Class 10: Similarity-based correspondence

To do for next time
- Read Fleischhacker
- Finish Catalan assignment (due Wednesday, May 5 in class)

1. Steriade's P-map

A perceptual map, assumed to be available to all language users. Each cell in a multidimensional matrix tells you how similar/confusable two sounds are in some context:

Steriade ms., (13a): (bigger= less confusable)

Obstruent voicing	V_V	C_V	V_R	V_]	V_T	C_T
p/ b	p/b	p/b	p/b	p/b	p/b	p/b
t/ d	t/d	t/d	t/d	t/d	t/d	t/d
k/ g	k/g	k/g	k/g	k/g	k/g	k/g
s/z	s/z	s/z	s/z	s/z	s/z	s/z

The P-map tells us facts like… Δ(b,m)/V__] > Δ(b,p)/V__]
Δ(b,p)/C__T > Δ(b,p)/V__]

What does the speaker do with this information? Uses it to devise default rankings of faithfulness constraints:

> "For any two P-map cells, x-y/_K_i and w-z/_K_j, associated with different confusability indices, there are distinct sets of correspondence conditions, Corresp. (x-y/_K_i) and Corresp (w-z/_K_j)."

> "For any two P-map cells, x - y/ _K_i and w - z/ _K_j, if x-y/_K_i [is less similar than] w - z/ _K_j then any correspondence constraint referring to x - y/ _K_i outranks any parallel constraint referring to w - z/ _K_j"

IDENT-IO(son)/V__] >> IDENT-IO(voice)/V__]

2. The Too-Many-Solutions problem

Why is a ban on final voiced obstruents always resolved by devoicing (or not at all)?

If the P-map derives the following faithfulness ranking:
LIN(C_1VC_2 vs. C_2VC_1), DEP(ə vs. Ø) >> MAX(C vs. Ø) >> ID(son)/V_] >> ID(voice)/ V_]

Then, allowing the ranking of *D] to vary freely, what typology do we expect?

- How can we get multiple solutions to a phonotactic solution, when needed?

3. Romanian half-rhymes (Steriade 2003 ICPhS)

The narrow range of solutions to a given phonotactic problem may result from default rankings of faithfulness constraints governed by perceptual similarity; or, as Steriade points out, we can imagine that it comes instead from language change: misperceptions are likely (almost by definition) to be very close perceptually to the target, and if language change results from misperception… In this model, speakers/listeners don't even have to know the p-map.

But Steriade argues that speakers do know the similarity distances of the p-map, and one of her sources of evidence is poets' choices of half-rhymes.

Certain half-rhymes seem to be frequent:

(Steriade p. 2)

Mismatch		**Common context**	**HR Example**
i	Voice	[+nas]_	pʌmî̞nt - strɨŋgî̞nd
ii		[-nas]_#	pantóf - popóv
iii	j-Ø	C_#	ázj-obráz
iv	Back(u-ɨ)	/_[+nas]C	súnt-pʌmî̞nt
v	Front (i-ɨ)	/_[+nas]C	strî̞mte-sî̞mte
vi	Place	Coda nasals	strî̞mt-vî̞nt
vii	Height	Post-tonic	lumî̞le-númele
viii	Liquid-Ø	V_C/C_V	ɑlę̞árgʌ-intrę̞ágʌ

Recall Δ(b,m)/__] > Δ(b,p)/__]: half-rhymes that differ by nasality are rare or absent, but those that differ by voice are frequent.

Moreover, half-rhymes that differ by voice are more common in context (i) than (ii):
Δ(b,p)/V__] > Δ(b,p)/N__] (see chart).

Vowels are nasalized in the context __N and are shorter in the context __CC.
Given the following differences in the p-map,

Δ(ɨ-u) > Δ(ɨ̃-ũ) (bigger F2 difference)
Δ(ɨː-uː) > Δ(ɨ-u) (more time to hear the difference)

where do you think advancement-mismatched rhymes should be most frequent?

Could Romanian poets' decision to use these half-rhymes come from somewhere other than the p-map?

- None of the most frequent half-rhyme types are alternations in Romanian.
- Many actual alternations are not common half-rhymes: affrication of /t/, palatalization of /s/ before [i].

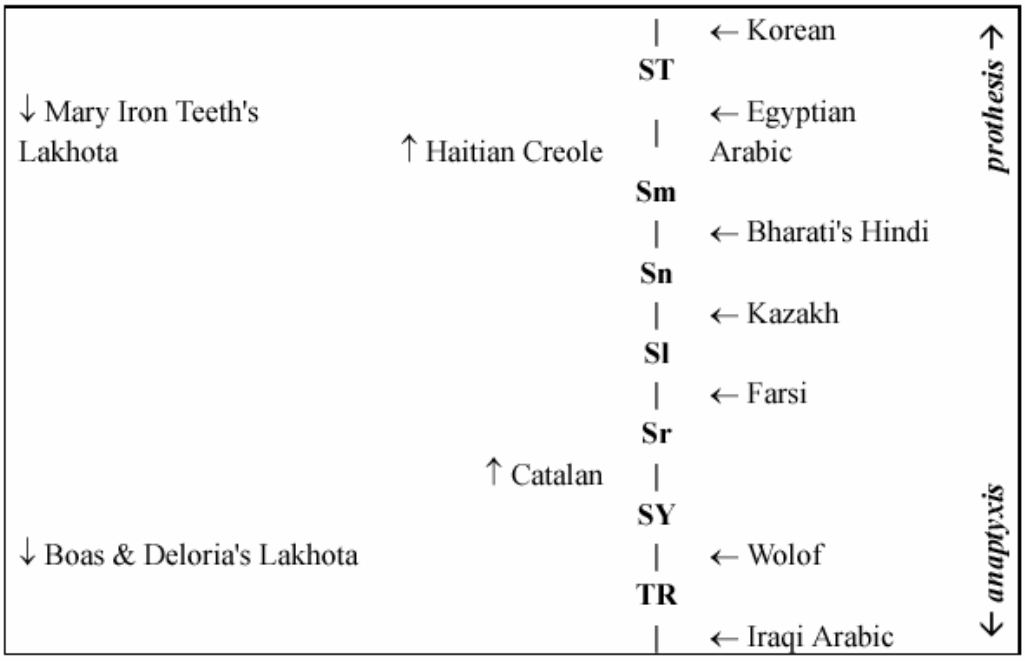
- What possible alternations do look like the common half-rhymes?

Why look at half-rhymes? Speakers are bound by experience in choosing input-output mappings. Rhyme-to-rhyme, foreign-source-to-loan, punnant-to-punnee, etc., mappings are much less so and we can hope that other knowledge will emerge.

3.1 Fleischhacker's [CC typology

Looks at how foreign words that begin with CC clusters are adapted as loans in languages that don't allow initial clusters (or not the one in question, anyway).

(13) Epenthesis patterns with respect to ST and OR[13] from Fleischhacker 2002a, p. 10



Fleischhacker's theory:
The site of the epenthetic vowel is chosen to make the result maximally similar (perceptually) to the unepenthesized form. Quality can be analyzed similarly.

Patterns found in Fleischhacker's survey (see schematic)

- If S_C, then T_R
- If _TR, then _SC
- If S_X and Y is more sonorous than X, S_Y
- If _SY and Y is more sonorous than X, _SX

Note also: there doesn't seem to be anything special about the sonority reversal in ST clusters, since SN, SL, SW clusters also show a tendency towards S_C.

4. Fleischhacker's experiment

Auditory-similarity and preference judgments by English speakers.

əST – ST	more similar than	SəT - ST		
TəR – TR	more similar than	əTR – TR		
STəR – STR	more similar than	əSTR – STR	more similar than	SəTR – ST R

- Why do TRV and TVRV sound so much alike?
  - R is vowel-like.

- Why is T_R more likely if T is a stop than a fricative?
  - The perceptual break (increase in intensity) between stop and sonorant is greater than between fricative and sonorant (and even greater than between sibilant fricative and sonorant).

- Why does sonority matter in SX clusters?
  - The more sonorant X is, the more vowel-like.

- Other things that could be expected to matter
  - voicing
  - sonority of X in TX clusters

- Why do VSTV and STV sound alike?
  - They don't, especially, but given that there's no vowel-like material present in the ST transition, it's better to preserve the ST cluster.

5. Fleischhacker's analysis

Context-sensitive DEP: DEP-V/X__Y

The more similar XVY is to XY, the lower-ranked (inherently) DEP-V/X__Y is.

DEP-V/S_T >> DEP-V/S_N >> DEP-V/S_L >> DEP-V/T_R (Fleischhacker's (19))

CONTIGUITY can be ranked at various places along this scale. (Various other constraints come into play too.)

6. Epenthesis vs. deletion in Fijian (Kenstowicz)

Initial and medial clusters are simplified by V epenthesis, final clusters usually by C deletion and V epenthesis (rather than two C deletions).

sp	s**i**pana	‘spanner’				
st	s**i**ta^{m}ba	‘stamp’	minis**i**ta:	‘minister’	ke:mis**i**	‘chemist’
str			ke:mes**i**t**i**ri:	‘chemistry’		
sk			bas**i**kete	‘basket’	desi	‘desk’
sn	s**u**nuka	‘snooker’				
fl	v**u**loa	‘floor’				
fr	f**e**reni	‘friend’				
pl	p**e**leni	‘plan’				
pr	p**a**ro:karamu	‘program’				
tr	t**a**rausese	‘trousers’				
kr			^{m}be^{ŋ}g**a**ravu	‘bankrupt’		
br	^{m}b**e**rekikeba	‘break camp’				
ntr			kon**i**t**a**raki	‘contract’		
ksp			sis**i**veni	‘sixpenny’		
pt					^{m}be^{ŋ}garav**u**	‘bankrupt’
kt			dok**i**ta:	‘doctor’	konitarak**i**	‘contract’
ns			tere**n**isisita:	‘transistor’	laisen**i**	‘license’
					konifere^{n}d**i**	‘conference’
nf			kon**i**fere^{n}di	‘conference’		
mp					pam**u**	‘pump’
					sita^{m}b**a**	‘stamp’
nt					itin**i**	‘agent’
nd					^{n}diaman**i**	‘diamond’
lt					^{m}be:l**i**t**i**	‘belt’
ld					koul**a**	‘gold’
ltʃ			vil**i**tiati	‘pilchard’		

Plain MAX and DEP won’t do the trick

/dokta/	MAX-C	DEP-V
☞ dokita		*
dota	*!	

/kontrakt/	MAX-C	DEP-V
…akiti		**
☹…aki	*	*
…a	**	

Constraint conjunction won't work either, because medially it is possible to insert two Vs in succession.

/kontrakt/	MAX-C	DEP-V
☞ konitar…		**
konit…	*	*
kot…	**	

- What would be the P-map-based analysis?