



The Phonological Effect of Iraqi Arabic as a Heritage Language on South Wales English as a Native and Majority Language for Heritage Speakers of Arabic in South Wales, the UK - (Experiment 1)

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I. Research Objectives

The current study generally aims to examine the interlanguage influence on the English accent in the productions of adult heritage speakers (HSs) of Iraqi Arabic (IA) in South Wales. In other words, it addresses whether and to what extent IA as a heritage language (HL) phonetically affects the English accent of HSs who are native speakers of South Wales English (SWE). Specifically, it intends **1)** to examine the effect of HL on the phonetic properties of English **a)** monophthongs and **b)** voice onset time (VOT) in the productions of HSs of IA. To facilitate the achievement of this goal and before the phonetic investigations, this study attempts **2)** to examine the effect of HL on the English accent of HSs of IA as perceived by native speakers of the same variety of English (namely, SWE) who are not heritage speakers. The latter investigation was intended to provide an initial understanding of the possible effect of HL on the English accents for HSs of IA and to draw conclusions that might facilitate and enhance the phonetic investigation. Therefore, this study initially has addressed the second question which examine the effect of HL on the accent in the English productions of HSs of IA as perceived by non-heritage speakers who are native speakers of SWE. The implementation of the rating of the accents of HSs aimed to find out whether their accents involve any deviated articulations. In this poster, I will present merely the accentedness rating for HSs in **the Accentedness Experiment, which** includes the methodology, analysis and findings of the experiment. That is to say, the phonetic investigations will not be presented in this conference.

Experiment 1: Accentedness

II. Methodology:

1. The Sample:

Table 1: The demographic data for the Heritage speakers, the Control Group, and the Raters

Group	Number	Number/Gender	Age (mean)	SD (Age)	Age (Mean) /Gender	SD (Age / Gender)
Heritage Speakers	31	17 (M), 14 (F)	28.7	5.46	28.82 (M), 28.5 (F)	4.94 (M), 6.52 (F)
Control Group	31	17 (M), 14 (F)	24.13	5.08	24.88 (M), 23.21 (F)	5.65 (M), 4.32 (F)
Raters	11	6 (M), 5 (F)	28.73	2.72	29.67 (M), 27.6 (F)	2.07(M), 3.21 (F)

2. Research instrument:

2.1. Stimuli: Reading a list of Phrases and Short Sentences: (Wilson, et al. 2009 , Weinberger 2016, Gao et al. 2018)

- A list of 14 sentences or phrases.
- The range of the words in each phrase or sentence is 4 to 13 words.

2. 2 . Demographic and Language Background Questionnaire: (Yeni-Komshian et al. 2000, Flege 2005)

- This questionnaire consists of 18 questions and aims to elicit the demographic data and the language background for the participants.

- it is intended to be administered to heritage speakers and control group.

2.3. Rating Questionnaires and The Rating Scale (For raters): (Yeni-Komshian et al. 2000, Guion et al., 2000 , Kupisch et al. 2014, Uzal et al. 2015, Lloyd-Smith et al. 2020))

- Five questionnaires were composed and distributed using “www.socisurvey.de”.
- The raters were recruited online employing the Prolific platform “www.prolific.co”.
- Each questionnaire comprises 496 audio file with a mean length of nearly 2.5 seconds.
- Under each audio file, the raters were instructed to rate the accent on a 9-point scale.
- This scale was embedded to the rating questionnaires, and it was employed to rate the accent of participants by selecting a number out of the 9 numbers/labels on the scale. Number 1 refers to heavily accented while 9 indicates no different accent at all.

3. Procedure

3.1. Demographic &Language Background Questionnaire:

- Participants completed their participations individually in a quiet area in Cardiff, Swansea, or through an online meeting.
- each participant filled out the questionnaire before the reading task to ensure s/he fits the stipulated criteria for the target participants.

3.2. Reading Task:

- 14 sentences were elicited in a reading task. Each participant was asked to loudly read in a normal pace the sentences which were written on an A4-size paper.
- The task was repeated three times only the last two readings were audio recorded. The motivation for these repetitions was to enable the participant 1) to familiarize themselves with the text, and 2) to elicit a fluent reading with no mistakes and hesitation.
- Out of the two recordings, only the last recording was analysed unless it involves invalid data (such as mistaken words). In such case, the first recording was another source to make up for the missing data.

3.3. Rating Task:

After the completion of all data from heritage speakers and control group,

- 10 sentences out of the 14 sentences were selected for the rating process.
- As I have recruited 31 participants for the group of heritage speaker and another 31 participants for the control group, the total number of sentences to be rated was 10 sentences * 62participants= 620 sentences. Each set of a sentence (62 sentences) was presented to the raters in four randomized sets.
- For instance, Sentence 1 was presented 248 times (1 sentence* 62 participants* 4 times) for the raters.
- This means that each rater has rated 2480 sentences (10 sentences *62 participants * 4 randomized repetitions).
- The rating process was completed in five consecutive days, one questionnaire with two sentences a day.
- The average completion time for each rating questionnaire is nearly an hour.
- The raters were recruited through the Prolific platform, “www.prolific.co” and completed the rating online as they received a link to the questionnaire in socisurvey “www.socisurvey.de”
- The raters were divided into two groups: one of six raters (three males and three females) and another one of five raters (three males and two females).
- Each group has completed the rating questionnaires with a different order of the five questionnaires, and with a different order of the two sentences presented in each questionnaire.
- As pointed out in research instruments, raters were instructed to rate the pronunciation and the accent of the speaker on a 9-point scale. They were instructed to compare the accent in each audio file to to their own accent, and how big the difference is if it exists.

III. Analysis and Findings

- All completed demographic and language background questionnaires for both groups were tabulated in two excel tables: one for the heritage speakers and another one for the control group.
- By the same token, the five rating questionnaires were tabulated in an excel table which includes all tested objects (for example, rater 1, and rater 2), variables (such as, age, gender, sentence 1, and sentence 2), and values (the obtained ratings).
- Then on R, the means for all tested variables were calculated and their standard deviations.
- In addition, I run tests to measure any possible effect of the order of the rated sentences on the obtained ratings.
- Moreover, gender of the raters was investigated to find out if it has any effect on the outcomes.
- All tests on the order of the sentences and questionnaires have shown insignificant effect on the obtained ratings as shown in Table 2.
- With respect to the gender variable for the raters, the outcomes of the tests have yielded insignificant difference between male and female raters with respect to the ratings of the heritage speakers (see ,Table 2 and Chart 1).
- On the other hand, gender variable has significantly effected the obtained ratings for the Control Group (see, Table 2 and Chart 2).

III. Analysis and Findings

Table 2: The Effect of three variables on the obtained rating for both groups

Variable	P. value (Heritage speakers)	P. value (Control group)
The Order of the two sentences in each questionnaire	0.4247	0.2726
The Order of the 5 questionnaires in the 5 rating days	0.4416	0.3399
The gender of the raters	0.08237	*0.04415

Chart 1: The effect of Gender of the raters on the Heritage Speakers

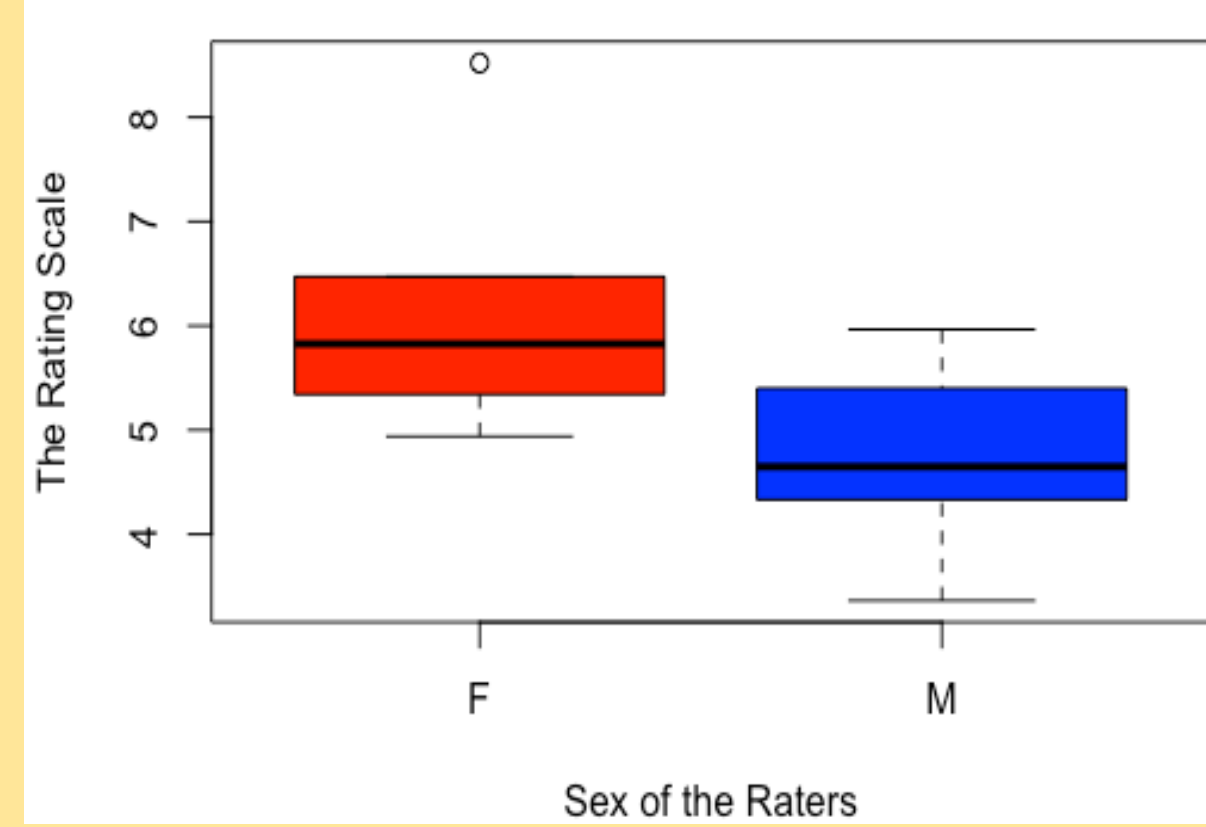
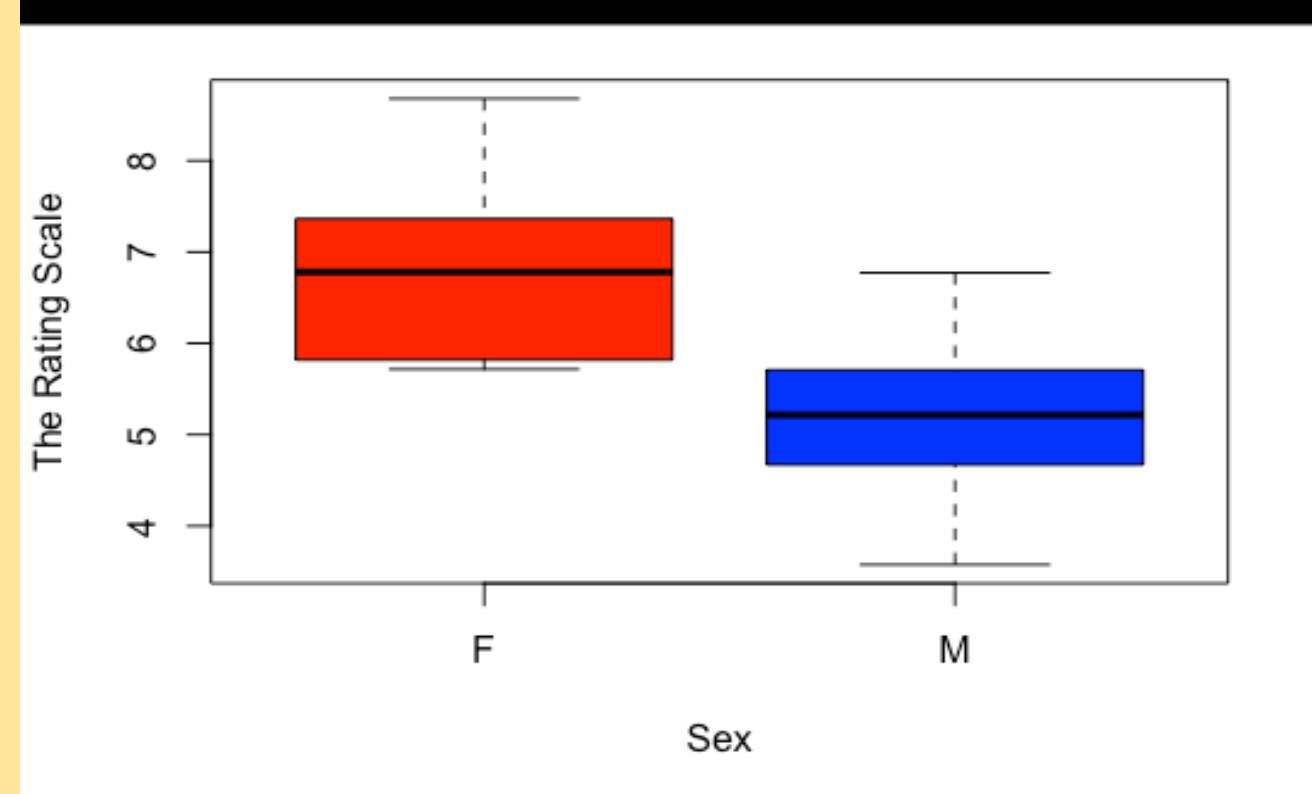


Chart 2: The effect of Gender of the raters on the Control Group



Heritage Speakers vs Control Group: Chart 3 shows the difference between heritage speakers and control group in the obtained ratings in all ten sentences. After running the t.test in R to measure the difference in the rating outcomes between these two groups, they have involved a significant difference (with p.value of 0.0006468) between each other.

Chart 4 shows the difference among the ten sentences for both groups of participants. as shown in the chart, the control group obtained higher ratings than heritage speakers in all sentences and subsequently greater value in the mean. Within each group of participants, no significant difference has been found among the ten sentences.

Chart 3:The Results - All Sentences for Each Group

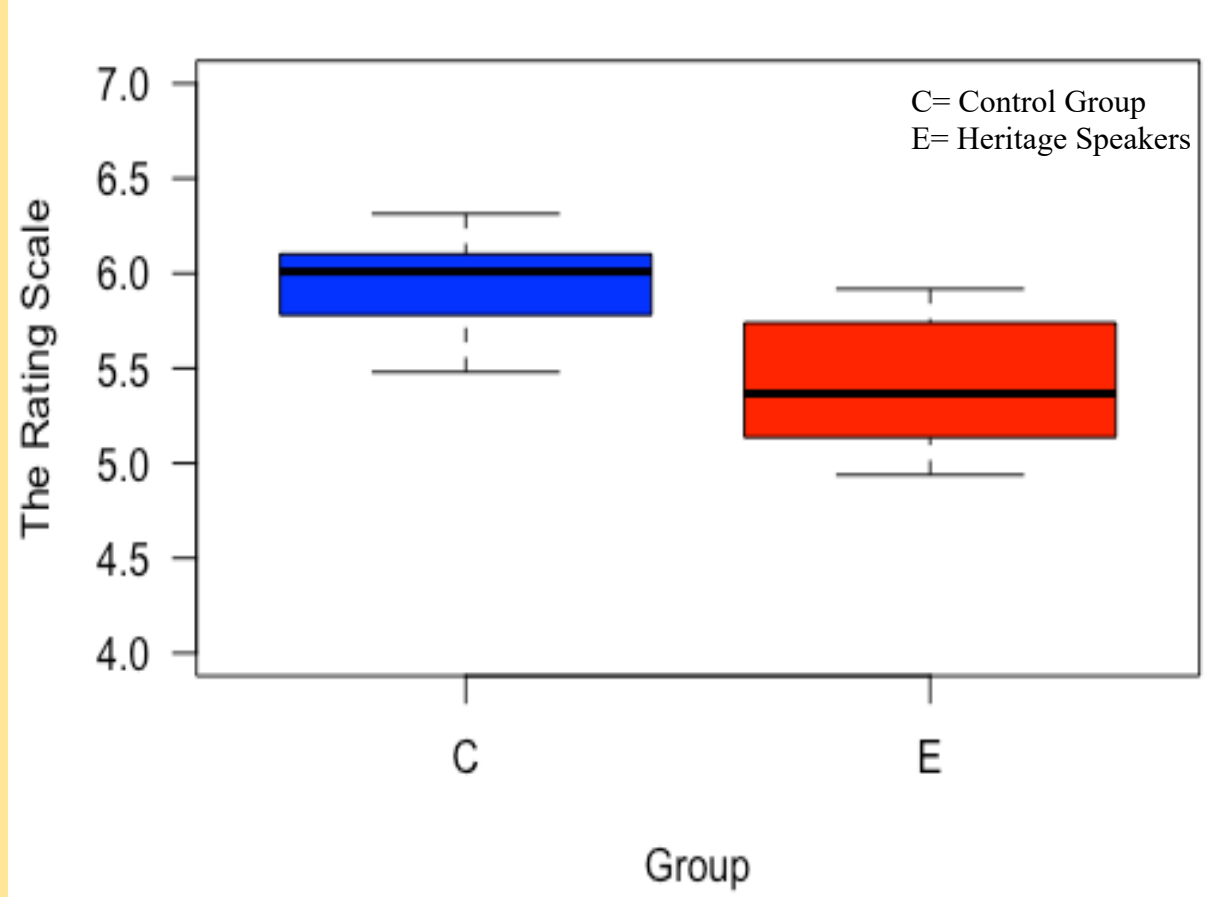
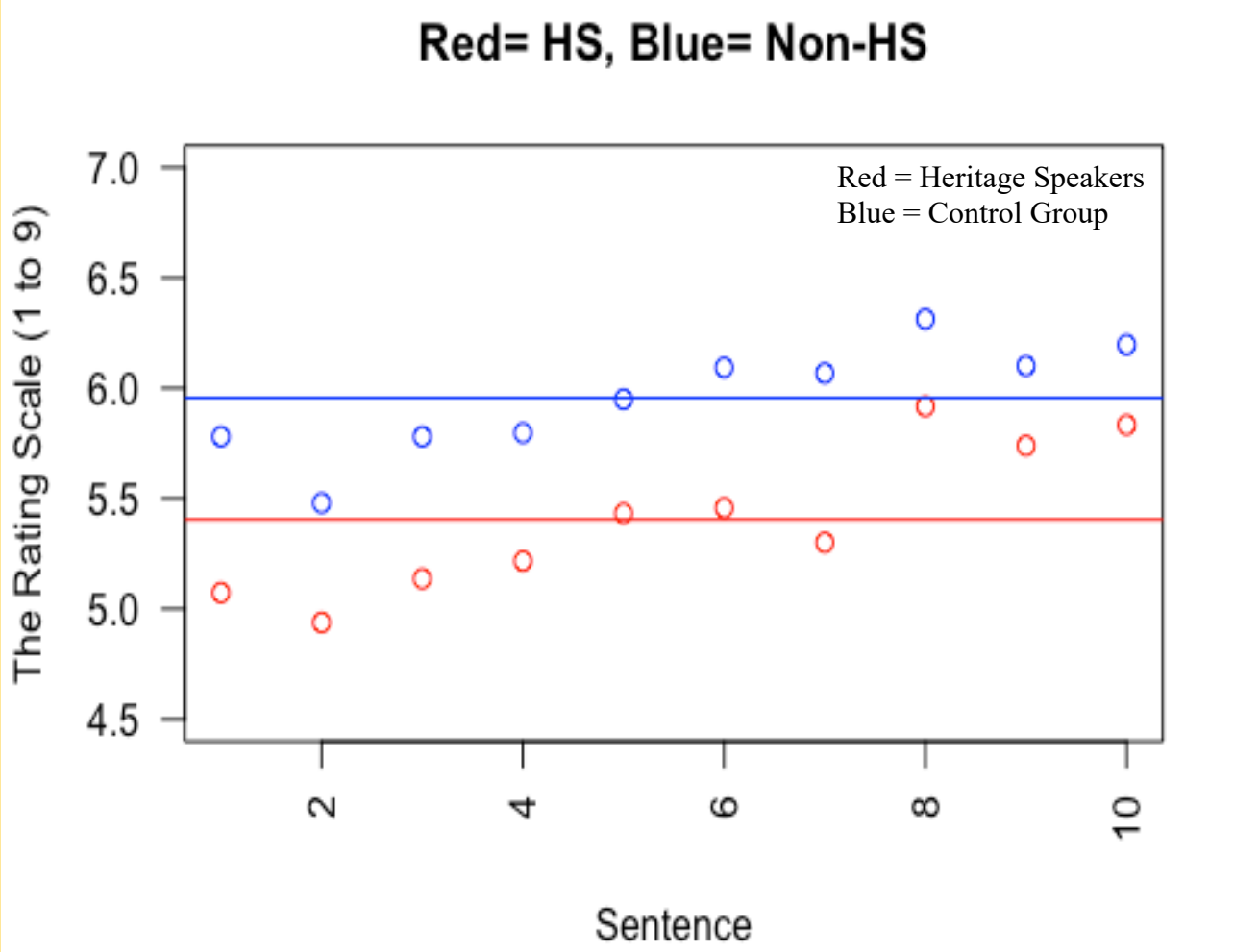


Chart 4: Heritage Speakers vs Control Group – in each sentence



IV. Selected References

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