LINGUISTICS 401 **LECTURE #10**
Topics in Phonetics

INTERSEGMENTAL CO-ORDINATION *(continued)*

2. ASPIRATION

ASPIRATION IS A FEATURE WHICH CAN MANIFEST A CO-ORDINATORY RELATIONSHIP BETWEEN A VOICELESS SEGMENT AND A FOLLOWING SEGMENT AT THE LEADING EDGE OF A SYLLABLE.

In aspiration, the onset of voicing for the second of the two segments is *delayed* for an audible period of 30-40 msec or more *beyond the end of the medial phase of the first segment*!

The onset of the second segment can be phonated as *whisper* or *voicelessness* → thus the term *Voice Onset Delay* or *Voice Onset Time* is used for aspiration.

Three approaches to the transcription of aspiration:

(i)

ASPIRATION IS A PROPERTY OF THE RELATIONSHIP BETWEEN TWO SEGMENTS -- A *VOICELESS* SEGMENT FOLLOWED BY A *VOICED* ONE!

What is the difference between the two transcriptions [p^{h}ɑn] and [phɑn]? (p. 348)

(ii)

The auditory quality of the aspiration is strongly coloured by the articulatory quality of the second segment: the relevant articulators are in position for the articulation of the second segment.

Explain the following transcription:

[$p^{ɑ}_{\circ}$ɑt] (p. 349)

(iii)

The aspirated relationship could be represented by a subscript symbol, indicating *initial devoicing* of the vowel.

Explain the following transcription:

[pʰɑt]

The continuum of possible relative timing relationships:

early onset of voicing (the beginning of voicing precedes the release by more than 25 msec)

simultaneous onset of voicing (the onset of voicing falls within +/-20 msec of the stop release)

late onset of voicing (the relative delay in the onset of voicing is more than 25 msec)

ONLY THE LAST ONE QUALIFIES AS ASPIRATION!

Phonemic contrasts between unaspirated and aspirated voiceless stops occurs in many languages.

Study the Chinese and the Thai examples! (pp. 349, 350)

The relationship of aspiration involves a hierarchical ordering of the two segments:

THE SECOND SEGMENT IS OF A MORE OPEN DEGREE OF STRICTURE THAN THE FIRST.

Three general cases:

(i) voiceless stop + vowel
Study the examples from Swahili, Sutu, Ndau and English! (pp. 350-351)

(ii) voiceless stop + approximants

e.g., English (p. 351)

(iii) voiceless fricative + vowel

e.g., Burmese (p. 351)

Voice Onset Time may depend on several factors:

(i) place of articulation (p. 352)

(ii) relative timing of VOT: language-specific differences (Study *Figure* 12.2)

(iii) the type of vowel that follows voiceless stops: longer VOT before close vowels! (p. 353)

(iv) dialect differences (e.g. Chengtu vs. Beijing accents, p. 353)

With aspiration it is possible to achieve triple distinction: contrast between unaspirated, moderately aspirated and strongly aspirated segments.

(e.g. Korean, p. 353)

In such cases, however, more phonetic factors maybe relevant than just the difference in VOT -- p. 353.

VOICED ASPIRATION

A syllable initial voiced stop (or a fricative or a lateral liquid) may be pronounced with a whispery or breathy phonation instead of modal voicing.

Transcription practices:

a. [b$^{\text{ɦ}}$ar] or [bɦar] *outside* [bar] *twelve*

[ɦ] -- indicates whispery voice

b. [b̤a̤r-- indicates different modes of phonation (the syllable starts with whispery or breathy phonation, changing to voiced phonation)

c. [b.ar]-- indicates that the whispery phonation fades away before the end of the vowel

d. [b̤a̤r] -- indicates the *higher airflow* that is associated with breathy voice.

Aspiration vs. voiced aspiration: contrastive use → linguistic function!
Examples: pp. 354-5.

A special category of voiced aspiration: voiceless stops released with breathy or whispery voice. (p. 355)

THE UNIFICATION OF VOICELESS AND VOICED ASPIRATION

Are they instances of the same phenomenon?

Catford (1977) proposes a unifying phonetic definition:

ASPIRATION INVOLVES DELAY IN THE ONSET OF NORMAL VOICING

Both voiceless and voiced aspiration meet this condition -- study pp. 355!

ASPIRATION VERSUS FINAL RELEASE

The transcription of [it^{h}] *eat* is misleading! Explain! (p. 355)

Aspiration: a co-ordinatory relationship between a stop and a following voiced segment

Final release: a co-ordinatory relationship between a stop and utterance-final silence

PREASPIRATION

Preaspiration involves early offset of normal voicing in the syllable-nuclear voiced segment, anticipating the voicelessness of the syllable-final voiceless segment.

Transcription options:

1. [ḁk]

2. [a^{h}k] or [ahk]

3. [a$^{ḁ}$k]

   Example: p. 356.

voice-offset time: "the time lapse between the offset of voicing related to a prestop sonorant sound and the beginning of the silent interval related to stop closure" (Engstrand 1987)

Phonetic realizations of preaspiration: Study p. 357.

Icelandic: contrast between pre-aspirated and aspirated stops (p. 358)

Phonation characteristics: voiced phonation
↓
(whisper phonation) may occur during the transition from voiced to voiceless states
↓
voiceless state

Preaspiration in the Andalucian accent of Spanish (p.358)