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MAGISTERSKÁ DIPLOMOVÁ PRÁCE

Factors Affecting a Foreign Accent in a Second Language: A Study into the Accent of Czech Students of Japanese

Faktory ovlivňující míru cizího přízvuku v nerodilém jazyce: studie výslovnosti českých studentů japonštiny

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Tato diplomová práce se zabývá faktory ovlivňujícími cizí přízvuk v japonštině u studentů japonské filologie Univerzity Palackého v Olomouci. Práce je rozdělena na část teoretickou a část praktickou. Teoretická část se soustřeďuje na vymezení pojmu „cizí přízvuk“ v rámci japonského jazyka, popisuje zásadní rozdíly mezi českou a japonskou fonetikou a fonologií a shrnuje předchozí výzkum zaměřený na hodnocení cizího přízvuku v druhém jazyce. Praktická část popisuje metody, průběh a výsledky výzkumu provedeného na 31 studentech bakalářského a magisterského studia japonštiny s různou úrovní jazyka. Cílem této práce bylo zhodnocení přízvuku v japonštině u zúčastněných studentů a nalezení faktorů, které jejich přízvuk zásadně ovlivňují. Výsledky výzkumu ukázaly, že dva ze zúčastněných studentů obdrželi hodnocení, které se výrazně nelišilo od hodnocení přízvuku jednoho z japonských rodilých mluvčí. Ani u jednoho ze zkoumaných faktorů nebylo dokázáno, že by zásadně ovlivňoval cizí přízvuk v japonštině u českých studentů.

I would like to thank the supervisor of my thesis, Mgr. Ivona Barešová, Ph.D, firstly for her patience and encouragement and secondly for giving me valuable advice and helping me when I was conducting the experiment.

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ABBREVIATIONS

AOL	-	Age of learning
ALM	-	Audio-lingual method
ANOVA	-	Analysis of variance
CLT	-	Communicative language teaching
CP	-	Critical period
CPH	-	Critical period hypothesis
CzL	-	Czech learners
HSD	-	Honesty significant difference
IPA	-	International phonetic alphabet
L1	-	Native language
L2	-	Second language
LOR	-	Length of residence
MLAT	-	Modern langage aptitude test
PCA	-	Phonetic coding ability
RP	-	Received pronunciation
RT	-	Rating time
R1–R4	-	Rater 1–4
S1–S3	-	Sentence 1–3

EDITORIAL NOTE

Modern Hepburn romanization was used for transcribing Japanese characters in this paper. All Japanese terms are written in italics followed by an English translation in brackets unless further explanation of the term is provided.

1 INTRODUCTION

Second language acquisition appears to be a widely popular subject of linguistic research as the vast number of recent studies on this topic suggests. A considerable amount of these studies concentrates specifically on the phonetic and phonological attainment of a second language, trying to explore how it works and how it can be affected. It has been demonstrated several times throughout the years that even advanced learners of a second language often retain a certain level of foreign accent easily recognized by native speakers of the target language. Many researchers collaborated with second language users in their experiments in order to state which factors are salient regarding the degree of foreign accent in one's speech. Although the methods and objectives of individual studies vary, several factors seem to be examined regularly by researchers from all over the world. These factors are: age at which a person starts learning another language, length of residence in the target language speaking country, motivation, formal instruction, language use, language aptitude and gender (see e.g. Piske, MacKay & Flege, 2001).

The main objective of this diploma thesis is to provide a comprehensive overview of existing literature on factors influencing foreign accentedness in a second language and to investigate which factors affect the degree of foreign accent of Czech students learning Japanese. No experiment of similar nature has been so far conducted with these two languages, which has its positive aspect but it also means overcoming specific difficulties. The positive aspect could be bringing new findings into the field of accent attainment while the difficult part concerns a limited amount of materials which could be used as a basis for the present research. Since a majority of studies on accentedness deals with English as the target language, researchers often use speech materials, e.g. sentences or word lists, already constructed for previous experiments. This was not applicable for the Japanese speech materials, yet the English materials still served as a guideline for creating the Japanese ones. In order to find out which features should be targeted in the speech materials, consonant and vowel inventories of Czech and Japanese were compared as well as phonological rules applied in both languages.

The research conditions also differed from many studies as it is more common to examine the accent of learners residing in the target language country (see e.g. Flege, Munro & MacKay, 1995; Moyer, 2007). All Czech learners (CzL) of Japanese

participating in the present experiment, however, lived in the Czech Republic. It can be thus expected that the factors affecting the degree of their foreign accent in Japanese might vary from factors which would be salient for the accent of CzL residing in Japan. There is one more question which arose regarding the fact that all participants have lived for most of their lives in the Czech speaking environment: *Was any of the participants able to achieve at least near native-like accent in Japanese?* Reaching the ultimate attainment in a second language, in other words acquiring an accent unrecognizable from that of native speakers is rare even for highly motivated learners who live long-term in a target language country. It is a secondary objective of this thesis to find out if any of the participating CzL of Japanese approached the native-like level in their accents. Based on previous research, native Japanese speakers were asked to assess the level of perceived foreign accent of the CzL of Japanese. Native speakers appeared to be suitable candidates for this task as they are extremely sensitive to detecting foreign accent in their native language (see e.g. Flege 1984; Munro, Derwing & Burgess, 2010).

The foreign accent ratings elicited from the native speakers were then used for subsequent analysis examining which factors could be potentially significant for affecting learners' accent. These factors were explored via questionnaire filled in by all CzL of Japanese who agreed to participate in the present experiment. The data collected from the questionnaires served as variables correlated with the accent ratings.

This thesis is divided into two main parts – a theoretical part and the actual research. The theoretical part provides a review of existing literature on the topic of phonetic and phonological attainment in a second language. Firstly, it defines the terms *accent* and *foreign accent*, further stating the salience of acquiring a near native-like accent in a target language. Secondly, the differences between Czech and Japanese phonetics and phonology are described. Thirdly, individual factors claimed to affect the degree of foreign accent are discussed in detail. Last part of the literature review concerns methodology used in previous research. The second part of the thesis first introduces the research questions and hypotheses outlined prior to conducting the experiment. Methodology and procedure of the experiment are described in the next section followed by interpretation of the results and final discussion.

2 LITERATURE REVIEW

2.1 DEFINING ACCENT

It is necessary for this paper to first define the word *accent* as there are considerable differences in approaching the term in various linguistic studies. The Oxford English Dictionary defines accent as "a distinctive way of pronouncing a language, especially one associated with a particular country, area, or social class." This definition, however, seems to be too narrow and thus can mislead people into thinking accent and pronunciation of a language can be used interchangeably. While pronunciation focuses only on the segmental level of a language, accent refers "to suprasegmental features as well: intonation, rhythm, pitch, segmental length, tempo and loudness" (Moyer 2013, p. 10). A similar problem may occur when using the term *dialect*, which is often interpreted in the same way as accent. In this case, the scope of dialect is broader in referring not only to the phonetics and phonology, but also to a discursive style, vocabulary and grammar of a particular language variety (ibid.).

The issue of defining accent might become even more complicated if the use of the Japanese word *akusento* is taken into consideration. Most studies into Japanese accent (eg., Ayusawa, 2003; Sugito, 1983; Shport, 2008; Yuzawa, 2002 etc.) are concerned with acquisition of so-called *pitch accent* (also *word accent*) that is in these studies frequently referred to simply as *accent*. It is important to stress that the term in Japanese is primarily used to describe only the rising or falling pitch of individual words, not including other segmental or suprasegmental features in its scope. Nevertheless, there are exceptions that can be found among research papers on assessing native or non-native accent in Japanese. Amino and Osanai (2013, p. 71) classified accent identification research into three groups depending on whether it was based on segmental and articulatory features, prosodic features or both. In their research they focused mainly on the prosodic characteristics, with pitch being an important feature, but they included some segmental characteristics as well. To avoid any potential confusion, for the purposes of the present paper, Moyer's (2013) broader interpretation of the term accent will be adopted, referring to both segmental and suprasegmental level of a language.

2.1.1 Foreign accent

As already mentioned above, our accent is associated with the country and region where we were born or where we live, as well as with our social class. In addition to this, there is a number of other factors such as gender, age or level of education which make the accent of each individual unique (Moyer, 2013, p. 10). All these factors apply to the accent in both a native language (L1) and a second language (L2). The main focus here will be put on the accent of L2 learners and what it is that makes them sound foreign or native-like while speaking in a second language. Foreign accent is a phenomenon, which affects social interactions to a large extent as it has an impact on both perception and production of a language (Munro and Derwing, 2005, p. 379). Munro's (1998, p. 139) definition of foreign accented speech says that it is "nonpathological speech produced by L2 learners that differs in partially systemic ways from the speech characteristics of native speakers".

It is interesting to observe how sensitive native speakers are to the presence of foreign characteristics in the speech of L2 learners. To test listeners' sensitivity to non-native speech, Munro et al. (2010) performed series of experiments with Canadian English speakers assessing three different accents (Mandarin, Cantonese and Czech) in English utterances presented backwards. The results showed that the listener's ability to distinguish native from non-native speakers was above chance-level, even for a single-word stimulus. Another example of listeners' sensitivity is Flege's (1984) research, carried out with native English speakers judging the accent of American and French subjects in English. Astoundingly, the judges were able to detect French accent in a speech sample as short as the first 30ms of the syllable /tu/. Major's (2007) findings also deserve a mention here as they raise new questions regarding foreign accent and its rating. The listeners in Major's study were divided into four groups depending on their native language and familiarity with Brazilian Portuguese, which was the language being evaluated. Surprising results were found in the group of American judges, who were able to distinguish native from non-native speakers without any Portuguese experience. As one of the possible explanations for these results, Major suggested the existence of "salient universal features of non-native speech" (p. 551). These examples clearly demonstrate that foreign accent is a very complex aspect of language and despite the large number of already performed experiments, there is still need for further research.

2.1.2 The salience of accent

One question commonly asked by most learners and teachers of L2 concerns the importance of accent in relation to intelligibility in L2 communication. Does accent really matter and can a strong foreign accent be seen as a constraint on intelligibility? Some researchers emphasize intelligibility as the main aspect of L2 learning, not considering a native-like accent to play deciding role in social interactions between native and non- native speakers (eg. Jenkins, 2002; Morley, 1991).

Based on a study of Munro and Derwing (1995), even highly accented speech can be rated as perfectly intelligible, which suggests that accent has a minimal effect on being understood by listeners. If the act of successfully conveying a message is the only goal that L2 learners want to achieve, then perhaps accent does not represent a salient feature of L2 acquisition. However, in a similar way one's accent in L1 influences how communication partners perceive each other, non-native accent in L2 also has a considerable impact on other people's attitudes towards the speaker. As Levis (2016) states, "[a]ccents provide us with a social anchor, an identity" (p. 153).

Foreign accented speakers can often encounter negative reactions of natives depending on social contexts. Attitudes towards those speakers are usually related to a certain amount of prejudice and stereotypes associated with a particular country. For example, Cargile and Giles (1998) found that Americans judged the speech of Japanese learners of English "less attractive" than the speech of native speakers, but the ratings on social status were comparable for both groups. This might be explained by the American stereotypical image of the Japanese as hard-working and intelligent as these qualities are usually associated with higher status in a society (Barnlund 1974, Mayovich 1972).

Finally, negative evaluations of accent may lead to discrimination, especially in the domain of employment. A number of cases prove that job applicants with a native accent stand a better chance of finding a job than those who sound foreign (Moyer, 2013). Regarding job interviews, accent is only a part of the overall impression a person makes on an employer and it does not have to be the decisive factor. Nevertheless, Cargile (2000, p. 167) mentions an experiment performed by Henry and Ginzberg (1985) proving that accent on its own can limit job opportunities. Participants with standard and nonstandard accents were making phone inquiries about jobs advertised in newspapers. While the standard accented speakers were in most cases invited for an interview, the nonstandard speakers were told that the same position was no longer available. It is clear

that the discrimination was based solely on the perception of nonstandard patterns in applicants' speech and the prejudices associated with it.

In conclusion, despite the fact that speaking with a foreign accent does not necessarily mean being less intelligible, there are situations when a non-native speech leads to discrimination in both private and working life. Therefore, the focus on achieving native-like accent might be important, especially for L2 learners who live, or plan to live, and work in L2 speaking country.

2.2 DIFFERENCES IN CZECH AND JAPANESE PHONETICS AND PHONOLOGY

Since the differences in phonetics and phonology of Czech and Japanese language present the most obvious potential difficulty for Czech speakers who want to reach, or at least approach, a native-like Japanese accent, it is important to state the differences in this paper before proceeding to other factors affecting the degree of L2 learners' foreign accent.

2.2.1 Differences in vowel inventories

Starting with vowel inventories of the two languages, they both have five short vowel phonemes, namely /a/, /i/, /u/, /e/ and /o/ and the phonological characterization of these vowels in terms of height and backness of the tongue is similar for Czech and Japanese. There is a difference in realization of the front vowel /e/, which is characterized as a mid-low [ɛ] in Czech, but mid [e] in Japanese. The main difference, nevertheless, lies in roundedness of the vowel /u/. While in Czech /u/ belongs to the group of rounded vowels with a clear lip protrusion, Japanese /u/ is unrounded and the lip protrusion is minimal. The IPA symbol [ɯ] could be used for the phonetic realisation of Japanese /u/ as in Kubozono (2015), yet as the author points out "it is not as flat as what the IPA symbol [ɯ] is supposed to denote" (p. 2). In modern Japanese, the vowel /u/ is along with /i/ also the shortest and they are often devoiced (Campbell, 1992).

Both languages have five long counterparts to the five short vowels and three diphthongs, although not all linguists agree on the number of vowel sequences that function as diphthongs in Japanese. Kubozono (2015), for example, states that there are three diphthongs /ai/, /oi/ and /ui/, whereas Novák (1987) considers a diphthong also /ei/. This vowel sequence, however, is mostly pronounced as [e^{i}]~[e:], which suggests it does not always behave as a diphthong. There is no such disagreement regarding diphthongs in Czech, which are /ou/, /au/ and /eu/, the last two occurring only in loanwords and interjections (Šimáčková, Podlipský & Chládková, 2012).

2.2.2 Differences in consonant inventories

Moving to consonant inventories of Czech and Japanese, more differences can be found between the two languages. Since Japanese fricatives seem to be a significantly

problematic group of Japanese consonants, they will be discussed in greater detail. There are three allophonic realisations of /h/ in Japanese, two of which may be most prone to mispronunciation by Czech speakers. The first allophonic form is a voiceless bilabial fricative [ɸ] occurring before /u/. This consonant is in Czech language transcribed as /f/, e.g. *fune* (ship), *fude* (brush), thus causing confusion with Czech voiceless labio-dental fricative [f]. While the latter is produced by approximation of the lower lip to the upper teeth, [ɸ] is produced by "blowing out air through a narrow opening made by bringing the lips close together" (Iwasaki, 2013, p. 32). The second potentially difficult realisation of /h/ is a palatal fricative [ç], which only occurs before a vowel [i] or a palatal glide [j], e.g. *hito* (person), *hyaku* (hundred). Czech speakers tend to substitute the palatal fricative with its closest equivalent in Czech language, which is a velar fricative [x], or with the third realisation of Japanese /h/ - a glottal fricative [h]. The latter, however, relates rather to insufficient knowledge of Japanese phonemic rules than to confusion caused by similarities between the two sounds.

The last fricative which will be mentioned in this chapter and which has a very close place of articulation in Czech and Japanese is a voiceless alveopalatal fricative [ɕ], as in *shita* (below). This sound can be mistaken by CzL of Japanese for a postalveolar fricative [ʃ] as both sounds are made by a constriction at the postalveolar region. The difference is that the area of constriction in [ɕ] is much larger, including also the area between postalveolar and palatal regions (Vance, 2008, p. 14).

There is one more Japanese consonant, which deserves a brief comment. It is an alveolar consonant /r/ classified as a tap [ɾ] in Japanese and as a trill [r] in Czech. The Czech trill is, nevertheless, "commonly realized with a single contact" (Šimáčková et al., 2012, p. 226), making the articulatory difference between the two sounds less obvious.

A note that should be made when talking about consonants in Japanese concerns the presence of long, also called geminate consonants. In spite of the fact that geminate consonants occur in many languages including Czech, it is the duration of geminate voiceless stops occurring word-internally in Japanese which may cause problems to non-native speakers. Han (1992, p. 103) states that "a geminate stop is composed of a moraic stop plus a single stop and its total duration is expected to be longer than twice the duration of a single stop". Han conducted an experiment with Americans fluent in Japanese to investigate if they were able to produce single stops and geminate stops of the same duration as native speakers. For the test she used minimal pairs of single and geminate stops such as *supai* (spy) – *suppai* (sour), *haken* (dispatch) – *hakken* (discovery)

(Han 1992, p. 104). The results showed that the Americans did not always differentiate between single and geminate stops and they pronounced them with random duration. It is possible that Czech speakers fluent in Japanese will have similar problems as the American speakers in this matter, therefore, it seemed relevant to include geminate voiceless stops in the speech materials of the present research.

2.2.3 Phonological rules

Concerning phonological rules in Japanese, it is the process of vowel devoicing which should be mentioned here in the first place. This process typically occurs in Tokyo Japanese and it concerns two short high vowels /i/ and /u/. The non-high vowels also seem to undergo devoicing occasionally, it is, however, significantly less common in comparison to high vowels (Venditti & van Santen, 1998). It is important to stress that in all Japanese dialects only short vowels devoice, whereas long vowels are not affected under any circumstances (Teshigawara, 2002, p. 50). In most cases, high vowels are devoiced either when they occur between two voiceless consonants as in *shika* (deer) [ʃi̥ka] or word finally as in *kashi* (lyrics) [kaʃi̥] (ibid., p. 49). The word-final condition requires a voiceless consonant preceding the high vowel followed by a pause or by another voiceless consonant (Vance, 2008). Teshigawara (ibid.) also states that vowel devoicing "can be observed in certain contexts where accent and vowel devoicing interact". Imaizumi, Hayashi & Deguchi (1995, p. 769) further note that speech rate could be an important factor in this matter. As this phonological process does not occur in Czech, it might be either completely ignored by some CzL when speaking Japanese or omitted by mistake, which is why vowel devoicing is one of the features targeted in the present experiment.

2.3 FACTORS AFFECTING THE DEGREE OF FOREIGN ACCENT

Throughout the existing studies, several factors have been suggested which may affect the degree of foreign accent of L2 learners. It is not an easy task to conclude which factors can be considered salient due to the inconsistent results of previous research. Among the most commonly examined factors belong "age of L2 learning, length of residence in an L2-speaking environment, gender, formal instruction, motivation, language learning aptitude and amount of L1/L2 use" (Piske et al., 2001, p. 195) Six of these factors will be discussed in greater detail in this chapter. The only factor omitted will be the length of residence in an L2 speaking environment, which does not seem to be relevant for the present study as all subjects live in the Czech Republic and none of them resided in L2 speaking country for more than one year.

2.3.1 Age of L2 learning

Age of L2 learning (AOL) is a factor referring to the point when an individual begins learning L2 and it is nearly always associated with the critical period hypothesis (CPH). Proving or adjusting this widely studied concept introduced by Penfield and Roberts (1959) and refined by Lenneberg (1967) seems to be one of the main concerns of researchers focusing on second language acquisition (SLA). With respect to phonology, the hypothesis states that people can attain a native-like accent in L2 only if they start learning the language before they reach certain age, in other words, before the end of the "critical period" (CP) (ibid.). Although many studies agree on the existence of such a period, the opinion on the boundary beyond which the native-like attainment of an accent is restricted, differs significantly. Scovel (1988), for instance, came to the conclusion that the age of 12 years should be seen as the end of CP, whereas Patkowski (1990) moves the supposed boundary to the age of 15 years. Both view these ages as a clear dividing line between the ability to reach native-like accent and the inevitable preservation of foreign patterns in learner's speech. Long (1990), however, suggests that we lose the ability to learn L2 without a foreign accent gradually, with the most "sensitive period" being between the ages of 6 and 12 years. This supports the findings of Oyama's (1976) study conducted with immigrants in the USA, whose accent ratings showed quite a linear decline with increasing age. Piske et al. (2001, p. 196) points out that there is a difference between "critical" and "sensitive" period and observes that these two terms

should not be used interchangeably. Results showing continuous decline in the ability to achieve native-like accent can be also found in more recent studies such as Munro and Mann's (2005) accent analysis of 42 Mandarin speakers who learned English as L2. Although this paper only presents accent ratings of learners up to the age of 16, the age- related decline was apparent.

Providing a slightly different example related to the effects of age on L2 replication, a study of English schoolchildren done by Tahta et al. (1981) can be mentioned. The children were all monolingual and their ages ranged from 5 to 15 years. Their task was to replicate pronunciation and intonation of words and short phrases in French (familiar to most subjects) and Armenian (unfamiliar to all subjects). The ability to replicate foreign sounds was proven to be affected by the age of participants, but the effect differed for pronunciation and for intonation. While pronunciation ability declined steadily over the whole age range, intonation figures showed a sudden drop from 8 to 11 with slight improvement in French for 13 to 15-year-old subjects. This "asymmetry between segmental and suprasegmental abilities suggests that … segmental vs. prosodic features may be controlled by different mechanisms with different 'offset' points implied" (Moyer, 2013, p. 23).

Most studies agree on the fact that age has the strongest effect not only on learners' phonological performance but also on language acquisition in general. However, there are a few examples of individuals who succeeded in reaching the ultimate attainment despite AOL after puberty. Admittedly, the occurrence of such talented learners is rather rare. For example, in Purcel and Suter's (1980) experiment, only one participant out of 61 Asian learners of English was judged as native by one of the raters. Moyer (1999) also describes one outstanding native-like performance in a group of 24 German speaking teachers employed in the German program at the University of Texas. Bongaerts et al. (1997) conducted research with Dutch subjects who were highly proficient in English to find out whether they achieved native level in L2 even as late learners. Five of the participants received ratings comparable to those of native speakers, thus supporting the initial hypothesis. Ioup et al. (1994) focused on an exceptional talent of a British woman speaking native-like Egyptian Arabic in order to determine what factors played a crucial role in her ultimate attainment. They concluded that the most decisive factor in this matter was that the subject had "the neuropsychological brain organization that typifies talented language learners" (p. 93). In spite of the fact that only a small number of late learners appears to possess the aptitude for achieving native-like speech patterns, the ability of

these learners demonstrates the interplay of more factors affecting the degree of foreign accent and it also calls CPH into question.

Lenneberg's (1967) original explanation of the existence of CP suggests that native-like L2 acquisition is dependent on neural plasticity, which seems to decline around the time of puberty. If this were the case, the neurocognitive development of adult learners who managed to master L2 on a native-like level would have to differ in some respect and there is little evidence supporting this theory (eg. Ioup et al., 1994; Novoa et al., 1988). Moreover, just as there are adult learners who managed to overcome the alleged biological restrictions, there are also cases of learners whose accent was judged non-native despite their early start. "The earlier the better" rule proposed by many scholars was not supported by García-Lecumberri & Gallardo's (2003) research, which showed that students with AOL ranging from 4 to 8 years received worse accent ratings than those who started learning L2 at the age of 11.[1] Although researchers suggested that this was caused by the lack of natural English-speaking environment, even the Italian subjects of Flege et al.'s (1997) study who arrived in Canada around the age of 3 had mild, yet detectable, foreign accent when speaking English.

Singleton (2005) noted that one more essential defect of CPH is that there are many versions of this hypothesis which are "mutually contradictory" (p. 269). The number of studies questioning CPH seems to be rather high, which indicates that CP should not be regarded a decisive restriction of attaining native-like accent (see MacLeod & Stoehl-Gammon, 2010, p. 401 for review). As was already stated, it is important to bear in mind that AOL is only one of several factors that can affect learners' phonological competence.

[1] Mean time-span of exposure for all students was 6 years (García-Lecumberri and Gallardo, 2003, p. 120).

2.3.2 Motivation

To begin with, the relation between motivation, learner's attitudes and orientations should be briefly mentioned in this chapter as the varying definitions of these three terms lead to a lot of confusion in SLA research. Many studies and books attempted to make the distinction clear, Gardner (1985) being probably the most cited and also most criticized one (see e.g. Crookes& Schmidt, 1991; Belmechri & Hummel, 1998; Noels, 2005). Despite these attempts, even more recent works might still confuse the reader, such as Moyer (2013), who described motivation and attitudes as two different concepts falling under the category of socio-psychological factors, but at the same time defined motivation as "a kind of super construct that incorporates attitudes" and orientation as one of the "essential qualities" of motivation (p. 68). Since the three terms are closely related and distinguishing them is not essential for the present paper, they will be used interchangeably hereafter.

Motivation has been proposed as an important factor affecting all levels of language learning, including pronunciation. Carrió-Pastor & Mestre Mestre (2014) define L2 motivation as "the various purposes that are part of the goals to learn a second language" (p. 240). Most studies further differentiate two types of motivation – *integrative* and *instrumental*. As the term suggests, *integrative* motivation refers to "the desire to integrate into the target language community" (ibid.), whereas *instrumental* motivation can be defined as the vigour that pushes someone to achieve specific goals associated with a reward, which can be either social or economic, for example passing an exam or a promotion (ibid.). When comparing the long-term effects of these two differently oriented motivations on SLA, learners with a strong desire to assimilate into the target language culture seem to be more successful in their learning over a longer period of time (Crookes & Schmidt, 1991). This does not mean, however, that the instrumental motivation should be regarded as less significant and, in fact, it is rare for L2 learners to choose only one type of motivation when learning a second language (Brown, 2000). What plays an important role in this matter is whether L2 learners live in the target language country while studying a second language. Locastro (2001, p. 69) mentions that students who learn L2 in a classroom in their country of origin appear to be mostly career oriented or they view L2 learning as a necessary condition for studying abroad, thus being mainly instrumentally motivated. The integrative motivation is, in this case, important to considerably fewer students than the instrumental motivation. Graham

(1984) further distinguishes between *integrative* and *assimilative* motivation, with the former being independent from first-hand experience with the target language culture, while the latter occurring only among learners with long term experience with the target language environment. He argues that assimilative motivation may be a decisive factor for achieving native-like level in L2 and that even children cannot reach this level unless they have the opportunity to interact with natives (p. 80).

A different approach to motivation, also generally accepted by many linguists, deals with *extrinsic* versus *intrinsic* motivation. Similarly to instrumentally motivated learners, those who are extrinsically motivated anticipate for their actions a "reward from outside", such as money, prizes or degrees (Brown, 2000, p. 164). On the other hand, the reward for intrinsically motivated individuals is "the activity itself or the feelings which result from the activity" (Deci, 1972, p. 217). This type of motivation is considered to be a stronger predictor of long-term success and, therefore, it is the one which is emphasized in foreign language classrooms (Brown, 2000, p. 165).

With respect to phonology research, many studies have confirmed motivation to be an important factor affecting the accent of L2 learners. The studies already mentioned in connection to the ultimate attainment of late L2 learners mostly concluded that the fact that all participants with native-like accent were highly motivated strongly affected their L2 performance (see Bongaerts et al., 1997; Moyer, 1999; Purcel and Suter, 1980). An experiment conducted by Munoz and Singleton (2007) could be also presented here to support the claim that not only one type of motivation matters. The focus of this research was put on two female Spanish learners of English who received the highest ratings for their accent from the native English-speaking judges. One of the participants made a conscious effort to avoid speaking her native Spanish in her private life and assimilate with Irish culture, thus showing mostly integrative orientation. The motivation of the other participant was decidedly intrinsic as she had a very positive attitude toward the language but she disliked England and described English people as "very cold" (p. 184).

Focusing on specific attitudes of L2 learners, Moyer (2013) states that the following four factors are associated with accent more than most others:

- concern for pronunciation accuracy;
- desire to sound native;
- self-rating of, and/or satisfaction with, accent and overall L2 attainment;

- attitudes toward the target language and culture. (p. 70)

In her previous research, Moyer (2007) concentrated on how attitudes affect the accent of immigrants in the USA along with AOL and length of residence in the country (LOR). She noted that there was a trend showing that participants who perceived themselves as highly fluent indeed received higher ratings of their accent from the judges. She also discussed how the desire to improve one's accent can influence learners' performance, admitting that despite strong correlation between such desire and the degree of foreign accent, it is difficult to state the practical implications of this factor (p. 510).

The last fact which should be mentioned in this chapter is that attitudes and motivation were found to be very influential with respect to acquiring L2 material (Gardner et al., 1985, p. 225). Not surprisingly, highly motivated individuals with positive attitudes toward the target language are predisposed to put more effort into studying, show more interest and react well to learning tasks, thus achieving high proficiency in L2 more easily than others.

In summary, there are several different types of motivation and learners' attitudes which seem to be relevant to L2 attainment in phonology. It is important that L2 learners incorporate more than one of them, with integrative/intrinsic motivation being especially significant for long-term success. Although investigating the effects of these factors is perhaps more complicated than investigating factors such as AOL or LOR, it is apparent that motivation and learner's attitudes do play a significant role in SLA in general.

2.3.3 Formal instruction

Similarly to already discussed factors, existing literature examining the effects of formal instruction on accent provide rather inconsistent results. A number of studies found that once formal instruction was included among other factors in the multiple regression analysis, it was not a significant predictor of the degree of L2 foreign accent (Thompson, 1991; Elliott, 1995; Flege et al.; 1995). Piske et al. (2001) suggest that the reason why instructional variables do not appear to be an important predictor of accent might be caused by a lack of attention paid to pronunciation in foreign language classrooms (p. 200). Concerning language instruction, there is one question which has to be considered and that is whether the main target should be learners' comprehensibility and intelligibility or the attainment of native-like accent. Since even a heavy foreign accent was not found to necessarily result in decline in intelligibility or comprehensibility (Munro and Derwing, 1999), there is no need to focus on achieving native-like level in foreign language classrooms. This might be one of the reasons why phonetic training does not usually play major role in L2 teaching.

Looking back at the language teaching methods of 20th century, there was a period in the 1950s and 1960s when accent was receiving considerable attention because a new Audio-lingual method (ALM) was introduced as a reaction to previous grammar-oriented methods (Ijewliw, 1968). ALM stressed the importance of phonetic training while encouraging L2 learners to practise their skills in language laboratories and to use special audiolingual equipment such as tape recorders or record players (ibid., p. 211) (see also Samimy, 1989, for a comparative study on teaching Japanese with ALM and Counseling- learning approach). The approach to L2 teaching started changing again with methods such as Cognitivism in 1970s and Communicative Language Teaching (CLT) in the 1980s, focusing on a learner's ability to communicate rather than on improving pronunciation. (Moyer, 2013, p. 149). In spite of the fact that CLT, being one of the prevailing teaching methods today, puts the emphasis on communicative competence, it underrates the necessity to master accent on such a level that a specific speech act can be performed with the right volume, articulation and tempo. These features might seem marginal yet ignoring them can easily cause "serious intercultural misunderstandings" (ibid., p. 148). Pronunciation started to be a more discussed topic in L2 research and teaching again in the mid-1980s and a prominent paper by Pennington and Richards (1986) should be mentioned as it re-examined "the status of pronunciation in language

teaching" and called for "a broader, discourse-based view comprising segmental, voice- setting and prosodic features" (p. 207) (see Morley, 1991, for detailed review of pronunciation teaching approaches).

Learners who aim to reach a high proficiency in L2 could benefit from the instruction concentrating specifically on phonology as it was proposed to be influential with regards to accent. It seems that even an input and practice as short as two weeks can have a considerable long-term impact on learners' phonological competence (Couper, 2006). In Bongaerts et al.'s (1997) research, five Dutch subjects, who reached the native-like accent in English, attended a course focused on intensive training of 'Received Pronunciation (RP) during their first year at the university, which indicates that this type of instruction can be one of the factors leading to a native-like performance. Missaglia (1999) conducted an experiment with Italian learners of German in order to compare the efficacy of two types of pronunciation instruction – "prosody-centred" training and "segment-centred" training. As the participants were all at the beginner level, they also attended German lessons at university. Although both methods helped the subjects to improve their accent, the group receiving "prosody-centred" training significantly outperformed the group with "segment-centred" training. Moyer's (1999) research supports these findings as only when both segmental and suprasegmental feedback was provided to the subjects, it emerged that this type of training is a strong predictor of closer-to-native ratings. Still, many studies examining the effect of formal instruction on accent only include training of specific phonemes, usually those which are commonly mispronounced by L2 learners. Elliott (1997), for example, conducted an experiment with American learners of Spanish, who attended a semester-long course targeting problematic Spanish phonemes to examine the effects of such training on their pronunciation skills. Thomson (2012) in his study used the high variability phonetic training[2] to enhance the ability of Mandarin speakers to identify ten English vowels during eight short sessions. Both experiments proved this type of narrow-focused training to have positive outcomes with respect to learners' phonological competence, even over a longer time span. Despite the apparent efficacy of these methods, they cannot contribute to the attainment of the native-like accent on their own as they target only a very small part of the segmental or suprasegmental level of the language.

[2] The method is based on improving L2 learners' perception by providing them with stimuli produced by more than one talker in more than one phonological context (Thomson, 2012, p. 5).

The last comment regarding pronunciation training deals with the relationship between perception and production of L2. A study by Beach et al. (2001) shows that there is a close connection between these two variables. A group of participants, who were Greek/ Australian-English bilinguals and produced syllables /ba/ and /pa/ in Thai with extreme voice onset times (VOT), also better distinguished the differences in VOT in the perception task. Bradlow et al. (1997) conducted a research with Japanese adults learning English investigating whether the perceptual training of /l/ and /r/ distinction can help the subjects to improve the production of these consonants. Learners indeed showed significant increase in their ability to produce the sounds, thus supporting the theory stating that gains in the perception domain can be consequently transferred to the production domain.

2.3.4 Language use

Language use is, to a certain extent, closely related to formal instruction as it includes the time spent learning L2 at school or any other institution. Suter (1976) was the first to ask participants of his study learning English as L2 about the amount of time they spend in conversation with native speakers at work or at school. Although he found that this variable significantly correlated with pronunciation accuracy, after re- examination of these results and applying the regression analysis by Purcell and Suter (1980), the variable appeared not to be a meaningful predictor of the degree of foreign accent. Nevertheless, there are researchers, who claim that language use is in fact one of the most important factors for attaining native-like level of L2 including L2 phonology. Moyer (2013) observes that "acquisitional constraints long attributed to age may have much to do with the consistency of language use" and she suggests that it is the quantity compared to quality of language use which should be examined (p. 18). In her earlier study, Moyer (2011) found that the context in which L2 learners use the target language seems to be more influential with regards to accent than the quantity of language use. Not surprisingly, the effects of L2 use are to a great extent dependent on whether L2 learners reside in their own country or target language country, as the variables involved in the process of acquiring accent might be different for each environment (see Thompson, 1991). Jia et al. (2002) found that the language used at home can be an important factor in this matter. In their study on long-term attainment of US immigrants, those who lived with L2 speakers had worse results in L1 listening task and participants with mothers highly proficient in L2 outperformed the others in L2 listening and reading task. Generally, using the target language in familiar domains elicits more personal involvement, thus it should lead to better L2 phonological performance than if L2 learners interact with native speakers only in formal domains such as classrooms or work. Interacting with native speaking friends and creating stronger bonds with them appear to have the biggest impact on accent, even bigger than using L2 at home (Moyer, 2011, p. 205; see also Derwing et al., 2007).

According to many scholars, language use effects are apparent, especially when regarding the amount of L2 use relative to L1 use. The results of a vast number of studies show that learners living in the target language country who avoid using their L1 undergo a change in language dominance, leading to an increase in their L2 proficiency (Moyer, 2013). On the other hand, immigrants who remain in the L1 environment and make no

effort to use L2 in their everyday life, do not usually acquire native-like speech patterns. This may apply even for early bilinguals, as was described in Thompson's (1991) study of Russian immigrants in the USA, in which two participants with AOL of 4 years and high L1 proficiency did not divest of foreign speech patterns in their L2. In contrast, an experiment conducted by MacLeod and Stoel-Gammon (2010) showed that early bilinguals (with AOL before the age of 12) can maintain equal language abilities in both languages without any significant change in language dominance. Similar findings are described in Yeni-Komshian et al.'s (2000) study on Korean–English bilinguals living in the USA. Participants of this experiment were divided into 10 subgroups depending on their age of arrival, ranging from 1 to 23 years, and the subjects in each group were judged on their accent in L1 and L2 respectively by Korean and English native speakers. Even though none of the bilinguals received ratings similar to the native speaker controls, one group of participants who immigrated to the USA around the age of 11 performed above average in both L1 and L2.

Recent studies mostly agree on the significance of language use for acquiring native-like accent in L2. Yet not all of the researchers seem to put enough emphasis on the quality of this factor, which, as has been already mentioned, predicts greater gains in L2 phonology than the quantity. It is, of course, the combination of both quantity and quality of language use which influence the degree of foreign accent of learners' speech, so none of these parameters should be omitted. Moreover, the relationship between L1 use and L2 use must be considered, especially in case of L2 learners living in the target language country.

2.3.5 Language aptitude

When the interest in learners' aptitude to acquire a foreign language increased in the late 1950s, the most important issue was to find an effective way of testing this factor (Spolsky, 1995). Carroll & Sapon (1959) laid the foundations of language aptitude testing with their Modern Language Aptitude Test (MLAT), which, among other subcomponents of language aptitude, focused on the phonetic coding ability[3] (PCA) of L2 learners. Interestingly, it is PCA together with empathy that was found to be a predictor of pronunciation aptitude in advanced learners, unlike "the classical measures of phonological working memory" (Hu et al., 2013, p. 374). Despite the existence of MLAT and other similar tests aiming for investigating learners' language aptitude, this factor remains one of the most complicated to assess with regards to its effects on the degree of foreign accent.

Abrahamsson & Hyltenstam (2008) describe language aptitude as "a largely innate, relatively fixed talent for learning languages" and most importantly they state that it is relatively independent of factors such as intelligence, attitudes toward the language and motivation (p. 485). When investigating language aptitude, many researchers concentrate only on learners' ability to mimic speech sounds which are not present in their L1. For example, Thompson (1991) asked subjects of her study to self-estimate their oral mimicry ability on a 7-point scale. Although this factor was found to be a minor predictor of the degree of foreign accent, Thompson concluded that it could still "facilitate the acquisition of accurate pronunciation in L2" (p. 197). The problem with assessing an individual's ability to replicate L2 pronunciation and intonation might be that it seems to decrease with age, as was shown in Tahta et al.'s (1981b) study of English schoolchildren imitating French and Armenian words and phrases. It could, therefore, be misleading to rate learners' aptitude based solely on oral mimicry ability. An experiment conducted by Flege et al. (1999) also incorporates participants' self-rating of the ability to imitate foreign accents and dialects, but it is included along with "musical ability" and "ability to remember how English words are pronounced" (p. 92). To describe these items, they used a collective term "Sound Processing Ability" (ibid.). This factor, however, accounted for only 2% of the variance in degree of L2 foreign accent.

[3] Moyer (2013) simply defines phonetic coding ability as "the ability to identify distinct sounds and retain sound-symbol associations" (p. 52).

Cochran et al. (2010) tried to find if there is any strong connection between the native language aptitude and foreign language aptitude, but no correlation occurred between these variables, probably due to the homogeneity of their subjects. Murakami (1974) points out that aptitude is not essential for reaching at least an average level of L2 proficiency as motivation, learners' interest or accurate formal instruction can successfully compensate for the lack of language talent. Results of Erlam's (2005) research also suggest that a specific type of instruction can be equally beneficial to all L2 learners regardless of their aptitude. Reaching a high level of language aptitude, however, seems to be a necessary condition for attaining L2 on a native-like level (Abrahamsson & Hyltenstam, 2008). As was already mentioned, language aptitude might even enable late learners to overcome maturational constraints connected to CPH (see chapter 2.2.1.). Providing an example, Novoa et al. (1988) in their study tested an exceptional 29- year- old learner who was able to master several languages on a level similar to native speakers in order to determine which neuropsychological factors played role in his language acquisition. Scores from MLAT showed that the subject had high pronunciation aptitude, which helped him to learn new languages with greater ease.

It seems apparent that phonological aptitude affects the degree of foreign accent of L2 learners, but further research of this factor is still needed in order to understand what it is exactly and how it works.

2.3.6 Gender

Some studies concluded that differences in gender might affect the degree of foreign accent (e.g. Thompson, 1991), but a number of researchers did not support these findings (e.g. Moyer, 2004), thus calling the relevance of the factor into question. What makes the matter rather complicated is the fact that gender mostly interacted with other factors such as AOL (see Munro & Mann, 2005; Flege et al., 1995) and only few papers treated gender effects separately (see Moyer, 2010). Daly & Warren (2001) also emphasized that the inconsistent results might be caused by the use of different speech tasks by each researcher.

Nevertheless, the evidence showing that male and female brains differ in language processing, males being left-hemisphere dominant and females bilateral, suggests that gender might have some effect on language acquisition (Lindell & Lum, 2008). Burman et al. (2008) found that women outperformed men in specific language tasks in their L1, which also often seems to be the case in L2 research. For example, Russian female immigrants in Thompson's (1991) study received better accent ratings in English than males and this superiority did not depend on LOR nor the amount of L2 use. Self-report of these women showed that they were more concerned about their pronunciation than men, but on the other hand, they did not put greater effort into improving their phonological skills. Cochran et al. (2010) concluded that the attitudes of female participants of their research toward foreign language learning were more positive than those of male learners, which might have had an impact on their higher language performance.

It is worth pointing out that the accent of males and females is also influenced by using different segmental and suprasegmental features in their speech. There seems to be an inclination toward more standard forms in the case of women, while men usually prefer more casual forms (Adamson & Regan, 1991). Spezzini's (2004) study of Spanish speaking students of English supports this claim as the female participants preferred standard pronunciation and they were judged more comprehensible than male participants. Regarding pitch, Daly & Warren (2001) proved that there is a clear difference between the patterns used by men and women. The pitch range of female speakers allegedly tends to be greater, which might be connected to women's higher awareness of their interlocutors needs and also to their bigger emotional investment in the conversation.

2.4 FOREIGN ACCENT RATING

2.4.1 Rating techniques

So far, an agreement on the most reliable rating technique of accentedness has not been reached, but the common feature of the vast majority of studies is incorporating both native and non-native listeners and letting them judge the degree of perceived foreign accent. The judges, also called raters, are most frequently asked to assess the accent of the participants on a scale, the nature of which can vary greatly depending on each study. Southwood & Flege (1999) investigated whether accentedness can be regarded a prothetic or metathetic continuum in order to find out if it is appropriate to rate the degree of foreign accent on "equal-appearing interval scales", i.e. the most commonly used ones (p. 336). Since a prothetic continuum cannot be partitioned into a set of equal intervals (judges tend to divide this continuum into smaller intervals at its lower end), another rating method than the interval scale is needed for providing valid measurements. Accentedness, however, appeared to be a metathetic continuum, which means it is amenable to linear partitioning into equal intervals and using interval scales for its evaluation is therefore relevant.

Using Likert scales seems to be the prevailing method in existing studies, yet the number of levels on the scale has also been a subject of discussion among L2 researchers for years. Even though psychologist Rensis Likert developed the scale as a strict 5-point scale (Busch, 1993, p. 733), later studies experimented with scales consisting of fewer or more categories in order to increase the reliability of listeners' judgements. Matell & Jacoby (1971) found that the reliability remained stable in scales with 2 to 19 levels, but generally applied scales in L2 research range from 3 to 11 levels. McKelvie (1978) notes that using scales with fewer than 5 categories may lead to a decrease of reliability and more than 11 point-scales do not ensure any improvement in reliability. On the other hand, the advantage of scales with fewer categories might be the fact that it is easier for the raters to differentiate between the levels that are usually explicitly labelled, which is often not the case with more point scales where only the endpoints are defined. An example of a study using scales with fewer than 5 categories is Tahta et al.'s (1981a) research introducing 0–2 scale, where the label for 0 was "no foreign accent", for 1 "detectable but slight accent" and for 2 "marked accent" (p. 267). The same researchers conducted another study in the same year, asking the listeners to judge the degree of foreign accent

on a 4-point scale ranging from 0 to 3, where 0 stood for "an excellent native accent", 1 "good accent", 2 "poor accent" and 3 "very poor accent" (Tahta et al., 1981b, p. 366). It is more common, however, to use scales where only the scalar endpoints are explicitly labelled as "their generic nature offers versatility, in that they can be used with learners from virtually any first language background or proficiency level on any task" (Isaacs & Thomson, 2013, p. 136).

There is another important question to be asked which concerns the usage of either an odd or even number of categories on a scale. Busch (1993) points out that short odd numbered scales could distort the results as they enable the listeners to opt for neutral responses, which "can lead to indecisive data" (p. 735). Nevertheless, scales with an odd number of categories appear to be preferred, especially 5-point scales (e.g. Oyama, 1976; Moyer, 2007; Abu-Rabia & Iliyan, 2011), and 9-point scales (e.g. Flege et al., 1999; Piske et al., 2001; Major, 2007). The study of Isaacs & Thomson (2013) shows that the consistency of judgements elicited using 9-point scales was higher than when using 5- point scales; their suggested explanation being that the scale-step choice of 5-point scales was more restricted (p. 143).

Some researchers experimented with continuous scales, which are usually labelled at the endpoints and also in the middle. For instance, Flege et al. (1995) used a response box showing a continuous scale with a top point defined as "native speaker of English – no foreign accent", middle point as "medium foreign accent" and the bottom point had a label "native speaker of Italian – strong foreign accent" (p. 3127). The value of the scale ranged from 0 to 255 and the raters participating in this study were asked to position a lever at some point on the response box, saving the top endpoint for native speakers of English and bottom endpoint for only one speaker with the strongest foreign accent. In Munro's (1993) research, the judges positioned a cursor on a continuous horizontal scale displayed on a computer monitor. The scale was again defined at 3 points, but there were only numerical values "0" at the left end, "50" in the middle and "100" at the right end (p. 55). The further to the right the cursor was placed, the more native-like the assessed vowel was perceived.

One more method was suggested to provide valid judgement of the degree of foreign accent and that is the direct magnitude estimation (DME). In DME, listeners first give a certain numerical value to the initial sentence serving as a starting point on which they base the rating of following sentences. In Southwood & Flege's (1999) study, the initial sentence, also called 'modulus', was reintroduced at regular intervals throughout

the experiment to ensure that the listeners did not change their “internal standards of accentedness” (p. 338).

2.4.2 Stimuli

The nature and the length of stimuli used for investigating accentedness have varied greatly depending on each study. As was already mentioned in chapter 2.1.1., mere 30ms of one syllable could be considered a sufficient token for rating someone's accent, though longer stimuli are usually preferred by L2 researchers. Quite common, especially in slightly older studies, is the use of words and phrases (see Snow & Hoefnagel-Höhle, 1977; Major, 1987; Flege & Munro, 1994; Bongaerts, Planken & Schils, 1995; Moyer, 1999; Flege, 1984; Derwing & Munro, 1997; Magen, 1998). The inconvenience of incorporating stimuli shorter than a sentence is that some suprasegmental features of speakers' accent may not be perceptible from them. The use of single or multiple sentences and paragraphs, therefore, seems to be more appropriate (Jesney 2004).

Researchers usually tend to elicit speech samples which are as close to a natural speech as possible and any morphosyntactic or lexical errors are undesirable as they could influence the accent ratings. The participants can be asked to repeat directly after a native speaker model or there can be a delay between the model and the subjects repeating what they heard. Intervening speech material can be also included which, together with the delayed repetition technique, might prevent "direct imitations from sensory memory" (Flege et al., 1995, p. 3127). Sentences or words are often provided in context to ensure a more natural flow of participants' speech and the subjects repeating after a native speaker model may also have a written support (e.g. Flege et al., 1995; Piske et al., 2001). In some studies, subjects only read the presented materials of various lengths (e.g. Munro & Derwing, 2001). Another technique of eliciting speech samples is an extemporaneous speech with a prompt so the participants may be asked to, for example, tell a brief anecdote (Oyama, 1976) or describe a picture (Moyer, 2007).

Since the range of methods used for obtaining speech materials is quite wide, there has been a lot of disagreement about which technique produces tokens perceived by the listeners as more foreign accented and why. Several studies, e.g. by Oyama (1976) and Thompson (1991), comparing the ratings of read-aloud stimuli and spontaneous speech concluded that the read passages were judged as more accented than the extemporaneous speech samples. Munro & Derwing (1994) argued that as the participants of these two studies read passages which were given to them and which purposely contained difficult phones, but they could talk about a topic of their interest, the perceived accentedness of these tasks should not be compared. It is expectable that L2 learners would avoid

problematic words or grammatical constructions in the spontaneous speech task. In the reading task, however, learners may encounter unfamiliar words and structures, which results in producing errors and consequently in receiving poorer accent ratings. The subjects of Munro & Dewing's experiment were first asked to tell a story which was presented to them as cartoon illustrations and, after a few days, read a transcription of their own narratives. The results did not show any significant differences between accent ratings of the speaking and the reading task, thus supporting researchers' hypothesis that both read speech and extemporaneous speech are reliable stimuli if speakers' familiarity with the presented material is ensured.

2.4.3 Speakers

Throughout existing literature, speakers recruited for accent rating experiments differed with respect to their L1 background, target language and proficiency in the target language and also with respect to their number. Generally, all these factors varied depending on the purpose of each study. The speakers are usually asked to fill in a questionnaire in order to provide information about their language learning background and about other factors which might have affected their accent in L2.

Starting with the number, certain studies concentrated only on one or two talented L2 learners (e.g. Novoa et al., 1988), whereas other experiments collected stimuli from more than 200 speakers (e.g. Yeni-Komshian et al., 2000). A large majority of studies recruited English as a Second Language (ESL) learners, who did or did not come from the same L1 background. Although homogenous groups of speakers seem to be more common, there are studies incorporating subjects from up to 15 different L1 backgrounds (e.g. Moyer, 2007). Among the most frequently appearing L1 backgrounds belong Italian, Spanish, Portuguese, German, Dutch, French, Russian, Mandarin, Japanese and Korean. Although English is by far the most investigated L2, some studies examined learners of other languages, for example, Dutch, German or Spanish. Some research has also been conducted on the acquisition of Japanese as a foreign language (see Ayusawa, 2003 for a review of studies on the acquisition of Tokyo accent and intonation). From more recent studies, an unusual experiment by Amino & Osanai (2014) deserves a mention here. The participants of this research were Chinese and Korean learners of Japanese who were asked to read telephone numbers in Japanese and their accent was then assessed on a computer as well as by human listeners. The aim of the experiment was to show whether native Japanese speakers are able to recognize non-native accents in the given settings. The listeners could, indeed, distinguish between native and non-native speakers with the average scores being 90.6%, but it is interesting that the average scores for identifying Chinese and Korean speakers were only 53.2%.

A part of the speakers' group usually also comprises native speaker controls who should be included in the research to ensure the reliability of listeners' judgments and to help the raters establish native-speaker norms. It is important that the number of native speaking controls in relation to non-native speakers is not too high or too low as it might distort the results (Jesney 2004). It seems that listeners tend to give non-native participants lower ratings if more stimuli by native speakers are included and, on the other

hand, without any or with just a few native controls, L2 learners might receive considerably higher scores (Flege & Fletcher. 1992).

2.4.4 Raters

As has been already stated in this paper, the most common way of assessing the degree of L2 learners' accentedness is to ask human listeners, often referred to as "judges" or "raters", to give evaluations of the stimuli based on their personal judgments. Having said this, the final ratings can obviously differ depending on listeners' exposure to the assessed language or on listeners' experience with providing phonetic feedback. Existing studies have used the terms "experienced" and "inexperienced" judges, the former usually describing L2 teachers, teaching assistants, phoneticians or even speech therapists, and the latter referring to linguistically untrained listeners with no knowledge of the assessed language.

Both types of raters have been used in L2 research, yet some researchers did not consider non-expert listeners as reliable judges. Thompson (1991), for example, compared ratings of experienced and inexperienced judges and she found that rating reliability of listeners with no linguistic training and minimal contact with L2 learners was considerably lower than that of experienced raters. In contrast, in Bongaerts et al.'s (1997) study all participants provided reliable accent ratings of given stimuli, regardless of their being linguistically trained or not. It seems then that the amount of experience does not necessarily play an essential role in judging listeners' reliability, but it should always be examined to what extent the raters agree on the ratings between each other (inter-rater or between-rater reliability) and also how each individual listener is consistent in his or her ratings (intra-rater or within-rater reliability).

Just as the speakers are in most cases asked to fill in a questionnaire, the raters should also provide some information about their L1 background, experience with the assessed language and most importantly confirm they have no problems with hearing. It is common to recruit judges who are native speakers of the language in which stimuli are presented. Jesney (2004) even points out that "it would seem prudent to avoid the use of non-native speakers as judges wherever possible" as they can rarely reach the native- like level in accent in their L2 (p. 7). Nevertheless, as was already discussed in this paper (see chapter 2.1.1), even non-native judges were able to differentiate between native and non-native speakers of a language with which they had no previous experience. It, therefore, does not seem erroneous to include subjects with no experience of the assessed language as raters, for it might bring new findings to the field of foreign accent research.

3 RESEARCH

3.1 RESEARCH QUESTIONS AND HYPOTHESES

The present research was based on previous studies discussed above and to a greater extent on Moyer's (2007) study investigating (among other objectives) the significance of language attitudes for accent and concluding that some attitudes, especially language-directed ones, were indeed connected to receiving higher accent ratings. The aim of this research was to examine and answer two main questions:

1. *Will the non-native learners of Japanese be able to receive accent rating scores close to those of the native Japanese speakers?*

2. *Will any of the examined factors be found as significantly affecting the degree of foreign accent of Czech students learning Japanese?*

Regarding the first research question, as was previously stated several times in the literature review, only a very small percentage of second language learners is able to achieve a native-like accent in their second language. The age at which people start learning a second language was proven to be a highly significant factor, yet it will not be the main subject of the present research. Although all Czech learners of Japanese participating in the experiment were asked about AOL, most of them were not expected to start learning before 15 years of age (which is the latest suggested boundary for CP, see section 2.3.1.). This expectation was based on the fact that Japanese is not a language commonly taught at Czech primary or secondary schools, which indicates that most children do not have a chance to come into contact with it. The hypothesis is, however, that some of the accent rating scores of the Czech learners will be very close to those of the native speakers of Japanese even with later AOL. The reason for this presumption is that the group of Czech participants was formed by highly motivated individuals who chose Japanese philology as their field of study and successfully completed at least 3 semesters, which alone requires a considerate amount of language drill and determination. It is also possible that some individuals might be exceptionally talented learners who could thus overcome the constrains connected to CPH.

The factors examined in this paper can be all classified, as Moyer (2007) puts it, as "learner orientation factors". Some factors discussed in section 2.3. could not be included in the present experiment either for lack of necessary technical facilities (language aptitude) or for time and space reasons (formal instruction). Gender was in the end also not incorporated into the variable measures correlated with the foreign accent ratings. Despite the effort to find equal number of male and female volunteers, the group of talkers was formed by majority of female speakers. The factors which could be measured in given conditions were factors dealing with motivation and language use. The motivation related factors were: a) motivation to improve one's accent, b) the long for cultural assimilation, c) attitudes towards Japanese culture, d) stress level experienced while communicating with native speakers of Japanese, and e) self-rating of the level of foreign (Czech) accent in Japanese. Factors connected to language use were: a) number of hours spent by learning Japanese outside classes, b) number of hours spent by listening to Japanese speaking media, c) number of hours spent by conversation with a Japanese native speaker outside classes, and d) conscious imitating of pronunciation and intonation of Japanese native speakers. The hypotheses of the research are as follows:

1) Some Czech participants will be able to receive accent ratings close to those of the native speakers of Japanese.

2) Some of the investigated factors will be significantly correlated with the degree of foreign accent. It is thus presumed that:
    a) Participants reporting stronger motivation to improve their accent will receive better accent ratings.
    b) Participants comfortable with the idea of assimilation with Japanese culture or showing significantly positive attitudes towards Japanese culture will receive better accent ratings.
    c) Participants experiencing lower stress levels while communicating with Japanese native speakers and feeling more confident about their accent will receive better accent ratings.
    d) Participants spending more hours using Japanese outside classes (both passively and actively) will receive better accent ratings.
    e) Participants constantly and consciously imitating pronunciation and intonation of Japanese native speakers will receive better accent ratings.

In order to disprove or confirm the hypotheses, an accent rating experiment was conducted with Czech and Japanese volunteers. The methodology was based on studies discussed in the literature review and adjusted to the circumstances of the current research.

3.2 METHODS

3.2.1 Participants

3.2.1.1 Talkers

There were 34 talkers who volunteered to participate in the current study, comprising 31 Czech learners of Japanese and a control group of 3 native Japanese speakers. The Czech talkers were 18 undergraduate and 13 graduate students of Japanese philology at Palacký University in Olomouc. First-year students of the undergraduate programme were not included as a more advanced level of Japanese was required (at least N3 level of the Japanese-Language Proficiency Test). The group consisted of 22 women and 9 men with ages ranging from 20 to 30 years. In addition to Czech and Japanese, 30 participants could also speak fluent English, 8 of whom were fluent speakers of one more language and one talker could speak fluent German.

The control group of native Japanese speakers was formed by 2 men and one woman, their ages ranging from 25 to 31 years. They all reported to come from the Tokyo region, thus speaking Standard Japanese without any regional accent.

3.2.1.2 Raters

The raters who volunteered to listen to and evaluate the speech samples were 4 female native speakers of Japanese, ranging in age from 19 to 21 years, all students of one-year undergraduate programme at the Faculty of Arts at Palacký University in Olomouc. Having already studied one semester in the Czech Republic, they were all familiar with Czech language but none of them could speak it. They would be all considered inexperienced judges (see section 2.4.4). Raters filled in a background questionnaire and reported English to be their second language. They also confirmed not having any problems with hearing. All four came from the Kanto region, two of them studying at Gakushuin Women's College in Tokyo, while the other two studied at Utsunomiya University in Utsunomiya. The rates will be hereafter referred to as Rater 1 (R1), Rater 2 (R2), Rater 3 (R3) and Rater 4 (R4) to keep all participants anonymous.

3.2.2 Reading materials and recording

For the purposes of the present paper 10 short Japanese sentences with similar number of morae (phonological units) were constructed, each targeting phonetic and phonological distinctions between Czech and Japanese and features which could be potentially difficult for CzL of Japanese. Apart from reviewing existing literature on this topic, two native speakers of Japanese working as lecturers at the Department of Asian Studies at the Palacký University were also consulted about common phonological mistakes made by students when speaking Japanese. Prior to preparing the actual reading materials, the talkers were given a short text in Japanese written in 4 different ways to examine which variant would be the easiest for them to read. This was important to ensure the participants would be able to produce utterances resembling natural speech as much as possible even by reading non-Latin characters. The options presented were a text written in Japanese syllabary *hiragana* with no spaces, a text in *hiragana* with spaces between words, a text written in Japanese characters *kanji* and a text written in *kanji* with *furigana*[4] (see Table no.1). The talkers unanimously chose the last option to be the most effortless to read, thus this variant was used for the research reading materials. On the contrary, excessive use of *furigana* may again make the text harder to read so it was not added above the most basic *kanji* (N5 level *kanji*).

Table no.1 Reading trial sentences

It is the season of blooming cherry trees in Japan.	English translation
にほんはさくらのきせつです。	*Hiragana* without spaces
にほん　は　さくら　の　きせつ　です。	*Hiragana* with spaces between words
日本は桜の季節です。	*Kanji*
日本は桜(さくら)の季節(きせつ)です。	*Kanji* with *furigana*

[4] *Furigana* is an aid for reading kanji written in *kana* syllabary, usually placed next or above the kanji in smaller characters.

Data were collected individually using a voice recorder in a quiet room at the Department of Asian Studies. The talkers had a short time to look at the sentences before recording and make sure they can read all of them fluently. They were asked to read each sentence twice as a precaution against any speech disfluencies. Native Japanese talkers were asked to record the sentences at home in the same manner as the CzL and with the highest quality possible. These recordings were then further adjusted together with the other elicited audio materials. Recordings from each participant needed to be cut in separate sentences, scaled for equal intensity and cleared from any background noise in audio-software Audicity. All 340 utterances were assessed for fluency and only 3 sentences (see Table no.2) were then selected from each speaker as stimuli for the foreign accent rating task.

Table no. 2 Sentence stimuli selected for the research

Japanese sentences	English translation
1.ちょっとお願いがあるのですが。	Can I bother you for something?
Chotto onegai ga aru no desu ga.	
2. 雨が降っても、毎日必ず散歩します。	I go for a walk every day, even if it rains.
Ame ga futte mo, mainichi kanarazu sanpo shimasu.	
3. あの人は約束をしました。	That person made a promise.
Ano hito wa yakusoku o shimashita.	

The number of sentences had to be reduced not only due to disfluencies or noises disrupting the recordings but also in order to minimize listeners' fatigue, thus eliciting more reliable and consistent ratings. It would not be possible for the judges to evaluate 10 sentences from all 34 talkers in one sitting, taking into consideration that each stimulus from each talker was presented twice. With the 3 selected sentences, each listener rated 204 stimuli in one sitting which should be an easily manageable amount regarding previous studies on accent rating often asked raters to evaluate larger numbers of stimuli.

A brief explanation of the phonetic and phonological distinctions targeted in individual sentences should be provided here. The first sentence (S1) is a common phrase used in everyday life which has one potentially difficult part and it is the last word *desu* (formal copula) followed by a conjunctive particle *ga*. One of the consulted Japanese lecturers reported that this sequence is often mispronounced by CzL of Japanese as [dezga] instead of [desu̟ga], which was one of the reasons to include this phrase in the reading materials.[5] The problem here is caused by CzL substituting final vowel devoicing in *desu* for vowel elision, thus creating a consonant cluster of a voiceless fricative followed by a voiced plosive. Such consonant clusters generally undergo a regressive voice assimilation in Czech (see Šimáčková et al., 2012), therefore [desga] becomes [dezga]. There is also a geminate voiceless stop occurring in *chotto* (a bit) in S1. The second sentence (S2) mainly examines how CzL produce the voiceless bilabial fricative [ɸ] in the initial syllable of the word *futte* (te-form of *furu* meaning to fall) and the initial alveopalatal fricative [ɕ] in *shimasu* (polite form of *suru* meaning to make). The latter can be also found in the last word of the third sentence (S3), i.e. *shimashita* (past tense of *suru*). The focus of S3 is put on the word *hito* (a person), where /h/ should be realised as a palatal fricative [ç] and it further concentrates on vowel devoicing of the word-internal /u/ in *yakusoku* (promise) as this process tends to be ignored by many CzL of Japanese (see section 2.2 for more details regarding the differences between Czech and Japanese phonology).

3.2.3 Questionnaire

Since the whole research including the questionnaire was anonymous, each respondent was assigned to one or two letters from the alphabet. The talkers filled in the questionnaire at the sentence eliciting session, prior to obtaining the speech materials. This was arranged to guarantee the respondents would perfectly understand each question as they had the possibility to ask for more details if necessary.

The questionnaire was divided into two main parts. The first part consisted of close-ended questions constructed to examine background information about the participants, specifically age, sex, year of study at the Palacký University, fluency in languages other

[5] Interestingly, there is a study investigating the same phenomenon with Slovene learners of Japanese at the University of Ljubljana (see Golob, 2013).

than Czech and Japanese and the age when they first started learning Japanese. Added to which, 3 yes/no questions were included dealing with learning Japanese before the university, studying at university in Japan and spending more than 1 year in Japan for other than academic reasons.

The second part of the questionnaire concentrated on the learner orientation factors and it comprised questions used as variable measures subsequently correlated with the foreign accent ratings. The subjects first answered 4 multiple-choice questions related to language use. These questions were formulated as follows:

1a) Do you intentionally try to imitate intonation and pronunciation of Japanese native speakers when speaking Japanese?

2a) How many hours per day do you spend on average studying Japanese? (University lectures were not included.)

3a) How many hours per week do you spend on average listening to Japanese speaking media? (films/anime/news/music/other)

4a) How many hours per week do you spend on average conversing with a native speaker of Japanese?

The number of hours spent by passive and active use of Japanese was considered 1 factor in the final analysis, thus the answers of questions 2–4 were added up and treated as one unit. The other set of 7 questions dealt with the motivation related factors (see section 3.1). These questions were:

1b) How stressful for you is the conversation with a Japanese native speaker?

2b) How strongly does the possibility of long-term residence and working opportunity in Japan motivate you to improve your accent in Japanese?

3b) How important is it for your career to speak Japanese without Czech accent?

4b) How important is Japanese for your personal life?

5b) How would you describe your attitude towards Japanese culture?

6b) How strong is your desire to assimilate with Japanese society?

7b) How would you assess the degree of foreign accent in your speech in Japanese?

The respondents had to express themselves on a 9-point Likert scale with the endpoints defined for each question separately.

Table no. 3 was created for future reference showing all factors numbered and assigned to specific questions.

Table no. 3 Factors numbered and assigned to questions

	Question number	**Question topic**	**Factor number**
Language use related factors	1a	Intentional imitation of accent	Factor no. 1
	2a	Number of hours spent by language use	Factor no. 2
Motivation related factors	1b	Stress levels	Factor no. 3
	2b	Motivation driven by life opportunities in Japan	Factor no. 4
	3b	Career oriented motivation	Factor no. 5
	4b	Personal motivation	Factor no. 6
	5b	Attitudes towards Japanese culture	Factor no. 7
	6b	Long for assimilation	Factor no. 8
	7b	Self-rating of foreign accentedness	Factor no. 9

3.2.4 Eliciting foreign accent ratings from the listeners

The listeners were invited individually to do the rating via headphones in a quiet room in the University Library. The whole experiment was presented to them on a laptop using a computer software Praat. The participants were first instructed to answer a short background questionnaire and subsequently read a script explaining the rating procedure in Japanese. They were asked to listen to 34 practice sentences (one sentence from each talker) and evaluate how foreign accented each sentence sounded to them on a 9-point Likert scale where 1 stood for “strong foreign accent” and 9 for “no foreign accent”. This was done to allow the listeners to get familiar with the accents of all talkers and adjust to the rating scale accordingly. The actual experiment followed where each judge assessed 6 sentences (3 previously selected sentences presented twice) from 34 talkers in randomised order. The listeners evaluated 204 tokens altogether and they could replay each sentence three times before rating it if needed. An option of a short break was automatically offered to the judges after assessing the first half of stimuli to prevent fatigue and a loss of concentration.

3.2.5 Statistical tests used in the experiment

To analyse the background questionnaire data and the data elicited from the raters, simple statistical tests were computed in the advanced analytics software Statistica. The Analysis of Variance (ANOVA) was used for examining the inter-rater reliability, ratings of each of the 3 stimuli and the foreign accent ratings of all talkers. ANOVA is "a test of the statistical significance of the differences among the mean scores of two or more groups on one or more variables or factors" (Vogt, 2005, p. 8–9). More specifically, a one-way ANOVA was performed, which means there was only one independent variable or factor present. In this research the dependent variable in all 3 tests mentioned above referred to the mean foreign accent rating score of each talker, i.e. either a talker's mean score from each rater individually or a mean score from all 4 raters. In one case it also referred to the mean rating time of each stimuli. The independent variables were either the raters, stimuli or the talkers, differing according to the analysis.

After computing the one-way ANOVA, Tukey's honestly significant difference (HSD) test was used in order to find out the "pattern of differences between the means" (Abdi & Williams, 2010, p. 1). Although ANOVA tells if the result of the analysis is significant, it does not provide any information about "which of the pairs of means are statistically significantly different form each other" (Cramer & Howitt, 2004, p. 129). By comparing all 4 raters with each other Tukey HSD test showed if any of them rated the degree of perceived foreign accent significantly lower or higher than the others. This test was also used for investigating if any of the CzL of Japanese received ratings close to those of the native speakers. Results of these post-hoc tests will be described in detail in sections 3.3.1 and 3.3.3.

The last method used for analysing collected data was Spearman's rank-order correlation. This statistical procedure can be used for comparing two ordinal variables and stating the relative strength of a relationship between them. The obtained value communicating the strength of the relationship is called a correlation coefficient and it is represented by the letter *r*. If the value of *r* equals 1 or is close to 1, a perfect or strong relationship between the two variables is indicated. The closer the value is to 0, the weaker the relationship between the variables is indicated (Corder & Foreman, 2009, p. 122–123). Spearman's rank-order correlations were performed in order to find out if any of the examined factors significantly affects the degree of foreign accent of the Czech subjects participating in the research. Results of this procedure are discussed in section 3.3.4.

3.3 RESULTS

3.3.1 Rater consistency

To ensure the consistency of the elicited ratings, both within-rater consistency and between-rater consistency had to be estimated. Beginning with the within-rater consistency, a comparison of the two ratings of each sentence from each listener had to be done. It was necessary to discard all pairs of ratings differing by more than 3 points on the 9-point scale. The number of excluded pairs for individual raters was 12 for R1, 4 for R2, 19 for R3 and 9 for R4. That means 44 out of 408 pairs of ratings, i.e. 10.7% could not be used for the subsequent analysis. The consistent pairs of ratings were averaged and used for further analysis. The chi-square test was computed to find out if the raters were consistent with themselves. The result showed that the inconsistency in the listeners ratings was not significant, thus all raters could be considered reliable in this respect.

The between-rater consistency was examined by performing Person correlations between ratings of each talker for the 6 possible pairs of the 4 raters. A good between-rater agreement was confirmed for R1, R2 and R4. R3, however, significantly differed in her ratings from R1 and R4. Table no. 3 shows that a correlation was found in R3-R2 pairs but it is also visible that the correlation is considerably lower, with the *r* coefficient being only .05, than in the pairs without R3.

Table no. 4 Person Correlations

Rater	**R3** **5.3190**	**R2** **4.2696**	**R1** **3.9191**	**R4** **3.5711**
R3		0.059729	0.004717	0.000187
R2	0.059729		0.840571	0.348992
R1	0.004717	0.840571		0.843362
R4	0.000187	0.348992	0.843362	

Figure no. 1 demonstrates even more clearly the differences in rating between R3 and the rest of the listeners. While R3 tended to evaluate the talkers fairly high on the 9-point scale, other raters appeared to be stricter in how they perceived the foreign accentedness of the talkers, with R4 giving the lowest ratings of all listeners. Due to the lack of agreement between R3 and the other raters, R3 had to be excluded from the whole experiment.

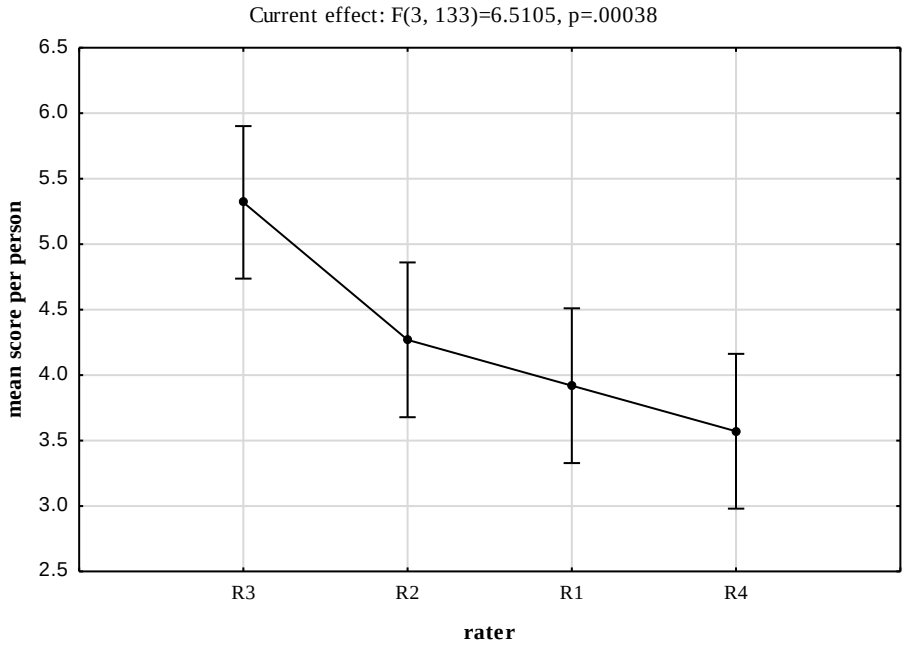

figure no. 1 Mean accent ratings of all talkers assessed by individual raters.

It can be also pointed out that R3 was the least consistent rater with herself. After examining discarded sentences from this rater, further inconsistencies were found that did not occur in the ratings of any other listener. Not only did the two ratings of the same stimuli differ by more than 3 points, R3 twice evaluated stimuli from two different speakers first as native or near native-like (9 and 8 points) and then rated the same stimuli lower than 5 after second hearing. This fact seems to be especially unusual considering the sensitivity of native speakers to recognize non-native speech (see section 2.1.1.). There were no serious reasons for not including R3 in the experiment based on her answers from the social and language background questionnaire, yet her ratings showed otherwise. This case well demonstrates that verifying rater reliability is a necessary measure in any research incorporating native speakers as judges of perceived foreign accentedness.

3.3.2 Sentence Ratings

Another analysis was computed to find out if there were any differences in consistency of rating the 3 individual sentences. It is visible from the left graph in figure no. 2 that S1 (coded as *onegai*) uttered by all 34 talkers received the most consistent ratings from the 3 judges. Moreover, the listeners were able to decide the fastest about their ratings of this sentence as the right graph in figure no. 2 indicates. The analysis showed surprising results regarding S3 (coded as *yakusoku*) as it received the lowest average ratings from the listeners but its score range was significantly larger than with the other 2 sentences. It means that the consistency of rating S3 was fairly low and that it was probably the most difficult sentence to both utter and evaluate. The reason might be the occurrence of more potentially complicated features in S3, especially the right realisation of /h/ in *hito* and devoicing of word-internal /u/ in *yakusoku.* As the complete omission of the /u/ devoicing can be easily detected by ear even for a non-native speaker, all S3 recordings were examined to find out if there is any relationship between receiving worse accent ratings and omitting the /u/ devoicing. This analysis indeed showed that those who did not devoice the high vowel in *yakusoku* received worse ratings than those who did.

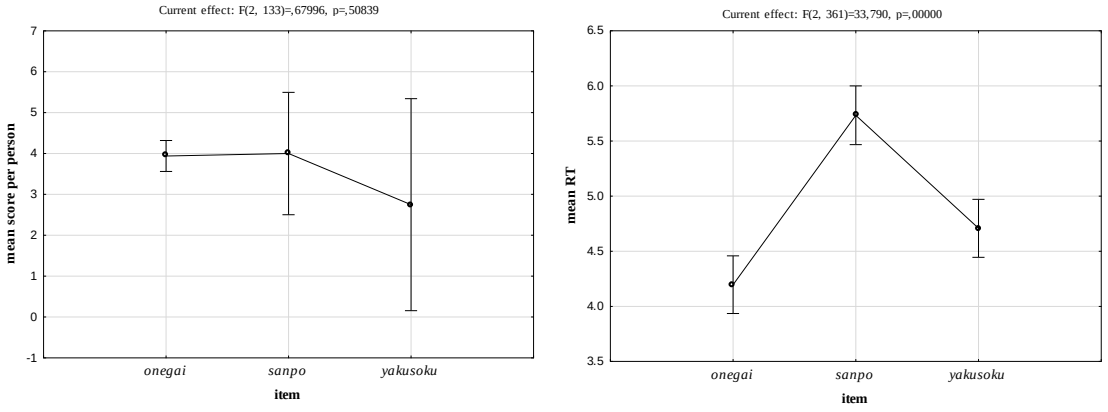

figure no. 2 The graph on the left shows mean accent ratings for individual sentences coded as *onegai* (S1), *sanpo* (S2) and *yakusoku* (S3). The graph on the right shows mean rating time (RT) for each sentence.

An important fact that cannot be omitted here is also the role of suprasegmental features on the perceived degree of foreign accent. As was already discussed in section 2.1, the term accent refers to both segmental and suprasegmental features of a language. That means intonation, rhythm, pitch, segmental length and tempo surely had an impact

on the listeners' ratings. These features were, however, not targeted in this experiment for their great complexity (regarding Japanese language), which would require more in-depth analysis of the speech materials and the elicited speech samples. Such analysis was not feasible in the circumstances of the present research but it should be taken into consideration that the suprasegmental features might have been one of the reasons for inconsistent ratings of S3.

3.3.3 Foreign accentedness ratings

The results of the accent rating task are shown in figure no. 3. It is apparent that the highest scores, i.e. above 8 points on the 9-point Likert scale, received the 3 native speaking controls as was expected. None of the Czech participants were, however, able to reach anywhere near these scores. Seventeen Czech talkers, which is more than a half of them, received mean ratings between 3 and 4 points; 9 talkers scored between 2 and 3 points and only 5 CzL of Japanese were able to get mean ratings higher than 4 points on the scale. Nevertheless, the Tukey HDS test revealed that there were 2 participants whose accent did not differ significantly from one of the Japanese speakers. The most successful talker (mean accent rating score = 6.17) even managed to received 9-point rating for S2 from two different raters.

Questionnaire data collected from the two successful talkers were compared in order to find out if there was anything that could suggest the reason for their better scores. The 2 participants were both 25-year-old students of the postgraduate program, one male and one female. Regarding the language use factors, they both reported a conscious effort to imitate the intonation of native speakers. Despite the fact that the subjects admitted spending a large amount of time by either passive or active use of Japanese, this did not seem to be the deciding factor as the participants with the lowest scores reported similar numbers. Looking at the motivation related factors, they agreed that speaking Japanese without a foreign accent was very important for their careers (more than 7 points on the scale) and they both had a very positive attitude towards Japanese culture (more than 8 points on the scale). Interestingly, these 2 talkers were fairly strict on themselves when evaluating the degree of their foreign accentedness as they used only 4 and 3 points on the scale.

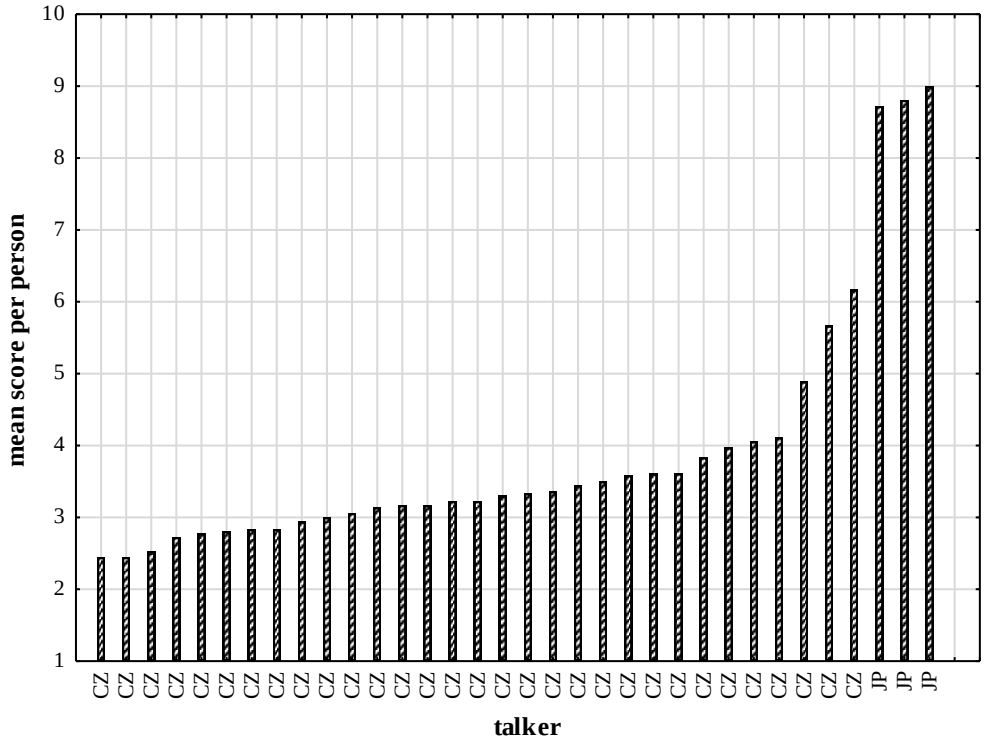

figure no. 3 Mean accent ratings for all talkers including 31 Czech speakers (CZ) and 3 native Japanese speakers (JP).

3.3.4 Questionnaire data

It seems appropriate to briefly summarise the responses obtained from the questionnaire before proceeding to the correlations. As for factor no. 1, i.e. the intentional imitation of native speakers' accent, none of the respondents reported that they would never try to do so. Nevertheless, 61% admitted either trying to imitate the native speakers only in half of the cases when talking to them or not trying in most of the cases. There was one talker who reported conscious imitating of an accent every time when speaking with a Japanese and the rest of the participants chose the "mostly yes" option.

Regarding factor no. 2 the number of hours spent by language use did not differ dramatically for the majority of the participants. 84% of the respondents appear to spend less than 2 hours per day studying Japanese, 61% listen to Japanese speaking media for less than 2 hours per week and 90% reported conversing with a native speaker for less than 2 hours per week. It seems worth pointing out that nobody spends more than 3 hours per day studying Japanese and only 1 respondent spends more than 3 hours per week conversing with a native speaker.

The elicited data concerning the motivation related factors are summarised in Table no. 5. The table shows how many participants chose each point on the 9-point Likert scale for each factor. The endpoints of the scale were defined for each factor separately (see Appendix).

Table no. 5 Elicited data concerning motivation related factors

Factor Number	**Likert scale**								
	1 ○	**2 ○**	**3 ○**	**4 ○**	**5 ○**	**6 ○**	**7 ○**	**8 ○**	**9 ○**
Factor no. 3	2	3	3	2	3	4	7	5	2
Factor no. 4	0	1	3	2	4	4	5	7	5
Factor no. 5	0	1	0	1	3	3	9	10	4
Factor no. 6	0	1	1	4	4	11	4	4	2
Factor no. 7	0	0	1	0	2	4	10	9	5
Factor no. 8	3	2	3	5	11	2	4	1	0
Factor no. 9	1	6	7	6	5	3	3	0	0

3.3.5 Correlating the foreign accent ratings and the questionnaire variables

Spearman's rank-order correlations were used for correlating each factor separately with the mean accent ratings of all talkers. The values of correlation coefficient *r* are presented in Table no. 5. It is apparent that the values in the table are closer to 0 than they are to 1, which indicates that none of the examined factors was proven to significantly affect the degree of foreign accent in the speech of CzL. The relationship between the variables seem to be trivial for 7 out of 9 factors. The remaining 2 factors show some tendencies which could be interpreted, yet both of them are rather weak. The factor with the highest value of correlation coefficient ($r = 0.2842$) was factor no. 1 concerning the effort to imitate pronunciation and intonation of native Japanese speakers. It could be said that there is a tendency for CzL of Japanese to achieve more native-like accent if they constantly and consciously try to imitate the accent of Japanese speakers when talking to them. A second factor with $r > 0.2$ was factor no. 7, i.e. the attitudes towards Japanese culture. This result suggests that participants with more positive attitudes towards the

target language culture sounded less foreign accented than those with more negative attitudes. This, again, can only be understood as a tendency.

Table no. 6 Values of correlation coefficient for each factor

Language use related factors	***r***
Factor no. 1	0.2842
Factor no. 2	0.0123
Motivation related factors	***r***
Factor no. 3	-0.1591
Factor no. 4	-0.1232
Factor no. 5	-0.0012
Factor no. 6	-0.0479
Factor no. 7	0.2123
Factor no. 8	-0.0024
Factor no. 9	0.0499

3.4 DISCUSSION

The foreign accent rating task revealed that a majority of CzL participating in the experiment received very similar rating scores from the judges, i.e. between 3 and 4 points on the scale. These scores may seem quite low for advanced learners who could be expected to use Japanese in their future careers. Nevertheless, a study on foreign accent rating by Šimáčková & Podlipský (2016) shows similar results for their advanced CzL of English studying the English for Translation and Interpreting programme at the Palacký University.[6] It should be taken into consideration that students of Japanese with the earliest AOL started learning at the age of 17 years and most of the group reported AOL between 19 and 20 years. It seems worth pointing out that there was only a small difference between accent ratings of students who were likely to have started learning English before 15 years of age and students of Japanese with fairly late AOL. This would suggest that neither AOL nor language use played an important role in L2 phonological attainment of participatns of these two studies.

Looking at the two talkers who managed to achieve accent rating scores close to one of the native speakers, a qualitative analysis of their background questionnaires indicated that they did respond similarly to some of the questions. They both seemed to be strongly motivated by their careers and they reported very positive attitudes toward Japanese culture. They also did not show much confidence in their accent in Japanese and evaluated it fairly low. Interestingly enough, 6 out of 9 talkers who received mean accent ratings between 2 and 3 points on the scale assessed their own accents higher (above 5 points on the scale) than those who recived the best ratings from the judges. This fact indicates that L2 learners who reached a certain level in their accent attainment might be more aware of their own mistakes and features of their accent which make them sound foreign to native speakers. On the contrary, Moyer‘s (2007) findings suggest the opposite. She examined survey responses of two participants whose accent was rated on a par with native speakers, concluding that they both reported “great satisfaction with accent” (p. 514). Perhaps once L2 learners achieve the ultimate attainment, they also become more confident about their accent, while the near native-like speakers perceive the

[6] The foreign accentedness of participants of this study was assessed by native speakers of English on the 9-point Likert scale. Similar to the present study, 9 out of 18 Czech talkers received accent rating scores between 3 and 4 points on the scale.

imperfections in their phonology more than others. However, further research on this topic would have to be done to support this hypothesis.

In order to answer the main research question, correlations of the examined factors and the elicited accent ratings were performed, showing no significant relationship between the variables. Possible reasons for this outcome will be now discussed in detail. First, it is necessary to look at the group of Japanese raters who agreed to participate in the research. They all reported to have the same language background which should eliminate any differences in perception related to dialect. In spite of this fact, the between-rater reliability test revealed that one of the raters tended to give the talkers significantly higher ratings than the others, thus had to be excluded from the experiment. To ensure the reliability of the judges is a challenging task for any researcher as the way a native speaker perceives L2 learner's accent depends on a vast number of variables. For instance, Moyer (2013) in her book on foreign accent mentions several times that native speakers can be influenced by their personal attitudes towards demographic factors such as gender or social class when evaluating accent of L2 learners. The biggest disadvantage of the present research regarding the judges was probably their low number, which even had to be further reduced. Although Moyer (2007) also incorporated only 4 raters in her experiment, a larger group of listeners seem to be more convenient for any subsequent quantitative analysis. A researcher always runs a risk of revealing that some of the selected raters are not reliable enough to be involved in the experiment. A larger number of participating listeners can then also increase the chances of finding a consistent group of judges.

A similar problem could be discussed in the case of talkers. It is necessary to ensure that the group of participants will not be too homogenous. This can be again reached by incorporating larger number of speakers or by specifically searching for speakers who would differ in as many respects as possible. To give an example, speakers with both early and late AOL and with different amount of language experience might form a more suitable group for this kind of research than a group of students from the same school class. Even though the present experiment included both undergraduate and graduate students who were expected to differ in the amount of language use and motivation, the group did not prove to be heterogenous enough. The presence of CzL who received significantly higher ratings than others suggests that there were some differences between the subjects, but too many participants appeared to be on a very similar level in their phonological attainment.

Concerning the speech materials used, bigger variety of tasks performed by the talkers might help the raters to create a better idea about L2 learners' accent. On the other hand, the number of stimuli which is possible for the rater to evaluate in one sitting has to be borne in mind. It is often done that the rating tasks are divided into more sittings to prevent rater's fatigue. As for the present experiment, the quantity of speech samples selected for the rating task seemed to be appropriate and a good within-rater reliability also supports this statement. The sentences themselves targeted most of the obvious potential difficulties for CzL of Japanese and the talkers did not appear to struggle with producing naturally sounding utterances due to sentence length or reading non-Latin characters. Yet, one of the sentences received considerably less consistent ratings from the judges than the 2 remaining sentences. It is difficult to say whether this fact had an impact on the whole accent rating task. It might have been more advisable to choose stimuli which would not noticeably differ in their rating consistency.

Finally, any potential advantages and flaws of the questionnaire and the choice of examined factors should be mentioned here. The idea of asking the participants to fill in the questionnaire at the speech recording session showed to be convenient for both the talkers and the researcher. The talkers did not have to face the problem of not understanding the questions correctly as they had the chance to ask if they were in doubts. Thus, it was guaranteed that the elicited data would not be affected by possibly ambiguously formulated questions. One of the problems connected to the questionnaire dealt with the language use related questions. The range of offered answers the respondent could choose from did not seem to be sufficient for eliciting varied enough data for quantitative analysis. Even though the second part of the questionnaire using 9-point Likert scales might have been better in this respect, the results did not show any significant correlations between the variables. It is also possible that some of the motivation related questions were too difficult to answer in given circumstances and would be more relevant for L2 learners living in the target language country. This refers especially to the long for assimilation, which did not appear to be very strong for 24 out of 31 participants. Overall, the fact that LOR factor was not included in the examined variables might have presented the essential problem of the experiment. Majority of studies on foreign accentedness are conducted with L2 learners residing in the target language country and the LOR factor has been proven to play an important role in the phonological attainment of such learners. Although the present research concentrated on investigating which factors affecting accent in L2 are salient for learners residing outside

the L2 target country, the same methodology was applied as for the experiments performed with learners residing in the L2 speaking country. Finding no significant results, however, suggests that considerable changes in the methodology would need to be done in order to answer the main research question of this thesis.

4 CONCLUSION

The theoretical part of this diploma thesis first defined the term accent and explained its salience for L2 acquisition, further discussing differences in Czech and Japanese phonetics and phonology followed by a thorough overview of existing literature on foreign accent rating. This served as a good starting point for the subsequent experiment conducted with CzL of Japanese in order to answer the two main research questions.

Starting with the first question, 4 Japanese female students were asked to evaluate speech samples of 31 CzL of Japanese and 3 Japanese native speakers to examine if any of the Czech participants reached the native-like level in their phonological attainment of Japanese. After analysing ratings from all 4 raters, one of them was not found reliable and had to be excluded from the experiment. Ratings from the 3 remaining judges were then used to answer the first question. The one-way ANOVA test and the post-hoc Tukey HDS test revealed that two CzL did not significantly differ from one of the Japanese speaking controls. Although the rating scores of these two talkers were not on the par with the Japanese talkers, i.e. more than 8 points on the scale, they did at least approach their level of accent. Thus, the hypothesis that some of the participants will be able to get close to native-like accent of Japanese despite late AOL seems to be confirmed. When trying to shed some light on the success of the two CzL, 3 following features were found to be shared by both of them:

- strong career-oriented motivation
- very positive attitudes towards Japanese culture
- low self-rating of accent in Japanese

These features might provide us with a lead of what can possibly influence the degree of foreign accent in L2 learners' speech. Nevertheless, further analysis, especially in the field of language aptitude, would be necessary to reveal all the variables involved.

The second research question concerned the factors which affect the degree of foreign accent of CzL of Japanese. Spearman's rank-order correlations of the mean accent rating scores and questionnaire data were computed, showing no significant relationship between any of the examined variables. This means that the hypothesis stating some of

the factors would have a significant impact on the degree of perceived foreign accent was not confirmed. There were, however, some tendencies apparent from the results. The first tendency referred to conscious imitating of native speaker's pronunciation and intonation and the second one dealt with positive attitudes towards Japanese culture. This could be interpreted as: *Better ratings of the degree of perceived foreign accent tended to receive participants who reported very positive attitudes towards Japanese culture and those who constantly and consciously imitate pronunciation and intonation of Japanese native speakers.* Potential reasons for not finding any of the examined factors significant for phonological attainment of CzL of Japanese can be summarized as follows:

- The number of Japanese raters and Czech students participating in the experiment was too low.
- The group of talkers was too homogenous with regards to their language background.
- The factor concerning long for assimilation with Japanese culture might not be applicable for learners residing outside the target language country.
- The AOL and LOR factors were not included in the experiment.
- The range of answers offered in the questionnaire was not sufficient for eliciting data usable in a quantitative analysis.

In spite of the fact that the experiment did not bring the expected results due to methodological errors, it could still be beneficial and in some respects serve as an inspiration for future research on foreign accentedness.

SUMMARY

This diploma thesis deals with the factors affecting the degree of a foreign accent of Czech students learning Japanese. It is divided into two main parts – a theoretical part and a research part. The theoretical part first defines the term *accent* in the context of the Japanese language. It further outlines the differences between Czech and Japanese phonetics and phonology and it provides a review of existing literature on the topic of phonetic and phonological attainment in a second language. The second part of the thesis describes an experiment conducted with undergraduate and graduate students of Japanese philology at Palacký University in Olomouc. The aim of this thesis is to assess the degree of the foreign accent of the participants and to investigate which factors have a significant impact on the degree of foreign accent in their speech.

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APPENDIX

1. Questionnaire

Age ☐

Sex ○ female ○ male

Year of study: Bachelor's degree ○ second year

○ third year

Mater's degree ○ first year

○ second year

1. **What languages can you speak fluently apart from English and Japanese?**

☐

2. How old were you when you started learning Japanese?

☐

3. Did you learn Japanese before attending university?

- ○ Yes
- ○ No

If yes, the form of the study was:

- ○ self-study
- ○ lessons with non-native speaker of Japanese
- ○ lessons with native speaker of Japanese

4. Have you ever studied Japanese in Japan? If yes, how long was your stay?

- ○ yes ☐
- ○ no

5. Have you ever spent more than one month in Japan for other than study reasons? If yes, provide the length and reasons for your stay.

- ○ yes ☐
- ○ no

6. When speaking Japanese, are you consciously trying to imitate pronunciation and intonation of native speakers?

- yes, always
- mostly yes
- in about half of the cases
- mostly not
- no, never

7. How many hours per day do you spend on average studying Japanese? (Do not include university lessons.)

- less than half an hour
- half an hour – 1 hour
- 1 – 2 hours
- 2 – 3 hours
- more than 3 hours

8. How many hours per week do you spend on average listening to Japanese speaking media? (films/anime/news/music/other)

- less than half an hour
- half an hour – 1 hour
- 1 – 2 hours
- 2 – 3 hours
- more than 3 hours

9. How many hours per week do you spend on average conversing with a native speaker of Japanese?

- less than half an hour
- half an hour – 1 hour
- 1 – 2 hours
- 2 – 3 hours
- more than 3 hours

10. How stressful for you is the conversation with a native speaker of Japanese? Try to express yourself on a scale 1–9, where 1= I do not feel stressed at all, 9 = I feel extremely stressed.

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

11. How strongly does the possibility of long-term residence and working opportunity in Japan motivate you to improve your accent in Japanese?

1= no motivation, 9 = very strong motivation

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

12. How important is it for your career to speak Japanese without a Czech accent?

1= the degree of foreign accent does not matter, 9= it is necessary to acquire native native-like accent

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

13. How important is Japanese for your personal life?

1= not important at all, 9= Japanese is a necessary part of my personal life

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

14. How would you describe your attitude towards Japanese culture?

1= very positive, 9= very negative

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

15. How strong is your desire to assimilate with Japanese society?

1= very weak, 9= very strong

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○

16. How would you assess the degree of foreign accent in your speech in Japanese?

1= strong foreign accent, 9= no foreign accent

1○ 2○ 3○ 4○ 5○ 6○ 7○ 8○ 9○