• American English vowels: Symbols and properties to know

Background reading:
• CL Ch 2, sec 6
• CL Ch 2, Table 2.17 (p 44)
0. Vowels: Overview and learning guide

- The reading you have done in CL Ch 2, sec 6, contains a lot of information and detail

- Here is what you need to learn from this reading
  → These slides and links will help you!
    - The vowel symbols in Table 2.11, p 42
    - The phonetic properties of these sounds that we can use to describe them

- Other details and charts in the reading are there to help you understand this central information
1. How to describe a vowel

- Goal: Know all of the symbols and descriptions for the vowels in Figure 2.11 (CL p 42)

- We will describe vowels using the following four phonetic properties:
  - height
  - backness
  - rounding
  - tense/lax
  - vowel (corresponds to “constriction type” in consonants)
2. About vowels in varieties of English

- Vowels are where varieties (dialects) of English differ the most in their pronunciation
  - There are differences between the “standard” Englishes of different parts of the world
  - There are differences between “standard” and other varieties of English within each region
2. About vowels in varieties of English

• In this course, we will use online sound files representing “standard” or “mainstream” American English, and the corresponding IPA symbols, as a way to learn about how to describe vowels

  - The examples below come from the clickable American English vowel chart on the web site for the book A Course in Phonetics

  - If you are interested, there are sample British English vowels on the same web page
2. About vowels in varieties of English

- You, personally, may not have the exact same vowel quality in an individual word as demonstrated here
  - Practice **recognizing** the vowel sounds in the recordings and **matching** them to symbols
  - *For fun:* Try to analyze whether your own vowels are different from the models — and if so, how! (using phonetic properties)

- Later in the course, we will talk more about linguistic differences between some of the varieties of English
3. Height and backness

• Consider these vowels
To hear them, click on the matching symbol in this chart
Note: You do not need to let the web site access your microphone

[ɪ] as in bid
[ɛ] as in bed
[æ] as in bad
3. Height and backness

- Consider these vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

  [ɪ] as in bid | high
  [ɛ] as in bed | mid
  [æ] as in bad | low

- These vowels illustrate the three height categories: **high, mid, low**
  - Refers to vertical position of tongue body
3. Height and backness

- Consider these vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

  [ æ ] as in bad
  [ ʌ ] as in bud
  [ ə ] as in bod
3. Height and backness

• Consider these vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone
  
  [æ] as in bad | front
  [ʌ] as in bud | central
  [ɑ] as in bod | back

• These vowels illustrate the three backness categories: front, central, back
  - Refers to horizontal position of tongue body
3. Height and backness

• Using height and backness, we can represent vowels in a two-dimensional diagram:

<table>
<thead>
<tr>
<th></th>
<th>front</th>
<th>central</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>ï</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mid</td>
<td>ë</td>
<td></td>
<td>ñ</td>
</tr>
<tr>
<td>low</td>
<td>æ</td>
<td></td>
<td>ã</td>
</tr>
</tbody>
</table>

• Be careful not to confuse **mid** and **central**!
4. Rounding

• Consider these vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

[ i ]  as in bead  (shown as [ iː ] on chart)
[ u ]  as in booed  (shown as [ uː ] on chart)
[ ɪ ]  as in bid
[ ʊ ]  as in hood

• These vowels illustrate the rounding categories: are they round or unrounded?
4. Rounding

• Consider these vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

  [ i ]  as in bead  (shown as [ iː ] on chart)
  [ u ]  as in booed  (shown as [ uː ] on chart)
  [ ɪ ]  as in bid
  [ ʊ ]  as in hood

• These vowels illustrate the rounding categories:
  are they round or unrounded?

  [ i ] [ ɪ ]  | unrounded    [ u ] [ ʊ ]  | round
4. Rounding

- See vowel height, backness, and rounding for [i e a o u] on this X-ray video

  From: Peter Ladefoged’s *Vowels & Consonants* textbook, via YouTube
5. The tense/lax distinction

- Consider these pairs of vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

  [i] as in *bead* vs. [ɪ] as in *bid*
  [u] as in *booed* vs. [ʊ] as in *hood*
5. The tense/lax distinction

• Consider these pairs of vowels
  To hear them, click on the matching symbol in this chart
  Note: You do not need to let the web site access your microphone

  \[ i \] as in bead vs. \[ ɪ \] as in bid
  \[ u \] as in booed vs. \[ ʊ \] as in hood

• These comparisons illustrate tense and lax vowels
  - Tense vowels tend to be longer and have a more extreme (less central) tongue position than their nearest lax counterparts
  - The web site we are using for audio examples actually transcribes the tense vowels [ i ] [ u ] as long with the [ : ] symbol
5. The tense/lax distinction

- A **diagnostic** for tense/lax in English:
  - In English, only **tense** vowels can come at the **end of a one-syllable word**
  - With one exception: [ɔ] (if you have it!—see below) is **lax** but can appear in this position (for historical reasons)
5. The tense/lax distinction

- Many languages have small vowel inventories, so only **height**, **backness**, and **rounding** are needed to distinguish all vowel categories.

- But other languages — such as English — need to make this further distinction between tense and lax vowels.
6. Mid vowels in American English

• The **mid tense vowels** are seen in these words:
  - *bayed*   (mid front tense vowel)
  - *bode*   (mid back tense vowel)

• Do you notice anything special about these vowel sounds? (Hint:  Try saying them slowly.)
6. Mid vowels in American English

- These vowels are **diphthongs** — complex vowel categories that start with one vowel quality and end with another.

- We reflect this in a two-part phonetic transcription:
  
  - [eɪ] as in *bayed*  
  - [ɔʊ] as in *bode*

To hear them, click on the matching symbol in this chart; note that diphthongs are **arrows** (not circles) on the chart.

  Note: You do not need to let the web site access your microphone.

- An alternative transcription convention uses lax vowels instead of glides in diphthongs: [eɪ] [ɔʊ]—as seen on the clickable chart we’re using for audio.
6. Mid vowels in American English

- Most languages have mid (tense) vowels that are *not* diphthongs
  - For such languages, we would simply transcribe the vowels [e], [o] (no glides)

- Using a diphthong pronunciation for mid vowels is one common characteristic of an American **accent** in foreign-language learning!
6. Mid vowels in American English

• Here is a vowel category that some American varieties have, and some do not: [ ɔ ]

• If you have a different vowel in thought and lot, then you probably have thought [ ɔ ] and lot [ ɑ ]
  - If you have the same vowel in lot and thought, then the vowel you have is probably [ ɑ ]

• Another test: [ ɔ ] is round, [ ɑ ] is unrounded

• Hear the contrast: [ ɔ ] bawd vs. [ ɑ ] bod

Click on the matching symbol in this chart
Note: You do not need to let the web site access your microphone
7. Remembering vowel symbols

- Easy to learn: **Tense vowel** symbols

  - These match the expected pronunciation of the corresponding alphabet letter *in many non-English languages* (example: Spanish)

<table>
<thead>
<tr>
<th></th>
<th>front</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>high</strong></td>
<td>[i ]</td>
<td>[u ]</td>
</tr>
<tr>
<td><strong>mid</strong></td>
<td>[e ] (Eng. [ ej ])</td>
<td>[o ] (Eng. [ ow ])</td>
</tr>
<tr>
<td><strong>low</strong></td>
<td></td>
<td>[a ]</td>
</tr>
</tbody>
</table>
7. Remembering vowel symbols

- Think of these **lax vowels** as similar to the tense vowels with **related** symbols

<table>
<thead>
<tr>
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<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>[ɪ]</td>
<td>[ʊ]</td>
</tr>
<tr>
<td>mid</td>
<td>[ɛ]</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>low</td>
<td>[æ]</td>
<td></td>
</tr>
</tbody>
</table>
7. Remembering vowel symbols

- Two mid central lax unrounded vowels: 
  [ə] “schwa” vs. [ʌ] “wedge”
  - [ʌ] is used for a stressed sound: cup
  - [ə] is used for an unstressed sound: sofa

- In this course, you won’t be asked to distinguish these two symbols by sound or by properties (we will treat them as interchangeable)

- Hear [ʌ] bud

Click on the matching symbol in this chart
Note: You do not need to let the web site access your microphone
7. Remembering vowel symbols

- Two similar low vowels: [ a ] vs. [ ɑ ]
  - [ a ] is central; [ ɑ ] is back
  - In “standard” American English, [ a ] is used only as part of the diphthongs [ aj ] bite, [ aw ] loud
  - Some other varieties of American English do use [ a ] in additional contexts
    - Boston: p[a]k your c[a] in H[a]vard Y[a]d
    - Some SE US varieties: time, tide have [a]

- You won’t be asked to distinguish these two vowels by sound (but do know their properties!)
8. Summary so far

(circled=tense)
9. More diphthongs

- We’ve seen these diphthongs: [ ej ], [ ow ]
  - We simply classify them as mid front unrounded tense vowel and mid back round tense vowel — just like simple vowels — because their transitions are minor
9. More diphthongs

- In “standard” American English, these words have more extreme (major) diphthongs:

  [aj] as in bite → Do you have [aj] in bide?

  [aw] as in loud

  [ɔj] as in boy
9. More diphthongs

- For the three major diphthongs, we can just describe their starting and ending points.

- All five diphthongs in “standard” American English are tense (yes, even [ɔj]!)

Diphthongs as transitions between vowel qualities