



- (6) Example. Reduplicant must be open syllable, although closed syllables are allowed in lg.  
 MAX-IO>>NoCODA “Don’t delete to avoid a closed syllable.”  
 NoCODA>>MAX-BR “Have incomplete copying to avoid a closed syllable”

/RED+takder/	MAX-IO	NoCODA	MAX-BR
TA - tak.der.		**	**** (kder)
TAK- tak.der.		*** !	*** (der)
TA - ta.de.	**! (...k...r)		

- (7) TETU yields template-like restrictions through constraint enforcement. (Cf. Steriade 1988). Let us use our resources maximally:

Hypothesis. All templatic restrictions follow from TETU: there are no templates.

- (8) GTH. Given that each morpheme must specify its own category (Root, Affix, — Stem, etc.) and/or the category of the item it attaches to, and/or the category of the result of the combination; and given that these *morphological* categories have typical *phonological* realizations, we come to the **Generalized Template Hypothesis**:

**The Reduplicant is the Canonical Structural Realization of its morphological class.**

The “Canonical Structural Realization” (Grimshaw’s term) is attained through TETU.

- (9) For background and further kinds of evidence of the correctness of this stance, see at least Downing (1994, 1995ab, 1996), Itô & Mester (1992), McCarthy & Prince (op.cit.), Futagi (1997).

- (10) **Crude map of morphological collocation types:**

Quasi-Independent: stem

Compounding: [ stem stem ]<sub>stem</sub>

Dependent:

External Affix: [ — stem ]<sub>stem</sub>

Internal Affix: [ — root ]<sub>stem</sub>

►or maybe [ ... ]<sub>stem'</sub>, a step up the X-bar ladder

•thus, here, stem = root', X-bar-wise

- (11) Two Basic Phono-Morpho Interface Constraints:

ALIGN (Stem, L/R; PrWd, L/R)

Every L/R Stem-edge should coincide with the L/R edge of PrWd

- (12) Some assumptions about the Prosodic Hierarchy.

a.GEN: every Prosodic Word contain a Foot.

b.CON: PARSE-σ, which demands that every σ belong to an F

FTBIN, which demands that every foot be binary on moras or syllables.

- (13) External Affixation. What is its basic *canonical structural realization* ?

(14) English External Prefixes.

rē - build	contrast <i>internal</i> rěform ~ rėformation/ rē'search, rē'cess
dē - Nazify	děfine ~ dėfinition/ dē'fect ~ děfective
prē- built	prėscribe / prē' fix
prō -capitalist	prőceed ~ prőcession / prō'noun ~ prőnominal
mis- t <sup>h</sup> ype	mĩstake (Aronoff)
un- realized	(cf. /in-/ intemperate/illegal/irresponsible)
non- linguistic	

See Aronoff for discussion of the semantic, phonological, and combinational differences between the two.

(15) English external prefixes are stressed, unreduceable, semantically transparent, productive and (minimally) bimoraic: they have a high degree of prosodic independence. (The internal ones, even when near homophonous, contrast in each of these properties: e.g. their stress is contextually determined.) How could this follow from their morphological classification?

(16) Morpho → Phono Interface: Say both Align constraints (2) are met. Then we have the Ph-structure

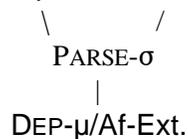
[ rē [ (build)<sub>F</sub> ]<sub>PrWd</sub> ]<sub>PrWd</sub>.

(17) Now assume that PARSE-σ is satisfied in these affixal domains, and FtBin everywhere.

• Then, we **must** have [ (rē) [ (build)<sub>F</sub> ]<sub>PrWd</sub> ]<sub>PrWd</sub>.

(18) **Conclusion.** Affixes like external rē- *must be (at least) bimoraic*, given the imposed structure and the constraints imposed on it.

(19) Partial grammar: DEP-μ/Stem FTBIN ALIGN-L (Stem, Prwd) ALIGN-R (Stem, PrWd)



(Note: if ExtAf+Stem → Stem', then we write instead Max/Stem', with an inclusion hierarchy Stem ⊆ Stem' and we generalize Alignment accordingly: Align (Stem<sup>k</sup>, PrWd) — align Stem and all its projections.)

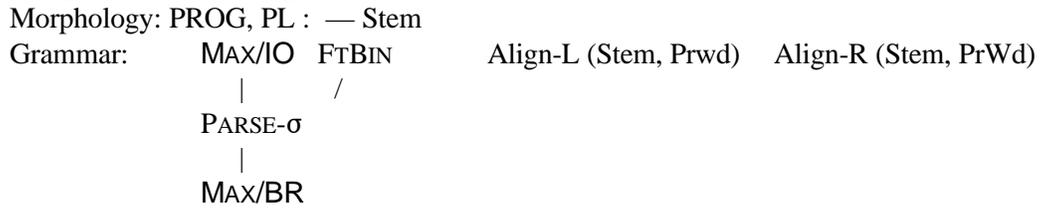
Interpretation: Violation of Dep-μ (“Don’t lengthen”) is forced in External Affixes, if necessary to satisfy PARSE-σ and FTBIN. So potential /re/ ↦ rē. But no such map for the internals, e.g. [ rě (fórm) ].

• Note that FTBIN (if it sets an *upper* 2 unit bound, as well as a lower bound) forces violation of PARSE-σ generally — what would be an example?

(20) **Reduplicative ‘Template’ Effect:** the heavy syllable prefix “σ<sub>μμ</sub> -” Ex.: Ilokano Progressive and Plural (McCarthy & Prince 1986; Hayes & Abad 1989).

trab- trabaho	‘be working’
da: -daʔit	‘be sewing’
dad -daʔit	
na: -nars	‘nurses’
tra: -trak	‘trucks’

(21) Applying the same kind of grammar as in (3), we have



Interpretation.    MAX/IO >> PARSE-σ    (F>>M, map-blocking) “Don’t delete to get perfect footing.”  
                           PARSE-σ >> MAX/BR    (M>>F, map-making) “Undercopy B-to-R for foot’s sake”

(22) Why should the affix then be **monosyllabic**? We have so far demanded only that it be Foot-parsed. Bruce Tesar suggests that Foot-internal alignment constraints may be responsible:

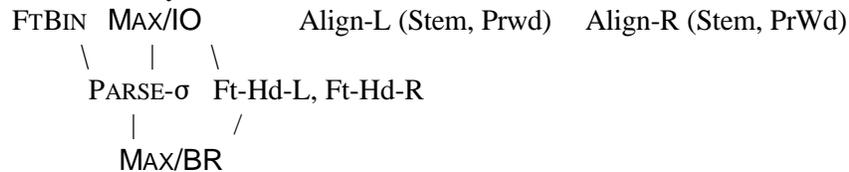
ALIGN (F,L; Hd(F), L) , ALIGN (F, R; Hd(F), R).

Only a monosyllabic foot, with its head at both left and right edges, can satisfy both!

(23) What happens if the Foot Head constraints have more general force — as ranked over MAX/IO?

- The language allows only monosyllables! Like Chinese, etc.

(24) So the operative hierarchy must contain at least



(25) Illustrative Tableau. Only candidates satisfying FtBin & Stem~PrWd Alignment considered.

/PROG+trabaho	Max-IO	PARSE-σ	Ft-Hd-L, Ft-Hd-R	MAX/BR
a.  [(trab) - [tra (baho)]]		*	*	***
b. [(tra:) - [tra (baho) ]]		*	*	**** !
c. [ trã - [tra (baho) ]]		* * !	*	****
d. [(trab) - [ (trab) ]]	* ! **	✓	✓	✓

(26) **Conclusion:** With MAX-BR subordinated to phonological constraints, incomplete copying is recruited to obtain better satisfaction of the superordinate constraints. This is TETU: and gives the “Heavy Syllable Template” here.

(27) **Phonology of BRI.** What if **F/BR** is dominant over some structural constraint **M** that is respected in the lg. at large? Then it can happen that the reduplicant shows unusual phonology — violation of **M** — *merely to look like the base*. And vice-versa! — the base can show unusual phonology to look like the reduplicant.

(28) **An illuminating case.** Southern Paiute. /w/ shows up initially; between vowels you get /ŋ<sup>w</sup>/

waʔaji	ti' – ŋ <sup>w</sup> aʔaji	‘to shout/to give a good shout’
▲	▲	

(29) But in Reduplication, the Base imitates the Reduplicant --

a. *Differing Context in R and B:* BR identity => B back-copies R

wi'nai–	wi – wi'n'nai–	‘to throw/several throw down’
	*ŋ <sup>w</sup> i – ŋ <sup>w</sup> i'n'nai–	*(R copies B to excess)
	*wi – ŋ <sup>w</sup> i'n'nai–	*(normal phonology; bad BR-Faith)
	▲            ▲	

b. *Same V–V Context in R and B.* BR identity + normal phonology

wiŋt–	ya– ŋ <sup>w</sup> ɪ' – ŋ <sup>w</sup> ɪŋtɪxɑ <sup>c</sup>	‘to stand/while standing and holding’
	▲            ▲	

(30) **Analysis of background phonology.**

Logic of Complementary Distribution: distinguishes a *default* from a special case. The problem is how to keep the nondefault out of circulation.

- In SPE type phono, the default is the lexical value /α/, with \*/β/ and α → β / E.
- ▶ In Unspec Th., the lexical value is ambig between the two: /A/ and \*/α/, \*/β/ and we have A → β / E , A → α everywhere else, filling in the def. feature.
- ◆ In theories w/o lexicon-specific restrictions, we have α → β / E and elsewhere β → α (the latter dumping β from the inventory)

(31) Ergo, we must settle on the *default* (a notion that is more general than the implementations). Suppose it is **w**, as seems natural (perhaps presence of ŋ<sup>w</sup> presupposes presence of **w**).

We conclude that \*ŋ<sup>w</sup> >> \*w

(32) We must superimpose these maps: **w** → ŋ<sup>w</sup> intervocally, losing the default value there.  
 ŋ<sup>w</sup> → **w** elsewhere, dumping the *nondefault*.

(33) The map ŋ<sup>w</sup> → **w**. By the discussion in Class 3 of what it takes to get a map going (Handout 3., (40)), we know that there must be *some* constraint against ŋ<sup>w</sup> that dominates *every* M constraint against **w** and every F constraint against the mapping ŋ<sup>w</sup> → **w**

So, at least: \*ŋ<sup>w</sup> >> \*w, IDENT-IO(nas)

(34) For **w** → ŋ<sup>w</sup> intervocally, it must be that some → constraint against intervocalic **w** dominates every M constraints against (intervocalic) ŋ<sup>w</sup> and every F constraint against the mapping ŋ<sup>w</sup> → **w**. So,

So, at least: \*VwV >> \*ŋ<sup>w</sup>, IDENT-IO(nas).

(35) Putting these together, we have (at least): \*VwV >> \*ŋ<sup>w</sup> >> \*w, IDENT-IO(nas)

(36) Suppose we now add IDENT-BR(*f*), the set of all BR-feature identity constraints. It is unviolated — the Reduplicant is featurally identical to the section of the Base that it copies — so it can be top-ranked:

(37) With undominated IDENT-BR(*f*), there are two serious candidates:

wi'nai–	wi – wi'n'nai–	‘to throw/several throw down’
	*ŋ <sup>w</sup> i – ŋ <sup>w</sup> i'n'nai–	

■ But surely the second will win! — because it violates undominated \*VwV.

(38) We need to rule out [ŋʷ]. So CON must supply \*[ŋʷ]. (NB. if ŋʷ were the default, we'd need this for the basic phonology). McCarthy & Prince 1994 et seq. argue that such a constraint exists independently.

(39) Final Grammar. IDENT-BR(f), \*[ŋʷ] >> \*VwV >> \*ŋʷ >> \*w, IDENT-IO(nas)  
Observe that this grammar selects the correct candidate:

☞ wi - wi'n'nai-  
\* ŋʷi - ŋʷi'n'nai-

The second candidate violates the highest ranked \*[ŋʷ]; the first only violates \*VwV, now demoted.

(40) **Interpretation:** Crucially, the BASE assumes unusual phonology to achieve reduplicative identity. Thus, the ranking pattern F/BR >> M >> F/IO can yield not just “over-application” but **back-copying** from the reduplicant to the base, violating F/IO !

(41) **CRISIS!?** The P. Hamilton/R. Kager Conundrum: **Templatic Conditions are never back-copied.**

/RED + takder/            => \*ta-ta !!  
/RED + wakari/           => \*waka-waka !! (Diyari)  
/RED + sawatik/         => \*sa:-sa:watik !! (Nahuatl: ‘someone hoarse’)

(42) But, *if there are templates*, or indeed affix-specific constraints, this is easily accomplished.

(43) “RED =σ<sub>μ</sub>”, Max-**BR** >>MAX-**IO** in Ψ-Ilokano

/RED+tʰilparku/	“RED =σ <sub>μ</sub> ”	MAX-BR	MAX-IO
a. ☞ trab - trab			***
b. trab - trabaho		*** !	
c. trabaho - trabaho	* !		

(44) Unreduplicated forms receive a fully faithful analysis in Ψ-Ilokano

/trabaho/	“RED=MINWD”	MAX-BR	MAX-IO
a. trab			*** !
b. ☞ trabaho			

(45) **But if Templatic conditions come always from TETU, with constraints of general applicability, this is impossible.**

(46) As above, the descriptive outcome “RED is σ<sub>μ</sub>” comes from this:

FAITH/IO >> PROSOD >> FAITH/BR

Clearly, with FAITH/IO dominant, there can be no truncation of the Base to meet PROSOD or to accommodate the Reduplicant.

(47) Suppose we try to fit PROSOD through the Back-Copy Ranking (40) .

- a. The key element of the ranking is PROSOD >> FAITH/IO
- b. But now, everything in the language conforms to PROSOD !



(51) **Conclusion.** Three main goals.

a. To direct attention away from the worm's-eye view of hustling candidates through hierarchies, and toward a perspective on what more general, element-to-element *maps* are performed by the grammar.

b. And to investigate the properties of these maps, particularly the question of which related maps can be superimposed in the same grammar.

c. Having found that the simple theory has properties of great interest, and to guide theoretical development with an eye toward preserving those properties in the large.

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