Consonants and transcription

1. We've covered different consonant sounds, but now we're going to focus our attention on their features.

2. We have defined consonants in terms of three characteristics: place of articulation, manner of articulation, and voicing. One way of representing these characteristics is with a consonant inventory, or consonant chart.

3. Sounds change as a function of their environment.
   a. /l/ allophony
      
      *like* [laɪk] vs. *tile* [tʰaɪl]
      *lens* [lɛnz] vs. *fell* [fɛl]
   
   b. Place assimilation: /n/ before interdentals and velars, 'in the', 'can go', 'in case'
      
      *in time for* [ɪntʰaɪmfə]
      *in the kitchen* [ɪŋðækʰɪtʃɪn]
      *I can go* [aɪkʰæŋɡʊ]
      *in case he wants* [ɪŋkʰɛiʃɪwɑntɪs]
   
   c. Flapping/Tapping in English
      
      *pit* pitted
      *sit* sitting
      *cat* cat in the hat
      *put* put a ring on it
      *ride* riding
      *read* reader
      *seat* seating
      *seed* seeding
      *grate* grating
      *grade* grading

   -How these sounds change is an example of a phonological rule - both sounds change to /r/ in between vowels. It's a particular example of what is called neutralization.

   -This is part of a phonological system because it is a rule. Note that this is not universal - British English doesn't do it and neither do many other
languages. It's something about American English phonology.

d. **Allophony** - when the same "sound" is realized two different ways as a function of context and the contexts are mutually exclusive.

**Vowels in English**

1. Certain vowels are closer together and others are further apart.

   a. Practice the sequence going from [i > a]. Does this go through other vowels in your pronunciation?

      - It should cross over things like [i] or [ei] or [ɛ].

   b. Now, compare this with the sequence going from [i > i], or from [u > o]. The key is to get them to do all these movements slowly. Does this go through other vowels?

   c. Vowels that don't cut across other vowels in the space are closer together than ones that cut across vowels.

   d. If we were to map out all the vowels in the space in terms of how far away they sound from each other, we would end up with something of a similar shape to the vowel chart.

      Though, to do this comprehensively, one would have to compare every different vowel with each other. This would take a bit of time for the comparisons to be made, so we rely on auditory and acoustic work that phoneticians have done to tell us approximately how far away vowels sound from each other in the vowel space.

2. Not all vowels are equally extreme. There is variation across languages and dialects. For instance, the vowel [i] is high and front for American English, but even higher and more extreme for French speakers.

   a. Practice saying a normal [u] and an extreme [u], as an example.

3. Diphthongs involve a movement from one vowel target to another, but it is not easy to identify where they start and where they end.

   a. One way we can see where things end and begin is by changing the diphthongs around. So, have the students practice changing [ai] to [æi] to [ai] to [ʌi]

      Where does the vowel begin? Is it between [æ] and [a/ɔ]? It should be.
b. Practice changing [ai] to [æ] and [ai] to [ai]. Which ones are more similar? (The first two, right?)

c. This illustrates both how to see where the diphthong begins/ends and that it doesn’t begin/end necessarily where other monophthongals do, but we approximate this the best we can in the IPA.

d. The crucial thing is that diphthongs are a movement from one location to another.

e. Distinguish the following:

[ai] and [AI] The latter is found with Canadian raising (below).

[œʊ] and [ou] Br.English and American English, respectively

[æɔ] and [au] Australian English and American English, respectively.

-So far, we’ve established that vowels can be distinguished by height, backness, rounding.

-We’ve also established that diphthongs are best described as a movement from one approximate position in the oral cavity to another approximate position; it is the movement that characterizes them, not the exact targets.

-Both languages and dialects differ in the exact starting/endpoints of diphthongs. There are even triphthongs.


a. Rhoticism - There are dialects of English that lack rhotic vowels. For instance, most British varieties and coastal US varieties lack rhotic vowels.

-Instead of a rhotic, British varieties contain a schwa, as in:

'hear' [hɪə]  'hair' [hɛə]  'hire' [haʊə] ~ [haɪə]

'bore' [bɔə]  'our' [aʊə]  'poor' [pʊə]

-The vowel corresponding to the Am.English [ə] is [ə] in British English.

-Other non-rhotic varieties are different in other ways, such as Australian English, where the vowels are monophthongal and length is used to indicate the "lost r" as in:
*Yes, there is a bit of a quality difference in the last one too.

- There are also different diphthongs here too:
  - [æɔ] 'scout' vs. Am.English [skɔut]
  - [æe] 'night' vs. Am.English [næt]

b. Practice making these vowels with each other.

c. Low vowel merger. Beginning from the area around Ohio, going westward, American English speakers have lost the distinction between /a/ and /ɔ/, as in the words 'cot' and 'caught.'

For these speakers, they produce a vowel between the two, but closer to [ɔ], which we transcribe as [ɑ].

Yet, even for those speakers who do not merge, people vary in their vowels for certain words.

(1) Do you merge or not? Transcribe the following:

'cot' vs. 'caught'  'stock' vs. 'stalk'
'rot' vs. 'wrought'  'Don' vs. "Dawn"

(2) If you do not merge, then what vowels do you have for the following? Is it [ɑ] or [a]? 'wash', 'log', 'moth', 'bother'

5. Tense/Lax vowels: vowels in American English can be divided phonologically into two categories, based on whether the vowel occurs in an open syllable (one without any final consonant, e.g. 'go', 'see') or only in closed syllables (with a final consonant, e.g. 'goat', 'seat').

a. Tense vowels occur in any syllable, but lax ones only occur in closed syllables.

b. Tense: i, u, ɔ, ei, ɔə, aɪ, ao, oi
For instance, we can say 'see' and 'seat', 'sue' and 'suit', and 'so' and 'soap.' These vowels occur in words of different types.

Lax: ɪ, ɛ, æ, a, ʌ/a, ʊ
For instance, we have words like 'sit' and 'set' and 'sat' and 'soot' and 'shut', but it is impossible to end a syllable with /i/ or any other of these vowels, e.g. */si/ is not a possible English word.
c. Note that the tense vowels consist of the more peripheral vowels, e.g. [i, u, ɔ~a], as well as the diphthongs. By 'peripheral', we mean the vowels at the extreme corners of the vowel space.

d. The lax vowels, by contrast, consist of vowels that are more in the middle of the space (centralized), though [æ] is an exception to this.

e. Historically, the lax vowels correspond to English short vowels and they still are shorter in duration than the tense vowels, though the words 'tense' and 'lax' are phonological labels and the tense vowels do not have any more muscular tension, in a physical sense, than the lax vowels.

f. This is a phonological category, meaning that the labels capture something important about where different types of vowels occur in English words, i.e. their distribution within the language's phonological structure. The category also makes sense historically.

6. Canadian raising: In certain varieties of English, there are two variants of diphthongs. They occur in different contexts. From the words here, observe the contexts where each occur.

<table>
<thead>
<tr>
<th>kʰʌɪt</th>
<th>'kite'</th>
<th>ɹaɪd</th>
<th>'ride'</th>
<th>ɹʌɪs</th>
<th>'mice'</th>
</tr>
</thead>
<tbody>
<tr>
<td>ɹaɪt</td>
<td>'right'</td>
<td>ɹaɪvə́</td>
<td>'rival'</td>
<td>ɹai̯m</td>
<td>'mime'</td>
</tr>
<tr>
<td>aɪz</td>
<td>'eyes'</td>
<td>ɹaɪp</td>
<td>'type'</td>
<td>ɹai̯nd</td>
<td>'find'</td>
</tr>
<tr>
<td>pəɪə̯</td>
<td>'pry'</td>
<td>ɹai̯nə̯</td>
<td>'deny'</td>
<td>ɹai̯n</td>
<td>'sky'</td>
</tr>
<tr>
<td>wəɪf</td>
<td>'wife'</td>
<td>ɹai̯k</td>
<td>'like'</td>
<td>ɹai̯s</td>
<td>'nice'</td>
</tr>
</tbody>
</table>

a. Create columns/rows for each vowel type and write down the contexts where each vowel occurs, e.g.

- kʰ: kʰ_t, _t...
- aɪ: ɹaɪ_#, _d...

What are the phonological contexts where each sound occurs?

b. Is there anything that the preceding consonants have in common. What about the following consonants?

c. You should notice that the raised diphthong only occurs before voiceless consonants. But where does the voiced consonant occur?

d. One occurs in specific contexts and the other in more general ones, but neither occur in the same environment.
This is a bit like Superman and Clark Kent. They are both the same person, but when you see Superman, you don't see Clark Kent, and vice-versa. This is called **complementary distribution**. Sounds that are in complementary distribution are allophones.

7. **Vowel nasalization**
   a. Vowels are nasalized in English preceding a nasal consonant, e.g.

   ```
   stɛmp  sʌn
   θʌmp  bʌn
   ɹɪŋk  tʰʌŋ
   ```

   b. The degree of nasality on individual vowels varies. Lower vowels tend to sound more nasal than higher vowels.

   c. What is happening during nasalization of vowels? Airflow passes both through the oral cavity and through the nasal cavity.

   d. Certain languages have contrastive nasalization on vowels, as in French or Portuguese.

   **French:**
   
   `pɔ̃ 'pont / bridge'`  `po 'peau / skin'
   `sɑ̃ 'sans / without'`  `sa 'sa / his, her'
   `fɛ̃ 'faim / hungry'`  `fɛ̃ 'fait / done'
   `sɛ̃k 'cinq / five'`  `sɛk 'sec / dry'

   - Note that nasal vowels and oral vowels occur in the same context here. The words’ meanings change with nasalization.

   e. Though, French does not have nasalization of vowels preceding nasals! E.g. panne, gônnes, Cannes, diné...

   ```
   [pan]  [gɔn]  [kan]  [dine]
   ```

   f. Vowel nasalization is **allophonic** in English, meaning that oral and nasalized vowels occur in complementary distribution (one before nasal consonants and another everywhere else.

   - Just like Superman/Clark Kent.

   g. Vowel nasalization is **contrastive** in French, meaning that both oral and nasal vowels occur in the same contexts and contrast *meaning* in words.
- French does not have allophonic nasalization like in English.

- However, this is not something universal. There are languages with contrastive nasalization but where all vowels are nasalized before (or after) a nasal consonant. Such languages have both contrastive nasal vowels and allophonically nasalized vowels.

  h. In languages with contrastive nasalization, we say there are "nasal vowels" vs. "oral vowels." In languages with only allophonic nasalization, we say there are "nasalized vowels."