

# Speech Analysis and Linguistics

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## Intonation

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### Linguistic Components

#### Functions of intonations

Emotions

Meaning

Focusing

The variability arises from -

pauses

pitch

stress - changes in pitch, duration and energy

Intonation is the manifestation of pitch.

Intonation

-> Tonality - Intonation phrases (separated by audio pauses); every phrase will convey only a single intonation pattern

-> Tonacity - parts in an intonation phrase

-> Tone - Pitch variation within a syllable (high or low - speaker specific), rising tone, falling tone, falling and rising

rising, mid-tone(b/w high n low)

Intonation pattern -> sequence of tones

accented syllable - stressed syllable with pitch changes (the point or location is called as pitch accent),

#### Last accented syllable is called the nucleus syllable

pre-head, 1st accented syllable (also called onset), head, nucleus syllable , tail -> tonal structure of a phrase

### Acoustic Components:

- intonation graphs basically
- more intonation graphs
- challenges in intonation capturing:
  - unvoiced region (pitch won't exist)
  - variations around the tone trend (not exactly smooth in practical sense)
  - unknown segment boundaries
  - range of speaker (to decide high and low tones)