

Rapport de Soutenance de la thèse de Doctorat de Marie HEVROVA

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Titel: Phonetic attrition and cross-linguistic influence in L1 speech of late Czech-French bilinguals

Graduate School : CLESCO – Comportement, Langage, Education, Socialisation, Cognition

Spécialité : Sciences du langage

PhD. Committee :

Radek Skarnitzl, Associate Professor at Charles University Pragues, external examiner
Élisabeth Delais-Roussarie – CNRS Research Director, Université de Nantes, external examiner
Lorraine Baqué – Professor at Universidad Autonoma de Barcelona, chair
Barbara Köpke, Professor at Université of Toulouse 2 Jean-Jaurès, co-supervisor
Tomáš Bořil, Assistant Professor at Charles University Pragues, co-supervisor

The defence started with a presentation of 30 minutes where Marie HÉVROVÁ summarized the theoretical background, aims of the study, experimental design and findings.

After the oral presentation Ms. Lorraine Baqué, Chair of the PhD Committee, gave the floor to Ms. Elisabeth Delais-Roussarie (EDR), CNRS Research Director at University of Nantes, one of the two external examiners.

The latter began her speech by congratulating the candidate on having reached the defence. She recalled that, using an experimental approach, Marie HÉVROVÁ (MH) studies phonetic attrition and cross-linguistic influence in speaker's L1 (Czech), learner of French (L2) and resident in Toulouse area. She also added that the thesis work consists of three distinct experiences: a perception study which allows evaluating how native-like do the speakers sound, an acoustic analysis that allows comparing acoustic values/ features in Czech spoken by monolingual or late Czech/French bilingual, and a study on extra-linguistic factors based on a questionnaire. EDR then said that the work makes an interesting contribution in the large range of studies dedicated to phonetic CLIs and attrition.

EDR then said that the core of the manuscript was divided into two parts, each containing four chapters (for a total of 8 chapters), and also included an introduction and a conclusion. In the introduction, MH explains her motivations for studying phonetic attrition and cross-linguistic influences (CLI) from L2 French into L1 Czech, and presents the organisation of the document. In the first part, which contains chapter 1, chapter 2, chapter 3 and chapter 4, MH presents the theoretical background that is used to achieve the research presented in the document. Chapter 1 provides a comprehensive presentation of several models used to account for L2 production / perception, starting from contrastive analysis to more elaborated models such as the "Native Language Magnet Theory" as developed by Kuhl and colleagues, the "Perceptual assimilation Model" or PAM as well as its new version designed for L2, PAM-2, both developed by C. Best, the Speech Learning Model (SLM), initially proposed by Flege, and its revised version, the SLM-r, the 'second Language linguistic perception model' developed by Escudero and inspired by stochastic

OT, and the model developed by Mennen to account for the acquisition of suprasegmental features, the L2 intonation learning theory (LILt). In Chapter 2, MH clarifies the terminology for terms such as bilingualism, attrition, phonetic drift, cross-linguistic influences, etc. Several studies accounting for phonetic CLI are then presented and discussed, a distinction being made between L1 influence on L2, and L2 influence on L1, on the one hand, and on the feature investigated on the other (stop consonants, fricatives, vowels, liquids, suprasegmental elements, etc.). Chapter 3 is a comparison of the Czech and the French phonological system/ inventory (vowels, consonants and suprasegmental features), variation being considered. In Chapter 4, which contains less pages, MH explains more clearly what are her research questions and how she will apprehend them, based on the presentation made in the three previous chapters.

The second part relates the three experiments achieved by MH during her doctoral studies. Chapter 5 is dedicated to the perception test which consisted to evaluate the French/ Czech nature of items produced by Czech bilingual living in France, the items being extracted from distinct types of data. The results obtained confirmed the hypothesis formulated by MH: Czech bilingual productions sound 'less' Czech in comparison to items produced by Czech monolingual. As the participants had to indicate what was crucial in their evaluation, several cues (vowel quality, rising intonation, etc.) were mentioned and then taken into consideration to design the acoustic study presented in Chapter 6 and based on data extracted from the reading and semi-spontaneous speech production produced by 17 female monolingual Czech and bilingual Czech/French speakers. Several acoustic features were analysed in order to evaluate possible phonetic CLI. They consisted of the spectral characteristics of vowels (F1, F2 and F3 values mostly), spectral and temporal characteristics of rhotics, spectral characteristics of glottal and velar fricatives, F0 in non-conclusive intonation patterns, and the occurrence of stuck schwas. As for the results, significant differences were observed for vowels (especially F1 values), fricatives and stuck schwas, whereas differences are less clear for rhotics and rising tonal patterns. Chapter 7 focuses on external factors and provides ideas to take them into account in analysing phonetic CLIs. The study mostly relies on a questionnaire that was given to the speakers and is presented in the document as appendix. Four points were considered: Length of residence, use of Czech in France, preferred identity and proficiency in French. Among them, proficiency in French displayed significance. In Chapter 8, a general discussion of the results obtained for the various experiments is proposed. It allows analysing the results with regard to previous studies and models. Moreover, MH has the ability to evaluate the limits and contributions of her work. This second part, which contains four chapters, is followed by a conclusion which summarizes the findings.

To EDR's mind, the thesis is a very interesting work on phonetic CLI from French L2 to Czech L1 and on attrition. It is based on a solid knowledge of the literature. Moreover, the work achieved shows that MH has the ability to set up and question experiments and to use statistical modelling. As for the document itself, EDR explained that it is well-presented and well-structured. She also said that she really appreciated the various summaries provided at the end of each chapter, as they allow understanding clearly which issue is most specifically apprehended/ questioned in the chapter. As for the results, they are always clearly presented in the various chapters, and discussions are developed in such a way as to question the hypotheses investigated.

Despite the fact that the thesis has clearly much more strength than weaknesses, and results from an impressive work, a good knowledge of the literature, a coherent designing of several experiments, EDR explained that she regretted that MH never gave access to the audio data used for both the perception test and the acoustic analyses. This could have been done by distributing a CD with the manuscript. Consequently, she had hoped that the candidate would present some of the audio stimuli during the defence, but this was not done, the defence being a simple reiteration of what was written in the manuscript, without any particular development.

After these comments on the manuscript and the oral presentation, EDR asked questions to the candidate in order to give her the chance to defend her positions. She first asked the candidate to explain what she meant by phonetics and phonology, as the terminological choices made and the examples treated may give the impression that the difference between the two is not so clear. A discussion ensued on this subject, and MH clarified her positions.

This was followed by a discussion on inter and intra-speaker variation, which does not seem to be taken seriously. EDR also supported the idea that the candidate could rely on the L1 of the speakers, and the way they realise certain sounds or prosodic features. By not looking at any of the speakers' productions in their L1, it is difficult to know whether the small differences are really due to contact with the French language. On this subject too, a debate opened with the candidate, EDR suggesting that she use another procedure to analyse the results (confusion matrix, etc.). She was relatively pleased with the answers given by MH.

Before concluding her intervention, EDR asked the candidate about the data used for the study on suprasegmental features, especially when extracted from larger corpora and spontaneous speech. MH then explained how she proceeded. EDR was satisfied with the answers, and congratulated MH again for having reached the defence.

Then the Chair of the PhD Committee gave the floor to the second external examiner, Mr. Radek Skarnitzl (RS), from Charles University Prague (Czech Republic).

In his review, RS noted that MH's dissertation constitutes the first systematic examination of the effects of L2 French on L1 Czech. He appreciated that the L2 acquisition models, introduced in the first chapter, were described in extensive detail, supported by useful examples, and also that the student presented not only the traditional segmental approaches, but also Mennen's L2 intonation learning theory. He commended the student on the extensive presentation of the theoretical background, accompanied by summaries in a concise tabular form. The fact that the author went beyond mere descriptions and considered limitations of the studies and concepts discussed was also highlighted as a very positive aspect of the dissertation. RS regarded the description of the concept of standard language and the linguistic situation of Toulouse French and Bohemian Czech as somewhat redundantly detailed. The comparison of Czech and French sound patterns itself was generally well presented, although he raised two points at this stage, namely the unfortunate use of slant brackets not only for phonemic distinctions, but also for allophonic variants; and the use of the question mark for the glottal stop instead of the proper IPA symbol [ʔ]. RS summarized that the theoretical chapters were generally well written, with a logical structure, that MH had familiarized herself with a wide range of studies, demonstrated solid knowledge of the field, and managed to describe this research area in a comprehensive way and with a critical eye. He pointed out that the work with references was exemplary in the dissertation, with only one mistake in referencing (Dacovičová should be Dankovičová).

As regards the empirical part of the dissertation, RS commended the student on a careful and meticulous methodological approach. Specifically, he appreciated that the methodological aspects of the design of the perceptual experiment (such as balance between the number of C and CF items) was carefully considered, based on available studies. As for the acoustical study, he emphasized that measurement methods were carefully described and justified (especially the reasoning for using both raw and normalized values to measure vowel formants). On the other hand, the reviewer pointed out that 17 was rather a low number of participants in a perceptual experiment, but borderline acceptable. The reviewer highlighted that the results of the acoustic study were accompanied by truly informed discussion; specifically, he appreciated how the author

considered interesting implications of the observed assimilation and dissimilation effects and uses efficient illustrations of the combined effects (Fig. 6.19).

Turning to general discussion, RS praised the student for considering the results from several perspectives, comparing the three conducted studies to each other, and proposing a possible three-stage development of L2 sounds from complete equivalence classification via a dissimilation in some features of an L2 phoneme and assimilation of other features, to a formation of a new L2 category. He also appreciated that the author pointed to the importance of looking beyond group results and examining individual variability.

Finally, RS posed two questions concerning the perceptual study and two related to the acoustic study. First, he asked whether the PhD student behaved differently from the others. During the defence, MH replied that she re-analysed the data, examining the PhD student separately and, indeed, found some differences as compared to the mean behaviour of the remaining group, but not major ones.

Second, RS asked whether “students in their first year of the Bachelor of phonetics” (p. 144) may really be regarded as “experts” (p. 145). The candidate admitted during the defence that “experts” may not have been the best word to refer to the respondents, but provided an assuredly positive answer to the question, showing that this “expert” level was clear from the insight the respondents demonstrated in their comments regarding features they noticed in the CF’s speech.

Next, RS inquired about calculating f0 range. In his review, he quoted the author’s decision (p. 196) “For determining the speaker’s f0 range in the task, the highest f0 value was rounded to the closest higher multiple of five and the lowest f0 value to the closest lower multiple of five.” He asked why she made this decision and whether there was any support for this approach in literature. MH explained during the defence the motivation for this decision satisfactorily. She pointed out that the reasoning was simply to include all f0 values into the range measures.

Finally, the reviewer asked for details on how “very high rising intonation” in section 6.6 was conceptualized, whether such contours were identified perceptually, or acoustically, with a given threshold in semitones. During the defence, the student admitted that this may have been explained in a better way. Having already described the identification of very high rising contours in her presentation, she repeated that this was performed using k-means clustering analysis and subsequent visual identification of the contours.

Overall, RS summarized his review by saying that he regarded the submitted dissertation as very good research of cross-linguistic interference between L1 Czech and L2 French, confirming that the author had demonstrated comprehensive knowledge of the scientific area, offered new results and proposed intriguing theoretical implications for L2 acquisition. He concluded that MH had convincingly demonstrated her capacity to conduct independent scientific research, that the submitted dissertation met the requirements of a doctoral dissertation.

Then Ms. Lorraine Baqué (LB) took herself the floor and first of all congratulated MH for the quality of the manuscript. She appreciated very much the way the work was organised and found it very interesting that MH decided to analyse two different tasks, involving different cognitive processes with varying levels of complexity, as well as the fact that she linked her 3 main experiments (about the extent to which Czech-French bilinguals’ speech sound typically Czech, the acoustic characteristics of their segmental and prosodic productions and the correlations between these characteristics and the extralinguistic factors) so as to obtain a global overview of the research questions.

LB appreciated very much the fact that MH described in great detail most of the acoustic and statistical analyses, explaining why and how they were carried out. Perhaps the only exception concerns the description of the obtained corpus. It is a pity that, having entirely transcribed it, she

did not include it in the appendix. LB considered that it would have been interesting to know exactly which items were included in her perception test, and to see which phonetic context are the items selected for the acoustic analyses extracted from, so as to determine the potential effects of phonotactics on the results. LB asked MH to elaborate a little bit more on the criteria she used for the selection of the items included in test 1: which were the units: sentences, phrases, paragraphs? Did she select - and if so, which - specific phonemes or prosodic phenomena in order to decide to include these units in the perception test? And which is the impact on the results of these choices? MH provided a satisfactory response to the abovementioned questions.

Before going further to more substantive matters LB made some comments that could be useful to improve the manuscript for future publications.

1. The definition of the "liaison" (p. 126) may be revised in order to avoid confusion between different resyllabification phenomena such as what is known in French as 'liaison', 'enchaînement' and so on.
2. It might be worth refining the definition of the different types of what MH calls "stuck schwa" in order to make it clearer what she is talking about.
3. The phonological status of mid open and mid close oral vowels in southern French could be better explained as well. That may have an impact on the interpretation of the results concerning, for example, cross-linguistic influence on e/ɛ, especially if MH does not take into account the potential effect of syllable structure on the acoustical values.
4. Finally, it would be useful to carry out a Fleiss' kappa to compute the inter-judges agreement in test 1.

MH thanked LB for her suggestions.

Coming to the main issues, LB pointed out two aspects she would like to address, both related to what can be considered phonetic or phonological in the thesis, and to the effects of cross-linguistic influence phenomena on the interpretation. The first is of more theoretical nature, while the second leads to methodological issues.

1. As had already been pointed out by other members of the examining committee, what can be considered phonetic or phonological in this work is not as clear as it could have been. MH decided to analyse in great detail individual phonemes, that can be considered "not identical" in the two considered languages. Such a definition is, to say the least, debatable. A phonological unit, for example a phoneme, is not defined by its articulatory nor acoustic properties, but from a functional point of view in relation to the other phonemes of the same phonological system. For instance, when MH analysed cross-linguistic influence of French on Czech vowels, let's say i: or ɪ, it is interesting to see which acoustic differences arise between the two considered groups. These allowed her to conclude that some kind of phonetic drift has occurred in CF. However, in order to see to what extent there is some kind of phonological reorganisation of the vocalic system, it could have been interesting to investigate whether the phonological distinctions between the two I-phonemes are preserved or not in CF productions. And the same for E-phonemes and so on. In order to test the stability of the vocalic system in Czech of the CF group, LB suggested using tools such as the metrics related to the concept of Vowel Space Area, and especially, CMintra (which is related to intra-categorical dispersion) and CMinter (which is related to inter-categorical differences), as computed by Audibert and Fougéron in 2012. In addition, in order to obtain a more comprehensive overview of the potential reorganisation of the vocalic system, Phi index, as described in Huet and Harmegnies in 2000, could be used.

2. Similarly, taking into account not only individual phonological units but phonological features as well could allow MH to better distinguish between phonetic and phonological effects of cross-linguistic influence. For example, it might be worth analysing in depth the correlations between different parameters she described (p. 231) in order to see whether cross-linguistic influence affects individual phonemes or, more systematically, a specific phonological feature (for instance frontness or height as a whole, phonological length, etc.). Such an approach could also

provide new evidence for the interesting proposal of the coexistence of assimilation effects on a specific feature and dissimilation effects on another feature of the same phoneme. 3. From a methodological point of view, as MH said in her final discussion, it might be worth analysing the productions in French of CF group. LB considered that she has discussed in a very interesting way how the results can be interpreted following the main L2 acquisition models. Most of the hypotheses of CLI and attrition of the L1 are somehow related to the idea that the reorganisation of the phonological system in the L2 (for instance, the formation of new phonological categories) can lead to cross-linguistic influence of the L2 on the L1, and thus to phonetic drift or attrition at the phonological level. An extreme example is what she stated on p. 234 that higher levels of proficiency in L2 lead to well-distinguished phonological systems in FR and CZ (and to less CLI) contrary to what happens with intermediate or initial levels of proficiency. LB could agree with that, but she found it difficult to assert that all the differences MH observed between the two groups result from the influence of French, without taking into account to what extent the participants had acquired the phonetic and phonological system of their L2 French by analysing their productions in French. Related to these issues, LB raised two questions:

1. What are the explanatory hypotheses of the coexistence of both an assimilation effect (let's say of the "spectral moments" of /r/ in semi-spontaneous speech) and the dissimilation effect in its normalised duration? Does MH think CF participants tend to be less sensitive to one phonological feature of the Czech /r/ while preserving their sensitivity to another feature or to the difference between the French /r/ and the Czech /r/? Does she think it is the result of some kind of compensation?
2. How does MH explain (p. 222) that she expected that "lower amount" of Use of Czech of CF will not be related to more phonetic CLI in the acoustic indicator variables [...] and that, on the contrary, it will be related to more phonetic CLI in the perceptual indicator"? Could it be related to fluency phenomena? If so, why did she compute articulation (or speech) rate and did not report the results in her thesis. It's a pity since it would have provided an insight into phenomena such as fluency that may have a great impact on the perception of native-likeness of the CF productions.

MH responded in a satisfactory way to most of the questions.

Before ending, LB made some suggestions for future developments of MH work:

1. Although she has talked about initial accent in French and Czech, she did not include this in the thesis. It might be worth analysing the effects of the different phonological status of initial accent in both languages in the prosodic organisation of CF group.
2. Finally, some of the results could be related to phonotactics and syllable-structure. It might be useful to have a look at these potential effects.

MH thanked LB for her suggestions.

To conclude, LB congratulated once more MH for her work and thanked her for her answers.

Then the Chair of the Committee gave the floor to Mr. Tomáš Bořil (TB), from Charles University Prague (Czech Republic), one of the two co-supervisors of the PhD thesis.

TB found MH to be a conscientious and talented student working full-time on her PhD topic on everyday basis and regularly coming up with original ideas. Considering the fact that she started her PhD studies with no previous background in phonetics, statistics, acoustics or programming, she made a significant progress over the past three years, culminating in the submitted thesis.

She mastered advanced concepts in phonetic attrition, phonetic acoustic measures, statistics (e.g., linear mixed-effects models), programming in R, using the ggplot2 library for creating

advanced plots, and became fluent with the phonetic Praat software, including the creation of scripts and multiple-forced-choice perceptual experiments.

She actively participated in Doctoral seminars and Theoretical and Methodological Seminars during the past three years of her doctoral study. She successfully passed the following examinations:

- English Language
- First or Second Language Acquisition
- Speech acoustics and speech technology
- State PhD Examination

Marie Hévrová attended Internship abroad, at the *Institut für Phonetik und Sprachverarbeitung* in München, Germany, from 9/30 to 12/20/2020 under the leadership of Dr. Esther de Leeuw, a specialist on cross-linguistic influence and phonetic attrition. She was an active attendee of the postdoc seminars under the leadership of Prof. Dr. Jonathan Harrington.

She participated in several local conferences and workshops and published two peer-reviewed papers in international conferences:

- Hévrová M., Bořil T., Köpke B. (2020). Phonetic Attrition in Vowels' Quality in L1 Speech of Late Czech-French Bilinguals. In: Sojka P., Kopeček I., Pala K., Horák A. (eds) Text, Speech, and Dialogue. TSD 2020. Lecture Notes in Computer Science, vol 12284. Springer, Cham, pp 348-355, DOI 10.1007/978-3-030-58323-1_38.
- Hévrová M., Köpke B., Bořil T. (2021). Perception of L1 Speech of late Czech-French Bilinguals by Czech Monolinguals. In: Proceedings of VIII Congreso Internacional de Fonética Experimental.

She is a coauthor of a research paper that will be submitted to an impact journal *Linguistica Pragensia* later this year (autumn 2021):

- Bořil T., Šturm P., Skarnitzl R., Hévrová M., Köpke, M. What reveals a long-term stay in France: Perceptual impression of non-conclusive rises. *Linguistica Pragensia*. (ISSN 0862-8432 (print), 1805-9635 (online))

This paper follows up on the findings made in her thesis and applies them in the context of artificially manipulated melodic contours of utterances which are being perceptually evaluated by Czech L1 monolinguals.

In the theoretical background section of the thesis, MH conducted thorough research of L2 speech production and perception models, cross-linguistic influence and L1 attrition and compared Czech and French phonetic systems. Based on this state-of-the-art knowledge, she proposed major research questions and hypotheses about Czech-French bilinguals' speech.

In the experimental section of the thesis, she conducted three main studies – perceptual test, acoustic study and extralinguistic factors analysis.

During her stay in Toulouse, she recorded read and semi-spontaneous speech of 17 late Czech-French (CF) bilinguals in a professional sound-treated studio. Subsequently, she transcribed all the recording by means of precisely labelling phone-level time boundaries following well-defined phonetic segmentation rules. In her analyses and experiments, as a reference, she used a sound material capturing Czech (C) monolinguals, which was recorded in similar settings in a previous effort under a grant cooperation of Charles University and Czech Technical University in Prague.

At all levels of her analyses (acoustic and perceptual), she found statistically significant differences between CF's and C's Czech speech (L1), both in segmental and suprasegmental features.

The submitted thesis presents an intensive research work with a good logical structure, outstanding use of references, and application of effective methods accompanied by statistical evaluations and producing highly promising results.

In closing, TB finds that the thesis represents both a meaningful and substantial contribution to the field of L1 speech attrition and cross-linguistic influence. The author of the thesis proved to have the ability to perform original research and achieve novel scientific results.

Then the Chair of the Committee gave the floor to the second co-supervisor, Ms. Barbara Köpke (BK), from the Université de Toulouse 2 Jean-Jaurès (France).

BK started saying that her role as supervisor is first of all to recall some elements of MH's background and development.

She met MH first when she came to see her as the coordinator of the master program – it must have been in spring 2016 or at the end of 2015. At that time MH was involved in a program in French language and literature in the ICT in order to prepare for the national competition for teacher qualification. She pursued (and succeeded) in this path, and involved in parallel in the master program in language sciences where she focused her research on language didactics.

BK remembers MH following her classes, taking notes all the time, and emerging from time to time from her notes to ask a question, most of the time very interesting.

BK was nevertheless very surprised when MH came to see her in Spring 2018 and told her that she wanted to apply for a doctoral grant in order to prepare a PhD on phonetic attrition of the L1.

The topic was completely different from what MH had done during her master. Except from some master classes, she did not have a curriculum in language sciences, and she had never been trained in phonetics. BK tried to convince her to wait one more year, to take time for reading and get a bit of training in phonetics, but MH did not want to listen to her, she applied and succeeded in obtaining a grant, and went headlong into her PhD study. Luckily enough, MH found a co-supervisor with qualification in phonetics, and started the training in phonetics immediately during the summer. She also started English classes, since it turned out that the only language the co-supervisors could communicate in was English, and so it was clear that the language of the thesis was to be English. BK was very impressed by the quick progress MH made in both domains during the first months. She then insisted to start data collection very quickly, without going too much into reflections on method, as BK would have preferred, but this turned out to be a lucky decision since data-collection became very difficult later on with the sanitary crisis.

The topic chosen by MH for her PhD, which was motivated in part by personal experience as BK learned when she read the introduction of the thesis, is interesting for many reasons:

- Research on phonetic L1 attrition is fundamental, because, as put by De Leeuw (2019: 204) "native language phones are the building blocks from which all other language representations are built". It is further established that phonetic perception and articulation are the domains of language that are most prone to age effects, i.e., most difficult to acquire in an L2, and therefore frequently assumed to be particularly resistant to attrition effects.

- Despite such evident interest, the number of studies investigating the influence from a second (or third) language on the first in the phonetic domain remain still very limited. If we include early work from Flege, this kind of studies will not exceed one dozen and a half. Many of these studies are case studies or involve very limited numbers of participants, and of the group studies, most involve foreign accent rating but no acoustic analysis, as pointed out by MH in her thesis.

- Furthermore, since nearly all of these studies involve English (as the L2 most of the time), many focus on VOT that has been shown to be particularly plastic, accommodating constantly to the linguistic environment the speaker is in at a given moment (e.g., Sancier & Fowler, 1997).

BK then went on stating that the study presented today by MH makes a real contribution to the existing research on phonetic drift, CLI and attrition. As she had outlined, her study adds a new pair of languages to a research domain very much dominated by English (and its phonetic characteristics), it is based on a number of speakers that is far from insignificant, but most importantly, it investigates a huge variety of phenomena including vowels, rhotics, fricatives, intonation and schwa. While the thesis was concluded within the contractual period – exactly 3 years today! – there are surely enough data enough to be analyzed for the next years.

As supervisor, BK only wanted to ask one question. Throughout the thesis, MH deliberately chose to talk about CLI AND attrition and not to choose one or the other. Other authors (e.g., Chang, 2012) talk about phonetic drift. So, her question was, where MH would set the differences between these three domains and if she thinks that it is important to make a distinction between them? BK and MH engaged then in a discussion about the difficulty to make a difference between CLI and attrition.

To finish, BK wanted to stress the huge amount of work accomplished by MH during the past three years. She has shown a lot of determination to realize a doctoral thesis in only three years, on a topic she was not familiar with and not trained for, collected a significant amount of data in a context that was not always the best, familiarized herself with tools for acoustic analyses and complex statistical investigations. BK then congratulated MH once more and expressed her best wishes for success in her future career.

After deliberation, the Chair of the Committee informed Ms. Marie HÉVROVÁ that she obtained the degree of Doctor of Language Sciences and congratulated her.