Handout 5: Articulatory phonetics: Consonants

Terminology

- **consonant place**: where in the vocal tract a consonant is made.
- **consonant manner**: how a consonant is made. What the articulators are doing.
- **consonant phonation**: how the vocal folds affect a consonant.

Notes

Consonant manner refers to what sort of obstruction a consonant sound involves.

- **obstruents**: consonants made with significant vocal tract obstruction.
  - **plosive**: a sound involving total obstruction.
    - **stop**: total obstruction, followed by an audible release.
    - **affricate**: total obstruction, followed by a noisy, fricative-like release.
  - **fricative**: a sound made with continuous, noisy airflow through an obstruction.
- **sonorants** (or **resonants**): consonants made with little vocal tract obstruction.
  - **nasal** (or **nasal stop**): full mouth obstruction, but free airflow through the nose.
  - **approximant**: a consonant made with very little obstruction.
    - **liquid**: an r-like or l-like sound.
    - **glide**: a vowel-like consonant.

These English and Kwakwala words begin with consonants of various manners:

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<th>Consonant Place</th>
<th>English Examples</th>
<th>Kwakwala Examples</th>
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<tbody>
<tr>
<td>bilabial</td>
<td>tubby, purity, collect</td>
<td>pus’ka ‘hungry’, ṭuṭu ‘star’, kidläm ‘net’</td>
</tr>
<tr>
<td>labiodental</td>
<td>shine, feel, honey, sob</td>
<td>łałku ‘mallard’, xándzas ‘nose’</td>
</tr>
<tr>
<td>interdental</td>
<td>challenge, justice</td>
<td>tse ‘get water’, dzika ‘dig clams’, tlátgmł ‘hat’</td>
</tr>
<tr>
<td>alveolar</td>
<td>needy, mermaid</td>
<td>mgłik ‘sockeye’, numas ‘old man’</td>
</tr>
<tr>
<td>postalveolar</td>
<td>lucky, rubber</td>
<td>łałkwa ‘firewood’, la’stu ‘ten’</td>
</tr>
<tr>
<td>palatal</td>
<td>yummy, Wilbur</td>
<td>ąxwa ‘dancing’, watsi ‘dog’</td>
</tr>
</tbody>
</table>

Consonant place refers to where in the vocal tract a consonant is made.

- **bilabial**: made by bringing the lips together.
- **labiodental**: made by bringing the lower lip toward the upper teeth.
- **interdental**: made with the tongue tip between the teeth.
- **alveolar**: made with the tongue tip against the alveolar ridge, behind the upper teeth.
- **postalveolar**: made by pressing the tongue just behind the alveolar ridge.
- **palatal**: made by pressing the tongue against the hard palate.
- **velar**: made by pressing the tongue against the velum, or soft palate.
- **uvular**: made by pressing the tongue against the uvula, a dangling flap of skin.
- **glottal**: made by closing the glottis—that is, the opening between the vocal folds.
These *mid-sagittal diagrams* illustrate various consonant places, using IPA symbols:

- **stops and affricates (IPA)**: p t tʃ k q
- **fricatives (IPA)**: f θ s ʃ
- **nasals (IPA)**: m n n̄ n̄̄ n

Consonants are also distinguished by *phonation*—that is, what the *larynx* is doing.

- **larynx**: the organ that protects the windpipe, and contains the vocal folds.
- **vocal folds (or vocal cords)**: flaps of skin at the larynx that produce *phonation*.
- **glottis**: the space between the vocal folds.
- **phonation (or state of the glottis)**: how the vocal folds affect a sound.
  - **voiceless**: made with the vocal folds at rest.
  - **voiced**: made with the vocal folds vibrating, as in singing.
  - **aspirated**: made with the vocal folds stiff and apart, as in [h].
  - **glottalized**: made by bringing the vocal folds together, as in [ʔ].
    - **ejective**: a stop consonant whose glottalization causes a stronger release.
    - **creaky voice**: a type of phonation in which the vocal folds are brought together, but not fully closed, resulting in a creaky sound.

In English, plosives (that is, stops and affricates) and fricatives are *voiceless* or *voiced*:

- **voiceless plosives**: p t tʃ k
- **voiceless fricatives**: f θ s ʃ
- **voiced plosives**: b d dʒ g
- **voiced fricatives**: v ʒ z ʒ

In Kwak’wala, plosives can be *voiceless*, *voiced*, or *glottalized*:

- **voiceless plosives**: p t ts tl k kʷ q qʷ
- **glottalized (ejective) plosives**: Ɂ Ɂ is ɁɁ k Ɂ kʷ Ɂ q Ɂ qʷ ʔ
- **voiced plosives**: b d dz dl g gʷ g Ɇ Ɇ

Kwak’wala *resonants* (that is, nasals, liquids, and glides) can be glottalized too. This is pronounced either as an accompanying glottal stop [ʔ], or as creaky voice:

- **plain (voiced) sonorants**: m n l y w
- **glottalized sonorants**: m n̄ l̄ ȳ w