic inventory, excluding a number of

⁴ Table 2 was borrowed from Hawkins and Midgley (2005, 195) and Skarnitzl and Volín (2012, 7).

⁵ More on vowel duration in section 4.2.1.

Moravian varieties. We can say that the probability of recognition is low. A pair that illustrates this distinction in the present questionnaire is shown in (11).

(11) *beat* /'bit/ – *bít* /'bi:t/

The English low front /æ/ may have two incorrect interpretations. Czech learners sometimes confuse it with the Czech /ɛ/ or /a/. Phoneme /æ/ does not appear in the Czech phonemic inventory and high school teachers explain this sound as “something between /a/ and /ɛ/”. Generally, Czech learners mispronounce phoneme /æ/ as /ɛ/ rather than /a/. In her research study from 2003, Šimáčková proves that even prospective language professionals who are expected to have greater knowledge and skills in English tend to pronounce /æ/ incorrectly, overlapping it with /ɛ/ (Šimáčková 2003, 2296). When pronouncing /æ/ incorrectly as /a/, the message is usually delivered more or less clearly. Thus we can say that the functional load is lower than when pronouncing /ɛ/ instead of /æ/ which can lead to a misunderstanding. For example, if the learner says /'men/ instead of /'mæn/, a native speaker will most likely interpret it as a plural form of the word. However, a lot of Czech learners tend to make this mistake and assimilate /æ/ to the nearest sound – /ɛ/. It is true that, for example, Czech borrowing *gentleman* can also be written *džentlmen* (Slovník spisovného jazyka českého 2011). The word is then pronounced /'dʒentlmɛn/ instead of the English original /'dʒentlmæn/. For these reasons, this pair was placed in the group of middle probability of recognition in *Table 3*. A pair that illustrates this distinction in the present questionnaire is shown in (12). The word pair in (13) shows the difference between /æ/ and /a/ and it is highly probable that the respondents will identify it.

(12) *than* /'ðæn/ – *den* /'dɛn/

(13) *crab* /'kɪæb/ – *krab* /'krab/

The English /ə/ sound appears in unaccented syllables, only (Cruttenden 2001, 93). When word-final, Czech learners will most probably confuse it for the Czech /a/. A pair that was used in the present questionnaire is shown in (14) and it illustrates the different pronunciation of that particular Czech loanword. Another borrowing, *Amerika* /'amerika/ also shows the distinction between /a/ and the schwa which is pronounced in the original word *America* /ə'mɛɪnkə/.

(14) *karma* /'kɑmə/ – *karma* /'karma/

The difference between phonemes /ʌ/ and /a/ will most probably not be recognized by the respondents. Vowel /ʌ/ cannot be found in the Czech phonemic inventory but since it is produced with the tongue in the low central position as well as /a/, it sounds very similar and the respondents will interpret it as /a/. We might say that pronouncing /ʌ/ as /a/ would not lead to a major misunderstanding, since the difference is really minor. The pair of words from the questionnaire is shown in (15).

(15) *luck* /'lʌk/ – *lak* /'lak/

High back vowel /u/ appears in both English and Czech. Even though the IPA symbol is the same, *Table 2* tells us that the English /u/ is more front than the Czech and thus sounds different. The F1 values of English /u/ and Czech /u/ are more or less similar (289 Hz for English and 360 Hz for Czech) but F2 values differ extensively (1616 Hz for English and 940 for Czech). The Czech long /u:/ has its F2 value even lower (770 Hz) and is thus produced further back. However, Czech learners of English still usually do not perceive the difference and the English /u/ gets assimilated to the Czech /u:/. It is very unlikely that the respondents will recognize the difference in quality and they will most probably think the duration of both vowels is the same. One of the reasons for this might be, again, that majority of tense vowels are transcribed as long in English textbooks. A pair used in the questionnaire is shown in (16).

(16) *pool* /'pu:/ – *půl* /'pu:l/

The respondents will most probably have difficulties telling the difference between English mid-high back /ʊ/ and Czech high back /u/ since these vowels are close to each other in the vowel chart (see *Figure 1* in section 3.1.1 and their formant values in *Table 2*). A pair that illustrates this distinction in the present questionnaire is shown in (17).

(17) *look* /'lʊk/ – *luk* /'luk/

As mentioned earlier in this section, English /ɔ/ is transcribed as long /ɔ:/ in most English textbooks. Thus it is highly probable that the respondents, when comparing words in (18), will find the difference in the length of the vowels rather than their quality. Phoneme /ɔ/ will then be understood as /ɔ:/. The probability of recognition of the vowel quality is low. In GA, /ɑ/ is pronounced.

(18) *bought* /'bɔ:/ – *bod* /'bɒd/

The low back /ɒ/ will most likely be perceived as mid-high back /o/ by the Czech learners. A pair that was used in the present questionnaire to show such distinction is shown in (19). Considering the fact that a number of Czech learners stick to GA, the vowel sound in *hot* can also be pronounced as /ɑ/.

(19) *hot* /'hɒt/ – *hod* /'hɒd/

The difference in pronouncing /ɑ/ and /a/ which can be seen in words in (20) will also most probably be thought of as a difference in length by the respondents. However, teachers at high school usually explain the /ɑ/ vowel as a sound that is produced far back in the oral cavity and they stress out its quality. Thus the difference in quality of those vowels could be recognized. The author of the present thesis predicts the probability of recognition as middle.

(20) *lava* /'lavə/ – *láva* /'la:və/

When perceiving English diphthong /əʊ/, there is some degree of probability of differentiating it from the Czech /ou/ because of the /ə/ sound contrasting to /o/. The difference between these two sounds should be recognized well by the respondents, even as part of a diphthong. The probability of recognition is therefore middle. Though, Czech learners who have acquired principles of GA will pronounce the first part of the diphthong as /o/ and most likely will not identify the difference between /o/ and /u/ as the second part. A pair that illustrates this distinction and is used in the present questionnaire is shown in (21).

(21) *coat* /'kəʊt/ – *kout* /'kɒt/

3.1.3 Table of vowel pairs

	EN	CZ
High probability	/æ/	/a/
Middle probability	/æ/	/ɛ/
	/ɑ/	/a:/
	/əʊ/, /oʊ/	/ou/
Low probability	/i/	/i:/
	/ə/	/a/
	/ʌ/	/a/
	/u/	/u:/
	/ʊ/	/u/
	/ɔ/	/o:/
	/ɒ/	/o/

Table 3: *Phonemic differences of vowels*

3.2 Consonants

3.2.1 Description of English and Czech consonants

Table 4 shows consonants appearing in **RP**, sorted by place and manner of articulation. For each place of articulation, the example words containing each consonant as a word-initial sound from the specific category are given, respectively from left to right. Since velar nasal /ŋ/ does not appear as a word-initial sound in English, the example word containing this phoneme is transcribed.

Phoneme /w/ is articulated at two places in the oral cavity at the same time – with the approximation of lips as one articulation and of the back of the tongue and velum as the other (Cruttenden 2001, 214).

Glottal stop which is not phonemically distinctive in RP is not included in the chart (Cruttenden 2001, 150).

	Stops		Fricatives	Affricates	Approximants
	Oral	Nasal			
Bilabial (22)	/p/, /b/	/m/			(/w/)
Labiodental (23)			/f/, /v/		
Dental (24)			/θ/, /ð/		
Alveolar (25)	/t/, /d/	/n/	/s/, /z/		/l/
Post-alveolar (26)			/ʃ/, /ʒ/	/tʃ/, /dʒ/	/ɹ/
Palatal (27)					/j/
Velar (28)	/k/, /g/	/ŋ/			/w/
Glottal (29)			/h/		

Table 4: Consonant chart of English⁶

(22) *pot, back, man*

(23) *film, vest*

(24) *thing, this*

(25) *top, dock, nose, sick, zipper, lake*

(26) *ship, genre, chop, jubilee, rest*

(27) *yawn*

(28) *kick, gum, bank /ˈbæŋk/, wait*

(29) *hotel*

Table 5 provides phonemic inventory of **Czech** consonants, sorted by place and manner of articulation. Example words are shown for each phoneme according to manner of articulation – bilabial (30), labiodental (31), alveolar (32), post-alveolar (33), palatal (34), velar (35) and glottal (36).

⁶ Table 2 was borrowed from Cruttenden (2001, 149).

	Stops		Fricatives	Affricates	Approximants	Trills
	Oral	Nasal				
Bilabial	/p/, /b/	/m/				
Labiodental			/f/, /v/			
Alveolar	/t/, /d/	/n/	/s/, /z/	/tʃ/	/l/	/r/, /r̄/
Post-alveolar			/ʃ/, /ʒ/	/tʃ/, /dʒ/		
Palatal	/ç/, /j/	/ɲ/			/j/	
Velar	/k/, /g/		/x/			
Glottal			/h/			

Table 5: Czech consonant chart⁷

(30) *půl, bok, med*

(31) *finance, víno*

(32) *tok, den, noc, syn, zjistit, cypřiš, list, růst, řeka*

(33) *šachy, žok, čidlo, džíp*

(34) *tělo, děkovat, něco, jáma*

(35) *kat, guma, chata*

(36) *hokej*

3.2.2 Pairs of consonants examined in the questionnaire

This section presents five pairs of different English–Czech consonants that will be examined in the present questionnaire, ordered according to manner and place of articulation as in *Table 4* and *Table 5*.

Dental fricatives are very frequent in English and therefore they should be paid attention to (Cruttenden 2001, 300). However, foreign learners find difficulties pronouncing these sounds. Czech learners sometimes tend to replace voiceless /θ/ with /f/ which is also a fricative and voiced /ð/ with /d/ which is articulated at the alveolar ridge. These mispronunciations are caused by assimilating the dental fricatives to the nearest sounds. On the other hand, students at a high school level are most likely aware of these English consonants because they are explicitly taught about their pronunciation by the teachers. Thus it is highly probable that they will use them properly. A pair

⁷ Table 4 was borrowed from Palková (1994, 209).

examining the difference between /θ/ and /f/ is shown in (37) and a pair showing contrast between English /ð/ and Czech /d/ is shown in (38).

(37) *thin* /'θɪn/ – *Fin* /'fɪn/

(38) *than* /'ðæn/ – *den* /'den/

A phoneme pair that will most likely not be distinguished by the respondents is the English voiceless glottal fricative /h/ compared to the Czech voiced glottal fricative /ɦ/. In English, the voiced version is used in between two vowels only. The acoustic difference between these two consonants is so tiny that Czech learners most likely do not realize the difference in voicing and when they hear English /h/, they automatically perceive it as the Czech /ɦ/. A word pair that was used in the questionnaire is shown in (39).

(39) *hot* /'hɒt/ – *hod* /'ɦod/

English approximant /ɹ/ is not very common in world languages (Ladefoged and Johnson 2011, 175) and foreign speakers of English tend to replace this phoneme for the alveolar trill /r/ that occurs in Czech, as well. However, when we talk about Czech learners of English at a high school level, we can say that majority of them pronounce the English /ɹ/ correctly since they are explicitly taught to do so by the teacher. Teachers usually use the imitation of a “hot potato” in one’s mouth to practice the /ɹ/ sound with students. Moreover, the Czech /r/ is far more acoustically salient than the English /ɹ/ since there is more turbulence involved while pronouncing the Czech trill. This phoneme pair is classified in the group of high probability. A word pair used in the present questionnaire is shown in (40).

(40) *rent* /'ɹɛnt/ – *renta* /'renta/

Czech learners of English sometimes confuse English approximant /w/ for the Czech fricative /v/. We can say that this phenomenon results from pronunciation of Czech loanwords like *twist* pronounced /'tvɪst/ or *waltz* pronounced /'valts̩/. As can be seen in *Table 5*, Czech has no /w/ sound in its phonemic inventory, though this phoneme existed in Old Czech. The process of vanishing /w/ from the inventory was caused by introducing new borrowings containing fricative [f] and therefore a need for its voiced counterpart in the inventory. The labiodental fricative /v/ maintained some

features of /w/ even until now and it can be considered an approximant to some extent in various surroundings (Jan Volín and Radek Skarnitzl 2006, 254). However, we can say that high school Czech learners are aware of the distinction and it is highly probable that they will identify it. An example word pair that was used in the questionnaire is shown in (41).

(41) *wick* /'wɪk/ – *povyk* /'povɪk/

3.2.3 Table of consonant pairs

	EN	CZ
High probability	/ð/	/d/
	/θ/	/f/
	/ɹ/	/r/
	/w/	/v/
Low probability	/h/	/ɦ/

Table 6: Phonemic differences of consonants

4 Allophonic processes of English and Czech

4.1 Introduction

Each phoneme has one or more realizations of itself called allophones. Allophonic processes can be described as the rules under which each allophone is distributed. We can say that phonetic (allophonic) transcription is “more accurate” than phonemic transcription.

There is a number of phonetically similar sounds between two languages that are transcribed with the same IPA symbol even in the allophonic transcription (Flege 1981, 446). An example could be vowel sound /u/ whose quality differs in English and Czech but is still transcribed with the same symbol.

There is a number of special symbols (diacritics) used for determining different nature of an allophone according to the specific allophonic process.

The nature of an allophone is influenced in many ways. It is important where in a word that particular allophone occurs (whether at the beginning, in the middle or at the end of the word), in which part of a syllable it appears, if it is stressed and so on.

The following sections deal with the description of English and Czech allophonic processes that happen in each of these two languages and are relevant for the purpose of the present thesis. Simultaneously, the author of the present thesis predicts the probability of each allophonic process of English to be identified by the respondents of the present questionnaire and provides *Table 7* that sums up the predictions.

4.2 Allophonic processes of vowels

Vowels of English and Czech do not undergo as many allophonic processes as consonants.

Palková claims that Czech vowels are **always pronounced fully**, their position in spoken Czech is stable and they do not get much influenced by surrounding consonants (1994, 170).

4.2.1 Vowel duration

The vowel duration in **Czech** is determined by the diacritics over the specific vowel in written form of words. As described in section 3.1.1, Czech has five long and five short vowels.

When describing differences in vowel length within **English**, the following consonantal sound must be taken in consideration. According to Ladefoged and Johnson, a vowel of a given quality is longest in an open syllable, next longest when followed by a voiced consonant and shortest when followed by a voiceless consonant (2011, 100). This kind of difference occurs in words shown in (42) that are used in the present questionnaire. To illustrate the distinction, *Figure 2* shows word *bee* with vowel /i/ of approximate length 320 milliseconds, while *Figure 3* shows word *beet* containing the same vowel quality but with different duration, approximately 180 milliseconds. The same rule applies to diphthongs. However, this phenomenon does not relate to words ending in /m/, /n/, /ŋ/ and /l/ since these phonemes do not have their voiceless variant (Cruttenden 2001, 95).

(42) *bee* ['bi:] – *beet* ['bit] – *bead* ['bi:d]

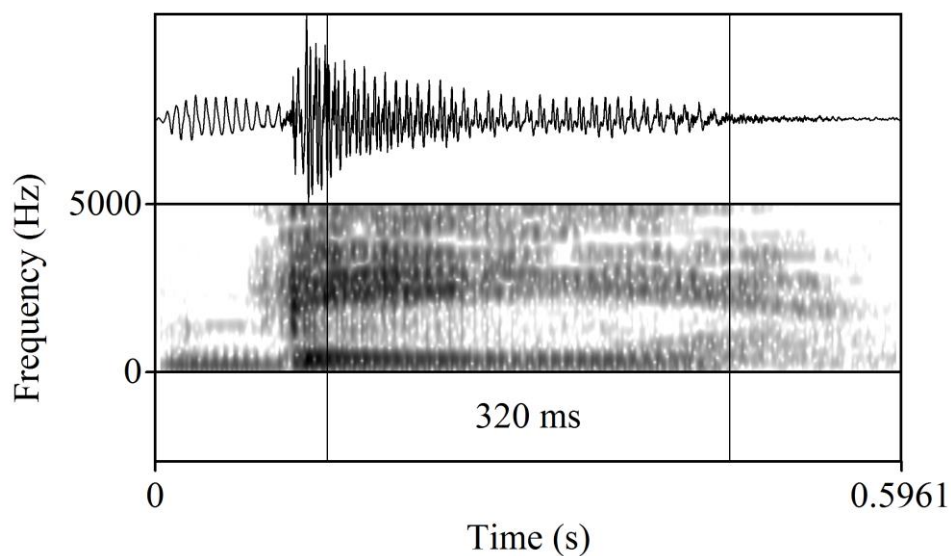


Figure 2: *Waveform and spectrogram of word 'bee'*⁸

⁸ Recording *bee.wav* was downloaded from <http://slovník.seznam.cz>.

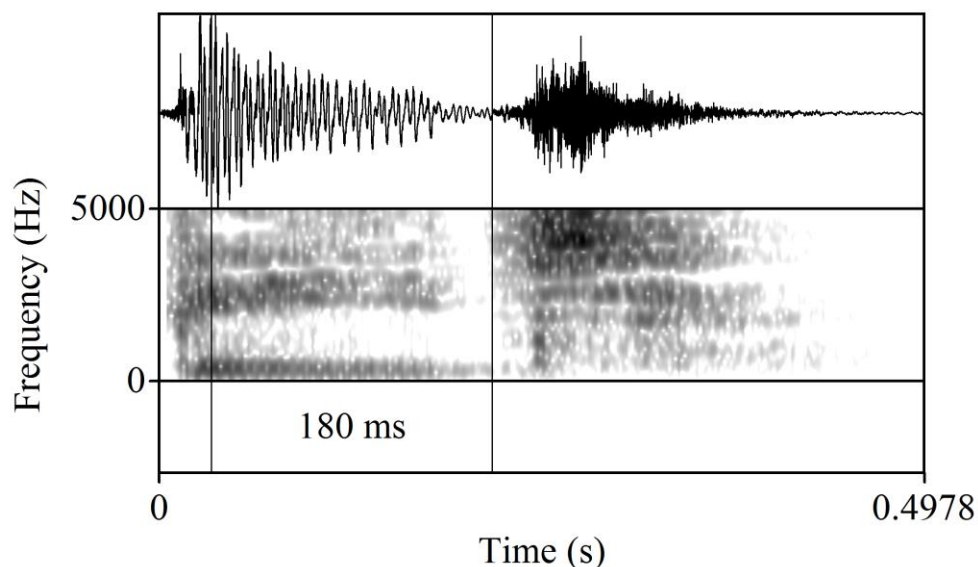


Figure 3: Waveform and spectrogram of word 'beet'⁹

It is very unlikely that the respondents will notice such distinction. The most possible outcome is that they will interpret the English vowel as of same length as its Czech “counterpart”.¹⁰ Similarly as in a study made by Flege (1980) with Saudi Arabians, the Czech subjects will most probably pronounce all the vowel sounds with approximately the same length. The probability of recognition is therefore low.

4.3 Allophonic processes of consonants

4.3.1 Aspiration of voiceless stops

A distinctive allophonic process of English is aspiration of voiceless stops that does not take place in Czech. Voiceless stops /p/, /t/ and /k/ become aspirated when they are stressed and syllable initial. Their release is followed by audible plosion, a small **burst of noise**. After this, the post-release phase follows. During this period, the air escapes through the vocal cords and makes audible /h/ sound which is called **aspiration**. Then the voicing of a following sound begins with vocal cords coming together (Roach 1991, 32). They can be aspirated when occurring before most of vowel sounds as well as some consonant sounds – the approximants, as described in section 4.3.2. Aspiration is common in the majority of English varieties and it characterizes the sound of English.

⁹ Recording *beet.wav* was downloaded from <http://slovník.seznam.cz>.

¹⁰ The Czech “counterparts” to English vowels are summarized in *Table 3* in section 3.1.3.

In GA, speakers tend to minimize the aspiration or even leave the voiceless stops unaspirated, though.

VOT plays an essential role in pronouncing stop consonants and describing aspiration of these sounds. It is the period of time that passes between the release of a stop and the onset of voicing (Cruttenden 2001, 152). VOT is usually measured in milliseconds. Ladefoged and Johnson describe three different lengths of VOT (2011, 151):

- 1) **Fully voiced stops** have their VOT negative (less than zero) because the vocal cords start to vibrate before the actual release of the stop.
- 2) **Unaspirated voiceless stops** have their VOT neutral. The reason for this is that the voicing of a following vowel sound starts right after the release of the stop.
- 3) **Aspirated voiceless stops** have their VOT long. The longer the VOT is, the longer the aspiration is. VOT values for aspirated voiceless stops generally range from 40 to 75 ms, depending on the speaker and the neighbouring sounds (Cruttenden 2001, 152).

Aspiration is one of the allophonic processes that are mentioned by teachers at high schools. It is an important rule that, when omitted, can cause misunderstandings as described later on in section 4.3.2. It is true that voiceless stops are similar to each other acoustically, meaning that they require relatively short burst and a small amount of energy (Lieberman and Delattre and Cooper 1952, 499). In terms of acoustic salience, we can say that [p^h] has greater VOT than [t^h] and [k^h] and therefore could be more easily recognizable by EFL learners (Cruttenden 2001, 156). On the other hand, when comparing the frequency rate of phonemes /p/, /t/ and /k/ several findings arise. In their research study from 1952, Liberman, Delattre and Cooper examined perception of voiceless stops followed by a vowel and proved the dominant acoustic salience of /t/. They used a pattern playback machine that enabled converting a drawn spectrogram into a sound. Schematic stops were played to the subjects and their task was to tell the stop they heard. The results showed that the schematic stop was judged as /t/ at frequency rate from approximately 2520 Hz to over 4320 Hz compared to /p/ and /k/ with maximum frequency of approximately 2520 Hz (Lieberman and Delattre and Cooper 1952). Considering these statements, it is probable that the respondents might not recognize [k^h] as easily as [p^h] and [t^h]. For all these reasons, the probability of

recognition of aspiration is middle. A word pair in (43) shows aspirated [k^h] in English versus unaspirated [k] in Czech.

(43) *coat* ['k^həʊt] – *kout* ['kout]

When a voiceless stop is preceded by /s/, it is not aspirated. An English–English word pair from the present questionnaire is shown in (44).

(44) *spill* ['spɪl] – *pill* ['p^hɪl]

4.3.2 *Changes of voicing*

Change of voicing happens a lot in the Czech language. A number of Czech voiced consonants lose the voicing either when preceded or followed by a voiceless sound – thus assimilation of voicing takes place, meaning that a voiced sound changes into a voiceless sound or vice versa in order to assimilate to a neighbouring sound so that the whole sound segment is voiced or voiceless (Palková 1994, 145) – or when they appear at word-final position. This causes Czech learners' voicing mispronunciations in English.

For example, Czech learners of English usually incorrectly pronounce final sounds of English words as voiceless because this allophonic process takes place in Czech. This can lead to major misunderstandings since voicing at the end of English words is important for keeping the meaning of words. The word pair examining this phenomenon that is used in the present questionnaire is shown in (45). The respondents are expected to identify the distinction. They are told about it at school and they most probably know about devoicing of Czech consonants. There is a difficulty, though. Cruttenden says that stops in running speech of colloquial English are usually not fully released (Cruttenden 2001, 158). In this case, the duration of the preceding vowel helps to identify the nature of the final sound (Cruttenden 2001, 154).¹¹ When a Czech learner hears a native speaker talking, the unreleased stop in word-final position could give them an impression of a devoiced consonant. Thus the degree of probability of recognition is middle.

(45) *led* ['lɛd] – *led* ['let]

¹¹ Section 4.2.1 deals with vowel duration.

Another difference in voicing is when voiced stops /b/, /d/ and /g/ are word-initial. In this case, speakers of English tend to devoice the stops to some extent. Foreign speakers, when pronouncing word-initial voiceless stops /p/, /t/ and /k/ unaspirated might be left misunderstood since the native speaker might perceive the unaspirated voiceless stop as its voiced counterpart (Cruttenden 2001, 154). For example, word *pack* might then be understood as *back*. In Czech, the VOT of voiced stops is negative, meaning that the voicing starts before the release of the stop and the sound is then fully voiced. There is a low probability that Czech learners of English will notice a difference in voicing of English word-initial /b/, /d/ and /g/ compared to these stops in Czech. The difference is not very audible and the VOT values are similar. An example word pair that was used in the present questionnaire is shown in (46).

(46) *back* [ˈbæk] – *bek* [ˈbɛk]

Devoicing, at least partial, in English also occurs when an initial **aspirated stop** is followed by an **approximant** (Ladefoged and Johnson 2011, 73). This phenomenon is examined in an English–English word pair shown in (47). The probability of recognition of such distinction is again low because the acoustic difference between a voiced and a devoiced approximant is minor. Moreover, the following vowel gives the impression that the approximant is actually voiced.

(47) *clay* [ˈkɫeɪ] – *lay* [ˈleɪ]

4.3.3 *The release stage of stops*

In English, stop consonants do not always have to be released. This means that they are not pronounced fully in certain situations. To illustrate an unreleased stop, the superscript symbol is used and /t/ becomes [t[̚]], for example. According to Cruttenden, apart from other circumstances, stops usually become unreleased or have a distinct release in the following situations (Cruttenden 2001, 157-160):

- 1) In **syllable final** positions, there is usually no audible release of a stop. Because this process appears mostly in running speech of colloquial English, it is not significant for the purpose of the present thesis.
- 2) In **stop clusters** (when a stop is followed by another stop or an affricate), the release of the first stop is not audible. This happens either when the two stops occur side by side within a word or at word boundaries.

- 3) When **followed by a nasal** (either syllabic or initial in the following syllable), the air comes out through the nose. This phenomenon is called “nasal release”.
- 4) When **followed by a lateral approximant /l/**, the release of a stop consonant happens in a way that one or both sides of the tongue are lowered to allow the air to escape. This is called “lateral release” and it applies for a situation when the /l/ sound is either syllabic or initial in the next syllable or word.

The present questionnaire contains a few word pairs examining the difference between English unreleased stops as part of stop clusters and Czech stops that are **always released**. The word pair in (48) shows such distinction. It is very unlikely that the respondents will recognize an unreleased stop. Although the released stop is more acoustically salient than the unreleased one, the difference is minor and more or less unidentifiable to a Czech learner. In terms of comprehension, we can say that if an EFL learner pronounces both stops in a stop cluster as released, the message will stay clear and unchanged, not leading to a misunderstanding. There is even not a single reference to this rule in English textbooks for Czech high schools.

(48) *sect* ['sɛkʔt] – *sekt* ['sɛkt]

4.3.4 Assimilation of place of articulation

In English, this kind of assimilation can be spotted in words with **dental fricatives**. In this case, alveolar consonants change their place of articulation to dental when before a dental consonant. A word pair from the questionnaire in (49) shows different place of articulation of /n/. The author of the present thesis expects low probability of identifying such change in articulation by the respondents since the difference is only minor. Alveolar ridge and upper front teeth are in near proximity and Czech learners are not expected to notice the difference in place of articulation. They will most likely pronounce the [ɲ] sound correctly with their tongue touching the upper front teeth but they will perceive it as regular [n].

(49) *ten* ['tʰɛn] – *tenth* ['tʰɛɲθ]

The specific assimilation of place of articulation that English and Czech have in common is pronouncing velar nasal instead of alveolar nasal before velar stops. In Czech, the velar nasal [ŋ] is an allophone of /n/ unlike in English where /ŋ/ came to be classified as a phoneme (see section 4.3.7). Czech words that include this kind of

assimilation are both original Czech words as well as loanwords (Hůrková 1995, 30). Since the velar nasal appears also in Czech, the respondents should easily identify it. An English–English word pair in (50) shows the difference in distribution of /ŋ/ and /n/ in English.

(50) *sing* ['sɪŋ] – *sin* ['sɪn]

4.3.5 *Assimilation of manner of articulation*

In English, alveolar stops /t/ and /d/ usually become affricated when followed by /j/ or /ɹ/. Affrication means that /t/ becomes [tʃ] and /d/ becomes [dʒ]. When /t/ or /d/ is followed by /ɹ/, the /ɹ/ sound adopts some features of the affricated [tʃ] and [dʒ] and becomes a fricative (Cruttenden 2001, 172).

An alveolar stop acquiring additional feature and becoming an affricated stop might be more or less well recognized by the respondents. The acoustic features of sibilants¹², /ʃ/ and /ʒ/ in our case, cause them to be more easily audible compared to other consonant sounds. As an example of acoustically salient sibilant, Ladefoged and Johnson mention the usual frequency rate of /s/, reaching from 5000 to 6000 Hz (2011, 202).

For the reasons described above, it is highly probable that the respondents will identify affrication of alveolar stops, as shown in (51).

(51) *would you* ['wʊdʒ ju] – *would I* ['wʊd aɪ]

4.3.6 *Velarization of /l/*

This allophonic process can be heard in English but not in Czech. Phoneme /l/, when at the end of a word after a vowel, before a consonant or when syllabic, becomes **velarized** (Ladefoged and Johnson 2011, 77). Some American varieties of English use the [ɫ] in the middle or as a first sound in a word, as well. Velarization is a secondary articulation at the soft palate (Palková 1994, 145). High school graduates might identify the “dark l” since they can hear it a lot from the speakers of GA, even in the word-initial or middle positions. However, since the velarized /l/ does not play an important role in changing meaning of words and it can also fall to the native category [l], the probability

¹² Sibilants are louder at a higher pitch (Ladefoged and Johnson 2011, 175).

of recognition is therefore predicted middle. A pair illustrating the difference that was used in the present questionnaire is shown in (52).

(52) *film* ['fɪlm] – *film* ['fɪlm]

4.3.7 Ng coalescence

Historically, /ŋ/ in English occurred only before /k/ or /g/ and it was not classified as a phoneme, it was an allophone of /n/. However, with the deletion of /g/ in the sequence /ŋg/, /ŋ/ became a phoneme. Most varieties of English including RP omit the final consonant /g/ (Cruttenden 2001, 199). When in the middle of a word, another rule applies, though. A word consisting of one morpheme is pronounced with /g/, while a word containing two or more morphemes is usually pronounced without /g/.

Czech loan words containing *-ng* sequence are pronounced with the final /g/ which is devoiced and becomes [k]. For example, Czech borrowing *gang* would be pronounced ['geŋk] or ['gaŋk]. This will most probably cause mispronunciation of English words ending in *-ng*. Moreover, as mentioned in the previous paragraph, speakers of some varieties of English pronounce the [g] sound as well so Czech learners might perceive it this way. There is thus middle probability of recognition of such distinction. The word pair used to illustrate this phenomenon in the questionnaire is shown in (53).

(53) *bang* ['bæŋ] – *bank* ['bæŋk]

4.4 Table of allophonic differences

High probability	Affrication of alveolar stops followed by [ɹ] or [j]
	Distribution of velar nasal
Middle probability	Aspiration of voiceless stops
	Voicing of final consonants
	Velarization of /l/
	Ng coalescence
Low probability	Vowel duration
	Voicing of /b/, /d/ and /g/ at word-initial position
	Devoicing of approximants preceded by an aspirated stop
	Unreleased stops in stop clusters
	Dental place of articulation of /n/ before a dental fricative

Table 7: Allophonic differences

5 The sample questionnaire in practice

5.1 Sample questionnaire

The sample questionnaire is shown in *Appendix*. It consists of two parts – open questions and practical part (including pairs of words). The respondents of the present questionnaire will be students of the fourth year at a high school who intend to study English at a university. The present questionnaire will be handed to the students in paper but the process of filling it will be in a spoken way. The practical part will be discussed with a student in Czech to allow them to express their thoughts properly. The respondents will be asked to comment on each pair of words and try to describe the identified differences in pronunciation in detail.

The transcriptions of words are shown to illustrate the differences in pronunciation. They will not be shown to the respondents. GA transcription is included for a number of words that are pronounced differently by a GA speaker than by an RP speaker.

5.2 Results analysis

To test the validity of the present questionnaire, three students of the fourth year at high school intending to study English at a university were asked to take part. For the sake of further analysis, each respondent's answers were recorded. The students pronounced each word aloud and tried to identify the differences in pronunciation and describe them. This section provides sample analysis of the recordings and points out some wrong pronunciations of words.

The first part (open questions) was discussed mostly in English. The subjects described their English education – the average length of learning English was 11 years, starting approximately in the second grade of primary school. Their methods of learning English pronunciation other than at school were generally similar – watching films with English subtitles, listening to songs and reading internet articles in English. None of the respondents attended any private lessons or courses of English. Speaker 2 had an experience of being misunderstood when pronouncing word *tissue* as ['tisu]. The other subjects did not remember any such situation but pointed out that, for example, vowels, when pronounced wrong way, could cause misunderstandings. When thinking of differences between English and Czech, all subjects mentioned the contrast between /ɪ/ and /i/, saying that the Czech trill sounds “sharper”, in some way. They also pointed out the fact that phoneme /w/ does not occur in Czech.

When it comes to comparing author's presumptions to the actual results, several findings arise. Those differences that were classified as highly probable to be identified were generally quite well spotted by the respondents.

A problem arose when the respondents were asked to differentiate final voiced consonants in English from final devoiced consonants in Czech. Speaker 2, for example, pronounced English word *led* as [lɛt], thus making it sound the same as the Czech *led*, as seen in *Figure 4*. The alveolar closure was not accompanied by the vibration of vocal cords, therefore /t/ was pronounced.

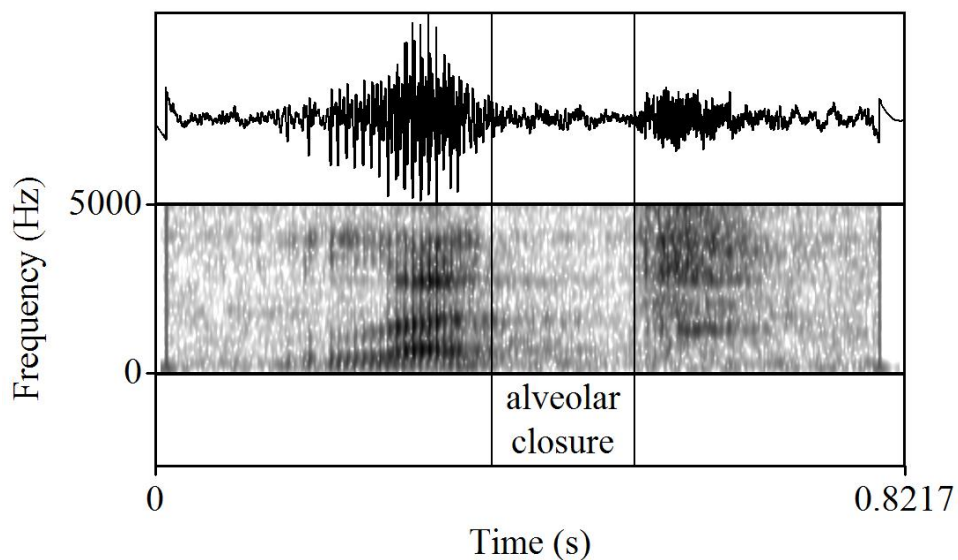


Figure 4: Word 'led' as pronounced by Speaker 2

Speaker 1 also had difficulties pronouncing the final consonants in English words properly, contrary to Speaker 3 who was quite aware of this phenomenon.

The subjects had a lot of difficulties with aspiration of voiceless stops. Speaker 2 did not use aspiration at all or incorrectly in word *spill*, for example, as shown in *Figure 5* where the burst of noise is illustrated.

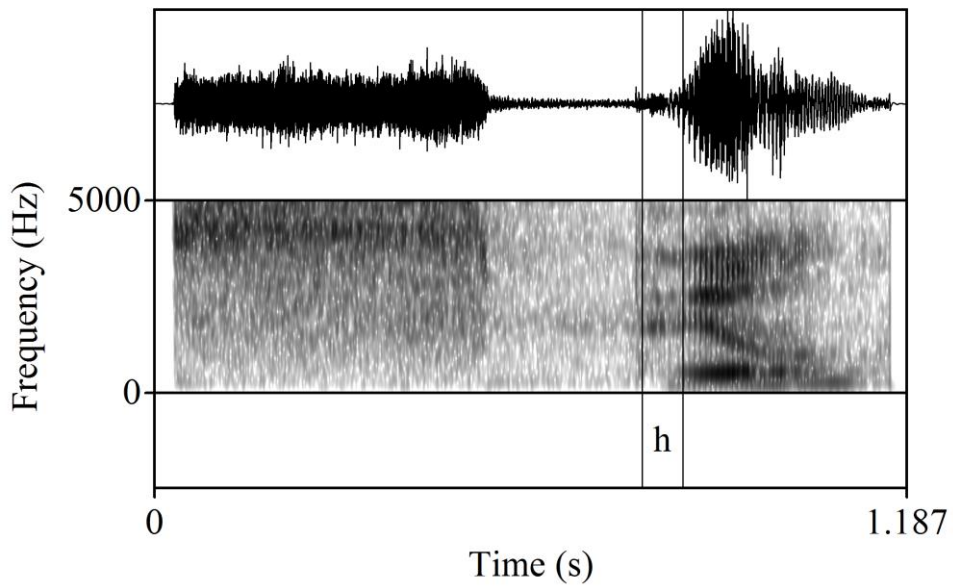


Figure 5: Word 'spill' as pronounced by Speaker 2

Speaker 1, on the other hand, used aspiration correctly in most words. *Figure 6* shows unaspirated /t/ in word *still* while *Figure 7* shows this consonant pronounced with aspiration in *till*.

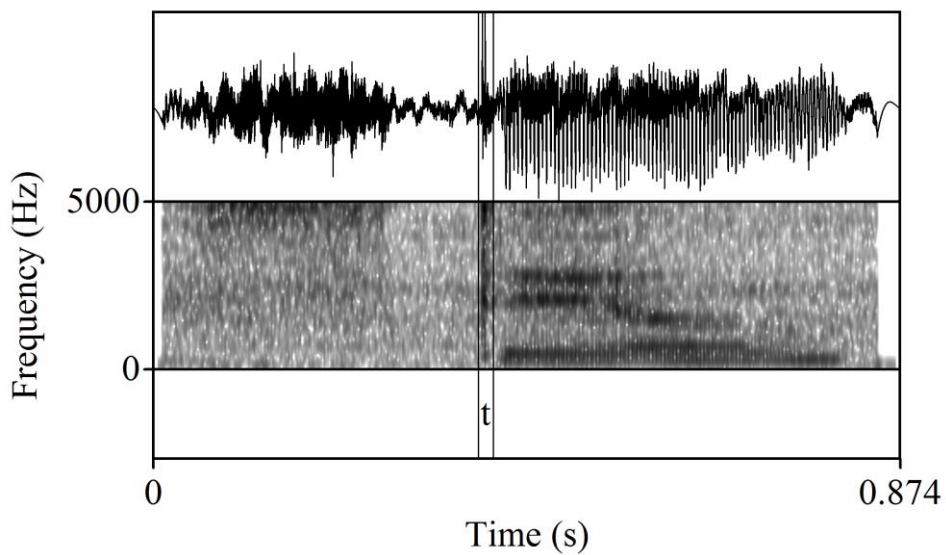


Figure 6: Word 'still' as pronounced by Speaker 1

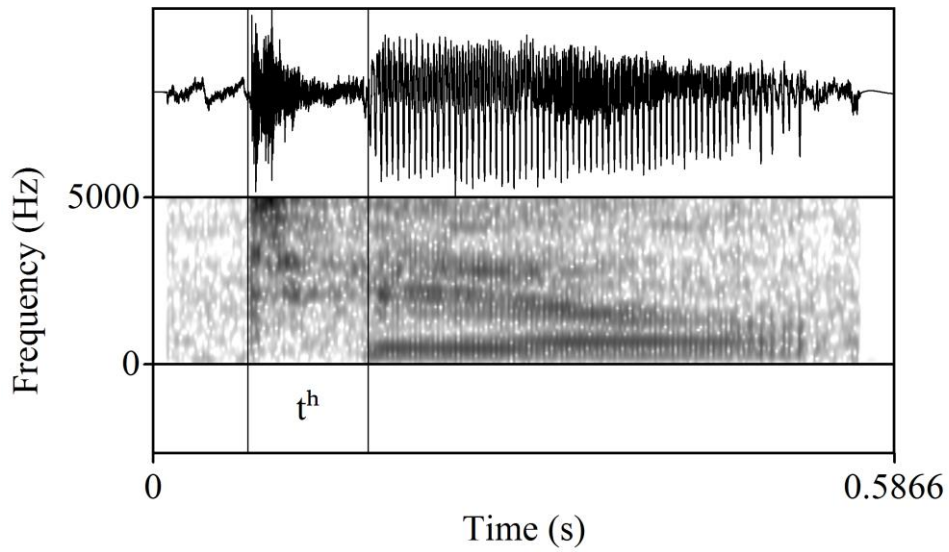


Figure 7: Word 'till' as pronounced by Speaker 1

Unrelease of a stop followed by another stop is one of the allophonic processes of English that none of the respondents identified. Word *skateboard* in particular brought some interesting findings. All subjects pronounced the [t] fully released. *Figure 8* shows the released [t] in *skateboard* pronounced by Speaker 2.

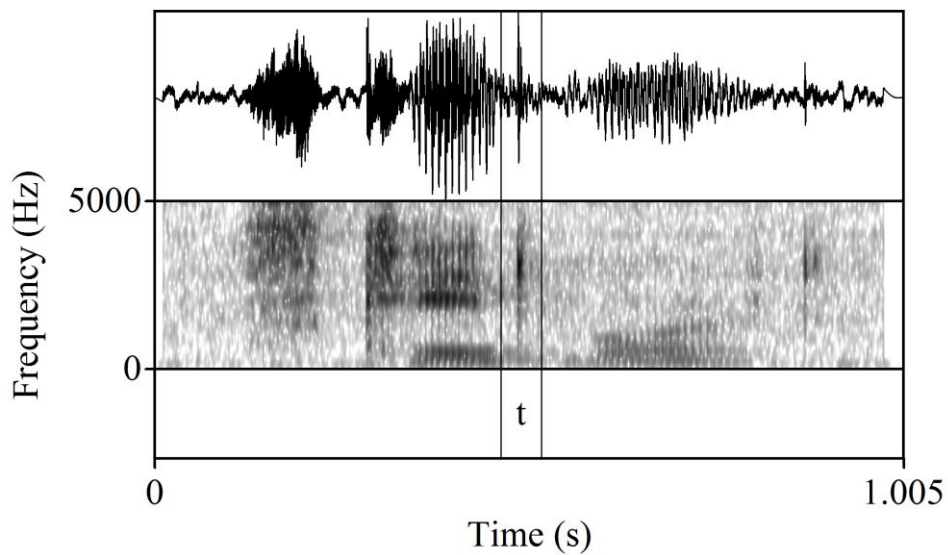


Figure 8: Word 'skateboard' as pronounced by Speaker 2

The respondents had difficulties recognizing different lengths of vowels in English–Czech pairs of words, as well as in English–English pairs. A problem arose with words *look* and *book* which Speakers 1 and 2 pronounced with vowel /u:/. As for the other pairs of words with difference in vowel duration, despite pronouncing these words correctly, the subjects did not realize the different duration of the vowels. This happened in a number of cases. *Figure 9* shows word *pig* as pronounced by Speaker 3, with vowel length of 160 milliseconds while *Figure 10* shows word *pick* as pronounced by Speaker 3, with vowel length of 115 milliseconds. The difference in the vowel length was made clear but the subject still did not manage to identify it.

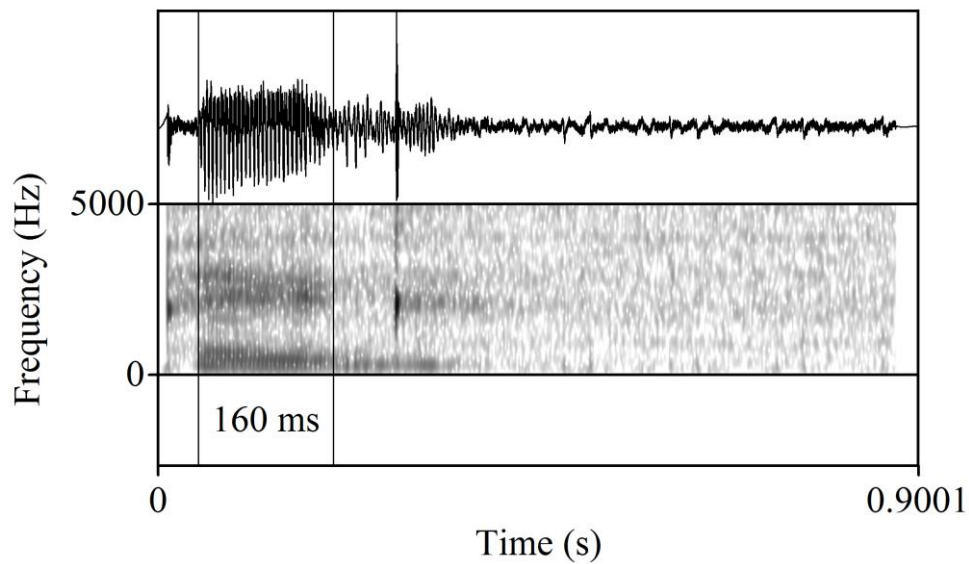


Figure 9: Word ‘pig’ as pronounced by Speaker 3

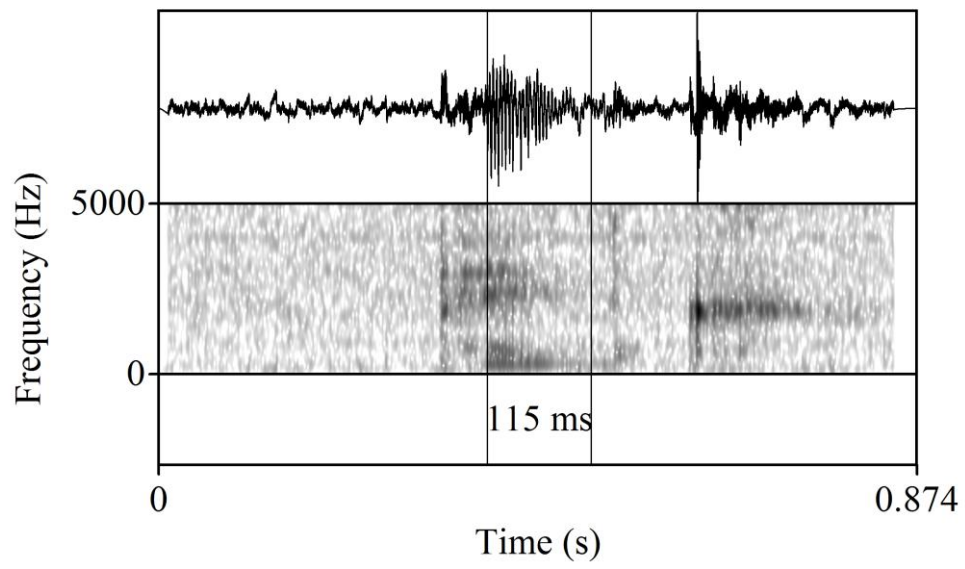


Figure 10: Word 'pick' as pronounced by Speaker 3

6 Conclusion

The present thesis aimed on differences in pronunciation between English and Czech, focusing on RP and Standard Czech. The author focused on phonemic and allophonic differences. Suprasegmental features of pronunciation were not dealt with. A research proposal was made and the sample questionnaire was tested by interviewing three future students of English at a university.

The respondents of the present questionnaire did not succeed to identify the differences in many cases. Among allophonic processes that were not recognized or that the respondents found greatest difficulties with were unreleased stops, vowel duration and aspiration of voiceless stops. Surprisingly, aspiration of voiceless stops, predicted by the author as an allophonic process that could be rather identifiable by the subjects, meant more difficulties than expected, eventually. Speaker 2 incorrectly pronounced a number of words, using aspiration in words like *spill* or *still*.

Although students pronounced a number of words correctly and made the difference between the English and the Czech word clear, they often did not realize the distinction or could not find the right words to describe it, even when the discussion was in Czech. Czech alveolar trill /r/, for example, was described as “sharp” or “hard” compared to English rhotic approximant /ɹ/ which sounded “softer” and “more indefinite” to the respondents. The respondents also happened to pronounce a number of words incorrectly but subsequently realized the mispronunciation and claimed that the word should be pronounced differently.

The research proposal is available for future research on this topic and with some possible modifications it can serve as a more detailed study of Czech learners’ implicit knowledge of English pronunciation.

7 Resumé

Tato bakalářská práce se zabývá rozdíly ve výslovnosti angličtiny a češtiny na fonémické a alofonické úrovni se zaměřením na výslovnostní normy Received Pronunciation a spisovné češtiny. Na základě kontrastivní analýzy výslovností obou jazyků byl sestaven vzorový dotazník, který může sloužit jako prostředek pro výzkum na téma „implicitní znalosti českých mluvčích o anglické výslovnosti.

V první kapitole popisuje metody, podle nichž v dalších kapitolách predikuje znalosti budoucích studentů angličtiny na vysokoškolské úrovni. Nejdříve se autor zabývá obecným vysvětlením problematiky učení se výslovnosti cizího jazyka. Poté popisuje aspekty, na základě kterých si studenti tvoří své znalosti. Ty dělí na explicitní a implicitní, kde explicitní znamenají vědomosti nabyté z hodin angličtiny, tj. z učebnic a od učitele, a implicitní jsou utvářeny postupným posloucháním daného cizího jazyka a následným utvářením svého povědomí o pravidlech jeho výslovnosti.

V dalších dvou kapitolách autor popisuje rozdíly ve výslovnosti Received Pronunciation a standardní češtiny na fonémické a alofonické úrovni. Ke každému jevu je uveden příklad, který je použit v navrženém dotazníku. Autor zároveň predikuje pravděpodobnost toho, že respondenti dotazníku daný rozdíl znají, či si ho všimnou.

Poslední kapitola představuje vzorový dotazník, který byl vyzkoušen se třemi absolventy gymnázia, aby se ověřila funkčnost. Autor poté analyzuje nahrávky z rozhovoru a identifikuje největší chyby ve výslovnosti.

8 Works Cited

- Best, Caroline T. 1995. "A direct realist view of crosslanguage speech perception." In *Speech perception and linguistic experience: Issues in crosslanguage research*, edited by W. Strange, 171–204. Timonium, MD: York Press.
- Cruttenden, Alan. 2001. *Gimson's Pronunciation of English*. London: Edward Arnold Publishers, Ltd.
- Flege, James E. 1980. "Phonetic approximation in second language acquisition." *Language Learning* 30:117–34. Accessed April 20, 2015. http://jimflege.com/files/Flege_phonetic_approximation_LL_1980.pdf.
- Flege, James E. 1987. "The production of 'new' and 'similar' phones in a foreign language: Evidence for the effect of equivalence classification." *Journal of Phonetics* 15:47–65. Accessed April 3, 2015. http://jimflege.com/files/Flege_new_similar_JP_1987.pdf
- Flemming, Edward. 2009. "The phonetics of schwa vowels." In *Phonological weakness in English*, edited by Donka Minkova, 78–98. London: Palgrave Macmillan.
- Harris, Michael, David Mower, and Anna Sikorzyńska. 2006. *New Opportunities Intermediate Student's Book*. Harlow: Pearson Education Ltd.
- Hawkins, Sarah, and Jonathan Midgley. 2005. "Formant frequencies of RP monophthongs in four age groups of speakers." *Journal of the International Phonetic Association* 35:183–99. Accessed December 8, 2015. http://journals.cambridge.org/abstract_S0025100305002124
- Hummel, Kirsten M. 2014. *Introducing Second Language Acquisition*. Chichester: John Wiley & Sons, Inc.
- Hůrková, Jiřina. 1995. *Česká výslovnostní norma*. Praha: Scientia.
- King, Robert D. 1967. "Functional load and sound change." *Language* 43:831–852. Accessed November 20, 2015. <http://www.jstor.org/stable/411969>

Ladefoged, Peter, and Keith Johnson. 2011. *A Course in Phonetics*. Boston: Wadsworth Cengage Learning.

Liberman, Alvin M., Pierre Delattre, and Franklin S. Cooper. 1952. "The role of selected stimulus-variables in the perception of the unvoiced stop consonants." *The American Journal of Psychology* 65:497–516. Accessed December 5, 2015. <http://www.jstor.org/stable/1418032>

Palková, Zdena. 1994. *Fonetika a fonologie češtiny*. Praha: Univerzita Karlova.

Roach, Peter. 1991. *English Phonetics and Phonology*. Cambridge: Cambridge University Press.

Skarnitzl, Radek, and Jan Volín. 2012. "Referenční hodnoty vokálních formantů pro mladé dospělé mluvčí standardní češtiny." *Akustické listy* 18:7–11. Accessed December 8, 2015. http://fu.ff.cuni.cz/vyzkum/Ska_Vol2012.pdf

Slovník spisovného jazyka českého. 2011. "Slovník spisovného jazyka českého." Accessed April 21, 2015. <http://ssjc.ujc.cas.cz>.

Soars, John, Liz Soars, and Sylvia Wheeldon. 2007. *New Headway Pre–Intermediate Student's Book*. Oxford: Oxford University Press.

Soars, Liz, John Soars, and Eva Paulerová. 2012. *New Headway Intermediate Maturita Student's Book*. Oxford: Oxford University Press.

Swan, Michael, and Bernard Smith. 2001. *Learner English*. Cambridge: Cambridge University Press.

Šimáčková, Šárka. 2003. "'Engela's Eshes': Cross-linguistic perception and production of English [æ] and [ɛ] by Czech EFL learners trained in phonetics." *Proceedings of The 15th International Congress of Phonetic Sciences* 15:2293–96. Accessed December 4, 2015. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2003/papers/p15_2293.pdf

Volín, Jan, and Radek Skarnitzl. 2006. "Fonologická výjimečnost české znělé labiodentály." *Kapitoly z fonetiky a fonologie slovanských jazyků* 16:251–64. Accessed December 4, 2015. http://fu.ff.cuni.cz/vyzkum/Vol_Ska2006.pdf

9 Appendix

9.1 Part 1 – Open questions

- 1) How long have you been learning English? Do you learn English only at school or do you attend any English courses or private lessons?
- 2) Do you learn pronunciation only by listening to the teacher? What other methods do you use to learn and practice pronunciation?
- 3) Do you have any experience of being misunderstood when pronouncing a word wrong way? Think of some examples that could put you in such situation.
- 4) When you compare Czech and English sounds, what differences come to your mind?

9.2 Part 2 – Differences in pronunciation of given pairs of words

9.2.1 Phonemic and allophonic differences between English and Czech

Read the following words aloud and focus on the differences in pronunciation of individual sounds. What sound/s do the words (or their underlined parts) differ in? Try to describe the difference in detail.

EN	CZ
hot ['hɒt] / ['hɑt]	hod ['fiot]
rent ['ɪent]	<u>renta</u> ['renta]
hit ['hit]	hit ['fiɪt]
led ['lɛd]	led ['lɛt]
lava ['lavə]	láva ['la:va]
boat ['bəʊt] / ['bɔʊt]	<u>obout</u> ['obout]
lob ['lɒb] / ['lab]	lob ['lop]
sect ['sɛk't]	sekt ['sɛkt]
drill ['dʒɪl]	drill ['driɪl]
smog ['smɒg] / ['smɔg]	smog ['smok]
twist ['twɪst]	twist ['tvɪst]
than ['ðæn]	den ['den]
karma ['kʰɑmə] / ['kʰɑɪmə]	karma ['karma]
rest ['ɪɛst]	rest ['rɛst]
bought ['bɔt] / ['bɑt]	bod ['bot]
thin ['θɪn]	Fin ['fin]

crab [ˈkræb]	krab [ˈkrap]
<u>card</u> [ˈkɑːd] / [ˈkɑːɪd]	<u>karta</u> [ˈkarta]
pool [ˈpuːl]	pûl [ˈpu:l]
fact [ˈfækt]	fakt [ˈfakt]
back [ˈbæk]	bek [ˈbæk]
film [ˈfɪlm]	film [ˈfɪlm]
<u>partner</u> [ˈpɑːtnə] / [ˈpɑːtɪnə]	<u>partner</u> [ˈpartnər]
look [ˈlʊk]	luk [ˈluk]
ham [ˈhæm]	ham [ˈfiam]
wick [ˈwɪk]	povyk [ˈpovɪk]
coat [ˈkəʊt] / [ˈkɒt]	kout [ˈkɒt]
beat [ˈbiːt]	bít [ˈbi:t]
trick [ˈtrɪk]	trik [ˈtrɪk]
doom [ˈduːm]	dûm [ˈdu:m]
book [ˈbʊk]	buk [ˈbuk]
spleen [ˈsplɪn]	splín [ˈspli:n]
luck [ˈlʌk]	lak [ˈlak]
pull [ˈpʊl]	<u>pult</u> [ˈpult]
suck [ˈsʌk]	<u>sako</u> [ˈsako]

9.2.2 Differences in pronunciation within English

Look at the following pairs of English words and try to spot the differences in pronunciation of the underlined parts. Try to describe the difference in detail.

<u>spill</u> [ˈspɪl]	<u>pill</u> [ˈpɪl]	
<u>bee</u> [ˈbi:]	<u>beet</u> [ˈbiːt]	<u>bead</u> [ˈbiːd]
<u>till</u> [ˈtɪl]	<u>still</u> [ˈstɪl]	
<u>sing</u> [ˈsɪŋ]	<u>sin</u> [ˈsɪn]	
<u>ray</u> [ˈreɪ]	<u>prey</u> [ˈpreɪ]	
<u>bill</u> [ˈbɪl]	Billy [ˈbɪli]	
<u>panther</u> [ˈpæntə] / [ˈpæntə]	<u>pan</u> t [ˈpænt]	
<u>need</u> [ˈniːd]	<u>neat</u> [ˈniːt]	
w <u>ould</u> you [ˈwʊdʒu]	w <u>ould</u> I [ˈwʊd aɪ]	
<u>scan</u> [ˈskæn]	<u>can</u> [ˈkæn]	

cl <u>a</u> y ['k eɪ]	l <u>a</u> y ['leɪ]
ch <u>i</u> ll ['tʃɪl]	ch <u>i</u> ll <u>y</u> ['tʃɪli]
skate <u>b</u> oard ['skeɪtˈbɔ:d] / ['skeɪtˈbɔ:ɪd]	skate <u>r</u> ['skeɪtə] / ['skeɪrə]
te <u>n</u> ['tʰen]	te <u>n</u> th ['tʰeɪθ]
ba <u>n</u> g ['bæŋ]	ba <u>n</u> k ['bæŋk]
tr <u>y</u> ['tɹaɪ]	ti <u>e</u> ['tʰaɪ]
si <u>l</u> ly ['sɪli]	si <u>l</u> k ['sɪk]
ma <u>n</u> go ['mæŋgəʊ] / ['mæŋgou]	ma <u>n</u> ly ['mænli]
cho <u>i</u> ce ['tʃɔɪs]	bo <u>y</u> s ['bɔɪz]
good <u>i</u> sh ['gʊdɪʃ]	good <u>b</u> y ['gʊdˈbaɪ]
tw <u>i</u> st ['twɪst]	w <u>h</u> isper ['wɪspə] / ['wɪspə]
mo <u>n</u> th ['mʌθ]	ma <u>n</u> ['mæn]
cup <u>c</u> ake ['kʰʌpˈkeɪk]	cu <u>p</u> ['kʰʌp]