Measuring the influence of phonological metacompetence on English as a second language pronunciation acquisition

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Summary

This is a research proposal for a PhD dissertation that focuses on measuring how metacompetence influences the way in which learners of English as a second language acquire English pronunciation. The theoretical scaffolding for this work is the model of phonological metacompetence proposed by Wrembel (2005). It builds on the Natural Phonology framework (cf. Stampe 1973) and the resulting role of metacompetence as a strategy for helping adult learners to acquire another phonological system (Dziubalska-Kołaczyk 1990). The dissertation will be written in the form of a collection of at least three journal articles to be published in 2018 and 2019.

The first paper in the series (in preparation) will address the main research question by through a longitudinal study that investigates how first-year Polish students of English studies interact with an online course in English phonetics and phonology, and how that relates to their performance in three recording sessions at the start, middle, and end of the course. This innovative study adds to the existing body of largely *qualitative* body of research on the topic (e.g. Lechowska 2005 or Porter 2012) by attempting to provide more granular *quantitative* evidence. This is why the title of this dissertation highlights the need to *measure* the relationship between the time and effort invested in gaining metacompetence and potential gains in pronunciation performance.

The remaining two papers focus on some of the novel teaching methods developed for the main study. One paper (in print) shows how using board games for such challenging aspects of metacompetence as English prosody could boost learners' in-class engagement and assessment performance. Another paper (in preparation) focuses on a custom-designed web application that learners can use to practise IPA-based phonetic transcription to increase their phonetic and phonological awareness.

1 Background

1.1 The changing role of pronunciation in language teaching

The role of pronunciation in English as a Second Language (ESL) instruction has changed over the past decades. During the popularity of the audio-lingual method in the 1950s, the goal of second language teaching was the enable the acquisition of a native-like accent, and the inclusion of phonetics and phonology in the language classroom was regarded as essential for understanding the mechanisms of second langauge (L2) speech (Busá 2008: 166). During the dominance of the cognitive approach in the 1960s and 70s, there was a considerable decrease in this trend, and it was considered to be impossible for adult second language learners to acquire a native-like pronunciation. Consequently, the emphasis on teaching phonological knowledge diminished (Busá 2008: 166).

Recently, however, there has been a considerable growth of interest in pronunciation teaching and learning (Dziubalska-Kołaczyk 2002; Lechowska 2005; Wrembel 2005; Wrembel 2007; Pawlak 2010). Although most agree that pronunciation is of key importance for successful communication, teaching pronunciation in L2 classrooms still does not receive the necessary attention (Busá 2008: 168). Teaching those aspects of phonetics and phonology that could accelerate pronunciation acquisition seems to be equally neglected.

1.2 Pronunciation teaching based on the metacompetence-oriented model

Wrembel (2005) proposed her metacompetence-oriented model as a theoretical framework to study how acquiring the theoretical phonetic and phonological knowledge could improve practical pronunciation. The premise of this model is that "conscious knowledge of phonetics and phonology and developed metalinguistic awareness are related to second language pronunciation achievements" (Wrembel 2005: 1). Metacompetence can be divided into declarative linguistic knowledge, i.e. phonetic and phonological knowledge of linguistic facts, and procedural knowledge, i.e. practical knowledge of English. This framework upon previous research (eg. Moran and Fitch 2001) that showed that when learners begin their pronunciation training with varying levels of phonetic awareness, the main factor in successful L2 pronunciation acquisition is the aforementioned metalinguistic awareness.

Wrembel's metacompetence-oriented model builds on Dziubalska-Kołaczyk (2002) who argued that learners of English as a second language who receive explicit formal instructions and acquire metalinguistic awareness are more successful in L2 pronunciation skills and linguistic competence. She based her claim on the Natural Phonology framework (cf. Stampe 1973; Dziubalska-Kołaczyk 1990), which allows to form predictions about the phonological aspects of L2 acquisition and puts external linguistic evidence as the primary source of speaker's linguistic competence. According to Dziubalska-Kołaczyk (2002: 2), describing language acquisition needs to be different for infant native language learners and adult L2 learners, who already possess an L1 system and set cognitive capacities that interfere with their L2 acquisition. A solution for this interference can be found in acquiring meta-knowledge and metacompetence skills which will help in the "self-organization of a new system" (Dziubalska-Kołaczyk 2002: 2).

2 Aim

The primary aim of this study is to confirm the hypothesis that phonological metacompetence helps advanced Polish learners of English as a second language (ESL) in mastering English pronunciation. Although this hypothesis has been proposed by many researchers (e.g. Dziubalska-Kołaczyk 2002; Wrembel 2005; Schwartz 2005), so far the only studies that attempted to address the role of metacompetence (e.g. Lechowska 2005; Porter 2012) were based mostly on anecdotal evidence, and not all of them studied Polish learners of English.

The secondary aim of this project is to investigate the behavioural patterns of learners in the online theoretical course in English phonetics and phonology. Up until recently, the only way for teachers to check whether their students read the assigned material was to prepare a quiz. With such free educational products as Moodle, teachers can move pre-class preparation online and track leading indicators of class preparation, such as the frequency, time, and duration of visits to Moodle. In this project, we will use such online metrics for estimating the relationship between metacompetence and practical performance.

3 Method

We will conduct research on first-year students at the Faculty of English at the Adam Mickiewicz University in Poznań who enrol in two obligatory courses: English phonetics and phonology (a theoretical metacompetence-oriented course) and English pronunciation (a practical course). Previous research studied the effect that completing a metacompetence course has on practical pronunciation skills mainly through qualitative data obtained through questionnaires that students completed at course end. A notable exception here is Wrembel (2015) who used a more quantitative approach with think-aloud protocols. This research adds to the existing body of mainly qualitative evidence in a significant way because our students will take the phonetics and phonology course in a flipped-classroom model on Moodle, i.e. they will be asked to complete an online pre-class preparation module on Moodle before coming to class, so that classroom time can be devoted to practice. The module contains a short video lecture on the topic, a few close-ended ungraded activities with pre-scripted feedback, and links to one or two supplementary readings (chapters from English phonetics and phonology textbooks). The 90 minutes of classroom time will be devoted to completing worksheet activities (more advanced versions of the online pre-class activities) and clarifying any confusing concepts. By the end of each course week, the students will take an online graded quiz. They will also take a longer test midway through each semester and the final exam at the end of the second semester.

Additionally, the students will be recorded thrice, so that their pronunciation can be analysed instrumentally and impressionistically. The first recording session at the start of the first semester (of the first year) serves as a pronunciation baseline. Then, the recordings collected during the second session at the end of the first semester will be juxtaposed with learners' online behavioural and performance data from the first semester. Similarly, the pronunciation performance from the third recording session will be associated with the behavioural and performance data from the second semester, as well as scores from the relevant final exams (practical English; phonetics & phonology). Overall, we will look at a broad range of phonetic and phonological measures of pronunciation, e.g. vowel contrasts, phonetic vowel features, phonostylistic processes, word stress, intonation, etc.

4 Significance

First, this research will add to the evidence about the rules governing second language pronunciation acquisition: Does theory matter or is practice alone enough? If theoretical preparation does matter, which aspects are most important?

Second, the findings will have practical teaching implications. We have experimented with various traditional and new teaching methods to provide guidance to teachers on how to best help learners acquire metacompetence. While we focus specifically on English as a *second* language, some of the findings should apply to English as a *foreign* language generally.

Third, the project's research method is an innovative combination of traditional data processing methods (student data collected through questionnaires, speech recordings and instrumental analysis) and more modern analyses (usage of digital study tools). We hope this will inspire other researchers to experiment with some of those new methods.

Finally, we hope to add a small contribution to combating the reproducibility crisis in science, especially in the humanities. All analyses in our published papers will be fully reproducible, i.e. we will provide the raw (anonymised) data and the code that processes that data to generate all figures and statistical tests, so that anyone can reproduce our work and build upon it.

5 Dissemination

The initial findings from this project have already been presented at three conferences: the 8th and 10th International Conference on Native and Non-native Accents of English (2014 and 2016), and at Young Linguists' Meeting in Poznań 2016. The final findings will be reported in detail through the following three or more research papers.

- **Measuring the influence of metacompetence on ESL pronunciation acquisition**. This paper (in preparation) deals with the main aim of this project, i.e. whether acquiring certain aspects of metacompetence helps in acquiring certain aspects of English pronunciation.

- **Board games for teaching English prosody to advanced EFL learners:** This paper (accepted for publication in ELT Journal) investigates print board games for teaching English prosody to advanced Polish learners of English.

- **Usage patterns of an online allophonic transcriptor:** This paper (in preparation) reports on the use of a novel tool created to supplement our phonetics and phonology course: an online allophonic transcriptor. This work is a practical implementation of ideas expressed in Mompean and Lintunen (2015), who pointed to studying IPA-based transcription as one of the best ways to improve learners' phonetic and phonological metacompetence.

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