

Q1

a) A, D

b)

camp: the middle nasal /m/ lowers velum, the beginning stop /p/ and ending fricative /k/ raises velum

cold: In /oʊt/, the velarized /t/ raises tongue but lowers velum

mourn: the ending nasal /n/ lowers velum

elms: the middle nasal /m/ lowers velum, the ending fricative /z/ raises velum

film: The ending nasal /m/ lowers velum

Q2

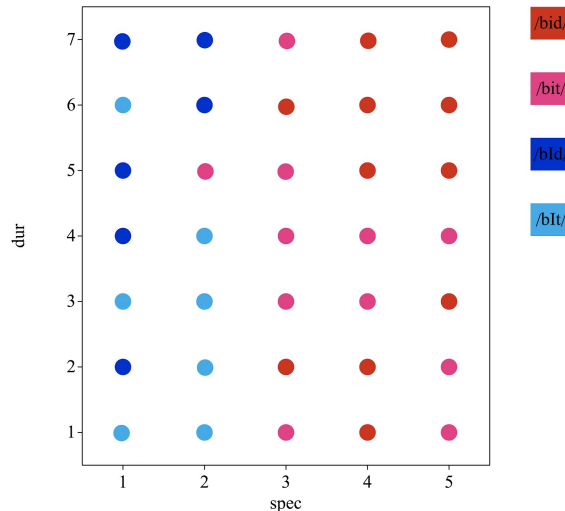
Sentence 1

[hʉ: tʰək̚ ɔ̃ ˈkʰɑ: .jæk̚ daʉ̃n̚ ɔ̃ ˈbaɪ: .u]

Sentence 2

[wid̚ goʉ daʉ̃n̚ tə ˈkʰænd̚ .lɔɹz pʰænd̚ wɪt̚ ʃ wʌz ə. ˈboʉt̚ tu: blɑks ə. ˈweɪ
fʌ ˌʌm ə ˈhaʉ.zəz]

Q3



Despite some outliers in the data, the result generally follows the following pattern.

a) tense vs lax: long duration tends to be tense vowels, short duration tends to be lax vowel. In the scatterplot, the upper-right part has more choice of /bid/ and /bit/. When the spec > 3 and dur > 5, all the choices are /bid/.

b) voiced vs voiceless stop: vowels closed by voiced stop tend to be longer than vowels closed by voiceless constant. In the scatterplot, the lower part has more choice of /bit/ and /blt/.