STATES OF THE GLOTTIS

- Figure 6.6
  - Voiced: narrow gap from the front to the back of the glottis
  - Voiceless: glottis open wide
  - Breathy voice or murmur: only back part of vocal folds vibrating, [ɦ] intervocally ahead
    - [ɑɦɑ]; [ɦɑ]; [bɦɑ] (or [b’ɑ]/[bɑ]) as in Hindi/Urdu and other lgs in India
    - Table 6.5 (CD sound clips)
  - Creaky voice: only front part of vocal folds vibrating; very low pitch
    - Pitch lower than the lowest musical notes; sometimes at the end of falling intonations
    - Sound clips on CD
    - Also called “laryngealized”

VOICE ONSET TIME

- VOT: interval between the release of a closure and the start of the voicing (measured in ms)

- Fig. 6.7: [d] -130 ms, [t] 20 ms, [tʰ] 50 ms in Sindhi, [tʰ] in Navajo
  - The more open the vocal folds, the longer the aspiration.

- Different languages have different VOTs for voiceless vs. voiced pairs: Fig. 6.8
  - Navajo /k/ vs. /ɡ/
  - English initial /p/ vs. /p/ after /s/ and initial /b/ (vs. intervocallic /b/) 
  - French /p/ vs. /b/ 
  - Gaelic /p/ vs. /b/ 
  - Thai /pʰ/ vs. /p/ vs. /b/
  - Korean /pʰ/ ـــ (90 ms) vs. initial /p/ KeyCode (40 ms) vs. /p’/<Keycode> (10 ms)
  - Navajo /k/ vs. /ɡ/ distinction may be considered as /kʰ/ vs. /k/
    - Phonologically the same (polar) distinctions; enough phonetic differences/cues

- Languages with more than two VOT time distinctions
  - Thai: three distinctions: Table 6.6
  - Hindi/Urdu: four distinctions: Table 6.7
    - Fig. 6.9 (for Row 2 of Table 6.7): [d̪] vs. [t̪] vs. [t̪ʰ] vs. [d̪ʰ]
    - Sindhi has five distinctions (including implosives) in each place of articulation: Table 6.2

- Learn to produce these sounds

- Table 6.8: Summary of principal actions of the glottis

- Homework Assignment: Pp. 157-159: Exercises A, C, D
  - Due: by noon, October 15th: Slide it beneath the door of J813
  - Will be returned before the mid-term exam on the 17th

- Mid-term exam: 3 PM, Oct. 17th