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The null-hypotheses of syllable structure

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(1) aim

a. to show that empty nuclei are not that bad/unnatural/stipulative as those whose theory lacks them think

b. to show that besides the what-is-adjacent-superficially-is-adjacent-underlyingly hypothesis there exists another, equally plausible, null-hypothesis of syllable structure

c. to show that standard government phonology fails to reach the logical conclusion of introducing empty nuclei

(2) what is a syllable?

a. "a minimal pulse of initiatory activity" (Catford 1988 : 179)

b. "the term *syllable* is unfortunate in that it is ambiguous [...]: on the one hand, [(i)] we have the syllable as defined in linguistic theory; on the other hand, [(ii)] we have the pretheoretical notion of the syllable to which we refer when trying to characterize performance acts" (Lowenstamm 1981 : 576); what interests us (certainly me) is obviously (i)

c. a tree structure whose root is the syllable node itself, containing subsyllabic constituents (typically onset, rhyme, nucleus, coda) and ultimately a string of segments

i. problems

α. phonological rules do not make reference to the syllable node (or if they do, this can usually be replaced by reference to the rhyme node; e.g., syllable weight, closed-syllable effects)

β. while the members of subsyllabic constituents normally affect each other, the same cannot be said of the members of syllables (i.e., while the members of branching onsets, branching nuclei, branching codas are constrained, there are hardly any constraints between onset and nucleus, nucleus and coda)

γ. there are constraints between a coda and the following onset ("syllable contact laws"), although representationally they appear to be totally independent of each other

ii. lessons

α. it is enough to retain onsets and rhymes at the top of the hierarchy (cf. Morris Halle—(6aii), Kaye & al. 1990, etc.)

β. phonotactic constraints appear to primarily affect adjacent consonants (and adjacent vowels—in e.g., diphthongs), i.e., are not dependent on syllable structure (many have come to this conclusion before, e.g., Rubach (1996))

d. a set of relations between segments (or, more technically, the skeletal slots containing these segments); this is the view partly advocated by government phonology and elaborated on here

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(3) autosegmental phonology

a. the basic tenet: the separation of the timing and the melodic tiers

b. association possibilities ($\times$=skeletal slot, α, β=melodic primes)

i. $\begin{array}{c}\times\\ |\\ \alpha\end{array}$ ii. $\begin{array}{cc}\multicolumn{2}{c}{\times}\\ \diagup & \diagdown\\ \alpha & \beta\end{array}$ iii. $\begin{array}{cc}\times & \times\\ \diagdown & \diagup\\ \multicolumn{2}{c}{\alpha}\end{array}$ iv. $\begin{array}{c}\\ \\ \alpha\end{array}$ v. $\begin{array}{c}\times\\ \\ \\ \end{array}$ vi. $\begin{array}{c}\times\\ \\ \alpha\end{array}$

i–iv are well-established possibilities, v and vi must either be excluded nonstipulatively, or exploited by the theory

(4) phonological primes

a. unary primes are theoretically more desirable than binary or scalar primes (Harris & Lindsey 1995)

b. unary primes encode minimal phonological contrasts by the presence vs. absence of the relevant prime: $\{\alpha, \beta, \gamma\}$ vs. $\{\alpha, \beta\}$; consequences:

i. each prime must be phonetically interpretable in isolation: $\{\alpha, \beta\}$ minimally contrasts with $\{\alpha\}$, α in itself ought to be pronouceable

ii. the total absence of primes must also be phonetically interpretable: $\{\alpha\}$ minimally contrasts with $\{\}$, the empty skeletal slot (3bv–vi) ought to be pronounceable, but, more importantly, it is predicted to exist

(5) some language types

with respect to the five constraints mentioned below at least[1] the following types of language are possible

	#V	C#	VV	CC	CC#	inventory
type 1	*	*	*	*	*	CV
type 2	*	✓	*	*	*	CV, CVC (only _#)
type 3	✓	*	✓	*	*	CV, V
type 4	*	✓	*	✓	*	CV, CVC
type 5	✓	✓	✓	*	*	CV, V, CVC/VC (only _#)
type 6	✓	✓	✓	✓	*	CV, V, CVC, VC
type 7	✓	✓	✓	✓	✓	CV, V, CVC, VC, CVCC, VCC

(6) there are two strategies for responding to the increase in superficial complication of CV patterns

a. strategy 1: "what you see is what you have", we stick to *superficial* patterns and add a new syllable type to the inventory of syllables every time the existing inventory is unable to parse a string (this is fine if syllables are superficial phenomena, like in, e.g., Kahn 1976)

i. problem: we get a dynamically expanding syllable inventory as the language type becomes more liberal

ii. partial solution: we can cut down on syllable types by listing only onset and rhyme types: type 7, for example, will then involve a two-member onset inventory

[1] I don't know if the implications $\#V \supset VV$ and/or $VV \supset \#V$ hold. I here assume they do.

({∅, C}) and a three-member rhyme inventory ({V, VC, VCC}) (cf. Aoun (1979), who attributes the source of the idea to Morris Halle); this still leaves us with quite many types

b. stategy 2: "what you see is only the surface", we stick to a few *underlying* "syllable types" and increase superficial types by different interpretations of the same underlying types
   i. GP claims that syllabic constituents are defined by the relation between skeletal positions (if a C governs another C to its right, they constitute a branching onset; if a C governs another C to its left, the first is a coda, the second an onset; if a V governs another V to its right, they constitute a branching nucleus, etc.)
   ii. when no government relation can be posited between two consonants, an empty nucleus is posited between them (they are a bogus—only-superficial—cluster), i.e., some closed syllables are represented as a full followed by a degenerate "syllable" (cf. Aoun (1979), who proposes the representation only for superheavy syllables—CVC.C/CVV.C)
      α. as a result, the syllabification of VC_1C_2V follows from the phonetic properties of C_1 and C_2, i.e., whether they are governors or governees (charm value, complexity, etc.—independently establishable properties): in -mp- C_2 governs C_1, hence this is a coda–onset cluster, in -tr- C_1 governs C_2, hence this is a branching onset, in -ml- neither C governs the other, hence this is a bogus cluster
      β. problem 1: if the C-to-C government relationship (in, e.g., [-tr-]) defines a branching onset, the onset constituent itself becomes somewhat redundant (cf. Takahashi 1993); all it encodes is the consonantalness of the segments associated with it
      γ. problem 2: the C-to-C government relationship in, e.g., [-mp-] does not define any kind of syllabic constituent (the story about constituent vs. interconstituent government is not convincing: why don't onset heads govern nuclear complements?)
      δ. problem 3: the theory does not exclude the "bogus" representation for *any* CC cluster, i.e., one can't be sure how to parse (and why!) the -ɪfrə- in dɪfrəns (*difference*) and pərɪfrəsɪs (*periphrasis*)?

c. strategy 2b (a radical extension of strategy 2): *all* closed syllables are represented by degenerate syllables: CV.C (cf. Lowenstamm (1996), who claims that only syllables of the CV type exist; Harris & Gussmann (1998 : 141), who claim that syllabaries typically analyse closed syllables like this; Scheer & Szigetvári (2002), who show that stress assignment rules are much less stipulative if closed syllables are CV.C, syllables with a long vowel are CV.V)

	#V	C#	VV	CC	CC#	inventory
type 1	∗	∗	∗	∗	∗	CV
type 2	∗	✓	∗	∗	∗	CV, C (only _#)
type 3	✓	∗	✓	∗	∗	CV, V
type 4	∗	✓	∗	✓	∗	CV, C
type 5	✓	✓	✓	∗	∗	CV, V, C (only _#)
type 6	✓	✓	✓	✓	∗	CV, V, C
type 7	✓	✓	✓	✓	✓	CV, V, C

i. what we have then is a maximum of three types of syllable: CV, V, and C; but what stops us from having strings like C.C.C.CV...? Aoun (1979) claims that degenerate syllables are more costly than normal ones, but how can this cost be calculated?

ii. let us claim that the three types of syllable are CV, ∅V, and C∅, or, more elaborately CV, cV, and Cv (where lowercase letters represent skeletal slots unassociated with melodic primes); let us further assume that the defining property of C slots is muteness, that of V slots is loudness (cf. Dienes & Szigetvári 1999)

iii. accordingly the cost of degenerate (Cv) "syllables" is in having to silence their inherently loud v part; syllable types are a function of which v positions of the skeleton can be muted

(7) conclusions

a. about abstractness

there are facts that are very easily explained by making reference to some segment x being in coda (cf. Kahn 1976): saying that it is attached to a coda constituent is no more concrete/natural than claiming that it is followed by an empty nucleus, or that it is unlicensed, these are all theoretical notions devised to capture empirical facts

b. about orthodox government phonology

orthodox GP fails to go all the way along the path it opened by accepting empty nuclei on a large scale

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