Notes on *Phonetics & Phonology*

Lesson 10.0
OVERVIEW

Lesson Summary – mostly repeated from Notes for Lesson 9

This lesson is devoted to the phonetic level of linguistic structure. *Phonetics* deals with *the study of speech sounds*.

We will concentrate on the sub-area of phonetics dealing with the *articulation of sounds*. Specifically, I will highlight and review the *parameters for describing the articulation of consonants and vowels*. We will also practice using *phonetic symbols* for the transcription of English sounds.

Resources:
I want to send you to a couple of wonderful tools that are available on the web. You may google other tools, but these are ones I have looked at:

1. The first one is called *Sounds of Speech*. This tool provides animated simulations of the articulation of consonants and vowels as well as video demonstrations with sound. **Sounds of Speech is available as an App**. Purchase the English only version of Sounds of Speech at the App Store and Google Play for $3.90. It is well worth it. Please make sure to check out all the sounds as they come up in my discussions in this lesson.
2. The second is an online keyboard for IPA symbols, and it is under "Web Links" in Canvas as well. Use the IPA online keyboard to compose your dictation; the address is also given below. Take a few minutes to familiarize yourself with the IPA online keyboard. Note that you choose symbols from the top section of the page, and the symbols appear on the bottom section of the page. After composing your answer in the IPA online keyboard, open a Microsoft Word document and then copy and paste the symbols into the Word document. Check that the symbols show up unchanged. Likewise you can open a message at the bulletin board and copy/paste the symbols into it. Here is the address for the keyboard:
   http://weston.ruter.net/projects/ipa-chart/view/keyboard/
3. There are also several other iPad and iPhone apps that help you practice the IPA. Some of them even have sound connected. However, all of the ones I have tested deviate a bit from the IPA symbol set in our book. So, use these apps as much as you like but keep in mind that there will be some unfamiliar symbols that we don't have time to get into.

Main Goals

After completing this lesson, you will be able to (SWBAT1):

- describe the articulation of consonants and vowels
- use the phonetic symbols of the British or American version of the International Phonetic Alphabet (IPA) for English sounds
- decipher simple phonetic transcriptions (i.e., transliterate)
- phonetically transcribe simple words and short texts

Main Ideas

- consonants vs. vowels
- articulation of consonants
    - state of the glottis
    - place of articulation
    - manner of articulation
- articulation of vowels
    - tongue height
    - tongue advancement
    - lip rounding
    - tenseness of speech articulators
- phonetic symbols
- International Phonetic Alphabet (IPA)

Lesson Summary – Phonology

In this lesson, we will transition from phonetics to phonology by talking about *natural classes*.

The topic of natural classes will allow us to make the connection with *phonology*. We will look at how *phonological rules* work that describe how the environment of a sound, expressed as a natural class of sounds, can influence the pronunciation of that sound.

To continue *phonology*. Specifically, we will talk about *phones, phonemes, and allophones*.

We will discuss the *properties of sounds* when they are allophones of different phonemes and when they are allophones of the same phoneme.

You will learn what it means when sounds are

- *contrastive/non-contrastive and distinctive/non-distinctive in meaning,*
- *overlapping/complementary in distribution*, and
- *non-predictable/predictable as to their phonetic environment*.

We will use images to understand these concepts.

Main Goals

After completing this lesson, you will be able to (SWBAT2):

- group language sounds into natural classes
- recognize some of the phonological rules that can be stated using natural classes (today)
- explain how languages group sounds into different classes called phonemes (next week)
- differentiate between phonemes and allophones
- differentiate between a sound as a phone as opposed to a phoneme

- determine the properties of sounds that are allophones of the same and of different phonemes

Main Ideas

- natural class
- phonetic environment
- phonological rules
  - assimilation
  - dissimilation
  - insertion
  - deletion
  - strengthening/weakening
- distribution of sounds
- phones
- phonemes
- allophones
- contrastive/non-contrastive sounds
- distinctive/non-distinctive sounds
- overlapping/complementary distribution of sounds
- predictable/non-predictable environments of sounds

Homework Assignments

1. **WRITTEN ASSIGNMENT (TRANSLITERATION of the " Joke")**

   Please do the following:
   - decipher the phonetic symbols of the short text in Canvas Lesson 10/Assignments/*Joke IPA Transliteration Assignment*, and
   - write the text using the Latin alphabet usually used to spell English (s. rubric in assignment).
   This two-step process is called "transliteration" by the way. The text is written using the American version of the IPA. Unfortunately, there are several versions of the IPA around, and our book has switched to the European version.

   I have put a copy of the American version of the IPA in Canvas/Lesson 9/Supplemental Materials; it's called "American IPA Language Files". Please print it out and use it side-by-side with the version in your book. That way you will become familiar with both versions. This is necessary because both versions are used in the literature. For the dictation later in the course, you only need to know one of the versions; you can pick which one.

   The **due date** for the assignment will be August 4. Submit the assignment via the *Joke*

IPA Transliteration Assignment in Lesson 10 in Canvas. Please remember to use our labelling convention <**YourLastName + *Transliteration***>

Also, continue to memorize the phonetic symbols in preparation for a dictation exercise. It's helpful to regularly visit new symbols and revisit ones you already looked at to refresh your memory rather than try to memorize them all at once. And remember that you only need to actively know one symbol system. Thanks!

2. **READ**

For this lesson, Lesson 10, please

- review Chapter 2 *Phonetics* and
- read Chapter 3 *Phonology* in the *Language Files*.

3. **REVISED TOPIC STATEMENT**

If you haven't posted your revised topic statement yet, please do so as soon as you can. This will give you time to conduct your library research and write the paper. I will start giving feedback and grading your topic statements this week.

4. **PROJECT PROPOSALS**

In the meantime, continue **conducting the literature search** using the library resources available from Lesson 4/Supplemental Materials/*Worksheets for Library Orientation & Library Tutorials* in Canvas.

As I mentioned before, you need to find at least 8-10 sources (articles, (e-)books, grammars) that help you understand your linguistic feature(s). There are many full-text articles and ebooks available through our library databases. Please make use of these excellent services.

You can also use Interlibrary Loans (ILL), either through your local libraries or Illiad, Hamline's online interlibrary loan system.

Make sure to include a *reference section* AND *a bibliography* *("to show your work")*. As is customary in academic papers, your literature must be cited in the text; it's standard in our program to use the APA (7th edition) *author/year method*, which looks like this: (Doe, 2001). And it must be fully referenced in a separate reference section as indicated in the suggested paper outline.

As you are starting to **write your papers**, please revisit step six of the Language Feature Paper overview from Lesson 4.

In particular, I would like to remind you of the outline for the paper structure. This structure will help you organize the materials you have collected during your library research. It is also not cast in stone; you are at liberty to mold and adjust it depending on

your personal preferences or the materials you have collected. A more detailed and elaborate paper structure is given in the syllabus. It is left up to your initiative and personal disposition to include some of the additional sections and paper components, but it is not mandatory.

Please use headings to indicate the main sections in your paper. And don't forget the title page and, as just mentioned, the reference section - common omissions. And use APA style (7th edition). You might as well start practicing using it, as it is required for the capstone and other course papers.

I realize that I'm somewhat vague and non-rigorous regarding the structure, organization, or format of the paper. This is on purpose since we have so many things to cover in this course. It wasn't possible to focus on linguistics, technology, and research/writing all at once.

My strategy has therefore been to offer you guidance and information but not mandate too many specifics around the paper so that you become aware of it. Hopefully some, or even much, will fall on fertile ground. There will be other opportunities to write papers throughout the program, though. Only at that point will the writing requirements become more stringent.

An excellent resource for how to write using the conventional academic style and language is the Swales & Feak (2012) book that I have mentioned before. The full reference is in the syllabus. You might as well purchase the book because we all use it in the MAESL program, including in the capstone preparation course. Thanks and good luck with the writing of your papers!

Again, post the latest version (after group discussions) of your three-part linguistic topic statement in ***Forum F9.4 Topic Statements*** in the discussion area (following the format given in Booth, Colomb, Williams, Bizup, and Fitzgerald (2016) - full reference is also in the syllabus) if you haven't done so yet.

I have started comments on topic statements that were posted earlier. Make sure to visit other people's statements and all of my comments. You will likely learn a lot when you read through them even if you are working on an unrelated topic. Thank you!

At a Glance

Here is a summary of all the things in the course that you're supposed to do this week:

1. READ

Chapter 3 **Phonology**; review Phonetics chapter

2. DO

Consonant and Vowel activity in GoogleDoc

3. DO
Submit **Phonetics Joke IPA Transliteration** Assignment ("Joke") in *Canvas Lesson 10/Homework* by August 4 due date

4. DO
Continue work on **paper project proposals**

5. WATCH
Video *Discovering the Human Language* if you haven't yet.

6. DISCUSS
Think-Pair-Share activities in group threads inside discussion board forums

7. PLAY
Berlitz Commercial in *Canvas Lesson 10/Supplemental Materials*

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NEXT:

- Now you can start playing back the *Google Meet* recording of this lesson by going to *Home* in Canvas, scrolling down to the module *for the current lesson*, and clicking on the link **Lesson 10 Recording Link and Notes with time stamps**.
- Consult the notes below in parallel as you watch the video.
- In the video, skip over recorded class discussion activities at the places indicated here in *Notes*.
- Instead of watching them, conduct the respective discussion activity online in CANVAS. Activity labels are given in the *Notes* file below. Instructions for the activities are given in the recording by me orally and also repeated in the CANVAS discussion forums in writing.
- After getting started with an activity, continue watching the video at the time marked below in this file and also continue the activity throughout the lesson.

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- Logistics feedback: (**2:57**)
  - Participation in my study:
    - there is still plenty of time and I would appreciate more participants
    - the study does not have to be completed until Lesson 12, starting August 10, when we discuss its content
  - SWBAT1 (Phonetics) and SWBAT2 (Phonology)
  - Resources (*Sounds of Speech* App and others; IPA keyboard)
  - Make sure to read my feedback to topic statement drafts in *Forum F9.4 Topic Statements*; and get feedback from classmates, too.

- Debriefing Online Discussion from last week [watch **10:35-13:40; then skip down to Syntax & Joke IPA Transliteration Homework Review**]

Panda joke

cf. my comment in Forum F9.1

Constituent Structure Test homework

Two common mistakes: switch constituents to test & test constituent not responsible for ambiguity/joke

[Enraged cow] injures farmer with Ax.

Enraged cow injures [farmer with Ax.]
Andreas Schramm

Juana, the constituents you want to test must have the same words in them. In this sentence it is the words injures farmer with ax. The two constituent structures are Enraged cow [injures] [farmer with ax] and Enraged cow [injures farmer] [with ax]. Now you can pick any one of the phrasal constituents, [farmer with ax], [injures farmer], or [with ax], and test them 3 times. Makes sense?
Also see below…

Articulatory Phonetics – Consonants:

see below

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- Syntax & Joke IPA Transliteration Homework Review (**16:00-39:55; instead go to** Forum Homework Review **to review in pairs; send me a message if you have questions**)

  Joke Homework

Make sure you have transliterated EVERYTHING in IPA!

What is the regional variation?

[klak] = clock for US speaker; but not for an British English speaker:

English speaker pronounces ‘clock’ as [kl ɔ k]

What is the English speaker hearing? Is it ‘clerk’? – No, that is [kl ʌ k] in British English

They here ‘clark’; regionally: ‘Clerk’ is in the North; elsewhere is ‘clark’

Stylistic variation: Fast pronunciation of you: [y & schwa]; of ‘your’ would be [yr̩]

Due date: November 13 (synchronous) and November 16 (asynchronous)

- Phonetics book (**1:02**)
  Collins, Mees, & Carley: Practical English phonetics and phonology: A resource book

- Continue Phonetic Articulatory Features Class Activity: (**1:03:55**)
  only 3 **functional** parameters to distinguish ALL consonant sounds: *state of glottis; place of articulation; manner of articulation*

use Canvas Lesson 9/Supplemental Materials/*Phonetics Overheads*
& *English Consonant Chart*

- we finished **state of the glottis**: ***voiced/voiceless***

Youtube of voicing: vocal folds vibrating: https://www.youtube.com/watch?v=y2okeYVclQo (watch from 30 sec-1:09) (**1:11:35**)

Let's review asynchronous discussion: [**Juana, Sarah**] (at **1:13:10 skip to)**

State of the Glottis

voiceless	**Synchronous:** **[p]** **[ʔ]** **[h]** [t] [s] **[k]** [wˠ]²[tʃ] [f] **[θ]** [h] **Asynchronous:** **[h]** [ʃ]
voiced	**Synchronous:** **[d]** **[z]** **[l]** [b] [ð] [n] [ŋ] **[ʒ]**[v] [dʒ] [m] **[ɾ]****[w]****[m]** [w] **Asynchronous:** [dʒ] [tʃ] [ŋ] [m]

Here is the link to the googledoc for this activity:
https://docs.google.com/document/d/1LHGa_aYm6rMmOmrbAiGhxij7dEOqcfWdsVQX1NTcgRA/edit?usp=sharing

- Continue with Activity: rest of dimensions for consonant description (**1:17:50; skip 1:18:25-1:20:23**)

  Summer 2023 students:

  - Determine your 2-3 consonants to analyze; coordinate with each other so that your consonants have not already been covered by one of the others
  - Enter your name and consonants in the googledoc (link is below) at the start of the Consonants section (under the names of synchronous folks), so nobody else works on the same sounds; pick a unique font color for yourself
  - Enter your sound in the appropriate row of the table (voiced or voiceless - for the first category) using your unique color.

- Do so before listening to the debriefing, then check in the recording and with each other in the googledoc whether you were correct. I will check on your work in the googledoc as well.
  Here is the link to the googledoc for this activity: https://docs.google.com/document/d/1LHGa_aYm6rMmOmrbAiGhxij7dEOqcfWdsVQX1NTcgRA/edit?usp=sharing
- Use an IPA keyboard such as the one in Canvas/Lesson 9/Supplemental Materials/
- *Watch recording of debriefing: there is important information besides articulatory descriptors;*

- Next, enter **place of articulation** (place of constriction) for your 2 sounds assigned last time.
31 Consonants on pp. 45-47; 15 students (**1:20:23**; enter your 2 consonants into the table):
(from front of oral cavity) ***bilabial, labiodental, interdental, alveolar, post-alveolar, palatal, velar, glottal*** (to throat/larynx) (skip **1:25:25-1:28:13**)
 use Canvas Lesson 9/Supplemental Materials/*Phonetics Overheads* – first 3 images & *English Consonant Chart*
Debrief: (check GoogleDoc)

- **manner of articulation** (amount of constriction):
(from complete stoppage) ***stops, fricative, affricate, flap, nasal (stops), liquids, glide*** (to hardly any constriction (**x:xx-x:xx; people entered their descriptors while I was giving explanations; so there is nothing to skip**)
 use Canvas Lesson 9/Supplemental Materials/*Phonetics Overheads* – first 3 images & *English Consonant Chart;* the file will download to your computer, then needs to be opened with Windows Photo Viewer by right-clicking it and selecting the app from the drop-down list
Debrief:

broad transcription; narrow transcription: upside down 'r' is retroflex r; right-side up 'r' is trilled 'r'; syllabic consonants, flap, glottal stop, voiceless w,

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BREAK (recording 1 ends at 1:57:11)

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- Articulatory Phonetics: Vowels (**56**)
- Class Activity: only 4 **functional** parameters to distinguish vowels: *tongue height, tongue advancement, lip rounding, tenseness*

There are 10 vowels & 5 diphthongs(?). Take your vowel (1 each assigned round-robin style), enter it into the Googledoc, and determine where it belongs on each of the four

articulatory parameters (see below)
Diphthongs without monophthong counterparts: ay/aj; aw/aw; ɔy/ɔj

Summer 2023 students:

- Put your vowels that nobody has worked on yet in the googledoc;
- Enter your sound in the appropriate place below using your unique color.
- Do so before the debriefing, then check in the recording and with each other whether you were correct. I will check on your work in the googledoc as well.
  Here is the link to the googledoc for this activity:
  https://docs.google.com/document/d/1LHGa_aYm6rMmOmrbAiGhxij7dEOqcfWdsVQX1NTcgRA/edit?usp=sharing

Watch recording of debriefing: there is important information besides articulatory descriptors

We will check together whether you were correct
For starters, enter **tongue height only**

- **tongue height: *high/mid/low*** (**no time period to skip; enter your information in the Google Doc and then continue watching)**

Debrief:

- **tongue advancement: *front/center/back*** (**no time period to skip;** Forum F10.1; **enter your information and then continue watching)**

Debrief:

- **lip rounding: *rounded/unrounded*** (**no time period to skip;** Forum F10.1; **enter your information and then continue watching**)

Debrief:
only in back vowels in English; other languages, such as French or German have front rounded vowels [ü (y,ʏ), ö (ø,œ)]

- **tenseness: *tense/lax*** (**no time period to skip;** Forum F10.1; **enter your information and then continue watching)**

Debrief:
ə & ʌ are 'nondescript'=hard to hear, yet common

ə is "default" vowel for unstressed syllables;
ʌ is stressed ə

Think Pair Share: How would you teach the tense-lax distinction to your students? (**37:24-42:04**; Forum F10.1)
Debrief:

- go back and forth between shaping your mouth more extremely
- watch teacher's mouth to demo: show the difference in facial/lip shape
- show image like cross section to demo; use phone App
- contrast minimal pairs with the sounds: meat-mitt; food-foot

NOTE:
tense-lax alternative IPA symbols:

i: - i u: - u
i – I u – ʊ

- ij – i uw - u

- Paper writing process: (**50:00**)

Only 3 topic statements in Forum F9.4 Topic Statements yet! Thanks, Kim, Uriel, & Kayla! **Summer 2023: Everybody, make sure to post as soon as possible! Most of you have and I have responded – thanks! The remaining people: please send me a message when you have posted in the forum *Topic Statements.* Thanks!**

- post missing topic statements asap;
- have started giving feedback; please read ALL my feedback from top; I assume that you have and don't repeat comments necessarily
- remember funnel structure in topic statement
- include bibliography (= many of your search results) in addition to references in paper
- no need to include topic statement in paper itself
- explicitly state what your pragmatic feature/topic is in paper
- save searches to RefWorks for formatting; double-check the formatting in RefWork
- use Interlibrary loans (ILL) through Illiad or local libraries
- revisit step six of the Language Feature Paper overview from Lesson 4 for an outline of the paper structure
- use sections with headings, title page, references
- use APA

- write using the conventional academic style and language; is described in Swales & Feak (2012)

- Natural Classes (**58:08**)

For **consonants**, we discussed

- state of the glottis (voiced, voiceless)
- place of articulation features (bilabial, labiodental, interdental, dental, alveolar, alveo-palatal, velar, glottal),
- manner of articulation (stops, fricatives, affricates, nasals, liquids, glides).

It is possible to make observations and to generalize about language learning processes on the basis of these articulatory features.

For example, take the following three examples of non-native speaker English with pronunciations that are also demonstrated for us below in the **Berlitz Commercial**:

(1) *I don't need to go to **z**e store.*

***Z**e police arrested **z**e **s**ief.*

***Z**at car went right **s**rough **z**e red light.*

Watch Berlitz Commercial (**1:01:58**-if it is hard to hear) (in CANVAS Lesson 10/Supplemental Materials: "**Berlitz Commercial** / berlitz_junior_40_Mpeg_2.mpg")

- Think-Pair-Share (**1:05:17-1:08:40**; Forum F10.2): what is the phonetic description (state of glottis, place & manner of articulation) of the **actual** sounds this German speaker makes? Debrief:

[s] = voiceless alveolar fricative
[z] = voiced alveolar fricative

- Think-Pair-Share (**1:10:30-1:14:09**; Forum F10.2): what is the phonetic description of the **target** sounds (English)?

Debrief:

[θ] voiceless interdental fricative
[ð] voiced interdental fricative

generalization: alveolar place of articulation replaces interdental PoA
give ideas for teaching:

The above sounds with shared phonetic feature: "natural class"

- Think-Pair-Share Activity: Find Natural Class of 3 sounds (**1:18:48-1:24:15;** Forum F10.2):
  1. Pick three sounds sharing one feature, e.g., [t, p, glottal stop]
  2. Ask partner to identify shared feature; here: "stop"
  3. Switch roles and repeat steps 1 & 2

Debrief:

d,n,l voiced alveolars h, f, s voiceless m, n, engma
m, n, engma – nasals
b m w – voiced bilabials
t z d – alveolar
p b m – bilabial

Natural classes provide bridge to phonology

- Phonological Rules

Pronounce the following list of words:

cat can

hat ham

sack sang

rap rang

- Think-Pair-Share (1**:30:27-1:35:36;** Forum F10.2): Do vowels sound the same in both columns? If not, why not? Is there a pattern? Can we identify a natural class responsible for a difference in each column?

Debrief:

No, they don't; why not?

□ right column all final consonants are nasal; oral consonants in the left column

Pattern: a following consonant (nasal) makes the preceding Vowel nasal sounding/nasalizes it:

æ □ æ̃/nasal

V □ nasalized V/nasal consonant (formal rule)

Phonological rule: describes systematic pattern or relationship between sounds;
 Phonology!

- Think-Pair-Share (**next session;** Forum F10.2): Gnome Chompsky cartoon (Noam Chomsky); can be found in Canvas Lesson 10/Supplemental Materials
  1. Describe the phonological rule demonstrated here
  2. What kind of phonological rule is it (e.g., assimilation, dissimilation)? p. 125 textbook File 3.3.3

Debrief:

Voiceless Stop Insertion

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HW for Lesson 11 (**1:44:38-1:46:58**):

- Review Phonology (File 3 textbook);
- Hand in "Headlines" Constituent Structure assignment by 08/04
- Hand in "Joke" IPA transliteration assignment by 08/04
- Next week, dictation: continue reviewing IPA symbols for dictation
- Watch *Discovering the Human Language* video any time from now online
- Continue with paper writing process: post revised topic statements in *Forum F9.4 Topic Statements* if you have not yet;

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