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COLLOQUE

21e colloque sur l'anglais oral de Villetaneuse

LA PROÉMINENCE EN ANGLAIS ORAL

29-30 mars./24

vendredi 29 mars = C304 - UFR LLSHS

samedi 30 mars = C204 - UFR LLSHS

- Invité d'honneur : **Rory Turnbull** (Université de Newcastle).

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- **Gratuit** pour le personnel et les étudiants de l'Université Sorbonne Paris Nord.

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Pléiade

21e colloque sur l'anglais oral de Villetaneuse
LA PROÉMINENCE EN ANGLAIS ORAL

Vendredi/Friday 29 mars/March 2024

1/ On stress and accent in English

Quentin Dabouis & Marie Gabillet – Université Clermont Auvergne, France, LRL (UR 999)

There is considerable variation in the terminology and concepts used to describe prominence in English and its different levels. The terms *stress* and *accent* are often used interchangeably, sometimes to describe different objects. In this paper we aim to provide an overview of the available literature on these issues, as well as pointing out where closer investigation is needed, while embracing the view that stress and accent are different objects.

In the American tradition, adopted by many phonologists, stress is strongly correlated with vowel quality and is difficult to diagnose as it involves phonetic resources used by other phonological phenomena (Hayes 1995). Under this approach, "stressed" syllables are identified using segmental processes which can be observed around stressed vowels. Indeed, certain processes are conditioned by stress, such as flapping and aspiration (e.g. *data* [ˈdɛjɾə] vs. *attain* [əˈtʰɛjn]) epenthesis of a plosive between a nasal and a fricative (e.g. *prince* [ˈpɹ̥ɪn(t)s], *insane* [ɪnˈsɛjn]), glide-deletion (e.g. *voluminous* [vəˈlʉwmɪnəs] vs. *volume* [ˈvɒljʉwm]), or syncope in unstressed syllables (e.g *memory* [ˈmɛm(ə)ɹij] vs. *memorize* [ˈmɛməˌɹɑjz]).

Intonation also interacts with stress, as pitch-accents anchor onto certain stressed syllables. Left-prominent words such as *rándomìze* or *Pàrk Ávenue* only have one pitch-accent in accented positions, whereas right-prominent words like *vìolátion* or *wíndshìeld* will have two pitch-accents (Plag *et al.* 2011; Plag & Kunter 2007), although they are undistinguishable in unaccented positions. Posttonic secondary stresses only seem to interact with intonation in specific contours such as the "chanted vocative". Thus, distinguishing between primary and secondary stress is crucial and goes against binary views of stress (e.g. Szigetvári 2017). Representationally, in Prosodic Phonology, stressed syllables have been analysed as foot heads (Gussenhoven 2004).

In pronunciation dictionaries such as Roach (2009) or Wells (2008), what is called "primary stress" and pretonic "secondary stress" are essentially syllables that receive pitch-accents, while the use of posttonic "secondary stress" is highly restricted and inconsistent.

However, a lot of the available evidence on those issues is anecdotal or relies heavily on intuition, and some processes that have been the focus of closer investigation have been found to be considerably more complex than initially thought. For example, flapping in North American varieties of English has been found to apply in a broader set of environments (Vaux to appear) and to show considerable lexical variation (Hannisdal 2022).

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2/ A phonological study on stress assignment: the case of Indigenous Languages of Australia loanwords in standard Australian English

Marjolaine Martin & Stéfany Thierry – Université de Tours, France, Laboratoire Ligérien de Linguisitique (UMR 7270 CNRS BNF)

The variety of Standard Australian English (SAusE) has been seen as "unmusical, unexpressive, thin, nasal, drawling, lazy and inefficient in the transmission of meaning." (Mitchell, p.12, 1951). It is only in the 60's, with the arrival of new approaches that SAusE was considered by linguists from an endocentric viewpoint and no longer systematically compared to the mother variety, British English. Thanks to late studies on the pronunciation of SAusE (Cox and Evans 2017; Harrington, Cox and Evans 1997; Malcolm 2001), we now have a precise view of the phonetical and phonological features of this variety which "is dear to the hearts of those of us who are Australian" (Butler, 2001, p.151).

Yet, one of the particularities of Australian English has not been thoroughly considered: its specific vocabulary borrowed from Indigenous Languages of Australia (ILA) focusing on native fauna and flora as well as other artefacts linked to the Indigenous people of Australia's culture. Following a first study by Martin 2011, we have decided to take a closer look at these particular loanwords from ILA in SAusE from a phonetical and phonological point of view. Based on a dictionary study, typical of Guierre's school, we have built a corpus containing 803 words (including 282 common toponyms) borrowed from 101 ILA covering all of Australia's territory. Major references for this study are the Macquarie Dictionary (5th edition and online), Australian Aboriginal Word in English: Their Origin and Meaning (Dixon et al. 2006) and several ILA dictionaries. Our study will focus on 520 lexical items in SAusE and in the source languages to compare the position of lexical stress both in ILA and SAusE. Given the treatment Indigenous people of Australia had to undergo, and even though things have started to change lately, the data concerning the ILA contains gaps and inaccuracies (regarding key descriptions such as stress, spellings, consonants, vowels (and recordings)).

This presentation aims to show, at first, how we filled in some gaps using more general descriptions as well as on site and online recordings. In a second time, we will give a detailed account of the comparison of stress placement in ILA and in SAusE and see how these words are adopted in the general stress assignment system of today's Australian English or have preserved traces of their specific ILA origin. To finish, we will take a closer look at compound words in the corpus which can be composed of both an ILA and and English base.

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3/ Improving lexical stress accuracy in non-native speech: real-time visualization and the challenge of perceiving prominence

Kizzi Edensor Costille – Université de Caen Normandie, France CRISCO (UR 4255)

Teachers highlight the fact that a stressed syllable is likely to be pronounced with more prominence than unstressed syllables. Prominence may involve greater loudness, higher pitch, greater duration, and a vowel which has its full quality (Collins & Mees, 2013). Which of these features are used by students? How can we perceive prominence if all these factors are not reunited?

This pilot study used a real-time 3D spectrogram to record lexical stress productions by six French English learners enrolled in their first year of a BA in English. The experiment comprised three phases. Initially, a pre-test required participants to record a list of 30 words without visual or auditory aid. Subsequently, a 10-week training session involved weekly drills on words with varied lexical stress patterns. The participants were asked to imitate the auditory and visual models of words seen on screen, record them using the real time spectrogram and compare them against the model. The study concluded with a 'post-test' of 60 words, including 30 from the initial test. While learners had visual and auditory support during training, both pre-test and post-test were conducted without aids. After the post-test, both tests were analysed auditorily and a broad transcription of each of the participant's productions was made. The following criteria was taken into consideration: the number of syllables produced, on which syllable the lexical stress was perceived, what type of vowels were produced (long versus short) and whether the vowels were full or reduced.

This study focuses on the impact of visualising speech on learners' word stress production. Can their training help them deal with the new words included in the post test? The results from the pre-test and post-test revealed a slight improvement in correct lexical stress placement, with the global mean rising from 4 in the pre-test to 4.5 participants in the post-test. Correctly pronouncing stress in words from the pre-test that were included in the post-test also improved by 1 participant, but there was no improvement for the new words in the post test. Regarding vowel pronunciation, there was an increase in correctly producing long or short vowels, rising from 3 to 4.5 participants. Surprisingly, the correct usage of weak or full vowels decreased overall from 4 to 3 participants in the post-test. This raises the question of perceiving or identifying prominence in speech which becomes challenging when all its features are not always present in speech.

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CONFÉRENCE PLÉNIÈRE/ KEYNOTE SPEAKER

4/ Inward and Outward Prominence

Rory Turnbull – Newcastle University, UK

"Prominence" is a well-(ab)used term of art in phonetics and beyond. It can refer to properties of the pronunciation of a unit (phone, syllable, word, phrase) relative to other units – "outward" prominence. It can also refer to structural or psycholinguistic properties of these units, such as position on a metrical grid or semantic salience – "inward" prominence.

The inward and outward prominence of words, morphemes, and other meaning-bearing units is related. In general, items which are less predictable in context tend to be pronounced with more outward prominence – longer, louder, higher in pitch, with more spectral clarity – than more predictable items. "Predictability" here is often defined in relation to the discourse context of an utterance. Equally important, however, are lexical factors which are invariant across contexts. These factors include lexical frequency, phonological neighbourhood density, and phonotactic probability, and can be thought of as characterizing (one aspect of) the inward prominence of a given item within the lexicon. From this perspective, inward prominence (prominence in the lexicon) is negatively correlated with outward prominence (prominence in pronunciation).

In this talk, I provide an account of inward and outward prominence by conceptualizing the lexicon as a complex network. In this network, words are represented as nodes, and related words are linked to each other. One advantage of this approach is that it allows us to apply the well-studied techniques of network science and graph theory to derive further insight from a network. Applying these methods, I present results from corpus-phonetic investigations of the interactions between inward and outward prominence.

A longstanding question within work on prosodic prominence, and indeed contextual phonetic modulations more generally, is whether changes in pronunciation occur "for" the addressee or "for" the speaker. That is, does a speaker enact these pronunciation variations in order to improve listener comprehension, or is it simply an easier pronunciation for the speaker? Empirical evidence on this issue has not been conclusive. Rather than add more data to the debate, I advance an argument that the very question may be fundamentally wrong-headed, drawing on Bourdieu's sociology of economics and related ideas. Instead, we ought to consider the levels of analysis that our theories relate to.

Drawing these ideas together reveals the longstanding tension between phonetics, which is ostensibly a physical science, and psycholinguistics, which is ultimately a science of unobservables. The study of inward and outward prominence requires a confluence of both approaches.

5/ Emphase prosodique et variétés d'anglais

Sophie Herment, Julia Bongiorno, Laetitia Leonarduzzi, Airelle Théveniaut, & Gabor Turcsan
– Aix-Marseille Université, France, Laboratoire Parole et Langage (UMR 7309 CNRS)

Nous entendons par emphase « une mise en relief inattendue qui marque une implication de la part du locuteur plus importante qu'à la normale » (Herment-Dujardin & Hirst, 2003). Nous nous intéressons ici à la mise en relief d'un ou plusieurs éléments d'un énoncé qui n'utilise aucun procédé syntaxique, mais uniquement des caractéristiques prosodiques (*cf.* Herment-Dujardin, 2001) et nous incluons dans notre étude l'emphase contrastive.

Il est communément admis (voir Wells, 2006, entre autres) qu'en anglais britannique standard (GB), l'emphase est obtenue prosodiquement grâce à deux contours principaux : le contour creusé (fall-rise, FR) ou la grande chute (high fall, HF). Qu'en est-il dans d'autres variétés d'anglais ? Nous examinons pour cette étude l'anglais de Newcastle, du Donegal, de Dublin, de Galway et de Cork. Nous avons volontairement choisi deux variétés appartenant au groupe UNBI, c'est-à-dire présentant par défaut des contours montants sur les énoncés déclaratifs (Newcastle et Donegal), notre hypothèse étant que ces variétés pourraient ne pas montrer le contour montant FR pour l'emphase.

A l'appui d'exemples et de résultats tirés d'études sur différents corpus, Turcsan & Herment (2015) pour Donegal, Bongiorno (2021) pour Dublin, Théveniaut (2023) pour Galway, Herment et al. (2020) pour Newcastle et une étude en cours sur Cork, nous montrons que les deux variétés UNBI utilisent le contour montant-descendant (rise fall, RF) pour l'emphase, alors qu'il est plutôt réservé à la surprise ou à l'ironie en GB (voir Roach, 2009 entre autres). Contrairement à nos attentes, les trois variétés d'Irlande du Sud n'utilisent pas non plus le FR pour l'emphase : à Dublin et à Cork, c'est aussi le RF qui est majoritaire dans les phrases emphatiques, alors que Galway se démarque, l'emphase y étant plutôt exprimée par un contour descendant.

La variation prosodique importante des contours emphatiques RF et F au sein de variétés d'anglais d'Irlande et dans celle de Newcastle nous encourage à creuser la question de la réalisation emphatique dans d'autres aires linguistico-géographiques. En effet, nous ne pouvons que constater le manque criant d'études documentant l'emphase au niveau prosodique dans plusieurs variétés d'anglais. Notre communication sera l'occasion d'ouvrir sur des perspectives de constitution de corpus pour une étude inter-variétale de l'emphase et d'émettre quelques hypothèses sur le système phonologique des cinq variétés étudiées ici.

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6/ The perception of English phonemic contrasts by L1 French students specialising in English

Paolo Mairano & Caroline Bouzon – Université de Lille, France, STL (UMR 8163)
Gabor Turcsan & Anne Tortel – Aix-Marseille Université, France, LPL (UMR 7309)

In this contribution, we present the results of the IPAC (*Inter-Phonology of Contemporary English*) perception test gathered on 176 second-year students specialising in English at the universities of Lille and Aix-Marseille.

Due to the generic nature of the IPAC learner corpus, the IPAC perception module has been designed to test all or most phonological contrasts that may potentially present a challenge to English learners of any L1. The literature has revealed that speech perception is an extremely complex process [2], involving cues beyond speech itself, such as spelling, frequency, visual cues, etc. Given the impossibility of testing all aspects of speech perception, it was decided to consider those that we consider to be most relevant within L2 phonology acquisition, namely learners' ability to correctly identify realisations of phonemic contrasts of native English.

After piloting an initial version of the test [3], we enlarged the number of phonemic contrasts to be included. We identified phonemic contrasts that may be problematic for learners on a proximity basis (i.e. phonemes that are articulatorily or acoustically similar) and selected 6 minimal pairs for each (tot. 348 pairs). Target sounds included vowels and consonants, and care was taken to ensure that consonants would be balanced word-initially, word-medially and word-finally as much as possible. The written and spoken frequency for each word was checked in *BNCweb* in the attempt to balance lexical frequency effects within members of each contrast. The stimuli were recorded by 4 native speakers of Southern British English (2F, 2M), and a minimal pair identification test was built with *PsychoPy3* [4] and presented online to participants. Participants saw the two members (A and B) of each minimal pair in spelling on the screen, listened to an audio stimulus, and had to identify it as A or B by clicking on a key. The software collected response and response time.

The test was run with approximately 240 second-year students specialising in English at the universities of Lille and Aix-Marseille. After excluding participants for whom French was not the L1 and who did not complete all trials, we ended up with 214 participants. The results revealed which contrasts are more difficult for L1 French learners; additionally, the self-declared level of English has a bearing on accuracy and above all on reaction time (see figures below for consonants). Further analyses are being carried out to evaluate the role of spelling transparency, lexical frequency, phonological environment and perceptive salience of the contrast (on the assumption that more salient contrast will be easier to identify, cf. SLM [5] and PAM [6]). For the future, we envisage various uses of this test beyond IPAC: for instance, it may become a useful diagnostic tool to detect perception weaknesses and propose targeted training for students.

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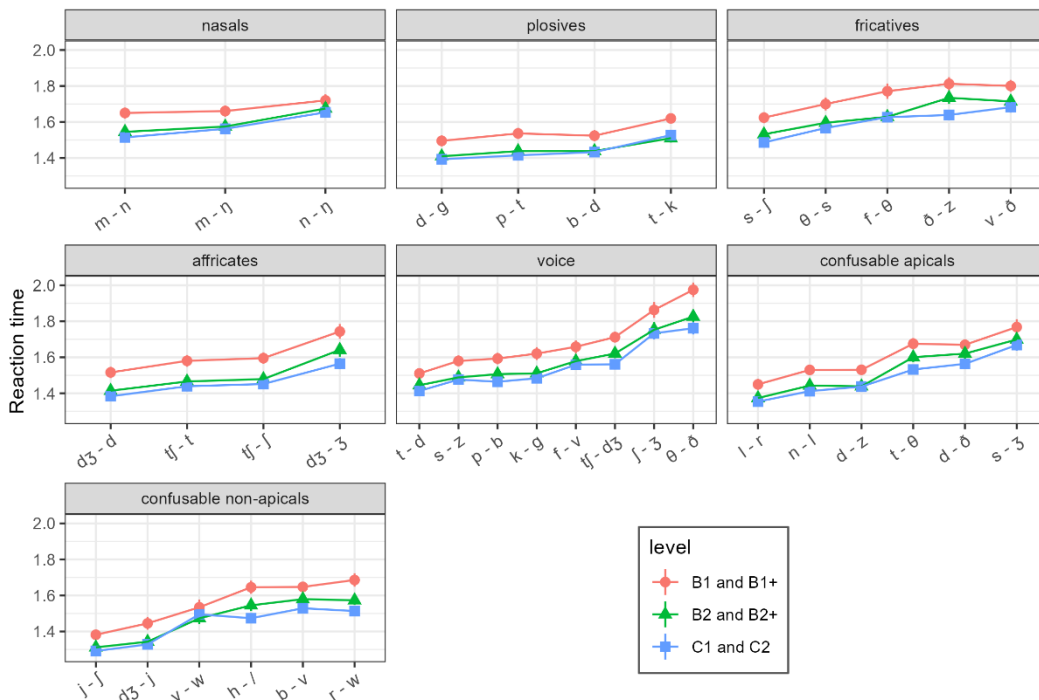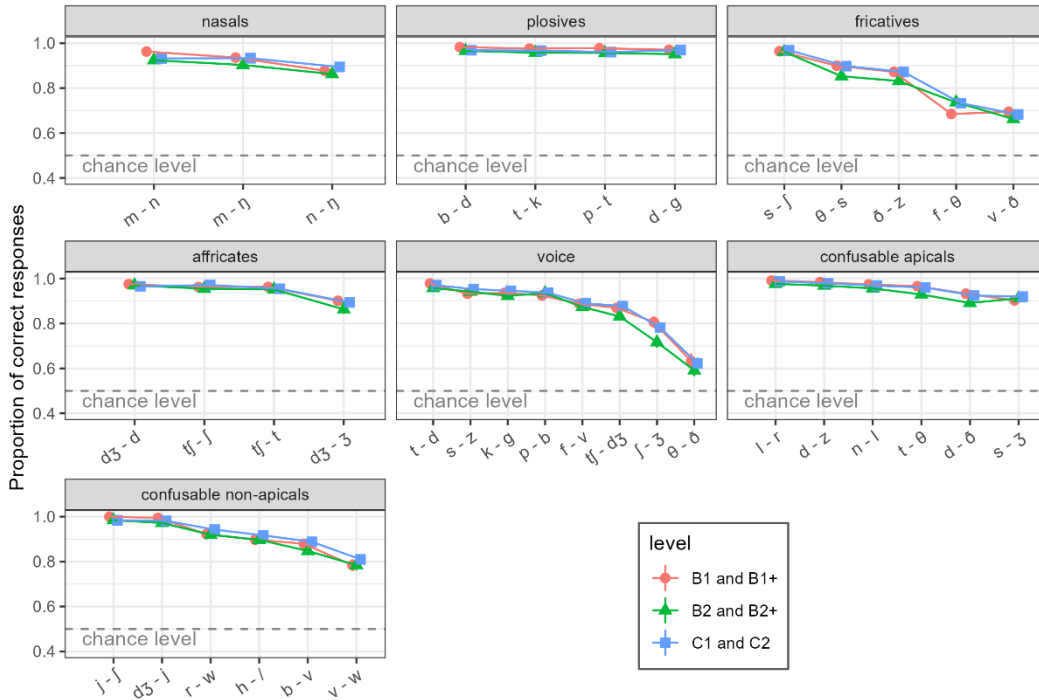
7/ Using Whisper to Investigate Learner Pronunciations of English: comparing LLM transcriptions with human perception of VOT

Tori Thurston & **Nicolas Ballier**, Université Paris Cité, France / CLILLAC-ARP)

This talk will show that Whisper large Language Model (LLM) is a tool for providing automatic pronunciation feedback and phonetic diagnoses to L2 learners using Automatic Speech Recognition (ASR) transcriptions of audio files and that the tiny model is an accurate representation of human interpretation as evidenced by the transcriptions of bilabial plosives according to VOT variability.

Whisper is an audio Pretrained Large Language Model (PLLM) that can be used for both transcription and translation tasks (Radford et al., 2023). There are seven main models within Whisper that provide varying transcriptions for the same audio input. The difference between these models is the number of parameters as well as how much data each model has been trained on. These models also include multilingual models that perform a language detection task before the transcription task (tiny, small, base, medium, large, large-v1, and large-v2) as well as native .en models (base.en, medium.en, small.en, and tiny.en) that assume the input is in English.

The main goal of this research is to investigate if the ASR output of Whisper is consistent with the human judgements produced by Native English speakers and L2 learners. More specifically, we wish to determine if the tiny models can be trusted to produce transcriptions consistent with human interpretations.

Previous research has shown that phonological features can be used in ASR systems for pronunciation training for L2 speakers (Arora, Lahiri, & Reetz, n.d.). By investigating the accuracy of the outputs of these systems, we can determine which areas need to be improved in order to incorporate these models into training materials for L2 learners (Choe et al., 2023). Past research on Whisper specifically has also shown that Whisper's tiny model produces output that captures errors in phonetic features and that this model can be used as a simulation to explore misunderstandings involving native speakers (Ballier, Meli, Amand, & Yun`es, 2023).

This paper will analyse whether the tiny and tiny.en Whisper model outputs are plausible ASR interpretations of speech signals compared to human interpretations. We chose to investigate VOT in word initial plosives as the current literature has defined this as an area of importance in phoneme comprehension that ASR models may interpret differently than human listeners. The word < pigtail > was chosen as a follow-up to a previous experiment where < pigail > was transcribed as <big tail> by one of the Whisper models for some of the 38 recordings of French learners of English (Ballier et al., 2023). In this experiment, we reused the original recordings as a baseline and synthetically modified the VOTs using a Praat script to modify its duration, varying from -10ms to +10 using 1ms intervals. We ran the modified files through each of the Whisper models and compared the Whisper transcriptions.

Preliminary Results Figure 1 in the appendix shows how Whisper reacts to VOT variability according to its different models. The horizontal axis corresponds to VOT duration (in milliseconds) and the vertical axis corresponds to the percentage of stimuli transcribed as < p > or < P >. The tiny.en model response to VOT is consistent with previous studies : higher values of VOT are transcribed as voiceless plosives. We will then discuss the different responses to VOT and compare them for our findings in our perception tests. Based on the results of previous SLA research involving exposure to phonetic variability, our hypothesis is that Whisper and Native English speakers will perform similarly on the perception tests, whereas L2 learners of English will produce different results as they have been exposed to less phonetic variability (Colantoni & Steele, 2023). Based on existing SLA research involving VOT in bilinguals, we can hypothesise that French-English bilinguals have shorter

VOTs than native English speakers and therefore may incorrectly attribute the VOT of a /b/ realisation to the /p/ realisation due to the L1 influence of French VOT and the lack of phonetic variability within their current exposure to English (Kehoe & Kannathasan, 2021). Using this same reasoning, we can hypothesise that Native English speaker and the Whisper LLM tiny model that has been trained on a variety of different English data should both perform at similar levels and produce similar results.

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Appendix

Figure 1: Whisper transcription response (percentage of < p >) to VOT Variability (duration in ms)
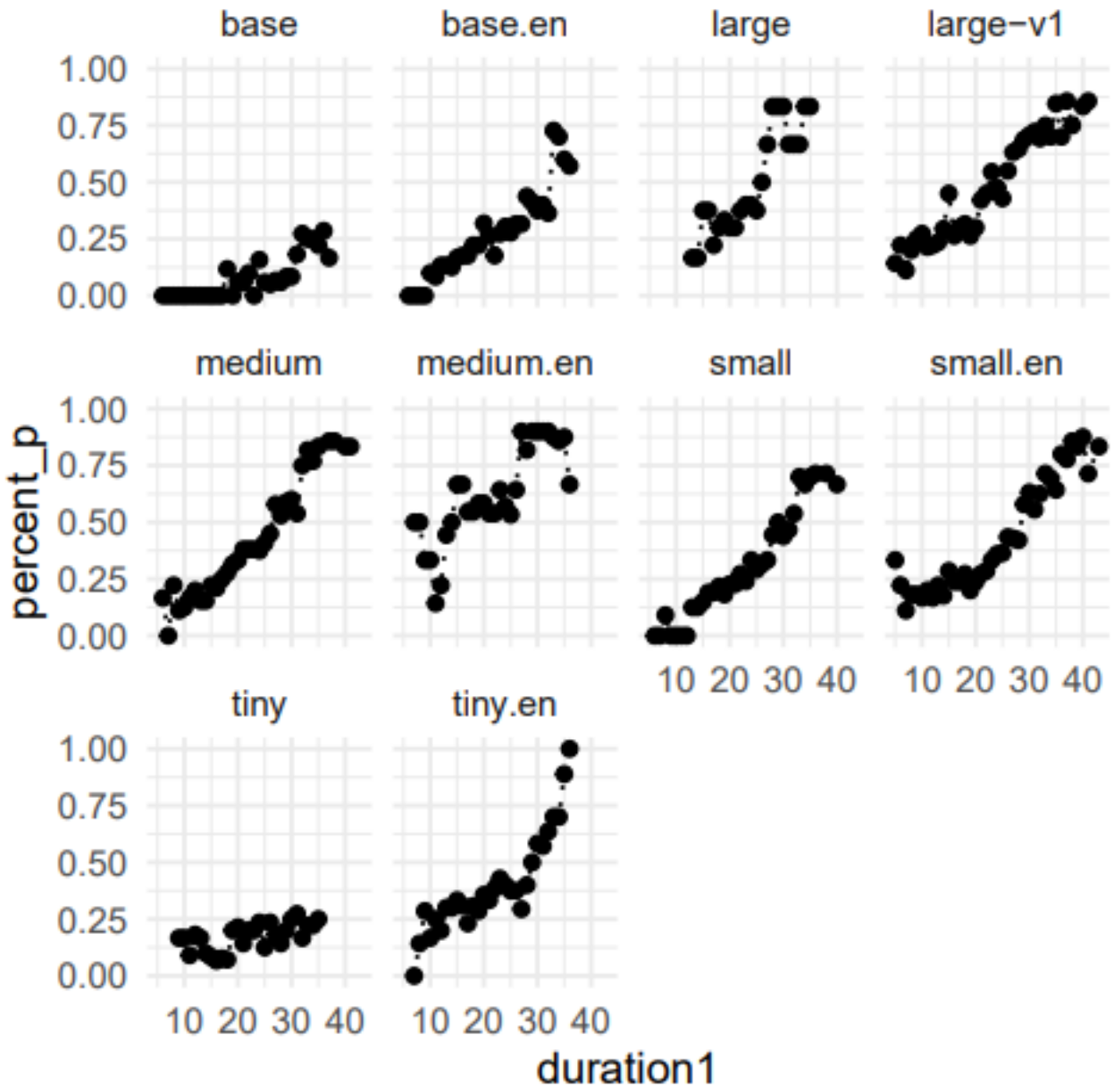
Samedi/Saturday 30 mars/March 2024

8/ Pragmatic prominence in stance marking

Richard Wright, **Gina-Anne Levow**, **Mari Ostendorf**, **Sara Ng**, University of Washington, USA
Valerie Freeman, Oklahoma State University, USA

In this study, we investigate the role of stance marking in prosodic prominence. Stance is defined as a speaker's expressed attitudes, opinions, feelings, judgments about a topic of discussion (ex: Biber et al. 1999; Conrad & Biber 2000). It is therefore related to evaluation, attitude, sentiment, and subjectivity. Stance acts (stance-taking) are dialog acts such as opinion-offering, (dis)agreement, convincing, etc. Since stance marking is part of the pragmatic component of the grammar (Turk 2010), it is expected to interact with information structure and prosodic structure. We view stance as information carried in a different channel from discourse information (ex given/new). Therefore, we hypothesize that stance acts are marked with acoustic/perceptual cues associated with prosodic salience in a way that mirrors discourse-information. That is, we expect stance marking to employ pitch, intensity, duration, etc. Furthermore, we expect that a recognition system trained using these acoustic features will be able to automatically classify stance acts in conversational speech.

To test our hypotheses, we use two corpora of spontaneous speech, ATAROS and FCRIB. The ATAROS (Automatic Tagging and Recognition of Stance) corpus comprises 32 dyadic conversations in a series of problem solving tasks designed to elicit stance taking at increasing levels of engagement. FCRIB (Financial Crisis: Role of Investment Banks) is a US Senate hearing into the 2007/8 financial crisis. The FCRIB hearing was chosen because the high political stakes resulted in frequent and sometimes intense stance acts.

Our results validate our hypotheses. That is, we find that measures of pitch, duration, and intensity are reliable predictors of stance strength and polarity in conversational speech. Furthermore, automatic classifiers trained on these dimensions can reliably identify stance acts.

9/ Focalisation in cleft constructions: revisiting the prosody / syntax interface

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Cleft constructions, whether IT-clefts (*It is John who broke the vase*) or WH- clefts (*What I need is information*) are considered by most linguists as focusing structures (Chomsky, 1972; Prince, 1978; Lambrecht, 2001): one part of the structure (the clefted constituent: *John* or *information* in our examples) contains the "focus" (Biber & Johanson, 1999) or "highlighted element" (Huddleston, 1984) or "foregrounded element" (Huddleston & Pullum, 2002). The rest of the structure (the cleft clause) is presupposed and corresponds to discourse-old information (Prince, 1978). Some linguists analyse the clefted constituent as being assigned prominence by the syntactic structure alone (Taglicht 1984). Yet, the fact that focalisation can also (and mainly) be achieved prosodically led other linguists to consider that the prominence of the clefted constituent is assigned not only by the cleft structure but also by sentence accent (Chafe 1976, Quirk et al. 1985). Chafe (1976) considers that a focus-marking nuclear accent will predictably fall on the clefted constituent. In other words, the syntactic focus and the prosodic focus will coincide. This has been shown to prove wrong (Delin 1990, Herment & Leonarduzzi, 2012, among others). A variety of prosodic patterns can actually be found, including patterns without any nuclear accent inside the clefted constituent, so that we might wonder (see Delin 1990) whether there truly is a relationship between the prosodic focus and the syntactic structure. In this paper, we revisit the relationship between prosody and syntax, showing that the choice of a

prosodic pattern is for a great part – but not totally - independent of the cleft structure. The role of prosody, when non neutral, is to mark an element as prominent, whereas the role of syntax is to highlight not the denotation of the clefted constituent, but the relationship between the clefted constituent and the cleft clause.

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10/ Proéminence et structure informationnelle : les conditions d'utilisation de DO britannique

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DO britannique est un phénomène syntaxique spécifique à l'anglais britannique, rare en anglais américain et principalement observé dans la production orale spontanée. Il se manifeste par l'utilisation d'une forme non finie du verbe DO en contexte d'anaphore verbale, là où une ellipse serait attendue :

[1] Still, 209 all out seemed a fair performance by England, or it **would have done** had more of their batsmen scored some runs. (BYU-BNC, ABR)
(Comparer : or it would have __)

Sur le plan phonologique, le DO de DO britannique n'est jamais accentué, mais il ne peut pas être réduit ni cliticisé (voir, par ex., Quirk 1985, Huddleston & Pullum 2002). Par ailleurs, selon Halliday & Hasan (1976 : 114-15), tout auxiliaire fini précédant DO dans ce contexte ne peut être réduit, car cela placerait la proéminence sur DO. L'accent tonique est donc généralement attribué au premier auxiliaire associé à DO.

Dans ses travaux sur l'ellipse, Kertz (2008, 2010) propose un lien entre la structure informationnelle, le focus phonologique et l'acceptabilité de l'ellipse verbale. Elle identifie deux types principaux d'ellipse : le *subject-focus* (focus sur le sujet de la proposition elliptique) et *l'auxiliary-focus* (focus sur le premier auxiliaire du syntagme verbal elliptique). Suivant Rooth (1992), elle distingue également le focus simple du focus contrastif, ce dernier étant caractérisé par un renforcement de l'accent nucléaire lorsqu'il est porté par un élément contrastif :

[2] It's easy to identify snakes, and most experienced hikers **can**. (focus simple)

[3] The technicians didn't install the line, the engi**neers** did. (focus contrastif)

[4] This problem was to have been looked into, but obviously nobody **did**. (focus contrastif)[1]

Sur la base de ces constatations, j'ai analysé la structure informationnelle de 417 occurrences de DO britannique tirées de la composante orale du British National Corpus (BNC) et les ai comparées à un échantillon d'ellipse verbale. Les résultats suggèrent que DO britannique diffère de l'ellipse essentiellement par le fait qu'il est quasi-exclusivement associé à un élément de contraste avec son antécédent.

Pour confirmer cette hypothèse, une approche phonologique est nécessaire, car la proéminence phonologique notamment des auxiliaires permet non seulement de confirmer le type d'anaphore, mais aussi de distinguer entre focus simple (incompatible avec DO britannique) et focus contrastif. Une telle approche offrirait une nouvelle perspective à la compréhension de la syntaxe et de la phonologie dans le contexte de DO britannique.

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[1] Exemples empruntés ([3] adapté) à Kertz (2010).

11/ Pronunciation assessment: deconstructing intelligibility and setting learning objectives

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Many authors recognize that pronunciation is one of the key factors of intelligibility (Levis, 2005, 2020). In the field of pronunciation teaching research, following Munro & Derwing's (1995a) study, intelligibility is usually defined as "the extent to which a speaker's message is actually understood" (p. 76, p. 291), with the term "comprehensibility" generally used to refer to "listeners' perceptions of difficulty in understanding particular utterances" (Munro & Derwing, 1995b, p. 291). In speech therapy, intelligibility refers to the "reconstruction of an utterance at the acoustic–phonetic level", whereas comprehensibility involves decoding information at the "semantic–discursive level" (Pommée et al., 2022: 11). In terms of remedial pronunciation work, the problem for both fields is the same: what are the features in a language user's speech which must be addressed to make it more intelligible?

Pronunciation assessment is often described as difficult (Isaacs, 2013), and achieving consistency both in the design and use of scales to measure pronunciation is particularly challenging (Harding, 2016). The phonological control descriptors for the Common European Framework of Reference for Languages CEFRL mention prominence only once ("sentence stress"), intonation twice, and refer to intelligibility only at B1 level (COE, 2001: 117). However, an increasing body of research now points to the importance of prosodic features for intelligibility (Kang et al., 2018), and the new phonological control descriptors in the Companion Volume draw on this research, with two separate sections for "sound articulation" and "prosodic features" (COE, 2018: 136), and also mention intelligibility at all levels. The CEFRL descriptors are of course not language-specific, but the actual features of what makes speech intelligible vary according to both a speaker's L1 and the target language. Pronunciation descriptors which are calibrated not only for a given target language but also for learners' L1 therefore enable stakeholders not only to better assess learners' pronunciation difficulties, but also to set useful and achievable learning objectives to aid progression in various learning situations.

The present paper presents a study where the participants (first-year *Master MEEF* students) use pronunciation descriptors focussing on prosody (*author & collaborator, 2018*) uses an online corpus of a read aloud text to assess the pronunciation of first-year *LEA* students before and after an online pronunciation course (*author, 2021*).

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12/ The articulation of dark /l/ by L2 speakers of English: insights from Magnetic Resonance Imaging and Ultrasound Tongue Imaging

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Over the past 15 years, High Temporal Resolution Magnetic Resonance Imaging (HTR-MRI) has emerged as the optimal visualization technique in speech production (Isaieva et al. 2021; Lim et al. 2021). Compared to Ultrasound Tongue Imaging (UTI), HTR-MRI has the advantage of imaging all linguistically relevant structures (lips, tongue tip, soft and hard palate, uvula, pharynx, and larynx). However, there are few publicly available databases, none of which focuses on bilingualism. As part of pilot studies to develop an HTR-MRI database of French learners of English, this presentation will examine the production of the dark allophone of /l/ by three advanced L2 English speakers and a native speaker of English.

French /l/ is consistently produced as a clear [l] with a single apico-alveolar constriction, whereas dark [ɫ] occurs in many standard varieties of English in syllable codas and is realized with a retraction of the back of the tongue followed by an apico-alveolar gesture (Sproat and Fujimura 1993). We investigate whether L1 French speakers display native-like speech gestures in their L2; meaning whether they develop a distinct double articulation for English dark /l/.

The linguistic material consisted of three repetitions of two lists of 30 words in French and English, with /l/ in initial and final positions in various vowel contexts. MRI data consisting of mid-sagittal images of the vocal tract were acquired on a 3T MR scanner (Vantage Galan 3T XGO; Canon Medical Systems, Tochigi, Japan) at a rate of 10 fps.

All participants exhibited a dark /l/ in English, with two constrictions in coda position: at the tongue dorsum and tip (Fig.1, 5-8). Native and non-native speakers of British English produced a clear onset /l/ in French and English, with a single alveolar constriction at the tongue tip (1, 2, 4). However, the American English L2 speaker velarised /l/ in that position (3), aligning with darker onset productions observed in native speakers of that variety (Recasens 2012). Interestingly, the distinct "saddle" shape of dark /l/ (Wrench and Scobbie 2003) was visually less prominent in one L2 English speaker who displayed an atypical constriction at the pharynx rather than the velum (6), suggesting an alternative articulatory strategy for achieving darkness. These observations will be further discussed in the final presentation, supplemented by data collected with UTI using the same protocol.
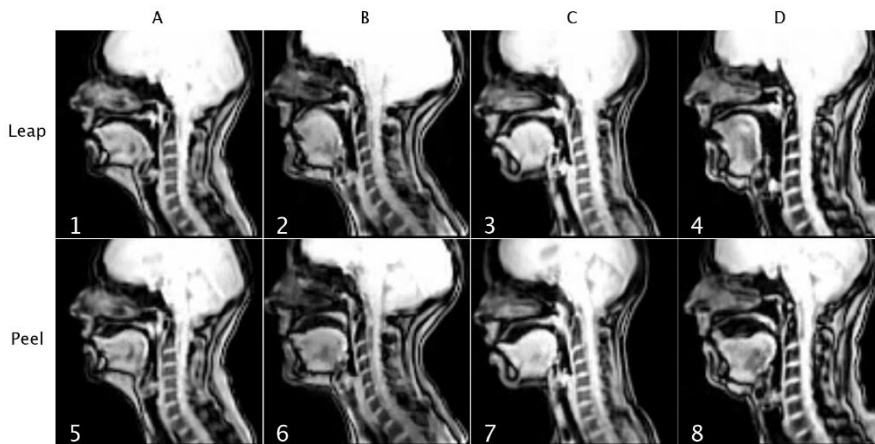

Figure 1: /l/ in onset and coda position for the native speaker (A) and English L2 speakers (B, C, D).

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13/ New Zealand Vowels: A Big Data Approach

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The vowel inventory of English in New Zealand has undergone differentiation in the past 50 years, a process that are ongoing and that have been the subject research interest (e.g. Watson et al. 1998; Watson et al. 2000; Hay et al. 2015; Sóskuthy et al. 2019; Brand et al. 2021). Studies of the acoustic properties of New Zealand vowels, however, have mainly focused on diachronic developments, rather than regional variation. This study presents initial findings into the investigation of regional variation in monophthongs in naturalistic speech from New Zealand, based on over 26 million vowel tokens in 68 New Zealand locations, using data collected as part of the CoANZSE Audio project (Coats

forthcoming, 2022). Mean F1 and F2 formant values were calculated for locations. Aggregate values for individual locations were then used as the basis for the calculation of a spatial autocorrelation statistic. K-means clustering conducted on autocorrelation statistic values suggests that New Zealand English monophthongs can be divided into three main regions: A region centered on Auckland, a Wellington-Christchurch region, and a southern South Island region. The preliminary findings provide a snapshot of contemporary regional variation in monophthongs in New Zealand English and lays the groundwork for more detailed sociophonetic investigations of the dynamics of regional variation in New Zealand English.

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14/ Decoding the interplay between usage and acceptability of phonological reductions: A perceptive study on syncopes in British English listeners

Poster presentation.

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Keywords: speech variation, phonological reductions, speech perception, lexical frequency, British native listeners

As a stress-timed language, English displays numerous variations in syllabic prominence and acoustic and rhythmical properties, including vowel quality, duration, intensity and fundamental frequency. An increasing amount of research has focused on unstressed syllables, particularly when some phonemes within the unstressed syllables are deleted. A prominent phenomenon within this line

of inquiry is syncope, the process of deletion of a vowel between consonants (e.g., *camera* becoming [ˈkæmrə]).

This study seeks to contribute to this expanding body of knowledge by examining the acoustic input (surface form) and the abstract linguistic representation (underlying form), with a focus on the interaction between the full form (or canonical form, e.g., [ˈfæmɪli] for *family*) and the reduced form (or non-canonical form, e.g., [ˈfæmli]). Previous studies have found that lexical frequency significantly interacts with reduction. Notably, high-frequency words are reported to be more often reduced than less frequent words in conversational speech (e.g., Ranbom & Connine, 2007; Brand & Ernestus, 2018). This suggests that full and reduced forms do not occur with the same frequency of occurrence across the lexicon. Rather, frequent words are more likely to be encountered in their reduced forms. However, to the best of our knowledge, although some words are commonly reduced, there is no recent and accessible corpus that provides frequency data for full vs. reduced forms.

Previous studies have demonstrated that listeners can accurately rate the frequencies of phonological variants (e.g., Racine & Grosjean, 2002), leading us to implement subjective frequency ratings for full vs. reduced forms. The experimental procedure (inspired by Brand & Ernestus, 2018, and Bürki et al., 2010) involved 50 British native listeners. Using a five-point scale and provided with audio stimuli, participants had to assess whether each word was more frequently heard in its reduced or in its full form based on their intuition. Various factors such as objective frequency, orthography, and phonotactics guided our stimuli selection process. Secondly, for each trial, a pronunciation acceptability evaluation, inspired by Racine (2008), was carried out with the aim of gaining information on how British native listeners perceive reduced forms. These tasks are meant to investigate: (i) the interaction between usage and acceptability and (ii) the role of objective and subjective frequencies for the recognition of spoken words. Reflecting the usage of British native speakers, these results will be further developed for L2 perception studies.

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15/ Rural indexicality in the urbanizing South: A sociolinguistic study of pre-voiceless /aɪ/ monophthongization in Middle Tennessee.

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This paper examines the sociolinguistic variation and social significance of the monophthongization of /aɪ/ in pre-voiceless contexts (e.g., in *ice*, *tight*) – a typically "rural" feature of contemporary Southern American phonology (Labov et al., 2006; Thomas, 2003). More specifically, production of pre-voiceless [a:] emerges as a rural phenomenon both objectively and subjectively, given that the variant (a) is mostly confined to non-urban regions of the South, and (b) appears to be sufficiently salient to most Southerners, insofar as it is often approached as a rural/urban shibboleth. Our survey location, Murfreesboro (Tennessee), has recently witnessed exceptional rates of urban and demographic growth, going in less than a century from a rural town to a large city. Additionally, Murfreesboro is surrounded by rural areas where monophthongization in pre-voiceless contexts is common (Labov et al., 2006). Given the socio-economic and geographical characteristics of the locale, we expect pre-voiceless /aɪ/ monophthongization to be especially salient amongst the population, and perhaps to bear first- and second-order indexes (Silverstein, 2001) that mark out particular segments of the population.

Our study is conducted within the theoretical and methodological framework of the PAC- LVTI Programme (Przewozny et al., 2020). Research is based on the analysis of authentic spoken data and sociolinguistic metadata obtained from recent fieldwork. Moreover, we rely on the LVTI sociolinguistic questionnaire (Przewozny et al., 2020) to reveal relevant local categories that organize the local sociolinguistic space of the members of a community. Surprisingly, the variable shows no form of inter-class variation whatsoever. However, results reveal that the local variant [a:] in pre-voiceless contexts is part of a complex indexical field that is structured around the overlapping *emic* (Pike, 1990) categories of "Southern" and "rurality". Additionally, production of pre-voiceless [a:] is age-graded, which coincides with the urban development of the locale.

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16/ Prominent features in open-ended recordings: an initial study of Scotrail onboard announcements

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Railway announcements are famous for irritating passengers (e.g. the word "tannoyance" coined by Mooney 2014) as well as language specialists (see Marsh's 2011 Guardian's Mind your Language article about "railspeak") with their unusual and specific wording and intonation. The present study aims at describing prominent features in train open-ended announcements (i.e. pre-recorded phrase openers), most typically followed by station names, such as "This train is for ..., The next station is ...". Onboard trains across the Scotrail network, recordings of two female speakers are used to deliver these announcements. The entire collection of onboard announcements, made available to the public in November 2023 following a Freedom of Information request, consists of 3372 recordings, 54 of which form open-ended announcements used for the purpose of this study.

Open-ended announcements were organised by number of syllables (ranging from 2 to 11), and prominence was analysed with different parameters which have been shown to be significant in the perception of speech focalisation (Herment 2011), i.e. duration of the recording, speech rate (as number of syllables per second), pitch contour (syllable showing maximum fundamental frequency or F0), and intensity pattern (loudest syllable).

The analysis suggested that the combination of several features in phonetic prominence are used in train onboard announcements, most likely in order to enhance intelligibility in noisy environments for passive listening from passengers (as discussed by Carlile 2014). Preliminary results indicate that no two sentences display identical patterns of rhythm and prominence; announcements with identical syllable counts do not share the same prominent syllable position, as identified with pitch and intensity (e.g. "The NEXT stop is ..." as opposed to "THIS train is for ...") This suggests that those open-ended recordings provide familiar listeners with prominent and rhythmic cues to indicate the nature of the announcement, which allows passengers to then attend more actively to the information at the end of the announcement. Interestingly, we also note that so-called "railspeak" involves a reduction of the stressed/unstressed syllable contrast typically found in English rhythm. Analysis is still under way and additional results will be ready ahead of the conference.

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17/ "Students would just laugh at me if I tried to speak like you people": Describing prominent features of Nigerian English in descriptive and normative works

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This paper addresses the accounts given of phonological phenomena with regard to standards and expectations in Nigerian English (NigE). How are the characteristics of this variety of English dealt with in reference books analyzing it? Which phonological traits are represented in descriptive works as decidedly Nigerian?

Descriptive works adopt either a very comprehensive manner of talking about the phonological features of Nigerian English, relative to so many criteria like location, native language—assuming it is not English, acrolectal use … that it is difficult to draw a portrait of this variety without (West) African features, such as Melchers et al. who provide a table of African lexical sets (2019:152) when other works directly compare local languages, relying heavily on Hausa English (Gut in Mesthrie, 2008:42) and marginally on Igbo and Yoruba, the other two main languages spoken in Nigeria. The first part will be devoted to an analysis of these descriptive works, to parallel them with how dictionaries and reference works describe the phonology of NigE, from a contrast with a broader world English on the scale of a continent (?) to local bilingualism.

The question of an external standard to contrast it with is also visible in the lack of representation of tones and stress shift in NigE, which is the main point of the second section of this paper. Some resort to a standardized stance, where a lexicographer "spelt loanwords without tone marks so that such words do not sound 'unEnglish' [sic] "(Igboanusi, 2010), when another proposes the introduction of digraphs to transcribe sounds like /k͡p/ as well as stress marks, such as <lid "don>, derived from "lie down" (Rotimi, 2010:133), using personal transcriptions.

The study of norms described in dictionaries and reference books will be compared with a spoken corpus of elements taken online. From accent coaches who teach not to sound Nigerian to YouTube and TikTok channels tutoring people to do the reverse, the differences and similarity between the portrayals of the perceived nigerianisms (stress shift, shortened vowels, realization of /a/ for the lexical sets LETTER AND COMMA instead of /ə/…) allow us to draw a semi-diachronic perspective on NigE. Speakers and co-utterers" views may deviate through their expectations and the goals behind describing NigE: as an accent to eliminate, as a way to be entertaining, to create a statement … sometimes against RP (or GA!), Pidgin or West African English.

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18/ Acoustic Analysis of Irish Slit /t/

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Slit-/t/ is an Irish realisation of /t/ in intervocalic and final position, usually described as a voiceless apico-alveolar fricative (Hickey, 1996b) and transcribed as [ꞎt]. While slit-/t/ has been described from a geographical, sociolinguistic, distributional and articulatory point of view (Hickey, 1996b, 2004, 2007, 2009), there seems to be a lack of work on its acoustic properties. This is all the more important as slit-/t/ is often confused with /s/ or /S/ by non-Irish speakers of English as slit /t/ can sound like there was an [s] added after the final /t/ (Ó Baoill, 1997).

This study aims at describing the acoustic properties of the slit fricative /t/ in an attempt to determine which of these properties allow Irish speakers to distinguish it from other fricatives in the system, such as /s/ and /S/, as well as identifying the effect of the position (word-final or intervocalic) and the impact of sociolinguistic factors (age, gender and province of origin of the speakers) on the pronunciation of slit /t/. We chose to compare slit /t/ with /s/ and /S/ since they are said to have higher amplitude and longer duration than other voiceless fricatives, for example, /T/ and /f/ (Behrens and Blumstein, 1988). Four measurements were taken: duration, intensity, centre of gravity (COG) and dispersion. Those were proven useful in differentiating the fricatives under study (Barnes et al., 2021; Cangemi et al., 2019 (Jongman et al., 2000), 2000). The measurements were based on the speech of twelve native speakers of Irish English, all of whom were born in the Republic of Ireland. Informants' ages ranged from 10 to 65 years old. They were asked to read words and sentences in which there was either an intervocalic or word-final /s/, /t/, or /S/. Praat was used for acoustic measurements, and statistics were run in Rstudio, to determine whether there were significant differences between the three fricatives, and to see whether sociolinguistic factors as well as the position of the phone could influence the duration, COG, dispersion and intensity of slit /t/. A particular attention was paid to COG, on which the impact of age, gender and province, as well as the potential impact of the segment preceding slit /t/ were tested thanks to a mixed effects model.

The results show that there is a significant difference for all four parameters between slit /t/ and /s/, except in intervocalic position where their difference in intensity is not significant. However, only duration and intensity are significantly different when comparing slit /t/ and /S/. Out of the three sociolinguistic variables, only age group and gender affect the data according to the mixed effects model, and gender has a larger impact than age. Depending on its position, the dispersion, duration and intensity of slit /t/ differ, but no significant difference was found regarding its COG values. Last but not least, the type of task has no effect on the dispersion and intensity of slit /t/, but affects on its COG and duration, which was expected since sentence reading necessarily in- volves a slightly faster speech rate. The nature of the preceding segment has no significant effect on the COG of slit /t/.

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