UNIVERSITI PUTRA MALAYSIA

EFFECTS OF SYSTEMATIC EXPOSURE TO FOREIGN ACCENTED SPEECH ON SPEECH INTELLIGIBILITY PERCEIVED BY LIBYAN EFL LEARNERS

DALAL ALFADHIL ATTAHER SALHEEN

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By

DALAL ALFADHIL ATTAHER SALHEEN

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

June 2020

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DEDICATION

TO **THE SOUL OF MY BELOVED FATHER**, THE PERSON WHO MADE ME WHAT I AM TODAY.

TO **MY BELOVED MOTHER**, THE PERSON WHO KEPT SUPPORTING AND MOTIVATING ME UNTIL ALL MY EDUCATIONAL AMBITION BECAME A REALITY.

TO **THE SOUL OF MY HUSBAND**, THE ONE WHO WAS ALWAYS SUPPORTIVE TO ME AND BELIEVED IN MY DREAMS.

TO MY BELOVED CHILDREN **NADA**, **SHADHA** AND **MALIK** URGING THEM TO BE MUCH BETTER THAN WHAT I AM.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

EFFECTS OF SYSTEMATIC EXPOSURE TO FOREIGN ACCENTED SPEECH ON SPEECH INTELLIGIBILITY PERCEIVED BY LIBYAN EFL LEARNERS

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DALAL ALFADHIL ATTAHER SALHEEN

June 2020

Chairman : Associate Professor Yap Ngee Thai, PhD
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With the ever-increasing population of non-native speakers (NNSs) of English around the globe to the extent of exceeding the population of native speakers, encountering foreign-accented speech (FAS) has become frequent and inevitable. Numerous studies have indicated that FAS presents challenges for accurate and efficient speech communication due to reduction in speech intelligibility. However, empirical studies have shown that perceptual accuracy of accented speech can be improved by adequate exposure such as perceptual training. A body of research on auditory perception has demonstrated generalization of adaptation to FAS within shared-language background groups and also within different language background groups; however, many of these studies utilized native speakers of English as evaluators of the degree of intelligibility. Little attention has been paid to speech intelligibility among diverse groups of non-native speakers of English. Therefore, this study attempts to determine the degree of intelligibility of FAS to a group of non-native speakers of English using native and non-native speaker models as effecting variables to non-native speakers of English. It also seeks to assess the perceptual learning and benefits of systematic exposure to FAS through training. A training phase of 10 training sessions was conducted involving exposure to a variety of "sentence-level" accented English produced by a number of speakers from Malaysia, and native speakers of English from the U.S.A. The naïve Libyan EFL learners who were randomly selected served as listeners; they were divided into three groups according to the type of exposure. A single foreign accent (SFA) group listened to only Malay speakers of English; a multi-foreign accent (MFA) group listened to Malaysian speakers of English; i.e., Malays and Malaysians of Indian and Chinese descents and a no foreign-accent (NFA) group served as a control group whose listeners were exposed to speech from native English speakers. The Bench-Kowal-Bamford (BKB) standard sentences lists were used as the stimuli for the transcription tasks (tests and training materials). Speech samples were recorded in a quiet room using PRAAT (Boersma & Weenick, 2016; version 6.0.19), and presented

to listeners in a phonetics laboratory. Data collection was conducted in three stages: (1) Pretest, which was given before training (2) Post-test A and (3) Post-test B. Both post-tests were administrated immediately after the 10 training sessions. Using SPSS (Version 22) and Microsoft Excel (2013), the data was descriptively and inferentially analysed. On average, the results revealed that the majority of Libyan EFL learners found difficulty in perceiving the Malaysian English variety. However, the results revealed that perceptual training was significantly efficient in improving intelligibility of FAS. Among the three types of training/ exposure, training with multiple foreign accents was the method with the most significant effectiveness to facilitate perception or to enhance intelligibility when exposed to unfamiliar FAS. Overall, the study concluded that a brief exposure to multiple accented speakers descending from different language backgrounds was sufficient to facilitate perception as it implies improvement in speech intelligibility, and it also attenuates initial perceptual difficulty when exposed to other unfamiliar foreign accented speech.

Key words: Accented Speech, Libyan EFL Learners, Malaysian English, Perceptual Learning, Speech Intelligibility, Speech Perception.

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KESAN PENDEDAHAN SISTEMATIK AKSEN BAHASA ASING TERHADAP KEBOLEHFAHAMAN UJARAN PELAJAR LIBYA MEMPELAJARI BAHASA INGGERIS SEBAGAI BAHASA KEDUA

Oleh

DALAL ALFADHIL ATTAHER SALHEEN

Jun 2020

Pengerusi : Profesor Madya Yap Ngee Thai, PhD
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Berikutan peningkatan populasi penduduk penutur bukan jati bahasa Inggeris (*non-native English speaker - NNS*) yang kian melebihi populasi penutur jati di seluruh dunia, pertemuan dengan penutur berloghat asing (*foreign-accented speech - FAS*) merupakan suatu perkara yang sering berlaku dan tidak dapat dielakkan. Pelbagai kajian telah menunjukkan bahawa *FAS* memberikan cabaran kepada ucapan komunikasi yang tepat dan cekap akibat dari kecerdasan pertuturan yang kurang. Namun begitu, kajian empirikal menunjukkan bahawa ketepatan persepsi loghat ucapan boleh diperbaiki melalui pendedahan yang mencukupi seperti latihan persepsi. Sebuah badan penyelidikan terhadap persepsi auditori menunjukkan penyesuaian generalisasi kepada *FAS* dalam kumpulan - kumpulan yang berkongsi latar belakang bahasa yang sama dan juga dalam kumpulan - kumpulan yang mempunyai latar belakang bahasa yang berlainan. Walau bagaimanapun, kebanyakkan kajian terdahulu menggunakan penutur jati bahasa Inggeris sebagai penilai kepada tahap kecerdasan ucapan. Sedikit tumpuan terhadap kecerdasan pertuturan hanya diberikan kepada kalangan kumpulan penutur bukan jati bahasa Inggeris yang pelbagai. Oleh itu, kajian ini cuba untuk menentukan tahap kecerdasan *FAS* kepada kumpulan penutur bukan jati bahasa Inggeris yang berbeza dengan menggunakan model penutur jati dan bukan jati yang mempengaruhi pembolehubah kepada penutur bukan jati bahasa Inggeris. Kajian ini juga bertujuan untuk mengakses persepsi pembelajaran dan faedah pendedahan sistematik kepada *FAS* melalui latihan. Sebuah fasa melibatkan 10 sesi latihan telah dijalankan yang meliputi pendedahan kepada pelbagai "peringkat-ayat" berloghat bahasa Inggeris yang diucapkan oleh sejumlah penutur dari Malaysia dan penutur jati Bahasa Inggeris dari Amerika Syarikat. Pelajar penutur bahasa Inggeris sebagai bahasa asing dari Libya yang dipilih secara rawak, telah dibahagikan kepada tiga kumpulan. Mereka juga bertanggungjawab sebagai pendengar, bergantung kepada jenis pendedahan. Kumpulan pertama merupakan kumpulan loghat asing (*single foreign accent - SFA*) dan hanya diperdengarkan kepada ucapan daripada

penutur Melayu berbahasa Inggeris. Kumpulan kedua pula merupakan kumpulan pelbagai loghat asing (*multi-foreign accent - MFA*) hanya diperdengarkan kepada ucapan daripada penutur bahasa Inggeris Malaysia, sebagai contoh; Melayu dan warga Malaysia berbangsa India dan Cina. Manakala kumpulan terakhir merupakan kumpulan penutur tidak berloghat asing (*no foreign-accent - NFA*) yang dikelaskan sebagai kumpulan kawalan hanya diperdengarkan kepada ucapan daripada penutur jati bahasa Inggeris. Senarai ayat-ayat standard Bench-Kowal-Bamford (*BKB*) digunakan sebagai rangsangan untuk tugasan transkripsi (ujian dan bahan latihan). Sampel ucapan direkodkan di dalam bilik yang senyap menggunakan *PRAAT* (Boersma & Weenick, 2016; versi 6.0.19), dan disampaikan kepada pendengar didalam makmal fonetik. Pengumpulan data dilakukan melalui tiga peringkat: (1) Ujian pra-kajian, ujian yang diberikan sebelum latihan (2) Ujian-pasca kajian-A dan (3) Ujian-pasca kajian-B, yang kedua - duanya diberikan sejurus setelah selesai menjalani 10 sesi latihan. Dengan menggunakan *SPSS* (Versi 22) selain daripada perisian *Microsoft Excel* (2013), data tersebut dianalisis secara deskriptif dan inferens. Umumnya, hasilnya kajian mendapati bahawa majoriti pelajar penutur bahasa asing dari Libya mengahadapi kesukaran untuk menerima variasi bahasa Inggeris Malaysia berikutan tahap kecerdasan yang rendah. Namun begitu, keputusan kajian menunjukkan bahawa latihan persepsi sangat memberi kesan dalam meningkatkan kecerdasan dan persepsi ucapan. Di antara ketiga - tiga jenis latihan / pendedahan yang dijalankan, latihan dengan pelbagai loghat asing merupakan kaedah dengan yang paling berkesanan untuk membimbing persepsi atau untuk meningkatkan kecerdasan seseorang apabila didedahkan kepada FAS yang asing. Secara keseluruhannya, kajian ini merumuskan bahawa, pendedahan yang ringkas kepada penutur pelbagai loghat yang mempunyai latar belakang Bahasa yang berbeza boleh membimbing persepsi kerana ia menunjukkan peningkatan bukan sahaja dalam kecerdasan ucapan, malah ia juga mampu melemahkan kesukaran persepsi awal apabila didedahkan kepada ucapan berloghat asing yang asing.

Kata kunci: Ucapan Berloghat, Pelajar Penutur Bahasa Inggeris Libya, Bahasa Inggeris Malaysia, Pembelajaran Persepsi, Kecerdasan Ucapan, Persepsi Ucapan

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DALAL A. A. SALHEEN

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L1	First Language
L2	Second Language
EFL	English as a Foreign Language
ELF	English as a Lingua Franca
ELLs	English Language Learners
ENSs	English Native Speakers
NNLs	Non-Native Listeners
NNSs	Non-Native Speakers
TL	Target Language
NL	Native Language
FAS	Foreign Accented Speech
NFA	No-Foreign Accent
SFA	Single Foreign Accent
MFA	Multi-Foreign Accent
ME	Malaysian English
BM	Bahasa Melayu
SPSS	Statistical Package for the Social Sciences
ANOVA	Analysis of Variances
BKB	The Bench-Kowal-Bamford standard sentences list

CHAPTER 1

THE PROBLEM AND ITS BACKGROUND

1.1 Introduction

This chapter presents the background of the study and the statement of the research problem. It also outlines the research objectives, the research questions, and a set of hypotheses on which hinges the entire study. In addition, the theoretical and conceptual frameworks are delineated. The last section of the chapter clarifies the key terms and concepts that are frequently referred to in the study.

1.2 Background of the Study

As an international language, English has attained a crucial role in the context of international interaction (Sneddon, 2003). Thus far, the population of English language learners (ELLs) has been rapidly increasing, and it remarkably outnumbers the native speakers' population (Crystal, 2003). Compared to the native English speakers (NESs) with about 375 million people, there are about 750 million people who speak English as their second language (L2). In addition, English is used in up to 70 countries with an official or special status (Reddy, Mahavidyalaya & Hyderabad, 2016). This new status of the English language has recently made it assume different roles and functions among different nations (Crystal, 1997; Graddol, 1997; Jenkins, 2007; Kirkpatrick, 2007). In particular, the widespread use of English as a lingua franca (ELF) opens the door for inevitable interactions among its speakers, which is mostly happening between the non-native speakers of English (See Figure 1.1). As a result, speakers from different first language (L1) backgrounds, and with different levels of competence, will necessarily communicate with very different accents (Beinhoff, 2014).

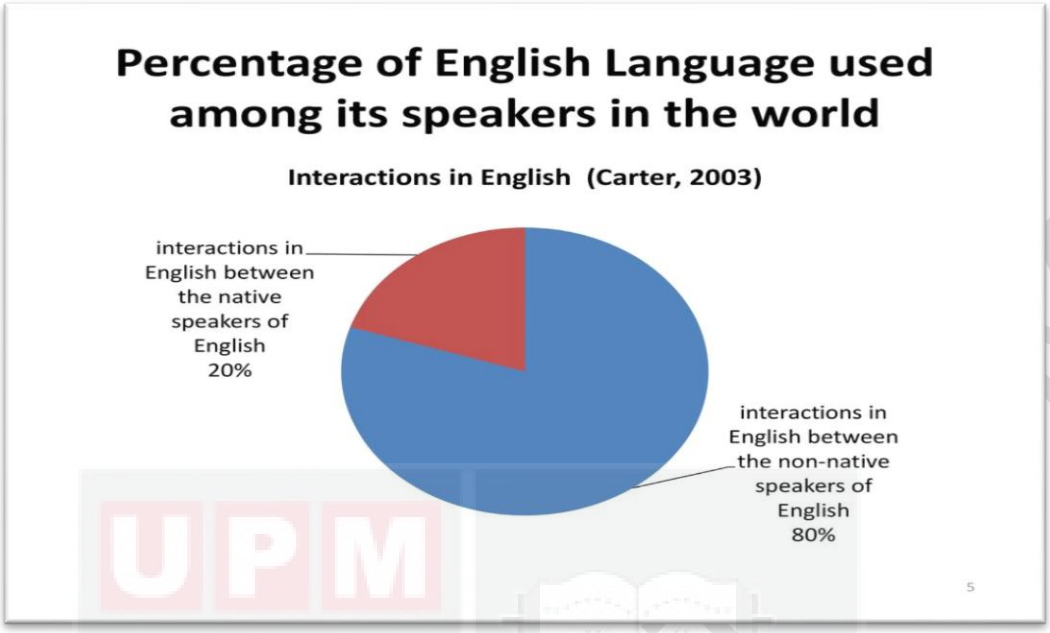


Figure 1.1 : Percentage of English Language used among its Speakers from Ddeubel, (2018)

English can be a difficult language to learn, as it is not a purely phonetic language — words are not necessarily pronounced the way they are written (Gebhardt, 2010; Womack, 1957). As English pronunciation lacks a one-to-one relationship with the writing system (Schmied, 1991), pronunciation is considered quite difficult to learn (Gilakjani & Ahmadi, 2011). Therefore, ELLs typically resort to listening to native English materials in a native English accent to enhance their communication skills. It does not matter which English — British, American, Canadian or Australian — they listen to, as long as the language is native to those people who are the speaking models (Jenkins, 2000). However, this way of learning might be a double-edged sword, especially as the number of NNSs exceeds the NESs' number, and also the possibility of having one-to-one communication with native speakers of English is becoming difficult for many non-native speakers of English (Mahboob, 2014; Majanen, 2008; Mauranen, 2009; Van Splunder, 2013). That is, the probability of having to speak with NNSs is rather high (Cristia et al., 2012). Hence, being limited to one speaking model of English (particularly listening to only natives) has become a non-realistic phenomenon.

Within the ELF context, ELLs will be positively presented with a diverse variety of non-native speech; the speech that diverges from native speech. However, the distinction is not inconsistent; it is shaped by the essential differences within the language background of L2 learners. Learners are likely to recall the phonological properties of the sound system of their L1 while perceiving their L2 (Barreiro Bilbao, 2002). Flege, Schirru, and MacKay (2003) stated that non-native speech features mostly arise from the interaction of the phonological structures of both, L1 and L2.

Accordingly, L2 speech production is created within the frame of L1 background, resulting in what is acknowledged as 'accented speech' (Escudero, 2005).

However, perceiving foreign accented speech (FAS), which is spoken within the mother tongue system, is quite different from the native speech (Escudero, 2001) and such a diversity makes the communication more challenging. As Weil (2003) pointed out, FAS is among the different types of speech that degrade speech intelligibility. Inaccurate pronunciation can hinder communication (Van Wijngaarden, 2000). Researchers argue that good pronunciation still conveys a clear message even with errors in other areas, while bad pronunciation does influence communication even if there is a good level of grammar (e.g., Gilakjani, 2012). As pronunciation is considered one of the toughest aspects of L2 acquisition to master (e.g., Flege, Munro, & Mackay, 1995; Munro, Flege & Mackay, 1996), a huge number of NNSs may never achieve a native-like accent. Thus, many NNSs of English will need to accommodate various English speakers who are recognized as having a foreign accent.

Foreign accent is an increasingly researched phenomenon, but it still remains an interesting area of empirical investigation among researchers. Munro (2005) indicated the effect of this phenomenon on both speakers and listeners. He referred to it as the most complex aspect of language because it affects communication in terms of perception and production as well as in social interaction. Linguistics has essentially concentrated on the intelligibility aspect of FAS (e.g., Bradlow & Bent, 2008; Derwing & Munro, 1997; Munro & Derwing, 1995a; Van Wijngaarden, 2001), and how native listeners recognize other speakers of L2 by perceiving their accents (e.g., Flege, 1984). Even though a foreign accent is certainly not always destructive to communication, its impact is often obstructive (Podlipský, Šimáčková & Petráž, 2016). For this reason, much research has been conducted to find out the factors affecting its degree, such as the beginning of L2 acquisition, the quality of L2 learning and the quantity of time spent on it as well as the frequent usage of the L1 (Piske, MacKay & Flege, 2001).

1.3 English in the Research Context

The following sub-sections deal with English backgrounds spoken in both countries, Libya and Malaysia. This would provide a better understanding of the nature of the study, as well as more insight on the research implications.

1.3.1 English in Libya

Libya is an Arabic country. It is located in North Africa where it shares its borders with Egypt, Tunisia, Algeria, and Sudan (See Figure 1.2). It has a population of about 6.5 million where most of the population is clustered at the north side of Libya. Concerning language, Agnaia (1996) stated that Libya is a bi-lingual country, with two spoken languages: Arabic and Berber. People who use Berber are a minority, and they live primarily in two cities: Zuwara and Yefren. Arabic is the only official language in Libya and is also used in the educational system. However, the Arabic

language that is used officially differs in dialects spoken around Libya. This variance becomes obvious when children enter school, and they find the standard Arabic used in school is unlike their everyday dialect.

Figure 1.2 : Map of Africa with Libya Pointed out

With respect to the English language, this foreign language has been taught in Libyan schools since the year 1954. At that time, Libyan learners were exposed to English at the early age of 10 in primary schools until they complete secondary schools. In 1969, the focus on teaching standard Arabic resulted in less interest in learning English. The lack of interest was caused by the fact that English was considered as the language of colonialism and imperialism. Consequently, the usage of English was forbidden everywhere other than in high schools and university curriculums until the year 1986. That was when the political power changed the history of English in Libya. Unfortunately, from 1986 to 1996 the English language was banned from schools, and all the English resources were burned. But after a while, the negative effects of this decision became clear. Most of the students who had not studied subjects in English in their primary and secondary schools lacked the knowledge and ability in their professional fields of studies. When the decision was recanted, several steps were made to clean up that mistake, and serious initiatives were established. Later, due to several developments in sectors such as tourism, the demand for English began to increase. English is now offered to early primary-level students around the age of nine. Now, all students would have had at least ten years of exposure to English as a school subject by the time they finish secondary school (Imssalem, 2002).

Currently, most Libyans have a high interest in learning English, and their attitude to English has changed generally. Most Libyans have become aware that English has become a dominant language for different walks of life worldwide. The majority of Libyans thus focus on learning English. Special recognition is given to those who speak English fluently and besides that, an individual who speaks English is considered more educated (Bagigni, 2016).

1.3.2 English in Malaysia

Malaysia, a country located in the Southeast Asia (See Figure 1.3), is a unique multi-ethnic and multilingual nation comprising about 32 million people. There are three main ethnic groups representing the population of Malaysia. The majority, about 68.8% of the total population, are Malays and other Bumiputeras who are Malaysians of indigenous origin, while 23.2% are Malaysians of Chinese ancestry, and 7% are Malaysians of Indian descent, and 1% are others (Population & Housing Census, 2017). With regard to their language profile, since 1967, Bahasa Malaysia has been used as the national language, and it has been used to unify the ethnically and culturally different sectors of society (Muslim, 2013).

Figure 1.3 : Malaysia Location on the World Map

However, English has been used as the official language before independence. During colonial times, English was the language of government, commerce, and administration (Subramaniam, 2007). The knowledge of English was very important, especially in education, for Malaysians in developing their careers and for social mobility (Omar, 1992). Moreover, it was the language of power — but this situation changed after independence. Benson (1990) stated that English lost its powerful

position in both administration and education. Instead, Bahasa Melayu (BM) started to be used, with the major goal of uniting all Malaysians. However, English became the second language, which is used in the fields of science and technology, while BM achieved the status of being the major language of Malaysia.

Malaysia can generally be regarded as a diglossic or polygossic country. The country is richly multilingual (Platt & Weber, 1980). English is spoken among the various ethnic nations of Malaysia. The various languages of the Malaysian people (Bahasa Melayu, Tamil and Chinese) influenced the English language and resulted in many variations under the name of Malaysian English (ME). Consequently, ME was recognized among the new Englishes with multiple non-native varieties. (Ahmad Mahir & Silahudin Jarjis, 2007). Thus, the nature of English spoken in Malaysia is different. As Pillai (2014) states, ME not only includes a collection of sub-varieties (Gaudart, 2000), but it is also spoken with a mass of accents representing ethnicity and geography. Rajadurai indicates in his 2007 study that ME is labelled as a "nativised variety" (Morais, 2001; Nair-Venugopal, 2001) because it has so many varieties that show "localized linguistic identity" (Kachru, 1986).

In this study, there are different goals and objectives. With regards to the specific variety of English, that is, the Malaysian English variety here, the study is guided with the goal of examining whether the exposure to Malaysian English would facilitate accent-independent adaptation to FAS. More specifically, would training with Malaysian accented English enable Libyan EFL learners to generalize to novel speakers from a novel language background (novel accent) or just to novel speakers form Malaysia? In their study, Baese-Berk, Bradlow and Wright (2013) demonstrated that being accent-independent is possible in the case of exposure to systematic variation (multiple speakers with different foreign accents) for native speakers. As stated earlier in this section, Malaysian English is spoken with different accents representing different ethnicities, but it is still considered one variety under the name of Malaysian English (Nair, 2017).

However, the current study aims to investigate whether the Malaysian English variety would help Libyan EFL learners to generalize their learning to novel speakers from Malaysia only, or can it scaffold their perception/enhance the intelligibility of the perceived FAS and support them to generalize to a novel speaker from a novel accent? More specifically, which perceptual knowledge would be developed; speaker-independent adaptation or accent-independent adaptation? Finding an answer to such an argument would help to give a peculiarity for the Malaysian English variety.

1.4 Statement of the Problem

In the modern globalized world, the ability to communicate effectively with individuals from different language backgrounds and different cultures is considered an asset (Kitapci, 2016). Today, more than half of the world's population is becoming at least bilingual, and in some cases multilingual. Substantially, English has

accomplished the position of being a lingua franca over the other languages spoken by those bilinguals and multilinguals. The high interest in learning English that has helped to increase the number of non-natives over the native population indicates that there is a higher possibility of interaction between NNS of English with other NNS of English. In such NNS-NNS interactions, English is used by many people from a diverse range of ethnic and linguistic backgrounds (Grosjean, 2010).

As argued by Mahboob (2014), it may be important to examine the different varieties of foreign-accented English which has evolved in the world today, as with each new variation of accent, new potential obstructions to perception may occur and may require further investigation (Jaber & Hussein, 2011). Speech intelligibility is among the potential barriers associated with accentedness. Beinhoff (2014) states that intelligibility and accentedness are widely acknowledged to be key issues in accent perception as intelligibility in speech is found to be graded poorly if the speaker is a non-native speaker for a given language, where it greatly contributes to speech communication (Van Wijngaarden, 2000). In addition, researchers have affirmed the significance of intelligibility as a vital component in international communication (Rooy, 2009), where interactions among nations is inevitable at the global level.

Speech perception, as Sutrisno explained (2018), is processing and interpreting spoken data. The process is not as simple as that, however, because data interpretation and understanding are not instantaneous. First, the acoustic speech signals must be presented to the listener in a recognizable format – a language they can understand at some level. Data of acoustic speech signals is initially processed and interpreted by the listener as soon as the information is presented. Next, the speech sounds are identified in two forms, segmental and supra-segmental. Simultaneously, the listener's cognitive domain automatically stimulates multiple levels of knowledge (i.e., background knowledge, knowledge of the context, and knowledge of the language) in order to be able to interpret the speech sounds into meaningful context and content. Thus, the completed/ accomplished interpretation is extracted from the received acoustic speech signals. Any failure of this extraction implies a breakdown of the process of perception in some portion of the process, which results in a malfunction of communication. So, the process can either end up with a successful 'loading' or failed 'buffering'. One of the steps in the process that has the potential to inhibit communication is the initial presentation of the acoustic speech signals – if those signals are in some way unclear to the listener, such as speaker accent, communication can be hampered or rendered impossible.

Studies have shown that FAS is not perceived in the same way as the speech of English native speakers (Baese-Berk et al., 2013; Bradlow & Bent, 2003; Clopper & Pisoni, 2004). A challenging aspect of FAS perception is that each speaker is a descendant from a different language background, and this directly affects the production of the speech sounds and it also affects listeners' sensitivity to the segmental properties of speech that differ from one accent to another (Sidaras, Alexander & Nygaard, 2009). Scholars have put effort in order to solve such a problem (e.g., Baese-Berk et al., 2013;

Bradlow & Bent, 2003; Clarke, 2000; Weil, 2001), and they have demonstrated positive results.

Studies have shown that native speakers could improve their perception of FAS after a short-term exposure to accented speech. Training with accented speech has shown positive result on accent perception, whereby native speakers have become more accurate in perceiving FAS while participating in foreign-accented training (Bradlow & Bent, 2003; Clarke, 2000; Weil, 2001). In a study by Clarke and Garrett (2004), native English speakers were exposed to English sentences produced by either a native or a Spanish speaker of English in a probe word matching task. The results revealed that the English native listeners were primarily better in responding to the speech of their fellow's 'native speech' rather than to the Spanish-accented speech, but later on they showed competence with the Spanish accented speech after a brief exposure.

However, the majority of the work addressing speech perception has been done utilizing the framework of native speech. Despite the fact that this is a sensible technique, FAS is actively involved more than ever due to the expanding enthusiasm for learning foreign languages and worldwide mobility. With respect to the native-speakers' norms, non-native speech should now be considered worthy (Romero-Rivas, Martin & Costa, 2015). Much awareness has been increasingly raised by applied linguists regarding the diversity of English and its ever-changing usage among speakers who come from different L1 backgrounds (Sung, 2016). In particular, there is frequent invitation to transfer from a monolingual standard focusing on one model speaker towards a multilingual standard so as to achieve a competent skill of communication within the multilingual context (Canagarajah, 2006; Jenkins, 2007). That is, instead of highlighting native-like diversity of English expressions as a requirement, ELF specialists argue that it is necessary for L2 learners to adjust their speech so as to be quite intelligible to other speakers within a wide range of lingua-cultural backgrounds (Jenkins, 2007; Walker, 2010). More precisely, researchers propose that attaining universal intelligibility should be prioritized to achieving a native sound like accent for successful international communication (Jenkins, 2000, 2007; Levis, 2005; Walker, 2010).

Arabic speakers can be considered a special case in perceiving other accents as they belong to the expanding circle (Kachru, 1985); an EFL area where competency accomplishment in English is always a challenge. Generalization about accent perception is only valid if non-native English users within the outer and expanding circles of English are also investigated; however, there are very few studies that have looked in this direction (e.g., Bello, 2019). Particularly, Libyan EFL learners, who are within the expanding circle, are not found in the literature. Therefore, this research intends to examine how Libyan EFL learners perceive a non-native variety of English, the Malaysian variety of English.

1.5 Purpose and Objectives of the Study

This study sets out to achieve the following objectives:

1. To find out to what extent the English produced by Malaysians from various ethnic backgrounds is perceptually intelligible to Libyan EFL learners.
2. To determine the significant differences in intelligibility test scores of Libyan EFL learners before and after the perceptual training.
3. To determine the significant difference in intelligibility test scores of the group trained with the multiple foreign accent (MFA); the Malaysian English variety on their perception of the Malaysian English before and after the perceptual training
4. To examine which Malaysian-English sample (whether Malay Speakers of English, or Malaysian-Indian speakers of English, or Malaysian-Chinese speakers of English) is more intelligible to Libyan EFL learners in both tests.
5. To examine what training condition/type of exposure will enable Libyan EFL learners to perceive unfamiliar FAS better; that is, to enhance speech intelligibility resulting in perception that is more accurate.

1.6 Research Questions

The purpose of this study is to answer the following questions:

RQ1. To what extent is the English produced by Malaysians from various ethnic backgrounds perceptually intelligible to Libyan EFL learners?

- **RQ2.** Is there any significant difference in intelligibility test scores of Libyan EFL learners before and after the perceptual training?
- **RQ3.** Is there a significant difference in intelligibility test scores of the group trained with the multiple foreign accent (MFA); the Malaysian English variety on their perception of the Malaysian English before and after the perceptual training?
- **RQ4.** Which Malaysian-English sample (whether Malay Speakers of English, or Malaysian-Indian speakers of English, or Malaysian-Chinese speakers of English) is more intelligible to Libyan EFL learners in both tests?
- **RQ5.** What training condition/type of exposure will enable Libyan EFL learners to perceive unfamiliar FAS better; that is, to enhance speech intelligibility resulting in perception that is more accurate?

1.7 Research Hypotheses

Each Inferential question stated above is linked to an identified research hypothesis that is aimed to be tested. The following are the proposed hypotheses:

- **H_{01}.** There is no significant difference in intelligibility test scores of the Libyan EFL learners before and after the perceptual training (Pretest and Post-test A scores)?
- **H_{02}**. There is no significant difference in intelligibility test scores of the MFA group on their perception of the English before and after the perceptual training (Pretest and Post-test A scores).
- **H_{03}.** There is no statistically significant difference between the intelligibility of Malay speakers of English (to Libyan EFL learners) and the other two samples (Malaysian-Chinese and Malaysian-Indian speakers of English) in both tests before and after the training.
- **H_{04a}**. Training with a non-foreign accent (native accent) does not have a transferable significant effect on the Libyan EFL learners on the perception of unfamiliar FAS (in Post-test B).
- **H_{04b}**. Training with a single foreign accent does not have a transferable significant effect on the Libyan EFL learners on the perception of unfamiliar FAS (in Post-test B).
- **H_{04c}.** Training with a multi-foreign accent does not have a transferable significant effect on the Libyan EFL learners on the perception of unfamiliar FAS (in Post-test B).

1.8 Theoretical Framework of the Study

As the present study examines the effects of training to FAS on speech intelligibility and accent perception, the researcher adopts the Exemplar Theory (Johnson, 1997; Pierrehumbert, 2001) and the Contextual Tuning Theory (Magnuson & Nusbaum, 2007; Nusbaum & Henly, 1992; Nusbaum & Magnuson, 1997; Nusbaum & Morin, 1992) as the framework of this study. Within the ELF context, ELLs may encounter difficulty in perceiving speech of other non-native speakers of English due to its lower degree of intelligibility (Van Wijngaarden, 2001; Williams & Escudero, 2014). Accent perception is significantly influenced by speech intelligibility (Beinhoff, 2014). The present study intends to enhance learners' perception as well as to boost the perceived speech intelligibility within the NNS-NNS context. The study has reviewed the most related studies as it has implemented the core insights of the Exemplar Theory which proposes the suitable practice to enhance speech perception of non-native speakers of English, and also the Contextual Tuning Theory which explains how non-native listeners attend to speech cues in the presence of speaker variability.

According to the Exemplar Theory, listeners should not encounter any struggles while perceiving speech produced by various speakers. Listeners are categorizing the speaker-specific information while encoding each exemplar in the lexicon (More details about the theory found in Chapter 2). Consequently, when being exposed to speech from a specific speaker, activation of the speaker's category occurs along with the assigned phonetic category (Boomershine, 2006). Therefore, and based on the assumption of the Exemplar Theory, Libyan EFL learners who are trained in the Malaysian English variety will perform better in their Post-test A (the test that is recoded with the Malaysian English variety) compared to their performance in the

Pretest. From another point of view, the exposure to Malaysian English is expected to improve Libyan EFL learners' perception, which translates into intelligibility. In particular, it has been postulated that Libyan EFL learners will be able to perceive the subsequent exposure to Malaysian English after 10 training sessions (as explained in Section 3.7.1) as the exemplars get activated and respond accordingly in the perception task.

With respect to the present study, the Contextual Tuning Theory would predict the perceptual benefits of systematic exposure to FAS among Libyan EFL learners. The Contextual Tuning Theory does not give a strong prediction on how the process occurs, but it proposes that listeners selectively attend to different cues in the presence of speaker variability, and then they are expected to show improvement in their speech perception of FAS (See Chapter 2). In particular, it has been postulated that Libyan EFL learners will be able to perceive the subsequent exposure of unfamiliar FAS due to the multiple exposure (multi-foreign accent training) represented in the multi-variety of English, the Malaysian English.

Based on the discussion raised in this section, the Exemplar Theory will be basically adopted in most of the analysis of data obtained in this study. The Contextual Tuning Theory will be also used to account for only the results of the results of the Post-test B (the test that is recoded with the Iranian English variety) as it is basically a tuning perception model. Figure 1. 4 illustrates the theories adopted in this study.

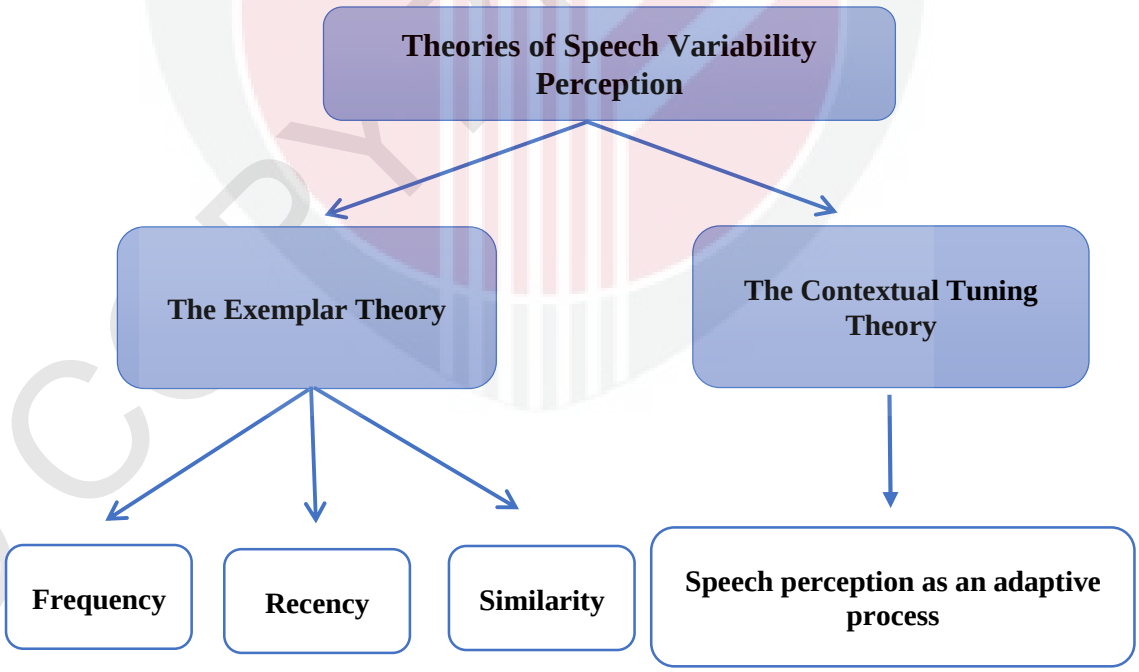
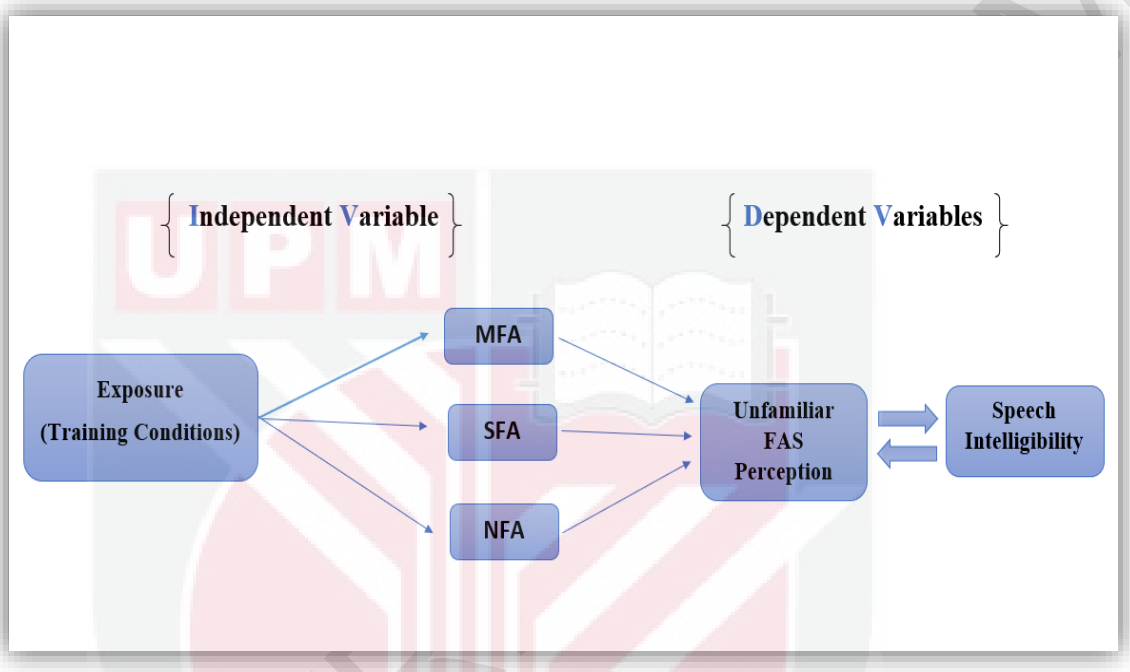


Figure 1.4 : Theoretical Framework of the Study

1.9 Conceptual Framework

This study focuses on the effect of systematic exposure to FAS on speech intelligibility and as well as on speech perception. As shown in Figure 1.5, different training conditions have been presented (Exposure to Native Accent/ NFA, exposure to only Single Foreign Accent/ SFA, or exposure to Multiple Foreign accents/ MFA) in order to examine the hypotheses of the study.



***NFA: No-Foreign Accent (Native British Accent), SFA: Single Foreign Accent (Malay English Accent), MFA: Multi-Foreign Accent (Malays and Malaysians of Indian and Chinese descents)**

Figure 1.5 : The Conceptual Framework of the Study

According to the two theories employed here, and also based on the study conducted by Baese-Berk et al., (2013), Libyan EFL learners, who will be trained under the MFA training conditions, are expected to succeed in alleviating the initial perceptual difficulty when exposed to the unfamiliar FAS (The speech recorded by Iranian speakers of English is not included in any of the training conditions). Unlike their initial performance when exposed to the unfamiliar FAS (The Malaysian accented English) in the Pretest, it is expected that the Libyan EFL learners would do better in Post-test A after they have gone through training. However, the other two groups of Libyan learners, who will be trained under the SFA and the NFA training conditions, are not expected to exceed the performance of group under the MFA training conditions. But it is expected that those group of Libyan EFL learners, who will be trained under the SFA training conditions, would also perform better than the group that has been trained under the NFA group conditions. Their performance would be measured through their perception with reference to the intelligibility scale. The more they accurately perceive the speech, the more it indicates that the speech is intelligible, and vice is versa.

1.10 Significance of the Study

As this research focuses on investigating the intelligibility level of the perceived speech among NNSs of English, its importance stems from a lack of such a topic in the literature. Research on the effect of systematic exposure to FAS on the speech intelligibility contributes to the fields of both linguistics and hearing science. This study would suggest directions for systematized training that has been shown to scaffold and help to make communication more efficient by improving the level of intelligibility (Derwing, Rossiter & Munro, 2002). The findings of the study that identify the factors influencing the best practices for better "tuning in" for NNS-NNS interactions offer privileged insights into the methods used by the human language perception device to cope with variability (Floccia et al., 2006).

Therefore, this research provides a substantial contribution to the existing literature. The findings of such a study can be of great value to non-native speakers of English especially since the population of NNSs is currently getting larger while having a conversation with English native speakers is not a realistic chance thereof. In particular, the current study has an immediate relevance to Libyan ESL learners as Malaysia is considered as one of the most popular study destinations for many Libyans. As the effects of training with multiple speakers of different accented varieties on target speech recognition can be modulated by language experience and by training experience, models of speech perception that aim to accommodate and explain the various distortions of speech signals that listeners encounter in everyday speech perception, therefore, must take such interactions into account. Further, the needs of populations with foreign accents would be better considered more when there is a clear understanding of the linguistic factors involving NNSs.

In addition, the findings of the study contribute to the general knowledge in the field of speech perception so as to serve as reference material accounting for the ongoing attention directed at considering multilingual patterns compared to monolingual ones (Canagarajah, 2006; Jenkins, 2007). Furthermore, the training study provides insights into parameters of auditory training that may be useful for improving speech understanding. This research, therefore, advances the understanding of the everyday problem of speech perception in encountering unfamiliar foreign accented speakers and contributes valuable information for the development of speech intelligibility testing and training programmes. In particular, the major contribution of this research is worthwhile for curriculum designers who need to take into account the variety of Englishes that emerges in the world today when constructing learning resources.

1.11 Definition of Key Terms

Foreign Accented Speech (FAS): This term indicates whatever English is spoken by those whose native language is not English. Del Puerto, Lacabex and Lecumberri defined this term as "The term 'foreign accent' (FA) is used to refer to the pronunciation of a language that shows deviations from native norms" (2007, p. 1). In

this study, the term refers to the English spoken by Malaysians, Iranians, and Nigerians.

Malaysian English (ME): Malaysian English in this study refers to the postulation that "the English language in Malaysia has developed to become a typical progeny of New Englishes: a distinct variety in its own right" (Baskaran, 2005, p. 18). It is spoken by the three ethnic Malaysian groups (Malays, Malaysian-Chinese, and Malaysian-Indians) (Talif & Hie, 1994).

Speech intelligibility: This term is used in this study as the main variable, which is defined as "the extent to which the native speaker understands the intended message" (Munro & Derwing, 1995a, 1995b). In this study, the term is meant to indicate the extent to which Libyan EFL learners accurately perceive the intended speech; percentage of words recognized of both variety: Malaysian English and Iranian English by Libyan EFL learners.

Perceptual learning: This term refers to the process by which the ability to respond is improved through experience (Borrie, McAuliffe & Liss, 2012). Precisely, Goldenstone (1998) defined perceptual learning of speech as "relatively long-lasting changes to an organism's perceptual system that improves its ability to respond to its environment and are caused by this environment" (p. 585). In this study, perceptual learning refers to the improvement in speech perception of Malaysian English (Post-test A) after the training session is conducted. From another point of view, perceptual learning indicates the improvement of speech intelligibility of Malaysian English that enable Libyan EFL learners to become more accurate in their perception.

Accent-Independent: This term has been used by Baese-Berk et al. (2013) to refer to the perceptual benefit that learners could achieve, resulting from their exposure to multiple variety of FAS, and consequently help them to alleviate their initial difficulty when exposed to unfamiliar FAS. That is, the leverage they require in order to accomplish 'accent-independent learning'. In this study, accent-independent refers to the perceptual accuracy in perceiving untrained accent (Iranian) by Libyan EFL learners on the speech perception task (Post-test B).

No-Foreign Accent (NFA): This term has been used by Baese-Berk et al. (2013) to refer to the groups that are involved in the kind of training with native accent. In this study, no-foreign accent is meant to make reference to the group that is involved in training with Native speakers of American English.

Single-Foreign Accent (SFA): Baese-Berk et al. (2013) also used this term to indicate the training that is conducted by involving speakers of one language background. Specifically, in this study, this has been meant to refer to the type of training that was recorded by only Malay speakers of English.

Multi-Foreign Accent (MFA): However, Baese-Berk et al. (2013) used this term to refer to the training type which involves different speakers from divergent language backgrounds. In particular, Malaysian speakers of English including Malays, Malaysian Chinese, and Malaysian Indians are the speakers of this type of training.

Novel Speakers: Baese-Berk et al. (2013) used the term 'Novel speakers' to refer to those whose voices were not familiar to the listeners in previous tasks. Similarly, the researcher used the term to allude to those speakers who have not been involved in previous tasks throughout the study.

1.12 The Structure of the Study

This thesis is composed of five chapters that are organized in this way. The first chapter of the study includes an introduction that gives an overview of the background of the study, the research questions accompanied with their hypotheses, the research objectives, the theoretical framework of the study and the conceptual one as well. The second chapter is a literature review that summarizes different articles and empirical studies relating to the topic of FAS perception and adaptation with adult EFL learners. The third chapter which is the methodology chapter, explains how the study was carried out to answer the research questions and test the hypotheses formulated for the study.

In addition, this chapter contains the pilot study report; the study that was conducted beforehand to check the thesis' method validity before conducting the actual study. In the fourth chapter, results of the study are presented. Data are analysed carefully with reference to each research question and its accompanied hypothesis. In particular, the chapter gives a clear picture on how participants responded to the experiment. At the end of tis chapter, there is a discussion on the analysis comparing the current study results with previous results in similar and related topics. At the end, a conclusion chapter is drawn to wrap up the problem of the study, and suggestions put forward for future studies.

1.13 Summary

In this chapter, the background of the research was introduced, and the research problem was clearly stated. The chapter also presented the research questions and the objectives of the study. Moreover, the chapter clarified both the scope and the significance of the present study, ending with defining the important key terms used in the study.

What follows is the literature review chapter that informs the basis of this study. It provides information about the new status of English, literary perspective on speech intelligibility, factors affecting speech intelligibility, foreign accent and L1 influence,

speech intelligibility measurement methods, empirical studies for perceptual learning, and the adaptation to foreign accented speech section.

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Dalal Alfadhil Attaher Salheen was born in Bani-waleed, city in Libya. She had her primary and secondary education in her hometown and graduated from the Secondary School in the year of 1999. She obtained her bachelor's degree in English Language from the University of Bani-Walid in 2004. Dalal was ranked as number one student on that year; 2004, so that she was given a scholarship to the U.S.A. to further her education. She obtained her master's degree in TESOL from the University of Colorado, Denver in 2011.

Dalal has worked as a lecturer in the Department of English Language, Faculty of Art-University of Azzytuna from 2011 till 2015. She has taught several topics for undergraduate students, among them Phonetics and Phonology, Linguistics, Language skills and Translation. She worked in different positions: the chairperson of department of examination and studies, the chairperson of the selection committee of scholarship students, to name but a few. She supervised different groups of students in different area of studies in their graduation projects.

She began her PhD study in February 2016 in the field of English Language at the Faculty of Modern Languages and Communication, Universiti Putra Malaysia. In August 2018, she attended the International Conference MICOLLAC; she presented and submitted a shared paper with the honorable supervisory committee members of her PhD dissertation. Dalal is very passionate in her area of study, and optimistic about succeeding in her present study and to expand her interest in FAS perception and speech intelligibility enrichment.

PUBLICATIONS

Salheen, D. A. A., Yap, N. T., Mohamad Ali, A., & Nimehchisalem, V. (2019). Perceptual learning of systematic variation in Malaysian English among Libyan EFL learners. *Journal of Language and Communication (JLC)*, *6*(1), 57-68.

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Conferences

6th FLL Postgraduate Research Conference Held at Faculty of Languages and Linguistics, University Malaya, Malaysia.

10th Malaysian International Conference on Languages, Literature and Cultures (MICOLLAC), Held at Hatten Hotel Melaka, Malaysia. Title of the paper: Perceptual learning of systematic variation in Malaysian English among Libyan EFL learners. 14th -16th August, 2018.

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