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An Acoustic Account of Prosodic Competence through Shadowing

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Abstract

Adopting an acoustic framework, this experimental study elucidates the effect of the shadowing technique on the prosodic competence of learners of English whose L1 (Arabic) and English have quite dissimilar phonological systems. It appertains to prosodic aspects such as pauses, stress, and sound length that cause challenges to non-English native speakers. Two individuals of heterogeneous linguistic background participated in a pre-test and a post-test before and after five weeks of shadowing sessions. The data was analyzed acoustically using Praat Software. Findings showed that the participant with the elementary level outperformed the other participant whose level was intermediate, partially because the former was highly motivated to improve her English. The study concluded that shadowing per se is in no way a panacea for improving supra-segmental features unless it is coupled with a motivation to do so, regardless of the level of proficiency.

Keywords: Pauses, Pronunciation, Prosody, Shadowing, Supra-segmental Features

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Introduction

Learning a foreign language is more complicated than merely learning its grammatical rules. Learners are required to master numerous skills, among which are the phonological segments (isolated words and sentences) and supra-segments. The latter is also called prosodic signals that native speakers naturally use to make their speech meaningful and effective. Such aspects as voice setting, intonation, stress, tone, and rhyme add more information to speaker's words— information about age, gender, intention, and emotional state (Yang, 2016); without such features, language is presented in its segmented naked form. They are inseparable components of learning another language. The mispronunciation of such supra-segmental elements can affect the overall meaning of the intended speech (Haufe, 2012). Non-native speakers, however, face challenges when using such supra-segments, which are uneasy about attaining because they are basically acquired naturally rather than taught straightforwardly. As these phonological rudiments stumble L2 learners' speaking and dilute their pronunciation, researchers have tapped into techniques that facilitate acquiring such prosodic aspects with shadowing as a case in point (Hatasa et al., 2011; Hiramatsu, 2000; Rongna & Hayashi, 2012). It has become at the forefront of techniques that language educators adapt for pronunciation improvement in several contexts, and this endeavor falls into this research landscape.

Rationale

Arguably, supra-segmental features are better acquired naturally while interacting with native speakers of the target language (Yang, 2016). Despite the debated discussion on acceptance of the many growing World Englishes and the weakening status of native-speakerism, there is still a submission to the norms of a native speaker in English education entrenched all over the World (Alasmari et al., 2019; Hsieh et al., 2013). A great deal of researchers suggests that learners should live in an English-speaking country to master the prosody of the target language. Observably, learners who live and study in English-speaking countries are more cognizant of such phonological patterns than those with fewer or no opportunities to contact native speakers (Alasmari et al., 2019). However, researchers from several ESL and EFL contexts have come up with evidence accruing from experiments and case studies that shadowing fosters English pronunciation. Shadowing (also called mimicry) is a template-based method. It has been evidently significant for EFL learners to nurture their pronunciation skills using self-study exercises and imitate authentic English input (Hamada, 2016). Rongna and Hayashi (2012) postulated that practicing shadowing for about 10-30 minutes per day helps learners recognize the patterns that make up the sentences.

The current paper has pulled together the studies of phonological fluency that employed shadowing as a research method. The majority of such studies were conducted in the East Asian context involving learners from Japan, Taiwan, Indonesia and China (e.g., Hamada, 2018; Omar & Umehara, 2010; Manseur, 2015; Mishima, 2017; Hsieh et al., 2013; Hussain & Sajid, 2015; Zakeri, 2014; Haufe, 2012; Horiyama, 2012; Foote & McDonough, 2017; Hamada, 2018, Sumarsih, 2017). This body of research provided the impetus for the present study to look into the issue in a new yet relevant context: the Arab context. Previous studies generally show that shadowing, as a language learning technique, elevates students' English pronunciation. It helps to showcase patterns of the target language and motivation. In the Arab contexts, however, very little empirical shadowing research has been done on this topic; EFL programs prioritize segmental features of the target language and divorce the prosody from other aspects of the language. The dearth of research in this area makes this study of immediate and urgent need.

Departing from the results of prior research that shadowing promotes motivation, attitudes, self-study and enhances listening and speaking abilities, the present study sets out to solidify such prior findings. It brings in more evidence of shadowing effectiveness on prosodic aspects as it helps non-native learners of English acquire a better command of the sound system of English beyond word and sentence levels (Hamada, 2016, 2018; Haufe, 2012; Mishima, 2017; Sumiyoshi & Svetanant, 2017). It reviews in detail the available information and presents new and significant acoustic information about the topic. The significance of the present study lies in its role in raising learners and teachers' awareness of problems caused by inadequate prosodic control, which is infrequent and almost ignored in EFL programs provided to learners of English in the Arab context.

Objectives

The overriding aim of this paper is to improve learners' prosodic competence by enhancing their aural sensitivity to English prosody towards authentic or authentic-like competency. It mainly undertakes how Arab learners of English practice foreign prosody with a dogged focus on pauses, stress, and length of utterances that the Arab learners of English generally attain inadequately. It rests on shadowing as a supportive technique to develop such problematic areas of English phonological aspects.

Literature Review

What is shadowing?

Defined as a cognitive activity in which learners repeat the same utterances they are exposed to as clearly as possible, shadowing is theoretically a form-focused technique in which speakers copy a speech stimulus by repeating it. This technique is often promoted: learners are given a speech stimulus - usually a recording- to speak along with the stimulus, copying the speech as accurately as possible (Luo et al., 2008). However, it is not a straightforward technique. It is not simply repeating what learners hear but trying to talk simultaneously the same way in the native speaker's recordings.

Lambert (1992) viewed it as 'a paced, auditory tracking task which involves the immediate vocalization of auditorily presented stimuli" (p. 266). This parrot-style repetition technique was evident in the naturalistic teaching of L2, and the Direct Method relied heavily on imitating the native speakers' model. It has also been used in the interpretation field (Haufe, 2012; Hsieh et al., 2013) to train novice interpreters "how to listen and speak simultaneously...before attempting to interpret from one language into another" (Hamada, 2016, p. 360). This technique is generally categorized into complete shadowing, selective shadowing, and interactive shadowing. Some procedures, such as mumbling, synchronized reading, prosody shadowing, and content shadowing are also considered other types of shadowing. Other categorizations were proposed by some other authors, too. Whatever the taxonomy, shadowing is essentially an imitation of native speakers' discourse with the purpose to follow their patterns. It draws the learners' attention to the flow of sentences as uttered by a native speaker without wasting effort on short-term memory and text reading.

Advantages of Shadowing

Although it is time-consuming, shadowing is much easier than finding a native English-speaking partner to practice the target language. It helps students work on language skills weaknesses, which are not fully addressed in the communicative approach, such as "vocabulary, prosody, accuracy, critical thinking...and intercultural communication" (Hiramatsu, 2000, p.313). It allows students to develop pronunciation, especially supra-segmental elements, such as stress and intonation (Hiramatsu, 2000; Hsieh et al., 2013), self-monitoring, and overcoming anxiety. As such, it promotes maneuver and self-monitoring. In the view of other researchers (e.g., Rongna & Hayashi, 2012; Nye & Fowler,

2003), shadowing is an effective means of teaching pronunciation. Although it is a cognitively complex activity, it is best suited for students at the intermediate or advanced level (Hiramatsu, 2000). Accordingly, language instructors may utilize it to improve learners' foreign language skills. Not only can it help to improve pronunciation skills but also some other relevant skills such as reading skills and vocabulary.

Numerous studies, predominantly in East Asian contexts, disclosed the benefits of shadowing. For instance, Hsieh et al. (2013), Zakeri (2014) and Manseur (2015) conducted experimental studies to examine the effect of shadowing on oral skills. Hsieh et al. employed 14 non-English major students to ascertain whether the shadowing technique promotes English intonation, fluency, word pronunciation, and overall pronunciation acquisition. The participants attended an English course at the National Taiwan University (NTU), and they were divided into a control and experimental group. An 8-hour shadowing instruction session was conducted (experimental group). The pre-test and post-test results showed that the experimental group outperformed their counterparts (the control group); shadowing helped the participants adapt to the flow of English sentences. Zakeri (2014) problematized shadowing as an exercise (independent variable) to foster the learners' oral performance (dependent variable). The study investigated the effects of shadowing on the fluency of 40 learners of intermediate level. This cohort was divided into an experimental group (n=20) and a control group (n=20). In the study, the finding showed a strong relationship between shadowing and the participants' fluency. Manseur (2015) conducted a quasi-experiment to examine the role of shadowing on the speaking skills of 16 Algerian EFL students. The participants were assigned into two groups: experimental vs. control groups. The study was designed of six sessions, including pretest, treatment, and post-test stages. The pre-post tests were adopted from BBC learning English website. The results of the t-test paired two-sample for means and those of the questionnaire revealed that shadowing helps language learners to hone many aspects related to the target language as the most essential aspect that has been developed is their speaking skills.

In the same line of research, shadowing-based projects have been reported. Haufe (2012) investigated shadowing in EAP settings using a case study research design. The researcher focused on the participant's pronunciation of target phonemes segmental aspects of pronunciation that she consistently pronounced inaccurately during an initial diagnostic test and pre-interview (pronunciation of voiceless /th/ and word-final /s/). Although the findings showed that shadowing was not an effective way to help the participant overcome presentation anxiety, it was generally effective in improving her pronunciation. Similarly, Omar and Umehara (2010) applied the shadowing technique to overcome the difficulties pronouncing English of four retired Japanese adults residing in Malaysia. The technique was used to assess the improvement in the participants' spoken English after undergoing a shadowing rehearsal. The participants lacked English rhythms in their spoken English and had trouble communicating with English speakers in Malaysia. They had not attended any formal English course. This action research concluded that the participants' English pronunciation improved especially English rhythms. In a longitudinal study, Teeter (2017) explored MALL-based shadowing applications in Japan. The study extended over 12 weeks, during which 1001 students of different disciplines shadowed five tasks. The results exhibited that the respondents' motivation and attitudes improved more than those who shadowed less; there was either maintenance or gains in their English proficiency levels. Although these projects were short-term projects, the participants in those studies considered shadowing a potential technique and an effective exercise to boost their motivation to participate in class.

Drawbacks

Although shadowing is mooted as a valuable technique for improving oral skills, it is not devoid of downsides. For instance, it is a tiring exercise to be implemented in the

classroom. Previous shadowing research reveals no consensus on the required hours for making improvements after undergoing a shadowing rehearsal. However, in their study of shadowing to improve pitch and accent in English, Rongna and Hayashi (2012) asked their participants to shadow a text ten times in three sessions over eight weeks. Based on this model, the researchers asked the participant to shadow 20 times or ten times per week, resulting in better performance. Opponents of shadowing contend that shadowing is discouraging, especially for low-level learners (Hamada (2016). The author's contention stems from the difficulty of performing this task; weak learners may be affected by negative feelings (e.g., demotivation and lack of confidence). Sumiyoshi and Svetanant (2017) and Teeter (2017) argued that shadowing becomes less valuable without motivation because shadowing practice is fundamentally self-completed. Moreover, Hiramatsu (2000) voiced concern that shadowing is not a one-size-fits-all exercise. It is a complex and cognitively demanding activity. Therefore, it is more suitable for language learners with intermediate or advanced proficiency in the target language (Hiramatsu, 2000; Rongna & Hayashi, 2012). Additionally, emulating the words and phrases produced by a particular speaker rather than the meaning expressed is another drawback of shadowing (Mansuer, 2015). In the midst of growing acceptance of World Englishes, it is not easy to decide which script or text is a model of good English that a learner should shadow.

Although the previous studies provided anecdotal evidence on the usefulness of shadowing, most of them reported unavoidable limitations. Replicating such an investigation in relevant contexts would reinforce evidence of its valued effects on pronunciation. Besides, the scanty research on supra-segments and how to mitigate this phonological phenomenon that stands in the way of learners was quite tempting to conduct the present study. It examines the value of shadowing in treating those difficulties in an Arab context wherein L1 (Arabic) prosodic features are obviously attendant in Arab EFL learners' pronunciation. It reports the results of a case study in which self-study situations reduced confounding variables such as anxiety and shyness. It demonstrates how it is used and illuminates the limitations of the technique to put forward some suggestions. By illuminating findings of previous studies that employed shadowing as a research method, the present investigation affords students a beneficial technique to advocate their aural sensitivity, stimulate oral performance, and correct mispronunciation and speech intelligibility. It also provides insightful ideas for pedagogues and course designers in the given context to develop recordings for shadowing to be included in the EFL program.

Method

This study is a dual-participant case study. It adopted an acoustic framework for analyzing the participants' input in order to examine the improvement of their performance in supra-segmental skills after undergoing a 'shadowing' rehearsal.

Participants

Two Yemeni individuals were selected with reference to their English proficiency to investigate the contextual problems of the supra-segmental issue and, then, to examine whether shadowing suitability and practicality change across the process of English learning. They are refereed as Participant A (hereafter PA) and Participant B (hereafter PB) throughout the manuscript. PA attended an elementary class of English and PB attended an intermediate one. They voluntarily participated in the experiment with the motive to improve their English pronunciation in general. PA was more motivated to improve than the PB. Arabic is their first language (mother-tongue) and English is their foreign rather than second language.

Materials

There were two types of speech materials: controlled and experimental materials. The controlled material was an audio script taken from Emma's course (2016) for teaching non-native speakers of English (see Appendix A). The script contains 164 words in the form of nine sentences varied from short to long ones. A hard copy was prepared and submitted to the participants. The purpose of adopting these two types of materials was to investigate the shadowing effect on the participants' performances regarding knowledge of three supra-segments: pauses, stress, and length of an utterance. For this purpose, the following materials were employed:

- Two iPhone devices were used to record the scripts the participants shadowed throughout the course of the project.
- Two other iPhones were used for receiving the audio files.
- A computer for installing and then processing them inside it.
- Headphones (hoco, M58).
- Praat software (Boersma & Weenink, 2020) for analyzing them.
- MP4 to MP3 converter (Format factory, 3.3.4).
- Windows snipping tool for taking screenshots of the spectrograms.

Description of the Experiment

This case study was a five-week shadowing-based experiment, involving three stages: pre-shadowing, shadowing rehearsal, and post-shadowing.

Pre-Shadowing.

In the pre-shadowing stage, the pretest was administered by requesting the participants to produce the target text at their pace and convenience. Then, the shadowing techniques were introduced to the participants with the purpose to prepare them mentally and elevate their motivation. Following Krashen's (1985)

comprehensible input, the respondents were not required to do exercise or activities when they were not willing to do so. Therefore, the participants were encouraged to shadow the target material and, then, to report their shadowing every week to the researchers. Encouraging the participant at this stage was important in order to lower Krashen's affective filter (the complex of negative emotional and motivational factors that may interfere with the reception and processing of comprehensible input).

Shadowing Rehearsal

In shadowing rehearsal stage, there were five practical training sessions of shadowing in which the participants imitated the given prompt's realization which served as a reference of analysis. Each weekly-session took about 60-80 minutes depending on the participants' performance and understanding. At the end of each session, there was a training section for feedback. Then, the participants were requested, again, to work on the target recording carefully and they drilled it repeatedly. The actual practice of shadowing followed Jack's (2017) LRRCR technique that is made of five steps:

(a) listening to an English phrase,
(b) repeating the phrase and record your voice,
(c) comparing your version with the original,
(d) making any changes you need to make, and
(e) getting long-term repetition.

Each week, multiple recordings were made of the same material, and each participant chose recordings of her favorite to submit to the researchers. Throughout the project, a closer observation to the participants' progress was maintained to boost motivation.

Post-Shadowing

In the post-shadowing stage, the posttest was administered by requesting the participants to produce the target text. The participants' recordings were initially stored as electronic files. They were retrieved later to compare the improvement of the participants' achievements with the model. Getting the substance files from the participants, the gathered data was acoustically analysed by using Praat (Boersma & Weenink, 2020) software to investigate the participants' performance in respect of improvement. The findings were reported and discussed as follows.

Results & Discussion

The analysis queried pauses, stress, and length of an utterance to verify if such features make a noticeable contribution to pronunciation before and after shadowing technique. Therefore, the productions of the target text have been obtained before and after shadowing. In order to introduce the sizeable data, only the longest statement is cited here, as an example, to illustrate the differences in the participants' productions against that of the model. The other sentences are appended for further references (Appendix B).

Statement 5:

> *In my opinion, traveling overseas and to different countries makes us more accepting of each other's differences and teaches us respect for different cultures, traditions and beliefs.*

This excerpt is the fifth statement of the target text. Its waveforms and pitch counters (Fig. 1, 2, 3, 4, and 5) by the model, PA (before and after sessions) PB (before and after sessions) narrate the insightful significance of shadowing technique.

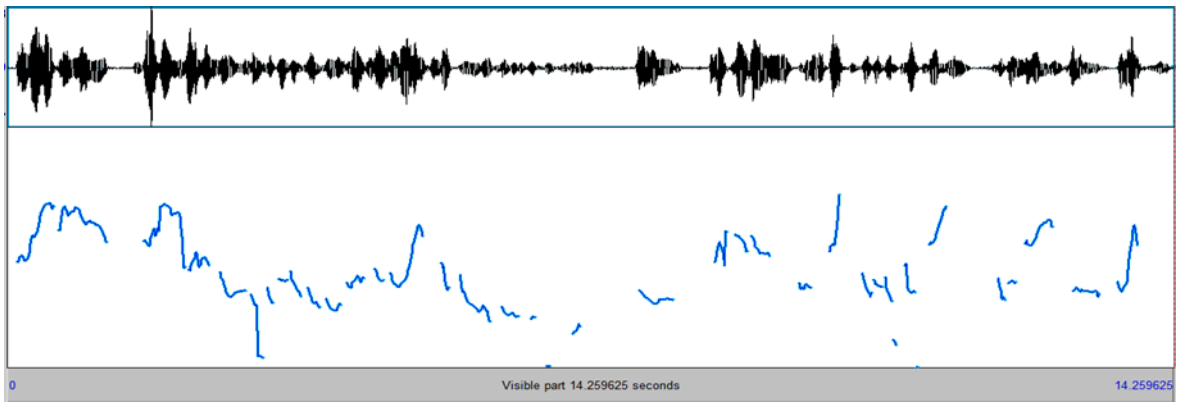

Figure 1: Waveforms and pitch counter of the fifth statement by the model

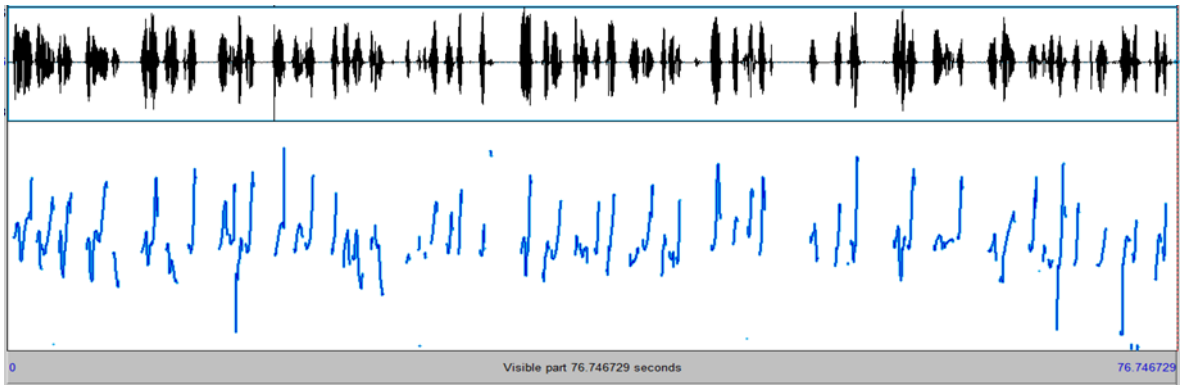

Figure 2: Waveforms and pitch counter of the fifth statement by PA before sessions.

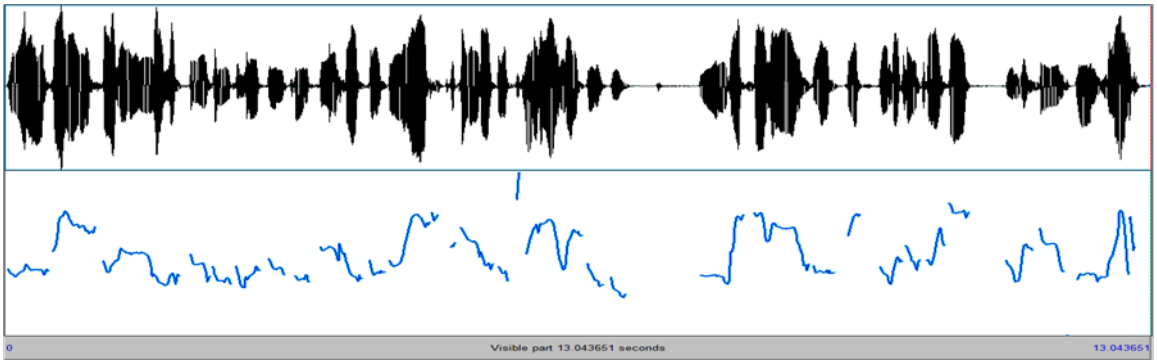

Figure 3: Waveforms and pitch counter of the fifth statement by PA after sessions

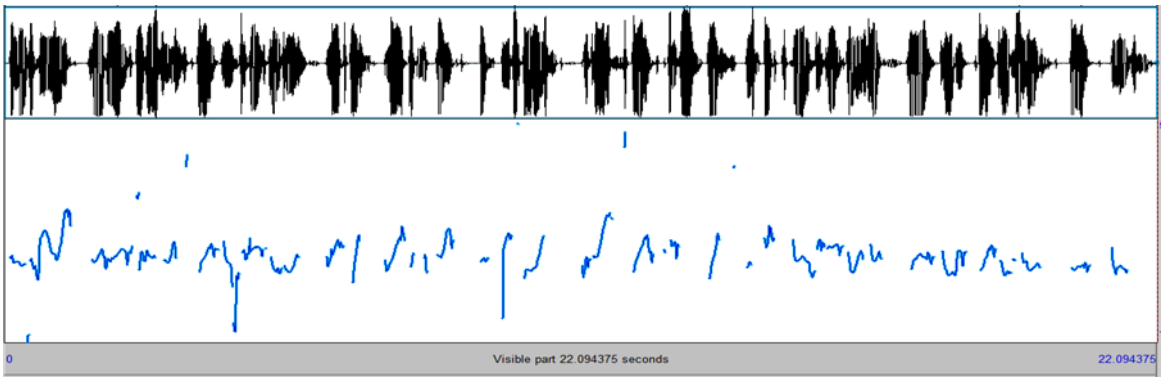

Figure 4: Waveforms and pitch counter of the fifth statement by PB before session

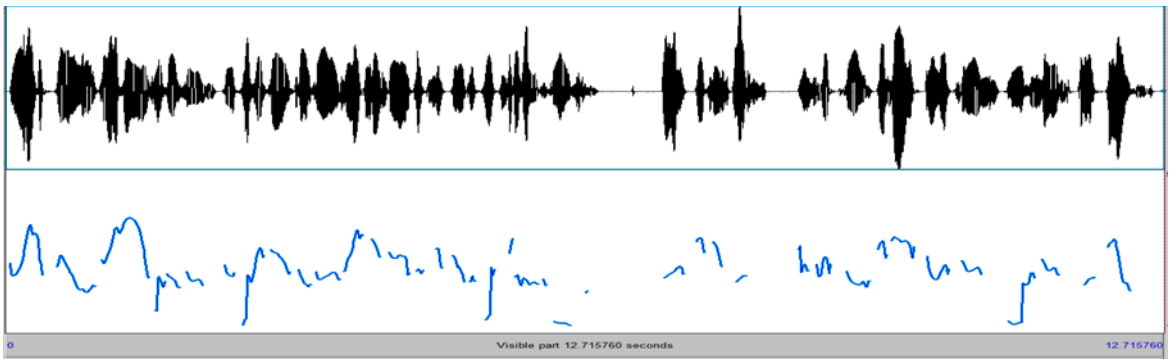

Figure 5: Waveforms and pitch counter of the fifth statement by PB after sessions

Given the production of the model and the participants, the obtained data before and after shadowing are discussed under three key changes: pauses, stress and length.

Pauses Changes

A pause is a significant element of supra-segmental phonology. Its importance is raised in forming intonation groups and making listening easier as in Figure 1. An intonation group is a single word or a sequence of words having a complete meaning (Ben Slama, 2017; Carr, 2008). The five Figures above are transcribed into Table 1 with reference to pauses. Slashes were used to indicate pauses regardless of pauses' duration.

Table 1. Pauses changes before and after shadowing

The Model	Participant	Before shadowing	After shadowing
"In my opinion/, traveling overseas and to different countries makes us more accepting of each other's differences /and / teaches us respect for different cultures, traditions and beliefs.	PA	In my/ opinin/ opin/ opini/ ion/, traveling/ over/seas /and to different/ cou/countries/ makes us more /us more/ acc/ acca/ting of/ each/ other's /diffren/differen/ces/diff/reces/ diffrences/ and /teaches us/ sep/spect /for different/cultures, tradi/tions, ditions /and beliefs/ beliefs.	"In my opinion, traveling overseas and to different countries makes us a more accepting of each other's differences /and teaches us respect for different cultures/, traditions and beliefs.
	PB	In my opinion/, traveling overseas and to different countries /makes us/ more accepting /of each other's/ differences and teaches us respect for different cultures/ and tradi traditionals/ and/ beliefs.	"In my opinion, traveling overseas and to a different countries makes us more accepting of each other's differences /and teaches us / respect for different cultures, traditions and beliefs.

Following Kormos and Denes (2004), Hilton (2008), Towell et al., (1996), Bulc et al., 2010 and Bosker, (2014) (as cited in Al-Ggazali & Alrefaee, 2019), natural pauses are less than 0.25 seconds. Accordingly, a pause of more than 0.25 seconds was considered as a pause that determined a boundary and helped the participants to identify an intonation group.

The model's pauses

Starting with the model, the data in Figure 1 and the first column in Table 1 indicates that the long sentence contains three pauses (0.31 seconds, 0.49

seconds, 0.27seconds, respectively) resulting in four harmonic groups of intonation:

a. a prepositional group: "in my opinion",
b. a compound subject and a phrasal verb: "traveling overseas and to different countries makes us more accepting of each other's differences",
c. a connecter: "and",
d. a phrasal verb: "teaches us respect for different cultures, traditions and beliefs".

This segmentation shows that pauses are conditioned by a syntactic issue. According to Freed (1995) (as cited in Al-Ggazali & Alrefaee, 2019), the syntactic location of pauses is considered to be a marker of fluent or non-fluent speech. The data visualization showed that two types of pauses were identified: i) silent pause as in the case of the first and the third intonation groups and ii) filled pause as in the case of the second intonation group. The latter refers to the pause that was filled by a week realization of the inhalation process. Importantly, these meaningful pauses made by the model contributed to attract the listener's attention and convey the intended meaning. The meaning of each intonation group was in agreement with the pervious and the following utterance and the whole context in general. The way the speaker organized the intonation groups showed that she was serious, high-minded and respectful of tradition.

Participant A's pauses

Figure 2 and Table 1 (the first box in column 3) introduce PA's performance of Sentence 5 before shadowing. They showed that the same sentence was subjected to several meaningless segmentations. Apparently, the pauses were 29 and each of them lasted more than 0.25 seconds. These unnaturally-frequent pauses were motivated by an attempt to find the correct pronunciation. They exposed unconscious awareness of the importance of the syntactic location of pauses producing nonharmonic groups of intonation. a) The realization of the prepositional phrase "in my/ opin/ opini/ ion/" showed heaviness of articulation due to its separation into meaningless parts. The silent pauses were created due to the hesitation, repetition and self-correction. b) The production of the second intonation group as "traveling/ over/seas /and to different/cou/countries/" seemed to be unnatural. The word "traveling" in the verbal phrase "traveling/ over/seas /", which represents a single idea, was separated from the compound noun "over/seas" which itself was divided into two parts as well. c) The phrasal verb "makes us more /us more/ acc/ acca/ting of/ each/ other's /diffren/differences/ diff/ rences/" showed another trouble of weakening both of the pronunciation and the target meaning. d) Although the connecter "and" as an intonation group was followed by a quick pause, it did not have the meaning of directing the listener to the coming point for emphasis. It had the meaning of thinking of what is next. e) Similar troubles appeared with the rest of the sentence. The pauses showed troubles in pronouncing words and in creating meaningless intonation groups. Thus, this poor reading and random pauses could be attributable to limited exposure to authentic English.

Figure 3 and Table 1 (the first box in column 4) introduce PA's performance of Sentence 5 after shadowing. They revealed that her performance was improved

noticeably. Although shadowing sessions helped the participant to proliferate word recognition and phonemic awareness, which was reflected in the fluent and effortless performance, evidence showed that there were still problems in copying pauses, their placement in relation to the phrases boundaries and their length. Two out of three pauses were made. However, one of them was misplaced: "and teaches us respect for different cultures/, traditions and beliefs". The length of the pause that rightly placed was 0.78 seconds that was longer than that one produced by the model. This supports the fact that the speech performance of non-native speakers is remarkable of the length of the pauses (Al-Ggazali & Alrefaee, 2019).

Participant B's pauses

Figure 4 and Table 1 (the second box in column 3) introduce PB's performance of Sentence 5 before shadowing. Although the participant seemed to have prior exposure to English, she did not know how to describe clearly the intonation of the context as in the given model. Seven pauses out of eight were misplaced, producing unusual segmentations of the intonation groups. a) For example, the thought "differences and teaches us respect for different cultures" is a juxtaposition of words that belong to three intonation groups in which "difference" is a part of the second intonation group, "and" stands as an intonation group by itself and "teach us" is a part of the last intonation group. b) The group "respect for different culture" was incomplete thought due to the misplacement of the pause. c) Finally, the phrase "traditions and/ beliefs" exposed inappropriate intonation groups as well. Such random grouping of words into thoughts failed to draw the listener's attention and to convey the intended intonation.

Figure 5 and Table 1 (the second box in column 4) introduce PB's performance of Sentence 5 after shadowing. Similar to PA after shadowing, shadowing sessions helped the participant to develop her awareness which was reflected in the fluent and effortless performance. However, evidence showed that there were still problems in copying pauses, their placement in relation to the phrases boundaries and their length. Focusing on the fifth sentence as an example, its production revealed two pauses only rather than three. However, one of them was placed inappropriately as in "and teaches us /respect for different cultures, traditions and beliefs." The length of the pause that rightly placed was 0.70 seconds which was longer than that one produced by the model.

Having investigated each pause and intonation group, the illustrations in Figures 3& 5 and Table 1 (the first and second boxes in column 4) showed that the participants managed to produce two intonation groups and failed to achieve the other two groups. Paying attention to the well performance of segmenting thoughts, the outcomes of this stage paves the way for focusing on stress in each intonation group.

Stress Changes

Stress is another key of supra-segmental elements. It has been indicated in the literature that each intonation group has at least one stressed syllable. Sometimes, it has two stressed syllables but one of them is more focused. Giving special attention to the appropriate intonation groups produced by participants in the present investigation, Table 2 introduces an analysis of stress before and after

shadowing. The words in bold have stress but the underlined words have focused stress in relation to the other words in the intonation group in the sentence.

Table 2. Stress Changes

Intonation groups (the model)	Speaker	Before shadowing		After shadowing	
		Stressed syllables	Focused syllable	Stressed syllables	Focused syllables
In **my** opinion	PA	-	-	opinion	opinion
	PB	opinion	opinion	opinion	opinion
traveling overseas and to different countries makes us **more** accepting of each other's differences	PA	-	-	more, others	others
	PB	-	-	traveling, **makes**	traveling
And	PA	and	and	-	-
	PB	-	-	-	-
teaches us respect for different cultures, traditions and beliefs.	PA	-	-	-	-
	PB	-	-		

According to Table 2, both participants had negative achievement before shadowing sessions. After shadowing, stress in the appropriate intonation groups was not copied successfully. The participants need to be involved in extensive practice to help them put stress on the syllables that carry the meaning of the intonation groups.

Length Changes

In addition to pauses and stress as shown in Figures 2, 3, 4, 5, the participants exhibited obvious length changes with reference to the model. Table 3 introduces the utterance length changes of both participants before and after shadowing. It also shows the model's length of the utterance under analysis as a controlled data.

Table 3 illustrates the participants' performance before and after shadowing at the word and sentence levels. Before shadowing, the performance of PA was longer than the model's and PB's because of her slow speech interrupted by silent pauses, pauses filled by inhalation breath, hesitation in producing words and repetition of syllables and words. On the other hand, the performance of PB was shorter than PA's performance but longer than the model's. Her length of the statement was resultant from the additional pauses and the repetition of [-tradi]. After engaging in shadowing technique with length awareness, both participants made positive achievements in respect of duration. However, they could not copy the exact model's length.

Table 3. Utterance length changes

Example		Participant	Length before shadowing	Length after shadowing
Sentence	In my opinion, traveling overseas and to different countries makes us more accepting of each other's differences and teaches us respect for different cultures, traditions and beliefs.	model	14.3 seconds	
		PA	76.74 seconds	13.04 seconds
		PB	22.09 seconds	12.71 seconds
Word	differences	model	0.8 seconds	
		PA	9.43 seconds	0.82 seconds
		PB	0.98 seconds	0.63 seconds

As supra-segmental factor has a significant impact on speaking and listening development, this study strengthens prior findings that shadowing enriches such rudiments that mark the model of a naive speaker. Inasmuch as the current study is concerned, the performance of the two participants was not identical. That is, before shadowing, *Participant A* did not show any prior exposure to English whereas *Participant B* showed prior exposure to English but still her intonation was perceived as heavy. This heaviness in Arab performance is described as "leaden, as it's rather heavy and non-musical" (Cook, n.d., p. 206). It is to be noted that shadowing earmarked with speech but speech is not wholly imitative. Speakers used their own speech habits or language knowledge in shadowing as well.

Regardless of variation of their English level, both participants achieved close performances. This could be attributable to the motivation of each one of them. Shadowing with awareness of pauses, stress, and length increased the participants' motivation to copy, to some extent, the supra-segmental features in the text under scrutiny This is somehow at odds with some previous studies which recommended shadowing for students of an intermediate and advanced levels but not for low level learners (Hiramatsu, 2000; Rongna & Hayashi, 2012). This indicates that motivation is all what matters. In the experiment, PA whose level was an elementary was more motivated than PB (intermediate) to shadow the given texts. This is arguably because she wanted to advance her English by improving her pronunciation. Without motivation, shadowing becomes less useful because it is fundamentally self-completed (Sumiyoshi & Svetanant 2017; Teeter, 2017).

Implications

It is implicated that shadowing improves learners' pronunciation regardless of their proficiency level. It is beneficial for students' oral skills which contribute to the development of foreign language acquisition. When deciding whether or not to include shadowing activities in EFL/ESL courses, teachers consider the needs of the students to improve their overall language proficiency or further develop specific areas of weakness. Many YouTube video clips on shadowing are available for this purpose; see Steve Kaufmann (2011), Les Perras (2009), Emma (2016) and Jack (2017), among others.

In underprivileged contexts, shadowing is a technique that language teachers and researchers should consider as one-on-one phonetic exercise of teaching pronunciation to extend exposure to authentic English even beyond the classroom and juxtapose the formal and informal language learning. Nevertheless, it is difficult to perform better supra-segmental features in a single session of shadowing if it is the only class activity. Increasing the amount of shadowing practice in one lesson or a training course brings about a change in pronunciation that likely aligns with the native speaker's model. Although nativespeakerism is increasingly losing advocates, using the native speaker's model is still used as a good reference when discussing such language patterns as the supra-segments. It is also implicated that for a better understanding, other shadowing-based activities might include songs, unlike the present study that used a short text to shadow. It sounds boring to repeat the same short text every now and then, but educators would vary their shadowing exercises to make it more enjoyable. Shadowing would be more effective when it is used in combination with other activities such as reading comprehension and vocabulary.

Conclusion

The study essentially capitalizes on pronunciation teaching as is underrepresented in the context in question. The endeavour departed from prior research findings in the East Asian contexts which adopted shadowing to improve listening and speaking skills. To replicate the study in an Arab context, the present case study has undertaken, through an acoustic framework, the effects of shadowing on supra-segmental elements. It specifically examined pauses, stress, and length of an utterance as these three aspects make a noticeable contribution to speaking and listening skills. Although the findings confirm prior research findings in that shadowing is invaluable to improve pronunciation skills, it is not a linear process; it requires time and effort that only passionate learners of the target language would make expected progress. Given the time and conditions of the experiment at hand, some limitations are acknowledgeable. The experiments would have yielded more extended results if a third participant of an advanced level would have been included to testify the magnitude of difference in performance across level of proficiency (elementary, intermediate and advanced). Besides, the study could not establish a correlation between shadowing and anxiety reduction. Perhaps, these shortcomings would make venues for future researchers.

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We (the authors of this paper) hereby declare that research ethics and citing principles have been considered in all the stages of this paper. We take full responsibility for the content of the paper in case of dispute.

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References

Al-Ghazali, A. & Alrefaee, Y. (2019). Silent pauses in the speech of Yemeni EFL learners. *ELS Journal on Interdisciplinary Studies in Humanities, 2*(1), 39-48. https://doi.org/10.34050/els-jish.v2i1.6142

Alasmari, M., Alkadi, A. & Ahmed, R. (2019). Techniques to enhance learning of suprasegmental features. A proceeding of Kentucky Teachers of English to Speakers of Other Languages 2019 Conference. October, 4-5, Kentucky, USA.

Ben Slama, N. (2017). Musahamat anmatt at-tanghim fi tanthim albunyatu al-akhbaryah (The contribution of intonation patterns in organizing the information structure). *The Annual of Tunisian University, 62* (113-144). Faculty of Letters, Arts and Humanities, University of Manouba, Tunisia.

Boersma, P. & Weenink, D. (2020). Praat: doing phonetics by computer [Computer program]. Available on http://www.praat.org/

Carr, P. (2008). *A Glossary of phonology*. Edinburgh: Edinburgh University Press.

Cook, A. (n.d.). *American accent training. A guide to speaking and pronouncing American English for everyone who speaks English as a second language* (3rd ed.). Barron's.

Emma (2016). Speak English clearly! The imitation technique. Available on YouTube https://www.youtube.com/watch?v=T91p6pTPpSY

Foote, J. & McDonough, K. (2017). Using shadowing with mobile technology to improve L2 pronunciation. *Journal of Second Language Pronunciation, 3*(1), 34 –56.

Hamada, Y. (2016). Shadowing: Who benefits and how? Uncovering a booming EFL teaching technique for listening comprehension. *Language Teaching Research, 20*(1) 35–52.

Hamada, Y. (2018). Shadowing: What is it? How to use it. Where will it go? *RELC Journal*. 003368821877138.

Haufe, H. (2012). *Case study of shadowing as a means of helping EAP students to prepare for oral presentations: Effects on pronunciation and anxiety* (MA thesis). School of Linguistics and Language Studies, Carleton University.

Hiramatsu, S. (2000). A differentiated/integrated approach to shadowing and repeating. Retrieved from: cur-ren.cjc.ac.jp/detail/587201002220829 33?l=en

Hsieh, K-T. , Dong, D-A. , & Wang, L-Y (2013). A preliminary study of applying shadowing technique to English intonation instruction. *Taiwan Journal of Linguistics*, 11, 43-66.

Horiyama, A. (2012). The development of English language skills through shadowing exercises. *Journal of Bunkyo Gakuin University of Foreign Studies, Bunkyo Gakuin Junior College, 12*, 113-123.

Hussain, S. & Sajid, S. (2015). Applications of suprasegmental in EFL classroom: A short review. *International Journal of Scientific and Research Publications, 5,* 9.

Jack (2017). Shadowing: Can this method help you speak English fluently? Available on https://www.youtube.com/watch?v=KHmfinXxu5c

Kaufmann, S. (2011). Shadowing technique. Available on https://www.youtube.com/watch?v=3IvByB_NWQc

Krashen, S. (1985). *The input hypothesis: Issues and implications*. New York: Longman

Lambert, S. (1992). Shadowing. *Meta, 37*(2), 263–273.

Les Perras (2009). Shadowing. Available on https://www.youtube.com/watch?v=UOgsXKI_z8c

Luo, D., Shimomura, N., Minematsu, N., Yamauchi, Y., & Hirose, K. (2008). Automatic pronunciation evaluation of language learners' utterances generated through shadowing. *Interspeech*, 2807–2810.

Manseur, R. (2015). *Exploring the role of shadowing in the development of EFL learners' speaking skill: A case study of third year students of English at Mohamed Kheider University of Biskra* (Unpublished doctoral dissertation). Mohamed Kheider University of Biskra, Algeria.

Mishima, M. (2017). The impact of a computer-mediated shadowing activity on ESL speaking skill development: A pilot study. *L2 Journal, 9*(1), 21-35

Nye, P. W. & Fowler, C.A. (2003). Shadowing latency and imitation: The effect of familiarity with the phonetic patterning of English. *Journal of Phonetics 31*, 63-79

Omar, H., & Umehara, U. (2010). Using a shadowing technique to improve English pronunciation deficient adult Japanese learners: An action research on expatriate Japanese adult learners. *Journal of Asia TEFL*, *7*(2), 199-230.

Rongna, A. & Hayashi, R. (2012). Accuracy of Japanese pitch accent rises during and after shadowing training. *Proceedings from 6th International Conference on Speech Prosody*, Shanghai, Tongji University Press: Shanghai, China, 2012; pp. 143–146

Sumarsih, S. (2017). The impact of shadowing technique on tertiary EFL learners' listening skill achievements. *International Journal of English Linguistics. 7*, 184. 10.5539/ijel.v7n5p184.

Sumiyoshi, H. & Svetanant, C. (2017). Motivation and attitude towards shadowing: Learners' perspectives in Japanese as a foreign language. *Asian-Pacific Journal of Second and Foreign Language Education*, 2(160, 2-21. Doi 10.1186/s40862-017-0039-6

Teeter, J. L. (2017). Improving motivation to learn English in Japan with a self-study shadowing application. *Languages*, *2*, 19.

Yang, L. (2016). Optimizing pronunciation and prosody teaching in second language learning. ISAPh 2016 International Symposium on Applied Phonetics, 25-28 March 2016, Nagoya, Japan.

Zakeri, E. (2014). The effect of shadowing on EFL learners' oral performance in terms of fluency. *International Journal of English Language Teaching, 2*(1), 21-26.

Appendix A
Shadowing Script

1) I love to travel to different countries. 2) I love meeting new people and tasting different foods. 3) To date, I think I have visited about twenty-two different countries but there are so many more places on my list. 4) Almost every person that I know, who has a decent income, does some sort of travel every year, usually overseas, to a different country. 5) In my opinion, traveling overseas and to different countries makes us more accepting of each other's differences and teaches us respect for different cultures, traditions and beliefs. 6) It also helps me to tell some pretty interesting stories about my adventures. 7) I love talking to people about places they've visited and things that they have seen in the world. 8) I think it's because I can easily relate to them and it's easy for me to share my stories and experiences with them. 9) Plus, I love getting recommendations about places to visit. It helps me to plan where my next holiday is going to be.

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