

Correspondence basics (revised, augmented)

- Plan:**
- review basic correspondence notions and constraints
 - why any theory of phonology sooner or later recognizes a theory of correspondence
 - loan adaptation
 - meter and metrical tension
 - rhyming

- segments vs. features as the unit of correspondence
 - input vs. output context in correspondence constraints.
- (1) UR /sɪkl/ - SR [sɪkɫ] as against SR [sɪk], [sɪkɪl], [sɪkt] [sɪko], [sɪlk]
 - (2) Ranking of correspondence constraints yielding SR [sɪkɫ] from a possible UR /sɪkl/
 - (3) No correspondence rankings needed in a rule-based grammar:
[+son] -> [+syllabic]/ [-son]_#
 - (4) Two misapprehensions:
 - Correspondence Theory is the direct consequence of rejecting rules
 - ...and ordering or cycles
 - (5) Two arguments for ranked correspondence constraints in any grammar:
 - loan adaptation
 - poetic meter and rhyme
 - (6) Terms:
 - L₁, L₂: native language, and second language, respectively
 - loan(word), borrowing: a form from L₂ adapted and imported into L₁
 - loan adaptation: process thru which loans abide by phonological structure of L₁
 - loan phonology: the entire system that allows borrowers to adapt L₂ words
 - (7) Korean *Hemnit* < [hæmlət]; k^hap^hilli – k^hap^hiri < [k^hɔpli]; p^heksi < [fæks]
 - K [l] is either a coda or a geminate [ll]; [r] alternates with [l], is ok in V_V
 - some general processes of K:
 - a. nl -> ll
 - b. Cl -> Cn applies to some loans (*Hamlet*), not all (*Copley*).
 - c. CN -> C_[+nas] N applies to some loans
 - (8) The mysteries of loan phonology:
 - Most rules operative in loan phonology seem absent from L₁.
There's no epenthesis in K
 - And many L₁ rules actually don't apply to loanwords, or not always.
 - But loans tend to abide by the output constraints of L₁.
No Cl, CN on the surface in K loans from English
No complex onsets, or impermissible codas in K.
Most sounds in loanwords are native sounds, even if L₂ source contained nonnative sounds: E. [f] -> K. [p^h]

If L₁ rules don't apply to loans, then in what sense are loans adapted to L₁'s phonology? And where do the L₁ speakers come up with the novel rules they do apply to loans?

- (9) OT provides a different view of this: L_1 phonology is
- a set of active or undominated phonotactic (markedness) constraints:
e.g. *Complex onset
 - a set of correspondence constraints: e.g. MAX C/ IO, DEP V/IO
 - rankings within (a), and within (b), and between (a) and (b).

e.g. *Complex onset \gg MAX C (Japanese); MAX C \gg *Complex onset (English)

OT explains how loans are adapted to L_1 phonology without undergoing L_1 “rules”.

- Loan adaptation = insuring that *phonotactic constraints* of L_1 are satisfied in loans.
- What differs between L_1 phonology and adaptation from L_2 to L_1 ?
Ranking among correspondence constraints.

Something we won't address:

why the ranking of correspondence comes to differ between L_1 and $L_2 \rightarrow L_1$.

- (10) Same phonotactics, different means of satisfaction in L_1 and in loans: Korean, E- \rightarrow K

Coda cluster resolution; coda modification; other cluster changes in K

	UR	Final or pre-C	Pre-V	Gloss
a.	<i>kulm</i>	<i>kum</i>	<i>kulm-</i>	starve
b.	<i>palp</i>	<i>pap</i>	<i>palp-</i>	tread on
c.	<i>hilk</i>	<i>hik</i>	<i>hilk-</i>	soil
d.	<i>tols</i>	<i>tol</i>	<i>tols-</i>	anniversary
e.	<i>halt^h</i>	<i>hal</i>	<i>halt^h-</i>	lick
g.	<i>moks</i>	<i>mok</i>	<i>moks-</i>	share
h.	<i>kaps</i>	<i>kap</i>	<i>kaps-</i>	price
i.	<i>antf</i>	<i>an</i>	<i>antf-</i>	sit
j.	<i>nas</i>	<i>nat</i>	<i>nas-</i>	sickle
k.	<i>nas</i>	<i>nat</i>	<i>nas-</i>	sickle
l.	<i>natf</i>	<i>nat</i>	<i>natf-</i>	daytime
m.	<i>pat^h</i>	<i>pat</i>	<i>pat^h-</i>	field

8. Corresponding rules in K(L_1), applied in this order:
- [+lateral] $\rightarrow \emptyset / _ [-\text{syllabic}, -\text{coronal}]_\sigma$
 - $[-\text{syllabic}] \rightarrow \emptyset / [-\text{syllabic}]_\sigma$
 - [+cons] $\rightarrow [-\text{cont}, -\text{spread glottis}, -\text{strident}] / _]_\sigma$
9. Other general properties of K, whether or not supported by alternations:
- no CC codas/onsets; no diphthongs; no fricatives other than s.
 - no consonantal continuants (e.g. s) in coda, or affricates (e.g. tf)
 - the only C in coda are unaspirated, voiceless stops or nasals.

10. Coda cluster resolution in E->K ($L_2 \rightarrow L_1$), and other C transformations

	English	Nativized in K as	Not as
a.	<i>p^hæs</i> <pass>	<i>p^hesi</i>	<i>pæt</i>
c.	<i>græf</i> <graph>	<i>kirap^hi</i>	<i>kirap</i>
d.	<i>lov</i> <love>	<i>robi</i>	<i>rop</i>
e.	<i>fæks</i> <fax>	<i>p^heksi</i>	<i>p^hek, p^hekit</i>
f.	<i>p^hʌlp</i> <pulp>	<i>p^hɔlp^hi</i>	<i>p^hɔp, p^hɔl, p^hɔlip</i>

11. Some “rules” involved in E->K($L_2 \rightarrow L_1$):

- i. [+cont,-voice, +cons] -> [+spread glottis, -cont] (*f* -> *p^h*)
- ii. [+cont,+voice, +cons] -> [-spread glottis, -cont] (*v* -> *b*)
- iii. [-cont, -voice] -> [+spread glottis] (*p, t, k* -> *p^h, t^h, k^h*)
- iv. [+lateral] -> [+long]/ V_V (*film* -> *p^hillim*)
 -> [-lateral]/#_ (*love* -> *robi*)
- v. Ø-> i/[+strident, +anterior]_ {C, #} (*pass* -> *p^hesi*)
- vi. Ø-> i/[+cont, +voice]_ # (*love* -> *robi*)
 [+cont, +spread glott]_ # (*graph* -> *kirap^hi*)

12. A different picture in an OT analysis:

•Korean undominated phonotactics:

- *Complex onset; *Complex coda,
 - If [-son]_σ then [-cont, -voice, -sp.gl]; If [+cont, -son] then [+strident]
 - *Cl, * [+nasal] [-syll, -nasal]
- These and others are always satisfied by adapted loans.

•Korean L₁ system

- *Complex onset
 - *Complex coda
 - If C_σ then [-cont, -voice, -sp.gl]
 - If [+cont, +cons] then [+strident]
- DEP IO → MAX IO
 Ident [±voice], [±sp.gl] IO
 MAX/DEP/Ident IO

•English-to-Korean ($L_2 \rightarrow L_1$) system

- *Complex onset
 - *Complex coda
 - If C_σ then [-cont, -voice, -sp.gl]
 - If [+cont, +cons] then [+strident]
- MAX IO, DEP V≠i, Ident F IO → DEP i

13. A preliminary analysis of *graph* -> *kirap^hi*

L2	græf	K-phonotactics	Ident F	MAX C	DEP i
a.	kræf	*!* (kr, f)			
b.	kep			*!(r)	
c.	kiræp		*! (f -> p)		*
d.	kirap ^h i				**

14. A preliminary analysis of *fax*-> p^hɛksi

L2	fæks	K-phonotactics	Ident F	MAX C	DEP i
a.	p ^h ɛks	*!* (CC] _σ , s] _σ)			
b.	p ^h ɛk			*!(s)	
c.	p ^h ɛksi				*

15. Summary of this point

- The phonotactics that were undominated in the K (L₁) system remain so in the KE (L₁-> L₂) system. It's in this sense that the loans have been submitted to the L₁ grammar.
- The K (L₁) differs from the KE (L₁->L₂) in the rankings of correspondence constraints relative to each other: a grammatical description lacking correspondence constraints cannot even describe what it is that K and KE share and how they differ.

16. Syntagmatic and paradigmatic correspondence

- syntagmatic: strings in correspondence cooccur within the expression being evaluated
- paradigmatic: they don't.

17. Correspondence in meter: between the abstract metrical rhythm and linguistic stress
Kiparsky 1975 "Stress syntax and meter," *Language* and later works

- one meter: iambic pentameter = (ws) 5 times (w = weak, s = strong)
- perfect, monotonous metricality: ictus (s) coincides with stressed syllables
 - But why did poison come without delay?*
- metrical lines with 2 inversions ("disappointments"):
 - Never came poyson from so sweet a place*
 - Which one gave poison from so sweet a place?*
- unmetrical line with 2 inversions:
 - For when came poison from such sweet flowers?*
- here we focus on the fact that stressed syllables may end up in w position: e.g. *came*

18. A rule-based approach to meter-stress correspondence: Kiparsky 1975

Rules that change the basic metrical pattern generating a few acceptable variants:

MR1 [1 stress] -> [α stress]

MR2 [4 stress] -> [βstress] in /

{#_#

#[_#_}

the monosyllable rule

modified phrase-initial rule

19. Derivation of the pattern that fits *never came poison* in 17.b: 34114 from basic 41414

Input #[_p #14#1#14

MR1 #[_p #44#4#14

MR2 #[_p #34 #4#14

20. Index of metrical tension:

The metrical tension between a derived pattern $\phi_1 \dots \phi_2$ and an underlying metrical pattern $\psi_1 \dots \psi_2$ is the sum of the differences between each ϕ_1 and ψ_1 .

21. Kiparsky: “the monosyllable constraint in MR2 is functionally motivated by its effect in preventing word-internal stress relations from conflicting with the meter”.
22. The Metrical Rules are too limited:
- in dactylic and anapestic (Romanian) meters 41 (ws) and 14 (sw) are mapped to 44 (ww)
 - in trochaic and iambic meters (English etc) 144 mapped to 141 and 441 to 141.
- These are not felt as inversions but as regular text to rhythm mappings

What the monosyllable rule shares with these mappings: there is no reversal of relative prominence between the linguistic text and the abstract rhythm in any of these cases.

	Inversion 14 <-> 41	Monosyll 1 <-> 4	1(#)44 <-> 141	44(#)1 <-> 141
Is word prominence reversed?	Yes	No	No	No

23. A correspondence-based approach (similar to one alluded to in Hayes 2004 ms.)
- a. For any pair of syllables of the same word, σ_1 and σ_2 , if they correspond, respectively, to positions p_1 and p_2 in the verse, then if p_1 is more prominent than p_2 , σ_2 is not more prominent than σ_1 .
- Penalizes *never*, *flowers* scanned as ws; not as ww ; nor *came* in w position; nor *Antonio* as wsws
- b. For any pair of syllables of the same word, σ_1 and σ_2 , if they correspond, respectively, to positions p_1 and p_2 in the verse, then p_1 is more prominent than p_2 iff σ_1 is more prominent than σ_2 .

Penalizes *néver* scanned as ws; or ww; not *came* in w position

Additional versions of these constraints obtained from placing the strings in context (line-initial vs. line-final) and by distinguishing “any pair of syllables of the same word” from “any pair of syllables of the same phrase”

24. Relational prominence constraints like (23.a) are very useful in the analysis of compound stress (e.g. *pípe òrgan plàyer* 13020) where they relate I and O rather than abstract meter and linguistic text. The point is that constraints involved in meter are not just correspondence constraints in some general sense, but the very same constraints as those needed in standard linguistic analysis.
25. Correspondence between the abstract metrical pattern and the linguistic rhythm is acknowledged in Kiparsky’s system in two separate ways:

- the Index of metrical tension, which marks each allowable deviation
- the set of Metrical Rules, which define possible kinds of deviations

The proposal in (23) unifies these devices and appropriately expands the set circumstances in which stress and ictus fail to match.

26. Correspondence in rhyming conventions: syntagmatic correspondence

- pairs of poetry lines contain substrings (rhyming domains, RD) that must be identical.

- | | |
|--|-------|
| a. <i>And yet with neither love nor hate</i> | [eit] |
| b. <i>Those stars like some snow-white</i> | [ait] |
| c. <i>Minerva's snow-white marble eyes</i> | [aiz] |
| b. <i>Without the gift of sight</i> | [ait] |

- RD begins at the last stressed vowel of the line and ends with the line
Láncelòt can rhyme with *Máandelbròt*

Rom. *máalurile* 'the shores' rhymes with *váalurile* 'the waves',
but not with *vánturile* 'the winds'

- Identity need not be perfect: half rhymes

<i>Trouble all my days</i>	[eiz]
<i>Born and partly raised</i>	[eizd]

<i>A stich in time</i>	[am]
<i>Saves nine</i>	[am]

- An implicational hierarchy of possible half rhymes reflected in relative frequency:

<i>Trouble all my days</i>	[eiz]
<i>From the pretty maids</i>	[eidz]

<i>A stich in time</i>	[am]
<i>Saves Kai</i>	[a]

- To characterize: the difference in relative well formedness of some rhyme types compared to others and the fact that some rhyme types are, for some/all poets, categorically impossible.

Rhyming is a linguistic system for computing abstract similarity; thus comparable to the UR-SR similarity computations characterized by correspondence theory. The same constraints and rankings that characterize perfect/better/worse rhymes provide the contents of standard correspondence theory as applied to input-output relations.

There is no rule-based characterization of rhyming: no input modifications are involved. A rule-based phonology thus has to appeal to correspondence theory anyway, just for rhyming.

27. The elements of an analysis

- MAX (RD): Any element *e* of RD(L_i) has a correspondent element *e'* in RD (L_j).
- Ident (RD): correspondent elements in RDs of $L_i L_j$ have identical F values.
- Rhyme! The RD(L_i) corresponds to the RD (L_j), where L_i and L_i are designated lines
- Positional faithfulness: MAX C //V (RD) >> MAX C -(//V)(RD)
- MAX vs. Ident: MAX C//V >> Ident F_c//V
- A rhyme system tolerating some mismatches:

MAX C //V (RD) >> Rhyme!>> MAX C -(//V)(RD), Ident F_c//V

28. Summary

- L1-to-L2 correspondence in adaptation, meter-to-text correspondence and Rhyme Domain (RD) correspondence share basic properties with IO correspondence as studied in OT:
 - the distinction between 3 types of constraints MAX-type, Ident-type and Relational constraints (as in (23))
 - effects of context: at least the MAX and Ident constraints are positional and take the form $\text{MAX } x/\text{context } A \gg \text{MAX } x/\text{context } B$
- There are no rule-substitutes for meter-to-text and RD correspondence; the rule-account of loan adaptation fails to explain what the L2-L1 adaptation system has to do with the native L1 system.
- A correspondence theory that generalizes across pairs of representations being related (IO, RD, meter and text) holds promise for all cases.