The intonation of Singapore English

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1. Introduction

The segmental characteristics of the English spoken in Singapore are quite widely described (e.g. Tongue 1979, Platt and Weber 1980, Brown 1988a, Brown 1991). However, the suprasegmental aspects, such as intonation, are less well documented, even though it is widely accepted that it is the suprasegmental aspects that contribute most to the distinctive character of "foreign" accents such as that of Singapore (Brown 1991: 4).

Most consideration of the suprasegmentals of Singapore English has tended to concentrate on the rhythm (Brown 1988b) and stress placement (Tongue 1979: 33-38). With regard to intonation, Platt and Weber (1980: 58) briefly comment on the limited number of pitch patterns which they suggest are used by Singaporean speakers of English; Tay (1982) and Rathi (1983) both find that the intonation of Standard Singapore English is (with a few exceptions) functionally similar to that of British English, but with rather more multi-nuclei intonation groups; Yeow (1987) describes Singapore intonation in terms of a number of patterns of alternating static high and low pitches (though he does not explain when each occurs); and Low (1994) concentrates mainly on pitch range and deaccenting in Singapore speech. Apart from these, however, little description of the intonation patterns of Singapore speech is available. The emphasis on segmental rather than suprasegmental description is not uncommon for studies on varieties of English (Wells 1982: 91).

This paper, in addition to describing the characteristics of the intonation of Singapore English, will consider whether it can be described within the framework usually used for the description of British English, or whether a new framework should be established. Although it may seem inappropriate to attempt to describe Singapore English with reference to another variety rather than as an independent variety in its own right (Mohanan 1992), Standard Southern British pronunciation (sometimes referred to as RP) is still the standard for pronunciation usually adopted in Singapore for teaching purposes and also in the media. Moreover, as mentioned above, other studies have concluded that the intonation of Singapore intonation is functionally very similar to that of British English.

2. The British model of English intonation

The model of intonation usually adopted for the description of British English (O'Connor and Arnold 1973, Brazil 1985, Cruttenden 1986, Couper-Kuhlen 1986) involves the division of speech into intonation groups, each of which usually has one kinetic tone, or characteristic pitch movement. One essential component of the intonation group is the nucleus, which is the syllable on which the pitch movement for the tone begins. In many cases, the nucleus is the most prominent syllable; but it should be noted that often other syllables, particularly the first stressed syllable in the intonation group, may be equally prominent, certainly in terms of loudness and pitch height. It therefore

makes more sense to consider the nucleus as the anchor point of the tone, so that "it plays the principal part in the intonation of the tone group" (Halliday 1970: 4), and is not necessarily always the most prominent syllable.

The existence of a nucleus is central to the British model of intonation (though Brown *et al.* (1980) report that it is not easy to identify a nucleus reliably in conversational data). Alternative analyses, such as that of Pierrehumbert (1980) which uses an asterisk * to indicate alignment with accented syllables but makes no assumption about a nucleus, may be gaining in popularity; but the traditional British model with its emphasis on the nucleus is still widely used both descriptively and pedagogically.

In the British model, there are some cases where a single intonation group can have more than one tone (though Brazil only finds a single tone in all of his data). For example, O'Connor and Arnold include as one of their ten most common tunes the case of a falling tone followed by a rising tone later in the intonation group. But such multi-nuclear intonation groups are the exception rather than the rule.

For Singapore English one must consider whether this framework — of intonation groups each with a tone anchored on a nucleus — is appropriate. In investigating whether there is one syllable which may be termed nuclear, one also has to consider the possibility that such a nucleus may be cued differently from that of British English.

3. Data

Three female Chinese clerical staff from the School of Arts at the National Institute of Education (NIE) were recorded. They were selected because, although all three of them have a distinctive Singaporean accent, they also speak English clearly and in a fashion that is easily understood by non-Singaporeans. Indeed, much of their working life is spent communicating in English with Westerners. All three obtained some O levels, but no A levels. Their speech might be classified as mesolectal (Platt 1977). The speakers will be referred to as S, C, and E, and the interviewer as D.

The recording of each speaker consisted of two parts. First, the speaker was asked to describe a picture which was taken from a local newspaper. The picture is of a Caucasian man buying some goods from an all-purpose shop (a 'mama store') in a Housing Development Board (HDB) local housing estate. The speakers were encouraged to say whatever they wanted about the picture. Second, there was a brief conversation between the speaker and the author of this paper, concentrating mostly on the educational experiences of the subjects. The situation may be described as fairly formal: although all the subjects knew the interviewer well, they still felt they were being interviewed by a member of the lecturing staff of the university.

In collecting the data, it was decided to maintain careful controls to ensure that there are comparable data for a number of speakers. Consequently, all the speakers are female, Chinese, of a similar education and speaking cooperatively in a fairly formal situation. Particularly in Singapore, where there is a rich ethnic mix of people of Chinese, Malay, and Indian origins, it was not possible to investigate all variables, which is why it was decided to limit the data to just one kind. The speech that was recorded for this research sounds "very Singaporean"; but there may be many other kinds of speech that differ markedly from these data but still sound just as Singaporean.

With regard to the environment for the data, it is well known that Singapore speakers vary their speech according to the formality of the situation (Pakir 1991), perhaps even more than speakers of other varieties of English. Gupta (1992) describes the use of English in Singapore by many speakers as a kind of diglossia, with people switching between an H-form in formal situations and a more colloquial L-form in casual situations. The data described here, however, do not include examples of casual speech, such as the lighthearted bantering speech that might be used between colleagues in an office or members of the same family. Furthermore, as the speakers were in the non-dominant position of the interviewee, there are not many examples of questions from them.

In this paper, conventions for the transcription are illustrated in sentence (1): stressed syllables are underlined; rising, falling, rise-fall and level tones are indicated by / \ ^ ‾ respectively at the start of the word; and boosted pitch is marked with ↑. All of these terms, and the rationale for their use, are explained in the sections that follow. The 'C030' at the end indicates tape mark 030 for speaker C.

(1)   ↑/last ‾ time I /used to \think that my /Chinese was ^better   (C030)

4. Method

All the recorded data of the three subjects was digitized onto a personal computer, manually transcribed phonetically, and analyzed using the CECIL pitch analysis software from the Summer Institute of Linguistics. Use of the playback function in this software, together with measurements of amplitude, helped in the accurate alignment of the transcription. An orthographic record of the speech was then transcribed tonetically, using a combination of repeated listening with a tape recorder, listening to isolated short stretches of speech using CECIL, and consultation of the F_0 tracks from CECIL.

The fundamental frequency (F_0) tracks output by CECIL are highly dependable when appropriate frequency ranges and interpolation functions are specified. However, F_0 tracks are not the same as perceived tones. For example, one speaker produced the phrase "where there's a small shop here". The F_0 track of this utterance showed a clear rise on 'small', a sharp fall followed by a short rise on 'shop', and a level F_0 after an initial fall on 'here'. These F_0 contours are no doubt partly influenced by local consonantal perturbations. But the auditory impression of the pitch movements found on these three words suggests that, although they are clearly not identical, they represent variants of the same rising tone.

One can say that, in such a case, the auditory impression does not match the acoustic evidence. Such a mismatch between the auditory impression and the acoustic data, and the confusing wealth of detail obtained from acoustic F_0 tracks, led Crystal (1969: 13) to exclude instrumental measurements in favor of a purely auditory approach. But in the case of the Singaporean data considered here, the F_0 information derived from computer analysis was found to be extremely useful in determining a suitable analysis.

5. Stress

It is certainly not true that all syllables have an equal degree of stress in Singapore English. For example, in sentence (2) 'of', 'they', 'the' and the second syllable of 'basic' have less prominence than the other syllables, and so they might be marked as unstressed.

(2)   /this \type of \shop they \sell \all the /basic /things   (S013)

However, the placement of stress in Singapore English can be rather different than that of standard English. From (2), it might be assumed that content words tend to be stressed, while most function words (but not 'this') are unstressed. However, it is not always as simple as that. Consideration will first be given to stress within content words, and then to cases where function words are stressed.

5.1. Stress in Content Words

In (2), in 'basic' the first syllable has rather more prominence than the second syllable. However, it is often found that both syllables of bisyllabic content words seem to have about an equal degree of prominence, and so both syllables might be regarded as stressed. Examples include 'language' (S041, E063), 'tidbits' (S007), 'service' (C003), 'English' (E063, S057), 'Chinese' (E063, C030). In some cases, this extends to all the syllables of a trisyllabic word, e.g. 'continue' (S046). Often syllables that would have a schwa in British English have a full vowel in these Singaporean data; so the first syllable of 'continue' has /ɒ/. However, there are also many polysyllabic words with syllables that are not stressed, such as 'essential' (S006), 'remember' (S039)

5.2. Deaccenting

In standard English, deaccenting occurs when, often at the end of a sentence, there is a content word that has already been referred to in the discourse. As it is not "new" information and is largely predictable, it becomes destressed (Ladd 1978: 52). Sometimes, this process of deaccenting does not take place in Singapore English.

(3)   D: OK, can you tell me what type of school you went to when you were young?

       E: \oh I /study in /Chinese \school   (E022)

In standard English, in instances like (3), one might expect 'Chinese' to receive the main stress, and 'school' to be deaccented, because it is repeated from the previous sentence. But in (3), 'school' is stressed and has a falling tone, so one can say that it has not been deaccented. There are two possible (closely related) reasons for this: 'school' may have a falling tone to indicate the end of a sentence; and the falling tone may have a pragmatic function, to indicate the end of a turn. The use of falling tone for these functions is discussed further below.

The tendency for Singaporean speakers not to deaccent information which is repeated is also reported by Low (1994). For her data, she asked Singaporean and British speakers to read the same set of carefully prepared sentences, such as (4).

(4) I went to the shop to buy Mars bars, but they'd totally run out of Mars bars.

and she reports that the Singaporean speech was more likely to exhibit prominence on the second instance of 'Mars bars'.

5.3. Stress on Function Words

Although content words tend to be stressed and function words are generally not stressed, there are some notable exceptions to this. In particular, there are two classes of function word which are stressed more often than they would be in standard British English: demonstratives, such as 'these' in (5) and 'this' in (6); and modals, such as 'should' in (7).

(5) it /usually ... er ... /owned by /these /Indian \people   (S004)

(6) and from ᵗ/this /picture we /see that ᵗ/this /European \man is a ... ^foreigner (S010)

(7) /maybe at the /moment when I /first \left \school I \should ... er ... ^continue (S004)

The stressing of demonstratives occurs quite widely in these data, but modals do not occur so frequently. However, it is a common phenomenon to hear Singaporeans stressing words such as 'will'. It may be a consequence of the nature of these data that modals such as 'will' are rarely used.

5.4. Nucleus

It is very hard in these data to identify any one word per intonational phrase that is more prominent, or that anchors a tone for the whole phrase. For example, in (8), it is not clear which of the three words 'normal', 'store' or 'Singapore' might be regarded as the focus of information.

(8) this is a /normal mama /store in /Singapore (C000)

It is not claimed that all stressed syllables have the same degree of prominence. Certainly, there are cases in the data where some words are clearly more prominent than other stressed words. A good example of this is (6), where both instances of 'this' have particularly strong emphasis. However, it is suggested that the underlying system for the great majority of utterances is that there is not one syllable or word, a nucleus, that clearly acts as the focus of information as a result of the intonational contours.

In some ways, this is similar to the claims of Tay (1982) and Rathi (1983) that multi-nuclei intonation groups are common in Standard Singapore English. However, their claim is that Singapore English is functionally similar to British English; whereas here it is suggested that an underlying structure in which the tone of each intonation group is anchored on one syllable is inappropriate for the analysis of these data. One reason for this different conclusion could be that Tay and Rathi were both studying more highly educated speakers, whose English was likely to approach the British standard more closely.

At the end of this paper, after the incidence of the different tones has been discussed, consideration will be given to the possibility that a nucleus does exist for these data, but that it is cued differently from that of British English.

6. The domain of tone

In the system of transcription for Singapore English adopted here, a single tone has been transcribed for each stressed word. There are a number of reasons for assigning tones to words rather than syllables. It is well established for British English that if the nucleus of an intonation group falls on the first syllable of a bisyllabic word, the F_0 movement associated with the tone actually occurs on the second, unstressed syllable. For example, 'twenty' will be perceived as having a rising tone if the second (unstressed) syllable has a higher F_0 than the first (stressed) syllable; but even though the F_0 rise occurs on the second syllable, one would normally transcribe a rising tone against the first syllable (O'Connor and Arnold 1973: 9-10).

In fact, in the Singaporean data, an example of just this word 'twenty' is found in sentence (9), with the F_0 movement occurring on the second, unstressed syllable; and so it

is transcribed with a rising tone before the stressed syllable, in the same manner that would be used for British English.

(9) /more than /twenty /years   (S012)

This kind of rise in F_0 on the second, unstressed syllable of a bisyllabic word is common in the Singaporean data. Another example is 'buying' in (10).

(10) he's /buying /Sunshine \bread   (C002)

There are also many cases of bisyllabic words where the two syllables seem to have equal stress; but the words have a similar pitch movement and auditory impression to those of 'twenty' and 'buying' above, even though the stress patterns are different. 'Chinese' and 'English' in (11) both fall into this category. Therefore for these words, it is still reasonable to show a single tone, even though both syllables may be stressed.

(11) you know my /Malay ... /Chinese and /English ... in /school   (E064)

In fact in some cases there is actually a falling F_0 on both the syllables of a word, but the overall auditory impression for the whole word is still of a rising tone, because the second syllable has a higher F_0 than the first syllable. If the tones of syllables were to be marked separately, these syllables might be regarded as instances of two falling tones; but if the tone of the whole word is marked, a rising tone would be assigned. Such occurrences are 'second' in (12) and 'working' in (13).

(12) /Chinese as a /second \language   (C017)

(13) I was /working in the \private /company   (E053)

Finally, a rise-fall tone can occur on monosyllabic words such as 'bread' in (14), but there is a similar auditory impression for the bisyllabic word 'study' in (15), where there is rising F_0 on the first syllable and falling F_0 on the second, and 'chocolates' (/tʃɒkləts/) in (16), which in fact has falling F_0 on both its syllables. If a rise-fall tone were shown in (14) but a rise followed by a fall in (15) and two falling tones in (16), there would be a failure to show that the auditory impression is similar in all three instances. Therefore, it is preferable to show the tone as belonging to the whole word.

(14) /this /loaf of ^bread   (S016)

(15) and that's \why I \stop the ... the ^study   (E054)

(16) /especially \sweets ... ^chocolates   (S007)

More detailed consideration will now be given to the occurrence of the different tones.

7. Tones

Four different tones are used here: the rising tone, the falling tone, the rise-fall tone, and the level tone. Typical occurrences of each are outlined below.

7.1. Rising Tone

The rising tone is the most common tone in these data. It occurs frequently in non-final position, where there is often a sequence of rising tones (sometimes terminated by one or more falling tone). Examples of this are (17) and (18).

(17) it's /different from the /students who are /all /now /taking \now   (S032)

(18) that's /only for the /English \night \classes   (E045)

However, it would be wrong to emphasize this tendency too much, as there are also some cases where falling tones exist in non-final position, and rising tones exist in final position, as in (19) and (20).

(19) you can /see a \lot of /colorful /things   (S017)

(20) I \take the /whole /exam but er ... I did \not \get .. er .. /many /many /Q's   (E034)

7.2 Falling Tone

In final position, falling tones seem to indicate completion. This is particularly evident in the interview, where falling tone may be used as a means of indicating an end of turn by the Singaporean speaker, as in (21).

(21) D: Was your ... education all in Chinese?

       E: /yes ... only /English as a /second \language

       D: ....   (E036)

From the discourse point of view, an interesting example is (22). The final 'yup' is rather quiet (which is why it is not marked as stressed); but its function appears to be to carry a falling tone and thereby indicate that the speaker considers her turn finished. The rising tone on 'school' suggests that the speaker may originally have been intending to continue further on this topic, and then changed her mind; so instead she signaled the termination of her turn with a falling tone on a dummy word.

(22) D: What school did you go to before the ... the secondary school?

       C: I'm ↑\still in the /Methodist /school ... \yup

       D: ....   (C026)

When a falling tone occurs in non-final position, it is possible that sometimes this may be used to indicate the end of an intonational phrase, so it retains its meaning of finality. Thus in (23), the falling tone on 'time' might serve to indicate that 'because at that time' is an intonational phrase.

(23) /no /because at that \time I'm /thinking about ⁻my ... /more of my ^future (C023)

In other cases, a falling tone may indicate an extra degree of emphasis on the word. For example, in (24), the falling tone on 'private' might be used to indicate that this is the key word of the phrase.

(24) then \because I ... I was /working in the \private /company ... I /have to \do
      ^overtime   (E053)

However, this cannot explain all instances of falling tone in non-final position. For example, in (24), it is hard to see how the falling tone on 'do' indicates any extra degree of emphasis (or any finality).

The great majority of the tones found in these data are either rising or falling tones. This essentially binary classification is similar to that of Brazil (1985), who proposes a two-way analysis into a 'proposing' tone that is usually realized as a falling tone and a

'referring' tone which may be a fall-rise or rising tone.   However, these Singaporean data do not fit easily into Brazil's analysis that the proposing tone is generally used for new information, while the referring tone is for old information that is part of the common ground of the speaker and listener. For example, in (24) it is hard to see how 'because', 'private' and 'do' could be analyzed as new information while 'working', 'company' and 'have' are old information.

7.3. Rise-fall Tone

The rise-fall mostly (though not always) occurs in final position, and it may indicate an extra degree of emphasis. Its lilting quality contributes considerably to the distinctive Singaporean tone of voice. In (25), 'messy', 'properly' and 'presentable' have this tone.

(25) but I ᵗ/supp_ose_ it's a \bit ^messy he should \try \to ... /arrange his /things
       ^properly ... \so that it would /look /more ^pres_ent_able   (C007)

7.4. Level Tone

There are (as one would expect) a large number of filled pauses, usually with 'er' or 'mmm' in these data. Most of these pause particles are produced on a level pitch. Additionally, there are many instances of words which are lengthened, to create a pause which allows the speaker time to think and plan what to say, and in many cases, these lengthened words have a level pitch which is very similar to that found on the pause particles. They can be transcribed with a level tone; for example, 'was' in (26) and 'smiling' in (27), each of which has a similar auditory quality (on the same pitch) as the following 'mmm'.

(26) /what \ex_am_ ... ᵗ/that ⁻was ... ⁻mmm ... /many \years /ago   (E048)

(27) I ᵗ/supp_ose_ the /service of /this ... \Ind_ian \man ... is \quite \good ... \as I can /see_
       /him ⁻smiling ... ⁻mmm   (S005)

The level tone is sometimes used in a slightly different setting, when giving a list of items; and in this situation, it is not always clear that the speaker is pausing for thought between items.   In these data, there are no really clear examples of this, because often within a list the speaker pauses, so it is not clear if the level tones should be analyzed as instances of list intonation, as pauses, or maybe as a combination of these two factors. Examples of this are 'things' and 'toys' in (28).

(28) they \have to ⁻sell ... \quite a \lot of ⁻things ... ⁻toys ... \sweets as /usual   (E048)

Brazil (1985: 202) claims that, in British English, the level tone is a variety of the referring tone used when speakers adopt what he calls 'oblique orientation'. This occurs when they assume that what they are saying has no direct communicative significance; which can happen in two situations: when they are pausing, to collect their thoughts; and when they are reading out a text which was prepared by someone else, and so they have had no direct input into it. The use of a level tone for pauses in these Singaporean data is obviously very similar to the first of these uses suggested by Brazil; but when Singaporean speakers use a level tone in lists, it is not clear that this is an example of oblique orientation, as it is not clear why the speakers would be suggesting that the items in the list were outside their control.

8. Pitch range

It has sometimes been claimed that Singapore English has a narrower pitch range than British English (Tongue 1979: 38); but these data do not confirm that Singapore English has a narrow pitch range. All three speakers vary their pitch very considerably, often within the same phrase. In (29), the F_0 on 'last' reaches 325 Hz, while that on 'I' dips to 178 Hz; in (30), the F_0 at the start of the vowel in 'shop' is 332 Hz, while 'of' falls to 153 Hz; and in (31), at the end of 'normally' the F_0 reaches 282 Hz, and then drops to 165 Hz in 'of'.

(29) ᵗ/last ⁻time I /used to \think that my /Chinese was ^better	(C030)
(30) /sundry ᵗ\shop are /selling a \lot of \sweet	(E001)
(31) ᵗ/normally \this \kind of \shops ah	(S004)

If the full pitch range of these speakers is considered, it is even greater than this. For example, for one speaker, there is an F_0 of 369 Hz on 'think' in (32) and 138 Hz at the end of 'level' in (33).

(32) I ᵗ/think ... /probably it would be in \art	(E055)
(33) \what \exam ... /O \level	(E027)

This finding, that there is a large pitch range for Singapore English, is consistent with the findings of Low (1994: 31), whose experiments show that Singaporean speakers exhibit a greater overall F_0 range than British speakers.

9. Boosted pitch

In (29), (30), (31) and (32) above, one word is marked as having boosted pitch, which represents an instance of particularly high pitch. This is similar to the use of high key to signal a new topic in British English (Cruttenden 1986: 129). This role for boosted pitch can be seen in Singapore English best by considering (31) in the context in which it occurred, in the fragment of connected discourse in (34).

(34) ᵗ/this is a /picture of a ... a \kiosk, /no ... ⁻where er ... it's in H ... /HDB /buildings ... where there's a /small /shop /here ... which \sell /all the /daily ... er /essential /things ... for the \people ... and ... ᵗ/normally \this \kind of \shops ah ... it /usually .. er /owned by /these /Indian \people ... and they ᵗ/sell /things ⁻are ⁻the ... the \what you ⁻call ... the /necessity /things ... the /essential /things like /sugar ... er ... /household the \small /items /thing they /sell /here and they /sell ^tidbits ... for sch ... /children /especially \sweets ... ^chocolates ... er .. in .. in ᵗ/this /picture you /find .. er ..	(S000-S008)

One can analyze (34) as consisting of three topics: initially, the speaker introduces the kiosk; then she mentions the Indian owners of the kiosk; and finally, she discusses the kinds of things that are sold in the kiosk. In each case, there is the use of boosted pitch to introduce the new topic, on 'this', on 'normally', and on 'sell'. There is then the beginning of a fourth topic at the end, with boosted pitch on 'this' in the last line.

One may also notice from this fragment of discourse that there is a falling tone at the conclusion of both of the first of these two topics (in each case on 'people'), and a rise-

fall at the conclusion of the third (on 'chocolates'). It would appear that a combination of boosted pitch at the start and falling tone (or rise-fall tone) at the end is used to mark the boundaries of a unit of discourse.

The speech in (34) was taken from the description of the picture. When participating in the interview, the Singaporean speakers rarely introduced a new topic themselves, so their use of boosted pitch occurred mostly in response to a new topic being introduced by the interviewer. For example, in (35), originally the conversation was about A levels; but then it shifted to the Methodist school, and use of boosted pitch is found on 'still'.

(35) D: Did you try to study for A levels and continue studying?

C: /no ... /because at that \time I'm /thinking about ‾my ... /more of my ^future ... ‾so ... I \stop ... \taking /A \levels no

D: Do you regret that you didn't do A levels?

C: /no I /don't /think \so

D: What school did you go to before the ... the secondary school?

C: I'm ↑\still in the /Methodist /School ... \yup

D: Was it .. er .. was that a good school?

C: ↑‾yes ... it's /supposed to \be   (C022-C027)

However, not all examples of boosted pitch can be analyzed in this way, so that, for instance, the high pitch on 'yes' in the last line of (35) exists within the same topic of the Methodist School; and there is no suggestion of a new topic being introduced with either instances of 'school' in (36).

(36) I /go \to ... /Katong /Girls ↑/School ... and \Catholic /High ↑/School ... that's /only for the /English \night \classes   (E044)

One possibility for these rising tones on 'school' is that they represent a 'high-rise', as opposed to a 'low-rise' which is more commonly found. Analyses of British English often suggest a somewhat different role for high-rise from low-rise (e.g. O'Connor and Arnold 1973).

10. Question intonation

As the Singaporean speakers in these data were in the non-dominant role of interviewee, they were responding to questions rather than asking them. However, one speaker did use a number of WH-questions, in each case repeating the question of the interviewer, either to check the question (37), or as a strategy to allow herself time to think and prepare an answer (38-41).

(37) /what \age ... did I /leave the \school ... you mean   (E024)

(38) \what \exam ... /O \level ... so I /only \passed \two \subject   (E027)

(39) /why \not ... because ... the /time has ^over   (E039)

(40) /where did I \go ... I /go \to ... /Katong /Girls ↑/School   (E043)

(41) /what \exam ... ↑/that ‾was ... ‾mmm ... /many \years /ago   (E048)

In every single one of these cases, the phrase containing the question ends with a very clear falling tone. This does not support the claim by Tay (1982) that Singaporean speakers use rising intonation on all questions. However, one might regard these data as being not directly relevant, as these are not "real" questions, asking for information.

11. Discussion

The analysis presented here suggests that the British model of intonation is inappropriate for this variety of Singaporean English, because there is no clear nucleus acting as the focus of information or anchor for intonation within each intonational phrase. An alternative possibility is that there is a nucleus, but that it is differently cued. For example, it was observed that rises tend to occur in non-final position, while falls (or sometimes a series of falls) more usually occur in final position; and also there are rise-falls, which may indicate an extra degree of stress. There is therefore the possibility that a change from rising tone to falling tone may be a cue for the focus of information. Further work is needed on this, including perceptual tests, to find where Singaporeans feel that the focus of information lies. However, it may be noted that if the nucleus were cued in this way, then the intonational unit for which it acted as the focus would sometimes be rather longer than the intonation group used in British English, as the Singaporean data often exhibit a number of phrases each ending with a rising tone before there is one terminated by one or more falls.

This analysis proposes four tones: rising, falling, rise-fall and level tones. However, further work is needed to see whether other tones, such as a high-rise, and maybe a fall-rise, are well-motivated. Even with the long tradition of study of the intonation of British English, there is wide disagreement on how many tones there should be.

Further work is also needed to determine how the intonation of Singapore English varies under different circumstances, and with different age groups, levels of education, and ethnic groups, and also whether male speakers differ from females.

Acknowledgments

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