Class 5 (Week 2, R): Upwards interfaces V, phonology of morphological paradigms

To do
- ☐ Read **Pierrehumbert 2002** for Tuesday
- ☐ Read **Wagner 2012** for Thursday.

Overview: Some aspects of phonology-morphology interface we didn't get to, then paradigms

1. Follow-up note on Korean suffix allomorphs

- Recall that the use of *–kwa* after C and *–wa* after V seemed to defy a phonological analysis
  - it looked like we needed arbitrary subcategorization frame for each allomorph
  - we tried to do it with the phonology (some kind of ALIGN(morpheme, syllable)), but couldn't get it to quite work (ranking paradox for ONSET and *COMPLEX)
  - another possibility is to encode a preference for *–wa*, all else being equal: "USEWA", or /wa > kwa/ in the lexical entry (Bonet, Lloret & Mascaró 2007)
- FYI, Sung 2005 goes for a phonological analysis: SYLLABLECONTACT >> *COMPLEX
  - Syllable contact: if you two sounds with a syllable boundary in between, the second one shouldn't be more sonorous than the first (Vennemann 1988)

2. Phonological influences on how many times a morpheme occurs?

2.1 Multiple exponence

- Caballero 2011: Choguita Rarámuri (Uto-Aztecan, Mexico, 1000 speakers)
- Pluractionals can be marked with prefix, consonant mutation, *or both*

	Singular	Pluractional	Gloss	
(3)	čóni	o-čóni	'become black'	[AH 05 2:24/El][3]
	siríame	i-sérikame	'governor'	[BF 05 1:156/El]
(4)	kapórame	kabórame	'be round'	[BF 05 1:155/El]
	remarí	témuri	'young people'	[BF 05 1:155/El]
(5)	kipá	i-kibá	'snow'	[SF 05 2:8/El]
	sitákame	i-sirákame	'be red'	[BF 05 1:157/El]
	mukí	o-mugí	'woman'	[BF 05 1:156/El]
	ranára	a-tanára	'offspring'	[BF 05 1:156/El]

(p. 3)

- Plus similar phenomena in applicatives (vowel mutation + suffix, or suffix + suffix), causatives (suffix + suffix).

- Caballero argues this happens when the output of the Stem 1 level (the part in [...] below) looks "less morphologically segmentable" (p. 8).
  - /bučé, ri/ → (bučé)ri or (bučér), to avoid an unfooted syllable
  - If the post-tonic deletion option is taken, the result undergoes suffixation again at Stem 2 level (which also requires a final V)

Table 2: Stem shape condition on derives stems with ME

Pattern	**Prosodic generalization**	**Examples**
Causative doubling	[... ˈ σ **-C**]–ti	[bučé-**r**]-**ti-**ma [aka-rá-**r**]-**ti-**ma
Multiple applicatives	[... ˈ σ **-C**]–ki	[sú-**n**]-**ki-**ma [pá-**s**]-**ki-**ri

(p. 8)

2.2 Haplology

- Classic example (MacBride 2004, pp. 3-4):

	singular	plural
non-possessive	[dɑg] [ɑks]	[dɑg-z] [ɑks-ɨn]
possessive	[dɑg-z] [ɑks-ɨz]	**[dɑg-z]** [ɑks-ɨn-z]

- MacBride 2004: Maybe the reason why the same phonological material can do double duty is that plurality and possession are just morphemes that want the word to end in [z].
  - Careful, though: can we still get the plural or possessive of *maze*?

    - MacBride's constraints can refer to stem boundaries, like so PLURAL :]$_{stem}$ z
    - Because plural and possessive happen to be phonologically identical (and their constraints don't stipulate "novelty"), they can share a segment.

- How MacBride gets "subtractive" morphology
  - There are languages that do this more robustly, but I'll just use a small example from French that could be gaining in generality

singular	*plural*	
œf	ø	'egg'
bœf	bø	'steer, ox'
ananas	anana	'pineapple' (not in Canada, probably not all speakers)
byt	by	'goal' (maybe some European speakers)

/ananas, PLURAL/	DEP	PLURAL: Segment]$_{word}$ where Segment]$_{word}$ is novel	MAX-C
ananas		*!	
☞ anana			*
ananasa	*!		

(except that in French the PLURAL constraint applies only to a small set of words)

3. Paradigms: related words tend to be phonologically similar

3.1 One way to explain this is *cyclicity* (review)

- Withgott 1982: default in English is for an unfooted syllable to join a following foot. We can tell because if it starts with a voiceless stop, that stop is aspirated

  (Mèdi)([tʰ]e(rránean))
  (Lòlla)([pʰ]a(lóoza))
  (àbra)([kʰ]a(dábra))

- But what are we to make of...

  càpi[ɾ]alístic cf. mìli[tʰ]arístic (Steriade 2000; Davis 2002)
  inèvi[ɾ]abílity
  màrke[ɾ]abílity
  pàla[ɾ]abílity
  pròfi[ɾ]abílity

  and these might vary

  prìmi[tʰ~ɾ]ivístic
  rèla[tʰ~ɾ]ivístic

- Let's sketch a cyclic analysis (do some phonology, then some morphology, then some phonology...)

3.2 Another way to explain this is *paradigm uniformity constraints* (review for most of you)

Kenstowicz (1996), Benua (1997), Crosswhite (1998), Burzio (1999), Steriade (2000), and others

- Let's just try it. We need two key ingredients:
  - the input to the tableau includes both the underlying form /kæpɪtæl+ɪst+ɪk/ and the related surface form [kǽpɨɾəlɨst]
  - besides Input-Output correspondence constraints, there are Output-Output correspondence constraints

3.3 Taking it even further: get rid of the underlying form!

- Or at least, severely restrict it
- Albright 2002: every paradigm has a *base* that the rest are derived from
  - N.B. This is different from the "base" in *Richness of the Base* (where it means "input"), or in *base-reduplicant correspondence* (where it means the part of the word that the reduplicant is copied from)

- First big idea: The base has to be one of the surface forms of the paradigm

  - e.g. Russian noun paradigm: 'pie' (from Wiktionary, with phonology added)

	singular	*plural*
nominative	pirók	piragí
genitive	piragá	piragóf
dative	piragú	piragám
accusative	pirók	piragí
instrumental	piragóm	piragámi
prepositional	piragé	piragáx

  - Knowing that Russian has vowel reduction and final devoicing, what would we normally say the underlying form is?

  - In Albright's model, the learner can't have a "composite" underlying form, and must settle for one of these surface forms
    - anything not predictable from that surface form must be memorized as exceptional
    - or perhaps covered by a minor rule that applies to a few words

    see Bowers 2015 for arguments in favor of composite underlying forms

- Second big idea: Within a language, this base is the same cell of every paradigm
  - e.g., always the genitive singular

- Third big idea: Learners choose as the base the paradigm member that is most *informative*
  - implemented as how well a rule system (learned by Alright-Hayes morphological learner, Albright & Hayes 2003) can derive the rest of the paradigm from that cell

- Fourth big idea: We can get evidence about which cell is the base from diachronic change
  - Latin example from Albright 2001
  - Pre-Classical Latin had a rule of approximately s → r / V__V

	pre-Classical Latin
nominative	hono:s
genitive	hono:ris
dative	hono:ri:
accusative	hono:rem
ablative	hono:re

By Albright's algorithm, ablative is the best choice for Latin over all
- What could be the diachronic consequence?

- What actually happened: *hono:s* changed to *honor* (there was also vowel shortening)
- Apparently, once learners had to memorize the nominative [s] as a quirk of certain words, they started losing it.

4. Something related that we didn't have time for, FYI

- Paradigms that have gaps (what is the past tense of *forego?*), for phonological reasons
  - Albright 2003; Raffelsiefen 1996; Löfstedt 2010, Pertsova 2004, just to name a few
  - on cases where there may not be a phonological reason: Daland, Sims & Pierrehumbert (2007)
  - A collection of articles: Rice & Blaho (2010)

5. A different theory: Optimal Paradigms

- Instead of reading the paper that proposes the idea (McCarthy 2005), we read one that illustrates its use, Lloret 2004 (student presentations)

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