Phonology One – Winter 2008

Business first: homework, grades, and meetings

- The goal of the class is to build skills in phonological analysis and argumentation. There will be **nine** homework assignments. Grades will be based on your eight best homework scores. There will be no tests. Homework will often be posted at: **`http://clml.uchicago.edu/baseling`**
- Because we will go over the analysis and answers for the homework together in class, and because I will drop your lowest grade, no late or make-up homework will be accepted for *any* reason. If you have an actual emergency that takes you out of action for a portion of the quarter we can figure something out.
- Class meets MW at 1:30. If there is sufficient interest and the timing is feasible we may schedule some extra sessions with the TA. I am free for meetings any time by appointment: **`jriggle@uchicago.edu`**

Three questions that drive us:

1. What is phonology and how do the following things fit into the answer?

a. words
b. sounds
c. sound sequences
d. alternations
e. contrasts
f. the mind
g. morphemes
h. acoustics
i. probabilities
j. exceptions
k. learning

2. Is the job of the phonologist to ...

a. ... discover answers to question 1?
b. ... develop a theory of the tools needed to describe individual languages?
c. ... develop a theory of native speakers knowledge of linguistic sound patters?
d. ... explain how humans learn, store, and use the knowledge in (d)?
e. ... develop a theory of what makes a possible human language?
f. ... develop a theory of how sound patterns change over time?
h. ... (*your answer here*)

3. Once we have a theory that gives us answers to these questions (i.e. a **model**), or several competing models, how do we pick the right one?

Q: What **evaluation metric** do Chomsky & Halle propose for phonological models?

Q: What does **typology** tell us? What do Prince & Smolensky think?

Q: What do **experiments** tell us? How does neurology and/or cognition inform us?

Q: Is it the job of the phonologist to model what is **possible** or what is **typical**?

Pre-Spanish-contact Tagalog:

p	t	k	ʔ	i	u
b	d	g		a	
	s		h		
m	n	ŋ			
	l				
w	j (glide)				

[e], [o] occur as allophones of /i/, /u/
[ɾ] occurs as *intervocalic* allophone of /d/

bare stem		*paN+stem*	
poʔók	'district'	pampoʔók	'local'
tú:biŋ	'water'	pantú:biŋ	'used in making broth'
katawán	'body'	paŋkatawán	'physical'
ʔabála	'interruption'	paŋʔabála	'distraction'
baʔák	'split in tow'	pambaʔák	'tool for splitting'
dagán	'weight placed on'	pandagán	'weight placed on top'
gi:liŋ	'grinding'	paŋgi:liŋ	'grindstone'
sigáʔ	'blaze'	pansigáʔ	'funeral pyre'
hú:li	'catch'	paŋhú:li	'trap'
madláʔ	'people'	paŋmadláʔ	'public'
	(no examples for n or ŋ)		
litó	'confused'	panlitó	'red herring'
wakás	'conclusion'	paŋwakás	'final'
já:ɾi	'power'	makapaŋjá:ɾi	'to dominate'

1. Can you formulate a rule that accounts for the prefix in the Tagalog data?

Q: How does your rule fare according to the **evaluation metric**?

Q: What does your rule predict for loans that begin with a tap?

i.e. ɾá:dyo → ???

- To do phonological analysis we need to start with (at least) three basic questions:

❶ **What are the basic sounds of a language?**
We want a list of (contrastive?) sounds in the language.
How many vowels are there in your dialect? (What's typical x-linguistically)
❷ **What combinations of sounds are allowed (in what positions)?**
What other kinds of factors determine whether a word is 'good'?
❸ **What are the suprasegmentals involved in a language?**

❶ One way to establish **contrasts** in a language is by finding **minimal pairs**.

Q: Can you prove to me that /m/ and /n/ are contrastive in English?
Can you refine your answer for specific contexts?

- What minimal pairs do you see in this data from **Tagalog**?

1.	[kahon]	‘box’	2.	[hariʔ]	‘king’
3.	[ʔumagos]	‘to flow’	4.	[ʔari]	‘property’
5.	[kaʔon]	‘to fetch’	6.	[humagos]	‘to paint’

- What minimal pairs do you see in this data from **Inuktitut**?

1.	[iglumut]	‘to a house’	8.	[pinna]	‘that one up there’
2.	[ukiaq]	‘late fall’	9.	[ani]	‘female’s brother’
3.	[aiviq]	‘walrus’	10.	[iglu]	‘(snow) house’
4.	[aniguvit]	‘if you leave’	11.	[panna]	‘that place up there’
5.	[aglu]	‘seal’s breathing hole’	12.	[aivuq]	‘she goes home’
6.	[iglumit]	‘from a house’	13.	[ini]	‘place, spot’
7.	[anigavit]	‘because you leave’	14.	[ukiuq]	‘winter’

- What minimal pairs do you see for nasals in this data from **Venda**?

1.	[han̪u]	‘at your place’	7.	[ene]	‘he’
2.	[lin̪o]	‘tooth’	8.	[hana]	‘childhood’
3.	[mun̪e]	‘master’	9.	[kʰono]	‘there’
4.	[n̪ari]	‘buffalo’	10.	[vatanu]	‘five’
5.	[pfʰen̪e]	‘baboon’	11.	[vonani]	‘see’
6.	[van̪a]	‘four’	12.	[zʷino]	‘now’

Q: Are there any pairs that show the nasals in the same immediate context?

- Compare this with English. There is no difference between new and n̪ew. Nor can we find *any* minimal pairs for these sounds in English. So we have failed to find evidence that they contrast. But what does this really mean? (e.g. ʃ and ʒ)

new	tenth
annoy	month
onion	panther
nun	chrysanthemum

Q: What is special about the context for the dental variant?

Q: What is **complementary distribution**?

- With the alveolar vs. dental nasals, their **distribution** is both predictable and complementary, which means that they are different facets of the same sound.

- We call the ‘basic’ variant of a sound a **phoneme** and say that each phoneme can have multiple **allophones**. What do you think of this distinction?

Q: How can you explain this to your grandma? (*hint* – you need a piece of paper and a Mandarin speaker if you have one handy)

Q: When do you expect free variation and when do you expect find patterns?

- What can you tell me about the distribution of sounds in Tagalog from this data?

1.	[datiŋ]	‘to arrive’	6.	[daɾaɾiŋ]	‘will complain’
2.	[dami]	‘amount’	7.	[maɾumi]	‘dirty’
3.	[dumi]	‘dirt’	8.	[maɾami]	‘many’
4.	[daɾatiŋ]	‘will arrive’	9.	[daʔiŋ]	‘to complain’
5.	[manduɾukot]	‘pickpocket’	10.	[andukot]	‘to go pickpocketing’

Q: Are [d] and [ɾ] separate phonemes? – are there minimal pairs?

[d] is found _____

[ɾ] is found _____

Q: Which has the more general distribution?

- Give me examples of allophones in English that are phones elsewhere. And the other way around ...

- Consider the data from **Mixe**

Q: What are the morphemes for “your” and “my”?

Q: Are aspirated stops separate phonemes from the voiceless unaspirated stops and the voiceless stops? – To answer this question make three columns, one per stop category; list the environments of each.

1.	[wetʰ]	‘clothes’	9.	[nbopʰ]	‘my aunt’
2.	[tɛpʰ]	‘cold’	10.	[ndɛʃ]	‘my dish’
3.	[pɔ:n]	‘metate’	11.	[nbo:m]	‘my perfume’
4.	[tɔtʰ]	‘buddy’	12.	[ngoʃ]	‘my knee’
5.	[nɔtʰ]	‘deaf’	13.	[mdekʰ]	‘your lizard’
6.	[kon]	‘shirt’	14.	[mdɔkʰ]	‘your mother’
7.	[koʃ]	‘knee’	15.	[mbɔkʰ]	‘your gourd’
8.	[po:pʰ]	‘white’	16.	[mgi:ʃ]	‘your girl’

The Phonemic Principle:

In any given language, all utterances are composed of a limited number of basic sounds called phonemes. Phonemes are the sound that speakers use to represent the morphemes of their mental lexicons. When you hear a novel word in a language you know you immediately recognize it as a sequence of basic sounds in that language. This makes morphemes and words easier to learn.

Q: How does this principle measure up for the questions that we started with?