Ling 403/603
Introduction to Phonology

DAY 7
CESAR KOIRALA
Consonant (Place) features

The following features tell us about the active articulator involved (Major articulator features).

1.  [+labial] = articulated with lips
2.  [+coronal] = articulated with the tongue blade and/or tip.
3.  [+dorsal] = articulated with the tongue body.
Consonant (Place) features

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Some consonants use two articulators:
1. [w] involves both lips and tongue body → [+labial, +dorsal]
2. [!] involves both tongue tip and tongue body → [+coronal, +dorsal]
Features for classifying the Coronals

- [+anterior] = sounds that are produced more front of the alveolar ridge
- [+distributed] = More contact of tongue blade
- [+strident] = sibilants, noisy, grooved tongue
- [+lateral] = Distinguishes [l] from other coronals.
[+anterior]

- [+anterior] coronals are articulated at the alveolar ridge or further forward → alveolars and (inter-)dentals.
- [-anterior] coronals are articulated behind the alveolar ridge. → palato alveolars and retroflexes.
• Coronals can be produced using either the tongue tip (e.g., [t], [s] etc.) or the tongue blade ([ʃ], [tʃ] etc.)
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- Laminal coronals
- Apical coronals

Laminal coronals are [+distributed] and apical coronals are [-distributed]
practice

- ([t],[d],[n],[s],[z]) (place features for this group?)

- ([ʃ],[ʒ],[tʃ],[dʒ]) (place feature for this group?)
practice

- ([t],[d],[n],[s],[z]) (place features for this group?)
  [+coronal, +anterior, -distributed]

- ([ʃ],[ʒ],[tʃ],[dʒ]) (place feature for this group?)
((t, d, n, s, z)) (place features for this group?)
[+coronal, +anterior, -distributed]

((ʃ, ʒ, tʃ, dʒ)) (place feature for this group?)
[+coronal, -anterior, +distributed]
Coronal fricatives and affricates are [+strident].
\( ([s], [z], [ʃ], [ʒ], [tʃ], [dʒ], [ts], [dz]) \)

The airstream is channeled through a groove in the tongue blade and blown at the teeth.

Acoustically [+strident] sounds are louder than non-strident fricatives.
[+lateral]

- [+lateral] distinguishes [l] from other coronal sounds.
- In a lateral sound, air can pass laterally around the tongue.
Features for classifying the labials.

The features for classifying the labials are the following:

1. [round] = articulated by rounding the lips
2. [labiodental] = articulated by touching the lower lip to the upper teeth.
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1. \([\text{round}] = \text{articulated by rounding the lips}\)
2. \([\text{labiodental}] = \text{articulated by touching the lower lip to the upper teeth}\).

<table>
<thead>
<tr>
<th>Category</th>
<th>Phonemes</th>
<th>Feature Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain bilabials</td>
<td>[p, b, m, \phi, \beta]</td>
<td>[+labial, -round, -labiodental]</td>
</tr>
<tr>
<td>Plain labiodentals</td>
<td>[f, v]</td>
<td>[+labial, -round, +labiodental]</td>
</tr>
<tr>
<td>Rounded bilabials</td>
<td>[p^w, b^w, m^w, \phi^w, \beta^w]</td>
<td>[+labial, +round, -labiodental]</td>
</tr>
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<td>[f^w, v^w]</td>
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</table>
Features for classifying the dorsals.

- The [dorsal] articulator (tongue body) is also the primary articulator for vowels.
- The features for classifying the dorsals are similar to the closest vowel.
Features for classifying the dorsals.

- Fronted velars (the kind in English *keen* [kɪn]) are treated as [+high, –low, +front, –back], like [i] and [y].
- Central velars (the kind in English *collect* [kəˈlekt]) are treated as [+high, –low, –front, –back], like [ɪ] and [ə].
- Back velars (the kind in English *coo* [kʊ]⁶ are treated as [+high, –low, –front, +back], like [ʊ] and [u].
- Uvulars (e.g. [q, ɢ, ɤ, ʜ]), are treated as [–high, –low, –front, +back], like [γ] and [o].
- Pharyngeals (e.g. [ɬ, ʃ]), are treated as [–high, +low, –front, +back] like [ɬ] and [ʃ].
## Summary

**Place of articulation**

<table>
<thead>
<tr>
<th>LABIAL</th>
<th>CORONAL</th>
<th>DORSAL</th>
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<tbody>
<tr>
<td>round</td>
<td>anterior</td>
<td>high</td>
</tr>
<tr>
<td>labiodental</td>
<td>distributed</td>
<td>low</td>
</tr>
<tr>
<td>strident</td>
<td>front</td>
<td>back</td>
</tr>
<tr>
<td>lateral</td>
<td></td>
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In Spanish [un] stands for masculine indefinite article. Notice how it changes in different contexts. Give the rules that describes these alterations.

[un] (masculine indefinite article)
[un oso] ‘a bear’
[un peso] ‘a peso’
[un beso] ‘a kiss’
[un foko] ‘a focus’
[un tio] ‘an uncle’
[un dia] ‘a day’
[un sako] ‘a sack’
[un tsarko] ‘a pool’
[un kakto] ‘a cactus’
[un gato] ‘a cat’
[un xweyo] ‘a game’
Practice problem

- in isolation: [un] (masculine indefinite article)
  - before a vowel: [un oso] ‘a bear’
  - before bilabials: [um peso] ‘a peso’
  - before labiodentals: [um beso] ‘a kiss’
  - before dentals: [um foko] ‘a focus’
  - before alveolars: [um tio] ‘an uncle’
  - before palatoalveolars: [um dia] ‘a day’
  - before velars: [um sako] ‘a sack’
  - before velars: [um tjarik] ‘a pool’
  - before velars: [um kakto] ‘a cactus’
  - before velars: [um gato] ‘a cat’
  - before velars: [um xweyo] ‘a game’
Phonological rules and Place features

- Phonological rules manipulate all the place features at once.

\(/n/ \text{ Assimilation}\\n \rightarrow [\text{place}_i] / \underline{\text{\hspace{1cm}} [\neg \text{syllabic}]} \underline{\text{\hspace{1cm}}} [\text{place}_i]\)
Laryngeal features

Laryngeal features
a. voice (some break this up to [stiff vocal cords] and [slack vocal cords])
b. constricted glottis (glottalized sounds, ejectives)
c. spread glottis (aspirated sounds)

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<td>$C^h$</td>
<td>$C$</td>
<td>$C'$</td>
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<tr>
<td>+spread glottis</td>
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[p,t,k,f...] \rightarrow [-voice]
[b,d,g,v...] \rightarrow [+voice]
[voice] indicates that you vibrate the vocal cords while producing these sounds.

This is a very important feature for phonemic distinction among obstruents.

[p,t,k,f...] → [-voice]
[b,d,g,v...] → [+voice]

Voicing is seldom phonemic among sonorants and never phonemic among vowels.
[spread glottis]

- [+ spread glottis] indicates that the vocal cords have been placed relatively far apart, producing a wide glottis.
[spread glottis]

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- [+ spread glottis] indicates that the vocal cords have been placed relatively far apart, producing a wide glottis.

- Phonologically, [+spread glottis] is present for [h], for breathy vowels and for aspirated consonants.
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[constricted glottis]

- As the name implies, [+constricted glottis] is opposite of [+spread glottis]. It involves adduction of the vocal cords to make a narrow or closed glottis.
Laryngeal features

a. voice (some break this up to [stiff vocal cords] and [slack vocal cords])
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[+implosive] sounds are non_pulmonic sounds in which larynx is lowered, creating a temporary partial vacuum.
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<tr>
<td><strong>Clicks</strong></td>
</tr>
<tr>
<td>! Bilabial</td>
</tr>
<tr>
<td>! Dental</td>
</tr>
<tr>
<td>! (Post)alveolar</td>
</tr>
<tr>
<td>! Palatoalveolar</td>
</tr>
<tr>
<td>! Alveolar lateral</td>
</tr>
<tr>
<td>! Ejectives</td>
</tr>
<tr>
<td>! Bilabial</td>
</tr>
<tr>
<td>! Dental/alveolar</td>
</tr>
<tr>
<td>! Velar</td>
</tr>
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<td>! Alveolar fricative</td>
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Delayed release refers to the period of semi-closure during which the frication noise is produced. Hence, applies only to affricates and fricatives.

Stops are [-delayed release] and affricates are [+delayed release]. This helps us to get the distinction between stops and affricates.
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Stops are [-delayed release] and affricates are [+delayed release]. This helps us to get the distinction between stops and affricates.

But, this feature seems to be irrelevant for sonorants. Hence they are [0 delayed release]
[0 as a feature value]

1. Some features are simply irrelevant for certain sounds.
2. Some segments **do not care** about certain feature values.

What is the value for dorsal features like [high], [low], [front], [back], or [tense] for a plain labial consonant /p/?