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The interference of the native language on second-language production during interpreting

(bakalářská práce)

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V Olomouci dne 17. května 2012 ....

1. INTRODUCTION

For most people, it is difficult to learn the correct pronunciation of a second language. There are several reasons why; one of which can be described as an interference of their mother tongue. This interference is considered to be the constant constraint of the people who are trying to speak in a foreign language. In other words, the interference holds the reign of our ability to speak correctly in the second language. The aim of this thesis is to examine this phenomenon from a different point of view and to determine whether there is influence of interference in interpreting situations. As stated above, influence of the native language is problematic for most non-native speakers and a crucial factor for interpreters if they strive to speak correctly in a non-native language. The main topic of this thesis then is to determine the negative impact of the native language (Czech) during the process of interpreting, which involves switching attention from the listening to the source language to the production of speech in the target language (English).

Daró and Fabbro (1994) focused on verbal memory during simultaneous interpretation. In my thesis, I focus on second language production of an interpreter. However, their study should be considered in my thesis. Their main aim was to "determine whether reduced recall in spoken simultaneous interpretation actually depends on a reduced capacity of working memory due to phonological interference" (369). Daró and Fabbro (1994) examined a group of advanced student interpreters on the basis of two tasks. The first task was to recall short stories after simultaneous interpretation from the source language (L1) into the target language (L2), and vice versa. The second task was to recall digits (this task is called Digit-span memory). Daró and Fabbro's findings showed that the subjects remembered less information after simultaneous process than after listening process in the first task. In their paper, they presented four different experimental conditions (recall after control condition, shadowing, articulatory suppression and simultaneous interpretation) for measuring the memory span for digits in L1 and L2. I will not state all of them, because it would exceed the scope of my thesis (see Daró and Fabbro 1994 for a review). The memory span for digits was significantly poorer following simultaneous interpreting than in any of the other conditions. The articulatory suppression was one of the remaining conditions, as mentioned above. In this condition, the subjects had to listen to the digits which were presented to them, and at the same time, they had to utter two irrelevant

syllables. Afterwards, they had to recall the digits. Under this condition, the subjects recalled significantly fewer digits than under the listening condition. Daró and Fabbro's results (1994) state that "during simultaneous interpretation, where listening to a message in the source language and verbal production in the target language are concurrent, working memory is also disrupted by a mechanism of phonological interference" (361). Even though their study was mainly focused on simultaneous interpreting (for the purposes of my study, it would be better to have findings based on conference interpreting), it is clear that the mind of an interpreter is engaged in the process to such an extent that the interpreter is not capable of recalling all the information that he/she has heard. To paraphrase Daró and Fabbro (1994), poorer recall after simultaneous interpretation than after listening might result from both a shallower cognitive processing of the text and on interference mechanisms at a more superficial level, due to concurrent listening and speaking. In their opinion, the decrease in the digit span during recall indicates that "memory impairment during simultaneous interpretation is at least partially due to phonological interference caused by verbal production in the target language" (1994, 375). Daró and Fabbro (1994) add that the poorer recall might be influenced by other factors beside the phonological interference. For example, divided attention and translation process may be such factors. It is apparent that the mind of an interpreter works on the multitasking basis, and, based on the factors of phonological interference and divided attention, it can be assumed that the mind of an interpreter will not focus on his/her proper articulation in L2 production.

It is this interference that the present thesis was designed to investigate. This can be supplemented by another statement by Flege and Efting (1987), who proclaimed that "perhaps the greatest single cause of foreign accent is 'the new wine in old bottles' phenomenon: production of L2 phones via the nearest possible L1 category" (186).

In the first part of the paper, I provide the theoretical background for my research. The theoretical part mainly focuses on the area of relevant possibilities of the division of language systems. It is divided into four sections. In the first section, I compare the studies of Escudero and Flege with consideration of having either two separate working language systems or only one joint language system. In the second section, I formulate my hypothesis, which is logically derived from the comparison made in the first section. In the third section, the specific research question is phrased. The forth section provides

the theoretical background for the term "formant", which consists of auxiliary information for understanding the practical part.

In the practical part, which is structured into four sections, I thoroughly depict my research. The first section, the method, provides detailed information about the research process; for this purpose, it is divided into three subsections; subjects, procedure and analyses. The second section, the results, summarizes the outcome from the analysis subsection. The last main section, the discussion, discusses the potential results and impacts of the research.

1.1. L1 and L2 – separate or joint systems?

With respect to bilingual speakers, it is a question of how the two language systems are represented. It is clear that there are two main possibilities of two postulates, which I will compare in this part. The first possibility is that there are two separate language systems and the speakers must either use one or the other while perceiving and producing speech. As stated in the introduction, I primarily focus on the interpreters. In the first possibility, they mostly perceive speech in the first language system (L1) and then they switch their controlling focal point to the second language system (L2), and produce speech by the means of the second system, if they want to have the most native-like pronunciation. The second possibility is that the L1 and L2 systems are considered as one joint set in which speakers both perceive and produce speech. The question has already been raised by the researcher Paola Escudero in the part "the cognitive interplay of two language systems" (2005): "If both L1 and L2 sound categories and phonological processes are represented as knowledge in the learner's mind, the next natural question is how these two systems relate to each other. Presumably, they both belong to the linguistic faculty, but do L2 learners have a single perceptual system or two systems?" (2007, 114) In accordance with this statement, Escudero focuses on the perception of speech, but in my research, I specifically focus on the production of it. The possibility of the first view is examined by Escudero (2007) in her model of the L2 version of the Linguistic Perception (L2LP). In comparison to this study, the second possibility is supported by the Speech Learning Model (SLM), established by James Emil Flege in his work, Second Language Speech Learning: Theory, Findings and Problems (1995). There are proponents of both views: Escudero's (2005, 2007) L2LP model presumes L1 and L2 are separate, whereas Flege's (1995)

Speech Learning Model is based on the assumption that the L1 and L2 share common phonological space.

1.2. Interplay between L1 & L2

The review paper by Paola Escudero (2007) summarizes different views on second language phonology with focus on the role of perception. For the purpose of my research, I will merely focus on the L2LP model. I will start with a brief summary of the acquisition process of the L2 perception, because many phonetic studies assume that the perception ability of non-native sounds plays a key role in the acquisition of L2 phonology, to paraphrase Escudero (2007, 110).

As stated above, it is assumed that speakers work on the basis of two individual separate language systems in this possibility. This is a prediction based on the research made by Paola Escudero (2007). Escudero emphasized the importance of the priority of preceding perception in phonological production as one of the main crucial factors for L2 learning and production: "perception develops first and needs to be in place before production can develop, and the difficulty adult learners experience producing L2 sounds has a perceptual basis, such that incorrect perception leads to incorrect production" (2007, 111). This fact is supported by previous studies by many researchers (Flege and Eefting, 1987; Sheldon and Strange, 1982; Grosjean, 2001). For example, to paraphrase Rochet, the errors the speakers make in the L2 production are associated with their wrong identification of sounds in the perceptual task (1995). It can be stated that the ability of perception of L1 sounds is a crucial factor for L2 production of sounds (not only for L2, but for L1 as well). This is supported by the words of Barry (1989) and Grasseger (1991) as well, who primarily claimed, that those who had established their perceptual categories well produced more precise L2 sounds. At this part of Escudero's work, she refers to the studies that provide evidence for the second possibility of two joint language systems (e.g. the studies of Sheldon and Strange, 1982; Goto, 1971 or Flege and Eeefting, 1987). These studies are concerned with approaches that support the notion of the second possibility (i.e. one phonological space for both languages). I will speak about one of these approaches in the next section. Nevertheless, she concludes the brief review of these studies with a notion of doubt, because she also states that these studies can be disputed on the ground of many methodological shortcomings (such as the controlled nature of the production task among other things).

To return to the role of perception, in her review, Escudero describes the learning process of sound perception in the second language. The role of perception is indisputable, according to her study, and the means of learning perceptual skill should be considered as well.

In her paper, Escudero claims that learning to perceive sounds of a second language involves acquisition of the appropriate number and type of sound categories. However, there are noticeable differences in L2 acquisition and L1 acquisition according to Escudero. There are three main aspects:

i)   The initial state at the onset of learning of L2,
ii) The constraints in development affecting mature learners; and
iii) The cognitive interplay of two language systems while acquiring L2.

The first point is clear; adult L2 learners often have different conditions at the beginning of their L2 learning process. Some learners might have lived for several months (e.g. holiday, travelling, working stay etc.) in a country where L2 was spoken on daily basis. That means they were exposed to the L2 every day. Compare this to the Czech student, living his/her whole life in the Czech Republic, who decided to start learning Dutch as the L2. For adult L2 learners, the L2 sound perception is constrained by the sounds and perceptual processes of L1. It means that L1 is already in place. According to Escudero, "the strong role of L1 in L2 learning process is considered an important factor underlying the L2 performance" (2007, 112). This phenomenon has been described and explained through used concepts of transfer (interference) and cross-linguistic influence. The transfer explanation is attractive in the realm of segmental phonology, although it remains a controversy, as stated by Archibald and Young-Scholten (2003). Different levels of L1 transfer (no transfer, partial transfer or full transfer), representing the initial state of L2 learners, will influence the assumptions that can be made about the L2 learning task and L2 development. To illustrate Escudero's work, the initial state of L1 acquisition of children is the state when they know no language whatsoever (i.e. no language system is in place, it was not yet acquired). In comparison, the initial state of L2 acquisition of adults probably differs with the scope of L1 transfer (no transfer, partial transfer or full transfer). In other words, adult L2 learners already have one language system in place and the scope of its transfer influences the L2 acquisition process.

In the second point, the developmental constraints, Escudero refers to the age and maturity of L2 learners. In her study (2007), she also uses terms such as *positive evidence* (exposure to speech around L2 learners, in order to learn the second language), or *negative evidence* (corrections or specific instruction, in order to learn a second language). I will not describe this part in more details, for it would exceed the scope of my thesis.

The third point is the most significant for the purpose of my study. The interplay of two language systems is inevitable in the process of L2 acquisition. It can be viewed in a different ways (see Figure 1).
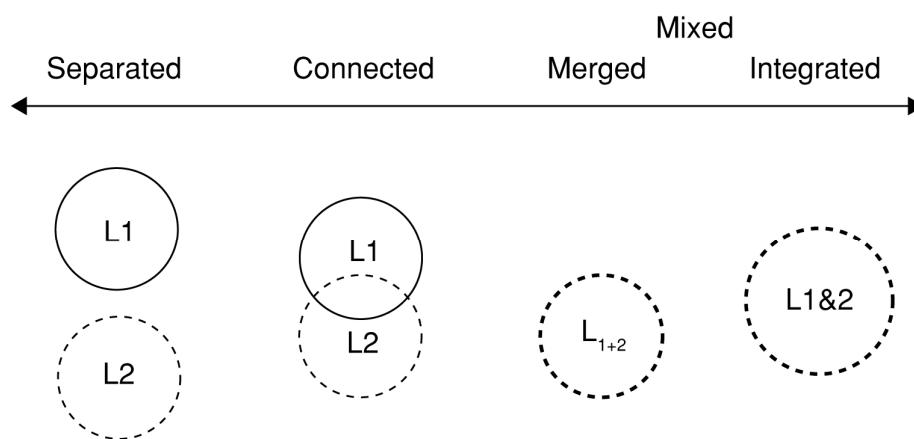
Figure 1: The possible interplay of two language systems, adapted version of Cook's figure (2002, 11).

The natural question at this point is how the two language systems relate to each other. Do L2 learners have a joint perceptual system or two separate systems? The level of separation or integration between the L2 learner's phonological systems influences the level of perceptual proficiency that a learner can have in both languages. This type of restraint can be termed as *representational constraint* (Escudero 2007). The basic fundamental division of two language systems is that they can be separated or connected. This division is supplemented by another possibility of mixed assumption – the merged possibility.

Based on this division, it is a matter of discussion, as to which of these assumptions best describes the performance of L2 of bilingual speakers. If we choose one of these assumptions, it will crucially form the explanation of L2 perception and thus L2

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production as well (if we consider the key role of L2 perception on L2 production). In separated systems assumption, it is considered that L1 and L2 sound categories belong to two distinct systems. In comparison, the mixed assumption asserts that L1 and L2 sound categories belong to a single representational system. The mixed assumption can be further divided into two possibilities – merged and integrated systems. In the merged possibility, we can assume that the language systems works in one space and thus no differentiation of these systems is implied, whereas "integrated representations imply language specification within a single combined system" (Escudero 2007, 115). A less excessive view is the assumption of the connected systems, which states that L1 and L2 sound categories are mostly different, but they may share some properties to some extent (as shown in Figure 1).

As you can see in Figure 1, Escudero takes into consideration the possibility of having both separated and mixed (joint) language systems, as I mentioned in the beginning of this chapter. In her paper, Escudero also briefly reviews six models concerning L2 sounds perception. These models are: The ontogeny model, the phonological model, the perceptual assimilation model, the native language model, the speech learning model and the linguistic perception model (for a review of these studies, see Escudero 2007). With respect of the limited framework of this work, I will not describe each of these studies and I will mainly focus only on two models – the linguistic perception model, which is the example of the left side of Figure 1, and on the speech learning model, which is the example of the right side of Figure 1.

1.2.1. *Linguistic perception model of L2 learners (L2LP model)*

Escudero's Second Language Linguistic Perception model (2005, 2007), i.e. L2LP, involves three main points:

    i)   Full copying of the L1 perception grammar
    ii) Full Access to all mechanisms of L1 learning;
    iii) Full Proficiency in both L1 and L2 under conditions of high usage of both.

To briefly explain these three points, Escudero suggests that the L2 learner creates a copy of L1 perception grammar at the beginning of the L2 learning process and this copy develops through time. With respect to ultimate attainment of L2, the learner needs to have the full access to all mechanisms which were available in the L1 learning

process. With regard to full proficiency, Escudero claims that native-like perception of L1 and L2 is feasible, because speakers operate on a separate-system basis. (i.e., two separate sets of perceptual categories and two perception sets of grammar, which are used on a regular basis). In accordance with full copying, she based her assumptions on the study of Spanish learners (SL) of Scottish English (SE) with comparison to SL of Southern British English (SBE). Her findings suggest that SL of SE reused their perception grammar and perceived the two specific SE vowels /i/ and /I/ as the two Spanish vowels /i/ and /e/, but SL of SBE perceived two SBE vowels /i/ and /I/ as only one SE vowel - /i/. The SL of SBE used only duration differences to identify the SBE types of these vowels, and thus, they mis-perceived the two vowels as only one vowel (for further information, see Escudero 2001).

Another important term is used in the L2LP model. It is called *language control.* To paraphrase Escudero, it is the ability to activate a particular language system and to restrain the other. It is basically a skill of preventing the cross-linguistic activation (i.e. interference) of the two language systems at the same time, as if the learner was the perfect monolingual speaker of each language. From the perspective of the present paper, I can regard this as a crucial skill for the work of an interpreter.

All of these assumptions (the role of perception of L2, the process of attainment of L2 and the perceptual categories) support the high likelihood of the possibility that two language systems work on a separate basis in the mind of an interpreter.

1.2.2. *Speech Learning Model (SLM)*

J. E. Flege can be cited as a proponent of the opposing view; that L1 and L2 coexist as a joint system in bilingual speakers. The second possibility of one joint language system is based on Flege's research (1995). Flege (1995) proposed the Speech Learning Model which explicitly addresses this question. To be more accurate, the assumption of having one joint language system is derived from one of the postulates of a Speech Learning Model (SLM). Even though his paper focuses significantly on the learning process, it should be considered in my thesis, as it is concerned with changes in L2 production.

To paraphrase Flege (1995), the SLM aims to account for age-related limits on the ability to produce L2 vowels and consonants in a native-like fashion. Important factors

affecting L2 proficiency are the age of onset of learning and L2 use. Flege's work was focused mainly on bilinguals who have spoken their L2 for many years, i.e. the beginners were excluded.

SLM model is based on four main postulates and from these postulates, seven hypotheses are derived. I will not mention all of them, because it would exceed the scope of this paper. Nevertheless, the most relevant postulate for my research is the fourth one: "Bilinguals strive to maintain contrast between L1 and L2 phonetic categories which exist in a common phonological space" (Flege 1995, 239). The SLM model is essentially about prediction of which sound will be difficult to acquire for the L2 speaker. It can be either L2 sound, which is similar to the L1 sound, or it can be an L2 sound, which is dissimilar to the L1 sound. The more dissimilar the L2 sound is, the simpler it will be for the L2 speaker to acquire and produce this L2 sound. If the L2 sound is similar to the L1 sound, it will be more difficult for the L2 learner to notice the difference. Flege touched on this in his first hypothesis, in which he states that the L1 and L2 sounds are related perceptually to one another at a position-sensitive allophonic level (1995).

Flege illustrated this hypothesis on native Japanese (NJ) speakers who had learned English as the second language. Even though this hypothesis is mainly focused on the position of the allophone, it should be considered in this section. The study describes the difficulty of NJ speakers to produce and perceive English liquid vowels /l/ and /ɹ/. Flege states that NJ speaker perceive and produce English liquids more accurately in word-final than word-initial position, perhaps because the acoustic difference between English /ɹ/ and /l/ is more robust in final than initial position. Another explanation of this may be that the final but not the initial allophones of English liquids are categorized differently by NJ learners of English. This can be further supplemented by the third hypothesis of Flege's paper, that "the greater the perceived phonetic dissimilarity between an L2 sound and the closest L1 sound, the more likely it is that phonetic differences between the sounds will be discerned" (1995, 239). Flege further claims, that there is evidence that Japanese /r/ is closer perceptually to English /l/ than to /ɹ/ (see Flege 1995), which leads to the expectation that larger amount of "NJ learners of English will discern some or all of the phonetic differences between Japanese /r/ and English /ɹ/ than between Japanese /r/ and English /l/" (Flege 1995, 240). This fact

supports the idea of beneficial factor of the distinction between an L1 sound and L2 sound representation on L2 production. The greater the distinction is, the more accurate production the L2 speaker will have. In support of this contention, Flege showed in his paper (1987), that English learners of French are able to produce French /y/ in a more native-like fashion than French /u/, because French /y/ is more dissimilar to the closest English vowel than is the French /u/, which is very similar to the English /u/.

The idea of a common phonological space is a crucial term for my research. SLM thus represents the mixed side of two language systems (see Figure 1). The reason why SLM has to postulate the common L1-L2 phonological space is because of the common similarity of some L1 and L2 sounds. According to this prediction, L1 and L2 sounds must be compared by learners along the same perceptual dimensions. In addition, this is one of the postulates forming the SLM model – Bilinguals strive to maintain contrast between L1 and L2 phonetic categories, which exist in a common phonological space. In his fifth hypothesis, Flege states that "category formation for an L2 sound may be blocked by the mechanism of equivalence classification. When this happens, a single phonetic category will be used to process perceptually linked L1 and L2 sounds (diaphones). Eventually, the diaphones will resemble one another in production" (1995, 239). In other words, formation of an L2 sound may be blocked by an identical L1 sound. Interestingly, Escudero also briefly reviews the SLM model in her paper (2007) and she defines equivalence classification as "a mechanism that leads to the categorization of acoustically different tokens into the same abstract category" (2007, 122). The assumptions derived from Flege's hypotheses thus support the possibility of having one joint language system in which we perceive and produce speech (both L1 and L2).

To illustrate Flege's Speech Learning Model, imagine a Spanish student who decides to learn Czech, for example, as his/her second language without being previously exposed to the Czech language (i.e. he/she has not studied Czech before, nor has he/she lived in the Czech Republic). This Spanish student is exposed to Czech (L2). If we consider that Spanish (L1) has a 5-vowel system and Czech has a 10-vowel system, it means that some of the vowels which exist in Czech will not have equivalents in the Spanish system and that means that new phonological categories need to be established for the learner to achieve the native-like pronunciation. If this Spanish

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student uses a word containing an unfamiliar vowel for L1, he/she may pronounce a Czech word with a Spanish foreign accent. The reason for this is that in Spanish there is no phonological category for a particular Czech sound, which is why the Spanish student will produce the closest possible pronunciation of the familiar Spanish vowel. In terms of common phonological space, he/she will create a new phonetic category which would be derived from the phonetic category of his/her own language system in order to produce the most native-like sound. From an L2 perceptual point of view, the sound of L2 will be "assimilated" to a single category with a basis in L1. From an L2 production point of view, the pronunciation will be influenced by the L1 language system i.e. it will not be a native-like pronunciation.

As mentioned above, Escudero reviews SLM in her work (2007). In the beginning of her review, she states that this model is unsubstantiated, because "there is no explicit proposal for how phonetic discerning or processing (i.e. the extraction of phonetic information for categorization) works" (2007, 122). She claims that in the process of the mutual influence of two language systems, the dissimilation is apparent (see Flege, 2002, 2003 for a review). It can be thus assumed that the L1 and L2 phonological categories will be slightly different in comparison with the L1 and L2 categories of native speakers. In addition to dissimilation, Escudero mentions the effect of assimilation, which is a result of creating of new merged category by the experienced L2 learner, if the L2 learner is not capable of creating a new category of an L2 sound, which differs audibly from the closest L1 sound. Both of these language transformations (assimilation and dissimilation) and the presence of the common phonological space may account for Grosjean's claims that there can be no "perfect" bilingual (1999). This is illustrated in Figure 2. SLM predicts that the speaker of each language will not be able to speak as a monolingual. According to SLM, these systems mutually influence each other and their mixing is inevitable (Escudero 2007).

LANGUAGE MODES CONTINUUM

L1   BILINGUAL   L2
                MODE

Figure 2: The inability of the bilingual to speak as a perfect monolingual in both of language systems.

The above discussion is relevant to this paper, in which I focus on the influence of the L1 on the L2 production during interpreting. To be more accurate, the subjects of my research are student interpreters and I will focus on their production of L2 after having listened to both L1 and L2.

1.3. Hypothesis

It is reasonable to assume that the long-term use of L1 has an impact on L2 production. Guion et al. (2000) showed that the long-term effect of the L1 use is apparent in the L2 production, when they examined Quichua speakers who had learned Spanish as their L2. By combining their results with the results of Flege et al. (for their study see Flege et al. 1997), the study showed that speakers who use L1 more frequently have stronger foreign accent in L2 than speakers who use their L1 less frequently. They also supported the notion of having one joint language system (L1 and L2 reside in the common phonological space) and in this regard, he mentioned the study of Soares and Grosjean (1984), who in essence claimed that one of the two language systems cannot be fully deactivated while perceiving and speaking. Guion et al.'s (2000) findings support the claim that the long-term use of L1 influences the L2 production.

I focus on the effect of L1 use from a different angle. This thesis attempts to determine whether there is any apparent influence of L1 use on L2 production in immediate situations (in comparison to the long-term exposure examined by Guion et al., briefly mentioned above). After having described the two possibilities (separate language systems and joint language systems), my hypothesis is derived from their distinction. If Escudero is right, and the L1 and L2 systems are separate, we can assume that the L1 use of an interpreter will not have a strong effect on his L2 production. On the other hand, if Flege is right and the L1 and L2 systems work on the basis of the

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common phonological space, we can assume that the L2 production by an interpreter will be influenced by the L1 use, and thus, he/she will have worse L2 production. In other words, according to Escudero's model, a speaker (an interpreter) who operates in both L1 and L2 during interpreting task and switches control between these systems, will have better L2 production than a speaker (an interpreter) who operates on the basis of Flege's SLM model, because the two systems interact with each other. In Escudero's model, the L1 (Czech) use does not participate in L2 production (the L1 is in place of the speaker, but it is not activated in the L2 production). That is why the L1 use will not affect the interpreter's L2 production. In other words, the L2 language system is created as a copy of the L1 language system in Escudero's model, but the L1 does not participate actively in further L2 acquisition and production.

1.4. Specific research question

There are many possibilities as to how to examine language interference. For example, Šimáčková and Podlipský (2011) touched on this topic in their work concerning the pronunciation skills of an interpreter. In this paper, they described the perfect characteristics of an ideal interpreter. In their own words, "an ideal interpreter understands everyone and is understood by everyone". They examined the issue of the intelligibility of the Czech-accented English. In addition, Šimáčková and Podlipský (2011) focused on the interpreting performance in terms of intelligibility and foreign-accentedness. To paraphrase a statement of Šimáčková and Podlipský (2011), if an interpreter strives to have an unmarked pronunciation (i.e. native-like L2 production without the L1 influence), he/she needs to establish what this pronunciation is like. It is clear that interpreters must be able to cope with plenty of varieties of different pronunciations they encounter. For their own speech production, it means that they should not be marked by noticeable foreign features. In their paper, Šimáčková and Podlipský showed several features of Czech-accented English, because the "Czech accent in English has its identifiable properties and it has received considerable attention, both with respect to segments and suprasegmentals" (2011, 2). They focused on a considerably wide range of characteristics (e.g. consonants, vowels and suprasegmentals). The relevant part for my thesis is the characteristics of vowels of Czech-accented English. To be more specific, the transfers of the Czech vowel system into the English vowel system are relevant. One of the characteristics mentioned in their paper is the absence of the /ɛ/-/æ/ contrast (which is supplemented in their example

section of Czech accent by mispronunciation of 'that' as [d̪ɛtʼ] and 'planned' as [plɛnt]). My specific research question is derived from this absence of contrast. Šimáčková and Podlipský further claim that "there is no empirical evidence as to how the individual features contribute to specific positive or negative perceptions of the accents" (2011, 2).

It is then reasonable to assume that Czechs have problems with differentiating the vowels which are not represented in our vowel system. For example, English has a 15-vowel system which is a broader vowel system than the Czech one (10-vowel system, as stated above). This can be further illustrated by the difference between the Czech vowel system and the Spanish one. According to Savela (2009), these vowel systems differ in their pattern of prototypes. The Czech /ɛ/ is often considered to be more open than the Spanish /e/ (see Figure 3). In other words, the Czechs will have a problem in the identification of the phoneme /æ/, because there is not any representation in our vowel system for this particular phoneme (the representation of the English vowel is already occupied by the representation of Czech /ɛ/). It is then reasonable to assume that the problems in production result from the perception problem. In addition, Šimáčková examined the role of duration in the process of identifying the vowel contrast between /ɛ/ and /æ/ (2003). According to Šimáčková, substituting /ɛ/ for /æ/ by Czechs seems to be a direct example of perceptual assimilation – "two contrasting L2 segments are absorbed by a single L1 category. One of the vowels is a better and the other a poorer example of the L1 category" (Šimáčková 2003, 2293). In her study, she focused on the vowel duration with respect to perception and production. The relevant part for my thesis is the production part. In her results, Šimáčková states that learners' [ɛ] and [æ] do not simply assimilate to the same L1 category. These English vowels are statistically different in height from the Czech [e, e:] (Šimáčková 2003). Šimáčková further claims that this may be the basic cause of [ɛ]-[æ] contrast. She concluded her study with the statement that production did not match perception and that a native speaker must rely on the context not to mis-interpret words produced by Czech speakers. Based on this study, we see that Czechs have problems in keeping the two vowels separate in the L2 production phase. It can be assumed then, that interpreters will have the same problem during their L2 production, when their mind is occupied by other tasks.
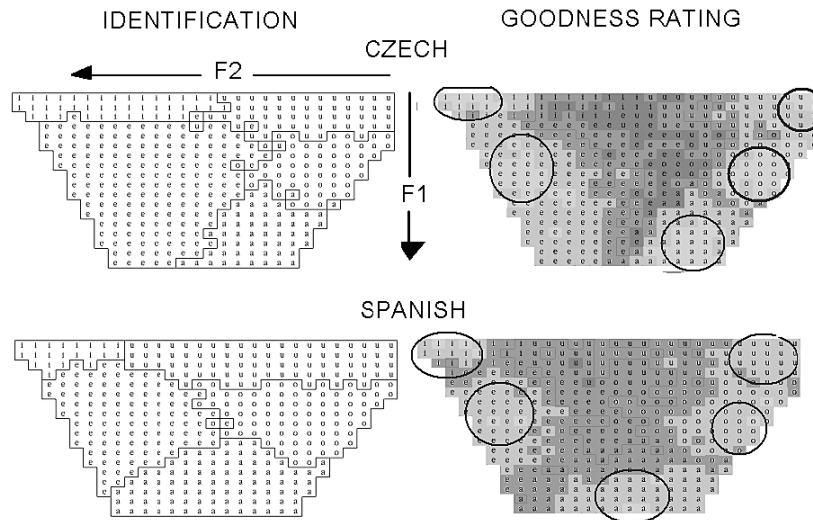
Figure 3: Czech (upper) and Spanish (lower) vowel charts represent the difference in the identification and goodness rating criteria of the vowel categorization according to their phonological systems. Lighter areas represent higher goodness ratings and circles represent the areas with the highest ratings. (See Savela 2009 for review).

This paper presents a new question: we know that the mind of the interpreter has to work with both language systems. Does it then lead to a greater level of transfer in production? This is based on the assumption that both activated languages have different phonological systems (i.e. it would not be effective if the systems were one). It is commonly observed that Czechs have problems in keeping these phonemes separate at the L2 production phase. It is clear that Czech interpreters will have even worse pronunciation in L2 production after listening to utterances in L1 because their mind is occupied by other tasks of interpreting (e.g. listening, processing and analyzing of message of utterances). Based on this assumption, I simulate the situation where I intentionally omit the translating task of the interpreter, in order not to occupy the mind of the subjects. The subjects (i.e. student interpreters) will perceive and process the utterances in the language they are listening to at the moment (English or Czech). In other words, they will not be occupied by the task of translating the utterances, which would lead to the worse L2 production. Afterwards, the subjects will speak in English only, in order to collect the data from their L2 production. Czech interpreters who listen to L1 utterances and speak in L2 will have L2 production with greater accent than Czech interpreters who listen to L2 utterances and produce L2 as well, because the L1 perception in the immediate situation is activated and therefore it triggers a greater degree of transfer.

Because the range of this bachelor thesis is not capable of covering more than one question, I will try to determine the transfer in the L2 production of two vowels - [ɛ] and [æ]. To summarize this part, the attempt of the specific research question is to determine whether L2 productions of interpreters will show a shift of values of the first two formants of vowels [ɛ] and [æ] after listening to L1 and L2 utterances which were created to simulate the interpreting process.

1.5. Vowel quality and formants

In the research, I mainly focus on the change in formants of the phonemes /ɛ/ and /æ/. In this part, and in accordance with my research, I put these vowels into the right phonetic context and I supply the theoretical background of the term formant for the reader.

I will start with a brief description of vowel qualities. From the articulatory point of view, we speak about three main factors. The first one is the height of the tongue (high, mid, low), the second one is the front-back position and the third one is concerned with the rounding of the vowels. From these characteristics, we determine that the English vowel [ɛ] is a mid-low front unrounded vowel. The second vowel ([æ]) is a low front unrounded vowel, according to the description above.

The sounds of vowels are a part of acoustics, which is a very broad area. According to Lagefoged, we can think of them as containing a number of different pitches simultaneously (2011). The term 'voice pitch' is the level at which the vowel is spoken and it depends on the vibration of the vocal folds. In addition to this feature, there is a term called 'overtone pitch', which is a result of the resonating cavities of our vocal tracts. Any body of air, such as that in the vocal tract or that in a bottle, will vibrate in a way that depends on its size and shape (Lagefoged 2011). These overtone pitches determine the distinctive quality of the vowel. This can be expanded to the notion of the variety of voice pitches which are distinguished on the basis of two vocal pitches which are affiliated to these overtones. These characteristic overtones are called the formants of the vowels.

The formant with the lower pitch is called the first formant and the higher one is the second formant, which are relevant terms for my upcoming research. Lagefoged provides us with two very simple cues of how to hear the overtones characterizing the

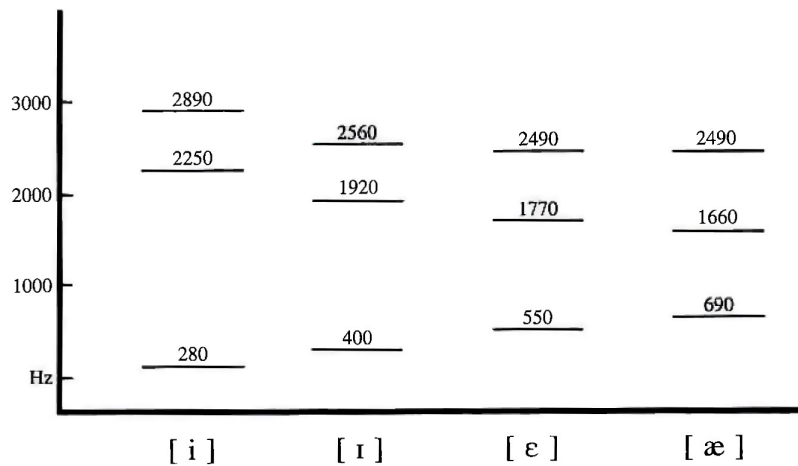vowels by the means of whistling and producing a "creaky voice" (see Lagefoged 2011, 22).

Figure 4: Adapted version of the chart of the frequencies of the first three formants in two American vowels (Ladefoged 2011).

When we speak in the realm of formants, we have to also consider another important term, which is the frequency. Frequency is the suprasegmental property of the syllables. Each time we open and close our vocal folds, we push the air through them and these openings results in peaks, which are recorded in the soundwave. To quote Lagefoged, it is the technical term for an acoustic property of a sound – namely, the number of complete repetitions of a pattern of air pressure variation occurring in a second. The unit of frequency is the hertz, usually abbreviated Hz. In other words, Hz equals the number of complete openings and closings of the vocal folds in a second. For example, the frequency of 300 Hz means 300 complete opening and closing movements in one second. In Figure 4, you can see the frequencies of four vowels of American speakers, estimated by Ladefoged (2011). He estimated the values for 8 American vowels, but for the purposes of the research it was not necessary to show them all. As you can see in Figure 4, the first and the second frequency of the two vowels (/ɛ/ and /æ/) are very similar. It is then reasonable to assume that the production will be very similar and it will be difficult for the non-native speaker to produce them in the most precise way. The difference between the values of the first and the second formant differs for each vowel. The difference of the two relevant formants of /æ/ will be smaller than the difference of the two formants of /ɛ/, according to Figure 4.

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David Crystal's statement is worth mentioning. He stated that there are more than just two formants: "Three main formants provide the basis of vowel description: the 'first formant' is the lowest, and the 'second' and 'third formants' are respectively higher. Other formants are less significant for linguistic analysis (1991)." Based on this definition, I focus mainly on the shift in two formants of the vowels /ɛ/ and /æ/. You can see the approximate values of the two vowels in Figure 5 (Ladefoged 2011).
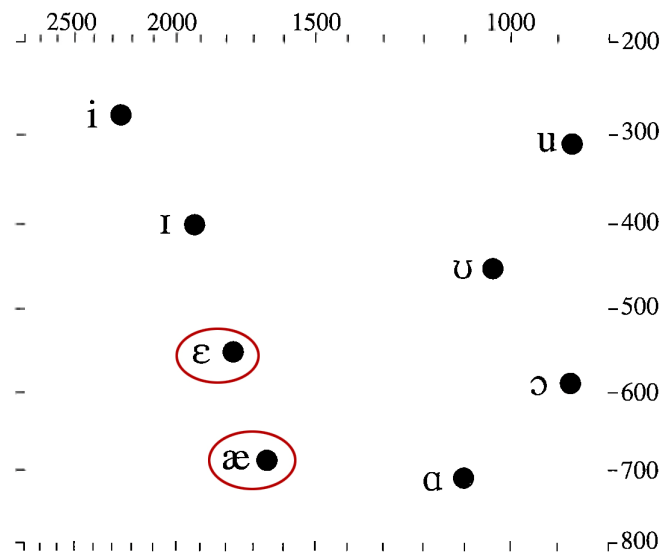

Figure 5: A formant chart showing the frequency of the first formant on the vertical axis against the second formant on the horizontal axis. The scales are marked in Hz. The two relevant vowels are marked in red circles. It is an adapted version of the chart in Ladefoged (2011).

2. METHOD

2.1. Subjects

Twenty-two students from the Department of English and American Studies participated in my research. The majority of subjects were the student interpreters of the English for Translators and Interpreters study programme (ETI). One student studied English and Applied Economics study programme (EAE). All of these students had very high L1 and L2 proficiency. Within these 22 students, there were 6 men and 16 women. Unfortunately, the balance between men and women was not ensured. Because of the low amount of male samples, the men were excluded from the research; the results would be insufficient. The subjects were asked to fill out the questionnaire after the study. All of the female subjects had had relevant experience with interpreting, because of the mandatory attendance of the interpreting courses (I tried to keep the inexperienced and experienced interpreting students in balance. Based on the submitted questionnaires, the subjects had attended 5 interpreting courses on average; the maximum possible attendance was 9 courses). Based on their answers, the average age of these women was 22.6 years. The subjects spoke English approximately 64 minutes a day (ranging from 5 minutes a day to 300 minutes a day. Interestingly, half of the examined women have never spent any time in English speaking countries (i.e. they have not been exposed to the second language for a longer period of time). The average time of their L2 (i.e. English) acquisition was 13.25 years (ranging from 9 to 20 years). These subjects were chosen on the basis of their language proficiency in both languages (L1 and L2). None of these subjects had any sort of hearing impairment.

2.2. Procedure

After choosing the appropriate target words (12 different words) which would contain the two relevant phonemes /ɛ/ and /æ/ (both in stressed syllables), I created two sets of short utterances (Czech and English sets) containing the target words. I strived to create utterances that would sound natural and informal for the listeners (subjects). The first set (Czech) was recorded by two people from the Moravia region and two people from Bohemia, in order to ensure that the subject would not get used to the voice of one listener (i.e. he/she might get used to the voice and his perception and production might improve during the test). The second set (English) was recorded by four English native speakers with different accents (Northern and Southern English, American and

Australian). I tried to have two women and two men for each set (for proper authencity of the recordings), but unfortunately I did not manage to ensure this balance and I had to gather only men for the recordings eventually.

Afterwards, on the basis of the aforementioned sets (Czech and English), two slideshows were created. The first slideshow contained a Czech set of recordings and the second slideshow only English recordings. The first slideshow (i.e. the *Czech part*) contained a brief introduction with specific instructions of the process in Czech. The introduction was followed by the example situation, so that the subject would ensure that he knows exactly what to do in the rest of the slideshow. The example was followed by the first recording in Czech and, after an utterance, the new slide with two English sentences appeared on the screen. The subjects had to choose the appropriate sentence which would be the logical reply to the utterance they had just heard. I did not want to interact with the subjects by speaking to them beforehand, in order to avoid the impact of my own pronunciation. That is why the introduction with the example was presented at the beginning of the slideshow. On the same basis as the first slideshow, the second slideshow (i.e. the *English part*) containing the English recordings was created. This part differed from the first part in the language of utterances that the subjects listened to. The subjects had to choose the appropriate reply in English as well.

I wanted to simulate situations similar to interpreting, and the Czech and English parts were based on listening to the utterances and reading the sentences out loud. I needed to simulate a situation when the subjects' mind is occupied by another task; that's why the third slideshow (i.e. *No-Intro part*) was created. This slideshow focused on the short-term memory of the subject. The No-Intro part was introduced in English and the example situations followed the instructions as well. In this slideshow, the subject saw two very similar pictures next to each other for 1.5 seconds, then only one sentence (containing the target word) appeared on the screen and the subject had to read the sentence out loud. After this, one of the two pictures that he had seen before the utterance appeared on the screen and the subject had to say out loud on which side the picture had appeared before. The approximate similarity of the pictures was intentional, because I wanted to induce the situation where subject's memory is occupied by a specific task (memorizing), so that the subject would not focus (i.e. would not self-monitor himself/herself) on the pronunciation of the sentence with the target word.

The next task was to submit the three slideshows to the subjects. I did not submit the slideshows to 22 subjects at once, because they would be affected by listening to each other. The subjects underwent the study individually in an examination room. They wore headphones with microphone during the whole examination and they were recorded into the Audacity programme. After each part (i.e. each slideshow), I came into the examination room and switched the parts (i.e. there were three separate slideshows, ergo the subjects had time to rest for a while between the slideshows). I tried to create a plausible environment for them, so the subjects would feel comfortable during the recording. The subjects were left alone in the examination room during the research and they could adjust the volume on the headphones themselves. It was impossible to find an entirely abandoned and soundproof room at the faculty. Unfortunately, I had to count with the disturbance, such as students chattering in corridors, sounds of the street etc.

The No-Intro part was always the first part for all of the subjects. Then, the Czech and English parts were counterbalanced, I wanted to ensure that the order of the parts wouldn't affect the L2 production. The whole examination process of one subject lasted 20 minutes. After the research, I submitted the quetionnaires with relevant questions to the research (see Appendix 6.4).

2.3. Analyses

The recording was carried out in the Audacity programme. The recordings were then thoroughly examined in the Praat programme. As was stated in the specific research question, I focus on the shift in the first and the second formants of the vowels of the target words. In Praat, I found the relevant target word and the relevant vowel. After this, I marked the central part of the vowel and pressed F12. This function recorded three formant values of the relevant vowel. After recording all of the relevant vowels, I created the mean value of the three formant values of the relevant vowel (either /æ/ or /ɛ/ in English, Czech and No-Intro part) using Microsoft Excel. To illustrate this, the first subject recorded 6 sentences containing the vowel /æ/ in the English part. After pressing F12 in Praat, I received 18 formant values (6 values of /æ/ * 3 formants – F1, F2 and F3) for the first subject. For each of these three formant values, the mean was created. That means the first subject had three mean values (F1, F2 and F3) of /æ/ from the English part.

Each subject recorded 12 sentences in each part; overall, 36 sentences containing 36 target vowels. For each part (Czech, English and No-Intro), the mean of the values of particular vowel was created, as mentioned above. In conclusion, one subject provided me with 18 mean values (F1, F2 and F3). The value of the third formant was excluded from the research because it was not valid for the purposes of the research. After collecting the average values of both vowels ([ɛ] and [æ]) in all parts, the data were submitted to statistical programmes and they were compared on the basis of repeated measures ANOVA and post-hoc Tukey tests.

3. RESULTS

As mentioned above, the male group was excluded from the research, which means the data were collected from 16 women. This part is divided into three sections for clear interpretation of the data. In the first part, the first formant is the dependant variable (F1). In the second part, the second formant (F2) is the dependant variable and in the third part, the shift between these two formants (F2 – F1) is the dependant variable. Each part was carried out with respect to three factors. The first factor is the order of tests as the between-subject factor, which is further called *Order*. I tried to discover whether the results change in accordance with the order of tests, because there were two variations of testing (the first one: 1. No-Intro, 2. Czech, 3. English part; the second one: 1. No-Intro, 2. English, 3. Czech part). As you can see, the order of English and Czech parts was almost counterbalanced (7 women started with English part and 9 with Czech part; this unbalance is due to the 6 men who were excluded from the research afterwards). The second factor is a 3-level condition (i.e. No-Intro, Czech and English parts) as the within-subject factor, which is further called *Condition*. The third factor is called *Vowel* and it is a 2-level condition, because I focused on two vowels - [ɛ] and [æ].

3.1. F1 data

The data were submitted to repeated measures ANOVA with F1 as the dependant variable. Repeated measures ANOVA found that there was no significant effect of Order ($p>0.1$) on F1. As for the second factor, repeated measures ANOVA found a significant main effect of Condition on F1: $F_{(2.28)}=7.98$, $p=0.0018$. As for the third factor, repeated measures ANOVA found a significant main effect of Vowel on F1: $F_{(1.14)}=34.62$, $p=0.0000$). It was established that Order of tests does not have

statistically significant effect and that is why it will be excluded from the post-hoc Tukey test, which examines the interaction between Condition factor and Vowel factor. Crucially, a post-hoc Tukey test (see Figure 6) found no significant difference in F1 of /æ/ or /ɛ/ between English and Czech condition, although the difference between /ɛ/ in the English and Czech approached significance (p~0.055).
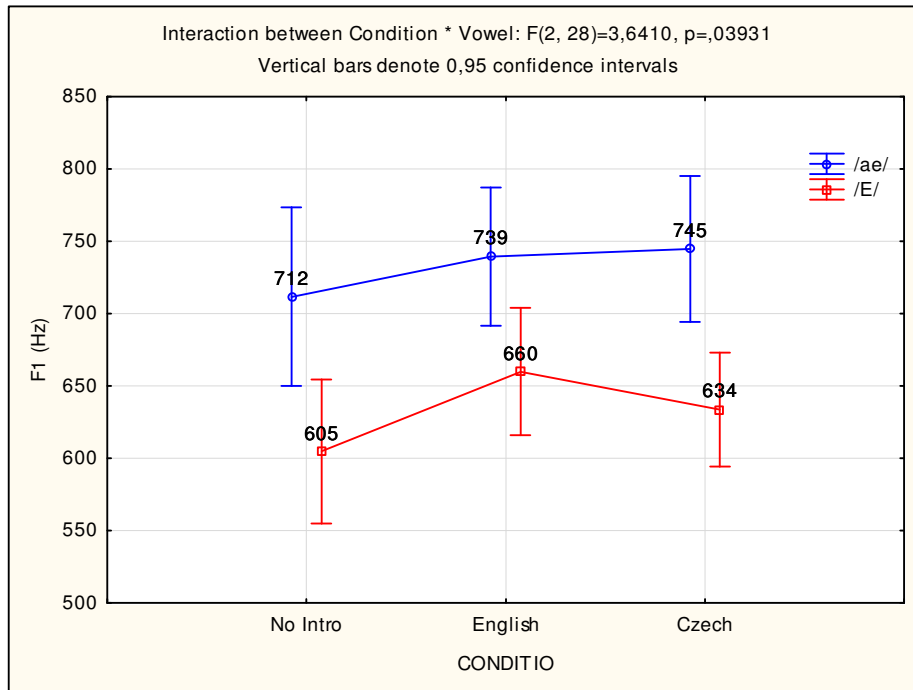

Figure 6: The post-hoc Tukey tests showing the interaction between Condition and Vowel factors for F1 part. /ae/ stands for /æ/ and /E/ stands for /ɛ/ vowel.

3.2. F2 data

The data were submitted to repeated measures ANOVA with F2 as the dependant variable. Repeated measures ANOVA found that there was no significant effect of Order (p>0.1) on F2. As for the second factor, repeated measures ANOVA found a significant main effect of Condition on F2: $F_{(2,28)}=30,04$, p=0,0000. As for the third factor, repeated measures ANOVA found a significant main effect of Vowel on F2: $F_{(1.14)}=3.57$, p=0.0001. It was established that Order of tests does not have a statistically significant effect and that is why it is excluded from the post-hoc Tukey test, which examines the interaction between Condition factor and Vowel factor.

Crucially, a post-hoc Tukey test (see Figure 7) found no significant difference in F2 of /æ/ or /ɛ/ between English and Czech condition.

COND*VOW; LS Means
Interaction between Condition * Vowel: F(2, 28)=5,0128, p=,01378
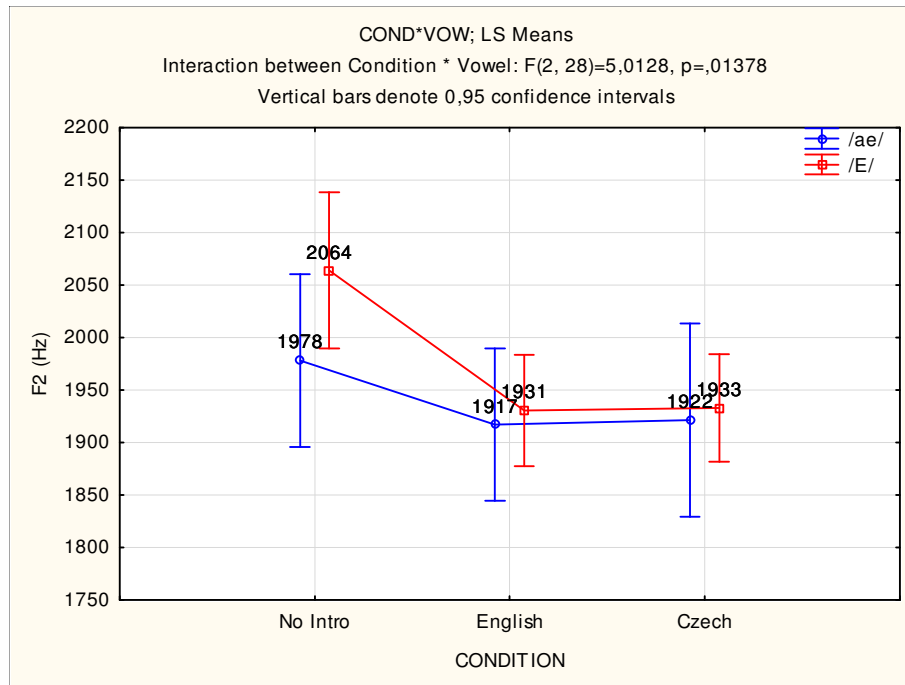Vertical bars denote 0,95 confidence intervals

Figure 7: The post-hoc Tukey tests showing the interaction between Condition and Vowel factors for F2 part. /ae/ stands for /æ/ and /E/ stands for /ɛ/ vowel.

3.3. F2-F1 data

The data were submitted to repeated measures ANOVA with F2-F1 as the dependant variable. Repeated measures ANOVA found that there was no significant effect of Order (p>0.1) on F2-F1. As for the second factor, repeated measures ANOVA found a significant main effect of Condition on F2-F1: $F_{(2.28)}=5.01$, p=0.0138. As for the third factor, repeated measures ANOVA found a significant main effect of Vowel on F2-F1: $F_{(1.14)}=17.09$, p=0.0010. It was established that Order of tests does not have statistically significant effect and that is why it is excluded from the post-hoc Tukey test, which examines the interaction between Condition factor and Vowel factor. Crucially, a post-hoc Tukey test (see Figure 8) found no significant difference in F2-F1 of /æ/ or /ɛ/ between English and Czech condition.
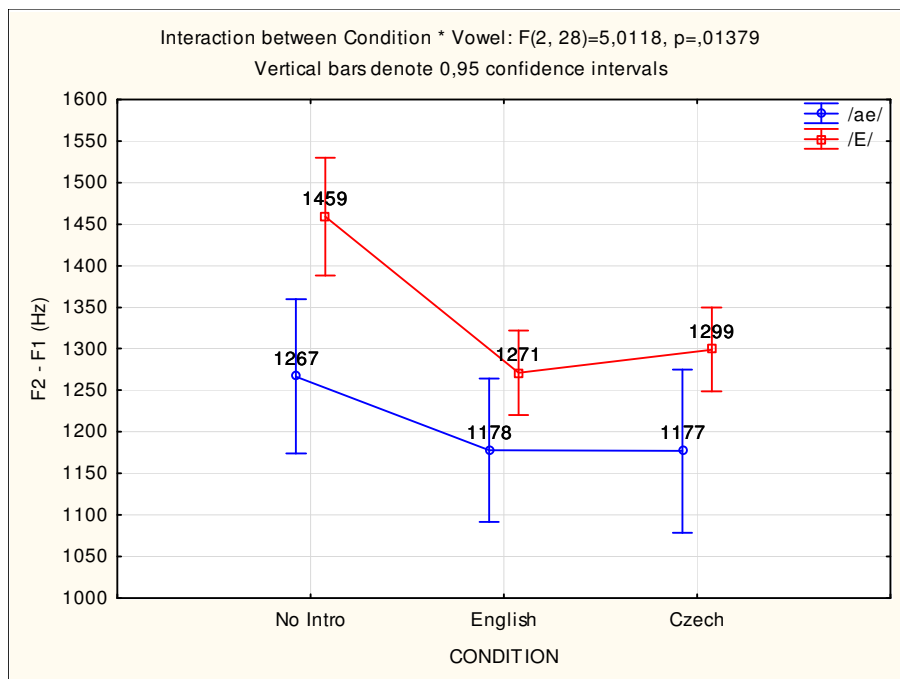
Figure 8: The post-hoc Tukey tests showing the interaction between Condition and Vowel factors for F2-F1 part. /ae/ stands for /æ/ and /E/ stands for /ɛ/ vowel.

4. DISCUSSION

In this thesis, I attempted to determine whether the L1 perception influences the L2 production during "immediate situations" (e.g. interpreting situations). It should be noted, that the vowels /æ/ and /ɛ/ are very difficult to keep separate in production for non-native speakers. In other words, it is difficult for non-native speakers to distinguish their production properly while speaking. This fact was also stated by Šimáčková (2003). It is then interesting to focus on the production itself. Based on the results, we can see that there is a significant difference in the F1 values (see 3.1), even though the difference in F2 values is not significant (see 3.2). The difference in F2-F1 values results from the aforementioned difference in F1 values. It can be generally observed that the two vowels are different i.e. the two vowels are not produced as one vowel by non-native speakers.

The aim of this thesis was to determine whether the Czech language influences the English production during "immediate situations" (e.g. interpreting situations). The post-hoc Tukey tests (of F1, F2 and F2-F1 values) of the interactions between Condition and Vowel factors revealed that the F2-F1 values are not significantly different, with one exception - in F1 values of /ɛ/, the difference between values of /ɛ/ in the English

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and Czech parts approached significance (p~0.055). Even the difference of F2-F1 values showed a slight deviation between values of /ɛ/ in the English and Czech part (see Figure 8), which was not significant as the post-hoc Tukey test revealed. Despite the results of the post-hoc Tukey tests, we see that after listening to the Czech set of utterances, the subjects had greater difference in F2-F1 values of /ɛ/ than after listening to the English set. This fact shows the slight L1 influence on the L2 production.

It was found that individual factors (based on the results of the repeated measures ANOVA of Condition and Vowel factors, see 3.1, 3.2 and 3.3) had significant effect on all formant values. The main effect was not found between the parts in different languages (English and Czech parts), but it was found between the No-Intro set and the two remaining parts. The F2 values in the No-Intro part are higher than the values in the English and Czech parts (see Figure 6). In addition, the F1 values in the No-Intro part are lower than the values in the English and Czech parts (compare Figure 6 and Figure 7). Presumably, the No-Intro part may be the likely cause of these differences. In this point, we can speculate that the reason for the differences in the No-Intro part was based on the completely different character of the task that the subjects had to undergo. It is possible, that the subject's mind was not sufficiently occupied by the task of memorizing the pictures. Even though, most of the subjects answered in the questionnaire that the No-Intro part was the most difficult part for them (12 of 16 women marked the No-Intro part as the most difficult one), when I asked them to order the parts according to their difficulty. Another possibility is that the linguistic load was insufficient (i.e. the subjects were able to self-monitor their pronunciation while reading the sentences out loud). If you look at the procedure in section 2.2, you can see that the No-Intro part was always the first part the subjects had to undergo; it may be possible that the subjects were not as tired as they were in the rest of the research.

At this point, we know that different language of the sets of utterances (Czech or English) does not affect subjects' L2 production, but it matters what the subjects do. In other words, it does not matter which language the subjects perceive first (Czech or English), because it does not affect their L2 production, but at the same time, we cannot claim that the subjects always have the same L2 production, because of the data from the No-Intro part.

The specific research question attempted to determine whether the L1 (Czech) perception influences the L2 (English) production during "immediate situations" (e.g. interpreting situations). Based on the collected data in research, we cannot explicitly claim that the influence is noticeable. In addition, we cannot claim that the research did not find any influence of the L1 perception on L2 production whatsoever. There are several probable reasons why the research did not reveal noticeable influence of L1 perception on L2 production during the "immediate situations" (i.e. interpreting situations). One of the reasons might be the poorly formed research tasks. In other words, the tasks did not simulate the proper interpreting situations, in which we know the L2 production would differ significantly. The research tasks differed noticeably from real interpreting situations. For example, an interpreter must cope with longer utterances than the subjects of my research. Another reason may be the fact that the subjects did not have to translate any of the utterances (sentences in slides) at all. Their only task was to choose and read the sentences out loud. The translation task was omitted on purpose, as stated in 1.4 section. If I wanted to focus specifically on the change in L2 production during the interpreting process, I should implement the translation task into the research. The specific research question focuses on the L1 influence on the L2 production in "immediate situations" (i.e. interpreting situations were used as the example of such situations). It is clear, that interpreters will have worse L2 production when they are occupied by the task of translation, which is why the translation task was omitted (the subjects would be occupied by the task of translation). For better simulation of interpreting situations, I recommend replicating the same research with one improvement. In the Czech and English sets of utterances, the subjects should choose between two replies in Czech, not in English, and then they should translate the relevant reply before saying it out loud. The length of the utterances can stay the same. In this way, the translation task would be incorporated into the research.

Interestingly, in Figure 8, we can see that the F2-F1 value of /æ/ in the No-Intro part is almost the same as the F2-F1 values of /ɛ/ in both the Czech and English parts. The F2-F1 values of /æ/ after listening to English and Czech parts were almost perfectly even and that is why we the post-hoc Tukey test revealed, that the interaction of the two factors (Condition and Vowel) was not significant. The extent of the F2-F1 values of /æ/ (ranging approximately from 1050 to 1360 Hz) was much wider than the range of F2-F1

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values for /ɛ/ (ranging approximately from 1260 to 1430 Hz). See Figure 8 and compare the differences of the vertical line segments in English and Czech parts. You can see that the blue line segments are wider than the red ones (notice the deviation of the blue line segment in the Czech part, which is even wider than the blue line segment in the English set). Based on this fact, we can suppose that a subject's production of /æ/ was not as stable and constant as a subject's production of /ɛ/ (the F2-F1 values of /ɛ/ shows smaller difference in fluctuation). Why do the subject's F2-F1 values of /æ/ differ more than the subject's F2-F1 values of /ɛ/? This may be the result of the difference in representations of the vowel systems (English vs. Czech). One possible explanation is that the new vowel (/æ/) in the Czech vowel system was produced with greater differences than the vowel which is more similar to the Czech one (/ɛ/), because there is no representation of the new vowel in the Czech vowel system. The speakers had greater problems with the production of this "unfamiliar" vowel for the Czech vowel system.

Another reason for claiming that the influence of L1 perception on L2 production is not noticeable might be the fact that subjects speak on the basis of one joint language system (i.e. one common phonological space, see 1.2.2 in this paper). As stated in the SLM model (see 1.2.2), the more dissimilar the L2 sound is, the simpler it will be for the L2 speaker to acquire and produce this L2 sound. I mentioned that the two vowels (/æ/ and /ɛ/) are very difficult to distinguish for non-native speakers. This might be the problem of non-distinctive production of the subjects. Further studies should be performed, in order to determine the influence of L1 on the L2 production. The research of /æ/-/ɛ/ contrast is too specific to claim, that there is no influence of the L1 perception of the L2 production at all.

In conclusion, the specific research question cannot be answered in a conclusive way. Based on the data from the No-Intro part, we see that the L2 production of /æ/ and /ɛ/ is different than L2 production of these vowels in other parts (Czech and English). That means that the L2 production varies. At the same time, we cannot specifically say that the native language (the Czech language in this situation) influences L2 production, because the collected data showed no significant difference in F2-F1 values of /æ/ and /ɛ/. The results showed no significant differences between the native- and foreign-language conditions.

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6. APPENDIX

6.1. Target words and utterances of Czech part

Czech set of utterances of /æ/:

sad – I'm sad to say they refused to come.
tab – Press the tab key to go forward.
bad – There are some bad ones too.
fat – There was a fat wallet and some documents.
gap – There was a small gap in the fence.
dad – Dad is still at work.

Czech set of utterances of /ɛ/:

vet – The other vet is still open.
set – I'll set some money aside.
shed – They shed their skin.
said – He just said he was upset.
debt – Debt is a burden for anyone.
text – I'll text you tomorrow.

6.2. Target words and utterances of English part

English set of utterances of /æ/:

dad – My dad taught me a lot.
badge – This badge will be enough.
bat – This bat feeds on fruit.
batch – The first batch will be here tomorrow.
Tad – Not even Tad Smith could have done better.
tap – Just tap on the window.

English set of utterances of /ɛ/:

fed – It's fed to the pigs.
dead – Dead or alive, you're coming with me.
jet – A private jet would be expensive.
bet – The bet was received too late.
death – Death would be a blessing.
test - The first test was too difficult.

6.3. Target words and utterances of No-Intro part

No-Intro set of utterances of /æ/:

jazz – Modern jazz is more interesting.
jack – The jack of diamonds and the ace of hearts.

back – My back is all sore from the work.
bag – Her bag was too big to carry.
tax – The tax on alcohol is rising.
tag – The price on the tag was unreadable.

No-Intro set of utterances of /ε/:

bed – The bed is not wide enough.
beg – I beg your pardon.
deck – The deck of the boat was washed.
check – Check your email please.
deaf – Deaf people are shy.
chess – Chess is not my favorite game.

6.4. Slideshows used in the research

The three slideshows (No-Intro, Czech and English parts) are enclosed on CD.

6.5. Research questionnaire

1.) What is your gender?

2.) What is your age?

3.) What foreign languages have you been learning? (at least for one year)

4.) How long have you been abroad and where? (specify)

5.) How long have you been learning English? (in years)

6.) How many minutes/hours a day do you speak English approximately?

7.) How many interpreting courses have you attended so far?

8.) Which year of your bachelor (master) studies are you attending now?

9.) Do you smoke?

7. ANOTACE

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Název česky:	Vliv mateřského jazyka na produkci cizího jazyka během tlumočení
Název anglicky:	The interference of the native language on second-language production during interpreting
Vedoucí práce:	Václav Jonáš Podlipský, Ph.D.
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Klíčová slova v ČJ:	cizí jazyk, tlumočníci, produkce, percepce, interference, kontrasty samohlásek, formanty,
Klíčová slova v AJ:	foreign language, interpreters, production, perception, interference, vowel contrasts, formants,

Anotace v ČJ: Hlavním cílem této práce je zjistit vliv mateřského jazyk na produkci cizího jazyka v okamžitých situacích. Práce poskytuje teoretický úvod, zabývající se dvěma možnostmi interakce mateřského a cizího jazyka (dva oddělené systémy a jeden společný). Subjekty výzkumu jsou čeští studenti anglického jazyka oboru tlumočnictví a překladatelství. Studenti nejprve produkují cizí jazyk po poslechu mateřského jazyka a poté po poslechu cizího jazyka. Výzkum se specificky zaměřuje na rozdíl hodnot formantů samohlásek /æ/ and /ɛ/, které jsou v češtině velmi těžko odlišitelné. Výsledky této studie významně nepotvrzují, ale ani nevyvrací vliv mateřského jazyka.

Anotace v AJ: The main aim of this paper is to determine the influence of the native language on production of the foreign language in "immediate situations". This paper provides the theoretical introduction, which is concerned with two possibilities of interplay between the native language and the non-native language (the possibility of two separate language systems and one joint language system). The subjects of the research are the students of the interpreting and translatology. Firstly, the subjects speak in foreign language after listening to the native language. Secondly, the subjects speak and listen in the same foreign language. The research aims specifically on the shift of formant values of the vowels /æ/ and /ɛ/, which are very difficult to be distinguished in the Czech language. The results showed no significant differences between the native- and foreign-language conditions. Implications for the theory and future research are discussed.