

Ling 105
Sounds of Language

Tuesday, December 3, 2024

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Final exam

- Wednesday, December 18, 9–12 in Northwest B108
- Open-book/note, but no devices
- No transcription exercises
- Cumulative, but weighted towards post-midterm
- 25% of grade
- Structure (exact #s might vary)
 - ① Multiple choice (40 questions · 1 point each = 40%)
 - ② Short answer (10 questions · 3 points each = 30%)
 - ③ Data analysis (3 questions · 10 points each = 30%)
- Practice exam

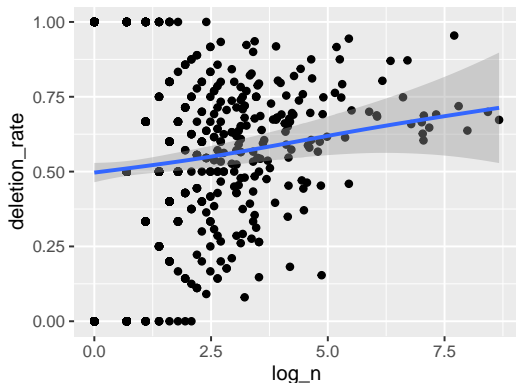
All readings from the syllabus

- **Phonetics:** all of *LJ* except chapter 5
- **Statistics:** *RDatSci* 1–3
 - But only need what was covered in lecture/homework
- **Phonology:** Odden 3–4, 10 (until pg. 319)
 - Odden has lots of practice problem sets, both with and without solutions

- Not much on the exam
- No writing code from scratch, but possibly filling in blanks with routine “tidy” R code, or answering questions about given code
- Anything on the exam will have been covered by the slides and homework (never just the reading)
 - A few multiple-choice questions
 - A short answer or two (e.g. interpreting a plot, evaluating or fixing code)

Statistics: short answer

- Per word: final /t/ deletion rate vs. log word frequency
- ① Describe the correlation in plain English
- ② Why is frequency logged?
- ③ Why is there striation (patterning) on the left side?



Statistics: short answer

- The following code takes the data frame **words** (one word token per row) and makes a new data frame with each speaker's speech rate (**words_per_min**) and **age**
- In **words**, speaker ID is in the **Speaker** column
- ① Fill in the blanks to complete the code (if you don't know the exact function, just describe in plain language what needs to be done for half credit)
- ② Why is **first()** used in the last line?

```
wpm_by_speaker = words >
  (a) _____ >
  summarize(total_words = (b) _____,
            total_minutes = sum(Duration) / 1000 / (c) _____,
            words_per_min = (d) _____,
            age = first(age))
```

Data set presentation

① Batch

word1	word2	word3
word4	word5	...

② Columnar

- Each column is a morphological category
- Leftmost column (a) may or (b) may not be affixed

a.	A	B	C
	root1-suf1	root1-suf2	root1-suf3
	root2-suf1	root2-suf2	root2-suf3

b.	A	B	C
	root1	root1-suf1	root1-suf2
	root2	root2-suf1	root2-suf2

Phoneme vs. allophone problems

- Are [x, ʃ, s] phonemes or allophones?
- Logical possibilities
 - ① 3 separate phonemes (no rules needed)
 - ② 2 phonemes, one with 2 allophones (1 rule needed)
 - ③ 1 phoneme with 3 allophones (2 rules needed)

kɪʃɪsə	sɪnæf	sɒfɛmɪ	uxɒfə
təʃɪks	ɪʃæxɒm	xʊmɒks	sʊsɪmɒs
ʃɪmɒsʊmɪs	səmɪks	ɛsɛʃɛræks	bæksəræsi

Distributions: preceding segments

- __x: u, i, æ, #, o
- __ɸ: i, o, #, e
- __s: i, #, u, o, e, æ

- 1 Is any pair of sets complementary? (3 pairs to check)
- 2 Even if only one element is shared, the two sets are not complementary

Distributions: following segments

- x__: o, #, u, ɑ
- ʃ__: i, e, æ
- s__: ɑ, i, o, u, e

- 1 Is any pair of sets complementary? (3 pairs to check)
- 2 x__ is complementary w.r.t. ʃ__
- 3 Thus, [x] and [ʃ] are allophones
- 4 Characterize the non-elsewhere complementary set(s) as a natural class (i.e. generalize over the list)

Sample write-up

[After work above.]

There are two phonemes, /x/ and /s/.

/x/ has two allophones, [ʃ] and [x]. [ʃ] is found only before front vowels, while [x] is more heterogeneously distributed. I therefore take [x] to be the elsewhere case, with the rule being

$$x \rightarrow \text{ʃ} / \text{__front vowel}$$

/s/ has no allophones (other than itself).

URs note

- UR is not the same as root
- UR can contain (the URs of) affixes
- Affixes are not supplied by phonological rules
- E.g. German root /ʁad/, without and with a suffix

/ʁad/	/ʁad-es/
[ʁat]	[ʁad-es]
“wheel”	“of the wheel”

Rule practice: English

- English has an optional rule of post-nasal *t*-deletion
 - Winter* frequently sounds like *winner*
- Why doesn't the rule apply to the following? Formulate the rule
 - contagion*
 - intact*
 - untoward*
- Modify your rule to account for the following
 - integration* (can apply)
 - interaction* (can apply)
 - countertenor* (can apply)

 - intonation* (cannot apply)
 - intimation* (cannot apply)
 - intumescent* (cannot apply)

Rule (non-)interaction: Javanese

- Assume that the suffix for “this X” is /-ne/

	noun	this X	
a.	babi	babine	“pig”
b.	ibu	ibune	“mother”
c.	kulit	kulite	“skin”
d.	tfukur	tfukure	“haircut”
e.	murit	muride	“student”
f.	sisih	sisie	“side”
g.	omah	omae	“house”
h.	butuh	butue	“need”

Tone: Shona

- Describe in plain language the tone sandhi rule in (a–e)
- Does the rule implicate a floating tone?
- How might you refine the rule based on (g)?

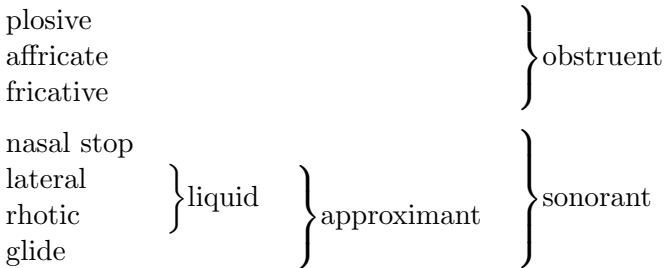
a.	ákàtéńá	“bought”
b.	tsàmbà	“letter”
c.	ákàtéńá tsám-bà	“bought a letter”
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d.	cìròńó	“pot”
e.	ákàtéńá círòńó	“bought a pot”
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f.	zvù-má	“beads”
g.	ákàtéńá zvù-má	“bought beads”

Terminology review: place

bilabial	}	labial
labiodental		
interdental	}	coronal
dental/alveolar		
palato-alveolar		
retroflex		
palatal	}	dorsal
velar		
uvular		
glottal	}	laryngeal

- Vowel place: high, low, non-high, back, etc.

Terminology review: manner



- Plus voiced vs. voiceless; stop vs. **continuant**
- Taps/trills are rhotics (sonorants, etc.)
- Vowels are also considered sonorants and approximants, so specify e.g. “sonorant consonants” if necessary
- Sibilants are a subset of fricatives and affricates

Sonority sequencing

- Rank violations from most (worst) to least (best)

- ① tra
- ② rta
- ③ kna
- ④ kla
- ⑤ ksa
- ⑥ kta

Rule typology

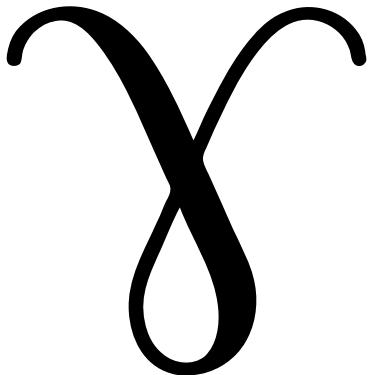
- Is each change assimilatory or dissimilatory? Which features (if any) assimilate?

- ① malu → malu
- ② tēmũn → temun
- ③ olo → oto
- ④ ifka → ixka
- ⑤ use → use
- ⑥ aba → aβa

n

ŋ

n



Y

Vowel features/markedness

- In what part of the vowel space is rounding **unmarked**?
- Which contrast are you more likely to find in a language, y/i or $\epsilon/\text{œ}$?
- Which three-vowel system is more likely, i-a-e or i-a-o?

- Which type of language would you expect to be more common (assuming that all feet are disyllabic)?
 - ① Primary stress is initial in even-parity words and peninitial in odd-parity words
 - ② Primary stress is peninitial in even-parity words and initial in odd-parity words

Weight/moras

- What are the two most common criteria for determining heavy vs. light?
- A Japanese haiku must be 5-7-5 in terms of moras; which **one** of the following haiku is illegal?
 - ① samurai ya / uguisu ni made / nan to naku
 - ② asagao no / zokuzo haete / žukawaruru
 - ③ honep:oi / higan dango ni / muširaruru
- What is a geminate and how is it syllabified?
- Show the syllable structure of *constantly* ['k^hānstēntli] as a tree with σ , O, N, C, and R