Class 1 (Week 0): Introduction, overview, SPE review

0. Icebreaker (see Kavanagh, Clark-Murphy & Wood 2011 for why we're doing this)

- Take an index card and write down 4-5 adjectives that describe you
- I'll shuffle and redistribute them
- Find the author of the card you got by asking people questions
  - To keep things interesting, you can emphasize wh-questions over yes/no questions
  - When you find the person, learn the correct pronunciation of their name and be ready to introduce them to the rest of the class

1. Write down one thing you know/remember about phonology on an index card for me

- It can be anything! A fact, a term, a concept, a phenomenon in a language, a rule…
- 1-2 lines is plenty

2. Phonology warm-up: Tongva

- UCLA is located on the ancestral lands of the Gabrielino/Tongva/Kizh people.[1] This land was never ceded through treaty.
- The Tongva language is currently used as a language of daily life, but the Gabrielino-Tongva Language Committee (with assistance from our department's own Pam Munro) works to reawaken the language.
- Especially if you're new to L.A., I hope you'll take a few minutes this week to learn the very basics of Tongva culture, history, and politics, including the history behind why the language is no longer spoken, which includes enslavement and land theft under Spanish rule, and continued forced labor under U.S. rule:
  - Wikipedia: en.wikipedia.org/wiki/Tongva
  - Digital story-map about "Tongva placemaking, landscapes, and cultural history": www.arcgis.com/apps/MapJournal/index.html?appid=4942348fa8bd427fae02f7e020e98764 (explore the additional resources there)
  - UCLA Newsroom article about contemporary Tongva educators: newsroom.ucla.edu/stories/ucla-project-reveals-invisible-presence-of-the-tongva
  - Multimedia LA Times story about Tongva language, culture, geography, and history. Won LSA journalism award: www.latimes.com/projects/la-me-col1-tongva-language-native-american-tribe/

[1] All three names are widely used, with different spellings. Four different organizations represent the Tongva people and use somewhat different names—I'm not intending to support any one over the others by the choice of how to write the language name!

Tongva education conference at Kuruvungna Springs in West L.A.: Theresa Stewart-Ambo, Craig Torres, Barbara Drake, Julia Bogany, Paulina Sahagun, Desiree Martinez, Kelly Stewart—photo from UCLA Newsroom

- Uto-Aztecan language—this family spans a large area of the Western U.S. and Mexico. Well-known family members include Shoshoni, Comanche, Hopi, and Nahuatl.
- Some local place names that come from Tongva (or maybe a closely related language—it's not always clear): Azusa, Cahuenga, Topanga, Tujunga
    - *-nga* means 'place'

Break into groups of 2-3. Your job:

a. Some Tongva plurals are marked by **"reduplication"**—repeating the first consonant and vowel. Don't worry about explaining the suffixes (what comes after the last hyphen in each word).
b. Assume there's rule in Tongva that puts **stress** on the second syllable of a word, and don't worry about explaining the exceptions.
c. In **#1-#6**, explain why (or describe how) the vowel of the copied first syllable is different from the vowel of the root. If you know how, you can write a rule.
d. If you finish that, explain why some of the root vowels are also changing in **#7-#15**.
e. If you finish that, speculate about what's going on in **#16-17**.

You have 15 minutes; wave me over if you want any input.

	singular	*plural*		*IPA tips*
1.	ˈkii-j	kɛ-ˈkii-j	'house'	**j** is the sound in English *yes* **ɛ** is the sound in English *yes* ˈ means the syllable *after* the mark is stressed
2.	ˈnaavo-t	na-ˈnaavo-t	'tuna cactus'	
3.	ˈpiino-ɾ	pɛ-ˈpiino-ɾam	'hummingbird'	**ɾ** is the sound in American English *city*
4.	ˈmaanɛ-t	ma-ˈmaanɛ-tam	'toloache'	
5.	ˈʔiita-ɾ	ʔɛ-ˈʔiita-ɾom	'coyote'	ʔ is the sound in English *uh-oh*
6.	ˈʃoo-t	ʃo-ˈʃoo-tom	'rattlesnake'	**ʃ** is the sound in English ship
7.	ʃaˈxaa-t	ʃa-ˈʃaaxa-t	'willow'	**x** is the sound in Spanish *jalapeño* (voiceless velar fricative)
8.	toˈkoo-ɾ	to-ˈtooko-m	'woman'	
9.	ʃoˈʔii-t	ʃo-ˈʃooʔɛ-tam	'jackrabbit'	
10.	ʃaˈŋaa-ɾ	ʃa-ˈʃaana-ɾom	'yellow jacket'	
11.	kaˈvaajoʔ	ka-ˈkaavajoʔ-am	'horse'	
12.	t͡ʃɛˈveevɛ ʔ	t͡ʃɛ-ˈt͡ʃeevɛvɛʔ-am	'spotted'	**t͡ʃ** is the sound in English *chip*
13.	t͡ʃaˈmee-ɾ	t͡ʃa-ˈt͡ʃaamɛ-ɾam	'owl'	
14.	hoˈŋii-t	ho-ˈhooŋɛ-tam	'squirrel'	
15.	noˈvoo-ɾ	no-ˈnoovo-ɾ	'tray basket'	
16.	ʃoˈkaa-t	ʃo-ˈʃuuka-t	'deer'	
17.	pɛˈkʷaa-ɾ	pɛ-ˈpiikʷa-ɾ	'greedy eater, wolf'	

from Munro 1983

Intro & big picture: what are we trying to do?

3. What is our job as phonologists? There are various answers out there...

- To describe phonologies (bullets from Goldsmith 1995):
  - What are the legal/possible words of the language?
    - phone inventory (set of basic units—sounds in spoken languages, gestures in sign languages)
    - phonotactics (set of legal sequences of units)
  - What alternations occur (changes that units undergo when placed in different contexts)?
  - Which phonetic differences are contrastive?
- To explain why phonologies are the way they are by constructing…
  - a theory of what people's knowledge of linguistic sound/gesture patterns is and how they learn, store, and use that knowledge
  - plus a theory of how linguistic sound/gesture patterns change over time, which ought to follow from the above

This will be our focus

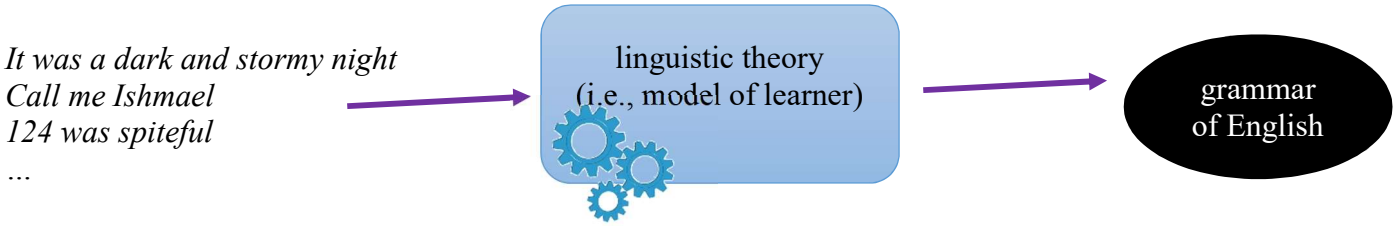
4. Chomskyan basics[2]

- Let a **grammar** consist of (at least)[3]
  - a function that labels any utterance as **grammatical** or **ungrammatical**.
  - a function that assigns truth conditions to any utterance
    - might be implemented as a lexicon and list of rules, or a set of constraints, or something else

[2] Chomsky 1965 pp. 25-27, Chomsky 1964 p. 29, and Chomsky 1995 p. 3, simplified, and filtered, I admit, through my own views.

[3] We probably want the grammar to do much more! (Chomsky also requires a grammar to assign a structural description to an utterance, but I wonder if this is begging the question: the structural description can be used to explain more-observable properties of a sentence like its truth-conditions, but do we know *a priori* that it's necessary?)

- Let a **linguistic theory** be a function that, given a (finite) set of utterances (the **learning data**), produces a grammar.[4]



5. So...

- a descriptively adequate grammar captures the significant, psychologically real generalizations—this is a lot!
- the real prize, an explanatorily adequate theory (i.e., learner), will, given typical learning data, return a descriptively adequate grammar

? How do these definitions compare to definitions of 'adequacy' that you've seen elsewhere in linguistics?

But how do we even know what the significant/psychologically real generalizations are?????

6. Case study: English noun plurals

cat	kʰæt	kʰæts	*pea*	pʰi	pʰi**z**
sack	sæk	sæks	*cow*	kʰaʊ	kʰaʊ**z**
dog	dɑg	dɑgz	*man*	mæn	m**ɛ**n
grub	gɹʌb	gɹʌb**z**	*foot*	fʊt	f**i**t
dish	dɪʃ	dɪʃ**ɨz**	*wife*	waɪf	waɪ**v**z
fudge	fʌd͡ʒ	fʌd͡ʒ**ɨz**	*whiff*	wɪf	wɪf**s**
			...		

[4] Chomsky sometimes breaks this into a **linguistic theory**, which defines the set of possible grammars, and a **strategy** for selecting a grammar out of that set, given the learning data.

We're going to do a "**gallery walk**" now

a. I'm putting you into 5 groups. Each group is designated to be the **advocate** of one of the five grammars for English below
b. First 5 minutes: Discuss and understand your group's grammar. Think of at least one advantage that your group's grammar has, and write that on your group's sheet
c. Next 5 minutes: Shuffle sheets, discuss and understand the other group's grammar, and reply to what's been written on the next sheet from a pro-your-grammar standpoint
d. Next 5 minutes: Repeat step ©
e. Last 5 minutes: Circle back to your original sheet, read the replies, and see if you have any refutation to make

You have 20 minutes.

A. ***No rules.*** *Just list every word you know, as though everything were an exception*

kʰæt	kʰæts	pʰi	pʰi**z**
sæk	sæks	kʰaʊ	kʰaʊ**z**
dɑg	dɑgz	mæn	m**ɛ**n
gɹʌb	gɹʌb**z**	fʊt	f**i**t
dɪʃ	dɪʃ**ɨz**	waɪf	waɪ**vz**
fʌd͡ʒ	fʌd͡ʒ**ɨz**	wɪf	wɪf**s**

- How does this work as a grammar?
  - E.g., to determine if *I like cats* is true, grammar looks up the singular of *cats*. It's *cat,* so the sentence is true iff I like members of the set CAT: $\forall x\, x \in$ **CAT** $\rightarrow$ LIKE(I,x)
  - The sentence's truth has nothing to do with whether I like members of the set DOG.

B. ***Add –s*** *to everything, except for these exceptions:*

dɑg	dɑgz	kʰaʊ	kʰaʊ**z**
gɹʌb	gɹʌb**z**	mæn	m**ɛ**n
dɪʃ	dɪʃ**ɨz**	fʊt	f**i**t
fʌd͡ʒ	fʌd͡ʒ**ɨz**	waɪf	waɪ**vz**
pʰi	pʰi**z**	...	...

C. ***Add –z*** *to everything, except for these exceptions:*

kʰæt	kʰæts	mæn	m**ɛ**n
sæk	sæks	fʊt	f**i**t
dɪʃ	dɪʃ**ɨz**	waɪf	waɪ**vz**
fʌd͡ʒ	fʌd͡ʒ**ɨz**	wɪf	wɪf**s**
		...	...

D1. ***Add –ɨz*** *after "sibilant" sounds,* ***–s*** *after non-sibilant [–voice] sounds, and* ***–z*** *otherwise, except for these exceptions:*

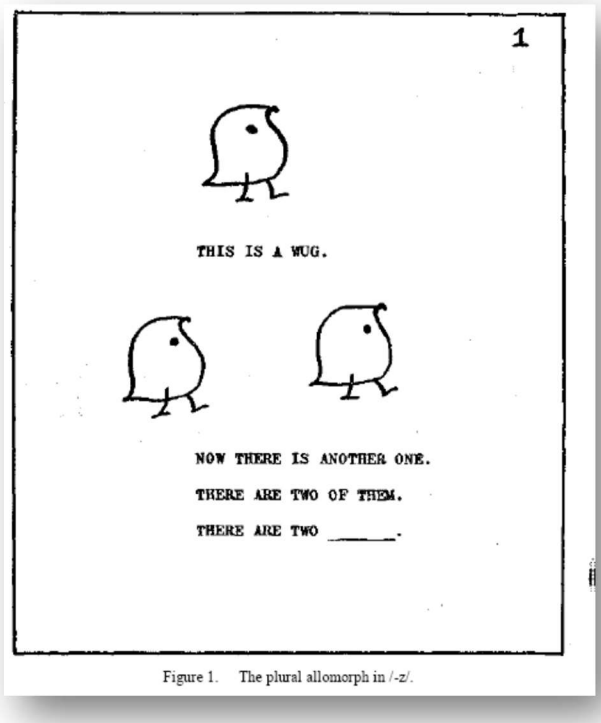
mæn	m**ɛ**n
fʊt	f**i**t
waɪf	waɪ**vz**

phonetics tip: "sibilants" are the fricatives and affricates made extra-noisy by shooting the already-turbulent airstream against the back of the front teeth

D2. ***Change final /f/ to [v]****, and then add –iz after sibilants, –s after non-sibilant [–voice] sounds, and –z otherwise, except for these exceptions:*

mæn	mɛn	...	...
fʊt	fɪt		
wɪf	wɪf**s**		

Which generalizations are real? How about a wug test.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THIS IS A WUG.

NOW THERE IS ANOTHER ONE.

THERE ARE TWO OF THEM.

THERE ARE TWO _____.

Figure 1. The plural allomorph in /-z/.

(Berko 1958, p. 154)

- Berko found that English-speaking adults (all highly educated, in her sample, FWIW) consistently give the following plurals when presented with invented words (pp. 155-158):

wʌg	wʌg**z**	lʌn	lʌn**z**
gʌt͡ʃ	gʌt͡ʃ**ɪz**	nɪz	nɪz**ɪz**
kæʒ	kæʒ**ɪz**	kɹa	kɹa**z**
toɹ	toɹ**z**	tæs	tæs**ɪz**

? For each of the grammars above, would anyone like to make the case for its descriptively adequacy, given these data?

? The adults disagreed about this word—what might we conclude?

hif	hif**s**, hiv**z**

7. Why is it hard to develop a descriptively adequate grammar in phonology?

- If a speaker already knows a word, it's uninformative to us!
  - Known words don't tell us anything about what generalizations the speaker has learned—they may have simply memorized those words
- Constructing novel phonological situations to put speakers in is a challenge.
  - Contrast this with syntax, where it's easier to construct sentences that—presumably—the speaker has not encountered before.
- We often can't be sure that these novel situations really test what we want them to test.
- In 200A, we'll mostly ignore this problem and proceed as though generalizations that we notice in the data are real to speakers.
  - In 201A there will probably be a more emphasis on methods for determining which generalizations are real.

8. Why is it hard to develop an explanatorily adequate theory?

- Suppose we could magically achieve description adequacy for all real languages.
  - That only tells us which generalizations people have extracted for existing sets of data
  - We don't know what people *would do* if faced with a language with different generalizations

- In the English example…
  - Suppose we're convinced by the wug test that English speakers' grammar includes the rule "use the [ɨ**z**] form of the plural after sibilants".

  → Exposed to the English data, learners choose a grammar with that rule

  - But we still know nothing about the learnability of "use the [ɨ**z**] form of the plural after **non-**sibilants".
    - If the data had somehow reflected this rule instead, would children be able to learn it just as well?

- To build our linguistic theory, we need to know which generalizations people can extract or tend to extract from all kinds of learning data, not just attested learning data.
  - Are some generalizations preferred to others?
  - Are there hard limits on learnability?

- Again, this won't be our focus this quarter, but some interesting things you could read:
  - Becker, Ketrez & Nevins 2011 and Becker, Nevins & Levine 2012 tackle this problem in a very interesting way, by comparing potential generalizations that exist within the same language—Turkish and English, here.




- Bowers 2012 argues that a sudden, one-generation change in Odawa happened because the data changed into something that children couldn't learn.

9. Last 15 minutes of class

- Let's look at the syllabus, BruinLearn, and Perusall
- What we did today
  - Situate the enterprise of phonological theory: we're working on a model of how to get from language experience to a plausible mental grammar
- What's next
  - We will go into excruciating detail about how one model, "SPE" works
  - Our goal is to understand precisely the predictions of that theory, so that we can compare it to other theories ("OT", in particular)
- Aim of the course overall
  - Starting from a very explicit base of how the two theories, and some of their variants, work, we'll look for conflicting predictions to help us decide
  - Preview: there mostly hasn't been enough work done on the crucial cases! So there is plenty for new phonologists to work on—the squib will give you some practice

References

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