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THE BOOK OF ABSTRACTS

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CONTENTS

PLENARY TALKS

PARALLEL SESSIONS

Marta Nowacka & Antoni Nowacki — International English in United World College East Africa: comprehension of native and non-native accents - qualitative method

Victoria O'Callaghan — Tailoring Sorry, could you say that again? The Intelligibility of French-accented English in an Academic Context

Mirosław Pawlak — Investigating grit in learning second language pronunciation: Towards a dedicated scale

Mateusz Pietraszek — The effect of aspiration on the intelligibility of Spanish-accented English

Ágnes Piukovics, Noémi Gyurka & Katalin Balogné Bérces — Towards a comprehensive typology of pronunciation errors

Laura Rupp & Alice Henderson — An exploration of <accent> and <intelligibility> in Big Data from the MOOC English Pronunciation in a Global World

Karolina Ryker — Modern RP in the Routledge Dictionary of Pronunciation for current English

Veronica G. Sardegna & Anna Jarosz — Learners' Beliefs and their Effect on Improving English Word Stress

Radek Skarnitzl, Michaela Svatošová & Jan Volín — Accentual and melodic forms of prosodic phrase terminals in Czech, English and Czech English

Łukasz Stolarski — Articulation of Cardinal Vowels by different phoneticians

Jolanta Sypiańska — Does this sound like a tall person? Attitudes towards Ukrainian accented Polish

Jolanta Sypiańska & Zuzanna Cal — Levels of proficiency in the L2 and the L3 as an interaction effect in L3 Norwegian stop perception

Magdalena Szyszka & Pekka Lintunen — Affective factors in L2 speech fluency

Beata Walesiak — AI for pronunciation learning – do apps teach accents?

Błażej Wieczorek & Arkadiusz Rojczyk — Phonetic imitation by young L2 learners: Direct imitation of English vowel duration clipping by Polish primary school students

Ewelina Wojtkowiak, Nate Sadursk & Geoff Schwartz — The use of creaky voice by Polish learners of English

Decai Xia — Singing training and its influence on the pronunciation of English: A longitudinal study

PLENARY TALKS

SOUNDING DIFFERENT: SOCIAL AND COMMUNICATIVE ASPECTS OF OUTGROUP SPEECH

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Outgroup speech, be it foreign accented, native accented, or speech from a closely related and largely intelligible foreign language, may have a wide variety of often negative consequences for both the speaker and the interlocutor. This presentation aims to provide a taxonomy of the effects of outgroup speech. Examples from published and unpublished work on listener reactions to outgroup speech are used to exemplify the overall classification of its effects into linguistic-communicative processing cost on the one hand, and social and psychological cost on the other. Both types of cost can be examined in a number of ways. For processing cost, these are comprehensibility, acceptability, and measures of intelligibility (Munro & Derwing 1995, Bradlow et al. 1997, Bohn & Askjær-Jørgensen, Bohn & Bundgaard-Nielsen 2009), and this contribution highlights both well-documented and possible relations between these aspects of processing cost. The nonlinguistic cost of (foreign) accented speech can be roughly classified as resulting in biases regarding the personality and/or social characteristics of the speaker (e.g., Ahmed et al. 2013, Lev-Ari & Keysar 2010, Uther et al. 2007, Vesterlund & Bohn 2022). The contribution will provide examples of how these consequences have been examined, which will result in a discussion of the relation between (aspects of) the two types of cost and the usefulness and appropriateness of different methods used to study the consequences of outgroup speech.

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NON-NATIVE-SPEAKING TEACHERS IN L2 PRONUNCIATION INSTRUCTION: IDENTITY, KNOWLEDGE BASE, AND FUTURE RESEARCH DIRECTIONS

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For the past 30 years, research has demonstrated that nonnative-speaking (NNS) language teachers are multicompetent and professional second language (L2) users capable of implementing effective L2 instruction like their native-speaking (NS) counterparts (Braine, 2010; Cook, 1999; Mahboob, 2004, 2010; Medgyes, 2017). However, the role of NNS teachers in L2 pronunciation instruction has received little attention until recent years. This is an important area to investigate because the pedagogical decisions teachers make in class have direct repercussions on the development of intelligible and comprehensible L2 speech in learners. The limited research on NNS pronunciation teachers has revealed that many of them feel concerned about their L2 accents (Golombek & Jordan, 2005), that they experience insecurities about implementing pronunciation instruction (e.g., Buss, 2016; Couper, 2016), that they use their previous teaching and learning experiences to build a knowledge base of teaching (Gordon, 2019, 2023), or that both NNS and NS pronunciation teachers can be equally effective in the development of L2 speech dimensions like comprehensibility (e.g., Levis et al., 2016).

While the majority of English language teachers around the world are NNS teachers of the language (Freeman et al., 2015), and there have been recent calls to see their language variety used in class as a fundamental part of their knowledge base of teaching (Freeman, 2020), many NNS teachers still feel unqualified to implement systematic pronunciation instruction due to their L2 accents, lack of training on pronunciation pedagogy, or ideas rooted in native-speakerism (Gordon & Barrantes Elizondo, in review).

In this talk, I will first present how personal, professional, and contextual factors shape the professional teacher identities of NNS pronunciation teachers, and how such identities eventually influence the implementation of pronunciation teaching practices. Second, I will discuss how training as well as teaching and learning experiences influence the development of pedagogical content knowledge that allows NNS teachers to make sound pedagogical decisions in a pronunciation class. Finally, in response to recent calls to expand the research on NNS teachers (Llurda & Calvet-Terré, 2022), I will propose (a) classroom-based observational studies of NNS pronunciation teachers, (b) research investigating differences between NS and NNS teachers' rationale behind error correction in L2 pronunciation, and (c) expanding research on NNS teachers of languages other than English in the teaching of L2 pronunciation as possible research avenues to explore and promote a more active role of NNS teachers in L2 pronunciation instruction.

PHONETIC IMITATION IN L2: METHODOLOGICAL FOUNDATIONS AND POTENTIAL IN SECOND-LANGUAGE SPEECH RESEARCH

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Phonetic imitation is a process whereby a speaker adjusts spectral and temporal properties of his or her speech towards those of an interlocutor (Babel 2012; Pardo et al. 2012; Trofimovich & Kennedy 2014). Previous research has shown that multiple speech properties are subject to imitation such as Voice Onset Time (Nielsen 2011; Shockley et al. 2004), vowel quality and duration (Babel 2012; Pardo et al. 2010; Rojczyk 2013; Zając & Rojczyk 2014), allophonic variants (Honorof et al. 2011), as well as speaking rate, intensity, or long-term average spectra Gregory & Webster 1996; Namy et al. 2002). Phonetic imitation is gaining interest in L2 speech research as shown by recent publications in recognised journals (Cao 2023; Chen et al. 2023; Jiang & Kennison 2022; Munro 2022; Rojczyk et al. 2023).

In this talk, I will discuss the methodological foundations and potential of phonetic imitation in second-language speech research. I will show terminological nuances that researchers must be aware of. I will outline biological foundations and human capacity to reproduce (imitate) the actions of others. I will review selected studies to demonstrate how L2 phonetic imitation may inform the general research on L2 speech. Finally, I will present the framework of L2 accent imitation in L1 (L2AIL1 model) that I am developing in collaboration with Alice Henderson and Joan C. Mora.

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THE ENGLISH LANGUAGE: LOCAL ACCENTISM; GLOBAL ACCENTISM

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In recent times, the colonial past associated with the English language has come under renewed scrutiny. Although English remains a desirable language, speakers of English as a second or foreign language, often in the context of bi- or multi-lingualism, continue to be criticised for not having 'good' English, whether or not they are clearly intelligible and fully able to communicate meaning. This reflects a similar picture visible in the UK, where some 'home grown' accents are stigmatised, largely because of prejudice and tribalism.

In this presentation, I provide some context to English accentism. I begin by looking the historical development of accents in England before considering the global spread of the language and the accentism that continues to accompany it and those that teach it. I end with a plea that we make a more concerted effort to tackle this issue and promote intelligibility over "nativelikeness" in the English spoken world-wide.

PARALLEL SESSIONS

MULTILINGUAL PERCEPTION OF RETROFLEXES

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This study juxtaposes cross-linguistic similarity with discrimination of retroflexes by multilinguals. The degree of perceived cross-linguistic similarity between the learner's L1 and L2 has been shown to mediate discrimination of L2 sounds (Cebrian 2022, Flege and Bohn 2021), but so far it has not been tested from a multilingual perspective.
In world languages, retroflexes occur infrequently (Maddieson 1984). Norwegian has a series of coronal consonants which are distinguished by retroflexion: alveolar /t, d, s, l, n/ and retroflex /ʈ, ɖ, ʃ, ɭ, ɳ/, whereas American English only has /ɹ/ and Polish sibilants and stops have a controversial retroflex status -- cues to retroflexion are argued to exist in /ʂ/, /ʐ/, /t͡ʂ/ and /d͡ʐ/ and cues to allophonic retroflexion – for /t/ and /d/ (Żygis 2005; Żygis, Pape & Jesus, 2012).

A subtractive language group design (Westergaard et al. 2023) was employed, with an experimental group consisting of 33 L1 Polish, L2, English and L3 Norwegian listeners and two control groups: 35 bilingual L1 Polish and L2 English listeners naïve with respect to Norwegian and 13 native Norwegian listeners with L2 English (all classroom setting learners). In an oddity categorial discrimination task 180 triads contained both Norwegian retroflexes (i.e., /ʈ ɖ ʂ ɭ ɳ/) and non-retroflexes (i.e., /t d s l n/) in inter-vocalic position. In the cross-linguistic (dis-)similarity task, participants rated (dis-)similarity between Norwegian and English/Polish retroflexes and non-retroflexes in 160 diads, on a scale from 1 to 7.

The data from rated (dis-)similarity task were analyzed using a mixed-effects ordinal logistic regression, which confirmed the proposed hierarchy based on matching or non-matching retroflexion and place and manner of articulation in the case of both similarity ratings and reaction times.

Binomial regression model of accuracy scores across groups showed that trilinguals were more accurate than natives and natives were more accurate than naïve bilinguals. Ceiling discrimination of /ʂ/-/s/ was obtained for both groups with L1 Polish, but not for Norwegians. Phonemic vs. allophonic status of retroflexes in Polish surfaced in Norwegian retroflex perception by trilinguals, and for naïve bilinguals the pattern was mirrored in lower accuracy ranges. Low discrimination rates for /ɭ/-/l/ in all groups can be attributed to low frequency of occurrence and the ongoing neutralization (Kristoffersen 2000).
Perceived cross-linguistic similarity has been shown to mediate discrimination also in the case of multilinguals, and additional evidence for retroflexes in Polish and gradiance in perceptual salience have been demonstrated.

The presented data will have been gathered as part of a larger on-going mixed-method longitudinal project examining several IDs as predictors of FL accentedness and comprehensibility. Based on the Big Five Model (Costa & McCrae, 1995), personality will

be regarded as a construct composed of five independent traits - Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Intellect/Openness to new experience.

The level of each trait is intended to be measured among English majors (N=50-70), prior to them receiving explicit formal instruction on English pronunciation, by the Polish version (Strus, Cieciuch & Rowiński, 2014) of IPIP-BFM-50 (Goldberg, 1990). The levels of the traits will be correlated with the participants' accentedness and comprehensibility, each assessed by 3 judges of different nationalities on 9-point Likert scales. The former will be evaluated on the basis of a task consisting in passage reading; the latter – on the basis of spontaneous speech on one of the suggested topics. The observed size effects in the case of each trait will be supplemented with qualitative data gathered among selected participants via interviews and written open questions on their motivation and socio-affective traits on one hand, and preferred pronunciation learning strategies and potential difficulties accompanying their pronunciation practice on the other.

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A PILOT STUDY OF SCHWA IN LITHUANIAN ENGLISH

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The Lithuanian vowel system is traditionally characterised as quadrangle consisting only of front and non-front (i.e., back) vowels (Girdenis, [2003] 2014 :224). Though recent studies indicate that, in female pronunciation of [ʌ], there is some closeness to the schwa-like vowel (Bakšienė et al., 2023: 16), the Standard Lithuanian vowel system does not contain schwa.

In the system of English vowels, the lax mid central vowel schwa takes a special place. It is not only the most frequently found vowel in unstressed syllables since any monophthong or diphthong can be reduced to it (Cruttenden 2014: 139) but it is also the most frequently occurring phoneme in English overall (Carley & Mees, 2021: 9). In current English, due to the process of weak vowel merger, schwa is often either used interchangeably or even replaces the KIT and FOOT vowels in weak syllables (Lindsey, 2019:39) increasing the necessity to master both its perception and production.

Contrary to the claim that schwa "does not usually present difficulties to foreign learners" (Cruttenden 2014: 139), the analysed data proves that the Lithuanian learners tend to identify schwa as one of the vowels causing the greatest difficulties in perception.

In unaccented syllables, Lithuanian vowels tend to restrain from reduction, therefore Lithuanian learners are likely to retain full unreduced vowels even in accented syllables (Aprijaskytė & Pažūsis, 1983: 30). Failure to produce schwa can lead to distorted flow of speech resulting in non-native like rhythm. The present pilot study sets its aim at trying to analyse schwa in Lithuanian English. The first part deals with the Lithuanian students' attitudes towards vowels, in particular schwa, in relation to difficulties in production and perception. Employing mixed methods, the second part presents the results of analysis of perception and production of schwa in Lithuanian English.

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'SOUL, NOT SALT' – STRATEGIES USED TO SAFEGUARD INTELLIGIBILITY IN NON-NATIVE RELIGIOUS DISCOURSE

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Over the past few decades there has been an increasing number of foreign-born Catholic priests arriving in the USA, primarily from Colombia, Mexico, Vietnam, the Philippines and Poland (Gordon, 2003). Non-native accents of such international preachers frequently become the most conspicuous thing about them and the reason for complaints from the local church-goers (Hoge, & Okure, 2006; Christian, 2021). As known from the relevant literature, apart from evoking accent-based stereotypes, non-native speech may pose threat to intelligibility and overburden listeners with additional cognitive load which may evoke their irritation (Johansson 1975; Munro 2003; Lippi-Green 1997; Moyer 2013). Indeed, language barrier, incomprehensible pronunciation in particular, constitutes one of the biggest challenges which 'imported' priests need to address in order to perform their service effectively. For this reason, recently there has been an increase in special language courses designed for international priests to help them improve their speaking skills and reduce foreign accents.

In the present paper five religious lectures (amounting to 5h of audio-visual material) delivered in Polish-accented English are discussed with respect to the priest's non-native pronunciation and his morally motivated effort to convey the message precisely despite phonetically deviant speech. The analysis of the diagnostic material, which was recorded live and posted on a YouTube channel RCS International, provides insight into how the preacher's motivation to be understood properly influences his communicative behaviour, both verbal and non-verbal. The shortcomings of non-native pronunciation are anticipated by the speaker and targeted with preventive strategies, such as disambiguation, frequent repetition and the use of emphatic stress to highlight the most relevant information, eliciting direct feedback from the listeners, monitoring their non-verbal responses, as well as the employment of enhancing devices, such as gestures.

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WHERE IS THE BOUNDARY? PERCEPTION OF VOICING DISTINCTION IN WORD-INITIAL STOPS BY MULTILINGUAL LEARNERS

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Perception of word-initial stops have been an object of research for a few decades now. Yet, the majority of studies concern the field of L2 acquisition (e.g., Kong 2019, García-Sierra et al. 2021, Pan et al. 2022) leaving multilingual perception of Voice Onset Time (VOT) largely unexplored. As being multilingual has become the standard in the present-day world, it seems vital to throw more light on possible processes and cross-linguistic interactions that are behind speech perception in multilinguals. The previously published studies on VOT perception in multilinguals provide rather inconsistent results pointing to either possible progressive and regressive cross-linguistic interactions (Liu et al. 2019) or separate patterns of VOT categorisation across languages (Cal and Wrembel 2023).

This study seeks to provide more insight into the field of multilingual perception of VOT and consolidate previous findings by exploring how trilingual speakers perceive word-initial stops in their three languages. The specific aim is to answer the following RQs:

(1)How are the stops categorised in a multilingual mind? Are the patterns of VOT categorisation in multilinguals language- and/or place of articulation-specific?

(2)Are the perceptual boundary locations between voiced and voiceless stops influenced by the interactions between L1, L2 and/or L3?

The experiment was conducted on a group of 30 trilingual speakers of L1 Polish-L2 English-L3 Norwegian. The study design involved preparation of VOT continua separately for the three places of articulation (labial/coronal/velar) and languages (Polish/English/Norwegian) that ranged from -100 to 100ms and consisted of 21 steps, each of 10ms. The obtained tokens were then applied in a two-alternative forced-choice task that was administered in three separate language blocks preceded by an introduction into a respective language mode. The obtained data included accuracy scores that allowed to calculate perceptual boundary locations.

A Linear Mixed Model was run to compare the main effects of language, stop continuum and their interaction on perceptual boundary locations. The results pointed to the main effect of continuum ($F=127.32$, $p<.001$) and the interaction effect of continuum*language ($F=2.96$, $p=.021$), but no main effect of language ($F=2.19$, $p=.113$). Pairwise comparisons

revealed significant differences between L1-L2 (t=2.16, p=.032) in the d-t continuum as well as between L1-L2 (t=2.36, p=.019) and L1-L3 (t=2.53, p=.012) in the g-k continuum, which suggest separate categorisation of native vs. non-native languages in the two continua. The ongoing analysis further investigates the role of L2/L3 proficiency, individual variation and native speakers' comparisons to further inform the findings.

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IS SPEECH PERCEPTION INFLUENCED BY L1(SPANISH)-L2(ENGLISH) ORTHOGRAPHIC INCONGRUENCES? EVIDENCE FROM CLIL AND NON-CLIL PRIMARY SPANISH STUDENTS

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Orthography has been found to interfere in L2 speech learning (Hayes-Harb & Barrios, 2021). One of the aspects which has been researched is congruence or how the language of the learners and the target language exploit grapheme-phoneme correspondences (Showalter, C. E. 2018; Stoehr & Martin, 2021). In formal learning contexts, in which the learners are exposed noticeably to the written form, the influence of orthography can shape the acquisition of pronunciation (Bassetti, 2017). However, the advent of foreign language teaching programmes such as Content and Language Integrated Learning (CLIL) has brought along an increase of different types of exposure (Coyle & Meyer, 2021), which could have an impact on the development of phonological acquisition in these learning settings. The present study seeks to explore whether CLIL mediates L2 speech perception in an auditory lexical decision task which presented mispronunciations based on Spanish-

English orthographic incongruence (i.e.: labiodental fricative vs. bilabial plosive for grapheme 'v', as in vet /vet/ vs. /bet/).

346 Spanish primary students aged between 8 and 10 performed a lexical decision test in which they were asked to decide whether the word they heard (all spoken with the same female voice) was an English word or not. 60 English words were presented to the students. Half of the set were correct pronunciations in English (zip /zɪp/) while the other half were incorrect pronunciations presenting the sound-grapheme congruence in the L1-Spanish (zip /θɪp/). Fourteen cross-incongruences were included. Accurate identifications of correct and incorrect pronunciations were calculated for CLIL/NonCLIL as well as for male/female participants.

Results indicated that all participants were significantly less accurate in detecting mispronounced words than correct words, regardless of their CLIL status or gender. When incongruences were analysed in more detail, it was found that the CLIL group was able to identify incorrect pronunciation of 'j' and initial 'g' as voiceless velar fricatives /x/ (as in jam /x/ or gin /x/) and of 'k' as an audible voiceless velar plosive /k/ (as in knee /kni:/) more often than the Non-CLIL group, which, in turn, significantly outscored the CLIL group in the identification of incorrect audible 'l' lateral approximant /l/ as in walk. The CLIL group tended to be slightly more accurate in identifying correct 'y' in words like playing, flying, correct initial 'g' in words like gin or get and correct silent 't' in words like listen or fasten than the Non-CLIL group. No differences between male and female participants were found. Results seem to indicate these young learners cannot identify all misperceptions on account of cross-linguistic incongruence, which indicates that orthography is mediating in their L2 perceptual abilities. Our analyses also indicate that CLIL can moderately mitigate this effect for some incongruent contexts at this early age.

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THE ROLE OF SPEECH MODALITY ON THE PRODUCTION OF NORWEGIAN, POLISH AND ENGLISH SIBILANTS IN A MULTILINGUAL ACQUISITION CONTEXT

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Although the concept of functional load was first mentioned about a century ago by the Prague School of Linguists (e.g., Jakobson, 1931), the practical application of functional load in L2 pronunciation learning and teaching methods remains largely ignored (e.g., Munro and Derwing, 2006; Kang and Moran, 2014; Suzukida and Saito, 2019; Sewell, 2021). This paper examines the extent to which functional load and L2 errors are predicted by the phonetic similarity between phones in a minimal pair, as measured by their manner and place of articulation. The purpose of this study is to determine the importance of prioritizing sound pairs with high functional load in L2 pronunciation instruction. The minimal pairs in this study were gathered from the L2 Arctic corpus which is a set of audio recordings with extensive phonetic transcriptions of sentences from literature read by 24 non-native speakers of English whose L1s are Hindi, Korean, Mandarin, Spanish, Arabic and Vietnamese (about 100 sentences), as well as a control group of L1 speakers. Minimal pairs were selected using an R script based on the transcriptions of L1 speakers. Phonetic features, including manner and place of articulation, were manually classified for each minimal pair phone based on O'Grady et al. (1993), allowing for an R script to then calculate the phonetic similarity between two phones. Then, the selected minimal pairs were extracted for all L2 speakers, and L2 errors were then calculated with an R script that measured the phonetic similarity between the phonetic transcriptions of L2 speakers to those of the L1 speakers. Next, the functional load of the minimal pairs in the corpus was calculated by two separate methodologies 1) change in entropy (Surendran, 2003), and 2) relative minimal pair counts. Finally, a multiple linear regression model was used to analyze the relationship between phonetic similarity, L2 error, and functional load in minimal pairs.

The present study compares the acoustic characteristics of Norwegian, Polish and English sibilants produced during semi-spontaneous and read speech in an L3 acquisition context. Traditionally, Polish and Norwegian maintain a three-place distinction in in their sibilant systems (Polish: /s/, /ʃ~ ʂ/, /ɕ/; see Jassem, 2003; Czaplicki et al. 2016; Norwegian: /s/, /ʂ~ ʃ/, /ç/; in Kristoffersen, 2000; van Dommelen, 2019), whereas, English maintains a two-place system (/s/ and /ʃ/).

Our primary research questions were: (1) Do L2/L3 learners' productions of sibilants differ across speaking modes, i.e., semi-spontaneous speech versus read speech and (2) does L2/L3 language proficiency interact with speaking mode to affect the acoustics characteristics of sibilants produced in an L1, L2, or L3?

Participants consisted of 39 (f=35) L1 Polish, L2 English, L3 Norwegian learners and 10 (f=8) L1 Norwegian controls. Subjects produced semi-spontaneous speech during a story recollection task, a picture description task and an informal interview. Read speech data was obtained in a North Wind and the Sun reading task, as well as in a naturalistic

sentence reading task across a combined sibilant production experiment and a voicing onset time experiment (n = 780 tokens per sibilant per language, i.e., Polish: /s/, /ʃ~ʂ/, /ɕ/; English: /s/, /ʃ/; Norwegian: /s/, /ʃ~ʂ/, /ç~ʂ~ɕ/).
Stimuli were presented in three ordered language blocks (L3 > L2 > L1) and language mode was calibrated between each block with a variety of methods (e.g., a story-telling task, audio clips in the language, task instructions in the language). To quantify the effects of language proficiency on sibilant production patterns in L1/L2/L3, detailed language background questionnaires and proficiency tests were administered.

The ongoing analysis uses linear mixed effects modeling to contrast the spectral properties of learner sibilant inventories across speaking modality and proficiency level by language. We assess the sibilants according to acoustic measures grounded in previous literature (Jongman, Wayland & Wong, 2000; Nirgianaki, 2014; Lee, 2020), i.e., spectral mean, spectral peaks, and spectral moments: spectral center of gravity (CoG), spread, skewness, and kurtosis.

We predicted that spectral moments of sibilants will display less variance in read speech than in semi-spontaneous speech. Orthography may also influence the variability of certain phonemes in read speech across L2/L3 proficiency levels as observed in Czarnecki-Verner et al. (in prep). Higher L2/L3 proficiency was predicted to positively correlate with sibilant CoG values more similar to those of the L1 controls in both read and spontaneous speech (i.e., higher proficiency L2/L3 speakers will produce more accurate sibilants regardless of the speaking mode). Results of the analysis will determine whether speaking mode (semi-spontaneous versus read speech) and learner proficiency (Norwegian, English) impacted patterns of cross-linguistic influence pertaining to sibilant production in Polish, Norwegian and English.

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WHY THE WORDS WE TEACH MATTER IN PRONUNCIATION INSTRUCTION

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Learners can improve their L2 phonological mastery through a combination of pronunciation instruction (Stratton 2023) and perceptual training (e.g., Thomson 2018). Both methods are valuable, but are often detached from the words learners know, and vocabulary is not systematically learned from a pronunciation point of view.
Training and instruction using minimal pairs of (potentially) unknown words or nonsense stimuli can make learners' perception and phonological mastery improve (Mora et al. 2022), yet this is not automatically mirrored in the way words are phonologically represented in the mental lexicon (e.g., Darcy et al. 2013). These phonolexical forms can be imprecise for perceptually confusable contrasts, especially in words learned at lower proficiency levels (Darcy & Holliday 2019; Rothgerber 2020). This results in persistent difficulties with the pronunciation of certain words and with recognizing spoken words (Choi et al. 2021).

Research also shows that having a large lexicon can predict higher phonolexical accuracy (on lexical decision tasks) for some groups because knowing many similar sounding words helps learners notice when a contrast is meaningful (Daidone & Darcy 2021; Llompart 2021), and this leads to what we call lexical "friction" between words. Friction is thought to create pressure which pushes some words to be represented more precisely than others (Rocca et al. 2023).

In this presentation, we argue that pronunciation instruction could play a tremendous role in helping learners generalize their learning and update their phonolexical representations by harnessing lexical friction. Investigating friction is challenging because it depends on which words learners know. To obtain more precise estimates of a learners' lexicon, we developed a phonological database of American English words which reports which words a typical learner knows at which CEFR level, ranging from an English lexicon of ~500 words (A1) to over 6000 at the C2-level. Compared to native speaker databases, our estimations of a word's neighborhood density are more precise and allow us to predict/identify which words are likely to cause friction (potentially helping learning) at each stage of development.

We present an overview of recent advances in research on phonology in the L2 mental lexicon and highlight their connections to pronunciation instruction. We demonstrate what lexical friction is and its potential role in facilitating phonological learning throughout the mental lexicon. Finally, we describe our database and clarify how it can be used in pronunciation instruction research. Bringing together insights from word learning studies and L2 phonology, we outline ways in which the words we teach matter, and why.

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SPEECH RHYTHM IN SPONTANEOUS AND CONTROLLED L2 SPEAKING STYLES: DIFFERENCES AND CHALLENGES

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Speech rhythm has been shown to be an important suprasegmental dimension for the comprehensibility and intelligibility of L2 speech (Levis, 2018; Low, 2015). For example, for language pairs like English (stress-timed) and Spanish (syllable-timed), located at opposing ends of a rhythm class continuum, acquiring certain language-specific phonetic properties that underlie speech rhythm (e.g. unstressed vowel reduction in English) may help make L2-English learners' speech more comprehensible and easier to process (Ordin & Polyanskaya, 2015; Van Maastricht et al., 2021). However, most studies of L2 speech rhythm have only used samples of read speech in their analyses (Algethami & Hellmuth, 2023), despite the fact that read speech has been shown to be perceptually different from spontaneous speech (Dellwo et al., 2015), and studies examining speech rhythm in spontaneous speech have focused on cross-language differences (e.g. Arvaniti, 2009) rather than on comparisons of spontaneous speech as produced by both L1 speakers and L2 learners. In addition, traditional rhythm metrics based on consonantal and vocalic interval durations have been called into question as a means of capturing L2 rhythmic development for specific L1-L2 pairs as well as differences in L1 speech rhythm between spontaneous and read speech (Arvaniti, 2012, 2021).

To examine rhythmic differences between speaking modes (spontaneous vs. controlled) in L2-English, the L2 speech rhythm of a group of 82 Spanish-Catalan learners of English was assessed relative to a control group of 8 native English. Large differences in speech rhythm were found for learners between the two speaking modes, as measured by the rhythm metrics %V, Varco-V, Varco-C and nPVI-V. Additionally, a set of novel Mahalanobis distance analyses were used to determine how far the speech rhythm of learners was from the native speaker control group in each of the two modes. Non-native speakers were found to differ significantly from the native control group to a larger extent in the spontaneous than the controlled condition and an optimal pairing of Varco-V and %V was found to differentiate maximally between the learners and native speakers. This research contributes to our understanding of rhythmic differences between native and non-native speakers in different speech styles. We discuss pedagogical implications for training and tracking learner progress and outline future work on native and non-native listeners' perception of rhythmic structure as an approach to overcome some of the methodological challenges associated with measuring speech rhythm.

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PERCEPTUAL ASSIMILATION OF ENGLISH VOWELS BY L1 SPANISH YOUNG SCHOOLCHILDREN IN A DISCRIMINATION TASK

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Speech acquisition models agree on the fact that native language (NL) sounds affect the learning process of second language (L2) phonology. As for naïve listeners, the Perceptual Assimilation Model (PAM-L2, Best & Tyler, 2007) identifies different assimilation types of L2 phones into sounds which cannot be clearly categorized as a NL category and sounds which can be considered good, acceptable or deviant forms of a NL category. The model also classifies L2 sound contrasts into different types according to the status of each of the members of the pair, and proposes different degrees of acquisition success for each type of contrast.

There has been little work on how L1-L2 sound distance affects young learners' phonological acquisition in formal contexts (Gallardo-del-Puerto, Cenoz & García Lecumberri, 2006). An instruction environment such as Content and Language Integrated Learning (CLIL), which now provides young students in Spain with more amount of instruction and more meaningful exposure to English, is yet to be explored in that regard. Besides, the interaction between sound acquisition, CLIL and gender is worth exploring, considering females have been found to exhibit some advantage for pronunciation learning (Moyer, 2016).

A total of 320 8-10 year-old L1-Spanish boys and girls in CLIL and Non-CLIL programmes performed an AXB English vowel discrimination task containing English CVC words. Some of the vowel minimal pairs (n=8) were classified into four types of contrasts, for which different degrees of successful perception are predicted by PAM-L2.

For this study, the KIT-DRESS and DRESS-TRAP English vowel contrasts were interpreted as "Two Category Assimilation" for L1-Spanish learners. The DRESS-NURSE and NURSE-TRAP contrasts were classified as "Uncategorized vs. Categorized" while FLEECE-KIT and KIT-FLEECE were presented as "Category Goodness Difference" and TRAP-STRUT and STRUT-TRAP as "Single Category Assimilation".
Non-parametric statistical analyses indicated that, overall, KIT-DRESS and DRESS-TRAP and DRESS-NURSE and NURSE-TRAP contrasts were discriminated significantly better than FLEECE-KIT and KIT-FLEECE, which, in turn, were also better discriminated than the TRAP-STRUT and STRUT-TRAP contrasts. These data suggest that, contrary to PAM-L2 predictions, "Category Goodness Difference" (FLEECE-KIT KIT-FLEECE) were discriminated significantly worse than those contrasts identified as "Single-Category Assimilation" (TRAP-STRUT and STRUT-TRAP) in the case of these young Spanish learners.

No differences between CLIL and NonCLIL learners were observed. No mediating role of gender was found either, with the exception that "Single Category" contrasts were not statistically worse perceived than "Uncategorized vs. Categorized" contrasts in the CLIL female sample. This result may hint at girls having taken an advantage of enhanced L2 exposure in CLIL, as CLIL females seem to be better able to discriminate target language sounds which are typically assimilated to the same native language category.

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ENGLISH VOWEL DISCRIMINATION SKILLS IN CLIL AND EFL YOUNG LEARNERS

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Research to date on the acquisition of English pronunciation in Content and Language Integrated Learning (CLIL) is scarce and has mainly focused on subjective holistic evaluations of secondary/tertiary education CLIL students' oral productions, as compared to those of students engaged in traditional English as a Foreign Language (EFL) learning environments (Gallardo-del-Puerto, Gómez-Lacabex & García-Lecumberri 2009; Rallo-Fabra & Jacob 2015; Rallo-Fabra & Juan-Garau 2010). Additional CLIL exposure does not seem to consistently result in better accentedness or comprehensibility ratings. However, it is yet to be explored whether the lack of a positive CLIL effect on phonetic competence is also found when CLIL lessons are implemented earlier in life. Besides, CLIL exposure has been claimed to contribute to erode the female advantage characteristic of EFL contexts identified in content attainment (Nieto Moreno de Diezmas & Hill 2019), vocabulary acquisition (see Fernández-Fontecha 2014) or language learning motivation (Gallardo-del-Puerto & Blanco-Suárez 2021). The effect of gender on the acquisition of second language (L2) phonology (Moyer, 2016) still has not been inquired in CLIL environments.

We attempt to fill the aforementioned gaps in the literature by reporting on an objective evaluation-based study measuring sound perception skills in English by schoolchildren (aged 8-10) in CLIL (n=171) and EFL (n=149) contexts. They took part in a computer-aided AXB discrimination task which tested 11 English Received Pronunciation vowels (FLEECE, KIT, DRESS, TRAP, STRUT, START, LOT, NORTH, FOOT, GOOSE, NURSE, as in Wells, 1982) in CVC words (schwa vowel was excluded as it cannot occur in monosyllabic words).

Results indicated that there were no statistically significant differences between CLIL and EFL learners as regards their English vowel discrimination skills, with the exception of a marginal difference in favour of the former in the case of the KIT and TRAP vowels. As for the effect of the moderator variable, gender did not yield any significant differences in CLIL learners. However, EFL females significantly outscored their male counterparts in the case of the NORTH vowel. These results point to a rather modest effect of additional CLIL on young learners' English vowel perception skills. They also agree with prior research in other language domains in that they timidly indicate that CLIL and gender may interact in pronunciation attainment, as the only female advantage found in vowel discrimination in the EFL sample did vanish in the CLIL environment. Pedagogical implications of all these findings will be thoroughly discussed.

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MOTIVATION TOWARDS L2 ENGLISH PRONUNCIATION: THE ROLE OF INSTRUCTION AND GENDER

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Second language acquisition research currently examines Content and Language Integrated Learning (CLIL), a language learning context which can improve second language (L2) proficiency and foster learners' motivation to acquire the language (Coyle, 2006). Within the research in this learning approach, scholars have investigated the connection between motivation and L2 achievement (Lasagabaster, 2011) and explored various factors that might influence motivation, including gender (Gallardo-del-Puerto & Blanco-Suarez, 2021), instruction level (De Smet et al., 2023), or the urban-rural divide (Alejo & Piquer-Píriz, 2016). However, there is still a noticeable research gap regarding the potential impact of CLIL on motivation towards L2 English pronunciation.

Historically, pronunciation has been overlooked compared to other skills in formal learning contexts, characterized by limited exposure in conventional language teaching and the presence of non-native speaker accents among educators (Gallardo-del-Puerto et al., 2006). Given that CLIL contexts provide added exposure, it becomes interesting to explore pronunciation in these contexts. This research aims to explore motivation towards pronunciation in both CLIL and non-CLIL environments, with particular attention to the

potential influence of gender. The motivation for this inquiry is derived from prior studies indicating that girls tend to outperform boys in traditional language learning approaches (Moyer, 2016). However, it remains uncertain whether such a difference persists within CLIL contexts.

Participants in this study consisted of 337 individuals (182 students enrolled in CLIL classrooms and 155 students in non-CLIL classrooms), all aged between 8 and 10 years. The instrument utilized was a 38-item 5-point Likert scale questionnaire measuring various dimensions of motivation towards pronunciation, including Intrinsic motivation, Extrinsic motivation, Ideal L2 self, Ought-to L2 self, Learner self-image, and Learner engagement. Data analysis involved quantitative methods to explore differences between CLIL and non-CLIL groups and differences between males and females within groups.
Statistical analyses revealed significant differences between the CLIL and non-CLIL groups concerning Intrinsic motivation and Learner self-image, in which CLIL students obtained lower scores. However, no statistically significant differences were observed for the other motivation constructs. Furthermore, within their respective groups, no statistically significant differences were found between males and females across all measured constructs.

The results suggest that, at a young age, CLIL instruction may compromise schoolchildren's self-image as pronunciation learners, which in turn might lead to inhibit their intrinsic motivation towards English pronunciation. Gender does not seem to be a relevant factor at such age, though. The implications of these findings will be further discussed.

We explored these students' motivational selves, wishes for pronunciation reference models, uneasiness owing to teacher's pronunciation, learning preferences and interlocutor anxiety by means of a questionnaire with moderate consistency in the first part ($\alpha = .66$, $n = 28$) and high consistency in the second part ($\alpha = .89$, $n = 36$) and selected interviews. 126 students were surveyed at an Engineering Faculty and 38 students were surveyed at a Faculty of Letters. Results indicated that the two groups of students did not differ in their ideal and ought-to-selves, or in the fact that their teachers' pronunciation does not cause uneasiness or impedes understanding during lectures. The two groups presented differences in their learning preferences, the English Studies students indicating that more technical procedures such as repetition and segmental practice are very good pronunciation learning techniques. They also expressed significant lower agreement with the statement "*I don't want to sound native, I just want to be understood*". We also obtained significant differences between the groups when analysing interlocutor anxiety: the English Studies students exhibited more anxiety, specifically fear of ridicule and worry of making mistakes, when considering their teachers and local and international peers as interlocutors. These results seem to suggest that we can expect differences regarding English pronunciation attitudes between different learner profiles, which may need to be considered during their learning progress.

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AN ENDOCENTRIC ANALYSIS OF VOWEL QUALITY IN SPONTANEOUS PUNJABI ENGLISH

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This is the first analysis of vowel quality in spontaneous Punjabi English (PunE) spoken by Punjabi native speakers from Pakistan. Many analyses of indigenized Englishes often ignore the fact that a multilingual community may have multiple varieties of English.

Moreover, they mostly offer exocentric comparisons between native and non-native varieties. For example, the existing studies on Pakistani English (PakE) offer comparisons with either American English (Abbasi et al., 2018) or British English (Bilal et al., 2021; Mahboob & Ahmar, 2008), thus failing to capture the influence of the linguistic diversity in Pakistan. We offer an endocentric analysis here and compare the inventory and quality of vowels in PunE compared with Pakistani Punjabi, two under-studied languages.

The data consisted of a subset of interviews conducted with native speakers of Punjabi. We analyzed Bark-normalized F1 and F2 in PunE and Punjabi vowels (N = 1,759) produced by two female speakers. Our analysis showed that PunE and Punjabi shared ten vowels (Front: i, ɪ, ɛ, e, a; Back: ʊ, u, o, ɔ; Central: ə). Notwithstanding the shared vowels, their quality differed significantly between PunE and Punjabi for three front vowels [i, ɛ, e], two back vowels [u, o], and for [ə].

Linear Mixed-Effects Regression analysis showed significant interaction between language (PunE, Punjabi) and F1 of the shared vowels ($p < 0.0001$) as well as the F2 of these vowels ($p < 0.0001$). This indicates a difference in the space of vowels shared between PunE and Punjabi. Further analysis showed that compared with Punjabi, [i, e] were produced with more fronted quality in PunE (i: $p < 0.001$; e: $p = 0.0002$). [ɛ] was produced as more open ($p = 0.0002$) and less fronted ($p = 0.009$) in PunE. Both [u, o] were produced with less open quality in PunE than Punjabi (u: $p = 0.0004$; o: $p = 0.04$). [ə] in PunE was produced with less open ($p < 0.0001$) and more fronted quality ($p < 0.0001$). No significant difference was found between the remaining vowels.

Our results indicate that the vowel inventory in PunE is influenced by Punjabi. However, the vowels in these two languages differ in their acoustic phonetic properties and exhibit a differential use of vowel space. Therefore, we propose that Punjabi English is a distinct variety of English and is insufficiently described by the global term Pakistani English. Future research with more speakers can shed further light on these differences.

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GETTING THE RHYTHM: A CROSS-LINGUAL STUDY OF ACOUSTIC REALIZATIONS OF WORD AND SENTENCE STRESS IN EFL

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While the alternation of stressed and unstressed syllables forms the perceivable rhythm in speech, both the positioning and acoustic realization of word and sentence stress differ between languages (Ladefoged & Johnson, 2014). Consequently, many language learners struggle with the appropriate production of language specific stress patterns, which can have a detrimental effect on their intelligibility and fluency in L2 (e.g., Anderson-Hsieh et al. 1992, Munro & Derwing 1999, Pinget et al 2014). A transfer effect from speaker's L1 to the L2 has been recognized in terms of stress placement (e.g., Wennerström 2000, Kormos & Dénes 2004, Guion 2005). It is, however, not yet clear how the speaker's L1 affects the acoustic realizations of L2 stress.

In an earlier study, Kallio et al. (2022) investigated acoustic realizations of word and sentence stress in EFL speakers from four different L1 backgrounds: Czech, Slovak, Hungarian, and Polish. Acoustic stress realizations were investigated as syllable-level prominence estimated by a continuous wavelet transform (CWT) analysis using combinations of f0, energy, and syllable duration. Correlations of prominence estimates for L2 utterances with estimates of corresponding L1 productions were used in predicting experts' prosodic proficiency ratings. The results showed a relation between prominence estimates and expert ratings, but the predictive power of the prosodic prominence signals varied both quantitatively and qualitatively depending on the L1 of the speaker, indicating that the speaker's L1 may affect the use of f0 and duration in producing English stress. While the CWT method enables analyzing these prosodic signals in parallel, it does not reveal how they manifest in the speech signal. Moreover, it neglects vowel quality as an indicator of stress.

The study in progress follows up on Kallio et al. (2022) by focusing on how parameters of speech timing, f0 change, and vowel quality differ between native and EFL speakers from above mentioned language backgrounds. Each L1 group includes 56 read speech samples assessed by trained raters for prosodic proficiency. Utterance-sized speech samples will be analyzed for standard deviation of syllable durations (nΔS), pairwise variability index (nPVI, Low et al. 2000), f0 range and standard deviation, mean f0 slope, and F2-F1 values of unstressed vowels. I will present the results of the study and discuss their implications for further research and functional language teaching that considers the learner's L1.

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DEGREE OF FOREIGN ACCENT AND CINEMATIC CHARACTERIZATION – RUSSIAN CHARACTERS IN HOLLYWOOD

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Different varieties and accents of English are routinely used in American cinema and TV as a shortcut for introducing characters (Lippi-Green, 1997). In particular, ethnolects, regional and social dialects can index the corresponding origin and sociocultural background of a character. At the same time, non-standard and non-native varieties of English are often employed for contrastive characterization. For instance, prestigious and mainstream varieties (such as General American English) were found to be favored for positive and heroic characters, while foreign accents and stigmatized dialects (such as Italian-accented English and Southern American English) tend to be employed for unfavorable or otherwise contrasted figures (Dobrow & Gidney, 1998; Dragojevic et al., 2016; Minutella, 2021). This asymmetry of characters' linguistic repertoires has been mainly identified through a categorical analysis, that is, by determining the type of English used in films. Little, however, is known about the role of the degree of accentedness in cinematic representation, and whether it can also meaningfully correlate with film characters of various profiles.

The study addresses this gap by investigating the language and accent of Russian characters in Hollywood films. Russian characters have populated mainstream American cinema since its inception in the 1910s and continue to maintain their strong presence due to dynamic relations between the US and the USSR, and later Russia (Robinson, 2007; Strada & Troper, 1997). The choice of this social group, therefore, offers an apt opportunity to investigate the use of foreign accent in the context of diverse characterological profiles. Speech of 163 characters from 36 films was assessed for the degree of foreign accent by L1 speakers of English in a rating experiment. The rating results were further tested against such non-linguistic variables as role centrality, narrative evaluation, gender and occupation. The findings offer insights into the nuances of accent portrayal in the cinematic representation of L2 speakers of English. The results are also discussed in relation to language ideologies conveyed through the popular American media.

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PROSODIC BOUNDARY STRENGTH AND PREVOCALIC T-GLOTTALING IN MASSACHUSETTS

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T-glottaling is the realization of the voiceless alveolar plosive /t/ in which the tongue gesture is either entirely replaced with, or accompanied by a glottal stop or creak (Garellek 2013: 2; 33-54). It is mostly well-known as a feature of many British English varieties (e. g. Milroy et al. 1994), but it is well-established in American English accents as well (Eddington & Taylor 2009; Eddington & Channer 2010; Seyfarth & Garellek 2015; Kaźmierski 2020). The environment in which t-glottaling occurs varies across English accents. Specifically, while prevocalic word-internal t-glottaling is common in many British English varieties e. g. city [ˈsɪʔi], it is extremely rare in American English varieties, where a flap is the usual realization of /t/: [ˈsɪɾi]. However, across word boundaries, prevocalic t-glottaling does often occur in American English.

T-glottaling competes with flapping prevocalically across word-boundaries, e. g. that is can be both [ðæɾɪz] and [ðæʔɪz], and so there is variation between the two processes. Several factors influencing this variation have been identified. To quote a few, there is indication that t-glottaling might be more frequent in Western US than elsewhere in the US (Eddington & Taylor 2009). It is particularly likely to occur in the speech of young women (Eddington & Taylor 2009; Kaźmierski 2020), and it appears to affect /t/-final words that are typically followed by consonant-initial words more than words that are typically followed by vowel-initial words (Eddington & Channer 2010; Kaźmierski 2020). A factor that has not yet been investigated is the role of the strength of the prosodic boundary. It can be hypothesized that the stronger the prosodic boundary, the more likely t-glottaling is, since the stronger the boundary, the less word-like a sequence of two words is, and so the less likely flapping is. This, to my knowledge, has yet to be shown empirically.

In the present study, therefore, I will investigate the role of the strength of prosodic boundary on the likelihood of word-boundary prevocalic t-glottaling in the speech of twenty young women from Massachusetts. The primary data consists of twenty one-hour-long sociolinguistic interviews. The realizations of /t/ will be manually annotated, and the probability of t-glottaling over flapping will be estimated using Bayesian mixed-effects logistic regression modelling. The relative importance of predictors will be compared.

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PRESCHOOLERS' PRODUCTION OF L2 VOWELS IS AFFECTED BY INPUT QUALITY: A LONGITUDINAL STUDY

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In their L1-dominant environment, EFL learners encounter diverse speaker models. Assuming that phonetic details extracted from input are associated with lexical entries, learners' production of L2 sounds is affected by a preference for commonly heard variants of words. Exposure to varied input characteristics can hinder category formation, and lead to lexical misrepresentation. In learners' shared L1~L2 phonological system, categories interact bidirectionally, with L1 sounds showing assimilatory or dissimilatory drift. We addressed how in-class input influences pre-literate FL learners' formation of L2 categories, and how this process affects L1 sound production. We compared vowels produced in known words, learnt previously from Czech-accented speakers, and new words, learnt in class with an SSBE-like speaker. We asked: (1) Are the learners' L1&L2 vowels better separated acoustically in new words? (2) Did production of L1 and/or L2 vowels change over time?

During 3 months, we recorded 7 Moravian Czech preschoolers aged 3;9-5;8 who attended weekly 45-minute EFL lessons for at least 10 months. They participated in 8 recording sessions, 2 in Czech (10 weeks apart), and 6 in English. Using a picture-naming task, we collected realisations of mono-/di-syllabic words (38 English, 24 Czech). These included the SSBE vowels /i,ɪ,ɛ,æ,ʌ/, Moravian Czech /i:,i,ɛ,a/, and back/central vowel fillers. We modelled normalised vowel height (F1-F0) and retraction (F2-F0) in ERB using linear

mixed-effects models with Vowel, Time and Input as fixed effects (/æ/ at Time 2 in new words as the intercept). Time 1 included the first 6 weeks (3 sessions), Time 2 last 6 weeks (3 sessions) of the experiment. Random effects were Speaker (by-Time varying slopes) and Word (varying intercepts).

At both Time 1 and 2, the children separated L2 /ɛ,æ,ʌ/ better in new words, producing higher /ɛ/ and more retracted /ʌ/ compared to /æ/. Still, an overlap was observed, /æ/ showing the greatest variability. L2 /i,ɪ/ became more separated at Time 2 due to /i/ raising; both were produced similarly in known and new words. L1 /iː,i/ raised at Time 2 and also started to overlap. Both vowels moved closer to L2 /i/. L1 /e,a/ retracted and /e/ overlapped more with L2 /æ/. Our findings illustrate the influence of input characteristics on child learners' production of L2 vowels, and further suggest that classroom input can drive phonetic drift in young children.

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THE EFFECTIVENESS OF AUDITORY AND AUDITORY-VISUAL FEEDBACK ON L2 ACCENTEDNESS AND COMPREHENSIBILITY USING ACOUSTICALLY MODIFIED LEARNER VOICES

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The idea of using an L2 learner's own voice and acoustically modifying it to sound more native-like is not new (Repp and Williams, 1987; Nagano and Ozawa, 1990; Probst et al., 2002; Felps et al., 2009; De Meo et al., 2013; Aryal et al., 2013; Zhao et al., 2018; Ding et al., 2019; Henderson and Skarnitzl, 2022). However, regardless of methods employed in pronunciation training and teaching, providing feedback on immediate production is essential for enabling L2 learners to expand their pronunciation repertoire (Warren et al., 2009). The main aim of this study is to investigate whether auditory-visual feedback seen in Praat (Boresma and Weenink, 2001) on pronunciation training leads to greater improvement in comprehensibility and reduces accentedness than auditory feedback. The participants (n=30) were Polish learners of English who recorded their voices using an interactive tool the "Golden Speaker Builder" that generated a personalised model voice, which mirrored the user's voice but with an American accent (Ding et al., 2019). In a four-week study, the participants, who were divided into three equal groups, were asked to perform listen-and-repeat tasks three times a week by imitating acoustically modified utterances that they previously recorded. After each training session, the first group received auditory feedback, the second one received auditory-visual feedback, whereas the last group had no feedback on their pronunciation progress. The participants were also given a pre-test, immediate post-test, and delayed post-test on their perception and production of English at the segmental and suprasegmental level. The results revealed that all groups improved significantly, however those who received feedback on their L2 pronunciation progress improved significantly more from the pre-test and post-tests in comprehensibility and reduced their accentedness. The most significant improvement in L2 pronunciation progress was noticed among participants who received an auditory-visual feedback, suggesting that self-imitation pronunciation practice is a method that has the potential to improve L2 learners' comprehensibility and reduce accentedness but it may bring even more positive results when immediate feedback, preferably auditory-visual, is provided.

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MORPHO-PHONETIC VARIATION IN SECOND LANGUAGE LEARNERS' SPEECH

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A growing number of studies have documented systematic phonetic differences in homophonous word-final alveolar sibilants [s,z] in English that stem from the morphological status of the phonemes: morphemic (e.g., laps) or non-morphemic (e.g., lapse) (e.g., Losiewicz, 1995; Plag et al., 2017; Tomaschek et al., 2019; Walsh & Parker, 1983; Zimmermann, 2016). Recent studies have shown that non-morphemic sibilants tend to be longer in duration than their morphemic counterparts. It is well known that word-internal morphological processes can have phonological consequences (Chomsky & Halle, 1968), but it also seems to be the case that phonetically gradient processes play a role.

Acquiring second language phonetics is complex and requires learners to categorize the phonetic variability they encounter in the L2 as either allophonic or morpho-phonetically meaningful. Not much is known about durational variation in homophonous word-final

sibilants in second language learners. The present study investigates a cohort of Korean learners of English as a second language whose first language Korean is characterized by a lack of acoustic realization of word-final sibilants, with word-final coronal obstruents being neutralized to unreleased [t̚] (Kim & Jongman, 1996). Excluding first language interference effects, it becomes possible to investigate whether and under which circumstances Korean learners of English (implicitly) recognize the fine-grained morpho-phonetic variation associated with word-final [s,z] in English and incorporate this information into their own speech patterns. The findings can contribute to the growing field of subphonemic studies in foreign language learning.

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EXPLORING LARGE LANGUAGE MODELS FOR L2 METAPHONOLOGICAL AWARENESS TRAINING

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Over the past few decades, artificial intelligence (AI) has made significant strides in education, from automated scoring of complex cognitive performances (Yan et al. 2020) to domain-specific intelligent tutoring systems (D'Mello & Graesser, 2023). Within the realm of second language (L2) pronunciation acquisition, AI has primarily been deployed in commercial solutions for summative assessment (e.g. Zheng & De Jong, 2011) and formative assessment targeting accent reduction (e.g. Chun, 2023). However, there has been limited applied research on systems aimed at fostering metaphonological awareness (Wrembel, 2011), despite its potential to facilitate L2 pronunciation acquisition (e.g. Kivistö-de Souza, 2017; Saito, 2019). The few previous tools focusing on metaphonological skills, such as phonetic transcription, showed promise (e.g. Łodzikowski, 2021), but also faced technical limitations, such as only being effective in well-defined and unambiguous scenarios.

The advent of large language models (LLMs) such as GPT-3 (Brown et al., 2020) and free LLM-based tools such as ChatGPT (OpenAI, 2022) offers unprecedented opportunities for the L2 pronunciation research and pedagogy community. When analysed through the lens of Bloom's taxonomy (Anderson et al., 2001), these systems surpass previous-generation AI systems. On the knowledge dimension, they can not only handle factual, conceptual, and procedural knowledge on a wide range of topics but also adjust their strategies based on context. On the cognitive process dimension, they can remember and apply knowledge, understand and analyse the learner's input, and create novel pedagogical approaches. When it comes specifically to domain-specific metalinguistic knowledge, they know enough to substantiate their use in the classroom (Beguš et al. 2023).

This research explores the use of LLM-based tools for developing L2 metaphonological awareness in advanced learners taking an English phonetics and phonology course. First, we evaluate the capabilities of a leading commercial LLM on a selection of the course curriculum. Second, we propose novel LLM-based metaphonological activities and pilot them with course participants. Third, we review the teachers' and students' perceptions of the usefulness of the intervention. Finally, we provide recommendations for implementing LLMs as valuable supplementary tools. Throughout, we emphasise the importance of treating them not as infallible sources of truth but as tools for critique. We highlight the need to encourage and educate students about using such tools not only for language acquisition but also as preparation for interacting with language-based AIs that are becoming increasingly prevalent across academic, professional, and personal spheres.

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CZECH EFL TEACHERS' BELIEFS ABOUT PRONUNCIATION: STANDARD(S) AND PRACTICE

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It has been well established that accurately perceiving non-native sounds poses a substantial challenge for second language (L2) learners (Best & Tyler, 2007; Flege, 1995). Previous studies (e.g., Derwing et al., 2022) have reported multiple factors that influence the difficulty in L2 speech perception, such as cross-linguistic influence, age, length of residence, and orthographic effects. In this line of research, there is still a need for further research on factors related to auditory input. Hence, the present study investigates the ways in which and the extent to which L2 speech perception is influenced by talker variability and lexical frequency in auditory input. More importantly, the current study examines how they interact with individual differences, particularly working memory, receptive vocabulary knowledge, and L2 proficiency.

The status of English as a lingua franca (ELF) has challenged the prevailing native-speaker norm(s), thus ultimately requiring EFL teachers to tackle the questions of standardisation, acceptability, comprehensibility and intelligibility. The area where this is perhaps the most apparent is pronunciation (Levis, 2005; 2018) – the nativeness principle has, at least in theory, given way to the intelligibility principle. Following the latter of the two, the fundamental goal of pronunciation instruction is essentially to ensure that learners are understood by other speakers (who may or may not be native). This translates into a shift in focus – from all pronunciation features to items that affect intelligibility (Lingua Franca Core [Jenkins, 2002]). Since it generally takes a fairly long time for such conceptual changes to take place, it is likely that the classroom reality and teachers' views might differ from the suggestions in pedagogical research ((Derwing & Munro, 2009); Vanderlinde & van Braak, 2010).

Despite the growing body of research in teachers' cognition (Borg, 2015), relatively little is known about what teachers believe with regard to pronunciation, which is chiefly due to the non-generalisability of the results. For instance, the respondents in Bøhn & Hansen (2017) and Baker (2013) favour intelligibility while those in Coskun (2011) and Uzun & Ay (2018) nativeness. Trainee EFL teachers in Vančová (2020) claim nativeness as a goal for themselves and leave intelligibility to their prospective students. This dovetails with the observation in Jarosz (2022) where the desire to sound native-like was much more frequently expressed by pre-service teachers than in-service teachers.

In our study, we investigate the beliefs of Czech EFL teachers with respect to pronunciation, with special attention given to the teachers' reasoning behind the notions of acceptability and standard. A mixed-method design consisting of a survey and semi-structured interviews will be used. The participants will be in-service teachers from Czech secondary schools with various amount of teaching experience. We hypothesize that teachers will show general reluctance to dedicate time to pronunciation, and when they do

so, the focus will mostly be on segmentals. Similar to the participants in Couper (2016), the explanation might be anxiety stemming from one's own purported imperfections.

These might in turn stem from the support of the nativeness principle with BrE being the prevalent model. This likely originates from the prescriptive tradition in the country (Cvrček, 2008), the resulting notion of "correctness", and/or the EFL materials available to teachers.

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THE ELFING PROJECT

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This paper aims at presenting the research project 'Development of Language Ideologies in the training of pre-service English Language Teachers from an ELF perspective' (ELFING), which will run from September 2023 to August 2026. Two universities are involved in the project: University of Málaga, in the South of Spain; and University of Lleida, in the North-east of the state, with 2 researchers in Málaga, and 6 in Lleida. The project's purpose is to study the language conceptualizations, ideologies and attitudes of pre-service English teachers at these two universities. (Irvine, 2013; Lowe, 2021). The goal is to: (1) better understanding the processes that make it possible for them to develop a complex appreciation of the language phenomenon in general and of such a globally established language as English, and (2) to problematize its very nature as well as its social presence, meanings and valuations.

The data collection methodologies comprise questionnaires to and interviews and focus-groups with students, classroom observations and interviews to lecturers along three semesters, starting in the spring semester of the 2023-2024 academic year. We adopt an ethnomethodological framework, with its bottom-up approach to making sense of social praxes (Georgakopoulou, 2013; Sacks, 1972). We assume that the array of data collected will provide evidence that students' dominant ideologies in our context initially rest on a monolingual native-speakerist approach, which places native speaker accents as the model to attain, and that the training at the two universities will potentially make them engage with an ELF-aware approach which places the focus on achieving international intelligibility. It will be our job to make sense of it all along this continuum, to identify and contrast patterns, so we can unpack, in a clear and systematized manner, which ideologies and identities are being (re)produced, whether we can spot and describe changes in these individual ideologies in the three semesters, and what the (dynamic) dominant ideologies are.

This project has two main hypotheses: (1) that students' ideologies and discourses evolve as they progress in their training; and (2) the potential differences of pre-service teacher ideologies and discourses due to the bilingual/monolingual contexts of Lleida and Málaga will be minimized by (a) their common interest in investing in English as their academic and future professional tool, and (b) their experiences with linguistic diversity in the contemporary multilingual reality of these Spanish cities.

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(DIS)FLUENCY AND PRONUNCIATION ACCURACY IN EMI LECTURES

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The internationalisation of higher education has entailed an increase in the number of English-instructed courses in countries where English is not an official language (Wächter & Maiworm, 2014). A group of researchers from five European universities collected data in the academic year 2018-2019 from interviews and classroom recordings of six lecturers per university, whose level was later classified based on the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2018). Eight raters were tasked with carrying out such classification from watching 20 minutes of the recorded lectures. The aim of this presentation is to show the results obtained after analysing (1) the (dis)fluency of 10 EMI lectures across the five European countries (two per country) and (2) the pronunciation accuracy of four of these lecturers (two Catalan and two Italian).

To address (dis)fluency, two 180-second sections of the ten lectures were selected, and the following measures were calculated: for fluency, Mean Syllables per Run (MSR), Rate of Speech Time (ROST), and Speech Time Ratio (Ginther, Dimova, & Yang, 2010); and for disfluency, repetitions and false-starts and self-corrections. The results show an alignment between fluency and accuracy measures with the CEFR classification of the 10 analysed lecturers.

To address pronunciation accuracy, 20 minutes of four lectures were selected. These lecturers were delivered by L15, a female Spanish lecturer rated B2; L18, female, Spanish, C1; L28, female, Italian, C1; and L30, male, Italian, B2. Deviations from the British and American standard varieties were independently identified by the two presenters. Three categories of deviations were adopted: suprasegmental and segmental (vowels and consonants). It was found that B2 lecturers deviate more frequently in the three categories, and have more problems particularly in terms of suprasegmental features (word stress), whereas the C1 lecturers analysed do not have many difficulties with stress placement. L28 produced some deviations in vowel and consonant pronunciation, and many filled pauses as a consequence of her strong Italian accent. A close look at the ratings she received shows that although she was rated C1 on average, she was actually rated B2+ in the phonology item. L18 showed very few deviations.
Finally, the chapter also reflects upon the complexity that surrounds the concept of pronunciation accuracy and explores implications for EMI pedagogy and training.

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TOWARDS A PHONETIC CORPUS OF NON-NATIVE ENGLISH LEARNERS: EXPANDING RESOURCES FOR PHONETIC ANALYSIS

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Despite the rapidly growing number of corpora available for linguistic research on the Internet, only some projects offer access to audio recordings that can be used for phonetic analysis. Among these resources, one can find just a few examples of databases with recordings of non-native speakers of English. These include the Corpus Inventory of Stanford University and the Pelcra Learner English Corpus, developed by Piotr Pęzik from University of Łódź (Pęzik, 2012). Additionally, one can use the Speech Accent Archive (Weinberger & Kunath, 2011) and the International Dialects of English Archive (Persley, 2013), but the audio materials available in these services are not compiled into a single database that facilitates fast searches for words or sentences corresponding to particular parts of a given recording.

This project focuses on developing a comprehensive phonetic corpus of audio recordings by English learners from various countries in Europe. The intended functionality of this tool will be presented using a prototype version freely accessible at eslcorpus.pythonanywhere.com. The prototype includes speech samples from six Polish learners of English, grouped according to various aspects such as age, gender, education, and language proficiency. The recordings comprise structured interviews and monologues on different topics to ensure lexical variety. The user may search for individual words and phrases and quickly obtain the corresponding audio fragments either in isolation or with a specified concordance window size.

In addition to presenting the prototype version of the corpus, the project aims to open a discussion on possible future developments of phonetic corpora. For example, with the use of highly effective speech recognition tools such as Whisper AI, utilized in the prototype under discussion, it is possible to create corpora based on almost any set of audio recordings in almost any language. One may also incorporate software for converting text to phonemic transcription, which would allow the user to make queries using the International Phonetic Alphabet.

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AN ACCENT FRANCA FOR A LINGUA FRANCA? CHOSEN STANDARDS FOR EFL TEACHING AND LEARNING IN THE FRENCH EDUCATION SYSTEM

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Since the democratisation of the internet, it has never been as easy as it now is for French learners of English to access radio, videos, films, and series from all over the Anglosphere. This ever-growing influence of English therefore prompted the French Secretary of State for Education to commission a report that brought forth many changes in the teaching of English (Manes & Taylor, 2018). The report, entitled Daring to Express the New World, assesses the ubiquity of the English language on the world stage and draws up guidelines on how it should be linguistically tackled in class.

The topic of this paper addresses an under-researched area of the French education system, namely that of the standard accent(s), if any, that ought to be taught in English classes as recommended in the national curriculum, and while bearing in mind that English is now being widely used as a global lingua franca.

To provide a comprehensive analysis of the status of the English accents in the French education system, I triangulated the entire institutional sphere, encompassing both the learner and the teacher realms, as well as the EFL resources developed by the institution. I analysed materials ranging from primary and secondary national curricula through French learner-oriented phonetics textbooks to examiners' reports of competitive exams for teaching English, as well as the findings of the report commissioned by the Department for Education (Ministère de l'Éducation nationale, 2018-2023). Textual, visual, and aural formats were analysed by frequency of occurrence of keywords using combined searchable text files or by manual examination.

Results revealed a lack of explicit pronunciation instructions about the standard accent that should be taught and spoken in English class inasmuch as the current modern languages curricula are largely drawn from the latest version of the CEFR (Conseil de l'Europe, 2021). This revision abandoned the nativeness principle in favour of the more New World-ready intelligibility principle, according to which accentedness of L2 speech is no longer frowned upon. As for the teachers, any accent can be used as long as it is both consistent and spoken in English-speaking countries or regions. However, although explicit instructions are not given, implicit references to SSBE –and to British culture in general– are widespread and these can impact the teaching of English and learner's linguistic representations. Overall, the results confirm that the British accent stands firm as the 'legacy variety', inconspicuously entrenched in the French education system despite English being considered a lingua franca therein.

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KURDISH EFL STUDENTS' RECOGNITION AND PRODUCTION OF WORD STRESS

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Word Stress, as a suprasegmental phenomenon, can have impact on pronunciation performance of non-native speakers. The aim of this study is to show that theoretical information of stress placement can have positive impact on students' practical recognition and production but does not always guarantee successful stress placement. To arrive at reliable findings, a list of 50 vocabulary of various structures is presented to the EFL students at Salahaddin University - Erbil in Kurdistan region of Iraq to identify stress placement on paper. The participants are 50 third-year college students of English Department. The same participants are then required to record their voices to enable the researchers compare their recognition and production performance. Later on, the list is presented again to the participants with placement of stress on the correct position and they are asked to read the words again to assess the usefulness of theoretical teaching of stress placement in verbal performance. The findings show that theoretical teaching of stress placement has a positive impact on their verbal performance. Another finding is that the students regard all affixes as "neutral", which means they do not change the position of stress in the words. If they know the affix belongs to which kind (stress carrying, neutral or stress changing affixes), they can place stress on the right syllable.

In this presentation, a brief background information is provided about Kurdish phonemic system and stress placement. The main aim of the research paper is to find the problematic areas first in stress placement for Kurdish EFL students. Then the methodology of the paper is explained along with some of the main findings.

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THE ROLE OF ACCENT IN THE PROCESS OF SPEECH PERCEPTION

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Speech rhythm plays a crucial role in how listeners perceive speech and the speaker: predictability of temporal patterns is of great importance if speech perception is to be smooth (Volín, 2010), and unexpected irregularities in the speech signal result in increased demands for cerebral processing of speech (Grossberg, 2003). Since listeners routinely make implicit judgements about speakers' personality based on their speech (McAleer, Todorov & Belin, 2014), it is not surprising that greater cerebral effort is, in turn, associated with negative perceptions of the speaker.

To suggest that speech perception is a complicated is hardly original: we know that humans do not merely transform acoustic information into linguistic information; rather, they use all types of cognitive processes, which include both accurate and inaccurate ideas about speakers' accents. The studies presented in this talk show that conscious and subconscious information that listeners possess about accents plays a significant role in speech perception. Listeners have overt knowledge of some aspects of how language

variation patterns in their communities, although oftentimes this "knowledge" is inaccurate (cf Niedzielski 1999, Niedzielski and Preston 2001, Hay et al 2006). Listeners also have accurate, but covert, knowledge of accents. Studies show, for instance, that they react in perceptual tests using certain information, even if they claim no conscious knowledge of such information (cf Koops et al 2008, Koops 2011). Finally, we know that subjects use social information in the attribution of phonetic properties to sociolinguistic variables, and in fact, social information can take precedence over acoustic information (cf Strand 1999, Niedzielski 2010, Hay et al 2006). To illustrate, I present results from several experiments that show that lifelong residents of a major US city are aware of language variation due to factors such as ethnicity and age, even if they report in language attitudes tests that they have no such awareness. We have found that respondents who claim no knowledge of word-final glottalization or vowel-length differences due to ethnicity show longer reaction times to glottalization or vowel-length values that conflict with actual glottalization or vowel-length patterns found in different ethnic groups. In addition, we have found, using eye-trackers, that respondents who claim no overt knowledge of language variation due to age still fixate longer on word pairs that are homonymous in older speakers, only if they believe it is an older speaker they are listening to, and not a younger speaker.

Thus, people have acquired knowledge about language variation in their community without being aware that they have this knowledge. We suggest that social information is an additional knowledge system that humans use, and knowledge regarding speaker accent must be taken into account in order to successfully model the speech perception process.

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INTERNATIONAL ENGLISH IN UNITED WORLD COLLEGE EAST AFRICA: COMPREHENSION OF NATIVE AND NON-NATIVE ACCENTS - QUALITATIVE METHOD

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This paper gives an insight into the highly diversified cultural community at United World College East Africa, Tanzania, a locus classicus for EFL in action, where English is the main medium of instruction and international students prepare for the International Baccalaureate.

The study includes 40 students of two diploma classes on the Moshi campus, representing 30 single and dual nationalities, 52.5% multilinguals, users of three to six languages, 30% bilinguals and 17.5% monolinguals. The cohort reported ability to speak a total of 32 languages of the following families: Indo-European (n=23), Niger-Congo (n = 3) Afro-Asiatic (n = 1), Creole (n = 2), Austronesian (n = 1), Turkic (n = 1) and Uralic (n = 1). They had learnt or acquired inner circle varieties of English, mainly British and American and some outer circle Englishes, e.g., East African.

The qualitative results are based on responses to open-ended questions. The research sheds some light on the following issues:

1) preferred variety of English,
2) techniques used to facilitate mutual understanding,
3) familiarity with English accents before UWCEA,
4) the difficulty in understanding certain accents at the beginning of study,
5) the most difficult accent(s) to understand,
6) the reasons for not being able to understand it/them,
7) the way of adjusting to the accent(s),
8) the effect of immersion in the multi-accent community on the students' English.

Some examples of situations concerning misunderstanding based on (mis)pronunciation and explanations on the clarification of meaning are discussed.

The results reveal that 42.5% of respondents admit to preferring one native variety of English over others and most often these are American and British English (17.5% each).

The most common ways of adjusting speaking for the benefit of communicative partner(s) are, e.g., slowing down (85%), repetition (75%), paraphrasing (68%), using gestures (48%), asking openly if one is understood (45%) and translanguaging (40%). Vietnamese (36.4%%), Asian English in general (13.6%) and Irish (18.2%) turn out to be the most difficult accents to comprehend. The most frequent reasons for not being able to understand some accents are, e.g., pronunciation (50%) and the fast rate of speaking (15.4%). Among the ways of adjusting to accents one may find, for example, listening carefully to accents (26.9%) as well as improving understanding of accents thanks to

immersion (26.9%). The study also shows that, given a chance, majority of the respondents would like to speak English with a native accent.

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SORRY, COULD YOU SAY THAT AGAIN? THE INTELLIGIBILITY OF FRENCH-ACCENTED ENGLISH IN AN ACADEMIC CONTEXT

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Since many L2 speakers never acquire native phonological patterns despite years of study and practice, much seminal research has been directed towards what makes speech intelligible as opposed to focusing on making learners sound like (SBE/RP or GA) native speakers (Derwing & Munro, 1995, 1997, 2006; Jenkins, 2000). The need to replicate native pronunciation has also been called into question (Jenkins, 1998; Bamgbose, 1998), particularly an international context. Drawing on theoretical and methodological paradigms from L2 phonology, variationist sociolinguistics and cognitive psychology, this presentation aims to describe the interphonological (segmental) system of a cohort of French adult speakers and to relate findings on the intelligibility and comprehensibility of French-accented English in an academic context.

A spoken corpus of the L2 English productions of thirteen French Psychology researchers was adapted from the interphonological and sociophonological components of the PAC protocol (Przewozny et al, 2022). We present our protocol based on reading and interactional tasks using psychology material (Xodabande, 2020, Budson et al, 2002) and videos of conference presentations the informants had given in English in a variety of

ecological scientific contexts. We then discuss how the analysis of this corpus contributes to the description of the French speakers' interphonological system in L2 English. Pillai scores for pairs of short vowels are discussed and our results are compared with previous works (Kenworthy, 1987; Jenkins, 2000; Capliez, 2011; Mairano et al., 2019; Rouaud et al., 2022).

We then examine the second phase of our ongoing study for which the spoken corpus was used to create the experimental material. A set of French and English participants were asked to perform three perception tasks to evaluate the informants' intelligibility. The participants had to listen and transcribe isolated words orthographically, complete a cloze test and finally they had to listen to an extract of a conference presentation and answer comprehension questions. We review the preliminary results with regard to the criteria of intelligibility and comprehensibility as defined in our study and discuss the implications for pronunciation teaching and international academic communication.

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INVESTIGATING GRIT IN LEARNING SECOND LANGUAGE PRONUNCIATION: TOWARDS A DEDICATED SCALE

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While grit, understood as perseverance and passion for long-term goals (Duckworth et al., 2007), has only recently attracted the attention of researchers investigating the role of individual differences (IDs) in learning a second or foreign language (L2), relevant studies are evidently on the increase. Attempts have been made, among others, to relate this construct to such ID factors as motivation, willingness to communicate, emotions, mindset as well as attainment (e.g., Feng & Papi, 2020; Guo et al., 2023; Khajavy & Aghaee, 2022; Khajavy et al, 2021; Li & Dewaele, 2021; Pawlak et al., 2022), to tap into its dynamicity (e.g., Elahi Shirvan et al., 2021), and to explore it among teachers (e.g., Sudina et al., 2021). A major development was the construction of the L2 Grit Scale (Teimouri et al., 2022), gauging perseverance of effort and consistency of interest, which allowed investigating the construct in the specific domain of L2 learning, as is typically the case with other ID factors (Dörnyei & Ryan, 2015). However, similar to a number of other ID variables (e.g., strategies), there are grounds to assume that L2 grit should be examined in a highly domain-specific manner by focusing on its role with respect to different areas of the target language (TL). Building on this reasoning, the study aimed to develop and validate a dedicated scale for tapping into L2 grit in learning pronunciation. Participants were 360 Iranian university students majoring in English. Requisite data were collected by means of the Grit in Learning L2 Pronunciation Scale, which is an adaptation of the L2 Grit Scale (Teimouri et al, 2022), as well as two scales tapping into motivated learning behavior and self-efficacy in learning pronunciation, adapted from Piniel and Csizer (2013). Confirmatory factor analysis supported a two-factor model of grit for learning L2 pronunciation, while structural equation analysis indicted important links between both facets of pronunciation grit, motivated behavior and self-efficacy.

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THE EFFECT OF ASPIRATION ON THE INTELLIGIBILITY OF SPANISH-ACCENTED ENGLISH

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Languages make frequent use of Voice Onset Time (VOT) as a distinctive phonological feature (Chao & Chen, 2008; Maddieson, 1984). The aspiration resulting from long-lagged VOT is also one of the most salient characteristics of the articulation of English voiceless plosives (Flege, 1987) and has been defined as one of the basic features of internationally intelligible English since the emergence of the ELF paradigm (Jenkins 2000, 2002; Walker 2010). Research, however, has shown contradictory outcomes: a number of studies have corroborated the importance of aspiration in international communication to varying degrees (Kennedy & Luchini 2013, Osimk 2009, Zhang 2013), while other researchers have not found evidence to confirm such claims (Deterding, 2013; Doel, 2007; Haslam & Zetterholm, 2016).

The aim of this the present paper was twofold. Firstly, associations between VOT and general pronunciation ratings were established using quantitative methods. Secondly, intelligibility breakdowns resulting from non-native VOT were analysed. For this purpose, 60 advanced speakers of English were recorded at a Spanish university. The instruments used for stimuli recording were an originally designed elicitation paragraph and a series of semantically unpredictable sentences (SUS), i.e., decontextualised phonological input (Wang, 2007). The participants' speech samples were then rated online by 330 listeners

from different language backgrounds – including L1 English speakers from the Inner Circle. Pronunciation performance was measured using three variables: (1) intelligibility, (2) comprehensibility and (3) foreign-accentedness. Intelligibility was defined as phonological utterance decoding (Smith & Nelson, 1985; Jenkins, 2000; Walker, 2010) and was tested using orthographic SUS transcriptions provided by the listeners. For the variables of comprehensibility (the perceived level of ease of understanding) and the degree of foreign-accentedness, semantic differential scales were used (Derwing & Munro, 1997, 2015). The level of aspiration was shown to be moderately correlated with all three pronunciation variables (especially foreign-accentedness) in tests where aspiration was not an isolated or the only feature present. However, the qualitative analysis of communication breakdowns in SUS – aided by acoustic measurements – did not support the hypothesis that aspiration consistently leads to major intelligibility difficulties as most short-lag VOTs were correctly recognised as voiceless stops. Moreover, the case-by-case analysis of phonological interpretations of words with "insufficient" aspiration levels showed the importance of frequent paronyms and minimal pairs in the input provided by the listeners. As a conclusion, it is suggested that prioritising aspiration as an indispensable curricular feature necessary for international communication in English may not be fully supported by empirical evidence.

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TOWARDS A COMPREHENSIVE TYPOLOGY OF PRONUNCIATION ERRORS

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In the field of ELT, whenever issues concerning pronunciation teaching and learning are discussed, "pronunciation" tends to be treated as if it was a uniform, monolithic formation. However, the term covers such a wide range of features that it is impossible to examine questions related to pronunciation without treating different features or feature types separately. Therefore, in our talk we propose that pronunciation can be broken down into components, and we provide a comprehensive typology of pronunciation errors based on the criteria of the problematic feature's teachability, learnability and its contribution to intelligibility.

There have been different types of frameworks designed to aid teachers' work in determining what pronunciation errors to deal with (e.g., Jenkins, 2000; Munro & Derwing, 2015). However, these fail to exhibit flexibility in terms of different learning settings (e.g., ESL vs. EFL) or various learner goals.

Focusing on the EFL context, we start out from Nádasdy's (2006) two-way categorisation into the phonetic and nonphonetic components of pronunciation (pp. 14–21), and expand it to a three-way classification of error types into lexical, phonological and phonetic pronunciation errors, the nature of which requires the application of vastly different methodologies both on the teacher/instructor's and the learner's part. We argue that phonetic error types, which tend to be overrepresented in ELT pronunciation materials,

can only be developed to an extremely limited extent depending on a set of language-external factors (primarily age, motivation and mimicry ability), and thus the perfect acquisition of such features is an unrealistic expectation from language teachers, both for their students and themselves. Instead, several phonological components of pronunciation exhibit a higher level of teachability and learnability, and their quicker acquisition can contribute more greatly to higher intelligibility. Finally, we maintain that lexical errors (mispronouncing words with a counterintuitive pronunciation, e.g., colonel, leopard, etc. – cf. Sobkowiak, 2001), which are not considered in the ESL- (as opposed to EFL-, cf. Szpyra-Kozłowska, 2015, pp. 33–39) dominated theoretical frameworks and pronunciation teaching materials, can be and should be dealt with regardless of educational situation and age.

We argue that our framework is highly instructive from the perspective of language teaching, as it can aid teachers/instructors in making conscious decisions on whether or not to deal with a particular pronunciation feature of a target language, taking into consideration a variety of aspects such as the learning setting, learners' L1 and their goals with English language learning.

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AN EXPLORATION OF <ACCENT> AND <INTELLIGIBILITY> IN BIG DATA FROM THE MOOC ENGLISH PRONUNCIATION IN A GLOBAL WORLD

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The focus of English pronunciation teaching has more and more shifted from aiming for nativelike pronunciation, to achieving L2 intelligibility (Levis, 2018; Walker et al. 2021) and on-line tools can play a useful role in achieving this (see, for example, Bueno-Alastuey, 2010). To this end, in 2018 Rupp created the Massive Open and Online Course (MOOC) English Pronunciation in a Global World for the FutureLearn platform (Open University, UK). To date, over 115,000 learners from 191 countries and online tutors from 35 countries have participated. Participants complete a number of steps associated with various pronunciation activities designed to:

- encourage discussion around notions such as intelligibility and raise awareness of key issues related to pronunciation.
- bring together a large variety of spoken Englishes, to provide maximally varied exposure to English accents and to generate a maximally varied data set.
- provide practice interacting with speakers from around the world, so people learn to handle variation in spoken English.
- offer teaching materials focused on L2 intelligibility.

In this paper we provide a case study centred on the terms <accent> and <intelligibility>. We analyse the written content of participants' comments and on-line tutors' reflection reports, in order to tap into evidence of beliefs related to accents in general (e.g., 'I want to remove all sounds of my L1 when I speak English') as well as traces of co-construction of meaning and negotiation of form in interaction (Haugh, 2011; Strawbridge, 2021) (e.g., discussion about what a 'neutral' accent sounds/should sound like).

Our analysis has two angles: a corpus linguistics angle focusing on collocations and co-occurrences of <accent> and <intelligibility>, and an ethnographic angle in order to probe sociolinguistic issues, analysing how that language was produced (e.g., language produced by an individual interacting with someone). Therefore we have found it necessary to tackle Big Data in two steps. First, we used a corpus linguistic tool (Kraif's Lexicoscope, 2023) to locate occurrences. Then we explored the broader context, which involves going beyond the written text, correlating each written comment with information about the user who wrote it (e.g., native or non-native speaker, status within the MOOC's community - learner, online tutor, teacher). This step in particular has proved to be challenging.

We hope that the Accents audience will find the results as well as the methodological issues interesting.

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MODERN RP IN THE ROUTLEDGE DICTIONARY OF PRONUNCIATION FOR CURRENT ENGLISH

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Recent years have seen an upsurge in changes pertaining to the Received Pronunciation (RP). Longman Pronunciation Dictionary (hereinafter referred to as LPD) compiled by Wells seems to constitute the main reference point for English learners around the world particularly in terms of learning British English. The phonetic symbols included therein can also be found in many other books related to phonetics. However, due to certain changes which can be observed in RP spoken today certain dictionaries attempt to update the phonetic symbols to reflect particular pronunciation changes. One of the dictionaries which subscribes to this category is the Routledge Dictionary of Pronunciation for Current English (hereinafter referred to as RDPCE) compiled by Upton and Kretszchmar. The authors of the dictionary highlight the greater range of transcriptions provided in the dictionary as opposed to its more prescriptive counterparts. New pronunciation tendencies are conveyed by employing symbols which differ from the ones applied in LPD.

The most salient features of RDPCE are as follows:
[æ] transcribed as [a] (reflecting the more open position of the vowel)
[e] transcribed as [ɛ] (reflecting the lowering of this sound)
[aɪ] transcribed as [ʌɪ]
[eə] transcribed as [ɛː]

the endings -ed and -es transcribed as [-ɬd] and [-ɬz]
both [tʃ] and [tj], [dʒ] and [dj] transcriptions are included
the inclusion of the intrusive r [e.g., wɪðˈdrɔː(r)]

The symbols are deliberated on and assessed in terms of facilitating the process of learning based on particular examples (e.g., institutionalisation, parents, issue). It is argued that RDPCE may prove to be very useful when it comes to being cognisant of change in RP especially for advanced learners. The great multiplicity of transcriptions, however, is also inextricably linked to hindering the comprehension of new words for beginners. It is also described what other implications the new symbols have for both beginners and advanced English learners.

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LEARNERS' BELIEFS AND THEIR EFFECT ON IMPROVING ENGLISH WORD STRESS

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Stress misplacement distorts the rhythm of the word and makes it unrecognizable for the listener (Cutler, 2012, 2015). Yet, although lexical stress is crucial for intelligibility (Levis, 2018), it is rarely taught in EFL classrooms due to class time constraints. This study explored the efficacy of an autonomous learning approach (The Covert Rehearsal Model, Dickerson, 2004) supported by instructional technology.

Participants were 12 Polish EFL high-school students attending a language course in Poland. To facilitate students' learning of academic words, the teacher assigned six worksheets that provided explicit instruction and targeted practice on three orthographic word stress rules: The Key Stress Rule, Left Stress Rule, and V/VC Stress Rule (Sardegna & Jarosz, 2022; Sardegna & Dickerson, 2023). The learners were encouraged to practice

the rules out of class, on their own, and for six weeks using the worksheets and listening to the practice words on YouGlish – a YouTube-based dictionary with speech samples in different accents of English.

To assess students' ability to predict, perceive, and produce English word stress, data were gathered from pre-and post-read-aloud tests consisting of 40 English polysyllabic words. The quantitative results were then triangulated with data gathered from a background questionnaire; a Likert-scale strategy use questionnaire; and weekly reflections documenting students' views, practice choices, and time spent practicing. The results divided the group in two based on their beliefs and practice choices.

The group that worked as instructed following the model and using YouGlish as a speech model made changes of statistical and practical significance with respect to their ability to predict, perceive, and produce English word stress. The other group only improved slightly in production, but this change was not of statistical or practical significance. Their beliefs of what and how to practice hindered their progress. The presentation concludes with pedagogical implications and recommendations for teachers looking to incorporate autonomous pronunciation learning activities in their classrooms.

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ACCENTUAL AND MELODIC FORMS OF PROSODIC PHRASE TERMINALS IN CZECH, ENGLISH AND CZECH ENGLISH

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The prosodic phrase seems to be a significant unit for cerebral speech processing and, subsequently, for the communicated meaning retrieval (Chafe, 1988; Frazier, Carlson & Clifton, 2006; LaCroix et al., 2020). It follows that prosodic phrasing (or 'chunking') is closely related to effectiveness of communication. However, not enough is still known about the detail of prosodic phrase formation in various speech styles, speech genres or in various groups of speakers.

Division of speech continuum into prosodic phrases is achieved mainly through boundary signals (although the role of cohesion cues should not be underestimated, see e.g., Yoon, Cole & Hasegawa-Johnson, 2007). Our study is focused on key signals of prosodic phrase boundaries in phrase-final stress-groups (prosodic phrase terminals). We provide phonetic description of these boundary phenomena for three groups of speakers: Czech and English professional news readers, and Czech learners of English with high motivation to become proficient.

News bulletin recordings from Czech and British national broadcasters and student renderings of the same texts were used. The bulletins typically comprise about 500 words in 5 to 7 paragraphs. Each speaker group was represented by 12 individuals (altogether 36 speakers, 18 female + 18 male). We segmented recordings into prosodic phrases using the recommendation of Beckman & Ayers Elam (1997) and performed analyses of phonetic structure and fundamental frequency tracks in the phrase-final stress-groups. Linear fitting, Legendre polynomials, and Functional PCA were used.

Our material provided over 5,000 terminals. The results indicate that in line with previous similarly oriented studies (Volín et al., 2015; Volín et al., 2017), the performance of English learners is not a mere compromise between their L1 and L2, and the concept of interlanguage cannot fully explain the forms used by L2 learners. Consistently with Ladd's prediction, we found a rich variety of prosodic boundary markings (Ladd, 1986), even though just one formal speech style was represented in our sample.

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ARTICULATION OF CARDINAL VOWELS BY DIFFERENT PHONETICIANS

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This project investigates phonetic productions of 28 Cardinal Vowels by 14 phoneticians. Acoustic measurements of these articulations were normalized in Miller's (1989) Auditory-Perceptual Space. Next, the dispersion, distances between centroids and category overlaps were quantified using both the "Euclidean distance" formula and the concept of "hypervolumes" calculated with the use of the R package "Dynamic Range Boxes" (Junker, Kuppler, Bathke, Schreyer, & Trutschnig, 2016).

One of the main findings of this research is that the metrics are primarily affected by the degree of vowel backness. Dispersion of articulations tends to be smaller for front vowels than for back vowels. Similarly, category overlaps also increase along the horizontal articulatory scale. Front vowel articulations exhibit less overlap than back vowel articulations. Finally, relative distances between centroids decrease along the backness dimension. The distances between the centroids of front vowels are greater than those between back vowels.

The results of this study offer valuable insights for interpreting how vowel articulations in various languages and dialects are represented on the IPA Vowel Diagram by phoneticians. The "precision" of such placements may decrease along the backness dimension. This is consistently substantiated by all the three metrics utilized in the research. Additionally, these findings have broader implications concerning general aspects of vowel articulation in natural languages.

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DOES THIS SOUND LIKE A TALL PERSON? ATTITUDES TOWARDS UKRAINIAN-ACCENTED POLISH

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If language is one of the most important elements of social identity (Grosjean 1982), then language attitudes are a window into attitudes towards a social group associated with a particular language variety (Ryan et al. 1982). Numerous characteristics have been analysed in the literature a general tendency is that non-standard varieties, including foreign-accented speech, receive low ratings (Cramer, 2016).

The current study is aimed at investigating how Polish native speakers evaluate the strength of accent and comprehensibility of Ukrainian-accent Polish and what kind of attitudes they have toward this accent. The hypotheses are: 1. moderate ratings for accent and comprehensibility are to be expected because of the closeness of Polish and Ukrainian languages; 2. Ukrainian-accented Polish will generally receive negative ratings; 3. higher ratings for foreign accent and comprehensibility will result in more negative attitudes towards the speaker.

The study was carried out on 49 participants (36 females and 13 males) whose age ranged between 19 and 43. They were all Polish native speakers with English or German as the first foreign language and German, Spanish, French, Danish or Chinese as the second foreign language.

A two-part questionnaire was run online. In the first part, the participants were asked to rate recordings according to the level of foreign accent and comprehensibility both on 7-point Likert scales ("no foreign accent" and "comprehensible utterance" and 7 meant "strong foreign accent" and "incomprehensible utterance", respectively). In the second part, the participants were asked about their opinions with regard to the speaker from each recording. The opinions were divided into four categories including social attractiveness, personality, competence and physical appearance and polar opposite adjectives for each category were presented by means of a 7-point Likert scale. The recordings for the questionnaire included speech of 15 female Ukrainian-Russian bilingual speakers speaking L3 Polish.

The results of the study showed that the mean accent rating was 4,514 and mean comprehensibility rating was 2,530. Mean ratings for the attitudinal data ranged between 3,14 for social attractiveness and 3,73 for physical appearance giving overall a slightly positive rating. An ordinal logistic regression was run to investigate the effects of accent and comprehensibility on the attitude ratings. It turned out that comprehensibility reached statistical significance (20,058; $p<0,001$) whereas accent was statistically insignificant (3,096; $p=0,078$). Comprehensibility was especially important when rating the social attractiveness, competence and physical appearance categories, with low comprehensibility linked to ratings on the negative part of the scale.

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LEVELS OF PROFICIENCY IN THE L2 AND THE L3 AS AN INTERACTION EFFECT IN L3 NORWEGIAN STOP PERCEPTION

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It seems that the switch from the L2 to the L1 source of influence (e.g. Gut 2010; Wrembel 2010) as a consequence of a change in both L2 and L3 proficiency could be a manifestation of the interrelatedness of these factors. Sypiańska and Cal (2020) analyzed spectral moments of the apico-alveolar Spanish sibilant produced by L1 Polish/L2 English/L3 Spanish speakers and found a reversed effect of L2 and L3 proficiency on centre of gravity, skewness and kurtosis of the sibilant. It remains to be verified whether level of proficiency behaves in a similar way in L3 perception.

The current study is a re-analysis of perception data from Cal (2023) in which 28 L1 Polish/L2 English/L3 Norwegian speakers were asked to participate in a two-alternative forced-choice (2AFC) task in which they decided whether they hear a voiced or a voiceless stop. Three continua for L3 Norwegian were prepared for each place of articulation (labial,

coronal, velar) that ranged from -100 - 100 ms and consisted of 21 steps, each of 10 ms. The obtained data included accuracy scores that were then used to calculate the perceptual boundary locations.

The aim is to analyze the effects of L2 and L3 level of proficiency, and particularly the interaction effect of the two factors, on the perception of fortis and lenis word-initial stops in L3 Norwegian by L1 Polish, L2 English speakers. We seek to answer the following research questions: RQ(1) Do both levels of proficiency in the L2 and the L3 influence the perceptual boundary in L3 Norwegian stops?; RQ(2) Is there an interaction effect of the levels of proficiency in the L2 and L3 on the perceptual boundary?

Multiple regression was run to determine the main effects of level of proficiency in the L2, level of proficiency in the L3, continuum (b/p, d/t, g/k) and the interaction effect of the two proficiency variables. The results showed significant main effects of L2 proficiency ($t=4.449$, $p=.001$) and L3 proficiency ($t=4.429$, $p=.001$) and a significant interaction effect of the two proficiency variables ($t=-4{,}381$, $p=.001$). The negative t value for the interaction effect pointed to a reverse directionality in the effects stemming from L2 proficiency and L3 proficiency on the boundary between the voiced and voiceless stops. The statistical results, and further re-analyses of L3 Norwegian data, will be interpreted from the point of view of holistic approaches to multilingualism in particular Complex Dynamic Systems Theory (Gut, Kopečková and Nelson 2023).

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THE EFFECT OF LANGUAGE ANXIETY ON (DIS)FLUENT MONOLOGUE SPEECH

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Research provides evidence that a complex mix of user internal and external factors determines fluent L2 speech, such as cognitive processes, L2 proficiency, and task type (Lintunen et al., 2020; Tavakoli & Wright, 2020). Affective dimensions of an L2 learner, which belong to user internal factors, have only recently gained some attention in L2 speech fluency research (e.g., Bielak, 2022; Nematizadeh, 2021). More detailed investigations of the interplay between affective factors and L2 speech fluency have been offered by the Fluency and Disfluency in L2 Speech (FDF2) project, funded by the Research Council of Finland. Here L2 speech fluency has been studied from the perspective of various dimensions of language anxiety and L2 willingness to communicate.

The aim of this presentation is to share the results of the affective work package of the on-going FDF2 project. We offer an overview of studies, based on data from 102 Finnish advanced learners of L2 English, whose L2 speech fluency was measured with an array of speed, breakdown, repair and composite indices of utterance fluency (Skehan, 2009). The affective dimensions of the participants were established from the Affective Questionnaire, consisting of several scales measuring general language anxiety (Horwitz et al., 1986; MacIntyre & Gardner, 1994), post-task language anxiety, linguistic self-confidence, L2 communication confidence, L2 willingness to communicate (adapted from Mystkowska-Wiertelak & Pawlak, 2017). Quantitative and qualitative analyses were conducted between the fluency measures and the affective factors. The results confirmed the role of several affective factors, such as language anxiety and L2 communication confidence in their intricate relationships with various, but not all, fluency and dysfluency measures. The results led to several practical implications for fluency teaching and assessment. This synthesis of the entire work package aims to formulate comprehensive contribution to second language learning and teaching.

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AI FOR PRONUNCIATION LEARNING – DO APPS TEACH ACCENTS?

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Developers of AIEd (Artificial Intelligence in Education) technologies focusing on the English language improvement of their users, speech development in particular, state that their AI-based solutions can encourage personalized learning experience (Freeman, 2023; 'How Can AI Tutors Help You Learn', 2023), increase confidence (Blue Canoe, n.d.; 'Introducing ELSA Voice AI Tutor Featuring Generative AI', 2023), and boost language development (Flowchase, 2023; 'How Can AI Tutors Help You Learn', 2023). Its capabilities are marketed as providing more opportunity for judgement-free speech coaching ('Best Speech Coach for Adults and Professionals', 2022), higher engagement ('Speak Shares Details of AI Tutor, Built on Top of OpenAI's GPT-4', 2023), or deeper understanding of pronunciation nuances (Blue Canoe, n.d.; 'How Can AI Tutors Help You Learn', 2023). Little attention, however, seems to be directed towards the production and perception of accent varieties.

The talk reflects on Walesiak's research (2020) into the affordances of mobile and web technologies for pronunciation training in which she found that a. free Google Play Store mobile pronunciation apps analysed (n=296) relied in their pronunciation pedagogy predominantly on the use of prestige native speaker models and that b. local accents were heavily underrepresented. Walesiak revisits her 2020 research and expands upon it by incorporating new data and insights that take into consideration the recent developments in the field of AIEd (such as GPT-4, intelligent tutoring systems using speech recognition to provide feedback, availability of pre-trained voice models). Her aim is to explore whether the representation of accents in apps is more diverse in 2023 than it was in 2020. The talk ends with some suggestions for future AI-related research.

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PHONETIC IMITATION BY YOUNG L2 LEARNERS: DIRECT IMITATION OF ENGLISH VOWEL DURATION CLIPPING BY POLISH PRIMARY SCHOOL STUDENTS

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Phonetic imitation in L2 is gaining interest in second-language speech research (Cao 2023; Chen et al. 2023; Jiang & Kennison 2022; Munro 2022; Rojczyk et al. 2023). The analysis of the emerging publications reveals that most studies concentrate on adult learners, at the same time largely disregarding younger learners. It is surprising considering the fact that a number of studies on L1 acquisition have demonstrated that children successfully imitate the speech of their caregivers (Kuhl & Meltzoff 1996), the speech of the community they live in (Floccia et al. 2012; van der Feest & Johnson 2016), or new accents that they are exposed to (Smith et al. 2007; Tagliamonte & Molfenter 2007). The currently available studies are not conclusive in terms of how effective young imitators are. Nielsen (2014) reported that children outperform adults in the degree of alignment with a model talker and that propensity to imitate decreases with phonological development into adulthood. Other studies found no differences between young and adult imitators (Paquette-Smith et al. 2022), or showed complex patterns in imitations by young L2 learners (Wieczorek & Rojczyk in press).

In the current study, we tested imitation of English vowel shortening preceding voiceless consonant, the phenomenon that is absent in Polish. The participants were young Polish learners of English ranging in age from 11 to 13 years old. The results are discussed in terms of which processes govern phonetic imitation by young learners in L2 compared to the currently available data from L2 imitation by adult learners.

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THE USE OF CREAKY VOICE BY POLISH LEARNERS OF ENGLISH

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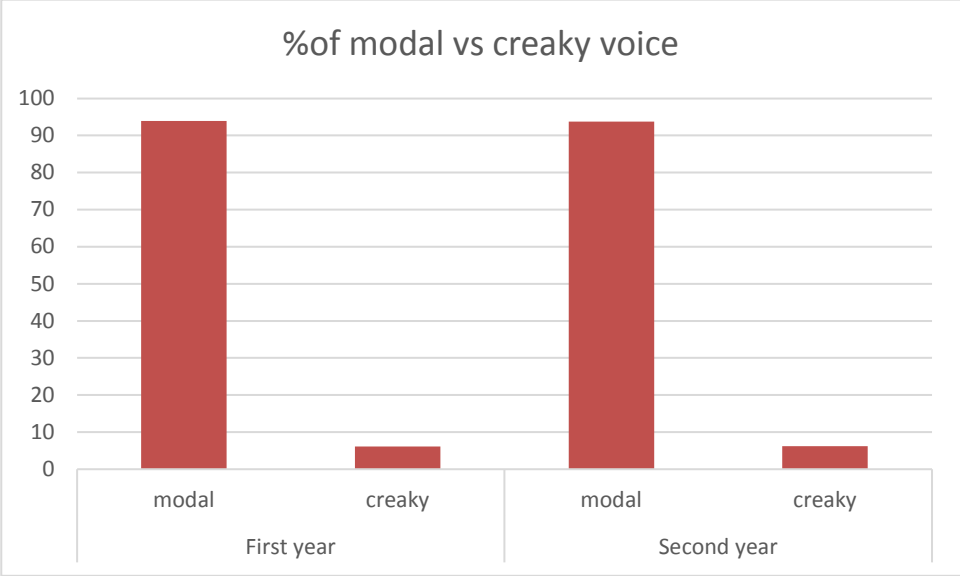
Research in second language (L2) speech acquisition, along with L2 pronunciation instruction, have tended to focus on segmental aspects of language structure such as consonants and vowels, which are typically described as sets symbols placed onto two-dimensional charts. Stress and intonation also receive a fair amount of attention. One area which is still largely unexplored is how the voice itself may differ between languages, and whether L2 learners adopt target language norms with regard to the use of non-modal phonation, especially creaky voice. This question is becoming more and more relevant given the increased use of creaky voice by L1 speakers of English in recent years (Yuasa 2020; Wolk et al. 2012). In this presentation we investigate whether Polish learners of English show increasing levels of creaky voice use as a function of increased L2 proficiency and pronunciation training.

We gathered production data from 20 female Polish-English bilinguals: ten of them recorded at the start of phonetic training in L2 after their admission into the English programme at a University and ten after two years of intensive phonetic instruction. They were recorded in a sound-proof booth, reading a set of sentences (N=131) in English (each of them ca. 16 syllables long). 2620 sentences were subsequently annotated by hand in Praat (Boersma and Weenink 2023), with one tier corresponding to the sentence duration and one measuring the portions of speech produced with creaky phonation. We classified voice as creaky on the basis of the acoustic properties associated with it (Keating et al. 2015): low rate of vocal fold vibrations (visually) and a lowered or highly irregular f0 (indicated by a pitch tracker).

Preliminary results indicate that creaky voice is present in the production of both groups and the groups do not really differ with regards to the rate of modal vs. creaky phonation: in the case of first year students creaky voice comprises ca. 6.07% of all production data and for second year students the rate is 6.22%, indicating a very small increase.



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SINGING TRAINING AND ITS INFLUENCE ON THE PRONUNCIATION OF ENGLISH: A LONGITUDINAL STUDY

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Previous research has explored the relationship between music experience and language processing. Cross-sectional studies comparing musicians and non-musicians have shown positive transfer effects from musical training to language processing, and music ability is also proved to be a predictor of accurate pronunciation in foreign language pronunciation (Besson et al., 2011; Christiner and Reiterer, 2013; Milovanov et al, 2007, Gilleece, 2006; Slevc and Miyake, 2006). However, longitudinal studies which investigate how singing training interacts with the pronunciation of foreign languages are scarce. This current study is thus conducted to address this research gap.

This research aims to investigate the influence of singing training on the phonetic perception and production of English on native Chinese-speaking aged 11 to 15. 60 students were involved in this study with 30 in the experimental group who received singing training 20 minutes twice a week for three months, and the remaining 30 students in the control group just attended regular school courses. To find out the difference between the experimental and control group before and after the singing training, a number of language and music tests were administered. The language tests consist of two production tasks, in which the participants had to describe pictures and read sentences in English, and one prosody perception test. The music tests include a music perception test and two singing tests. Native American English speakers were recruited to rate the participants' performance in language production tasks based on the native-likeness of vowels and consonants, word stress, intonation, rhythm and intelligibility. The singing performance was rated by professionals in music performance based on the accuracy of pitch and rhythm and voice quality.

The results of pre-training tests show no significant differences between the experimental group and control group in almost all tests. Positive correlations are found in pitch in singing and intonation in language production, rhythm in singing and rhythm as well as word stress in language production. Therefore, training in rhythm and pitch in singing is very likely to facilitate the placement of word stress, intonation and realization of rhythm in English. The upcoming analysis will compare the experimental group and the control group in the post-training test to identify whether there is a significant difference between them in each test. If significant differences are confirmed, it is then safe to say that training in singing can contribute to the pronunciation of foreign languages.

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