European Proceedings of
International Conference on Education & Educational Sciences
EpICEEPSY

www.europeanproceedings.com

e-ISSN: 2672-8141

DOI: 10.15405/epiceepsy.20111.16

11th ICEEPSY 2020

International Conference on Education & Educational Psychology

FOREIGN LANGUAGE PERCEPTION OF UNIVERSITY TEACHERS OF MUSIC AND FOREIGN LANGUAGES

Petra Besedova (a)*, Vendula Voříšková (a)
*Corresponding author

(a) University of Hradec Králové, Faculty of Education, Rokitanského 62, Hradec Králové, 500 03, Czech Republic, petra.besedova@uhk.cz

Abstract

Perception belongs to the complex and complicated psychic procedures actively participating on a certain reality construction. Perception of foreign languages is a very complicated phenomenon, which has a sensory character and can act with only two senses presented - hearing and vision. Such perception character is based on an ability to integrate the hearing sound firmly into the category of a certain phoneme without letting it uncategorized. We considered some of these facts and focused our current research on the perception of characteristic foreign language melody. Our main research aim is to describe the results of our experiment focusing on perception of foreign language material by the university teachers. Our research was done on 90 university teachers in the Czech Republic divided into 3 groups: teachers of music, teachers of foreign languages and teachers of other university subjects. The research was conducted in the following way: the teachers listened to 10 random audio examples of various foreign languages, including both tonic and non-tonic languages. The results did not confirm our expectations that the teachers of music would perceive tonic languages as more positive than the rest of the teachers. Our presumption was based on the fact that the teachers of music work more actively with melody, consequently their listening abilities are more sensitive towards the perception of tones and melodies simply because they are more trained for such differentiations. Since the perception of foreign languages still belongs to the marginal field of linguistic and didactic interests, it is necessary to undergo more research work and experiments, which could provide other possible views and answer to more questions about foreign language perception.

Keywords: Perception, FLT, university teacher, didactics.

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

1. Introduction

Perception belongs to the psychic procedures which generally participate actively in learning and studying. Particularly, they are very important when learning foreign languages and studying music. Two terms used for such psychic process are perception (from Latin word *perceptiō* meaning perception, understanding, or from Latin verb *percipere* meaning seize, grasp or catch) and sensing (to feel or experience something by senses). The definition of perception is quite complicated because it covers a complex process of an active construction of the reality. Such process is defined for example by Průcha et al. (2009) as a process of gathering and analysing stimuli and information, which constantly come from surrounding as well as from the inner human world. Psychologists often define perception as a process of acceptation the simplest isolated elements, i.e. senses, and refer to the theory of associationism. According to Sternberg (2002) perception include complex psychic procedures which allow us to differentiate, classify, match and attribute in our brain the meaning to the senses we gain from the surrounding stimuli. Nakonečný (2003) in his definitions stresses the fact that perception is used in much wider context than only in its relation to the surrounding. He includes also inner human state. More complex understanding of perception introduce Atkinsonová et al. (1995) when they claim that the human being is confronted by the complex stimuli and not only by partial information, i.e. man sees 3D pictures and listens to music and words.

The entire perception includes signals, which come from physical or chemical stimulation of the sensory system and go through the nervous system. Průcha et al. (2009) assert that perception is composed of the following processes: stimuli receiving, comparison with existing experience, labelling, reduction or filtering the stimuli, coding of information, alternative reactions and realization of the reaction. The process of perception itself starts by understanding the object in real world, which Goldstein (2009) defines as distant stimulus or an object. However, it is still the outer source of stimulus which is depicted by sensory receptors and due to the physical process it is able to stimulate the sense body organs which transform the coming energy to the neutral activity so-called transduction (stimuli transformation to the nerve impulses which are transmitted to the brain). The moment the information encounter the sensory receptors, the neutral activity occur (according to Goldstein, 2009, p. 6), which we call proximal stimulus (inner sense of stimulus source). The nerve signals are transmitted to the brain, where they are processed (Goldstein, 2009). The final mental creation of a distal stimuli is perception, the result of perception are then individual senses, complicated complex pictures which include summary of the phenomenon characteristics. However, it often happens that perception of one sense produces perception of another sense. In such case we speak about so-called synesthesia (simultaneous influence of more than one sense impressions). According to Sternberg (2002) there is one quite frequently discussed question where the border between perception and cognition is (or between perception and sensing). To sum up the theoretical background of perception and its numerous definitions it seems to be better to understand sensing, perception and cognition as the parts of one complex.

2. Problem Statement

Nowadays, there exist several basic types of perception: vision, hearing, smell, touch (of heat, cold, pressure and pain), kinaesthesia and vibration etc. We gain 80% of information by our vision. Visual

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

perception belongs to the best researched and widely studied perceptive modalities. The perceptions of each type are influenced mutually. Simultaneously they work under the influence of our prior attitudes. Considering all, we have decided to deal primarily with perception through hearing organs which are also vital when distinguishing foreign languages.

Franěk (2007) says that human auditory system is composed of external, middle and inner ear, then of the auditory nerves and the part of the brain, which analyses all acoustic information. The external ear (auris externa) is composed of the auricle, the ear canal and the eardrum, where all surrounding sounds are registered. The sounds then travel through the ear canal into the second part, the middle ear (auris media) where 3 smallest bones are placed: malleus, incus, and stapes (hammer, anvil, and stirrup). Their role is to strengthen any acoustic vibrations and transfer them from the air into the inner ear fluid. Franěk (2007) claims that those little bones reduce the amplitude of the oscillation. The inner ear filled with fluid (located in bony labyrinth of the temporal bone) changes in cochlea the sound waves into the nerve signals and we finally perceive them as sounds.

Parker (2007) characterizes the ear function as a principle of energy transformation in which the air pressure differences (sound waves) are changed into the electrochemical nerve impulses. Such waves, coming usually as complicated frequency patterns, stimulate vibrations of the eardrum. The system of small bones, which moves jerkily, produces the vibrations in perilymph (i.e. an extracellular fluid located within the inner ear) and the waves transmit again their vibratory energy into the tube-like organ of Corti. The organ of Corti is special sensory epithelium that allows the transduction of sound vibrations into neural signals.

Auditory perceptual abilities constitute (pre)condition for language perception and language musical characteristics. The differences in perception of complex tones (whose basic characteristics are frequency, intensity, duration and tonic spectrum of aliquote tones) among people is evident. Thus, we decided to choose and research melody perception.

Melody as an intuitive concept is very difficult to define. Sedlák and Váňová (2013) describe melody as a sequence of tones with various pitch organized in musical logic unit (music thought). As another example, Ringer (2001) defines melody as "pitched sounds arranged in musical time in accordance with given cultural conventions and constraints" (p. 363). Jäncke (2012, p. 178) adds that the melody consists of a series of consecutive tones, which are composed according to a musical rule and rhythm.[1] Additionally, Patel (2008) stresses the fact, that the term melody is not limited only when speaking about music: "Yet the notion of melody is not confined to music, because linguists have long used the term to refer to organized pitch patterns in speech" (p. 182).

Melody belongs to the non-verbal language aspects called prosody. Numerous studies on children proved that speech prosody is acquired earlier than segmental language units and therefore forms the basis for speech development and language acquisition (Lewis, 1936; Monrad-Krohn, 1963; Ross 1993). Those non-segmental language units are called suprasegmental features, which are from the phonological point of view less researched when comparing the segmental ones. Nevertheless, we think that they play very important role within the study of phonological emotive speech subsystems, mainly when confronting more different foreign languages.

[1] translated by P. Besedová

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

Psychic process of perception plays a basic role when learning foreign languages. Melody belongs to one of the most important language speech means and its perception happens due to the hearing. Patel (2008, p. 183) contributes that "most musical melodies are built around a stable set of pitch intervals, whereas linguistic melodies are not. Although the precise set of intervals in musical melodies varies by culture, the organization of pitch in terms of intervals and scales is a salient difference between music and ordinary speech. The consequences of this difference are profound" (p. 183).

Each language has its own specific melody which each person perceives individually. The differences in perception are of many types, e.g. prejudices towards the concrete languages, or towards their speakers, melody liking, or not liking etc. When listening to an absolutely unknown foreign language, we are able to recognize only rhythm and melody. Based on speech rhythm and melody, we distinguish languages and slowly open our personal door to the language.

3. Research Questions

Perception plays significant role when studying and learning foreign languages. Melody perception of a language belongs to crucial characteristics. Therefore, it became a core of our research. Our study is based on the idea that when perceiving foreign language we mainly perceive its suprasegmental features. The research was focused primarily on language melody which seems to be the first feature a person perceive even if s/he does not understand any linguistic part of the language. Being aware of all mentioned above, we set the main research question:

RQ: What is the difference in foreign language perception of university teachers, e.g. teachers of music, teachers of foreign languages and the rest of the teachers?

Based on the studies of Czech and international literature resources, interdisciplinary cooperation with respected Czech and international scientists together with numerous subject projects, we worked on perception and learning foreign languages. We set the following hypotheses:

H1: Tonic languages are perceived more positively than the non-tonic ones.
H2: Teachers of music perceive tonic languages more positively than the rest of the teachers.
H3: Women perceive tonic languages more positively than men.

We explored our hypotheses from three different points of view - foreign languages, musical and gender view. We will try to analyse our hypotheses and come out with the answers.

4. Purpose of the Study

Contemporary foreign language didactics is focused on communicative aspects, when it is necessary for the speaker to understand language elements in context. As stated by Vlčková and Lojová (2011), it is important to classify these elements out of their context so that the speaker would understand their paradigm. Generally, we can accept that, but each of us has already met a speaker whose language was not understandable at all. In such moment another means of communication manifest. Suddenly we tend to

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

perceive at least the language melody to gain some information about the speaker. In such situation we consider perception of foreign language as the key phenomenon and ability.

The main goal of our research was based on melody perception of an unknown foreign language. We focused our attention to the university teachers whose experience with foreign languages is rich and we can say that their perception of various language melodies is supported by their experience. The researched teachers were divided into three groups: teachers of music, teachers of foreign languages, and the teachers of other university subjects. We supposed that the teachers of music would perceive more positively tonic languages than the other two groups. Accordingly, we divided the languages to tone and non-tone ones.

A tone language, or tonal, is from language typology point of view a language where a single tone plays important role. Words can differ in tones (like pitches in music) in addition to consonants and vowels. That means that a tone carries the basic word meaning. Considering the fact that in tone languages there is of no importance the absolute pitch of the tone, but relative which is compared to the other tones, we suppose that musically educated people and people practising music (in our study teachers of music) will perceive tone language more positively. Majority of Asian languages are tone, e.g. Chinese, Vietnamese, Japanese, Malay, etc. On the contrary, the Indo-European languages contain only tonal features (Swedish). As a result, we included such languages into the non-tone group. As Čermák (2001) says connection of existence and function of the tones on one hand and accent with melody on the other hand is not fully described yet. Thus, we focus on perception of foreign language melody and we will try to confirm, or disprove, our research question which is based on differences of foreign language perception. Alongside, we will do our best to deal with our hypotheses.

5. Research Methods

We have chosen a combination of various research methods. Our main intention was to use an experiment which we supplemented with the questionnaire. Our research had several phases.

5.1. Preparatory phase

Our preparatory phase came partially from the previous research published in 2019 (Besedová, 2019) when we used an audio track of one simple text recorded in several foreign languages. The recordings were made only by the native speakers from August to November 2018. The main stress was put on the characteristic language melody. The text was simple, not time-consuming - lasting around 30 seconds. The tapescript was following: “Good morning. How are you? Could I introduce my friend Vanda to you? She is twenty-two, and at the time being she is studying psychology at our university. Vanda is a very nice, pretty, witty and intelligent girl and she is interested in a lot of things. She is fond of and very good at sports. Vanda, can you come to us, please?”

We have recorded 21 languages according to our own language key (Table 01). At that time we have chosen 10 foreign languages: Chinese, Danish, Finnish, Japanese, Kazakh, Malay, Greek, Swedish, Turkish and Vietnamese.

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

Table 01. Recorded languages and their classification into the language families (Besedová et al., 2019)

Alphabetical order of language families		
Kazakh	Altai languages	Turkic language
Turkish	Altai languages	Turkic
Malay	Austronesian languages	Malayo-Polynesian
Vietnamese	Austro-Asiatic languages	Mon-Khmer
Belarusian	Indo-European languages	Slavic
Danish	Indo-European languages	Germanic
Irish	Indo-European languages	Celtic
Lithuanian	Indo-European languages	Baltic
Dutch	Indo-European languages	Germanic
Portuguese	Indo-European languages	Romance
Russian	Indo-European languages	Slavic
Greek	Indo-European languages	Greek
Slovenian	Indo-European languages	Slavic
Sorbian	Indo-European languages	Slavic
Spanish	Indo-European languages	Romance
Swedish	Indo-European languages	Germanic
Japanese	Japanese-rjúkjú languages	Sino-Thais
Chinese	Sino-Tibetan languages	Sino-Tibetan
Estonian	Uralic languages	Finno-Ugric
Finnish	Uralic languages	Finno-Ugric
Hungarian	Uralic languages	Finno-Ugric

After choosing 10 languages, we have prepared two sets (two audio sequences) of 5 languages trying to pick the representatives of various language families. Simultaneously, we paid attention on even number of tone and non-tone languages. The difference between these two groups is that tone languages have a tone firmly connected to the world and define its meaning. Other languages (even if they contain tone elements as for example in Swedish) we labelled as non-tone language, because the tone in such cases does not carry the meaning. Our final division was:

Testing Set 1: Greece (non-tone), Turkish (non-tone), Finnish (non-tone), Chinese (tone), Vietnamese (tone)

Testing Set 2: Danish (non-tone), Japanese (tone), Swedish (non-tone), Kazakh (non-tone), Malay (tone)

5.2. Study Procedure

Data collection took place from September to December 2019 and it was done by a specific language audio test. The participants firstly filled out the questionnaire, which helped us to form 3 observed groups (see Tab. 2 below). We had 90 respondents (N=90) all together, 58 women (n=58) and 32 men (n=32).

Table 02. Respondents' professional specialization

Music teachers	32
Foreign language teachers	21
Non music and non-foreign language teachers	37
Total sum	**90**

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

Beside gender and professional specialization, the questionnaire asked respondents about their relationship to music and foreign languages. Such data will not be described and analysed in this paper due to the space limits of the article, but they will be published in other research studies.

During the study procedure we depicted also a degree of foreign language recognition. The results have been already published in the article "Recognition of foreign language material on university teachers' memory test" (Besedová et al., 2020).

Returning to our memory audio test mentioned above, we run it in the following manner. Firstly, the respondents listened to the short text recorded by the native speakers in 10 foreign languages in this order: Kazakh, Turkish, Malay, Vietnamese, Danish, Greek, Swedish, Japanese, Chinese, and Finnish. The task of the respondents was to indicate how they perceive the languages, e.g. how they perceive the language melody. In this case we used semantic differential where the respondents took down their feelings about each language using the seven-grade scale. It started with n. 1 (meaning pleasant) rising up to n. 7 (meaning unpleasant). We kept in mind that the respondents have already some experience with foreign languages, or even with the native speakers, or foreign culture, therefore it was necessary to consider possible prejudice towards some languages, or foreign cultures. However, prejudice is not in the centre of our attention in this paper and we will not deal with it in this article.

5.3. Data processing

Our researched data were firstly pre-processed in MS Excell following IBM SPSS Statistics 24. Firstly, the detection of duplicity was concluded, then the metric variables were verified from the point of view of their range, e.g. minimum and maximum corresponded to the theoretically possible range of monitored scales. Then, the descriptive statistical calculations were accomplished to describe the researched sample: minimum, maximum, average, variable anomaly of gender and observed groups.

6. Findings

We set three hypotheses, which we would like to confirm, or disprove. Coming to first hypothesis H1 we assumed that tone languages are perceived more positively (in our scale answers around number 1 meaning pleasant) than the non-tonic ones (see table 3 below). In our set of 10 languages, there were 4 tone languages: Chinese (N=4,78), Vietnamese (N=4,04), Malay (N=3,30) and Japanese (N=4,1).

Table 03. Foreign language perception based on respondents' feelings

Row labels	Kazakh	Turkish	Malay	Vietnamese	Danish	Greek	Swedish	Japanese	Chinese	Finnish
music teachers	2.84	4.13	**3.56**	**3.94**	4.13	2.88	4.09	**3.94**	**4.66**	3.8
foreign language teachers	2.14	3.62	**2.67**	**3.95**	4.00	2.67	3.86	**4.62**	**4.67**	3.7
non music teachers and non-foreign language teachers	2.46	4.22	**3.43**	**4.19**	4.08	3.11	3.41	**3.95**	**4.95**	3.4
Total sum	2.52	4.04	**3.30**	**4.04**	4.08	2.92	3.76	**4.10**	**4.78**	3.6

Derived from the data, we have to disprove H1. As we can see in table 3, the most positively evaluated language was Kazakh (N=2,52), then Greek (N=2,92) and Malay (N=3,3). On the contrary, the

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

tone languages as Chinese (N=4,78), Japanese (N=4,1) and Vietnamese (N=4,04) revealed figures close to the negative feelings (around number 7 in our research scale).

Typical tone language, as for example Chinese, is in average perceived the least positively by all respondents, which is illustrated in Figure 01. below. The figures close to the number 1 show positive, or pleasant, feelings when listening to the languages, on the contrary number 7 demonstrates negative, or unpleasant, feelings of the listeners. Figures higher than n. 4 on Osgood seven point scale appeared beside Chinese also for Japanese, Danish (non-tone), Vietnamese and Turkish (non-tone). Three out of 4 observed tone languages were perceived as rather less pleasant. By contrast, non-tone languages as for example Kazakh and Greek were perceived as rather pleasant. Thus, we cannot confirm hypothesis H1 that tone languages are perceived more positively than non-tonic ones.

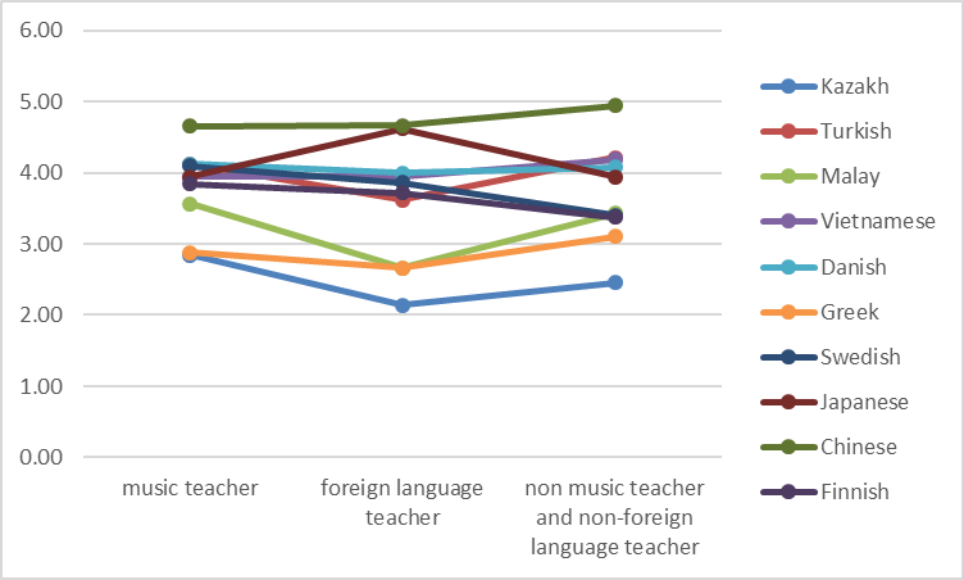

Figure 01. Foreign language perception of university teachers

The answers to our next two hypotheses H2: Teachers of music perceive tonic languages more positively than the rest of the teachers and H3: Women perceive tonic languages more positively than men can be found in the table 4 below.

Table 04. Foreign language perception by professional specialization and gender.

Row labels	Kazakh	Turkish	Malay	Vietnamese	Danish	Greek	Swedish	Japanese	Chinese	Finnish
Music teacher	**2.84**	**4.13**	**3.56**	**3.94**	**4.13**	**2.88**	**4.09**	**3.94**	**4.66**	**3.8**
Male	2.79	4.00	3.43	4.21	4.00	2.79	4.43	4.21	4.71	3.9
Female	2.89	4.22	3.67	3.72	4.22	2.94	3.83	3.72	4.61	3.8
Foreign language teacher	**2.14**	**3.62**	**2.67**	**3.95**	**4.00**	**2.67**	**3.86**	**4.62**	**4.67**	**3.7**
Male	3.00	6.00	4.00	5.00	4.00	5.00	3.00	6.00	6.00	5.0
Female	2.10	3.50	2.60	3.90	4.00	2.55	3.90	4.55	4.60	3.7
Non music teacher and non-foreign language teacher	**2.46**	**4.22**	**3.43**	**4.19**	**4.08**	**3.11**	**3.41**	**3.95**	**4.95**	**3.4**
Male	2.53	4.06	3.29	4.18	4.18	2.82	3.71	4.06	4.88	3.4
Female	2.40	4.35	3.55	4.20	4.00	3.35	3.15	3.85	5.00	3.4
Total sum	**2.52**	**4.04**	**3.30**	**4.04**	**4.08**	**2.92**	**3.76**	**4.10**	**4.78**	**3.6**

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

Music teachers perceive tone Chinese (n=4,66), non-tone Danish (n=4,13) and non-tone Turkish (n=4,13) as rather negatively, or with unpleasant feelings. The most positively is perceived non-tone Kazakh (n=2,84) and Greek (n=2,88). Therefore, we cannot claim that teachers of music perceive more positively tone languages which have characteristic melody. In contrast with Chinese as typical tone language we can see the highest number (n=4,66) when evaluating by respondents. We can say that Chinese is perceived by the teachers of music as the least pleasant language. Very similar results were achieved with the teachers of foreign languages (n=4,67) and the other teachers (n=4,95). The most positively perceived language by teachers of foreign languages is non-tone Kazakh (n=2,14) followed by non-tone Greek (n=2,67) and tone Malay (n=2,67). The other teachers, e. g. university teachers of other subjects but not music and foreign languages, also perceive the most positively non-tone Kazakh (n=2,46), followed by non-tone Greek (n=3,11) and non-tone Swedish (n=3,41). Thus, we cannot accept H2 which states that teachers of music perceive tone languages more positively than the teachers of foreign languages and other teachers.

Finally, the answers to our H3 saying that women perceive tone languages more positively than men can be observed in table 5 below.

Table 05. Foreign language perception - gender view

Row labels	Kazakh	Turkish	Malay	Vietnamese	Danish	Greek	Swedish	Japanese	Chinese	Finnish
Male	2.66	4.09	**3.38**	**4.22**	4.09	2.88	4.00	**4.19**	**4.84**	3.7
Female	2.45	4.02	**3.26**	**3.95**	4.07	2.95	3.62	**4.05**	**4.74**	3.6
Total sum	**2.52**	**4.04**	**3.30**	**4.04**	**4.08**	**2.92**	**3.76**	**4.10**	**4.78**	**3.6**

The most positively perceived foreign language by women is Kazakh (n=2,45) and when considering only female teachers of foreign languages it is even lower number (n=2,1). Similarly, the men perceive Kazakh as a language with pleasant melody. On contrary, the three typical tone languages as Chinese (n=4,84), Japanese (n=4,19) and Vietnamese (n=4,22) are perceived negatively. Most surprisingly, Chinese and Japanese got n=6,00 by male teachers of foreign languages which is a result very close to number 7 on the scale meaning the least pleasant. As we can observe in table n. 4, women really perceive tone languages more positively than men. Therefore, hypothesis H3 can be confirmed even if the differences among all tone languages are not statistically significant.

7. Conclusion

Perception is understood as an active process to create certain reality formed by learning, memory, expectations and attention. We are aware of the fact that study of perception generally is quite complicated and needs involvement of other disciplines such as cognitive psychology, personality psychology, social psychology, psychophysics, neurology etc. However, perception of foreign languages presently belongs to the less explored scientific fields both in linguistics and didactics.

We can conclude from our research that it is not possible to claim that tone languages are felt by participants more positively than the non-tonic ones. Such findings are influenced by many other factors, e.g. speaker and their speech, place and surrounding of the voice recording, respondents immediate feelings, even their prejudice etc.

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

We can also say that perception is a certain reality reflection via sense organs accompanied by human attitudes, emotions, interests, values, expectations and experience (Hartl & Hartlova, 2009) therefore it is too complicated to include all these factors in one single research. Such facts influenced also our findings that teachers of music would perceive tone languages more positively than the other teachers.

Our hypothesis came out from the scientific debates about absolute music sense in speakers of tone and non-tone languages (Deutsch et al., 2009; Golestani & Zatorre, 2009). We thought that the teachers of music had a trained music sense and they perceive melody of the tone languages as positive, or in other words listening to the tone languages bring them more pleasant feelings than when listening to non-tone languages. Such hypothesis was not confirmed. The results showed that tone languages, mainly Chinese, were evaluated as rather unpleasant. But we proved our hypothesis H3 where we concentrated on gender differences in perception. We can confirm that women perceive tone languages as more positive than the men although the differences were not great.

Summing up the findings in foreign language perception of university teachers we can answer finally our main research question RQ: What is the difference in perception of foreign languages in university teachers, e.g. teachers of music, teachers of foreign languages and the other ones? There are differences of perceiving foreign languages by university teachers, but the differences are not big. Simultaneously, we must be aware of the influence of many factors which can change perception of a certain language. Other research and studies should be done to bring more results and answers.

Finally, we can say that foreign language perception is the utmost interesting field of study of psycholinguistics and we think that more results from the research can bring many innovative ideas and thoughts into the practice. We see implications for practice and recommendations for future in implication and strengthening perception of music elements, mainly melody, into the practical foreign language teaching. We are convinced that the teachers develop not only pupils' language, emotional and cognitive abilities, but they should also encourage pupils' language feelings which is in our opinion vital part of foreign language education.

Acknowledgments

The authors would like to express many thanks to all involved in this research. Our study was financially supported by the specific research grant of Faculty of Education Hradec Králové (Nr. 2123/01360/1210) and it was approved by the ethic committee of Faculty of Education Hradec Králové 22nd January, 2019.

References

Atkinsonová, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Nolen-Hoeksema, S. (1995). *Psychologie* [Psychology]. Victoria Publishing.

Besedová, P. (2019). Correlation of memorial learning in foreign languages and music. Comparative study of elementary school learners in the Czech Republic. *The European Proceedings of Social and Behavioural Science, LXXII*, 289-298.

Besedová, P., Beranova, S., Matejovska, A., & Zizalova, J. (2020). Recognition of foreign language material on university teachers' memory test. *EpICEEPSY, 1, 2020.*

Čermák, F. (2001). *Jazyk a jazykověda* [Language and linguistics]. Karolinum.

https://doi.org/10.15405/epiceepsy.20111.16
Corresponding Author: Petra Besedova
Selection and peer-review under responsibility of the Organizing Committee of the conference
2672-8141

Deutsch, D., Doodley, K., Henthorn, T., & Head, B. (2009). Absolute pitch among students in an American music conservatory: association with tone language fluency. *Journal of the Acoustical Society of America*, *125*, 2398–2403.

Franěk, M. (2007). *Hudební psychologie* [Music psychology]. Karolinum.

Goldstein, E. B. (2009). *Sensation and Perception*. Cengage Learning.

Golestani, N., Zatorre, R. J. (2009). Individual differences in the aquisition of second language phonology. *Brain and Language, 109*(2-3), 55-67.

Hartl, P., Hartlova, H. (2009). *Psychologický slovník* [Psychological dictionary]. Portál.

Jäncke, L. (2012). *Macht Musik schlau? Neue Erkenntnisse aus den Neurowissenschaften und der kognitiven Psychologie* [Does music make you smart? New insights from neuroscience and cognitive psychology]. Hans Huber.

Lewis, A. (1936). *Infant speech: a study of the beginnings of language.* Harcourt, Barce and World.

Monrad-Krohn, G., H. (1963). The third element of speech: prosody and its disorders. In L. Halpern (ed.) *Problems of dynamic neurology.* Hebrew University Press.

Besedová, P., Ondráková, J., Tauchmanová, V., & Drtina, R. (2019). Korelace hudební a jazykové paměti. Pilotní studie. *Media4you Magazine*, *16*(4), 30-36.

Parker, S. (2007). *Lidské tělo []*. Euromedia Group, k. s.

Patel, A. D. (2008). *Music, Language and the Brain.* University Press.

Průcha, J., Walterová, E., Mareš, J. (2009). *Pedagogický slovník* [Psychological dictionary]. Portál.

Nakonečný, M. (2003). *Úvod do psychologie* [Introduction to psychology]. Academia.

Ringer, A. L. (2001). Melody. In S. Sadie (Ed.), *The New Grove Dictionary of Music and Musicians* (pp. 363-373). Grove.

Ross, E., D. (1993). Nonverbal aspects of language. *Behavioral Neurology*, *11*, 9-23.

Sedlák, F., Váňová, H. (2013). *Hudební psychologie pro učitele* [Music psychology for teachers]. Karolinum.

Sternberg, R. J. (2002). *Kognitivní psychologie* [Cognitive Psychology]. Portál.

Vlčková, K., Lojová, G. (2011). *Styly a strategie učení ve výuce cizích jazyků* [Learning styles and strategies in foreign language teaching]. Portál.