PROSODY AND THE SEGMENTATION OF MALAY DISCOURSE

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1 Introduction
The aim of this paper is to examine the issues of segmentation in continuous discourse and present a theoretical framework that somewhat eases its segmentation into fragmented parts. The difficulty encountered in segmenting a stretch of speech into separate tone groups provides the impetus for carrying out research of this nature. The paper presents arguments for segmenting discourse into units of speech whose boundaries are defined by audible prosodic cues. The conclusion is that this less restrictive framework enables the identification of prosodic cues in segmentative work and the roles they play in discourse development.

The standard approach to the description of intonation, especially in the British tradition of intonation, is to establish a unit of phonological organization within which the nucleus or focus can be defined. The assignment of tonal features in turn depends on the necessity of having appropriate information points pre-established. The recognition of this central unit in the study of intonation is described succinctly by Scuffil (1982:34) as follows:

All analyses of intonation postulate a unit which is central in the sense that it provides the framework within which intonational features can be described.

These units share a theoretical orientation and characterize some units of intentional description, the neutral and unmarked case coinciding with a clause. The intimate relationship between prosody and segmentation of speech is expressed in the words of Gardiner (1977:4) who postulates that intonation segments utterances into 'phrases signaling to what extent the phrases are related to one another and element within the phrase is the center of attention.'

The fact that it is impossible to utter an extended stretch of speech without some kind of break, and that it is impossible for the hearer to interpret what is said unless what is perceived is chunked into manageable units makes segmentation into divisible unit obligatory. Nevertheless, the decision as to how the verbal content of his discourse should be segmented is optional in the sense that it lies with the speaker. The belief that segmentation of discourse is prosodically identifiable and that often (but not always) segmentation is based on speaker decision in pursuit of a purpose provides the impetus for the investigation into the relationship between segmentation and the role that the segmented chunks play in discourse development.

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2 A proposed theoretical framework

Bolinger (1989) regards segmentation as ‘universal’ such that ‘all languages use intonation, rate, and pause to mark divisions’ (p.82). For example in Cayuava, ‘a fall and a trail off after the final accent signals the wish not to continue and a maintenance of the level of the final accent indicates incompletion’ (1982:82). According to Bolinger a speaker indicates a break in the discourse by a shift in pitch, in particular a drop in pitch. Likewise Brazil (1975, 1978), Lehiste (1975) and Bolinger (1989) note that the speaker indicates the beginning of a new utterance or topic by a change in prosody, i.e. raising the pitch height and/or increasing loudness.

The difficulties encountered when trying to segment Malay discourse using a definition of the nucleus and its domain which was finely tuned for English have led to the abandonment of dividing stretches of speech into tone groups. In practice, however, tone-group boundaries are sometimes not set off by audible prosodic cues and that segments which are demarcated by audible breaks may not contain a nucleus (Knowles: 1991). Crystal (1969) himself admits that he sometimes takes recourse to syntactical or semantic criteria to place boundaries. What seems to make segmentation difficult is the presence of hesitation phenomena brought about by planning and production difficulties. The very high proportion of performance errors in Brown et al’s (1980) data of spontaneous informal conversations, e.g. false starts, hesitation, slips of the tongue, overlapping and incomplete utterances contribute to making segmentation problematic.

When a speaker encounters problem in producing what he wants to produce he may be forced to pause or lengthen a syllable at an inappropriate place, thereby disrupting the prosodic flow of the utterance. This break in the prosodic flow causes a stream of speech to be realized as consisting of fragmented chunks whose boundaries may not coincide with syntactic boundaries. A speaker may, for example, pause before reaching the nucleus resulting in segments which have no nucleus. Although intonationally insignificant, these planning units are important in the sense that they fulfill the speaker’s interactional purpose, i.e. gaining him time to prepare his subsequent contribution.

The researcher has therefore adopted a less restrictive approach to segmentation; division into segmented parts is based on the presence of the prosodic cues which causes a break in the prosodic flow of utterances. The methodology for identifying the segmented parts thus rests on identifying the audible prosodic features whose presence contributes to making the units they bound hearable as segmented chunks. The question of whether these segmented parts contain a nucleus or not is not at issue here because the aim is not to describe the intonation patterns of Malay. After the identification of these segments, the contribution they make to discourse development will be examined. These segmented parts which I refer to as ‘speech units’ can be realized as follows:

1. a unit of information containing an item of information which is made prominent by a combination of prosodic cues, i.e. a speech unit containing a nucleus. The study interprets the term ‘information’ broadly so as to include not only content-information but also information of a social, pragmatic and interactional in nature.
2. a unit of performance such as a slip of the tongue, a false start, an incomplete lexical item, etc.
Although most linguists recognize the tone group as the basic intonational unit only Crystal (1969:204-7) gives the most complete discussion of the phonetic cues which signal the boundaries of the tone group. He claims that in most cases its boundaries can be determined by the following phonetic/phonological cues:

1. audible change in pitch at the level of boundary depending on the direction of the nucleus,
2. the presence of audible pause, final syllable lengthening or aspiration at the end of tone-group. (1969:204-7)

Crystal further adds that in the absence of these phonetics cues one can then resort to relying on ‘grammatical or semantic criteria to place the boundary’ (p. 207), but such cases are few. Couper-kuhlen (1986) and Cruttenden (1986) list out the following external criteria for boundary identification: pause location (either real or potential), final syllable lengthening, rhythmic discontinuity and the presence of anacrusis. Another boundary signal is the relative tempo of unstressed syllables.

To overcome the problem of segmentation, Ladd (1986) proposes the recognition of two types of intonational phrasing: Major Phrase (MP) and Tone Group (TG). The former is delimited by the presence of overt phonetic cues such as pause, anacrusis, syllable lengthening, pitch change, change of tempo, etc. whose presence is agreed upon by most linguists. Tone group is ‘merely a structural unit of phonology – the domain within which the nucleus is defined’, whose existence is identified solely on the basis of tonal structure (i.e. the presence of nucleus). These two types of domain form hierarchical structure and that they are recursive in the sense that a constituent is allowed to dominate a constituent that is higher in rank, parallel to the situation in syntax. In Ladd’s opinion this theoretical framework will help overcome problem in cases where no phonetic cues bound segments whose internal structure satisfies the minimum requirement of an independent tone group.

Pike (1962) presents a detailed description of how the boundaries of phonological units can be identified using rhythmic criteria. According to Pike while prenuclear unstressed syllables are characterized by crescendo loudness and faster tempo due to the relative shortness of the syllable, post nuclear syllables are marked by decreasing level of loudness (decrescendo), lenis articulation (including devoicing) and relative lengthening of the syllable. O’Connor (1973) adds that one can distinguish prenuclear syllables from post nuclear unstressed syllables by relative tempo such that the former is uttered relatively faster than the latter.

Table 1 below draws together the various observations that linguists have made as regards the phonetic criteria that contribute to making continuous stretches of speech realized as separate units of prosody.
Table 1: External Cues to Tone group boundaries

<table>
<thead>
<tr>
<th>Linguists</th>
<th>Pitch parameters</th>
<th>Tempo parameters</th>
<th>Other parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystal/ Cruttenden/ Couper-Kuhlen</td>
<td>change of pitch level or pitch direction</td>
<td>pause; final syllable lengthening; anacrusis; rhythmic discontinuity</td>
<td>semantic/ syntactic criteria</td>
</tr>
<tr>
<td>Pierrehumbert</td>
<td>boundary tones</td>
<td>pause; final syllable lengthening</td>
<td></td>
</tr>
<tr>
<td>Pike</td>
<td></td>
<td>relative allegro tempo of pre-nuclear unstressed syllables; relative lengthening of post nuclear unstressed syllables</td>
<td>cresendo loudness of pre-nuclear unstressed syllables; decresendo loudness of post nuclear unstressed syllables; lenis devoicing</td>
</tr>
<tr>
<td>Ladd</td>
<td>pitch change</td>
<td>anacrusis; final syllable lengthening; pause</td>
<td>major group-marked by audible prosodic cues; minor group- marked by the nucleus</td>
</tr>
<tr>
<td>O’Connor</td>
<td></td>
<td>prenuclear unstressed syllables uttered faster than post nuclear unstressed syllables</td>
<td></td>
</tr>
</tbody>
</table>

3 Truncated segments
Based on the external cues described above, a preliminary analysis of the data reveals the occurrences of the following truncated segments whose audible prosodic cues at the boundaries give them the auditory effect of being cut off or incomplete. This incompleteness is brought about by the fact that these speech units are syntactically, semantically and/or intonationally incomplete. They can be categorized as follows:

1. incomplete speech units whose boundaries are set off by prosodic cues. Syntaxically and semantically they are part of the subsequent chunk of speech from which they are separated
2. abandoned speech units whose realization is the consequence of unfluent speech. Unlike the former, the speaker leaves the segment incomplete and starts fresh. The boundaries are demarcated by audible prosodic cues. They do not cohere syntactically or semantically with the segment following them
3. parenthetical speech units which interrupt the prosodic flow of the primary utterance. The boundaries of these ‘wedged in’ segments are set off by prosodic cues