Ling 105 Problem Set 5

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Problem 1.

The spectrograms in order depict [i], [u], and [ɑ].

Problem 2.

The spectrograms in order depict [kæ], [tæ], and [pæ].

Problem 3.

[i] involves a larger pharyngeal cavity than [ɑ], and this is associated with a lower f_1.

Problem 4.

In order of f_2 from lowest to highest, the vowels are [u], [ɑ], [æ], [ɛ], [i].

Problem 5.

The airstream mechanisms and directions are:

(a) pulmonic egressive

(b) velaric ingressive

(c) glottalic egressive

(d) pulmonic egressive

(e) glottalic ingressive

(f) pulmonic egressive

(g) pulmonic egressive

(h) velaric ingressive

(i) glottalic egressive

(j) glottalic ingressive

Problem 6.

The first waveform shows a breathy voice, and the second shows a creaky voice. The glottis is more open for the breathy voice, since the creakyness comes from partial/complete closures of the glottis.

Problem 7.

Ejective clicks are possible, since clicking is velaric and independent of the larynx. For example, [k!'] is used in Xhosa.

Problem 8.

(a) Voiced lateral fricatives are transcribed as "dl".

(b) Engmas are transcribed as "ng".

(c) Voiceless aspirated coronal stops are transcribed as "th".

(d) Devoiced aspirated alveolar clicks are transcribed as "gq".

(e) Voiceless velar fricatives are transcribed as "rh".

Problem 9.

The minimum of the f_0 is approximately 85 Hz, the vowel ends at a f_0 of 124 Hz and starts at a f_0 at around 100 Hz.

Problem 10.

(a) Voiced bilabial click is [gʘ]

(b) Uvular post-alveolar click is [q!]

(c) Uvular ejective palatal click is [qǂ']

(d) Aspirated dental click is [k|ʰ]

(e) Breathy-voiced nasal dental click is [ŋ̈|]