

Class 11, 4/30/2020: Paradigm Uniformity II

1. Office hours

- Newly established: Wed. and Fri. at 2, also by appointment.

2. Assignments

- If you haven't read it before, read: Steriade, Donca (1999) "Lexical conservatism". In *Linguistics in the Morning Calm* 4:157-179.
 - On course web site.
- Also read: (2015) Bruce Hayes and James White, Saltation and the P-map. *Phonology* 32:267-302. If you read the Steriade, just read Section 1 (historical linguistics).
 - On course web site.
- Homework #3 is due Thursday May 7.

3. Today

- Continuing:
 - how *SPE* dealt with paradigm uniformity
 - data-romp through antepenultimate stress in English.
- The historical evidence supporting paradigm uniformity — Kiparsky
- Phonotactic effects of paradigm uniformity

TREATMENT OF PARADIGM UNIFORMITY EFFECTS IN *SPE* PHONOLOGY

4. Review: The *SPE* bifurcation of paradigm uniformity effects

- Inheritance of derived phonological properties: the cycle (*assimilation* vs. *Winnepesaukee*)
- Resistance to acquisition of properties: word-internal boundaries.
 - E.g.. *[#[jettison #] ing #]*, with stress assigned in the domain *jettison*
- But there are more things going on ...

5. Returning to the exercise

- In these -able forms (which replicate work by Steriade; readings), we see various odd basehood effects.

abominable
applicable

communicable
estimable
inalienable
incalculable
inextricable
innumerable
inseparable
interminable
inviolable
irremediable
navigable
permeable
tolerable
venerable
actionable
enviable
fashionable
fissionable
impressionable
knowledgeable
objectionable
perishable
practicable
questionable
reasonable
seasonable
serviceable
variable
amiable
amicable
formidable
indefatigable
malleable

caricature
temperature
literature

communicative
palliative
speculative
cumulative

accuracy
adequacy

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

occupancy
militancy
hesitancy
relevancy
irrelevancy
residency
presidency
expediency
incompetency
constituency

idiocy

6. We have seen here

7. Split base effect (Steriade)

remediable
practicable

or compare

compensable
inundable

- Steriade's idea:
 - Multiple bases can be lexically listed
 - It is best to use the one that is the true semantic base
 - But it can be better to use on that reduced markedness

8. Bases we see

- BasParadigm Uniformity is sensitive to the paradigm involved; i.e. we may need to be quite specific about the morphological relations present.

HISTORICAL CHANGE AND PARADIGM UNIFORMITY: SOME TUTORIAL MATERIAL

9. Where this work is gathered together

Kiparsky, Paul (1982) *Explanation in Phonology*. Dordrecht: Foris.

10. The key result of historical linguistics

- This idea dates from the 19th century.
- See the Hayes/White reading for coverage.
- *Phonetic change creates insoluble puzzles for the phonological learner, which leads to phonological change.*

11. Example

- Odawa (Dustin Bowers, 2015 UCLA dissertation)
 - Alternating iambic stress
 - Gradual shortening of stressless vowels — eventually deletion.
 - Enormous confusion, with new UR's and paradigms for numerous stems and affixes.

12. Historical evolution, earliest stage: iambic stress assignment, left to right

- In a sequence of short-voweled syllables, this places stress on all even ones; also on final and V: syllables.

(gʊtí)(gʊmí)(nʌgí)(bíná:) 'he rolls someone'

(nɪ-gú)(tígú)(míná)(gíbí)(ná:) 'I roll someone'

- This stress pattern is widely found in Algonquian languages and is likely ancient; see e.g. Hayes (1995).
- Note that the existence of short-voweled prefixes like *nɪ-* makes possible stress **alternations** in the paradigm.

13. Next stage of evolution: phonetic change in stressless syllables

- Iambic stress systems are prone to **vowel reduction** (Hayes 1995).

- This happened in Odawa: the stressless vowels become **steadily shorter and more reduced**.

Shorten:

(gǔtí)(gǔmí)(nǎgí)(bǐná:) ‘he rolls someone’

(nǐ-gú)(tǐgú)(mǐnǎ)(gǐbǐ)(ná:) ‘I roll someone’

Reduce:

(gǔtí)(gǔmí)(nǎgí)(bǐná:) ‘he rolls someone’

(nǎ-gú)(tǎgú)(mǎnǎ)(gǎbǐ)(ná:) ‘I roll someone’

14. Step 3: a new generation of children hears the degraded data, in the late 1930’s

- What for Mom and Dad is a quick and lazy way of pronouncing a vowel that is phonologically there, is now simply no vowel at all.

15. Consequences of taking reduction to its logical conclusion (deletion)

- Stress is no longer relevant (all stressless vowels are gone!) — so I won’t transcribe it.
- What was originally a **vowel-reduction** alternation was heard by the new generation as a — potential — **syncope** alternation.

gtɪgmɪŋɪbna: ‘he rolls someone’

ngɔtɡɔmnɔgbɪna: ‘I roll someone’

16. The correct textbook-style analysis for the data late-1930's Odawa children heard

- Recapitulate diachrony; i.e.
- Assume “**etymological**” underlying representations — all vowels in their correct historical places.
- Assume **abstract left-to-right iambic stress**, followed by **categorical syncope** of stressless vowels.
- This is not what the kids did...

17. What actually happened I: new underlying representations

- For each stem, roughly, the **isolation form** is now the underlying form.
- Prefixation is to this form, with relatively little phonology:

gtigmingibna: ‘he rolls someone’ *unchanged*

ndΛ-gtigmingibna: ‘I roll someone’ *novel form*

(earlier 1 sg. form: **ngotgōmnΛgbina:**)

- Comparable changes happened **throughout the vocabulary**.

18. Where does the “crazy” prefix [ndΛ-] come from?

- **Recutting.** The [n] is part of the old prefix, and the [dΛ] comes from misapprehension of morpheme boundaries in the old alternations.
- **Historical derivation**

Λgo:dʒinnɪ-Λgo:dʒɪn ‘hang, I hang’

— **nɪdΛgo:dʒɪn** resolve hiatus with [d]

(Λgó:)(dʒín)(nɪdÁ)(gó:)(dʒín) iambic stress

(əgó:)(dʒín)(nədÁ)(gó:)(dʒín) vowel reduction

go:dʒɪn ndΛgo:dʒɪn syncope

- Justifying the recutting:

g o: dʒ ɪ n

n d Λ g o: dʒ ɪ n

- So [ndΛ-] is a prefix!
- Similar prefixes arose from other recut stem material, like [ndɪ-].

- These prefix allomorphs now compete with one another, with a non-etymological distribution, and much free variation.

19. The key point

- Never did a generation of children “say” to themselves: “Oh God! No! Don’t syncopate, it will make for terrible trouble” — the language was lured, phonetically, to the catastrophe.

20. Some other cases of structuring

- The total is vast, but here are two
- Yidiɲ (Hayes, “Phonological restructuring in Yidiɲ”, web site)
- Seediq (Kuo, almost-finished UCLA M.A. thesis)

LANGUAGE CHANGE AND PARADIGM UNIFORMITY: KIPARSKY’S WORK OF THE 1960’S AND 1970’S

21. Kiparsky’s mode of study at this time

- Just the sorts of cases described: 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.

22. Kiparsky’s training

- He is the son of a distinguished Indo-Europeanist and came to phonology with the typical associate assets (knowledge of many languages, historical linguistic techniques).
- I suspect this is why so little work replicating and extending Kiparsky’s work — hardly anyone is qualified.

23. The Swiss villagers

- Switzerland is mountainous and fragmented, with intense local loyalties.
- In the late 19th century, field workers fanned out to study the great variety of German dialects that have evolved on this territory.
- Kiparsky cites Wanner and Enderlin, which I have not consulted.

24. The cool isoglosses

- Isoglosses of phonetic change tend to spread forth on a broad front.
 - German Second Sound Shift (tide [tsait], hate [hasə] pepper [pʰɛfɐ], 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 the grand wave.
- Each spot represents, I think, an individual toddler, linguistically inept but charismatic, who created a language change from errorful learning and persuaded her cohort to adopt it.
- Since the fatal error is an individual creation, its geographic distribution is random and spotty, not broad.

25. Characteristic child-created changes

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

26. The child-created changes of greatest interest here

- These are cases of “analogical” change where the alternation was rendered less salient, but not eliminated.

27. German Umlaut

- As a sound change long ago, it was assimilation: stressed stem vowel is fronted when a front vowel follows.
- English had it too, as traces like *geese* and *mice* indicate.
 - Sharing in the low-level allophony that erupted in grammar post Anglo-Saxon conquest (E. Sapir, *Language*).
- In both languages, the vowels of atonic syllables reduced to schwa.
 - This removed the phonological basis for Umlaut, which however remained rather productive.
 - 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.

28. A conservative village, representing the Canton of Schaffhausen

- There is allophony of /o/, which lowers to [ɔ] before most coronals
 - Kiparsky’s examples include [r, t, d, s, ʃ].¹
 - /l/ is not a trigger, perhaps due to tongue body position?
- Forms with [o]:²
 - [foll], [holts] ‘wood’, [gold] ‘gold’

¹ My IPA-ifications of Kiparsky’s transcriptions: [ʃ] for [š], [œ] for umlauted [ɔ]

² My glosses are conjectural, Kiparsky provides none.

- [grob], [ops], [hobəl], [xnopf], [dobə], [ofə], [xopf]
- [xoxxə], [xnoxxə], [roxx], [kflogə] ‘fly-past.part.?’ , [bogə]
- Lowering to [ɔ]
 - [hɔrn] ‘horn’, [tɔrn], [ʃɔrə]
 - [rɔss] ‘horse’, [xrɔttə], [lɔsə], [ksɔttə], [bɔdə], [pɔʃt]

29. The allophonic rule (in current features)

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

- The purpose of [+back] is to keep the rule from applying to the /ø/ phoneme.
 - [pløtsli] ‘suddenly’, [frøʃʃ] ‘frog’

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

- 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.

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

31. The dialect of Kesswil

<i>Phonemic form</i>	<i>Surface form of base</i>	<i>Umlauted (surface) form</i>
/bogə/	[bogə]	[bøgə]
/bodə/	[bɔdə]	[bædə]

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

- No! Instances of [ø] that are not derived by Umlaut are not changed.
 - [pløtsli] ‘suddenly’, [frøʃʃ] ‘frog’ are the same in this dialect.

33. Intuitive expression

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

34. Socrates

- Work out grammars that derive both Schaffhausen and Kesswill dialects.

- Your answer must be restrictive, explaining the surface distribution of [œ].

35. This is not the only time this happened

- 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

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

- Innovating dialect

<i>Phonemic form</i>	<i>Surface form of base</i>	<i>Umlauted (surface) form</i>
/naxt/	[naxt] 'night'	[næxt-ə] 'nights'
/bet/	[bet] 'bed'	

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

36. A puzzle for me

- Standard German has a “branch” of Umlaut that isn’t fronting:
 - /au/ umlauts as [ɔɪ] or [ɔy], spelled *äu*.
 - I believe this reflects the modern reflexes of a historical alternation like /u:/ → [y:].
- If the relevant dialects had this, it’s a little puzzling that children apprehended the alternation so strongly as fronting.
- Perhaps the origin of standard [æ] and Kesswil [œ] took place at a time when Umlaut was a cleaner process.

THE PRINCIPLE OF PHONOTACTIC LIBERALITY IN PARADIGM UNIFORMITY

37. Trying to express the principle

- If you inspect the inventory of monomorphemic forms, you will get a rather strict phonotactics.
- But when forms occur in paradigms, a wider variety of legal forms emerges.

38. Sources of richer phonotactics in paradigms

- Suppressed phonology
 - like 'monitoring, not *mo'nitoring
- Overapplied phonology, like su₁blimi'nality
- Mere concatenation, like
 - “Hello, my name is Bill *[trɛbd]. I and all the other *[trɛbdz] are very pleased to meet you.”
 - Yet: *rubbed, dubbed, ribbed*, etc.
 - Socrates: what constraints could account for this pattern, including Paradigm Uniformity?

39. An example pointed out by Kiparsky from Leonard Bloomfield's *Language* (1933)

p. 366: “In the Central-Western type of American English, ...”

[ǣ] is a plain allophone in some environments: / ____ rp, rk
dark, sharp
 ['dǣrk], ['jǣrp]

also, “before the clusters [rd, rt] followed by “primary suffix” [-ǽ, -ŋ]”
barter, Carter, garden, marten (Martin)
 ['bǣrǽ], ['kǣrǽ], ['gǣrdŋ], ['mǣrtŋ]

“Before a secondary suffix [-ǽ, -ŋ], however, the longer variant is used, as in
starter, carter (‘one who carts’), *harder*
 ['stairǽ], ['kairǽ] ['hardŋ]

“Here the existence of the simple words *start, cart, hard* (whose [a] is not subject to shortening), has leave to the favoring of the normal, longer variant.”

['start], ['kart] ['hard]

- Socrates: figure this one out with constraints and rankings

40. Modern cases of this type

- Sugahara, M. & Turk, A. (2009) Durational correlates of English sublexical constituent structure. *Phonology*. 26, 03, p. 477-524

41. A characteristic pattern

- “Optional cyclicity”: a rule must be made optional when it applies on an inner cycle, but then obligatory when the stem occurs by itself.

- This seems at least inelegant to me: what is actually optional is whether you carry forward the effects of the base form on the derived form, per the principle of constraint ranking.

42. A classic example from the urtext of Paradigm Uniformity in OT

- Laura Benua (1997) *Transderivational Identity: Phonological Relations between words*.
- Epenthesis:
- Generally, words in Tiberian Hebrew do not end in consonant clusters.
 - There are a tiny number of lexical exceptions,
 - plus a larger class of systematic exceptions.

- Example:

Epenthesis in Tiberian Hebrew is demonstrated in (85) with the monomorphemic word [sēφer] ‘book’, which is related to the input root /sɪpr/ (compare [sɪφrɪ] ‘my book’, in which the root’s consonant cluster surfaces intact in a heterosyllabic parse).

- Jussives are formed by final vowel loss from imperfective base, yet often there is no epenthesis:

Jussive Truncation

	<u>Imperfective</u>	<u>Jussive</u>	
a.	yiš.bē	yišb	'take captive'
	yiφ.tē	yiφt	'be simple'
	yēš.te	yēšt	'drink'
	yēβ.ke	yēβk	'weep'
	yiš.te	yēšt	'drink'
	yaš.qe	yašq	'cause to drink'
b.	yiγ.lē	yi.γel	'uncover'
	yiβ.ne	yi.βen	'build'
	tiφ.nē	tē.φen	'turn'
	yiβ.zē	yi.βez	'despise'
	yiš.ʕē	yi.šaʕ	'gaze'
	not attested	yi.had	'rejoice'

- Figure out an analysis in Classical OT.

43. A simple example

- Benua: [lær] is ok in some dialects of English, but only as the truncated version of *Larry* ['læri].