Class 11, 2/14/23: Bases II: Forms of Evidence; Split Bases

1. Current assignments

- Web site is still down, so please the reading and backup handout in your email.
- Read:
  - Donca Steriade "A pseudo-cyclic effect in Romanian morphophonology. In Asaf Bachrach & Andrew Nevins (eds.) Inflectional identity. Oxford: Oxford University Press. 313–359.
  - No summary required
- Current homework on phonotactics due in class Tues. Feb. 21.

SUMMARIZING AND LEARNING FROM THE JAPANESE EXAMPLE

2. The empirical pattern in the relevant dialect

- Fundamentally, we have allophony, with [ŋ] as the intervocalic allophone of /g/.
- But in compounds, allophone [g] is inherited optionally: [niwa-ŋeta], [niwa-geta] 'garden clogs'
- Rendaku interacts in a curious way:
  - In rule-based phonology, /ori-kami/ → origami → [oriŋami]
  - For us, the issue is why /ori + kami/ → [oriŋami] (only). The missing candidate is *[origami].
- We succeeded in getting these facts with an OT/Maxent analysis.

3. Is this a problem for "inside-out", derivational theories?

- Including:
  - *SPE* cyclicity
  - Lexical Phonology
  - Stratal OT
- For these theories, *resemblance follows from derivation*, not direct, constraint-mediated influence.
- Putting it in OT terms, the only faithfulness (other than perhaps Base-Reduplicant) is Input-Output, where "input" can have various meanings in context.

4. A simpler case: optional [ɬ] in English *dealing*

- Make /l/ Darkening *optional* at the stem level, *obligatory* at the word level

/dil/	/dil/	
dil, diɬ	dil, diɬ	STEM LEVEL: optional darkening
	dilɪŋ, diɬɪŋ	affixation
diɬ, diɬ	—	WORD LEVEL: obligatory darkening
[diɬ] only	[dilɪŋ] or [diɬɪŋ]	output

5. How to apply this idea to Japanese?

- The earlier cycle must be [geta], since that is all you can derive.
- We had better use *hidden structure*, to distinguish "don't care" [G] from "real" [g]
- [G] is [0nasal,0sonorant], [g] is [−nasal,−sonorant].
- The constraints covering voiced velars [g, ŋ] fills in a zero with plus.

/Geta/	/Geta/	
Geta, geta	Geta, geta	STEM LEVEL: optional G specification
	niwaGeta, niwageta	affixation
geta, geta	niwaŋeta, niwageta	WORD LEVEL: obligatory G specification

6. Where did the Rich Base go?

- In this grammar, any underlying specified /g/ will fail to undergo Nasalization.
- But then we cannot model the absence of monomorphemic words like *[kagi].

7. All this is so unnecessary under a OO framework …

- With OO-Correspondence this is a simple case of free constraint ranking (or weighting).
- … and we are perfectly free to keep a rich base.

8. Some further attention to underlying /k/

- Why doesn't /ori-kami/ have the free variant *[origami] in this dialect?
- This would be legal, and more faithful than *[origami].
- New students often propose constraints like Don't affect [g], Don't affect [k].
- They work very nicely here.
  - /k/ must be affected, since otherwise we would violate Rendaku.

```
/niwa-geta/:
   Don't affect g OO|Rendaku|*Map-IO(g k)|*VgV|Don't affect k OO|*Map-IO(k ng)|*ng|*Map-IO(g ng)
>g                  |        |            | 1  |                 |            |   |
 ?       1!         |        |            |    |                 |            |1  |     1
 k       1!         |        |     1      |    |                 |            |   |

/ori-kami/:
   Don't affect g OO|Rendaku|*Map-IO(g k)|*VgV|Don't affect k OO|*Map-IO(k ng)|*ng|*Map-IO(g ng)
>?                  |        |            |    |       1         |      1      |1  |
 g                  |        |     1!     | 1  |       1         |             |   |
 k                  |  1!    |            |    |                 |             |   |
```

- My intuition, useful elsewhere, is that identity is just vastly better than all other forms of similarity …

QUICK HISTORY: TREATMENT OF PARADIGM UNIFORMITY EFFECTS IN *SPE* PHONOLOGY

9. The bifurcation

- Inheritance of derived phonological properties: the **cycle**
- Resistance to acquisition of properties: **word-internal boundaries**.

10. Cyclic effects

- English secondary stresses are (roughly) left-to-right binary, no clash, in the pretonic domain.

Examples from Hayes (1982, *LI*).

àbracadábra	Kàlamazóo
Lùxipalílla	Hàrdecanúte
Pèmigewássett	Àllamakée
Òkefenókee	Ìlliloué́tte
Nèbuchadnézzar	Màttamuskéet
pàraphernália	Àntigonísh
Kìlimanjáro	Gàllipolís

Pòpocàtepétl	Òkalòacóochee	Àpalàchicóla	Àntanànarívo
Hànamànióa	ìpecàcuána	ònomàtopóeia	hàmamèlidánthemum

This is not respected in suffixed forms, where there is a cyclic effect present:

sublìmínality
demòcratizátion
Macàssarése

- What the analysis has to do: Faithfulness of *sublìmínality* to *sublíminal* has to outrank the rhythmic principles that determine in monomorphemes.
- *SPE*'s method: cyclicity, on bracketed structure (brief demo)

11. Boundary effects: the distribution of preantepenultimate stress

- There are no stems whatever ending in stressed plus three stressless: "Hi, I'm *[ˈpæmələnə]"
- With **productive suffixes**, pre-antepenultimate stress seems rather normal and possible in new words:

-ing *monitoring, jettisoning*
-eth *seventieth*
-ish *Madison-ish*

12. The *SPE* analysis of boundary effects

- *P*roductive suffixes are treated with "#". "Readjustment rules" apply.
  - Rule 1: [ ] → [# #]
  - Rule set 2: X #] ation → X] ation; etc., for the less-productive affixes.
  - Stress rules apply in domains bounded by # #.
  - In translated form (prosodic structure), this is still a living analytic option, see e.g. Peperkamp, S. (1997). *Prosodic Words*. HIL dissertations 34. The Hague: Holland Academic Graphics.
- Brief board demo

13. Paradigm uniformity effects not covered in *SPE*

- These words seems to have influence from their base forms.
- But there are funny relations to the base, e.g. truncation of affixes, semantically inappropriate base
  - This is what Steriade seized on in her split-base paper.
- Below is a sorted list from a dictionary search for preantepenultimate stress words

14. -able forms with Preantepenultimate Stress

abominable
applicable
communicable
estimable
inalienable
incalculable
inextricable
inseparable
interminable
inviolable
navigable

How to form?

15. Some -ative form

communicative
palliative
speculative
cumulative

16. Some -acy forms

What is the pattern here?

accuracy
adequacy
advocacy
candidacy
celibacy
confederacy
degeneracy
delicacy
immediacy
intimacy
intricacy
legitimacy
literacy
obstinacy

17. Upshot

- We are seeing not the straightforward inside-to-outside derivations proposed in *SPE*.
- Rather, various quirky — Steriadean — relationships within the derivational paradigm — which we might plausibly be able to get with specific OO-correspondences constraints.

18. The apparent virtue of the Paradigm Uniformity approach

- It unifies:
  - affix neutrality (*SPE* boundaries)
  - simple inside-to-outside influences (*SPE* cyclicity)
  - quirky correspondence relations (*SPE* ignored these)

19. Rich variety of Paradigm Uniformity types

- Paradigm Uniformity is sensitive to the paradigm involved; i.e. we may need to be quite specific about the morphological relations present. E.g.
  - *-ing* is totally straightforward in selected a sensible, local base and maintaining its phonology: *ímitàting*
  - *-able* is sometimes *-ing*-like, but can also use *-ate*-truncated bases. It never changes base stress, as far as I know.
  - *-ian*, used by academics, is quite productive and can even resurrect lost vowel qualities: *Abelian, Sokolian, Kruskalian*

- This is perhaps a theme in the use of OO correspondence — it often seems to be process-specific.

EVIDENCE TO SUPPOSE THE EXISTENCE OF BASES

20. General list

- Ordinary OO-correspondence
- Split-base correspondence — to be covered
- Experiment — to be covered
- Historical change — here

21. Language change and paradigm uniformity: Kiparsky's work of the 1960's and 1970'S

- This is the origin of
  - standard rule ordering terminology (feeding, bleeding, etc.)
  - the concept of opacity
  - the idea that imperfect acquisition is revealing about phonology
  - synchronic paradigm uniformity (observed but not formalized)

22. Where you can find this all in one place

- Paul Kiparsky (1978) *Explanation in Phonology*. Dordrecht: Foris.

23. Kiparsky's mode of study at this time

- Language change as laboratory: postlexical phonetic change makes a natural wug test for a new generation of children, which they flunk in revealing ways.
- Why do they flunk? This is taken to be evidence of (what later came to be called) learning bias.
- Modern followers of Kiparsky's research method
  - Adam Albright
  - Jennifer Kuo

24. Time for picturesque Swiss villagers!

- In the late 19th century, field workers fanned out to study the variety of German dialects that evolved on this territory.
- Kiparsky cites Wanner and Enderlin, which I have not consulted.

25. Two kinds of isoglosses

- Isoglosses of **phonetic change** tend to spread out on a broad front. These are postlexical changes, spreading probably among adolescents.
  - German Second Sound Shift (*tide* [tsait], *hate* [hasə] *pepper* [pfɛfəʁ], *thack* [dax]) covers the breadth of Germany, dividing north from south
  - The "uvular r" zone of Europe covers Northern France, much of the Low Countries and Germany, and southern Scandinavia)

- Isoglosses of **paradigmatic change** are spotty, not a grand wave.
- Each spot represents an isolated change, arising from acquisition error.
  - Perhaps an individual child, acquisitionally clumsy but charismatic? I know of no research on how little-kid mistakes are adopted by whole speech communities, but it certainly happens.
- Since the fatal error is an individual creation, its geographic distribution is random and spotty, not broad.

26. Characteristic child-created changes

- Removal of alternation.
- Thus, millions of English speakers today say [ˈhaʊ**s**-əs] as the plural of *house.*
- Such cases are extremely abundant and in historical linguistics are called **leveling** (i.e. of the alternation)

27. The child-created changes of greatest interest here

- These are cases of "analogical" change where the alternation was rendered **less salient**, but not eliminated.
- This bears on the "P-map" and ways of formalizing more or less salient alternation.

28. German Umlaut

- As a sound change long ago, it was assimilation: stressed stem vowel is fronted when a front vowel follows.
- English had Umlaut too, as occasional relic forms like *geese* and *mice* indicate.
  - English and German probably shared low-level allophony for vowel backness.
- In both languages, the vowels of atonic syllables reduced to schwa.
  - This removed the phonological basis for Umlaut, which however remained rather productive in German.
  - HAVE FRONT VOWEL IN PLURALS, SUBJUNCTIVES, 3RD SG. PRESENTS …
- German orthography is matched to this principle, as it spells the outputs of Umlaut with the two dots that we know as "umlaut" diacritics.
  - First two examples below are spelled *kam* and *käme.*

29. Some standard-German examples

[ˈkaːm]	'come-past'
[ˈkeːm-ə]	'come-past subjunctive'
[ˈʁaːt]	'wheel'
[ˈʁeːd-əʁ]	'wheel-plural'
[ˈhɔnt]	'dog'
[ˈhʏnt-çən]	'dog-diminutive'

30. Not all words with front rounded vowels are morphologically derived by Umlaut

[fyːʁ]	‘for’
[hʏpʃ]	‘pretty’
[ˈhœlə]	‘hell’

- These were derived by fronting long ago, but the trigger is lost.

31. A conservative Swiss village, representing the canton of Schaffhausen

- They have Umlaut in their phonology, like all German dialects.
- There is allophony of /o/, which lowers to [ɔ] before most coronals
  - Kiparsky’s examples include [r, t, d, s, ʃ].
  - /l/ is not a trigger, perhaps due to tongue body position?
- Forms with [o]:[1]
  - [foll], [holts] ‘wood’, [gold] ‘gold’
  - [grob], [ops], [hobəl], [xnopf], [dobə], [ofə], [xopf]
  - [xoxxə], [xnoxxə], [rokx], [kflogə] ‘fly-past.part.?’, [bogə]
- Lowering to [ɔ]
  - [hɔrn] ‘horn’, [tɔrn], [ʃɔrə]
  - [rɔss] ‘horse’, [xrɔttə], [lɔsə], [ksɔttə], [bɔdə], [pɔʃt]

32. The allophonic rule of /o/ Lowering

$$\begin{bmatrix}+\text{syllabic}\\ -\text{high}\\ +\text{back}\end{bmatrix} \rightarrow [+\text{low}] \,/\, \_\_\_ \begin{bmatrix}+\text{consonantal}\\ +\text{coronal}\\ -\text{lateral}\end{bmatrix}$$

33. /o/ Lowering applies only to /o/, not to its front partner /ø/

- [pløtsli] ‘suddenly’, [frøʃʃ] ‘frog’
- Recall from above that there are fronted rounded vowels that are *not* derived by Umlaut; these words belong to this class.

34. In Schaffhausen, the lowered allophone interacts with morphology/Umlaut in the expected way

- Data:

[1] My glosses are conjectural, Kiparsky provides none.

Phonemic form	*Surface form of base*	*Umlauted (surface) form*
/bogə/	[bogə]	[bøgə]
/bodə/	[bɔdə]	[bødə]

- We tend to think we understand this!
  - Allophones are "late" and automatic, a sort of late spell-out of the results of the deeper phonology.
- Board work: let us do the history explicitly in derivations

35. The dialect of Kesswil

- This is about 40 miles to the east, on the shore of Lake Constance.

Phonemic form	*Surface form of base*	*Umlauted (surface) form*
/bogə/	[bogə]	[bøgə]
/bodə/	[bɔdə]	[b**œ**də]

36. Couldn't this just be lowering of *all* non-low round vowels in this environment?

- No, because as noted instances of [ø] that are not derived by Umlaut are not changed.
  - [pløtsli] 'suddenly', [frøʃʃ] 'frog' are the same in this dialect.
- /œ/ is now a (surface) phoneme, that occurs only in Umlaut contexts.

37. Board work

- Let us work out SPE grammars that derive both Schaffhausen and Kesswill dialects.
- Assessment for feeding/counterfeeding etc., and opacity.
- Assess them for Paradigm Uniformity
- Include the four key forms, and also frøʃ as well as rich-base */frœʃ/.

38. Intuitive expression of what is happening

- Umlaut is a backness alternation, and so the Umlaut of [ɔ] ought to be [œ].

39. Socrates again

Work this out with OO-correspondence.

40. This is not the only time this happened in German

- Standard German permits two pronunciations of the vowel that is the Umlaut of /a/.
  - A *lautgesetzlich* one, reflecting the fact that the original version of the sound change *raised* [a] to [ɛ] (naturally enough, since the trigger was normally an [i]).
- Conservative dialect

Phonemic form	*Surface form of base*	*Umlauted (surface) form*
/naxt/	[naxt]	[nɛxt-ə]
	'night'	'nights'
/bet/	[bɛt]	
	'bed'	

- Innovating dialect

Phonemic form	*Surface form of base*	*Umlauted (surface) form*
/naxt/	[naxt]	[n**æ**xt-ə]
	'night'	'nights'
/bet/	[bɛt]	
	'bed'	

  - Where [bɛt] demonstrate that this is not a sound change of [ɛ]-lowering.

41. Diagram showing how Paradigm Uniformity increased gradiently

Schaffhausen (conservative)	Kesswill (innovating)
y ← u	y ← u
ø ← o	ø ← o
ɔ (allophone)	œ ← ɔ (allophone)

42. The OO reanalysis was first done by Kenstowicz

- Kenstowicz, Micahel (1996). Base identity and uniform exponence: Alternatives to cyclicity. In J. Durand, & B. Laks (Eds.) *Current trends in phonology: Models and methods*. (pp. 363-394). Salford, Manchester: European Studies Research Institute, University of Salford.

STERIADE'S WORK ON SPLIT BASE THEORY

43. Fundamentals I: true basehood

- It seems intuitive (to me) to think that most derived words have a "true" base, the semantically "sensible" one:
  - English *-able* adjectives: the verb from which the deverbal adjective is formed (*jump ~ jumpable*)
  - French prevocalic masculine adjective allomorphs: the isolation form of the masculine adjective
  - This view seems very teachable in Ling. 20; undergraduates seem quite capable of apprehending these bases and doing the morphology (including feeding, with multiple affixes).

44. Fundamentals II: exploring the rest of the paradigm to get useful allomorphs

- It is possible to "interrogate" **the entire set of stem allomorphs** to get the phonological material that you "want".
  - English *-able* adjectives: your choice for *compensate* {ˈkɑmpəns, from *compensate*, kəmˈpɛns, from *compensatory*}
  - French prevocalic adjectives: your choice for [nuvo] 'new' is masculine [nuvo] and feminine [nuvɛl].
- Why you want it: to solve Markedness problems
  - English: [kəmˈpɛns-əbəl] better than [ˈkɑmpənsəbəl] re. lapses, posttonic stressless heavy.
  - French: nuvɛl ɑ̃ 'new year' is better re. hiatus avoidance.

45. Parasitic character emerges in wug testing

- Here, you can do a particularly natural form of Wug test: apply morphology to words your already have which don't have a derived form.
  - e.g. *compensate, contemplate, confiscate, equilibrate*
  - also: *abdicate, predicate, allocate, dedicate*
- If there is a "secondary base": predominant *com*ˈ*pensable, con*ˈ*templable, con*ˈ*fiscable, equi*ˈ*librable*
- If no "secondary base" exists, strongly predominant nonalternation of stress: ˈ*abdicable*, ˈ*predicable*, ˈ*allocable*, ˈ*dedicable*
- Consultants who think of *ob*ˈ*fusca*ˌ*tory* also come up with *ob*ˈ*fuscable.*

46. The basic idea of Steriade's theory

- Quantification over bases: you are ok if you are faithful to *some* base.
- It's probably better to be faithful to your local base.
- We will see a MaxEnt alternative to this next time.

47. Working this out

- Try
  - *avoidable* (Faithfulness to the local base)
  - *compensable* (a nonlocal base is available)
  - **inundable* (no nonlocal base is available)
- Constraints:
  - Something for the funny loss of *-ate: *ate-able*, Max(-ate)
  - Bans on stress four from the end, stressless heavy
  - Perhaps *Null Parse, with null parse candidate
  - Faithfulness to *some* base, or to the *local* base