

## Abstract

This research is intended to investigate the phonological effect of Iraqi Arabic as a heritage language on the Cardiff English of relevant native speakers in the UK. It will attempt to find out any possible interference from Arabic as a non-dominant language in the production of English as a majority language. In other words, it will auditorily and acoustically test whether Iraqi Arabic as a minority language influences the production of English spoken in Cardiff, UK. To elaborate, the concentration will be on whether a peculiar accent is detected in their articulation of English segments based on accentedness ratings; and to look at and pinpoint the acoustic characteristics of some segments to determine any potential deviation on the segment level that might result in different phonetic properties in these segments. Furthermore, it will discuss the correlation between accentedness ratings and the acoustic measurements.

For the methodology, this data has been collected from two groups: an experimental group (namely, heritage speakers of Iraqi Arabic) and a control group (namely, monolinguals in Cardiff English). The implemented instruments are a reading material and a demographic questionnaire. Then, their audio recorded readings will be rated by ten monolinguals in Cardiff English. In addition, acoustic characteristics for a number of segments will be measured and compared between the two groups. The findings will present and discuss any possible overlap between these two languages focussing on the interference from Arabic in the articulation of English.

## I. Introduction

The current study aims to auditorily and acoustically investigate the phonological effect of Arabic as a heritage language on the production of Cardiff English as a majority language for adult heritage speakers of Arabic in the United Kingdom of Great Britain context (henceforth, the UK), particularly the Context of Cardiff in Wales. In other words, it explores the English accent for heritage speakers of Arabic in the UK concentrating on the accentedness rating and the acoustic measurements. In order to delimit the scope of this study, the review in this chapter will focus on two main phonological aspects: the interlinguistic accentual influence and interlinguistic segmental influence; and how they are correlated to each other. Therefore, this study is not going to look at the morphosyntactic domains for heritage speakers (e.g. see (Montrul 2014)), children heritage speakers (e.g. see (Khatab 2002) for Arabic), nor the phonological effect on the heritage language. Rather, this study will concentrate merely on the effect of the heritage language on the majority language, and specifically on the English accent of adult heritage speakers and the acoustic characteristics on the segmental level. What is more, this study will focus on Cardiff English as a majority language and Iraqi Arabic as a heritage language in the UK context.

## II. Review Questions

This study seeks to address one major question and three sub-questions. The main question is:

- To what extent does Iraqi Arabic as a heritage language in the UK accentually and acoustically influence Cardiff English as a majority language?

- **The three sub-questions for the main question are the following:**

1- based on the accentedness ratings, to what extent does Iraqi Arabic as a heritage language auditorily affect the accent of heritage speakers of Arabic when speaking English?

2- Acoustically, to what extent does Arabic as a heritage language phonologically affect the phonetic properties of some English consonants and vowels, such as VOT values and the vowels first and second formants?

3- To what extent do the accentedness ratings correlate to the acoustical measurements?

## III. Methodology

### A. Sample

Approximately **thirty male and female adults** have taken part in this research as an experimental group. In addition, **thirty participants** who are monolinguals in Cardiff English have acted as a control group in this study. With respect to the experimental group, they have been selected based on the following criteria:

1. The participant's age ranges between 18 and 40 years old.
2. Cardiff English is his/her native and dominant language, i.e., s/he has acquired English before the age of six years.
3. The participant acquires English in Cardiff or nearby towns. (the focus only on one variety of English)
4. Iraqi Arabic is the language for his/her family or ancestral, namely, at least one or his/her parents.
5. His/her parent's variety of Arabic is Iraqi Arabic which is spoken in Iraq, the Middle East. (i.e.. the heritage language is Iraqi Arabic).
6. S/he does not speak any additional language.

These characteristics have been inferred and determined by a number of questions in the demographic questionnaire which has been filled out and analysed before carrying out the test.

### B. Stimuli:

**Three reading texts** have been employed in this research (Adopted from Weinberger (2015); Wilson et al (2009)), as illustrated below:

- 1- a 7 sentence paragraph,
- 2- a list of 14 sentences, and
- 3- another seven-sentence paragraph which is exactly the same as the first one.

These sentences involve and concentrate on all phonemes in Cardiff English that either exist in both languages as phonemes, such as /k/, /f/ and /s/ or exist only in English, such as /v/. Additionally, the sentences includes a number of clusters in some words.

Moreover, a **demographic questionnaire** has been implemented to elicit all basic information about the participant which allows the researcher to determine whether a participant meets the stipulated criteria to be counted in the experimental or control group.

### C. Procedure

First, each participant has filled out the demographic questionnaire. Then, the participant has been asked to read aloud and in a normal pace all sentences in all three sections with short pauses among sections; and a shorter pause after each sentence. Each participant has completed the task individually in a quiet area. While s/he was reading the sentences, s/he has been audio recorded. After the completion of all recordings for both the experimental group and the control group, 12 representative sentences were selected from each recording (participant). These sentences will be randomised and rated by ten monolinguals employing a 9-point scale (utilised by Flege et al (2006)).

## IV. Analysis

For the analysis, the data from the demographic questionnaire has been tabulated in an excel sheet, and the recordings were uploaded into a computer and saved in two folders; one for the experimental group and one for the control group.

**A- Firstly**, for the accentedness ratings, the raters judgments for both groups will be analysed using **R** software to compare the productions of the heritage speakers to those of monolinguals.

**B- Secondly**, based on the reviewed literature and the findings from the accentedness ratings, a number of phonetic features for some consonants and monophthongs will acoustically be measured using PRAAT for both the experimental and control group.

## V. Selected References

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