THE INTONATION PATTERNS OF QUESTIONS IN MALAYSIAN ENGLISH

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Abstract

Since its introduction to Malaya by the British in the 18th century, the English language spoken in Malaysia has developed to become a local variety of English which we call Malaysian English (MalE). The purpose of this study is to identify and compare the intonation patterns used by MalE speakers when asking *wh*-questions and *yes/no*-questions. Twelve Malaysian speakers of the three major ethnic groups in Malaysia (Malay, Chinese and Indian) were recorded reading a list of questions and participating in an information gap activity. Analysis on the initial and final boundary tones indicates that Malaysian speakers of English almost consistently begin *yes/no*-questions at a level tone and end with rising tone. For *wh*-questions, some differing patterns emerge: Malay speakers began the questions at a level tone, ending with a falling tone, Chinese speakers had high initial boundary tone and either rising or falling final boundary tones and Indian speakers produced rising or level initial boundary and rising final boundary tones. From a perception test which was conducted to determine if the ethnicity of the speakers could be identified from their speech, listeners were able to identify speakers who share the same ethnicity as their own, but not the ethnicity of other ethnic groups. While certain intonation patterns distinctive to the different ethnic groups have been identified, some of these features are not reliably observable, which suggests a convergence. Further, there were more rising final boundary tones when ending *wh*-questions in MalE by the three ethnic groups compared to British English and American English, despite the differences. The rise of systematic linguistic patterns of MalE spoken across the three major ethnic groups supports Gut's (2007) Norm Orientation Hypothesis, which states that such patterns emerge when speakers of a local variety

accept the endonormative rather than an exonormative norm. In other words, MalE may be shifting from the nativisation phase to the endonormative stabilisation phase of Schneider's (2007) theory for the development of new Englishes.

Abstrak

Sejak bahasa Inggeris diperkenalkan ke Tanah Melayu menjelang abad ke-18, ia telah berkembang menjadi sejenis bahasa Inggeris tempatan (MalE). Tujuan kajian ini adalah untuk mengenal pasti dan membandingkan corak intonasi yang digunakan oleh penutur MalE ketika meminta soalan-*wh* dan soalan-*ya/tidak*. Dua belas penutur Malaysia daripada tiga golongan etnik utama di Malaysia (Melayu, Cina dan India) telah direkodkan membaca senarai soalan dan mengambil bahagian dalam aktiviti jurang maklumat. Analisis pada nada sempadan awal dan akhir telah mendedahkan bahawa penutur MalE memulakan soalan-*ya/tidak* pada nada rata dan berakhir dengan nada meningkat. Untuk soalan-*wh*, beberapa corak yang berbeza muncul: pentutur etnik Melayu memulakan soalan pada nada rata, yang berakhir dengan nada jatuh, penutur Cina mempunyai nada sempadan awal yang tinggi dan ada nada meningkat atau jatuh nada sempadan akhir dan nada sempadan awal bagi penutur India adalah meningkat atau rata dan meningkat bagi nada sempadan akhir. Dari ujian persepsi yang telah dijalankan untuk menentukan sama ada etnik penutur dapat dikenal pasti dari ucapan mereka, pendengar dapat mengenal pasti etnik penutur yang berkongsi etnik yang sama seperti mereka sendiri, tetapi bukan penutur dari golongan etnik yang lain. Terdapat corak intonasi yang tersendiri kepada tiga golongan etnik yang diuji. Walaubagaimanapun, perbezaan tersebut tidak konsisten. Ini menunjukkan konvergens antara golongan-golongan etnik tersebut. Di samping itu, terdapat lebih nada meningkat untuk sempadan akhir soalan-*wh* oleh ketiga-tiga golongan etnik berbanding *British English* dan *American English*, kebangkitan pola linguistik sistematik yang dituturkan dalam ketiga-tiga golongan etnik utama menyokong Norm Orientasi Hipotesis Gut (2007), yang menyatakan bahawa corak

itu muncul apabila penutur tempatan menerima endonormative dan bukannya norma exonormative. Kemungkinan besar, MalE sedang beralih daripada fasa *nativisation* kepada fasa *endonormative stabilisation* seperti dalam teori Schneider (2007) untuk pembangunan Englishes baru.

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"I can do all things through Christ which strengtheneth me."

-Philippians 4:13

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List of Abbreviations

AmE	American English
AusE	Australian English
BrE	British English
ENL	English as a Native Language
ESL	English as a Second Language
EFL	English as a Foreign Language
F0/f_0	Fundamental frequency
IELTS	International English Language Testing System
IndE	Indian English
MalE	Malaysian English
MUET	Malaysian University English Test
NE	Nigerian English
RP	Received Pronunciation
SgE	Singapore English
ToBI	Tones and Breaks Indices

CHAPTER 1

INTRODUCTION

This chapter gives a brief overview of the spread of English to the establishment of World Englishes and English in Malaysia. The current study would also be introduced with the problem that it is attempting to address, the objectives, research questions and the scope of study.

1.1   The spread of English

From the age of British colonialism to American economic, political and technological leadership, the English language has spread far and wide globally as a language of importance. As such, it has become one of the most commonly used languages in the world, with most of its speakers being non-native speakers. Such an unprecedented phenomenon has given rise to geographical and cultural variation among its native and non-native speakers alike. Thus, there are varieties of English such as British English (BrE), American English (AmE), Australian English (AusE), Nigerian English (NE), Indian English (IndE), Singapore English (SgE), and Malaysian English (MalE). Each variety has its own distinct phonological, syntactical, and lexical structures.

In an effort to classify the varieties of English in the world, Quirk (1985) put them into three groups: English as a Native Language (ENL), English as a Second Language (ESL) and English as a Foreign Language (EFL). ENL is spoken in the United Kingdom, the United States of America, Australia, Canada and New Zealand,

where English is the primary language. ESL is typically spoken in countries that were once colonised by the British or the Americans. Examples of these ex-colonies are Nigeria, the Philippines, India, Singapore and Malaysia, where English is not the primary language, but is widely spoken. EFL on the other hand, occurs where English is not commonly used outside the classroom. This is the case in countries such as China and Japan. This classification by Quirk, although useful in certain contexts, is not without its shortcomings. The connotation that comes with the label 'native language' is that it represents a superior and standard English that is spoken by all native speakers, and that it is a model that all English language learners in ESL and EFL countries should aspire to follow. However, in reality, English spoken in ENL countries come in many different varieties. Which variety should then serve as a model? Besides that, with the rise of multi-cultural and multi-lingual societies within ENL countries, can we say that the variety of English spoken by these multi-linguals represent 'native language'? Furthermore, would a 'native language' mode be appropriate in ESL countries where there may be many fluent speakers of their own variety of English?

Similar to this taxonomy of English by Quirk (1985), is Kachru's (1992) three concentric circles of Englishes (the inner circle, the outer circle and the expanding circle). In the inner circle are countries which are mostly made up of native speakers of English such as the United States of America, the United Kingdom, Canada, Australia and New Zealand. The expanding circle on the other hand, consists of countries where English has a foreign status such as in China, Japan and Indonesia. Malaysia is said to be in the outer circle, along with countries like Singapore and

India. This classification by Kachru is an improvement from Quirk's taxonomy as it acknowledges the existence of a variety of Englishes.

In describing the development of New Englishes in postcolonial countries, Schneider's (2007) Dynamic Model divided it into five successive stages: "Foundation," "Exonormative stabilisation," "Nativisation," Endonormative stabilisation," and "Differentiation". In each stage, the identity construction, sociolinguistic conditions and linguistic effects are considered. In the Foundation stage, the English language is introduced where settlers come in contact with the indigenous population. A few bilinguals may play the role of interpreters and guides. In the Edonormative stabilisation stage, the British settlers stabilise and become more prominent. Bilingualism increases among the elite indigenous people. In the Nativisation stage, the British settlers begin to accept a new identity as ties with the motherland weaken. The indigenous population has a stabilised second language system with phonological innovations and structural nativisation. In the Endonormative stabilisation stage, the local norm is stabilised and accepted. The new variety is established with its own dictionary and grammatical description, which is taught in schools. In the Differentiation stage, new group specific varieties emerge in the form of dialects. While English in Malaysia can be said to be in the Nativisation stage (Schneider, 2007), discussion in Chapter 2 and Chapter 4 may suggest that MalE is in the process of shifting from the Nativisation stage to the Endonormative stabilisation stage.

1.2   English in Malaysia

Malaysia is a Southeast Asian country with its closest neighbours being Thailand, Indonesia and Singapore. It is a multi-cultural, multi-ethnic and multi-lingual country, with a diverse variety of languages such as Bahasa Malaysia, English, various Chinese dialects, Indian languages and some other minority languages (Rajadurai, 2004).

English was brought to Malaya in the late 18th century, when the British turned it into a thriving trading colony. To aid governance of the new colony, English-medium education was made available for a privileged few such as the indigenous royals. As a result, English became a language of power and prestige among the locals. This attitude towards English fuelled the demand for English-medium education (Schneider, 2007). Besides that, the British caused a number of large-scale migrations. The Chinese, who migrated to Malaya mainly to work in the tin mines, brought with them an array of Chinese dialects such as Mandarin, Cantonese, Hokkien, Hakka, to name a few. The Indians, who came to work in the rubber plantations, brought various Indian languages such as Tamil, Malayalam, Hindi, Punjabi, and Telugu. As Malaysia gained independence and the British colonials left, the Chinese, Indians and other minorities remained to live among the Malays. In an effort to unify the different races in the country post-independence, Bahasa Malaysia was made the official national language and medium of instruction in schools through the National Education Policy and the New Economic Policy. English, which was previously an official language, became a second language

officially learnt in schools, while Mandarin, Tamil, Iban and Kadazan were accorded vernacular status.

According to the Department of Statistics Malaysia, the distribution of ethnic groups in Malaysia for 2010 was 67.4% Bumiputera (also known as Malay), 24.6% Chinese, 7.3% Indians and 0.7% Others (Department of Statistics Malaysia, 2011). In such a multi-cultural and multi-lingual landscape as Malaysia, English continues to be respected and considered prestigious, and is regarded as a language that is important for instrumental purposes, for inter and intra-cultural communication, and for professional growth (Lee, et al., 2010). The English language spoken in Malaysia has developed to become a local variety of English which we call Malaysian English (MalE). As discussed in the previous section, English in Malaysia has often been described as a second language as according to Quirk (1985) and in Kachru's (1992) three concentric circles of Englishes, Malaysia is said to be in the outer circle along with countries like Singapore and India. However, the assumption that all Malaysians use English as a second language is inaccurate as English is a foreign language to many Malaysians in the rural areas. On the other hand, about 2% of Malaysians use English as a first language (Crystal, 1997), consisting of Chinese, Indians and Malays living in urban areas (Asmah Hj. Omar, 1991).

In fact, there is an emerging notion that varieties of English spoken in countries in the outer circle such as SgE and IndE are not deficient versions of the inner circle Englishes, but are instead recognised varieties of English (Noor Fadhilah Mat Nayan, 2013). This is also the case for MalE. As Rajadurai (2004) noted, Malaysian speakers are proud of the localised variety of English and often use it as an

expression of cultural identity or as a sign of solidarity to enhance one's group membership. Following Schneider's (2007) theory for the development of New Englishes, this phenomenon is consistent with a shift from the Nativisation phase to the Endonormative stabilisation phase, when the new variety of English gradually becomes accepted as the local norm.

1.3   Problem Statement

The English language taught in the Malaysian education system generally follows BrE as a model. However, Malaysian speakers who speak with a BrE pronunciation would seem out of place in local contexts, as the accent marks a foreign identity. Moreover, their group membership would be negatively affected if they speak with a 'native' accent such as BrE or AmE, as they would be labelled as fake or pretentious by their peers (Pillai, 2008; Salleh, 2000). Therefore, a standard MalE pronunciation model would be more suitable to be taught in Malaysian schools, as compared to BrE.

Pillai (2008) noted that many Malaysians still tend to view MalE as incorrect, mainly because they equate MalE to its colloquial forms and not as a representation of all sub-varieties of English spoken in Malaysia, including the standard MalE. This failure to recognise standard MalE has resulted in the lack of its description. Furthermore, the assumption that MalE pronunciation is largely the same compared to SgE (Brown, 1988; Platt & Weber, 1980; Tongue, 1974), resulted in many early studies that described them together. Such stereotypical descriptions may lack precision, and thus fail to reveal patterns that may be unique to MalE (Newbrook,

2006; Baskaran, 2008, Pillai, 2008). Thus, there hasn't been enough research on MalE to provide a proper description, which could potentially serve as a model for English education in Malaysia.

While studies on MalE are few (Newbrook, 2006), studies on MalE pronunciation are fewer still, and are mostly focused on segments and rhythm. A search on MalE intonation research yields a brief description by Baskaran (2008), and a description of the intonation patterns of English spoken by Malays in Malaysia by Noor Fadhilah Mat Nayan (2011). The lack of acoustic studies on the intonation patterns of MalE shows that there is a gap which this study hopes to fill. The purpose of this study is to identify and compare the intonation patterns used by Malay, Chinese and Indian speakers of MalE when asking questions. It is hoped that this study would add to the description of the intonation patterns of MalE, and bring us one step closer to the teaching of the MalE pronunciation model at Malaysian schools.

1.4   Objectives

The objectives of this study are:

1. To examine the intonation patterns of *wh*-questions and *yes/no*-questions produced by fluent speakers of MalE.
2. To determine if listeners are able to distinguish the ethnicity of the speakers.

1.5   Research Questions

In order to address the research gap, this study aims to answer the following questions:

1. What are the initial and final boundary tones in *wh*-questions and *yes/no*-questions produced by fluent speakers of MalE?

2. To what extent are there inter-ethnic differences in the production of these boundary tones?

3. To what extent are listeners able to distinguish the ethnicity of the speakers?

1.6   Scope of the study

In order to compare the intonation of MalE as spoken by the three major ethnic groups in Malaysia, certain sociolinguistic (educational background, gender, age, English proficiency, etc.) and geographical variables need to be controlled. The participants of this study would be limited to Malaysian Malay, Chinese and Indian female undergraduates who reside in the Klang Valley region and have a minimum of Band 4 for MUET (Malaysian University English Test). Therefore, the intonation patterns that are identified in this study may not be representative of all MalE speakers in general. For the same reason, this study will focus on *wh*-questions and *yes/no*-questions that are external questions asking for information according to Freed's (1994) taxonomy of questions. As such, the findings would not be applicable to other types of utterances.

1.7   Summary of Chapter 1

Since its introduction to Malaya by British colonials in the 18th century, the English language spoken in Malaysia has developed to become a local variety of English which we call Malaysian English (MalE). Over the years, MalE has reached the Nativisation phase of Schneider's (2007) Dynamic Model and is shifting to the Endonormative stabilisation phase (Gill, 2002). While the Received Pronunciation (RP) model is still being used in the teaching of the English language in schools, Malaysian linguists such as Pillai (2008) and Noor Fadhilah Mat Nayan (2013), argue that a standard form of MalE pronunciation model would be more suitable to be taught in Malaysian schools. However, research on MalE pronunciation is thus far insufficient to provide such a model. It is therefore hoped that this study would add to the description of the intonation patterns of MalE, thus bringing us one step closer to the teaching of MalE pronunciation at Malaysian schools. With this ultimate aim in mind, the purpose of this study is to identify and compare the intonation patterns used by MalE speakers when asking *wh*-questions and *yes/no*-questions. The study seeks to examine the intonation patterns of *wh*-questions and *yes/no*-questions produced by fluent speakers of MalE, and to determine if listeners are able to distinguish the ethnicity of the speakers. In order to achieve this, several socio-linguistic variables need to be controlled, and therefore the findings of this study may not be applicable for speakers of MalE in general.

CHAPTER 2

LITERATURE REVIEW

Chapter 1 briefly described the spread of English across the globe, the classifications of world Englishes, and the development of English in Malaysia. In this chapter, studies on the description of MalE and its intonation would be reviewed. Approaches to the study of intonation will also be discussed. Finally, the types of questions in the English language as well as their typical intonation patterns will be discussed.

2.1   Malaysian English

English spoken in Malaysia has become a variety of English distinct from BrE and other varieties in its "syntactic, phonological, lexical, stylistic and discoursal" features (Rajadurai, 2004), as it has changed considerably to meet local needs. Kachru (1986) calls this process 'nativisation', which is where the linguistic features of a language systematically changes to form a localised variety of the language. Looking further into MalE as a nativised variety of English, researchers recognise a range of sub-varieties ranging from standard MalE, which has little morpho-syntactic variation from RP, to colloquial MalE, which are more ethnically marked with "phonological, lexical and morpho-syntactic variation" (Pillai, Zuraidah Mohd. Don, Knowles & Tang, 2010). These sub-varieties of MalE accents characterise different ethnic groups, socio-economic, education, language and geographical backgrounds of their speakers (Pillai, 2008). Baskaran (1987) saw this as a continuum on which there are three forms, the acrolect, mesolect and the basilect, and these forms are all under the same umbrella term – Malaysian English. The acrolect, or otherwise

known as standard MalE, is the variety used by speakers who have been educated in the standard form of English in formal contexts. The acrolectal variety of MalE is also used in newspapers and television news reporting. It has minimal deviations from RP and is internationally intelligible. The basilect, on the other hand, is what Malaysians commonly refer to as 'manglish' or 'broken English'. Its phonology, syntax and lexis deviate considerably from the standard MalE, and it is most ethnically marked. In the middle is the mesolect, which allows some variation in phonology and lexis. It is most commonly used in informal contexts, and it is often used as a sign of solidarity or as a way for asserting ethnic or national identity (Rajadurai, 2004). As the three forms of MalE exist as a continuum, they do not occur as distinct varieties of MalE and its speakers are able to shift along this continuum according to the situation. It is common for acrolect speakers to downshift to the mesolect or the basilect form of MalE, depending on the social context in which they are conversing and their familiarity with whom they are conversing with. However, if a speaker's highest proficiency is the mesolect, it is not possible for her to upshift to the acrolect. Likewise, if a speaker is only able to speak the basilect form, she would not be able to use the mesolect or acrolect forms of MalE.

Early descriptions by researchers of MalE such as Brown (1988), Platt and Weber (1980) and Tongue (1974) tended to link it to SgE. Although both varieties share many linguistic features, differences have emerged over the years. One of the reasons for these differences is the different language policies in Malaysia and Singapore upon being free of British colonial rule. Upon independence, English was made the medium of instruction in Singapore schools, while *Bahasa Melayu* or

Malay was made the official and national language in Malaya and gradually replaced English in primary and secondary English medium schools at public tertiary institutions in Malaysia, giving English its 'second language' status today. Furthermore, the demographic landscapes in both countries are different, with the Chinese being the majority in Singapore, while the Malays are the dominant ethnic group in Malaysia. Malaysia also has more diverse ethnic groups spread over a larger geographical area compared to Singapore. Due to such factors, the two varieties of English may have diverged to some extent, and it is no longer tenable to describe them together as one variety (Newbrook, 2006; Baskaran, 2008, Pillai, 2008).

Recent descriptions of MalE include lexical borrowings, syntactical variations from other varieties of Englishes and phonological descriptions by Tan (2006), Newbrook (2006) and Baskaran (2008). For example, Tan (2006, p. 124-136) identified various lexical borrowings from Malay and Chinese dialects in the Malaysian English newspaper such as *rotan*, *rakyat*, *char koay teow* and *kongsi*, just to name a few. Newbrook (2006, p. 405-408) found syntactical variations such as variations in sentence structure (e.g. "Pollution [is] choking to death more rivers") and noun-verb agreement (e.g. "One of its main aim…"). Finally, Baskaran's (2008, p. 283-284) phonological description of MalE include the shortening of vowel length (e.g. the /iː/ in 'field' being realised as [i]) and reduced quality of diphthongs (e.g. the /eɪ/ in 'mail' being realised as [e]). There is a wide array of lexical, syntactical and phonological features unique to MalE, but the focus of this study is on intonation.

Some recent studies on MalE phonology with consideration for MalE intonation include a study on the intonation patterns of Malay speakers of English (Noor Fadhilah Mat Nayan, 2011), studies on the prosodic marking of information status (Gut, Pillai & Mohd Don, 2013) and question intonation (Gut & Pillai, 2014). According to Baskaran (2008), the range of functions performed by patterns of intonation in MalE is not as varied as in Received Pronunciation (RP). She further notes that change in pitch is not as common, with a more common use of particles such as *lah, man* and *ah* as markers of questions, attitudes, or emotions. However, in their study on question intonation produced by Malay speakers of English in a map task activity, Gut and Pillai (2014) found that the use of particles were rare, while the rising tone was preferred for most question forms. In a separate study, Gut, Pillai and Mohd Don (2013) found that new information tend not to be marked with any distinct pitch change by speakers of MalE. In a study on the intonation patterns of Malay speakers of English, Noor Fadhilah Mat Nayan (2011) found that Malay speakers of English used rising tones the most. These studies suggest that the way Malaysian speakers use intonation in their speech is somewhat different from intonation in RP. However, these differences must not be attributed as errors, or merely as L1 interference. Perhaps this shows that Malaysian speakers are gradually moving towards accepting MalE as a norm.

This phenomenon may be explained by Gut's (2007) Norm Orientation Hypothesis, which suggests that a variety of English would have systematic linguistic patterns when the speakers accept their local variety as the norm. The Norm Orientation Hypothesis was originally proposed to explain the acceptance of SgE and NE as the local norm. SgE, which is in the endonormative stabilisation phase, is widely

accepted as an endonormative norm in Singapore. However, NE is in the nativisation phase, and English language education in Nigeria still looks to the Standard BrE model (Gut, 2007). As speakers become more receptive of the local model as an endonormative norm (as is the case for SgE), new pronunciation features tend to emerge and take hold. In Malaysia, there has been no official acceptance of MalE as an endonormative norm (Pillai, 2008). Furthermore, Malaysians' perception towards their own local variety of English has been contradictory in recent years. While some still view MalE as incorrect (see 'What's there to boast when we're speaking Manglish?', 2009), others are advocating the acceptance of MalE (see 'Proud of Manglish?', 2012). This mixture of speakers' perception towards MaE may influence the rate at which new linguistic features emerge and develop (Gut, 2007). However, as previously discussed in this section, it may seem that certain systematic pronunciation features are developing, and these features are not necessarily attributed to L1 transfer. This places MalE in between the nativisation phase and the endonormative stabilisation phase. Whether MalE may reach the endonormative stabilisation phase or not may depend on the speaker's attitude towards it. This is suggested by Yamaguchi (2014) in her study on the substitution of [θ] and [ð] with a new [t] in MalE. It was found that although this shift was not an effect of L1 transfer and was indicative of the nativisation of MalE, the occurrence of the new new [t] was inconsistent as the speakers were conscious of their use of the new [t] instead of [θ] or [ð]. Due to the speakers' negative attitude towards MalE, it may seem that they were putting in conscious effort not to use the new [t], which would appear to be a feature of MalE. Therefore, unless there is an official acceptance of MalE as an

endonormative norm and widespread acceptance of MalE among its speakers, such linguistic features may not persist, and MalE would remain in between the two phases.

2.2   Intonation and prosody

Intonation is a form of non-verbal communication, which is the modulation of pitch over a whole sentence or utterance. The term 'intonation' can be broadly defined as a quality of speech that includes pitch patterns with timing, stress and voice quality (Nolan, 2006; Allen, 1971). These aspects of speech, especially pitch and stress, work closely together in the characterisation of an utterance. The more narrow definition of intonation restricts its meaning to pitch effects in speech, and the term 'prosody' would be used to refer to the interplay of intonation, stress, rhythm and voice quality (Roach, 1992; Levis, 1999). This study follows the narrow definition of intonation. However, the fact that stress and intonation are closely related must not be ignored, as pitch change tend to happen around prominent syllables (Nolan, 2006).

The analysis of speech production can be done at different levels of analysis. As noted in Section 1.3, most previous studies on MalE intonation have been done at a perceptual level. According to Laver (1994), a perceptual study is based on the perceiver's sensory input. Without the use of technology, analysis is dependent on the perceiver's listening skill. Another level of analysing speech production is instrumental acoustic analysis. With the assistance of technology, the identification and extraction of distinct evidence of speech phenomena in terms of quality or

timing is made possible (Laver, 1994). The acoustic analysis of intonation involves the extraction and analysis of fundamental frequency (f0). The modulation of pitch involves the manipulation of the rate of vibration of the vocal folds. Therefore, in acoustic phonetics, this rate of vibration translates into fundamental frequency values, the number of cycles per second, and is measured in Hertz (Hz). The higher the pitch produced by the speaker, the quicker the vocal folds vibrate and the higher the f0 values would be. From the extracted f0 values, a pitch contour could be plotted, and the pitch change could be registered.

In the study of intonation, most linguists look into the functions of intonations and how it communicates meaning. According to Halliday (1967) and Schubiger (1958), intonation is used by a speaker to convey their attitude or emotions. In examples given by Nolan (2006, p. 444-445), a yes/no-questions may end with a rising or falling tone as seen in (1) and (2). Both are perfectly acceptable and well-formed, but in (1), the speaker submits to the greater knowledge of the hearer, while (2) comes across as less polite and more demanding.

Have you FINished the ARTicle?   (1)

H*   L*+H H%
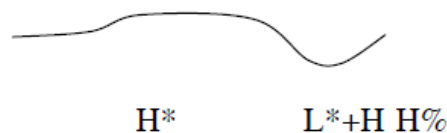
Have you FINished the ARTicle?   (2)

H*   H*+L 0%
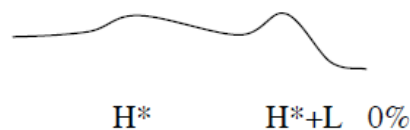
Besides attitudinal and emotional meaning, Crystal (1969) linked grammatical structure to intonation. For example, it can be used to guide the listener to the grammatical structure of an utterance, as grammatical structures tend to dictate where intonation phrase boundaries occur. Some linguists, such as Brazil (1985), looked at intonation from the discourse perspective, as the intonation choices speakers make "carry information about the structure of interaction, the relationship between the discourse function of individual utterances, the interactional 'give-ness' and 'newness' of information and the state of convergence and divergence of the participants" (Brazil, Coulthard & Johns, 1980). For example, in Brazil's (1985) discourse intonation approach, a falling tone is used to indicate new information, while a fall-rise is used for given information. However, there is an emerging trend among young speakers, young female speakers in particular, in countries like the United Kingdom, the United States of America, Australia and New Zealand, to use a rising or high level tone for declarative statements in place of the usual falling tone (Arvaniti & Garding, 2005; Britain, 1992; Cruttenden, 1997; Guy, Horvanth, Vonwiller, Disley & Rogers, 1986). Thus, it can be argued that instead of having attitudinal or grammatical functions, intonation may function as a form of social identity expression (Foulkes & Docherty, 2006).

2.2.1   The British tradition of studying intonation

In the study of English intonation, the approaches can be divided into two broad traditions set by British and American linguists. Considering the relationship between MalE with Standard Southern BrE, the British tradition in intonational studies may be more appropriate in the study of MalE intonation. The British

tradition of studying intonation, first developed by Palmer (1922), involves dividing the speech into intonation groups (also called tone unit or tone group), which contain a nucleus, pre-head, head and tail. These components make up the structure of a tone unit as shown below (the components in brackets are optional).

Tone Unit: (pre-head) (head) nucleus (tail)

The intonation group usually has a characteristic pitch movement and its boundaries defined by pauses for breath. The main feature of the British model of intonation is the nucleus (Deterding, 1994). It often is, but may not be the most prominent syllable in the intonation group. It is assumed that the nucleus contains a significant change in pitch, which may be a fall, rise-fall, rise, fall rise, or level. There have been, however, differences among linguists regarding the classification of pitch movements or tones and how they convey meaning. Schubiger (1958) put forward 12 pitch movements (low fall, high fall, low rise, high rise, low level, high level, high fall-rise, low fall-rise, rise-fall, rise-fall-rise, raised nonnuclear syllable, and high pitch on an initial unstressed syllable). Hallliday (1967) reduced this to eight tones (low fall, high fall, low rise, high rise, fall-rise, low fall-rise, rise-fall and low rise-fall) and Crystal (1969) reduced it further by doing away with the low rise-fall and low fall-rise and adding a level tone. Brazil (1985), on the other hand, used only five tones (rise, fall-rise, fall, rise-fall and level), which is sufficient for this study. According to Lim (1996), it is generally the last accented syllable that has a significant pitch change. Thus, the last accented syllable is defined as the nucleus (Nolan, 1984). The three optional elements of the intonation group are the head, pre-head and tail. The head and pre-head are the stretches of utterances that precede the

nucleus, and the tail is the stretch of utterance following the nucleus that usually continues the pitch movement to the end of the intonation group.

2.2.2   The Tones and Break Index (ToBI) System

The ToBI system was the result of the efforts to create a machine-readable transcription system by a group of prosody specialists (Silverman et al., 1992). It is a framework of generally accepted conventions for transcribing the intonation of speech of a language. It has become an influential framework for describing English intonation as well as the intonation of a variety of other languages such as German, Japanese and Korean (see www.ling.ohio-state.edu/~tobi). In this transcription system, not only the intonation is marked, but the breaks between the words are marked as well. This multi-tiered approach to intonation bears a resemblance to Pierrehumbert's (1980) work on intonation. In ToBI, intonation is a series of pitch accents (marked with a star, *), boundary tones (indicated with a percentage sign, %) and intermediate phrase boundary tones (marked by a minus sign, -), which can be low (L) or high (H). As a well-established convention for transcribing intonation, using ToBI is preferred as it allows for good inter-rater reliability. With reference to the examples given by Nolan (2006, p. 444-445) earlier in this chapter (see page 16), the use of the ToBI transcription convention is demonstrated in example (1). The question "Have you finished the article?" is one tone unit with two pitch accents at FINished and ARTicle. FINished had a high pitch accent (H*), while ARTicle had a low pitch accent (L*) followed by a rise (+H). The question ended with a high final boundary tone (H%).

2.2.3   Comparing intonation patterns of varieties of English

Studies have been done to compare the intonation or prosodic patterns of BrE and AmE local varieties, and have found that there inter- and intra-dialectal variation, geographical and gender differences in the intonation patterns. In a study on the intonation variation in seven dialects of BrE, Grabe and Post (2002) examined the intonation patterns in declaratives and inversion questions using data from the IViE (Intonational Variation in English) corpus. The researchers looked six speakers from each dialect, reading eight declarative sentences and three inversion questions. It was found that speakers of two dialects, Cambridge and Belfast, used different intonation patterns for declarative sentences (Cambridge speakers tend to use falls, while Belfast speakers tend to use rises). This study has shown that there is inter- and intra-dialectal variation in English intonation besides geographical differences in their intonation patterns. This study also shows that a speaker of one dialect may use different intonation patterns for different sentence types, while a speaker of a different dialect may use the same intonation patterns.

Most recent studies on intonation, such as the one done by Grabe and Post (2002), involve acoustic analysis, which first involves the display of a spectrogram, showing the temporal variations of the resonances and other acoustic components of speech (Nolan, 2006). Besides that, acoustic analysis involves phonetic transcription of the speech as well as plotting of the fundamental frequency (f_0), which corresponds to the rate of vocal fold vibration resulting in the highness or lowness of pitch. For example, in an experiment to distinguish between AmE with German and AusE using measures of rhythm and intonation, the measures of intonation Vicenik and

Sundara (2013) used were minimum, maximum and mean pitch of sonorant segments as well as the number of pitch rises, average rise height and average slope. Only pitch rises were studied because the speech data collected were all declarative sentences, which are typically marked by rising pitch (Pierrehumbert, 1980). The researchers found that the measures revealed that there were significant differences between the intonation of AmE versus German and AmE versus AusE.

Another study that employed the use of acoustic analysis was a study exploring prosodic variation in read speech in the Southern and Midland varieties of AmE. In this study, Clopper and Smiljanic (2011) compared the speaking rate and some aspects of intonation patterns (frequency and distribution of pitch accents, phrase accents and boundary tones) of the two dialects. The read speech data used was of two short passages read by five males and five female speakers of each dialect selected from the Nationwide Speech Project corpus. Auditory and acoustic analysis was done using an acoustic analysis software, Praat, and intonation pattern analysis was based on the Tone and Break Indices (ToBI) transcription system for Mainstream AmE. The measurements in the study were the number of intonation phrases, the number of intermediate phrases, the number of pitch accents, and the frequency counts for each of the phrasal-boundary tone combinations, phrase accents and pitch accents. The study revealed that there were significant differences in prosodic patterns between dialects and gender. It was found that Southern male speakers paused more often than the others, while female speakers of both dialects often produced peaks after an accented syllable (L*+H) and a fall followed by a rise (L-H%), but rarely used a peak on an accented syllable (H*). In addition, Southern female speakers also used more rises (-H) than the others.

Like Grabe and Post (2002), the study by Clopper and Smiljanic (2011) shows that prosodic patterns or intonation patterns vary in terms of gender and over geographical regions (Southern and Midland America and across the British Isles). The discussion in this section has shown that intonation patterns can be studied by transcribing the intonations in reference to the fundamental frequency (f_0) contours on acoustic analysis software such as Praat, breaking down the speech data into illocution type (such as Grabe and Post's (2002) declarative sentences and inversion questions) and comparing the frequencies of each tone or tone combinations (Clopper & Smiljanic, 2011). Therefore, acoustic phonetics is an appropriate approach and would prove useful in comparing the prosodic or intonation patterns of speakers.

2.3   Questions

Asking questions is an important part of daily conversation. Questions are different from other sentence types in terms of their grammatical structure and semantic function (Crystal, 1985; Quirk et al., 1985). Grammatically, there are three types of questions in the English language. The first are sentences with inverted subject and verb, as in *yes/no*-questions. For example, "Are you happy?" is a *yes/no*-question. The second type are *wh*-questions which start with question words such as *who, what, when, where, why* and *how*. This is done by adding the *wh*-question words to the previous example. The third are questions that end with a question tag, for example, "You're happy, aren't you?" Semantically, *yes/no*-questions and tag questions are considered polar questions, as they seek affirmation or negation. Content questions are *wh*-questions, and the type of information sought depends on

the *wh*-question word. Finally, the third type is alternative questions, which provide two or more possible answers. Besides being different syntactically and semantically, the various types of questions can be classed according to their discourse functions. Freed's (1994) taxonomy of questions classified questions into categories along an information continuum ranging from 'information sought' on one end, to 'information conveyed' on the other. The four main categories are external questions, talk questions, relational questions and expressive questions. External questions are questions asked to obtain new factual information about the external world. An example of an external question may be, "Where do you live?" assuming the speaker does not know the answer and wants to know the location. Talk questions are questions asked for clarification or repetition of information, while relational questions are asked to establish shared information and have a more conversational focus. An example of a talk question asking for repetition of information may be, "You live in Kuala Lumpur, right?" where the speaker may have heard where the addressee lives, but requires clarification. On the other hand, "Can you hear me?" is an example of a relational question. Finally, expressive questions are used when the speaker does not seek information, but wishes to convey information in the form of rhetorical, humorous or self-directed questions.

Questions play a major role in daily interactions and serve many purposes, from seeking to conveying information. These variations are not only at the syntactic, semantic or discourse level, but they are also manifest in varying intonation patterns. This will be discussed in the following section.

2.3.1 Question intonation

The intonation patterns used when producing questions differ according to the different types of questions previously discussed, as intonation is closely related to the grammatical structure of the utterance and the attitude of the speaker (Schubiger, 1958; Crystal, 1969). It has been long established that *wh*-questions in both Standard Southern BrE and General AmE tend to be marked with falling tones, and *yes/no*-questions usually have a rising tone (Halliday, 1967; Hedberg, Sosa & Fadden, 2004; Wells, 2006). Declarative questions for both BrE and AmE are marked with rising tone to avoid confusion with declarative statements (Hedberg et al., 2004; Wells, 2006). Tag questions, on the other hand, may be produced with either falling or rising tone, depending on the type of information sought. A rising tone is used when the speaker does not know the answer, while a falling tone is used when the speaker expects a certain answer (Brazil, 1985; Wells, 2006). Australian English (AusE) is known as a 'rising variety' of English (Cruttenden, 1997), where declarative statements tend to end with a rising intonation. According to Fletcher and Loakes (2006), the main distinction between the use of rising and falling tone in AusE are their discoursive functions, where the rising tone indicates incompleteness and has a 'floor-holding, and the falling tone indicates completeness 'and end-of-turn'. Aside from the prevalence of the rising intonation in AusE and its use for declarative statements, little has been done to study the question intonation in AusE.

According to Goh (1995), speakers of SgE tend to use the rising tone for *yes/no*-questions and both rising and falling tones for *wh*-questions. However, an earlier study by Deterding (1994) showed that while SgE speakers preferred using the

falling tone for *wh*-questions. This contrast may be due to several factors such as the small number of speakers in the latter study and the nature of the speech data collected. Goh analysed the intonation features of about 400 educated speakers of SgE reading a passage, while Deterding recorded three mesolectal SgE speakers describing a picture and having a conversation with the interviewer. While the former had a large amount of careful read speech, the latter had a limited amount of natural speech. In a study on the question intonation of Brunei English, Siti Faahirah bt. Hj. Rozaimee (2014) found that like RP, BrE and AmE, speakers of Brunei English used the falling tone for *wh*-questions and the rising tone for *yes/no*-questions. Other question forms such as tag questions, declarative questions and single word questions also had the rising tone.

As for MalE, when Gut and Pillai (2014) conducted their study on question intonation produced by Malay speakers of English in a map task activity, they found that Malay speakers of English preferred to use rising tones for most question forms. In contrast to RP, where *wh*-questions tend to be marked with falling tones (Halliday, 1967; Hedberg et al., 2004; Wells, 2006), Malay speakers of English used falling tones only 53.3% of the time and only 33.3% rising tones (Gut & Pillai, 2014), which is much less compared to BrE and AmE standards. Looking at the speaker's first language, Malay, *wh*-questions are marked with a rising tone. In his thesis, Wang (1987) described the intonation pattern of *wh*-questions and *yes/no*-questions in the Malay language as a series of level tones from the start which continues until the final syllable, which would be marked with a rising tone as illustrated in Figure 2.1. Therefore, the intonation pattern for *wh*-questions by Malay speakers of MalE in Gut and Pillai's (2014) study cannot be attributed to L1 transfer.

Figure 2.1: The pitch contour of an interrogative sentence which elicits a yes or no response in Malay (Wang, 1987, p. 168).

Besides the Malay, the two other major ethnic groups in Malaysia are the Chinese and the Indians. The main dialects of these ethnic groups are Mandarin and Tamil respectively. These dialects are taught in the Chinese and Indian vernacular schools and serve as a common language within the ethnic groups. In Tamil, each word tends to be accented with a fall-rise-fall, except for the phrase final word, which bears a falling tone (Keane, 2006). The pitch contour of *wh*-questions in Tamil tends to resemble declarative sentences but with a significantly higher overall pitch (see Figure 2.2). Rising final boundary tones is not typically used for *wh*-questions in Tamil, but are sometimes used for *yes/no*-questions (Keane, 2006). Therefore, if there is L1 transfer from Tamil to English by the Indian speakers of MalE, falling final boundary tones should be expected.

Figure 2.2: The pitch contour of a *wh*-question in Tamil, with rising pitch for the *wh*-question word and falling final boundary tone (adapted from Keane, 2006).

According to Shen (1990) and Yuan, Shih and Kochanski (2002), the pitch contour of questions in Mandarin mostly follow the tones of the lexical items in the sentence, but begins with an overall raised pitch which peaks at the final syllable, as shown in Figure 2.3. If the tone of the final lexical item is a rise, the steepness of the rising tone would be increased. On the other hand, if the tone is a fall, the falling slope

would be flattened (Yuan, 2006). If there is L1 transfer from Mandarin to English by the Chinese speakers of MalE, higher pitch averages and rising final boundary tones should be expected.
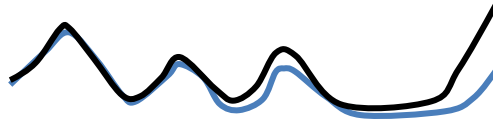
Figure 2.3: The pitch contour of a declarative (blue line) and interrogative (black line), in Mandarin (adapted from Yuan, Shih and Kochanski, 2002).

2.4   Eliciting speech

Phonological studies often require the analysis of some form of recorded speech data. Various methods of acquiring this data may be used, ranging from careful laboratory speech to spontaneous conversational speech. Careful laboratory speech may be individual words, vowel or syllables uttered by the speaker in a recording room. Such recordings may be useful in studies on the quality of consonants, vowels or diphthongs. One such study was done by Pillai, Mohd Don, Knowles and Tang (2010), where speakers were asked to read carrier sentences that contained the target vowel. The carrier sentence takes the form of a simple sentence such as, "Say ___ again." Inserted in the blank would be a word containing the target vowel, for example, the vowel *ɜː* in "Say bird again." What is recorded may be careful speech, but the use of carrier sentences makes the pronunciation of the target word more natural and reduces the effect of list reading. The object of their study, the vowel sounds, were thus successfully elicited. While this elicitation method works for

studies focusing on the segmental aspect of speech, it may not be suited for studies on the supra-segmental such as stress, rhythm and intonation.

For studies on prosody, researchers often use methods that are able to elicit longer stretches of speech, which may be read or prompted. This is mainly because these supra-segmental features are impossible to be studied in single word utterances, as they are influenced by the context, attitude of the speaker and the grammatical structure of the sentence. Two examples of eliciting longer stretches of speech can be found in studies by Vicenik and Sundara (2013) and Gut and Pillai (2014). In their study on intonation and dialect discrimination, Vicenik and Sundara (2013) recorded speakers reading 39 English sentences which they had selected. In their study on prosodic marking of information structure of Malay speakers of English, Gut and Pillai (2014) recorded speakers reading out a 179-word story. This method allows the researcher to control what is uttered by the speakers i.e. words, number of syllables, etc. This would enable them to compare overall duration, speaking rates, and pitch changes of several different speakers, as was accomplished by Vicenik and Sundara (2013) and Gut and Pillai (2014). While the speech produced by long reading texts allows the researcher to control the content, it is less varied compared to conversation, and speakers are less likely to speak as carefully as reading word lists (Warner, 2012).

For more conversational yet formal speech, speaking activities such as map tasks may be conducted. This method allows the researcher to maintain control over the target words and while eliciting relatively spontaneous speech. In the map task activity, two speakers are given similar, yet non-identical maps. One speaker gives

directions to follow a path in the map, while the other listens and draws the path. Because the maps are different, the listener would have to ask questions for clarification. Their speech is unscripted and target words may be provided as landmarks on the map. This activity has been used in studies on intonation such as those by Gut and Pillai (2014), and Noor Fadhilah Mat Nayan and Setter (2011). While the latter were interested in the intonation patterns of giving directions, Gut and Pillai's (2014) use of the map task in their study on question intonation of Malay speakers of English elicited various types of questions such as declarative questions, single word questions and tag questions, besides *wh*-questions and *yes/no*-questions.

For conversational speech, the researcher may conduct interviews or record phone conversations. These conversations can be between the speaker and the researcher or between two acquaintances or strangers as the researcher monitors. The speech produced in these methods can be considered natural, especially if the speakers are familiar with each other. In the case of conducting interviews, the speaker might not know the interviewer and might produce more formal speech compared to conversations with someone they are familiar with. The researcher has little control over the content and grammatical structure of the speech, and can only steer the conversation in the direction of certain topics. Furthermore, there is the risk of overlapping speech (Warner, 2012). Conversational speech, by nature, is goal oriented and interactive, and both segmental and supra-segmental features of conversational speech vary depending on the mutual understanding of the interaction between the speakers (White et al., 2010). These aspects are generally neglected in careful read speech.

It would be easy to say that recording conversations is the most ideal form of speech elicitation because of the naturalness of speech recorded. However, choosing a suitable method of speech elicitation depends on the objectives of the study. Conversational speech may not be suitable for studies that aim to compare the prosody of the speakers, as this form of elicitation provides the researcher with little to no control over the content or structure of speech recorded.

2.5   Social variables

Linguistic changes and variations exist in most speech communities and sociolinguistic studies have been done on how social variables affect these variations. In many of his studies, Labov has found that variables such as class, gender and age dictates our standing in society and thus influences our language use (Milroy, 1980). Other social variables include geographical variation, ethnicity and occupation.

The first social variable is age. From language acquisition as children to language deterioration in elders, speech patterns changes with age. There are different ways to define these age groups. The first is by grouping speakers into equal age spans (i.e. 10-20, 20-30, 40-50 and 50-60) and another is by grouping speakers according to shared experience such as stages of life (childhood, adolescence and young adulthood). Children as young as three years have variable linguistic patterns reflecting the speech patterns of the older people in their lives, who are their models (Roberts & Labov, 1992). As their speech models vary (parents, teachers, peers, media), the speech of children are constantly changing as they pick up the different

speech patterns of their models. However, at a young age, children also have difficulty picking up certain patterns (Chambers, 1992). This changes when children enter adolescence, where construction of linguistic style becomes an important part of adolescent group activity (Eckert, 1996). Adolescents generally lead the speech community in changes of linguistic style and development of new vernacular speech. New terms such as 'selfie' and 'twerk' that are eventually accepted by the speech community were often coined by adolescents. Such activities tend to come to an end during adulthood, where adults become more conservative (Labov, 1966), which can be due to the need for formal language in the workplace. Little variation is expected in the adulthood phase until retirement, where disengagement from the workplace could lead elders to become less concerned with using standard language (Eckert, 1996). With this occurrence of age-grading in mind, participants were taken from the same stage of life experience, namely first time undergraduates. Undergraduates with ages between 19 and 24 years of age are transitioning from the adolescent stage to becoming young adults. While still keeping up to date with popular vernacular, they have begun to adapt to the formal speech forms used in the academic institution (Eckert, 1996).

The second social variable that influences speech is gender. The most notable study on gender and language is by Lakoff (1975), whose study highlighted several linguistic features of women's speech. Lakoff asserts that women tend to use linguistic features such as the use of hedges, super polite forms, tag questions, rising intonation on declarative forms and other mitigating features, as opposed to more assertive features of male speech. In a study on effects of gender on prosodic patterns in AmE, Clopper and Smiljanic (2011) found that female speakers preferred

to use rising (L*+H) pitch accents and a dispreference for high (H*) pitch accents in comparison to male speakers. This finding supports Lakoff (1975) that the rising intonation on declarative forms is a feature of female speech. Women were also found to adhere to prestige linguistic norms more than men (Trudgill, 1995), while men tend to use non-standard forms more than women (Labov, 1990). Thus, their attentiveness to linguistic standards makes women ideal subjects for studying speech patterns of a speech community.

The relationship between language and ethnicity has also long been the interest of sociolinguists, many of which argue that variations in linguistic patterns are influenced by ethnicity of the speakers and likewise, language is an important part of the construction of ethnic identity (Noels, 2014). These varieties of a language that are associated with the ethnicity of the speakers are called ethnolects. However, some may argue that this relationship between language and ethnicity does not necessarily exist (Allen & Linn, 1986). This is because not everyone identifies themselves as members of a specific ethnic group. Instead, they identify with the people around them. In Malaysia, however, it is safe to say that most Malaysians identify themselves ethnically. In fact, ethnic polarisation is common, especially in public universities (Fatimah Daud, 2006 and Ting, 2012). As discussed in Section 1.2, Malaysian speakers are proud of the localised variety of English and often use it as an expression of cultural identity or as a sign of solidarity to enhance one's group membership (Rajadurai, 2004). Furthermore, as members of the different ethnic groups maintain different mother tongues as their first languages, it is not surprising that different ethnolects exist in MalE. Although SgE is accepted as an endonormative norm, there are still some minute differences in the prosodic patterns

among the three main ethnic groups. In a study on the intonation patterns of Chinese, Indian and Malay SgE, Lim (2000) found that the ethnicity of speakers can be identified from their speech in a perception test. The difference in intonation patterns among the three ethnic groups was illustrated using the question "*Where are you going?*" as an example. While they share a similar overall intonation contour for the question, "*Where are you going?*" which is a rise-fall contour for the final lexical item, the alignment of the peak with the syllables was different. Therefore, Lim suggests that the ethnicity of the speaker can be identified from their intonation.

Sociolinguists such as Trudgill (1975) have also established that linguistic patterns can vary geographically. Taking examples from the United Kingdom and the United States of America, significant differences in English intonation occur across dialects, from Belfast to London (Grabe & Post, 2002) and between Southern and Midland America (Clopper & Smiljanic, 2011). Closer to home, Asmah (1977) categorised the Malay language spoken in Malaysia into two dialects – one spoken in the central and southern regions of Peninsular Malaysia, which is considered the standard form of Malay. The other is the regional dialect spoken in Kedah or Kelantan, which are significantly different from the standard in terms of structure and pronunciation.

2.6   Perceiving speaker identity

In understanding and interpreting the sociolinguistic differences brought about by the social variables discussed in the previous section, an important perspective is added by considering the speakers' subjective viewpoint on said differences (Preston, 1993). Various studies have been done on the listeners' ability to identify speakers'

regional variety, ethnicity or socioeconomic background. In the perception study of ethnic variation in SgE, Lim (2000) played recordings of 15 speakers' conversations to 12 undergraduate Singaporean listeners. The listeners were asked to identify the ethnicity (Malay, Chinese or Indian) of each speaker and to indicate the speech elements which contributed to their decision. From the study, Lim (2000) found that the listeners were able to accurately identify the ethnicity of the speakers with a reasonably high success rate and that the ethnicities of the speakers were most accurately identified by listeners of the same ethnicity. The listeners also ranked intonation as the main speech element reportedly used to identify the speakers' ethnicity. In a similar study conducted in Malaysia by Yong (2012), who played recordings of 20 speakers to 133 Malaysian listeners. Like Lim's (2000) study, the listeners were asked to identify the ethnicity of each speaker. Similarly, Yong (2012) found that listeners were best at identifying the ethnicity of speakers from their own ethnic group. She then had the listeners identify the non-native speech elements (consonants, vowels, stress, and intonation and rhythm) in the recordings and found that they could only partially identify the speech elements of the different ethnic groups. A perception test done by Pillai, Knowles & Mohd Don (2012), who played recordings of 14 Malaysian speakers to 14 Malaysian listeners showed that listeners were only able to accurately determine the ethnicity of speakers (Malay, Chinese or Indian) less than 50% of the time. While they are examples of good practices in conducting perception tests, the studies by both Yong (2012) and Pillai, Knowles & Mohd Don (2012) used recordings of read speech in the narrative form, such as newscasters reading a news report or simply a lecturer reading out a story. The recordings used in both studies were then limited to declarative sentence forms.

Whether other forms of speech such as interrogatives have perceivable ethnic differences remain to be seen.

2.7   Summary of Chapter 2

Malaysian English (MalE) is an umbrella term that encompasses a range of sub-varieties ranging from standard MalE to colloquial MalE with particular "syntactic, phonological, lexical, stylistic and discoursal" features (Rajadurai, 2004). These sub-varieties are known as the acrolect, mesolect and the basilect. Recent descriptions of MalE include lexical borrowings, syntactical variations from other varieties of Englishes and phonological descriptions. These variations are to be expected since MalE is at the Nativisation stage of Schneider's (2007) Dynamic Model. While studies on MalE and its intonation suggest that the way Malaysian speakers use intonation in their speech is somewhat different from intonation in RP, these differences may be explained by Gut's (2007) Norm Orientation Hypothesis, which states that a variety of English would have systematic linguistic patterns when the speakers accept their local variety as the norm.

CHAPTER 3

METHODOLOGY

This study is divided into two parts. The first is to identify the intonation patterns used by Malay, Chinese and Indian speakers of MalE when asking questions. The second part of the study involves a perception test to see if there are any perceivable differences in the intonation patterns used by Malay, Chinese and Indian speakers of MalE. This section discusses the methods used to identify the data collection process, the participants and the method of analysis that would be used in this study.

2.8   Identifying intonation patterns

To identify the intonation patterns used by speakers of standard MalE, the speech produced by the speakers was first recorded and transcribed. The salient intonation patterns of speech produced by each ethnic group was then analysed to ascertain if there were any differences or similarities.

2.8.1   The speakers

Throughout the study, a total of 27 speakers (8 Malay, 12 Chinese and 7 Indian) were recorded. However, for the comparability of data across ethnic groups, a common set of ethno-linguistic variables, such as age, gender, hometown, education background and first language, had to be adhered to. The speakers used in the study had to be proficient enough in English to be able to produce what is considered to be educated MalE. Therefore, the speakers of the study comprised female Malaysian

undergraduates who have a minimum of band 4 for their MUET. A grade of band 4 for MUET or its equivalent, band 6.5 for IELTS, is the minimum English language requirement for the Bachelor of Arts Teaching English as a Second Language programme in University of Malaya, Malaysia (Entry Requirement – Bachelor (18 December 2015). Retrieved from https://www.um.edu.my/admissions/entry-requirements), as well as in most public or private universities in Malaysia. Having scores of at least MUET band 4 or IELTS band 6 means the students are competent users of English. They are satisfactorily expressive and fluent, and have effective command and understanding of the language despite occasional inaccuracies. They are therefore considered sufficiently proficient in English and are capable of producing educated MalE. The speakers are university undergraduates majoring in English based majors. This further ensures the high proficiency of the speakers. They come from the same age group (20 – 24 years) and live in the central region of Malaysia. The selection of speakers from one region would reduce the effect of geographical differences in speech, as shown in Grabe and Post (2002). All speakers met the above requirements. However, an extensive inquiry post recording revealed irregularities in the first languages of the Chinese and Indian speakers. In the end, 12 speakers were chosen equally from the three major ethnic groups in Malaysia (4 Malay, 4 Chinese and 4 Indian). The background of these speakers is described in the following subsections.

2.8.1.1 Malay speakers

The four Malay speakers were aged 21-24 years and studying English for Professional Communication at MARA University of Technology (UITM) Shah Alam at the time of recording. They all have the same first language, which is Bahasa Melayu, followed by English as a second language. Although some would assert that their use of English is as dominant as the use of their first language, they all had band 4 in their MUET which shows that their English language proficiencies were at the same level. As part of their course, they were each taking a foreign language class such as Japanese, Arabic and German. They live on the UITM campus in Shah Alam, Selangor, but they grew up in Perak and Selangor, both states in the central region of peninsular Malaysia.

2.8.1.2 Chinese speakers

At the time of recording, the four Chinese speakers were aged between 20 and 23 years and studying English and Linguistics at University of Malaya in Kuala Lumpur and Tunku Abdul Rahman University (UTAR) in Kampar, Perak. They originate from the states of Selangor and Perak. They were multi-lingual, speaking English along with several Chinese dialects (Mandarin, Cantonese and Hakka) in the home domain. Their two main languages are English and Mandarin, and their English language proficiency is good with two speakers having band 5 and band 6 in their MUET. Besides speaking English and the Chinese dialects, they were also proficient in Bahasa Melayu, having learnt it in school and frequently using it.

2.8.1.3 Indian speakers

At the time of recording, the four Indian speakers were all aged 21 years and studying TESL at University of Malaya and Sultan Idris Education University (UPSI) in Tanjung Malim, Perak. They originated from Selangor, Perak and Johor. Their first language is Tamil with English and Bahasa Melayu as their second and third languages, although some stated that English had become their dominant language as they used it more extensively than Tamil. One speaker had band 5 for her MUET, while all the others had a band 4.

2.8.2 Reading list

Choosing a suitable method of speech elicitation depends on the focus and objectives of the study. In this study, the intonation patterns of *wh*-questions and *yes/no*-questions produced by Malay, Chinese and Indian speakers of MalE are compared. Therefore, comparable recordings of wh-questions and yes/no-questions are needed. The reading list of questions was used in order to allow exact comparisons between the intonation patterns of the different speaker groups. The 12 speakers were asked to read from a list of 10 questions (5 wh-questions and 5 yes/no-questions) ranging from "How old are you?" to "Do you enjoy cooking?" (See full list of questions in Appendix A). Two extra sentences were added at the beginning and at the end of the question list to avoid any possible list-beginning or list-ending effects. All the questions were external questions asking for information according to Freed's (1994) taxonomy of questions. The questions were kept short, to ensure that each question is made up of one intonation unit. Not neglecting the interactional aspect of

conversational speech, the speakers were asked to direct the questions at the interviewer and to expect a response.

2.8.3   Information gap activity

Although using a read list allows for effective comparison as it reduces syntactical variation, the prosody of read speech may differ from natural speech. For a relatively more natural speech, a speaking activity was needed. However, a map task was not considered ideal as it elicits various types of questions as well as declaratives. A speaking activity which could yield wh-questions and yes/no-questions is the Cambridge Key English Test speaking test, which was a form of assessment on students' ability to take part in conversations by asking and answering questions. As the Cambridge Key English Test is a basic qualification of English, it would be considered easy enough to elicit relatively natural speech from the speaker subjects of this study, who have a minimum qualification of Band 4 in their MUET. Therefore, the speakers took part in an information gap activity adapted from Cambridge Key English Test speaking test to elicit semi-spontaneous speech. In the information gap activity, the speakers were given a card with question prompt words and were instructed to ask questions based on prompts given on the card, directed at the researcher, who had a card with the matching information (see Appendix B). Two different information gap activities, each eliciting five questions, were conducted for each speaker. Therefore, each speaker had to produce about 10 questions. Compared to the reading list of questions, this information gap activity elicited a more natural, semi-spontaneous speech in a controlled environment as the

speaker had the freedom to formulate their own questions based on the word prompts.

2.8.4 Recording

The speakers were audio recorded as they produced the questions in a quiet room. Care was taken to ensure no interruptions and to reduce background noises by turning off all electronic devices as well as the air conditioning or fans. Recordings were done with a Marantz professional PMD661 solid state recorder and an Audio-technica ATM73a cardioid condenser headworn microphone.

2.8.5 Analysis

The digital audio recordings were then viewed in Praat 5.4.0 (Boersma & Weenink 2015), an acoustic analysis software. The intensity values of speech and formants, which could be automatically viewed, were used to help identify stressed syllables and the beginnings and endings of utterances. Referring to the fundamental frequency (f_0) values, boundary tones were transcribed. The Tone and Breaks Indices (ToBI) transcription convention (Silverman et al., 1992) was used. ToBI is a framework of generally accepted conventions for transcribing the intonation of speech of a language. As a well-established convention for transcribing intonation, using ToBI is preferred as it allows for good inter-rater reliability. In ToBI, intonation is a series of pitch accents (marked with a star, *), boundary tones (indicated with a percentage sign, %) and intermediate phrase boundary tones (marked by a minus sign, -), which can be low (L) or high (H), as shown in Figure

3.1. Initial and final boundary tones were then classified into falling, rising, fall-rising, rise-falling and level tones.
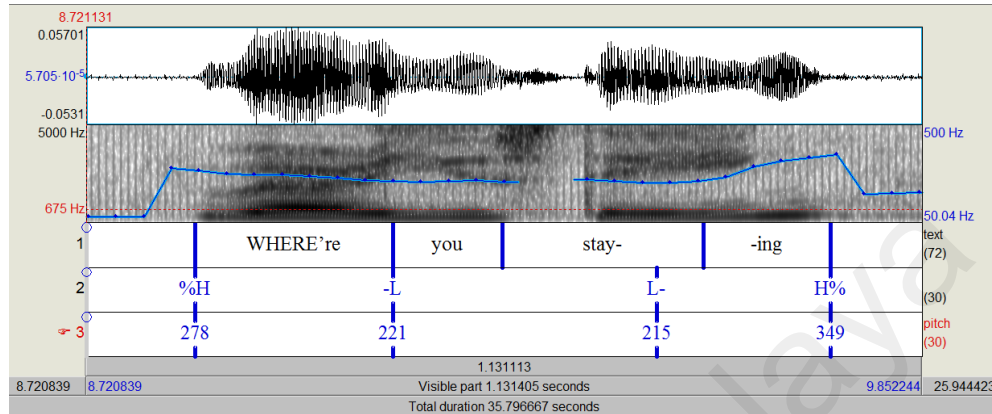
Figure 3.1: Screenshot of waveform and transcription on Praat 5.4.0.

Each question produced by the speakers were treated as a complete intonation phrase, provided they fit the British school definition for intonation phrase (also known as tone unit (Crystal, 1969; Brazil, 1997), tone group (Halliday, 1967), intonation group (Cruttenden, 1997) or intonation phrase (Wells, 2006). An intonation phrase has at least one stressed syllable, and is divided from neighbouring intonation phrases by a change in pitch direction, a pause and lengthening of the final syllable. The proportion of tones (falling, rising, fall-rise, rise-fall or level) of the first and final lexical item (initial and final boundary tones) of each question type was tabulated according to the ethnicity of the speaker. Using IBM SPSS Statistics 22.0, a statistical analysis software, non-parametric tests such as the Friedman test was applied to compare the initial and final boundary tones for each ethnic group (Malay, Chinese and Indian). According to Hinton (2004), the Friedman test is similar to the parametric repeated measures ANOVA, but does not require the assumptions for ANOVA to be met. It is performed when there is one multi-level independent variable and a dependent variable that is not in intervals or normally

42

distributed. The test gives the Mean Rank for results in each group and produces a chi-square statistic where larger values indicate a difference between the rankings (Hinton, 2004). Using this test, we are able to determine if there is a difference in the distribution of boundary tones for the three ethnic groups.

2.8.6 Validity of data

Three months after the recordings were transcribed, a second round of transcription was done on 40% of the recordings. The recordings of five speakers were randomly selected, transcribed again and compared with the initial transcription. The assignment of tone for each boundary tone and prominent syllable were considered, and the percentage of tone choices where the two ratings agreed was taken. When the placement of prominent syllable differed or when different tones were assigned to a particular syllable, it was counted as a disagreement. A 95.76% inter-rater reliability was achieved.

2.9 Perception test

To see if there are any perceivable differences in the intonation patterns used by Malay, Chinese and Indian speakers of MalE when producing questions, a perception test was conducted using the audio recordings that were recorded in the first part of this study.

2.9.1   Conducting the test

The audio recordings were broken down into audio tracks of one question each using an audio editing software, Audacity 2.1.1 (Audacity®, 2015), and compiled into folders that contained 12 clips of both Wh-questions and Yes/No-questions produced by Malay, Chinese and Indian speakers. For the perception test, 41 listeners of Malay, Chinese and Indian descent were asked to participate. The listeners were all Language and Linguistics undergraduate students of the Faculty of Languages and Linguistics in University of Malaya. The test was conducted in classroom settings, where students were given a form (see Appendix C), in which they marked the perceived ethnicity of the speaker (Malay, Chinese or Indian) of each track when they heard it, and indicated the speech elements (consonant, vowel, stress, intonation and rhythm) that helped them guess the ethnicity of the speakers. They were allowed to select 'other' for the ethnicity of the speaker, and to list more than one feature as well as add their own reasons for selecting the ethnicity. The listeners were also given the option to state that they could not decide the ethnicity of the speaker or the speech elements used in identifying the ethnicity.

2.9.2   Analysis

From the perception test forms, the success rate of the listeners was calculated according to ethnic group. The features that were reportedly used to correctly identify the ethnicity of the speaker in the recordings and their success rates were also tabulated. Using IBM SPSS Statistics 22.0, the accuracy of listeners in detecting the ethnicity of the speakers were analysed using crosstabulation and chi-squared

tests to determine whether there is a significant difference in the ability of the listeners in determining if the speaker is Malay, Chinese or Indian.

2.10   Summary of Chapter 3

In this chapter, the methods used to identify the intonation patterns used by Malay, Chinese and Indian speakers of MalE when asking questions, and to conduct a perception test to see if there are any perceivable differences in the intonation patterns used by Malay, Chinese and Indian speakers of MalE were discussed. In identifying the intonation patterns used by Malay, Chinese and Indian speakers of MalE when asking questions, all socio-linguistic variables were controlled to reduce possible variation that are not related to ethnicity or speaker L1. Speakers were recorded in a silent room while reading a list of questions and taking part in an information gap activity which elicited wh-questions and yes/no-questions asking for information. The recordings were transcribed using the ToBI transcription convention and an inter-rater reliability of over 95% was achieved. The initial and final boundary tones of the questions were analysed using Friedman test to determine if there is a difference in the distribution of boundary tones for the three ethnic groups. For the perception test, 12 clips of the recordings produced by the Malay, Chinese and Indian speakers were replayed to 41 listeners (also Malay, Chinese and Indian), who marked the perceived ethnicity of the speakers as well as indicate the speech elements that helped them decide the ethnicity of the speakers in a form. The accuracy of their responses were analysed using crosstabulation and chi-squared test to determine whether there is a significant difference in the ability of the listeners in determining if the speaker is Malay, Chinese or Indian.

CHAPTER 4

RESULTS AND DISCUSSION

In this chapter, the analysis involved in answering the research questions of this study will be discussed. The first research question involves identifying the initial and final boundary tones in *wh*-questions and *yes/no*-questions produced by fluent speakers of MalE (Section 4.3 and Section 4.4). The second research question involves determining if there are any statistically significant inter-ethnic differences in the production of these boundary tones (Section 4.5). The third was to find out the extent of which listeners are able to distinguish the ethnicity of the speakers in the perception test (Section 4.6).

4.1   Analysis of Speaker F0

As explained in Section 3.1.1, the recordings of 12 Malaysian speakers of English were selected for study. These 12 speakers comprised four Malays, four Chinese and four Indians. From Table 4.1 and Figure 4.1, it can be seen that the Malay speakers have a narrower pitch range (average pitch range of 176 Hz with standard deviation of 33.63Hz) and lower mean pitch (223Hz with standard deviation of 14.96Hz) compared to the Chinese (who had an average pitch range of 242Hz with standard deviation of 52.84Hz and average mean pitch of 247Hz with standard deviation of 19.32Hz) and Indian speakers (who also had an average pitch range of 242Hz with standard deviation of 37.51Hz and average mean pitch of 236Hz with standard deviation of 7.24Hz). This can be attributed to the relatively level pitch contour of the Malay speakers in this study. As discussed in Section 2.3.1, Wang (1987)

described the intonation pattern of *wh*-questions and *yes/no*-questions in the Malay language as a series of level tones from the start which continues until the final syllable, which would be marked with a rising tone. This tendency to have level pitch contour when speaking Malay may have been brought over into the Malay speakers' MalE speech.

Table 4.1: Minimum F0, maximum F0, mean F0 and F0 range of the Malay, Chinese and Indian speakers.

Speaker		Min F0	Max F0	Mean F0	F0 range	Avg min F0	Avg max F0	Avg mean F0	Avg F0 range
Malay	M3	161	321	217	160	175 (22.05)	350 (48.30)	223 (14.96)	176 (33.63)
	M4	153	334	210	181				
	M6	182	324	221	142				
	M8	202	422	245	220				
Chinese	C1	176	464	249	288	186 (13.48)	428 (47.17)	247 (19.32)	242 (52.84)
	C2	199	368	252	168				
	C6	196	467	266	271				
	C8	174	413	220	239				
Indian	I1	157	409	227	252	171 (18.14)	413 (32.98)	236 (7.24)	242 (37.51)
	I2	190	377	245	188				
	I4	183	457	238	274				
	I5	154	407	235	253				

Note: Standard deviations are in parenthesis. Numbers attached to M, C and I refer to the number of Malay, Chinese and Indian speaker. For example, M3 is the third Malay speaker, C6 is the sixth Chinese speaker and I5 is the fifth Indian speaker in the study.
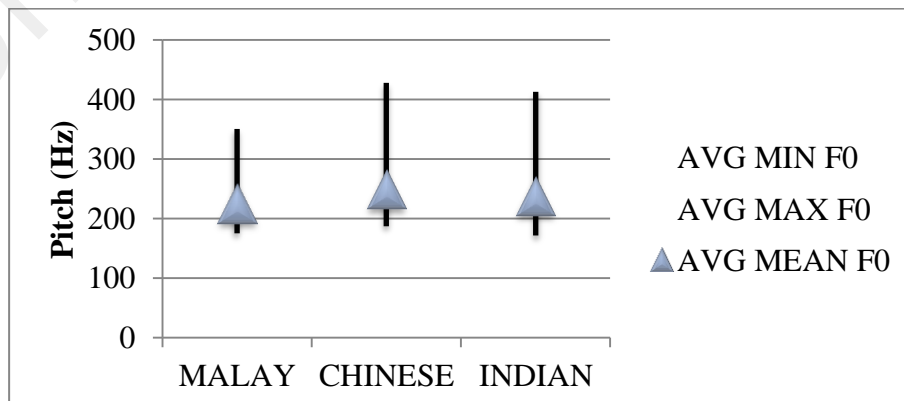

Figure 4.1: Average pitch ranges of the Malay, Chinese and Indian speakers and their average mean pitch.

4.2   Questions

As discussed in Section 3.1.2 and Section 3.1.3, each speaker took part in two speech elicitation activities, a reading list of 10 questions and two sets of information gap activities, both eliciting an estimated total of 20 questions per speaker. In the reading list, each speaker produced five *wh*-questions (*what, how, where, who*) and five *yes/no*-questions (*do, are, can*). However, it is difficult to control the type of questions speakers may produce in an information gap activity, as speakers are allowed to formulate their own questions based on question prompts. Thus, the distribution of question types is irregular, as shown in Table 4.2. For *wh*-questions, the majority of the questions produced by the Malay, Chinese and Indian speakers begin with '*what*'. Many of the speakers used '*what*' instead of other possible question words. For example, they said "What is the price of the student ticket?" instead of "How much is the student ticket?", "What is the closing time?" instead of "When does it close?" and "What is the address?" instead of "Where is the bookshop?" Likewise, for *yes/no*-questions, the speakers tended to begin their questions with the variations of the verb '*be*' and '*do*', such as "Is there a car park?" and "Do they sell English dictionaries?"

Table 4.2: Types of questions recorded in the information gap activity.

wh-question	Malay	Chinese	Indian	*yes/no*-question	Malay	Chinese	Indian
What	17	15	17	Is, Are	11	10	10
How	5	4	3	Can	3	5	2
When	2	2	3	Do, does, did	8	8	9
Where	3	1	4	Has	1	0	0
Total	27	22	27	**Total**	23	23	21

4.3   Initial boundary tone

As the *wh*-questions begin with *wh*-question words such as '*what*', '*where*', '*how*' and '*when*', which communicate the type of information being sought, these words may be made prominent by pitch change. This is common in Received Pronunciation as the initial *wh*-question word is often marked by a high pitch peak (Cruttenden, 1997 and Ladd, 1996). Because of this, the initial boundary tones produced by the speakers were compared.

As shown in Table 4.3, the initial boundary tones produced by Malay, Chinese and Indian speakers of MalE was largely limited to rising or level tones. *yes/no*-questions were often initiated with a level tone (see Figure 4.2), while *wh*-questions started with either a rising or a level tone (see Figure 4.3 and Figure 4.4). However, some small differences between ethnic groups were apparent, especially with *wh*-questions: the Malay speakers tended to start their questions with level tones (68.29%), while the Indian speakers used rising tones slightly more often (50%), and the Chinese speakers used both rising (48.65%) and level tones (48.65%).

Table 4.3: Percentage of initial boundary tones produced by Malay, Chinese and Indian speakers of MalE for *wh*-questions and *yes/no*-questions.

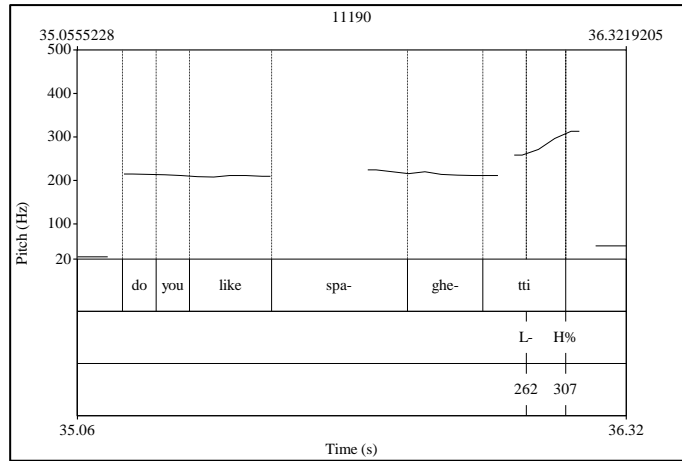| Question type	Ethnicity	Rise	Fall-rise	Fall	Rise-fall	Level
wh-question	**Malay**	31.71%	0%	0.00%	0%	**68.29%**
	Chinese	**48.65%**	0%	2.70%	0%	**48.65%**
	Indian	**50.00%**	0%	4.76%	0%	45.24%
yes/no-questions	**Malay**	16.67%	0%	0.00%	0%	83.33%
	Chinese	20.00%	0%	5.00%	0%	75.00%
	Indian	21.05%	0%	2.63%	0%	76.32%

Figure 4.2: The pitch contour of a *yes/no*-question with level initial boundary tone and rising final boundary tone.
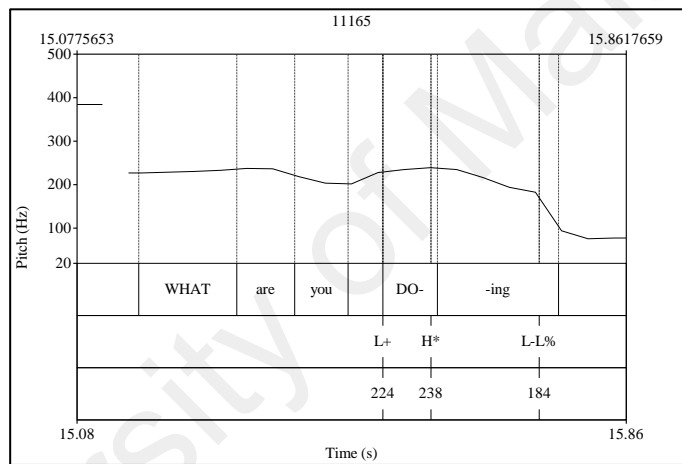

Figure 4.3: The pitch contour for *wh*-question with level initial boundary tone for *wh*-question word.
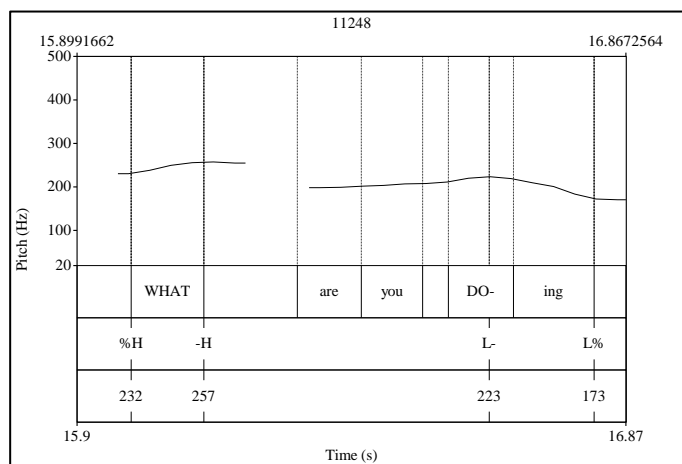

Figure 4.4: The pitch contour for *wh*-question with rising initial boundary tone for *wh*-question word.

Based on the Friedman test, a comparison among all tones was done for each ethnic group and the results indicate that there are significant differences between the tones. In agreement with the results in Table 4.3, Table 4.4 shows that the highest mean rank (M) for *wh*-questions by the Malay and Chinese speakers in this study belonged to the level tone, followed by the rising tone (M_M =4.21, M_C=3.72 for level tone, and M_M =3.29, M_C=3.72 for the rising tone). For the Indian MalE speakers, the highest mean rank for *wh*-questions belonged to the rising tone (M_I=3.75), followed by the level tone (M_I=3.63). For *yes/no*-questions the highest mean rank belonged to the level tone for all three ethnic groups (M_M=4.62, M_C=4.38, M_I=4.39), while the mean rank for the other tones were low in comparison. Likewise, the chi-squared test results indicate that the difference in tones is greater for *yes/no*-questions (χ^2(i, yn, M)= 105.23, p<0.001; χ2(i, yn, C)=81, p<0.001; χ^2(i, yn, I)=77.73, p<0.001) compared to *wh*-questions (χ^2(i, wh, M)= 75.22, p<0.001; χ^2(i, wh, C)=50.7, p<0.001; χ^2(i, wh, I)=53.95, p<0.001).

Table 4.4: Mean rank of initial boundary tones for *wh*-questions and *yes/no*-questions by Malay, Chinese and Indian speakers.

Question	Speaker ethnicity	Rise	Fall-rise	Fall	Rise-fall	Level	Chi-square	p value
wh-questions	**Malay**	**3.29**	2.50	2.50	2.50	**4.21**	75.220	<0.001
	Chinese	**3.72**	2.50	2.57	2.50	**3.72**	50.703	<0.001
	Indian	**3.75**	2.50	2.62	2.50	**3.63**	53.952	<0.001
yes/no-questions	**Malay**	2.88	2.50	2.50	2.50	**4.62**	105.231	<0.001
	Chinese	3.00	2.50	2.63	2.50	**4.38**	81.000	<0.001
	Indian	3.04	2.50	2.57	2.50	**4.39**	77.730	<0.001

As shown in Table 4.3, the Malay speakers generally started their questions on level tones (68.29% for *wh*-questions and 83.33% for *yes/no*-questions). This can be linked to the intonation patterns of the Malay language (see Section 2.3.1), where

sentences start on a level tone which continues until the final syllable, which would be marked with a rising or falling tone (Wang, 1987).

In Tamil, on the other hand, the *wh*-question words tend to be accented with a rise to distinguish the interrogative from a declarative sentence (Keane, 2006). However, the percentage of rising initial tone produced by the Indian speakers for *wh*-questions was not particularly high at 50%. Perhaps there has been a convergence with the speech patterns of Malay, the national language of Malaysia, or with the MalE spoken by Malays, the majority ethnic group in the country. As discussed in Section 2.3.1, the Chinese speakers begin their *wh*-questions with both rising and level tones. However, according to Shen (1990) and Yuan, Shih and Kochanski (2002), the pitch contour of questions in Mandarin mostly follow the tones of the lexical items in the sentence, but begins with an overall raised pitch which peaks at the final syllable. This pattern was revealed when calculating the percentage of high initial boundary tones (see Table 4.5). The Chinese speakers of MalE started their *wh*-questions at a high pitch (level or rising) more often than the Malay or Indian speakers.

Table 4.5: Percentage of %H initial boundary tone.

	Malay	**Chinese**	**Indian**
wh-**questions**	26.92%	**60.42%**	25.00%
yes/no-**questions**	2.22%	2.08%	0.00%

A closer look at the type of words used to begin the *wh*-questions shows some differences in tone use. As shown in Figure 4.5, speakers began the questions, "How old are you", "Who do you live with" and "What are you doing" with the level tone,

while the questions "Where are you staying" and "Where are you going" began with the rising tone relatively more often.
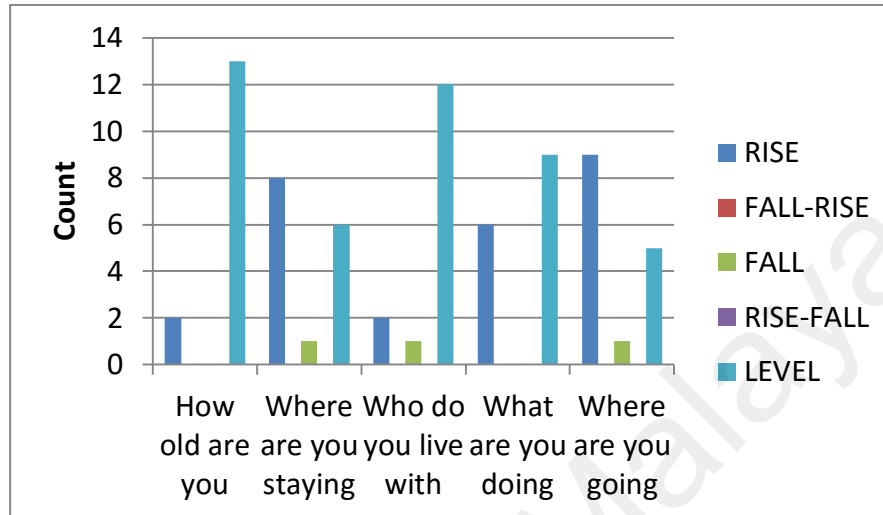

Figure 4.5: Occurrence of initial boundary tone for *wh*-questions in the reading list.

The main difference between the words 'how', 'who', 'what' and 'where' in these questions is their vowel length. In [hudʊ] and [wada][1] for the questions, "Who do you live with" and "What are you doing"), the vowels /u/ and /a/ are short (average vowel duration of 0.09 seconds and 0.08 seconds for 'who' and 'what' in the data of this study) and therefore don't allow sufficient time for any significant pitch change. In "How old are you", two different beginnings may occur: 'how' either ends with a glottal stop before the speaker articulates 'old' i.e. [hau ʔoud], or the speaker may glide from 'how' to 'old' i.e. /hauwouʊd/. In the first case, the glottal stop tends to shorten the vowel in /hau/ and thus provides insufficient time (average vowel duration of 0.118 seconds) for any significant pitch change. In the latter case, for

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[1] Malaysian English speaker generally do not contrast typical vowel pairs in terms of quality or length. The vowels produced for example, for /ʊ/ and /uː/, are produced closed to [u], such as in the words *full* and *fool* (Pillai, Zuraidah Mohd. Don, Knowles and Tang, 2010; Tan & Low, 2010)

which there was only one occurrence in the data, the speaker did not seem to pair the glide with a rising tone but rather a level tone. For the questions beginning with "Where are you", the glide in /wɛaju/ allows time for the speaker to have significant pitch movement for the initial boundary tone (average duration of 0.29 seconds). While this shows that speakers used the rising and level initial boundary tone for *wh*-questions depending on the phonetic nature of the initial words, no significant difference could be found between the Malay, Chinese and Indian speakers in this respect.

4.4 Final boundary tone

The final boundary tone is an important feature of question intonation. A change of the final boundary tone is often what turns a declarative sentence into a question. In RP, *wh*-questions often end with falling tones (82%), while *yes/no*-questions end with rises (Hedberg et al. 2004). In colloquial MalE, questions often lack pitch movement. Instead, they tend to end with particles such as '*ah*' and '*mah*' (Baskaran, 1987). Gut and Pillai (2014) found that Malay speakers of MalE favoured rises for all question types. In SgE, *yes/no*-questions end with rises, while *wh*-questions end with either falls or rises (Lim, 1996).

As shown in Table 4.6 and 4.7, Malay, Chinese and Indian speakers of MalE end their *wh*-questions with rising, falling or level tones (see Figure 4.6 and Figure 4.7) and their *yes/no*-questions with rising tones (see Figure 4.2). The fall-rise and rise-fall tones were rarely used. The lack of these tones is not surprising as MalE does not have as many intonation patterns as RP (Baskaran, 1987).

Table 4.6: Percentage of final boundary tones produced by Malay, Chinese and Indian speakers of MalE for *wh*-questions and *yes/no*-questions.

Question type	Ethnicity	Rise	Fall-rise	Fall	Rise-fall	Level
wh-questions	Malay	**26.83%**	2.44%	**46.34%**	7.32%	**17.07%**
	Chinese	**37.84%**	0.00%	**29.73%**	10.81%	**21.62%**
	Indian	**45.24%**	4.76%	**30.95%**	2.38%	**16.67%**
yes/no-questions	Malay	**92.31%**	0.00%	0.00%	0.00%	7.69%
	Chinese	**90.00%**	0.00%	0.00%	0.00%	10.00%
	Indian	**89.19%**	0.00%	5.41%	0.00%	5.41%

Table 4.7: Mean rank (M) of final boundary tones for *wh*-questions and *yes/no*-questions by Malay, Chinese and Indian speakers.

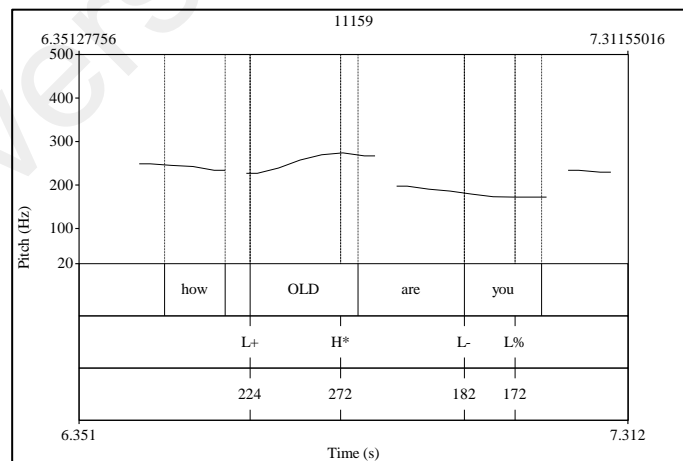| Question	Speaker ethnicity	Rise	Fall-rise	Fall	Rise-fall	Level	Chi-square	p value
wh-questions	Malay	**3.17**	2.56	**3.66**	2.68	**2.93**	24.976	<0.001
	Chinese	**3.45**	2.50	**3.24**	2.77	**3.04**	16.649	<0.005
	Indian	**3.63**	2.62	**3.27**	2.56	**2.92**	27.524	<0.001
yes/no-questions	Malay	**4.81**	2.50	2.50	2.50	2.69	128.308	<0.001
	Chinese	**4.75**	2.50	2.50	2.50	2.75	124.000	<0.001
	Indian	**4.73**	2.50	2.64	2.50	2.64	111.243	<0.001

Figure 4.6: The pitch contour for *wh*-question with falling final boundary tone.
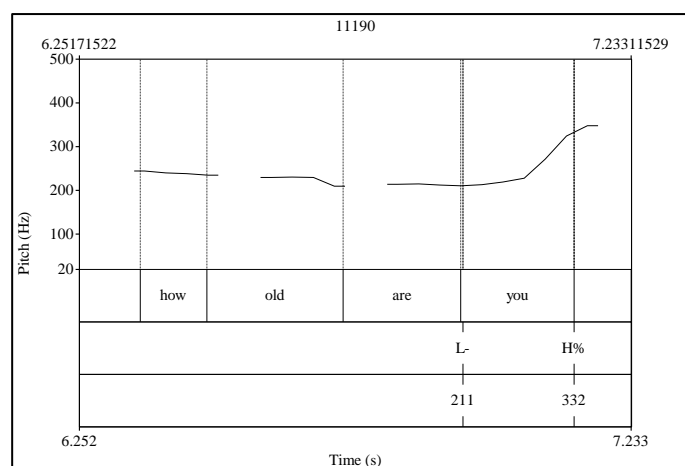
Figure 4.7: The pitch contour for *wh*-question with falling final boundary tone.

The Malay speakers ended their *wh*-questions with more falls (46.34%, M_M=3.66), followed by rises (26.83%, M_M=3.17) and level (17.07%, M_M=2.93) tones. The Chinese and Indian speakers on the other hand, used more rises (37.84%, M_C=3.45 and 45.24%, M_I=3.63), followed by falls (28.73%, M_C=3.24 and 30.95%, M_I=3.27) and level (21.62%, M_C=3.04 and 16.67%, M_I=2.92) tones. The higher percentage of rises produced by the Chinese speakers of MalE could be attributed to the question intonation patterns of Mandarin which tend to have a raised pitch peaking at the final syllable (Shen, 1990 and Yuan et al., 2002). However, *wh*-questions tend to have a falling pitch in Tamil, while the Indian speakers of MalE used more rises. Although the final boundary tone produced by the MalE speakers for *yes/no*-questions matches that of RP, speakers of all three ethnic groups use much less falls for *wh*-questions than in RP (82%, Hedberg et al. 2004). The chi-squared test results indicate that there is a statistically significant (p-value less than 0.005) difference of tone use among the three ethnic groups for *wh*-questions (χ^2(f, wh, M)= 24.98, p<0.001; χ^2(f, wh, C)=16.65, p<0.005; χ^2(f, wh, I)=27.52, p<0.001), but it is not as great as for *yes/no*-questions (χ^2(f, yn, M)= 128.31, p<0.001; χ^2(f, yn, C)=124, p<0.001; χ^2(f, yn, I)=111.24, p<0.001).

As previously discussed in Section 2.4, the semi-spontaneous speech elicited in the information gap activity may differ from the more careful read speech. Therefore, the mean rank of the tones elicited by the Malay, Chinese and Indian speakers in the reading list activity and the information gap activity was compared. However, as shown in Table 4.8, the chi-squared values for all ethnic groups in both the read list activity (χ^2(f, rd, M)= 11.00, p=0.027; χ^2(f, rd, C)=14.50, p=0.006; χ^2(f, rd, I)=21.50, p<0.001) and the information gap activity (χ^2(f, ig, M)= 14.48, p=0.006; χ^2(f, ig, C)=6.82, p=0.146; χ^2(f, ig, I)=13.46, p=0.009) were low, suggesting little to no statistically significant difference for tone use between both speech elicitation activities among the ethnic groups. Therefore, the results in Table 4.6 and Table 4.7 are reliable representatives of final boundary tones produced by Malay, Chinese and Indian speakers of MalE for both the read list activity and the information gap activity.

Table 4.8: Mean rank of tones elicited by the Malay, Chinese and Indian speakers in the reading list activity and the information gap activity.

Question	Speaker ethnicity	Rise	Fall-rise	Fall	Rise-fall	Level	Chi-square	p value
Read list	Malay	3.13	2.63	3.63	2.63	3.00	11.00	0.027
	Chinese	3.75	2.50	3.13	2.75	2.88	14.50	0.006
	Indian	4.00	2.63	3.00	2.63	2.75	21.50	<0.001
Information gap activity	Malay	3.21	2.50	3.69	2.74	2.86	14.48	0.006
	Chinese	3.09	2.50	3.38	2.79	3.24	6.82	0.146
	Indian	3.30	2.61	3.52	2.50	3.07	13.46	0.009

There appears to be a systematic linguistic pattern of MalE spoken across the three major ethnic groups that diverges from a native model of English, such as Standard Southern BrE or General AmE. This can perhaps be explained using Gut's (2007) Norm Orientation Hypothesis, which states that such patterns emerge when speakers

of a local variety accept the endonormative rather than an exonormative norm. As discussed in Chapter 2, the emergence of systematic linguistic patterns such as those found in this study may not be due to first language transfer. This was found to be true, as discussed previously in this section. Instead, as Gut (2007) suggests, these linguistic patterns emerge and develop over time as an accepted endonormative norm. This could happen as speakers pick up the patterns from other speakers of MalE (parents, teachers and peers) and the mass media such as radio and television news broadcasts and programmes, and advertisements.

According to Gut (2007), as speakers identify themselves with their local variety of English coupled with the acceptance of an endonormative norm, systematic linguistic patterns in the local variety would emerge and spread. However, these systematic linguistic patterns have emerged as many speakers of MalE use it as an expression of Malaysian identity although the Standard BrE continues to be used as a reference for pronunciation in the Malaysian English education system and there is no established endonormative model for MalE pronunciation (Pillai, 2008). There is a sense of pride of this local variety among its speakers and it is used in informal conversation to project a shared membership of a group (Rajadurai, 2004). As speakers pick up distinctively MalE linguistic patterns in such groups, they are likely to pass them on to other speakers. The participants of this study all learnt English in school and had Malaysian English language teachers throughout their education. It is likely that they picked up such linguistic features from parents, teachers and friends who speak MalE. English continues to be the focus of their undergraduate studies, and many of them are likely to pass these features on to future generations, thus continuing the linguistic patterns of MalE and enabling the development process of

these features. However, as previously discussed in Chapter 2, the development and establishment of such linguistic features of MalE is highly dependent on the attitudes of the speakers of MalE towards it. Public perception towards MalE remains divided as some advocate the acceptance of MalE while others still view it as something to be ashamed of (see 'What's there to boast when we're speaking Manglish?', 2009; 'Proud of Manglish?', 2012). The use of the term 'Manglish' among Malaysians while referring to MalE suggests that it is a 'mangled' or 'broken' variety of English. If the speakers see MalE as undesirable, they may put in conscious effort to use the intonation patterns of other native varieties such as BrE or AmE instead of MalE, much like how the speakers in the study by Yamaguchi (2014), who were conscious of their use of the new [t] instead of [θ] or [ð]. As previously suggested in Chapter 2, MalE should not be considered to be in the nativisation phase, but to be in the process of shifting to the endonormative stabilisation phase of Schneider's (2007) theory for the development of new Englishes. However, until there is an official acceptance of MalE as an endonormative norm and widespread acceptance of MalE among its speakers, it would remain in between the two phases.

4.5   Significant difference between ethnic groups

To determine if there are statistically significant inter-ethnic differences in the production of boundary tones when producing *wh*-questions and *yes/no*-questions in MalE, a chi-squared test was done. As shown in Table 4.9 and Table 4.10, the low chi-squared values and p-values more than 0.05 indicate that there are little to no difference among three ethnic groups in using rising, falling or level tone as initial boundary tones for both *wh*-questions (χ^2(i, wh, rise)=3.433, p=0.179; χ^2(i, wh,

fall)=1.939, p=0.379 and χ^2(i, wh, level)=5.098, p=0.078) and *yes/no*-questions (χ^2(i,

yn, rise)=0.523, p=0.77; χ^2(i, yn, fall)=1.962, p=0.375 and χ^2(i, yn, level)=1.327,

p=0.515). Similarly for final boundary tones, the low chi-squared values and p-

values more than 0.05 indicate that there are little to no difference among three

ethnic groups for both *wh*-questions (χ^2(f, wh, rise)=3.059, p=0.217; χ^2(f, wh, fall-

rise)=1.831, p=0.4; χ^2(f, wh, fall)=3.004, p=0.223; χ^2(f, wh, rise-fall)=2.289, p=0.318

and χ^2(f, wh, level)=0.389, p=0.823) and *yes/no*-questions (χ^2(f, yn, rise)=0.234,

p=0.89; χ^2(f, yn, fall)=4.345, p=0.114 and χ^2(f, yn, level)=0.567, p=0.753). There

were zero tokens for the initial boundary tones for *wh*-questions and *yes/no*-

questions as well as for the final boundary tones for *yes/no*-questions, as shown in

Table 4.3 and Table 4.6, thus there were no chi-squared values or p-values for these

cases. As there are no statistically significant differences between the three ethnic

groups, we can thus conclude that there is a relatively similar pattern of MalE spoken

across the three major ethnic groups.

Table 4.9: Chi-squared value and significant difference of ethnicity of speaker against initial boundary tone use.

Questions	Tone	Chi-squared value	p-value
wh-questions	Rise	3.433	0.179
	Fall-rise	-	-
	Fall	1.939	0.379
	Rise-fall	-	-
	Level	5.098	0.078
yes/no-questions	Rise	0.523	0.770
	Fall-rise	-	-
	Fall	1.962	0.375
	Rise-fall	-	-
	Level	1.327	0.515

Table 4.10: Chi-squared value and significant difference of ethnicity of speaker against final boundary tone use.

Questions	Tone	Chi-squared value	p-value
*wh-*questions	Rise	3.059	0.217
	Fall-rise	1.831	0.400
	Fall	3.004	0.223
	Rise-fall	2.289	0.318
	Level	0.389	0.823
*yes/no-*questions	Rise	0.234	0.890
	Fall-rise	-	-
	Fall	4.345	0.114
	Rise-fall	-	-
	Level	0.567	0.753

This further supports that there is a systematic linguistic pattern of MalE shared by the three major ethnic groups, despite coming from different ethnic backgrounds and having different first languages. As discussed in Section 4.4, these patterns are likely to persist as speakers continue to associate them with their Malaysian identity and pass these linguistic patterns on to future generations as teachers, parents, friends, and via mass media. As Gut's (2007) Norm Orientation Hypothesis suggests, these linguistic features emerge and develop over the years as speakers' attitudes towards the exonormative and endonormative norms shift.

4.6   Perception test

To examine if there are any perceivable differences in the intonation patterns used by Malay, Chinese and Indian speakers of MalE when producing questions, a perception test was conducted using the audio recordings that were recorded in the first part of this study. From the perception test forms, the success rate of the listeners was calculated. Overall accuracy of listeners is 45.9%, which correlates

with the perceptual test results conducted by Pillai, Knowles and Mohd. Don (2012), who found that Malaysian listeners could only correctly identify the ethnicity of fluent speakers of MalE less than 50% of the time. Shown in Table 4.11 is the overall success rate of listeners in determining the ethnicity of the speakers. The Malay listeners had a higher success rate (53.6%), followed by the Chinese listeners (42.4%) and Indian listeners (39.9%). With a chi-squared value of 7.731, the statistical difference is small, but significant ($p<0.05$).

Table 4.11: Overall success rate of listeners in determining the ethnicity of speakers.

Ethnicity of listener	Malay	Chinese	Indian	Chi-squared	p-value
Success rate	53.60%	42.40%	39.90%	7.731	<0.05

As shown in Table 4.12, the listeners were better at identifying the speakers of their own ethnic group. The Malay listeners were better at identifying Malay speakers (62.5%), Chinese listeners were better at identifying Chinese speakers (61.4%), and Indian listeners were better at identifying Indian speakers (44.6%). The Malay listeners did fairly well at identifying the Chinese (46.9%) and Indian speakers (51.6%), while the Chinese listeners fared poorly at identifying Malay (38.6%) and Indian speakers (27.3%). The Indian listeners, on the other hand, did not do as well in identifying the ethnicity of the speakers in general. In fact, the Malay listeners did better at identifying the Indian speakers (51.6%) than the Indian listeners did (44.6%). Compared to a similar test done with SgE speakers and listeners by Lim (2000), which yielded success rates of 65% and higher, the success rates of the Malaysian speakers in identifying the ethnicity of the MalE speakers in this study is relatively low. This suggests that although there are perceivable ethnic differences in the speech of the speakers, they are easily missed by the untrained ear.

Table 4.12: Success rate of listeners in determining the ethnicity of speakers.

Ethnicity of listeners	Ethnicity of speakers			Chi-squared	p-value
	Malay	Chinese	Indian		
Malay	**62.5%**	46.9%	56.6%	3.309	0.191
Chinese	38.6%	**61.4%**	27.3%	10.855	<0.005
Indian	42.9%	32.1%	**44.6%**	2.135	0.344

The features that were reportedly used to identify the ethnicity of the speaker in the recordings and their success rates were also calculated, as shown in Table 4.13. The listeners were all undergraduate students studying linguistics in the Faculty of Languages and Linguistics in University of Malaya and are familiar with the various speech elements. From the Table 4.13, it is clear that suprasegmental features such as intonation and rhythm played a greater role in helping listeners determine the ethnicity of the speakers compared to segmental features such as vowels and consonants. Overall, the listeners reported using supra-segmental features, intonation (40.2%), rhythm (33.1%) and stress (27.8%), to identify speaker ethnicity, as shown in Table 4.12. For both Malay and Chinese speakers, listeners reported that intonation (51.9% and 50.7%) was the most prominent feature of speech, followed by rhythm (37% and 40%). As for Indian speakers, it was reported that rhythm (44.3%) was the feature that helped listeners identify them, followed by intonation (34.3%).

Table 4.13: Speech elements reportedly used for positive identification according to speaker ethnicity.

Speech element	Malay	Chinese	Indian	Overall Percentage
Consonant	28.4%	32.0%	20.0%	20.30%
Vowel	14.8%	24.0%	10.0%	13.80%
Stress	22.2%	25.3%	28.6%	27.80%
Rhythm	**37.0%**	**40.0%**	**44.3%**	**33.10%**
Intonation	**51.9%**	**50.7%**	**34.3%**	**40.20%**
Other	0.0%	2.7%	0.0%	2.40%
Can't say	9.9%	4.0%	4.3%	14.20%

The suprasegmental features of speech are the most prominent differences between Malay, Indian and Chinese MalE. Studies on the segmental features of these three ethnic groups have found little to no differences, for example, Pillai (2014), who studied the monophthongs and diphthongs of MalE. Despite knowing this, listeners had an overall success rate of less than 50% when determining the ethnicity of the speakers. Such modest success rates show that ethnicity is not clearly discernible from the speech of educated speakers of MalE. Although the speakers of MalE come from different ethnic backgrounds and have varying mother tongues, educated speakers of MalE sound much like each other (e.g Pillai et al 2010). This is achieved despite not having an officially accepted endonormative pronunciation model for MalE.

4.7   Summary of Chapter 4

This study was carried out to identify and compare the intonation patterns used when fluent speakers of MalE produce *wh*-questions and *yes/no*-questions, and to determine if listeners are able to distinguish the ethnicity of the speakers. Particular patterns were found in the intonation of *wh*-questions and *yes/no*-questions in MalE, regardless of the ethnicity of the speaker. Both *wh*-questions and *yes/no*-questions tended to start with a level tone. There was a tendency for *yes/no*-questions to end with rises, while *wh*-questions ended with either falls or rises. These patterns were consistent across ethnic groups and between careful read speech and semi-spontaneous elicited speech. These findings are similar to Lim's (1996) findings on SgE and in agreement with Gut and Pillai's (2014) work on Malay speakers of MalE.

Results from the perception test suggest that there are perceivable ethnic differences in the speech of the speakers, but they are not as apparent as in Lim's (2000) study and are easily missed by the untrained ear. Such results are to be expected when speakers of different ethnic groups converge in their speech patterns. The greater the language proficiency of the speaker, the less ethnolectal pronunciation features would be present in their speech and the more similar they would sound (Pillai, 2008). These patterns produced by the Malay, Chinese and Indian speakers of MalE display a convergence, despite the speakers having different first languages. Neither can these patterns be attributed to first language transfer as they differ from known question intonation patterns of their respective first languages. These systematic linguistic patterns of MalE spoken across the three major ethnic groups are therefore in agreement with Gut's (2007) Norm Orientation Hypothesis, which states that such patterns emerge when speakers of a local variety accept the endonormative rather than an exonormative norm. As such, MalE is shifting from the Nativisation phase to the Endonormative stabilisation phase of Schneider's (2007) theory for the development of new Englishes.

CHAPTER 5

CONCLUSION

In Chapter 4, the analysis of the intonation patterns used by Malaysian English (MalE) speakers when asking *wh*-questions and *yes/no*-questions, as well as the results of the perception test, were analysed and discussed. This Chapter goes on to summarise the findings and their significance within the limitations of the study and make recommendations for future research on MalE intonation.

5.1   Summary of Findings

Referring to the first research question, which aimed to identify the initial and final boundary tones in *wh*-questions and *yes/no*-questions produced by fluent speakers of MalE, particular patterns were found in the intonation of *wh*-questions and *yes/no*-questions in MalE, regardless of the ethnicity of the speakers. *Wh*-questions tended to start either with a rising or level tone depending on the vowel duration of the *wh*-word, and end with either falls or rises. *Yes/no*-questions, on the other hand, tended to start with a level tone and end with rises, as discussed in Section 4.3 and Section 4.4. Wang (1987) describes the intonation of *yes/no*-questions in Malay as having a generally level pitch contour until the final syllable, where it rises or falls, and Keane (2006) described the pitch contour of a *wh*-question in Tamil as having a rising pitch for the *wh*-question word. Mandarin speakers, on the other hand, use an overall raised pitch which peaks at the final syllable according to Shen (1990) and Yuan, Shih and Kochanski (2002). However in the present study, the link between the intonation patterns of the Malay, Chinese and Indian speakers of MalE and that of

their respective L1 is weak. Furthermore, the intonation patterns for *wh*-questions as described in Section 4.3 and Section 4.4 bear little resemblance to RP, BrE or AmE, where *wh*-questions tend to end with falling tones (Halliday, 1967; Hedberg et al., 2004; Wells, 2006).

For the second research question, which aimed to determine the extent of inter-ethnic differences in the production of the initial and final boundary tones, a chi-squared test on these boundary tones indicated that there are little to no difference among the three ethnic groups in using the different tones for both *wh*-questions and *yes/no*-questions. Therefore, there is a relatively similar pattern of MalE spoken across the three major ethnic groups.

The third research question aimed to determine how well listeners are able to distinguish the ethnicity of the speakers. Results from the perception test revealed that while listeners were better at identifying the speakers of their own ethnic group, overall success rate of listeners in correctly identifying the ethnicity of the speaker is less than 50%, which is similar to the perceptual test results conducted by Pillai, Knowles and Mohd. Don (2012). Among the features that were reportedly used to identify the ethnicity of the speaker, suprasegmental features such as intonation and rhythm played a greater role in helping listeners determine the ethnicity of the speakers compared to segmental features such as vowels and consonants.

The systematic linguistic pattern of MalE spoken across the three major ethnic groups that diverges from the native model of English and cannot be clearly attributed to L1 transfer suggests that Gut's (2007) Norm Orientation Hypothesis

applies to MalE. Although there is no established endonormative model for MalE pronunciation, these systematic linguistic patterns may be emerging as part of the Malaysian identity. However, there still remains a negative impression towards MalE among many of its speakers, who still consider it to be 'Manglish' or 'broken English' and not as an umbrella term covering the full spectrum of varieties from colloquial MalE to standard MalE. MalE will not reach the endonormative stabilisation phase until we achieve independence of exonormative norms and fully accept MalE as the endonormative norm. Until then, we shall remain in between the nativisation phase and the endonormative stabilisation phase.

5.2   Limitations

Like all research, this study is not without its limitations. First of all, the findings of this study do not represent the intonation patterns of all speakers of MalE. For the sake of linguistic comparability, speakers were selected from a relatively specific sociolinguistic group. Speakers were female undergraduates majoring in English aged 20-24. Besides that, they came from the central region of peninsular Malaysia and had all undergone the same national education. It would then be imprudent to say that the findings of this study represent the intonation patterns of a 40 year old male working professional from east Malaysia. Secondly, the intonation patterns were identified for *wh*-questions (*who, what, when, where*) and *yes/no*-questions only and did not include other question forms such as declarative questions, single word questions and tag questions, which may have varying intonation patterns. Finally, as discussed in Section 2.4, the intonation patterns of careful read speech and semi-spontaneous speech may differ from natural speech. It was intentional,

however, to elicit speech using a reading list and an information gap activity to be able to compare the intonation patterns speech that had similar type and number of words. The effect of these limitations could be explored in further research.

5.3   Future directions

As discussed in Section 5.2, this study was limited in terms of the sociolinguistic backgrounds of the speakers, the type of questions studied and the naturalness of the speech studied. In future research, these gaps could be covered by exploring the intonation patterns of speakers from different sociolinguistic backgrounds as well as a wider range of question types. A study on the intonation patterns of natural speech could be done by recording interviews or meetings in the workplace or by conducting a focus group activity. While the speech used in these settings may be formal, it would likely be relatively more natural compared to the speech produced while reading a list or participating in an information gap activity. While no statistically significant differences were found in the intonation patterns among the Malay, Chinese and Indian speakers of MalE, listeners were able to correctly identify the ethnicity of the speakers 49.5% of the time and reported that suprasegmental features such as intonation and rhythm was used to help in the identification. Perhaps the difference between the speech of the Malay, Chinese and Indian speakers of MalE lies in their rhythm of speech. This is perspective is worth exploring in future research to further contribute to piecing together the puzzle that is the standard MalE pronunciation model.

5.4   Significance

As discussed in Section 1.3, there hasn't been enough research on MalE to provide a proper description, which could potentially serve as a model for English education in Malaysia. This study was therefore conducted in the hopes that it would add to the description of the intonation patterns of MalE, and bring us one step closer to the use of an acrolectal MalE pronunciation model in Malaysian schools and the findings of this study may be counted as a contribution to said model. Furthermore, this study adds to the assertion that speakers MalE accept the endonormative rather than an exonormative norm, thus pushing MalE towards the endonormative stabilisation phase. Therefore, the use of an acrolectal MalE pronunciation model at Malaysian schools may very well be a reality in the near future.

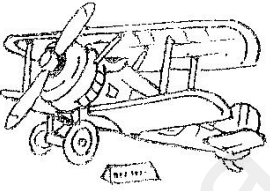## APPENDIX A – READING LIST

1. What is your name?

2. How old are you?

3. Where are you staying?

4. Who do you live with?

5. Do you live in an apartment?

6. What are you doing?

7. Are you going out for dinner tonight?

8. Where are you going?

9. Do you like spaghetti?

10. Can you cook?

11. Do you enjoy cooking?

12. Is this the last question?
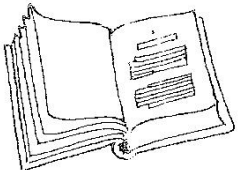
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APPENDIX C – PERCEPTION TEST FORM

Perception Test

Ethnicity: _____ Age: _____ Major: _____

Languages spoken: _____

Listen to the tracks and select the ethnicity of the speaker and the speech elements used by the speakers which made you choose his/her ethnicity.

You will hear each track ONCE.

Listen and tick (/) the ethnicity of the speaker.

Speaker	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Malay												
Chinese												
Indian												
Other (specify)												
Can't say												

Tick (/) the various speech element(s) used by the speakers which made you choose his/her particular ethnicity. You may select more than one.

Speaker	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Consonant												
Vowels												
Stress (sentence/word)												
Rhythm												
Intonation												
Other (specify)												
Can't say												

Thank you for your participation!

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