Linguistic Portfolios

English Proficiency Profile Study of an L2 Speaker from the Kingdom of Saudi Arabia

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ENGLISH PROFICIENCY PROFILE STUDY OF AN L2 SPEAKER FROM THE KINGDOM OF SAUDI ARABIA

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ABSTRACT

English is the main foreign language in schools in the Kingdom of Saudi Arabia. Even though the Kingdom has made considerable budgetary sacrifices to raise English proficiency in the country, the results do not yet match expectations. According to English First (EF), in 2019, Saudi Arabia ranked "very low" on the English Proficiency Index (EPI). We dig deeper to understand why a few succeed where most fail. In so doing, we examine the learning opportunities and practices of (KSA-F1), a female Saudi teacher of English, to understand the secrets of her success. We also study her pronunciation of English vowels to see where improvement is still needed. Aspects of the paper focus on the description of her social network and her acoustic vowel space. The analysis reveals that in spite of the strides that she has made, her vowels [ɪ] and [e] mask each other internally, while her vowels [æ] and [ɔ] mask General American English (GAE) [a] and [ʊ] respectively. Given the high relative functional load of these vowels, except for [ɔ] vs. [ʊ], intelligibility can be easily jeopardized if the discourse context lacks sufficient syntactic redundancies.

Keywords: English Proficiency Index, Acoustic Phonetics, Acoustic Vowel Space, Masking Analysis, Internal Masking, External Masking, Arabic-Accented English, Social Network Analysis, Relative Functional Load.

1.0 Introduction

The purpose of this study is to give an account of the proficiency of L2 English in the Kingdom of Saudi Arabia (KSA). As an Expanding Circle nation, English is important for Saudis, yet their proficiency in using it, is still low. First, we will look at the importance of English as a foreign language in KSA. Secondly, we will examine the current proficiency standing of KSA based on English First's 2019 report. Finally, we will contrast both findings with the proficiency profile of a Saudi female participant who teaches English in one of the largest women universities in Saudi Arabia. Assessment of her proficiency is based on a detailed study of her social network and the intelligibility of her vowels. Vowels are highlighted in this particular study because, according to Prator and Robinett (1985:13) they play an extremely vital role in intelligibility assessment.

2.0 Language policy in KSA

English is considered an important language in KSA for economic reasons. According to Alshahrani (2016:44) the discovery of oil in the late 1920s marks the beginnings of English in KSA. He goes on to note on page 45 that "English is used as the medium of training in major

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[1] **Authorship Responsibilities:** Author 1 was enrolled in Author 2's sociophonetics course where the idea of this paper originated, first as a term paper, and now as a joint publication. Author 2 made copious observations and re-analysis of the term paper for this publication. Author 1 edited the paper accordingly and submitted a second version of the original paper. Author 2 has rewritten significant portions of the second draft, provided additional analytical clarity and bibliographical support. To the extent that the measurements provided by Author 1 are accurate, they both share equally the rights, privileges, and responsibilities of this publication.

organizations and companies across the country, such as Saudi Airlines, Saudi Aramco, the Saudi Telecommunication Company, etc." He also quotes Al-Braik (2007) as saying that "English became important in the KSA education system because of its perceived economic value." However, literacy was low. Consequently, raising the general level of literacy became a national effort during the 1970s. In only 40 short years, literacy levels increased so much so that it met international expectations. In that effort, English became the main foreign language taught in Saudi schools. This led to a massive and urgent need for English teachers as a second language in all schools and the hiring of native speakers for teaching needs (Payne and Almansour, 2014:4). It was quickly noticed that the competency of Saudi educators to teach English was below standards; so, expatriates had to be hired. A remediation strategy to train Saudis for the demands of post-secondary teaching was introduced with the King Abdullah Scholarship Program (KASP) in 2005. The purpose of KASP, as detailed by Alshahrani (2016:45) was to send all qualified Saudis to study overseas with an expectation that they will be highly proficient in English and help to develop a relevant English as a Foreign Language curriculum upon the completion of their degrees. However, according to Taylor and Albasri (2014: 116), the English proficiency of the recipients of the KASP scholarship did not improve as much as expected:

> While graduates from the West used to land jobs easily based on the countries they graduated from, this is no longer the case. Some of these western-educated graduates failed to pass these employment tests, while their nationally educated counterparts passed them.

So, in spite of colossal investments, English Proficiency Index in Saudi Arabia has remained low. A case in point is the 9th annual report by English First (EF), English Proficiency Index of 2019. It ranks Saudi Arabia 98 out of 100 countries. The ranking is based on 2.3 million test takers from 100 countries. The report went on to note on page 38 that there was even "a significant decline" compared to the 2018 report. This means that, according to the Common European Framework of Reference band, English proficiency in Saudi Arabia is at an A2 level, which translates as a "very low" proficiency level. Overall, English in Saudi Arabia is a mixed bag of good and not so good results.

The country has made great strides in 80 years. Fueled by an apparent unlimited supply of wealth, the government initiated programs to increase proficiency levels of English. However, the results have not correlated with expectations at a national level. However, this does not mean that individuals have not done well. This is the case of an extremely successful Saudi educator who teaches English at the world's largest female-only university. We will first examine her social network to see how it may have contributed to the development of her English skills. Secondly, we will account for the intelligibility of her spoken English by embarking on an acoustic phonetic analysis.

3.0 Social Network Analysis
Social network analysis seeks to understand how an individual relates to the broader speech community that he/she is part of. Since English is a Foreign Language in Saudi Arabia, not much is available by way of social interactions in English. However, there are nuggets of information about the participant that show that she "created" her own social network of English speakers early on in her life. Her social network of English speakers was the television set. From 6 onward, she would watch cartoons in English. She mimicked the sounds she heard. As she grew older and

went to middle school and high school, she continued with mimicking as a way of practicing speaking. She was extremely motivated to learn English early on and this motivation stayed with her all through college. She graduated with an English degree from her university. Even though she has not studied abroad, she is now in charge of 10 EFL teachers that are from KSA. She also supervises expatriate teachers from the UK and the USA. These are currently the people in her English social network. The 10 teachers under her are in turn responsible for a cohort of 250 students. Some are training to be English teachers, but others will apply their skills in engineering, business, or in the medical profession. The participant in our study, referred to simply as KSA-F1 in Table 1 and Figure 1, uses her English skills to communicate both academically as a teacher and professionally as the coordinator of her cohort.

KSA-F1 listed four colleagues as the people in her social network with whom she interacts the most. For this study, they will be named KSA-F2, KSA-F3, UK-F1 and USA-F1. KSA stands for Kingdom of Saudi Arabia. The Suffix F is for "Female." UK and USA are self-explanatory.

	KSA-F2	KSA-F3	UK-F1	USA-F1
Countries	KSA	KSA	UK	USA
Native Languages	Arabic	Arabic	English	English
Hours per week	8	8	6	6
Social Event 1	Hangout at work	Lunch/Dinner	University	University
Social Event 2	Office/Work	University	Weekly meeting	Weekly meeting
Social Event 3	Shopping	Shopping	Team potluck	Team potluck
Social Event 4	Phone calls	Phone calls		
Social Event 5	Meetings	Hangout		
Language(s) used	Arabic (mainly) / English (meetings)	Arabic (mainly) / English (with foreigners)	English	English

Table 1: KSA-F1's Interactional table

Arabic and English are the languages that KSA-F1 uses in communicating with members of her social network. All in all, she spends 28 hours a week interacting with people in her social network. Approximately, 57.14% of her interactional time is spent using Arabic, while in 42.85% of her interactions, she uses English. With her Saudi colleagues, she speaks Arabic, except during office meetings when she uses English. With the American and British members of her social network, interactions are only in English. The social network can be diagrammed as follows:
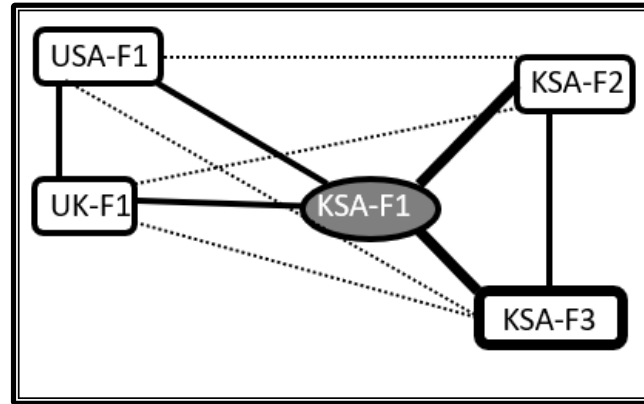
Figure 1: Social Network Diagram for KSA-F1

In social network terminology, it can be said that KSA-F1's network is intense because she spends 28 hours a week with the people in her network. Furthermore, her network is complex because she interacts with others in more than three distinct social contexts, as shown in Table 1. They are not only colleagues professionally, but also do things outside of school. This is more true of the Saudi members of the network than the expatriate members. The social events that bring them together revolve around work. This makes her linkage with them to be simplex because the interactions are limited to only the business of the university. The diagram also shows that her network is 80% dense. Two concluding observations can be made based on KSA-F1's social network analysis and its likely impact on her English proficiency. First, she spends 12 hours a week (42.85%) speaking only in English with USA-F1 and UK-F1. This gives KSA-F1 exposure to high quality input because USA-F1 and UK-F1 are native speakers of English. This likely has a positive impact on her speaking and listening abilities. Secondly, notwithstanding the quality input, her proficiency is likely to stagnate because her interactions are limited mostly to one social event, i.e., business related to the university.

4.0 Acoustic Phonetic Analysis of Vowel Intelligibility
We noted earlier that KSA-F1 has been receiving native speaker input since her early age because she has been watching cartoons in English. What has been the result of this early exposure on the intelligibility of her spoken English? Ordinarily, intelligibility assessment is based on human raters' opinion on whether an L2 speaker of English is intelligible or not. However, this approach is fraught with problems because of auditory illusion. Baken and Orlikoff (2000:1-2) are record as saying that "the ear is easily fooled." Consequently, Koffi (2019) has pioneered a methodology by which intelligibility is assessed by measuring the properties of the acoustic signals emitted from the mouth of the talker. This is the approach used here to assess the proficiency of KSA-F1's vowels. It is worth noting that, according to Fogerty and Humes (2012: 1490), "The acoustic information present during vowels is essential for speech intelligibility."

The participant was asked to read an augmented version of the Speech Accent Archive elicitation text. The vowels found in the highlighted words in the appendix were measured for F0, F1, F2, F3, F4, intensity, and duration. However, for this study, we focus on only F1 because, according to Ladefoged and Johnson (2015:207), F1 carries 80% of the acoustic energy in a vowel. The measurements obtained from Praat are found in Table 2:

Words		fleece	kiss	face	dress	trap	lot	thought	goat	foot	goose	strut
Vowels		[i]	[ɪ]	[e]*	[ɛ]	[æ]	[ɑ]	[ɔ]	[o]*	[ʊ]	[u]	[ʌ]
F1KSA	F1	440	468	468	505	859	639	469	542	459	435	686
F1KSA	F2	2354	1973	2403	2152	1761	1159	1115	1167	1401	1647	1335

Table 2: KSA-F1's F1 & F2 Measurements

The measurements obtained from KSA-F1's vowels allowed us to produce the acoustic vowel space in Figure 2:
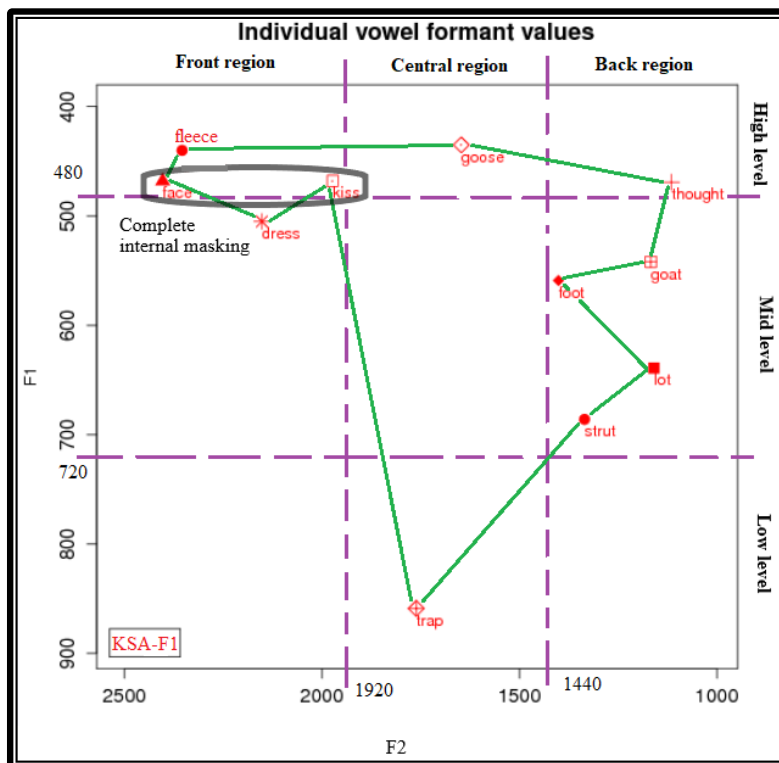

Figure 2: KSA-F1's Vowel Space

Two features of KSA-F1's pronunciation of English are striking. They both have to do with the amount of raising of the mid-vowels "dress" vowel [ɛ] and of the "thought" vowel [ɔ] in her accented English. A detailed account of other pronunciation patterns is discussed below.

4.2 Internal Masking Analysis

In acoustic phonetics, speech segments are said to mask each other if they overlap in acoustic space. Since the focus is on F1, we will concern ourselves only with masking on the F1 frequency band. Segments are said to mask each other if the acoustic distance between them is ≤ 60 Hz. However, in Koffi's framework, there are different levels of masking. Complete masking occurs if the acoustic distance between two speech segments is ≤ 20 Hz. Unintelligibility is absolute at this threshold. We see that in KSA-F1's pronunciation, the acoustic distance between the "kiss" vowel [ɪ] (468 Hz) and the "face" vowel [e] (468 Hz) is 0 Hz. Koffi (2019:82) notes that this is a common pronunciation challenge for Arabic speakers of English. This means that if

KSA-F1 produces the lexical minimal pairs "hit" and "hate," or "case" and "kiss," a GAE hearer may have a hard time knowing which is which. Furthermore, the Relative Functional Load (RFL) between these two vowels is at 80%, confusing [ɪ] and [e] can have a significant negative impact on intelligibility.

4.3 External Masking Analysis

Whereas internal masking deals with the speech signals as they are emitted by the speaker, external masking focuses on how the speech signals produced by him/her interact with the acoustic vowel space in the auditory system of the hearer. So, here the focus is how the English vowels produced by KSA-F1 compares with the acoustic vowel space GAE speakers. KSA-F1's vowels are compared with female speakers of GAE. The same Just Noticeable Difference (JND) of ≤ 20 Hz operates here too.
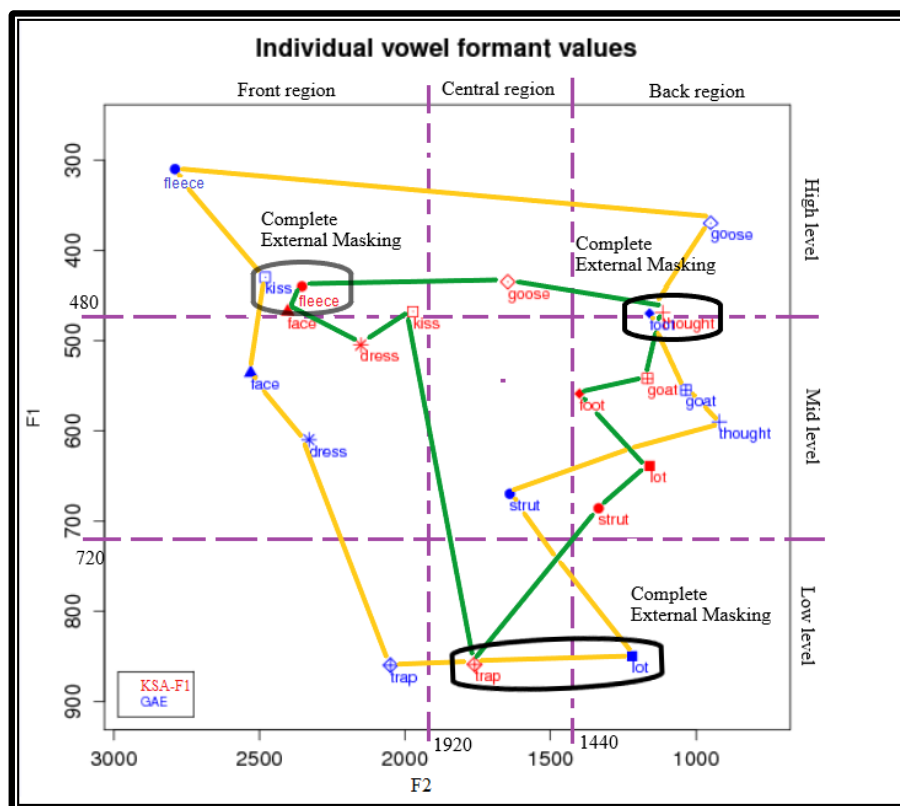

Figure 3: External Masking for KSA-F1

Three sets of vowels are problematic. First, KSA-F1's "fleece" vowel [i] (440 Hz) masks the "kiss" vowel [ɪ] (430 Hz) in GAE because the acoustic distance between them is only 10 Hz. This means that when KSA-F1 says "heat" vs. "hit" or "beat" vs. "bit," a GAE hearer may not notice any difference. Since the RFL between [i] and [ɪ] is 95%, confusing these two vowels can be detrimental to intelligibility. Another area of intelligibility concern is the "trap" vowel [æ] whose F1 in KSA-F1's pronunciation is (859 Hz). It overlaps with the "lot" vowel [ɑ] (850 Hz) in GAE. Complete masking occurs because the acoustic distance between the two vowels is only 9 Hz. Consequently, when KSA-F1 says "cap," it may be misperceived as "cop." This confusion can also play havoc on intelligibility because the RFL of the two vowels is 76%. Last but not least, KSA-F1 produced the "thought" vowel [ɔ] (496 Hz) in such a way that it masks the "foot' vowel

[ʊ] (470 Hz) with only 1 Hz difference between them. However, unlike the two previous cases of masking, confusion results only in marginal unintelligibility because the RFL between [ɔ] and [ʊ] is marginal, only 18%.

5.0 Conclusion

Several observations emerge from the study of KSA-F1's English. Even though she has not had the chance to study English in the USA, Australia, Canada, England, or New Zealand, the so-called Inner Circle countries, her childhood exposure to English kindled in her a strong desire to learn the language. This motivation (it is hard to say whether it was instrumental or integrative) has fueled her desire to know English well. It has propelled KSA-F1 to do well in English at all levels of her education. By every objective standard, KSA-F1 has succeed, academically, socially, and professionally. Not only is she overseeing 10 staff members while using English, but her team is in charge of a cohort of 250 students who are learning English. The Kingdom of Saudi Arabia should find ways to identify highly motivated people such as KSA-F1 and give them opportunities for additional training in Inner Circle countries. No doubt that she would take advantage of such an opportunity to improve the intelligibility her "kiss" [ɪ], her "trap" vowel [æ], and her "foot" vowel [ʊ].   Even without such an opportunity for an extended stay in an English speaking environment, studies such as this one should be conducted more broadly on teachers of English so that they become aware of particular pronunciation issues that may interfere with intelligibility. Preliminary versions of this paper was shared with KSA-F1. She was given an opportunity to be a joint co-author with us but she chose to remain anonymous.   We thank her for participating in our study. Now that her attention has been been drawn to these vowels, she can focus on improving her pronunciation by assessing resources available at websites such as English Club (https://www.englishclub.com/) which offer excellent pronunciation drills. She can also take advantage of her position as a supervisor of native speaker expatriates to broaden her interactional patterns with them.   She can also pay attention to USA-F1 and UK-F1's pronunciation of [ɪ, æ, ʊ] to see if she can perceive them accurately in running speech. If she follows these modest recommendations, she can turn their *i*+1 input into intelligible output.

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Appendix[2]

Note: The vowels in bold and capital letters are those that were measured acoustically in this study.

PlEAse call Stella. Ask her to bring these things wIth her from the store: Six gOOd spoons of fresh snow pEAs, five thick slabs of blUE cheese, and mAYbe a foot-long sandwich as a snack fOr her brother BOb. We also need a small plastic snake, the little yEllow bOOk, a rUbber dUck, and a paper I-pAd. She should not forget the dOg video game and the big toy frOg for the kIds. She must leave the fAked gun at home but she may bring the ten sea turtles, the mAt that my mom bOUght, and the black rUg. She can scOOp these things into three rEd bags and two Old backpacks. We will gO meet her, Sue, Jake, and Jenny Wednesday at the very last train station. The station is between the bus stop and the cOOkie store on Flag Street. We mUst mEEt there 12

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[2] This is an augmented version of the Speech Accent Archive text found at https://accent.gmu.edu/. The original text lacked the "foot" vowel [ʊ]. Furthermore, some segments had severely limited distributions. The expanded version remedies these insufficiencies.

O'clock, for sure. The entrance **I**s at the **E**dge of the z**OO** in Zone 4 under the zebra sign. York's Treasure Bank is the tall building in the l**E**ft c**O**rner. She cannot miss it.