CHAPTER FOUR

THEORETICAL FRAMEWORK

4.1 Introduction

This chapter seeks to set up a theoretical framework in which the prosodic features manifested in the data of Malay broadcast interviews can be identified and described. The four prosodic parameters that form the focus of examination are pitch phenomena, loudness, tempo and pause. Length parameter will be taken into consideration in the discussion of tempo. In the analysis of data the interaction of all these parameters will be taken into account because evidence points to the fact that simultaneous monitoring of more than one of the above mentioned parameters is required for listeners to determine what conversational co-participants are trying to "say" (Yaeger-Dors, 1985: 201).

Two assumptions must be stated as underlying the present approach. First, in examining a stretch of speech one can distinguish between aspects of phonetic continuum which affect the identification of particular words, and other phonetic aspects which are essentially variable in relation to them (cf. Crystal, 1969). A given syllable, word or phrase may be uttered in a number of ways by varying its prosodic characteristics, i.e.
its loudness, pitch phenomena, duration or tempo. In Malay, one can contrast the variations that can occur in respect of these prosodic features in uttering "bapa" (father) which are non word identifying with the segmental features (bilabial voice plosion and bilabial voiceless plosion, for example) which are word identifying. Second, in describing the prosodic features of a given syllable, a basic distinction can be made between their relative norms and absolute values. Couper-Kuhlen (1986) argues that although arguments for prosodic relativity have come primarily from the area of intonation, the same points can be made concerning other prosodic features.

Pitch, for example, can be expressed in relative terms such that pitch variations may be perceived as high or low with respect to a speaker's vocal range or the pitch level of the surrounding syllables. The pitch value of a single syllable in isolation is a relative perceptual judgement made by the listener in terms of a hypothesized placement within the general pitch over which the speaker's voice is believed to move. The pitch value of a given syllable in a sequence of syllables in connected speech is judged relative to the pitch values of its immediate neighbours, as being the same, higher or lower. According to Laver (1994:457):

"the melody of a speaker's voice on any given occasion is thus a matter of the train of relative pitch values that the listener perceives in the succession
of syllables that make up the utterance, within the framework of the speaker's assumed pitch range".

Likewise the estimation of the loudness-value of a single syllable as "forte" or "piano" is a relative perceptual judgement made by the listener in terms of the loudness value of other syllables that surround it, which is not necessarily louder than some absolute decibel value. Since the norms vary from speaker to speaker, there is thus no question of an absolute measure for the steps away from the norm. In sum, for the purpose of the present study, it is sufficient to describe the prosodic features of a given syllable in a given utterance from a particular speaker in terms of its variation relative to surrounding syllables within the speaker's voice range.

4.2 Manifestations of Prosody

As explained in Chapter 1 of this thesis, in the context of utterance the term prosody subsumes at least the following auditory aspects of speech: loudness, tempo, pitch and pause. In order to exhibit the range and gradation of linguistic contrastivity present in each of these prosodic features, they are grouped into systems on the basis of shared dominant phonetic parameters. Each system covers a particular kind of variability that can be discussed independently of variations taking place elsewhere (Crystal, 1969).
Although prosodic features may extend over longer stretches of speech, the smallest possible domain over which they extend is the syllable. Thus, in describing the prosodic phenomena of a stretch of speech the concern is not with the pitch of a segment but the pitch of a syllable, not the duration of a segment but the duration of a syllable, not the loudness of segments but the loudness of syllables (Couper-kuhlen, 1986).

The next issue that one has to contend with is the linguistic domain within which the prosodic cues will be examined. This thesis identifies three domains of examination:

1. speech units - prosodic phenomena is examined in relation to the part they play in segmenting stretches of speech into prosodically identifiable unit;

2. utterance - prosodic phenomena is examined in relation to the part they play in assigning prominence to certain lexical items;

3. speaking turn - prosodic phenomena is examined in relation to the part they play in marking cooperation between speakers in structuring a discourse.
4.3 Tempo

Tempo refers to the manner in which a speaker speeds up or slows down his speech rate. In this thesis, the examination of tempo parameter is restricted to the part of utterance whose acceleration or deceleration is functionally significant. For example, a deceleration followed by a subsequent acceleration may demarcate the end of one chunk of speech and the beginning of another. Likewise, the slowing down of speech rate brought about by syllable lengthening may be a cue to prominence or a strategy of gaining time. No attempt will be made to examine the overall tempo of all utterances in a particular speaking turn.

Spontaneous speech varies in its speed of utterance. The presence of hesitation phenomena has a direct effect on tempo. While a stretch of speech which is replete with hesitation phenomena is heard as slow, the one without or with little such occurrences is heard as fast.

Although tempo was taken into account even in the early phases of phonetics (Sievers, 1941; Jersperssen, 1913), its functional interpretation illustrates the limitations of their approach. The focus was on psychological dispositions and speaker dependent traits such as tempo of lifestyle, mood or membership in an ethnic group.
Starting from the work of Uhmann (1992), it is assumed that tempo, together with other prosodic cues, provides participants with speaker-independent information like possible turn constructional unit, foregrounding or backgrounding of items of information, separating known information from new information, etc.

According to Uhmann, participants use speech rate as a device to evoke context sensitive interpretations of utterances, i.e. in order to make them interpretable. Speakers do this by utilising two perceptually distinct phenomena: density of syllable per unit of time (referred to as Density I) and density of accented syllables per unit of time (referred to as Density II). The following is a summary of her findings:

-- High Density I and Low Density II serve to contextualise parenthesis, side-sequences, afterthoughts as turn exit devices and parts of minor relevance for the development of speaker's argument. Auditorily, this is perceived as "allegro" or "rapid" speech.

-- Low Density I and High Density I serve to contextualise part of major relevance. Auditorily, this is perceived as "emphatic" or "slow" or "lento".
High Density I and High Density I is quite regularly found in repair sequences (cf. Couper-Kuhen). Auditorily, this is perceived as "fast".

These findings corroborate analyses by Selting (1986 & 1992) who examines the functions of alternating rhythm in natural conversation. Selting finds that in adjacent speech, interactants locally contrast accent feet (cf. Bolinger, 1986) of less than 0.8 -1.0 seconds with accent feet twice or even three times that duration for strategic purposes. Shorter accent feet mark contributions as "foregrounded / matter-of-fact / self-conscious / energetic / important", whereas longer accent feet marked contributions as "less foregrounded/backgrounded/less self-conscious/less energetic/less important".

Couper-Kuhen (1992) who carries out a research on the prosody of interactive repair argues that the association between repair sequences and tempo is not accidental; repair sequences are usually accompanied by a noticeable shift in tempo. For example, repairs of audibility may entail a decrease in tempo or marked increase in loudness and pitch height, and repairs of non-hearing are usually accompanied by an increased speech rate. Her analysis makes it clear that an increased tempo is both a factor relevant for the perception of "speeding up" and an important contextualisation cue.
Auditorily it is possible to say whether a stretch of speech is uttered fast or slow. The thesis regards the rate of speech as a relative rather than an absolute phenomenon. What is significant is the relational property of tempo, i.e. the overall pattern of the speech tempo relative to surrounding speech rates. When a sequence of syllables is perceived as fast, it is heard as fast in comparison with the neighbouring syllables, i.e. those that precede it and those following it.

The speeding up and slowing down of a sequence of syllables results in the auditory effect of two steady tempos: "allegro" (fast) and lento (slow) and two types of changing tempo: "rallentendo" and "accelerando", i.e. a gradual deceleration and acceleration of speed respectively over a stretch of utterance (Crystal, 1969).

In this thesis, tempo is expressed in the notation by the use of extension (< >) which indicates whether the stretch of speech so indicated is allegro marked <al> or lento marked <len> or rallentando marked <ral> or accelerando marked <acc>.

On individual syllables, the acceleration or deceleration of the duration of the syllable results in the auditory effect of clipped or drawled respectively which is analysable in terms of syllable shortening or
lengthening. Clipped syllables are articulated at a more rapid speed than normal, in a very tense way; drawled are produced less rapidly than normal and are very lax.

In the preliminary analysis of the corpus of data, it is found that the occurrence of syllable lengthening in Malay is common. What is more interesting is that the subsequent syllables tend to be clipped resulting in the auditory effect of allegro speech. Thus, it is necessary to indicate the realisation of this marked lengthening of syllable in the data analysed.

Syllable lengthening is indicated generally by a colon (:) whereby each colon represents a duration of 500 msec or less but more than 100 msec, two (::) colons above 500 msec but less than 1000 msec and three colons (::::) indicates a duration of more than 1000 msec. At times, the duration is given and this is indicated in the data by an extension with the duration given outside the extension.

Extracts 4.1 and 4.2 present fragments of spoken data in which the formulated stretches of speech change from normal (which is left unmarked) to lento or normal to allegro or lento to allegro, etc.
Extract 4.1

1B: alhamdulilah dapat gred satu
2A: alhamdulilah ha tahniyahlah a: siapa nama dia

0.43<> <al al> (0.52)

3B: siti a izatulhawa
4A: a: so: a: ni: ya sebot pasal dapat apani keputusan SPM

Semalamkan ya jadi: ya: ni: ya: keputusannya bertambah baguskan

5B: ya saya
B: praise be to God she got a first grade
A: praise be to God, congratulations. What's her name?
B: Siti Izatulahawa
A: Referring to the release, what is that, SPM results yesterday, right?
So Datok the results have improved, right?
B: yes indeed.

Extract 4.2

6A: haghi ni:: Jumaat solat solat Jumaat hari ni satu dua puluh

<| (0.61) <|

<al al> (0.34)

sembilan ustadz

|
7B: ya:

8A: satu dua puluh sembilan tengahari:

\(<al \quad al> <ral >\)

\(< (0.52)\)

\(a: ni ustadz sebot pasal solat Jumaat ni\)

\(< \quad acc \quad >\)

\(a ini: mandi: ya mandi sunat=\)

\(<l \quad l> <al \quad al>\)

9B =ya-

10A: hari: Jumaat ni: macamana ustadz?

\(<l \quad l> <al \quad al>\)

A: today we prayer Friday. Friday prayer today one twenty nine ustadz?

B: yes

A: When we talk about Friday Prayer, ustadz, this optional cleansing of one's body

B: yes

A: on Friday. What's your opinion on that, ustadz?

In Extracts 4.1 and 4.2, the prosodic parameters marked are restricted to speech rate and syllable lengthening and the length of filled pause because the aim here is to indicate the notation used to describe tempo parameter.
In 2A Extract 4.1, speaker A initiates a question by beginning it with a filled pause of 430 msec in duration. The question itself is uttered fast without any hesitation phenomena, and it is marked <al> which stands for allegro. This fast speech can be compared to a comparatively slow utterance in Extract 4.1 (marked 4A) whose realisation as such is brought about by the presence of hesitation phenomena such as syllable lengthening and fillers. The lento tempo is marked <ll> which stands for lento. "apani" (what is that), a parenthesis is set off from the prior talk by a marked change in tempo and it is marked <al> to indicate change to allegro tempo.

In 6A Extract 4.2, the speaker's slip of the tongue "jumaat solat" ((Friday prayer) marked 6A) is uttered fast. He then corrects this mistake, reverting to his normal tempo (this is not marked in the data). The subsequent utterance which states what time the Friday Prayer is, is produced slow. A repeat of this by A in his subsequent utterance is uttered fast, marked <al al>.

Like Crystal (1969), a preliminary analysis of the data revealed a common occurrence of both lento and allegro (the latter in fact being the most frequently used). This may well be the variety of Malay chosen for analysis.
In a monosyllable utterance as is the case with "ya" (yes), "ni" (this), "tu" (that) one can categorise the syllable as either clipped or drawled. Clipped syllables are auditorily heard as fast because of the shortening of the syllable while drawled syllables which are uttered relatively long are heard as lento.

In the following extract, the symbols used in the transcription are (.) for clipped and (-) for drawled, both being positioned subsequent to the segment in question.

**Extract 4.3**

11A: a Insyaallah hari ni sepuloh hari kita puasa ya ustadz?

12B: ya, masok hari kesepuloh dah

13A: a:- haghi ni haghi Jumaat ustadz ya

14B =ya-

<>l

<>p

A: If God wills it, today is the tenth day of fasting, isn't it Ustadz?

B: Yes. We have entered the tenth day.

A: erm today is Friday, right?

B: yes
In 14B speaker B’s response to A is not only marked by vowel lengthening but also by low pitch (marked \(<l>\)) and piano loudness (marked \(<p>\)). Although in most cases drawled indicates emphasis and hesitation (Crystal (1969)), the presence of the other two parameters indicate that the speaker considers his response as being insignificant and deaccents it with reduced pitch height and loudness.

The investigation of tempo parameter is restricted to the examination of whether the speech rate is fast or slow. No attempt will be made to examine the other parameters such as the density of syllables and the density of stressed syllables in the stretch of speech selected for examination. Hesitation phenomena such as pauses, filled and unfilled, and elongation of syllables will be taken into account as they are relevant cues in influencing the perception of increased or decreased tempo.

The linguistic material that will be included in describing the tempo in a given domain includes audible "vocalised" speech, i.e. the syllables that make up its linguistic message with filled pauses and prolongations of syllable.
4.4 Loudness

The acoustic component of loudness is amplitude which is usually measured in decibels (dB).

Based on a preliminary analysis of the data, there seems to be grounds for pursuing an investigation of loudness phenomenon as another prosodic resource available to speakers of Malay to evoke context for the interpretation of utterance.

The examination into the linguistic function of loudness gets the support from Laver (1994) who highlights the role loudness plays in signaling the start of a new topic within an utterance, or indicating the parenthetic status of some intercalated material in an utterance. According to him the beginning of a new topic can be signaled by a widening of the loudness span, and/or by a step-like raising of the baseline (p. 506). Similarly, the parenthetic remark insert within an utterance can be identified by depressing the base-line and narrowing the width of the loudness span for the duration of the parenthetic remark, then returning to the span and the baseline values of the framing material.
Laver also discusses the interactional function of loudness parameter. According to him, speakers use loudness and often pitch as well as a strategy to gain the floor at the beginning of the speaking turn. During continuing competition, with the other interactant speaking simultaneously, loudness is usually raised, or the loudness declination suspended until the conflict is resolved. After gaining the floor, normal declination can proceed. It would be interesting indeed to investigate whether the communicative function of loudness identified by Laver is realised in the Malay spoken data selected for examination (see Chapter Eight of this thesis).

Local (1992) who examines the function of prosodic parameters in holding and projecting speakership, suggests that attempt should be made to study how interactants use loudness to contextualise part of their talk as continuation or restart. According to Local, it would be worthwhile to examine (along with the lexico-syntax that constitutes the beginning of A’s in overlap turn) the pitch and loudness characteristics in the sequence of the following kind:

A: ........ (where a does an apparent completion)
B: ....[.... (where B begins to address A’s turn)
A: ........ (where A comes in, overlaps with B but rather than being heard as taking back his turn from B’s usurping of it)

(Local:290)
Inferences at this perceptual level, which conversational analysts called "conversation management", provide information on such matters as:

(1) possible turn-constructional unit - whether or not the speaker still wants to hold the floor or is about to complete a turn,

(2) the status of the speaker’s talk - whether the speaker’s intervening talk is regarded as interruptive in some way, or whether or not the incoming talk is seen as a continuation of what was said.

In Chapter 8 of the thesis, this interactional function of prosody is explored within the framework of conversational analysis. The "conversation management" issues presented and examined by Locality will be reexamined in the context of a dyadic interaction between two Malay speakers whose role as participants is preassigned.

It must be mentioned here that loudness is one of the several prosodic parameters deployed by speakers in marking and delimiting the edges of different constructional components and in projecting the course of their talk at turns. The other two are tempo and pitch, the latter in fact being accorded a functional primacy to the exclusion of the other prosodic features.
In examining the notion of information focus, Wells (1986) observed that loudness is a reliable cue to perceived focus. The loudness parameters that have been identified as a reliable cue to prominence are:

1. loudness peak- defined as the highest point in the intensity. This loudness parameter is associated with unique/primary focus;

2. decrescendo - defined as a step down in loudness from the focus constituent to the following constituent;

3. crescendo - defined as a step in perceived loudness from the constituent preceding the focus constituent to the focus constituent.

Crystal defines loudness as the auditory correlate of amplitude. It is taken as the perceptual feature of intensity which is measured in terms of a scale whose units are decibel. According to Laver (1994), the human ear is remarkably sensitive to the loudness of sounds, and can auditorily differentiate degree of loudness of syllable, i.e. in terms of whether the syllable is pronounced louder or softer than the surrounding syllables. As with tempo, relative differences here is described in terms of a scale of continuous variability rather than in terms of discrete contrasts.
Based on musical senses of switching to a louder level of utterance, loudness-value of a syllable in a speaker's utterance is marked as forte (loud) and piano (soft); the unmarked being the norm. The loudness contrasts of forte and piano manifest over both polysyllabic stretches and single syllables, except the most prominent syllables which, in Malay, cooccur with forte loudness.

The extension of loudness parameter is indicated by the position of the ◀▶. Within the extension the loudness value is identified as either forte ◀f▶ or piano ◀p▶.

By way of illustration, consider the following conversational extracts:

**Extract 4.4**

15B: itu yang menunjukkan bahawa peraturan islam tu cantik ya

\[
\text{\textless f\textgreater \textless f\textgreater \textless f\textgreater \textless f\textgreater}
\]

16A: mhm=

\[
\text{\textless p\textgreater}
\]

17B: =lengkapnya=

\[
\text{\textless f\textgreater}
\]

18A: =mye=

\[
\text{\textless p\textgreater}
\]

19B: =sampai perkara yang macam tu pun dititikberatkan=
20A: =mhm
<p>
B: That shows that Islamic regulations are beautiful, yes.
A: mhm
B: so complete
A: mhm
19B: even that sort of thing
20A: mhm

The complex system has two marked contrasts: crescendo (increasing loudness) and decrescendo (decreasing loudness) which may occur on any two adjacent terms on the simple scale, for example norm-forte, forte-norm, piano-norm, norm-piano, etc. In the data analysed, these phenomena are realised in cases where there is a sequence of syllables because it normally takes a sequence of syllables to make the auditory effect perceivable

**Extract 4.5**

21A: memang ada hadisnya

<CRES n-f>
<p>


22B: saya ada:

A: There is the hadith.

B: yes, there is.

Extract 4.6

23A: dirantai=

< > CRES n-f

24B: =dibelenggu

< > CRES n-f

A: is trained

B: is restrained

In 1A Extract 4.5, the syllabic contrast is realised on a sequence of two syllables, the initial and the second have norm-forte contrasts, the loudness on the penultimate syllable tails off to a softer level of loudness on the last syllable which is labelled as <p>. In Extract 4.5, speakers A and B make loud contrasts in their speech: the former and the latter both produce norm-forte contrasts.
4.5 Pause

Pause as a speech phenomenon has been studied quite extensively over recent years. Such studies include the examination of pause parameter in terms of its physical reality (Helfrich, 1980; Koster, 1980 and Drommel, 1980) and its function (Goldman Eisler, 1958; Dechert, 1980; Balmer, 1980; Wolfgang, 1980; Klatt, 1980). The former looks at the phonetic aspects of pause, the latter its functional aspect.

In agreement with Kowal (1980), it is assumed that in examining the pause parameter, the matter of measurement and the question of function should be addressed separately. Deese (1980) seems to hold the view that the definition of pause in terms of its physical reality is arbitrary. Thus in keeping with this standpoint, the focus here will not be the physical definition of pause but its function. In particular, the study seeks to investigate how pause results in the manifestation of segmented stretches of speech whose boundaries are marked by pauses and or other prosodic parameters. The study also seeks to examine how pause is used in cooccurrence with other prosodic cues, syntactic and lexical choices as a means of making certain interpretative frames relevant and available for the interpretation of interactants' talk (Gumperz, 1982, 1992a and 1992b). This is the perspective adopted in this study.
4.5.1 Forms of Pauses

It is observed that utterances within a speaking turn are usually replete with pauses, pause fillers or gaps in the verbal content filled by articulations such as [e], [a] [ya], false starts, repetitions, etc. Also in between utterances that make up one speaking turn, there are often pauses of considerable length. The manifestations of these phenomena do not hinder the speaker's goal of getting across what he has in mind. In fact, they are steps on the way to achieving it.

The present study attempts to examine the realisation of these phenomena in two-party broadcast interviews. Although the focus of this section will be on pause parameters, the other hesitational phenomena such as false starts, syllable lengthening and repetitions will also be mentioned where the need arises.

4.5.2 Pause and Its Notation

In the data itself, unfilled pauses are described within brackets with the duration given to one-tenth of a second and inserted where they occur. In the description itself, the duration of pause is given in millisecond. Filled pauses will also be timed. In most cases, they are indicated with a colon. A brief pause of less than 0.5 sec. is marked by the orthographic
form of the sound produced (e.g. [eh], [ah], etc.) a longer filled pause of 0.5 sec. to 1.0 sec is indicated by (:), a pause with a duration of more than 1 sec. is marked (::). By way of illustration consider the following extracts:

**Extract 4.7**

25A: so: a:: doktor anak brapa orang (0.23) nak raya ni=

26B: =saya anak saya: empat orang semuanya=

27B: =mhm

28A: (0.23) dan yang tua baru darjah empat=

29B: =mhm=

30A: =yang kedua darjah dua:

31B: dan yang ketiga kindergarten (0.24)

32A: dan yang kecil baru:: sembilan bulan

33A: (0.21) mhm (0.32) jadi isteri doktorlah yang sibuk sekali ya

34B: (0.42) a: nampaknya begitulah

A: so doctor how many children are there to celebrate the festive season?

B: I have four children altogether. The eldest is in standard four, the second in standard two, the third in kindergarten and the youngest only nine months.

A: so your wife is the most occupied person, right?

B: I suppose so.
Utterance 25A is preceded by significant hesitating: prolongation of the vowel in "so" followed by a lengthy filled pause. After the initial "so", it is obvious that A is buying time as he searches for a satisfactory focus. When he verbalises his focus, he shows signs that he has wrongly phrased his words by rephrasing what he says immediately after the long filled pause. The repair itself is uttered with no pause and is produced with a relatively fast tempo.

Speaker B's response is relatively well phrased. Pauses and prolongation of syllables occur at a syntactically appropriate place. The prolongation of the vowel at the start of the utterance is due to the false start "saya anak" (children my) which in Malay should have been uttered as "anak saya" (my children). The correction "anak saya" is uttered fast without any pause.

Generalising over the above extract, it appears that pauses enable the speaker to collect his thoughts in order to find his focus, and once he finds it, he quickly verbalise it without much hesitation. These pauses, which give the speaker time to verbalise his focus, are integrated into the overall rhythmic structure of the speaker's speech and contribute to our perception of rhythmic flow of the language thus produced. The presence of pauses within utterances contribute to making them hearable as consisting of segmented parts bounded by pauses.
As can be seen from the extract, there are two forms of pauses: **filled** and unfilled, corresponding to the voiced and silent pauses. From the preliminary analysis the most frequently occurring type of filled pause includes the use of unrounded central vowel [ə] and a back, open unrounded vowel [a] of varying length. When hesitation occurs immediately after a word whose final phoneme is unrounded front close vowel (i.e. [i]), the filled pause takes the form of palatal approximant [j] followed by either an unrounded central vowel or a back open vowel. There is also the occurrence of bilabial nasal [m] with a schwa and a voiceless velar fricative [h] with a schwa, but such an occurrence is so rare that it is assumed that the occurrence could be caused by a slip of the tongue rather than a realisation of filled pause.

The analysis will also include exploration of another hesitation phenomenon whose prosodic manifestation is the lengthening of the phoneme in the final syllable of a word. This type of syllable lengthening is different from that for the purpose of highlighting or making the word in which the lengthened syllable occurs prominent. In the data syllable lengthening is marked by colon, and if necessary the duration of the lengthened syllable will be indicated in tenth of a second.
4.5.3 The Function of Pause

Based on the duration of the pause, Goldman-Eisler (1968:64) distinguishes two fundamental types: pause due to breathing and pauses due to hesitation. She concludes that decreases in hesitation indicates an increase in less creative activity and that breath pauses coincide with grammatical junctures. Liviant (1963) who looks at the function of filled pauses suggests that they may serve to increase the interactant's control of speaking turns.

Deese (1980) reiterates that it is difficult, based on physical measurement, to draw the distinction between hesitation pauses and pauses that appear to serve grammatical and rhetorical purposes. While it could be argued that strictly grammatical pauses (juncture) may be limited to very short intervals, anyone who has ever listened with an ear to the style of skilled speaker will know that very long pauses sometimes serve rhetorical purposes.

Results from Deese's research tend to show that very long pauses (some even up to five seconds) are not hesitations but serve intentional, communicative functions. These very long pauses do not necessarily occur at phrase boundaries, though more often than not they occur where a comma or some other graphemic device might be placed in written
discourse. Grammatically and rhetorically relevant pauses are often signaled by other prosodic features which reveal that the speaker has anticipated them and assimilate them to the flow of speech. He concludes that the grammatical functions of pauses can be distinguished from their rhetorical functions from the total context of speech (Deese, 1980).

In his article on the role of pause, Balmer (1980) considers three different aspects of pause classification: intensity of airflow, controllability and interlocutor's concerns. The latter which is more relevant to this study categorises pauses according to their functions: planning pauses, lexical/syntactic search pauses (in the middle of phrases, sentences) and turn-offering pauses. Other than classifying them, Balmer, however, does not seem to make much attempt to investigate these functions in great depth.

Cruttenden (1986) classifies pauses according to their place of occurrence and thereon discuss their functions, which are summarised as follows:

(1) Pauses occurring at major constituent boundaries (principally between clauses and between subject and predicate. The unfilled pause (which is the usual realisation) generally indicates a tone-unit boundary. If pause is obliterated, then its possible location of
occurrence would be after the first word of a tone-unit, the function of which is given in 3. When filled, this type of pause is usually used as a turn-keeping device to prevent another potential speaker interrupting the current speaker.

(2) Pauses before words of high lexical content or at points of low transitional probability. This type of pause, which typically occurs before a minor constituent boundary, generally within a noun-phrase, verb-phrase, or adverbial-phrase, e.g. between a determiner and a following head noun, can be taken as an example of hesitation caused by a word-finding difficulty.

(3) Pauses after the first word in a tone-unit. This is a typical position for "errors of performance" such as corrections of false starts and repetitions. It can also serve a planning function, i.e. it is essentially a holding operation while the speaker plans a remainder of the sentence.

From the preliminary examination of the corpus of data collected and consideration of this and other research in the field a number of points emerge:
(1) Pauses have two physical forms: filled and unfilled and that the distinction between the two is an essential primary formal distinction to make.

(2) It has generally been accepted that there are two types of pauses: pauses which have a demarcative function (juncture pauses) and those associated with hesitation phenomena. As regards the former, it is said that pause (together with other prosodic cues) is used to divide discourse into segments and to establish an informal hierarchy of beginnings and endings whereby major constituents can be distinguished from minor. Hesitation pauses form an important prosodic cue for participants in a conversation as to the relationship between the speaker and his utterance. Whilst speakers may need to hesitate more when faced with a heavy task demand (e.g. at points of highest uncertainty, before words of high lexical content, etc.), they may also increase the relative amounts of hesitation in their speech to achieve some interactional goal, although the difficulty of the utterance would not directly necessitate change.

It has been argued that speakers use pauses as a strategy to plan what to say next and to verbalise this in a manner which he thinks is adequate for the listener, to allow them to correct "errors of performance" (e.g. false starts, repeats, etc.) and so forth.
(3) Relevant to the above issue is the question of where do speakers tend to pause. It is generally accepted that pauses frequently occurs at tone-unit boundaries (this is not a definitive clue), at major syntactic boundaries and after the first word in the tone-unit. Several explanations have been put forward to support the occurrence of pause after the first word. One is that the speaker launches into the utterance while the planning is still incomplete and has to pause to clarify the plan. The other is to seize the floor from the coparticipant while his utterance is still sketchily planned.

4.6 Pitch Phenomena

In this thesis, the examination of pitch is motivated by the assumption that Malay speakers use pitch parameters singly or in cooccurrence with other prosodic cues to fulfill certain functions. The two parameters that are the major preoccupation of this thesis are pitch movement (falling, rising, falling-rising, rising-falling or level, i.e. no pitch movement) and pitch height or level. Pitch movement refers to the pitch movement starting on an accented syllable and this has implications for the pitch contour of any subsequent syllable until the next accented syllables is encountered.
In an experiment carried out to determine what prosodic cues are involved in the realisation of prominence in English, Wells (1986) concludes that "pitch features in general correlate best with focus; and of the pitch features involved maximum pitch range and kinetic tone (i.e. pitch movement) give the best correlation".

Bolinger (1986) brings to our attention the role that pitch plays in marking beginnings and endings of sentences and this clue to segmentation is particularly important when one wants to examine the demarcative function of pitch. In most instances, the beginning of a sentence is signaled by a step up in pitch from the preceding one. A final pitch drop plus a step up in pitch to signal a new beginning in addition to pause is a reliable cue for segmentation. The speaker usually indicates the wish to end his utterance by a fall and trail-off after the final accent (see Chapter Six of this thesis).

Pitch marking at sentence beginning is not a controversial issue. Many prosodians share the view that the initial boundary of a sentence begins relatively high and that pitch tends to decline with time across the utterance in the unmarked case (Johns-Lewis (1986)). This phenomenon of sentence declination has been examined in languages such as English (Maeda, 1976), Japanese (Fujisaki et al, 1979) and Italian (Magno-Caldognetto et al, 1979).
Pitch phenomena also function at the level of discourse to assist in marking boundaries between speaking turns, speech acts and topics. Pitch height signals initiality in turns and topics. Segmentation of continuous speech into divisible units is assisted not only by the presence of pause (cf. Brown et al: 1980, in particular p. 47) but also pitch characteristics and some other cues such as relative lengthening, lenis articulation (including devoicing), decrescendo and preboundary laryngealisation (Pike, 1972) (see Chapter 5 of this thesis).

Within conversation analysis, research on topics like "the management of interruptions" (French and Local, 1986), "turn-taking cues" (Cutler and Pearson, 1986), "the regulation of speaker turns" (Beattie, 1979), "turn-taking and interruption" (Beattie, 1982), "rules for taking speaking turns" (Duncan, 1972) highlight the role that pitch parameters play in the management of talk. The issues that have been touched include the role that pitch plays in holding or giving away talk, signaling the end of a speaking turn, etc. More recently, studies have been carried out to examine how prosodic phenomena, in particular pitch and loudness, parameters, function as contextualising cues for the constitution and signaling of speaking activities (cf. Local, 1992, French and Local, 1986), Pomerantz, 1984).
4.6.1 Pitch and Its Notation

The pitch parameters that form the major preoccupation of this thesis are pitch movement and height. Pitch movement in a prominent lexical item (capitalised in the data when necessary) will be indicated using a representation proposed by O'Connor & Arnold (1973). A symbol will be placed immediately before a lexical item to indicate the following pitch movements:

- fall - `makan
- rise-fall - ^makan
- rise - ąmakan
- fall-rise - ^makan
- level - `makan

No attempt will be made to differentiate between a high fall or a low fall, or a high rise or a low rise.

The height of a syllable or a sequence of syllables is indicated as follows:

- high or higher pitch than the surrounding syllables, indicated by <HH> in the prosody line of transcripts
- low or lower pitch than the surrounding syllables, indicated by \(<LL>\) in the prosody line of transcripts

4.6.2 Pitch Parameters and Their Notations

By way of illustration, consider the following conversational extracts:

Extract 4.8

35B: MAKNANYA tiga, PERKARA disentuhkan dalam hal \(`\text{ITU}

apabila \(<L \quad L>\)

menjelangnya bulan \(`\text{RAMADHAN pintu pintu syurga `DIBUKA} <H \quad H>\)

36A: ya-

\(<>\)

37B: ah maknanya (0.31) ^ JADI bulan \(`\text{RAMADHA:N ni bulan`KEBAIKAN}

\(<L \quad L> \quad <HH> \quad <I \quad I>\)

ah pintu syurga

\(<L \quad L>\)

B: It means three things are touched as regards the matter. When the fasting month approaches, the entrance to heaven opens.

A: yes
B:  ah it means ... so the month of Ramadhan is a month of goodness,  
    ah the entrance to heaven

In the above extract, the prominent words which is capitalised has  
a pitch movement whose realisation is indicated by a symbol placed  
immediately preceding them. In the first utterance there are five words  
which have pitch obtrusion: "makanany" has a fall-rise pitch obtrusion,  
"perkara" a rising pitch movement and "itu" and "ramadhan" and "dibuka"  
a falling pitch movement.

In 37B, the speaker makes a false start which is uttered low. He  
abandons it and does a restart beginning the next utterance with a  
relatively high onset which is indicated in the data by ^ . The symbol <H>  
indicates that the entire word is uttered relatively high. The utterance "ah  
pintu syurga" (the entrance to heaven) which is a repetition of what was  
said previously is uttered loud and the extent of this pitch is indicated by an  
extension <LL>.

4.7 Conclusion

In the preceding sections an attempt has been made to identify a  
number of prosodic cues relevant to the examination of prosodic  
phenomena in Malay discourse. The preliminary analysis of the sample is
based on the assumption that spontaneous Malay speech is a redundant multi-cue signaling system and one in which utterances are syntactically less well-formed than written. Thus, reliance upon systematic prosodic cues will increase. By viewing speech as such one becomes fully aware of the total complexity of speech and is able to give due importance to the use of prosody as a means of signaling the interactants' intention and interpreting the intention of other interactants.