

CYCLIC ACCENTUATION IN YORÙBÁ*

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ABSTRACT: In Standard Yorùbá phonology, lexically spurious H tone marks each cyclic node, like English nuclear stress (Bresnan 1971, Cinque 1993, Wagner 2005, Zubizarreta & Vergnaud 2006). Squaring this fact with assumed tonal autonomy forces a choice between two *ad hoc* analyses: either (i) amnesty all spurious Hs as homophonous "tonal morphemes" (Welmers 1959) or else (ii) sprinkle them as pitch accents into an unrestrictive "autosegmental-metrical" mix (Ladd 1996). But the circularity is avoidable, because tones are generative impostors, first induced by structuralist discovery procedures (Jones 1928, Chao 1930, Pike 1948) then pasted wholesale into formalist notation (Williams 1971, Leben 1973, Goldsmith 1976). The critique of taxonomic phonemics (Halle 1959, Chomsky 1964) should favor the derivational theory "...that it will not be possible to classify languages into 'tone languages' and 'languages with pitch accent system' in any non-arbitrary way, but it will be possible to speak of a language as having a pitch accent system up to some point in the ordering of its rules and having a tonal system from that point in the rules on" (McCawley 1970, 529). Forty years later, Clements & al. finally concede the argument "against universal tone features" and accept that the role of perceived pitch in human language is limited to "monodimensional... scales... directly interpreted in the phonetics" where "observed patterns of alternation... are typically random and arbitrary" (2010, 20f., cf. Hyman 2010, *pace* Hyman & Schuh 1974).

In Standard Yorùbá, a lexically spurious H tone marks each cyclic node, like English nuclear stress (Bresnan 1971, Cinque 1993, Wagner 2005, Zubizarreta & Vergnaud 2006). Squaring this fact with assumed tonal autonomy forces a choice between two *ad hoc* analyses: either (i) amnesty all the spurious Hs as homophonous "tonal morphemes" (Welmers 1959), or else (ii) sprinkle them as pitch accents into an unrestrictive "autosegmental-metrical" mix (Ladd 1996). But the circularity is avoidable, because tones are generative impostors, first induced by structuralist discovery procedures (Jones 1928, Chao 1930, Pike 1948) then pasted wholesale into formalist notation (Williams 1971, Leben 1973, Goldsmith 1976). The critique of taxonomic phonemics (Halle 1959, Chomsky 1964) should favor the derivational theory "...that it will not be possible to classify languages into 'tone languages' and 'languages with pitch accent system' in any non-arbitrary way, but it will be possible to speak of a language as having a pitch accent system up to some point in the ordering of its rules and having a tonal system from that point in the rules on" (McCawley 1970, 529). Forty years later, Clements & al. finally concede the argument "against universal tone features" and accept that the role of perceived pitch in human language is limited to "monodimensional... scales... directly interpreted in the phonetics" where "observed patterns of alternation... are typically random and arbitrary" (2010, 20f., cf. Hyman 2010, *pace* Hyman & Schuh 1974).

1. Tones are e-language

In the Benue-Kwa (BK) branch of Niger-Congo, syntactic accentuation has been drowned out by mainstream phonology.¹ Tonemes, coined from superficially minimal pitch contrasts in non-European languages (Jones

1928, Chao 1930, Pike 1948), were naively carried over as objects of generative computation (Williams 1971, Leben 1973, Goldsmith 1976), but in retrospect the alleged primes are descriptively inadequate. Whether it concerns H/M/L (in Nupe, Gbè, Ìdomà and Yorùbá) or H/L (elsewhere in BK), syntagmatic distributions are both “restricted” and “predictable” (Smith 1964, 168, Stahlke 1971, 1976, Voorhoeve 1973, Armstrong 1983, 126, 130, Akinlabí 1985, Odden 1988, Kimenyi 2002, Harrison 2005). Paradigmatic puzzles also abound: in the ternary BK languages, the unmarked tone is uniformly M except in Ìdomà where for some reason it’s L (Armstrong 1985, 4, 19). Among the binary languages, a covert ternary distinction is needed in southern Igbo for CV roots (Swift & *al.* 1962, Èménanjo 1981, Nwáchukwu 1995) and in kiNande/luYiira for CVCV stems (Hyman & Valinande 1983, Hyman 2001). Diachronically, too, phonology can’t explain how “the original Bantu tonemes have become reversed” in chíLùbà (Greenberg 1948, 198, cf. Burssens 1939, Clark 1988, Phillipson 1999). The list of tonal mysteries is open-ended.

Faced with a lopsided formal opposition, the classic response since Prince Trubetsky (1939, 66) and *paṇḍit* Pāṇini (Joshi & Kiparsky 1979) has been to treat the redundant value as the ‘elsewhere’ (unspecified) state of a privative feature, filled-in on the surface but not directly manipulable in grammar. Government Phonology even axiomatised the idea, banning minus values so as to capture “the notion of a possible phonological system” (Kaye & *al.* 1985, 327, cf. Kaye 1988a). But then a dilemma ensues. In Yorùbá, unspecified M disturbs rule economy and requires that “tone spreading is *not* automatic” (Pulleyblank 1983, 142, original italics). Similarly in Japanese, “sparse tone” demands “context-dependent... realization” (Pierrehumbert & Beckman 1988, 34, 52*f.*).

The only way out is to drop the thesis of autonomous tone.² “OT” achieves this by renouncing structure entirely, treating grammar as a black box and emulating its output as “emergent” from a given filter ranking (Olá 1995, Pulleyblank 2004, Archangeli & Pulleyblank 2015a,b, Flemming & Cho 2015).³ The structure-friendly alternative is to obtain surface tones from accents as defined in *systematic phonemics* alias PF—an abstract underlying representation “deeply determined by properties of both the syntactic and the phonological component” (Chomsky 1964, 68, cf. Halle 1959, Kaye 1988b, 1995, Scheer 2010a, *pace* Bromberger & Halle 1989). McCawley took the latter tack (1964, 1965, 1970), founding a dissident school (Clark 1978, Odden 1985, Sietsema 1989, Bamba 1991, Whitelock 1991, Liberman 1995, Manfredi 1995, Purnell 1997, Akinlabí & Liberman 2001, 2013, *pace* Poser 1984, Hyman 2009). Excluding tone features from grammar doesn’t prevent “monodimensional” tonal “scales” to be “directly interpreted in the phonetics” (Clements & *al.* 2010, 20*f.*) up

to any desired approximation of the observed acoustic signal, as shown in speech lab models of Yorùbá (Connell & Ladd 1990, Láńí.ran 1992).⁴

The moral of the story is that, even if OT and PF share nothing else, they do agree that traditional tone labels pertain strictly to *e-language*—“externalized” or “extensional” language (Chomsky 1986, 20). This conclusion follows, either vacuously because *everything* is e-language (OT), or else substantively because “tones”—taxonomic quanta of lexical pitch contrast—are unworkable as atoms of the auditory interface (PF). A mass of Yorùbá evidence is consistent only with the latter state of affairs.

2. Why this article is not about H-tone insertion

Kaye (1997) warned not to oversell the contributions of phonology to audible form. A case in point: the exotic idea that a human language would mark each phrase of syntax with a stray phoneme. For the Yorùbá data considered below, a reviewer prefers to speak of “cyclic H tone” than to invoke the “controversial” idea of *accentuation*, but the standard concepts of *pitch accent* and *stress accent* show that the term *accent* by itself is abstract enough to cover phenomena traditionally labeled *tone* as well as *stress*. Nobody suggests that Yorùbá operates the latter, and there can be many independent reasons why Yorùbá “H tone” would sound different from English main stress, such as the markedly different shapes of roots and syllables in Germanic versus Benue-Kwa—differences which are well within the ability of CV phonology to express. But any such reasons are guaranteed to remain obscure, so long as the observed formal similarity of pitch and stress accent is swept under the typological rug.

Within a derivational framework, to deny the formal autonomy of tone entails that rule-governed contrasts of perceived pitch have an accentual source. The same conclusion is forced by *lexically spurious tones*— F_0 events in sentences which were never smuggled in, encapsulated, inside of words.⁵ In principle, non-lexical tones are no different from intonation: they may be less gradient in Yorùbá than they are in Bolinger’s wry characterization of English (1972), but fluctuations are nonetheless observed, as discussed in §3 below. Some of these may be grist for standard phonology, but others track LF ambiguity and therefore diagnose i-language. Neither type of variability undermines the core facts.

Standard literature on Standard Yorùbá reports five kinds of obligatory surface H tones displaying twin properties: (i) they lack the semantic content of an open-class lexical item, (ii) their distribution is patently governed by core phrasal syntax. The environments are indexed in (1) and exemplified in (2), where the phenomena of interest appear in boldface.⁶

- (1) a. *nominative case* (2a,b,d)
(Oyèláràn 1970, 127-38; Awóbùlúyì 1975)
- b. *accusative pronominal clitic* (2a)
(Ward 1952, 81, Bámgbósé 1966a, 106)
- c. *infinitive null subject* (2b)
(Awóbùlúyì 1970, Bámgbósé 1971, Awóyalé 1983)
- d. *gerund proclitic* (2c)
(Ward 1952, 70f., Kújòòrè 1972)
- e. *relative complementizer* (2d)
(Bámgbósé 1966a, 115, Ajibóyè 2005, 87-136)
- (2) a. [TP **Iṣú** [VP wù [DP [NP **wón**]]]]. [MH[L[H]]]
yam.H please 3P.H
'(The) yam pleases them'
- b. [TP **Iṣú** [VP wu omò [CP **-ón** [VP je]]]]. [MH[M MM[H[M]]]]
yam.H please child -H eat
'(The) yam appetizes a/the child'
- c. iṣu [DP **jí**-[VP je]]. MM[H[M]]
yam H- eat
'yam-eating'
- d. iṣu [CP **tí** [TP omó [VP je]]] MM[H[MH[M]]]
yam C.H child.H eat
'the yam(s) which a/the child ate'

The seven boldface tokens of H in (2) are all obligatory and also all lexically spurious: none is inherent to the CV string it overlaps in time. The only possible controversy concerns the H of *tí* in (2d), but several observations converge on a non-lexical decomposition of this formative:

- (3) The [t i] Comp lacks H just if its complement is purely nominal i.e. nonclausal (Ajibóyè 2005, 106).
- a. [CP **tí** [TP omó [VP je _]]]
C.H child.H eat
'...which a/the child ate'
- b. [CP ti [NP omò]]
C child
'(something/someone) pertaining to a/the child'

- (4) In contexts where a *wh*-dependency is already salient, relative *tí* alternates stylistically (i) with H alone for subjects, or (ii) with zero for objects, thus the autonomy of H in relative Comp depends on phrasing (Abraham 1958, 638, Owómoyèlà 2005, 66, cf. Bámgbósé 1968, 77, Price 1959).
- a. [Ení [CP dé adé]] ti kùrò ní omòdé.
someone.H cover crown ADV leave LOC childhood
'Someone who wears a crown is no longer a child'
- b. [Eni [CP (**tí**) a fẹ]] ni a mò.
someone C.H 1P like be 1P know
'One likes who one knows'
- (5) All of Yorùbá's five other CV Comps also bear H: indicative *ní* and *pé*, subjunctive *kí* and interrogative *bí* and *ṣé*.
- (6) Standard *tí* with H corresponds in the Mòbà dialect to *ti ni* with M M (O. Ajibóyè, *p.c.*). This is relevant because copular *ni* of Standard Yorùbá is in complementary distribution with nominative H (Abraham 1958, 435), hence the two inflectional formatives are abstractly identical.

Analogous effects in chiBemba are called “structural tones” (Sharman & Meeussen 1955)—but of which structures? Phonology avoids the question by introducing *ad hoc* “tonal morphemes” (Welmers 1959), “floating tones” (Voorhoeve & al. 1969) and other “featural affixes” (Akinlabi 1996). All these post-PF “pieces of inflection” (Halle & Marantz 1993) alias “débris” (Halle 2004) are inevitable byproducts of methodologically segregating “two basic levels, phonological and grammatical” (Hockett 1942, 3), but they're unthinkable if phonology is “non-autonomous” (Chomsky 1964, 106).⁷ It seems reasonable to derive a spurious H like nominative (1a) from an inflectional “functional head” (Awóyalé 1995a, 115, cf. Déchaine 1992, Manfredi 1992, 210), except that (1a) is not alone in (1). The contexts of non-lexical H being multiple, category-specific spellouts must be multiplied and the “coincidence” of their multiplicity excused as “a tolerable result” (Williams 1971, 481). In Ìgbo—the first language where autosegmental theorists confronted morphotonemic homophony—Williams underestimated how much tolerance need be shown. Covering Ìgbo in more detail, Clark found not two but five phonetically identical, categorically distinct, lexically listed formatives, each one exclusively comprising a H tone (1989, 10).⁸

With *quantitative easing* of the morphological *fiat* coin, tonology stays one step ahead of the empirical *repo-man*, but in the long run there's no free lunch.⁹ Five H morphotonemes might conceivably arise in one

language by accident, but only if the five contexts weren't syntactically close and if similar profusion didn't recur in other languages. The facts being otherwise, homophony reduction is unavoidable and leads to analyses that diacritic morphology can't express.

DP=TP ("IP") isomorphism (Abney 1987) captures four of the five contexts of spurious H: (1a) overt nominative subject, (1b) clitic as DP (Uriagereka 1995 modernising Postal 1969), (1c) null infinitive subject alias "null case" (Chomsky & Lasnik 1993) and (1d) null subject of the gerund. Treating Yorùbá gerunds as DPs is less obvious, because they reject an overt subject in contrast to English *poss-ing* (7) (Awóyalé 1974b, 353, Abney 1987, 110, 142), but this could be a masking effect: Yorùbá lacks a structural genitive and makes do with adjunction (8), marked at PF by an epenthetic toneless mora which is optional prevocally (Ajíbóyè 2005, 62) and at LF by systematic ambiguity between apposition and possession (Awóbúlúyì 2004, 'S. Oyèláràn *p.c.*). Other hints that the Yorùbá gerund contains a null subject are the optionality of object preposing from unergatives (9a) and the hunch that preposing from unaccusatives (9b) is "stylistic" (Awóbúlúyì 1967, 126, Awóyalé 1974a).

- (7) a. [Sigá mí-mu]-ú wù mí.
cigar H-drink-H please 1s
'Smoking (by me or others) pleases me'
- b. *[[Sigá mí-mu]-u Tá yò]-ò wù mí.
cigar H-drink-M T.-H please 1s
- c. [Tá yò's [smoking cigars]] pleases me.
- (8) [[ò gá]-a Tá yò]
boss-M T.
'Boss T.' or 'T.'s boss'
- (9) a. Mo fẹ̀ràn-an [oko rí-ro]. ~ Mo fẹ̀ràn-an [rí-ro oko].
1s like-M farm H-hoe 1s like-M H-hoe farm
'I like farming' 'I like farming'
- b. Mo fẹ̀ràn-an [ẹ̀ran sí-sẹ̀]. *Mo fẹ̀ràn-an [sí-se ẹ̀ran].
1s like-M animal H-boil 1s like-M H-boil animal
'I like cooking meat' 'I like cooked meat'

Given DP, lexically spurious H in (1a-d) can be unified in two ways: representationally by assigning it to a multifunctional, Abneyan D=I morpheme, or derivationally by invoking a configuration: the *cyclic node*

(Chomsky 1973, 243, cf. Chomsky & Halle 1968, 15, Bresnan 1971, McCawley 1999) alias *strong phase* (Chomsky 2001, Dobashi 2004, Ishihara 2004, Richards 2010, Scheer 2011). The morphological solution still leaves out CP (1e), but phase theory covers all five contexts: CP, vP are primordial strong phases (Chomsky 2001, 12), DP is the new name of the "NP-module" (Riemsdijk & Williams 1981, 186) and TP arguably qualifies as a phase parametrically in the Benue-Kwa subclade to which Yorùbá belongs.¹⁰ Phase theory has the further advantage to motivate spurious H prosodically, as structural accentuation.

For the self-styled "standard theory" of PF, "prosodic structure is not syntactic structure, nor is it isomorphic to it" (Selkirk 2011). This weak claim is protected by a strong hedge, that "prosodic structure reflects syntactic structure in certain ways" (Selkirk 1978, 138, cf. Nespor & Vogel 1986, Truckenbrodt 1995), but the worldview of nonisomorphism presumes a "hierarchy" of "layered" *sui generis* constituents like "prosodic word" and "intonational phrase", each with its own handcrafted boundaries (cf. Scheer 2008).¹¹ Inevitably of course, the need to "relate phonological phrases to syntax" (Truckenbrodt 2007, 451) concedes a "restricted role to the syntactic derivation in determining sentence phonology" so as to rescue any "effects not capturable by a post-syntactic phonological interpretation" (Kratzer & Selkirk 2007, 132), but the opposite approach is less inoculated against disproof. In "minimal indirect reference" (Seidl 2000b, cf. Kaisse 1985), direct syntax-phonology mapping is the null hypothesis, so mismatches are the explananda not the norm. Minimalism allows the simplest direct mapping of them all, that "the N[uclear] S[tre]ss R[ule]... is a function of Merge" (Zwart 2004, 6). Analyses consistent with this architecture are not limited to Indo-European phrasal accent (Cinque 1993, Zubizarreta 1998, Legate 2003, Kahnemuyipour 2004, Arregi & Oltra-Massuet 2005, Wagner 2005, Zubizarreta & Vergnaud 2006, Sato 2009) but can't be withheld from "tone languages" (Ishihara 2004, Manfredi 2008, Cheung 2009).

For example, Minimalist direct mapping has a straightforward account of the pattern in (1). Building on the generalization that "an empty CV site precedes every major category" (Lowenstamm 1999, 164), Scheer argues that the only nondiacritic format of "intermodular translation" from syntax to phonology is "syllabic space... or strict CV" (2012), and that the major legitimate operation of this theory is "insertion of an empty CV unit" at the left edge of a spellout domain, pronounced "according to the context and the domestic phonological patterns at play" (2008, 181).¹² One domestic consideration is the difference between stress and tone. Descriptively, syllable weight determines the parsing of stress feet (e.g. Stowell 1979, Giegerich 1985), but this is less true for the distribution of stereotypical tones.¹³ The total irrelevance of syllable weight in Yorùbá guarantees that

a phase-initial empty CV (10a) is pronounced H—the head of the Yorùbá foot, given in arboreal format in (10b).¹⁴

(10) a. $[_{XP} X \emptyset [_{YP} \dots]$ (X = phase head, YP = spellout domain)

CV

b. (Manfredi 1995, 175)

[L] [H] [M]

The next question is how phase-initial H linearises on a tone-bearing unit. Observed outcomes include feature sharing (copying), epenthesis (insertion of default content), “docking” to an existing lexical item as well as the blocking of spellout altogether, cf. (11). These rules are already “domestically” active in various other phrasal configurations of Yorùbá, so they don’t need to be specially indicated for cyclic H, in fact they can’t be in the spellout theory, whereas tonal morphology can—must—tailor-make all the underlying forms to suit the observed outcomes.¹⁵

phase head *segmental carrier*

- | | | |
|------------------------|------------------------|--|
| (11) <i>nominative</i> | T \emptyset $[_{VP}$ | 3S, expletive: <i>o</i> -epenthesis (12c)
lexical item: docking (2a,b,d)
modal aux: *H (13)
(Awóbùlúyì 1975, Oyèláràn 1982, Awóyalé 1991, Déchaine 1992, Adéşolá 2010, 80) |
| <i>accusative</i> | D \emptyset $[_{NP}$ | non-3S <i>pro</i> : CV clitic (2a)
3S: empty mora (not shown)
lexical item: *H, v- ‘elision’ (not shown)
(Oyèláràn 1972, Elimelech 1982, Pulleyblank 1986, Akinlabí & Oyèbádé 1987, Carstens 1987, Akinlabí & Liberman 2000, Seidl 2000, Déchaine 2001) |
| <i>infinitive</i> | T \emptyset $[_{VP}$ | empty mora (2b)
(Awóyalé 1995b) |
| <i>gerund</i> | D \emptyset $[_{VP}$ | c-copy, v-epenthesis (2c)
(Pulleyblank 1988, 267, Akinlabí 2004, 2007) |
| <i>relative</i> | C \emptyset $[_{TP}$ | toneless <i>ti</i> (2d)
(Ajíbóyè 2005) |

In functionalist approaches, the abstract syntactic contexts listed in (1) and (11) are unavailable. Yorùbá is so impoverished in Comriean case that it rates no single mention in a recent book-length survey of “Case in Africa” (König 2008). The failure is less dramatic in Bisang & Sóná.yà’s “theory of markers” where the item in (1a=11a) is glossed as a pragmatic “operator which actualizes or validates the relationship between a predicate and a subject within a state of affairs” (1999, 1, cf. Culioli 1990). Taxonomy has no choice but to label every audible sign as a “marker” of something or other, whereas derivational syntax need not—or cannot—consider nominative as “marked” at all. For Bittner & Hale (1996), nominative is crucially an *unmarked* default in relation to some “direct” (marked) case—either accusative or ergative depending on the language. If the sound-meaning relation is mediated by the syntactic engine, there’s no need for a lexically spurious item to be meaningful on its own. Bisang & Sóná.yà concede this point *sotto voce*, when they allow that Déchaine’s (1992, 1993) analysis of nominative H “as a ‘last resort strategy’ may be motivated from a purely syntactic point of view” (1999, 7).

Cyclic spellout de-recognizes tones as computational atoms, not just for prosodic inflections and intonations, but even for traditional “lexical” contrasts. This is not a bug but a feature. Phonologists tend to overrate the distinction between lexical and phrasal modules, whereas “word-level” phonology shows “lexical non-integrity” (Giegerich 2015) and lexical listing is possible for any audible string, not just for Bloomfieldian “syntactic atoms” (di Sciullo & Williams 1987). In tropical Africa, missionary notions of minimal lexical contrast are artefacts of taxonomic word division. The “Dokean” conjunctive word blocks metrical analysis by foisting the impression that “penultimate lengthening” is not a normal phrasal rule (Zerbian 2007, cf. Odden 1999, Manfredi 2008). Even in Yorùbá with its syntax-friendlier disjunctive writing style, category labels and word boundaries induced from naive English translation equivalence have hidden phonetic and semantic cues of a “word-internal” boundary between V- “prefix” and nominal CV root (Oyèláràn 1970, 96f., Stahlke 1976, Awóyalé 1974b, 392-94). Dismissing translation-based “words” permits a more adequate analysis of Yorùbá “nouns” as univerbations of a classifier-plus-bare-noun phrase, *nP* (Seidl 2000a Ajíbóyè 2005, Manfredi 2009b). The syntactic transparency of *nP* explains why Yorùbá “lexical” nominalizations are more productive than the 1970’s “lexicalist” (N^0) hypothesis would expect (Awóyalé 1974b, Manfredi 1992).

In sum, not only has lexical tone imposed an onerous burden on generative grammar, obscuring compositionality cues, but it’s not needed anyway because impressionistic surface tones can and should be encoded cost-free as accents in listed phrasal fossils alias “words”. This result helps

“phonetic implementation” (Lání.ran 1992) by drawing the distinction between i-language and e-language in a non-circular way.

3. Grammar or gradience?

While the prosodic phenomena exemplified in (2) are clearly obligatory, others have been described as optional. In Standard Yorùbá, nominative H (1a) alias “high tone junction” (Bámgbósé 1966a, 33; cf. Ward 1952, 46) fails to show up before a closed set of modal auxiliaries that Oyèláràn calls “non-aspectual preverbs” (1970, 157, cf. Oyèláràn 1972, Déchaine 1992). The same set of auxes display correlated properties of inflection for a clitic subject, rejecting nominative *mo* ‘1s’ and *ó* ‘3s’ (12) in favor of non-nominative *mi/ń* ([ŋ]) and 3s *pro*-drop respectively (13).

- | | |
|--|--|
| <p>(12)a. [TP Àgbè-é [VP lọ]].
farmer-H go
‘(The) farmer went/has gone’</p> <p>b. [TP Mo [VP lọ]].
1S.NOM go
‘I went/have gone’</p> <p>c. [TP Ó [VP lọ]].
3S.NOM go
‘3S went/has gone’</p> | <p>(13)a. [TP Àgbè (k)ò [VP lọ]].
farmer NEG go
‘(The) farmer didn’t go/
hasn’t gone/won’t go’</p> <p>b. [TP Mi/ń (k)ò [VP lọ]].
1S NEG go
‘I didn’t go/haven’t
gone/won’t go’</p> <p>c. [TP <i>pro</i> Kò [VP lọ]].
3S NEG go
‘3S didn’t go/hasn’t
gone/won’t go’</p> |
|--|--|

In the accentual analysis, a high or modal aux fills the phase-initial CV (10a), directly blocking accentual spellout (13), QED. The stubborn residue of cased clitic morphology is irregular but easily handled by a variety of means including brute-force listing, since the forms are few.

Bámgbósé described “free variation” in the appearance of spurious H before the modal auxes *á* and (*y*)*ó*ò, or after a subject embedded under *kí*, the subjunctive Comp (1966a, 35; 1967, 36, cf. Abraham 1958, 1, 683).

- | | |
|--|---|
| <p>(14)a. [TP Èró á [VP pò]].
crowd.H MOD plentiful
‘There will be many people’</p> <p>b. [TP Èmí òò [VP lọ]].
1S.H MOD go
‘I will go’</p> <p>c. [CP Kí [TP ọmọ-ó [VP sá]]]!
C.H child-H run
‘Let the child run away!’</p> | <p>(14’)a. [TP Èrò á [VP pò]].
crowd MOD plentiful
‘There will be many people’</p> <p>b. [TP Èmì òò [VP lọ]].
1S MOD go
‘I will go’</p> <p>c. [CP Kí [TP èyàn [VP dédé dide]]]
C.H person sudden get.up
‘Suppose one suddenly got up’</p> |
|--|---|

But this variation is not “free”, for four reasons. First, any expressed *preference* (e.g. Awóyalé 1991, 195) asymmetrically favors the absence of spurious H (14’a,b) over its presence (14a,b). Second, a plausible derivational source exists for spurious H after the embedded subject (14c), namely in CP2 of examples with Comp recursion (15), whereas examples without CP2 (15’) follow the pattern of (14’c) without spurious H, cf. Abraham (1958, 365).¹⁶

- (15) Mo sọ pé [CP₁ kí [TP àwọ̀n [CP₂ (k’) [TP ó [VP lọ]]]]].
1S say C.H C.H 3P C.H 3S go
‘I ordered them to go’
- (15’) Mo sọ pé [CP kí [TP wọ̀n [VP lọ]]].
1S say C.H C.H 3P go
‘I ordered them to go’

Third, it happens that Standard Yorùbá does not combine morphologically nominative clitics like *mo* ‘1s’ and *ó* ‘3s’ with any modal aux, but this logically possible outcome should be just as “optional” as the forms in (14a,b), if the exclusion of spurious H by any modal aux was really an “erroneous impression” as alleged (Bisang & Sóná.yà 1999, 6 *fn.* 5) and if the distribution of spurious H was not governed by derivational syntax. Fourth, the fact that both *á* and (*y*)*ó*ò intrinsically begin with H provides a ready target for phonetic anticipation in (14a,b), offering a straightforward explanation for spurious H before these modals as an effect of e-language enhancement, interpolation or optimization (Stevens & *al.* 1986, Hume & Johnson 2001, Li 2003, Reinhart 1997). This OT-like wrinkle contrasts with, but does not threaten, the lawlike character of (10).¹⁷

Endnotes

* Dedicated to Morris Halle *ceteris paribus*. The honoree of this *Festschrift*, the *oní.pàṣpákunrin* of the Ìlòrín school, discovered the syntax of Yorùbá PF and infused it with his powerful *oògùn esè òlogbón. È sè gan-an ni!* Thanks to the editors, to U. Ansaldo, A. Bámgbósé, M. Bamba, M. Charette, L. Cheung, G. Cinque, M. Clark, late G. Clements, M. Dakubu, R.-M. Déchaine, L. Dilley, S. Duanmu, late 'N. Éménanjo, late K. Hale, late M. Haverkort, H. vd. Hulst, E. Keenan, Y. Lání.ran, M. Liberman, J. Lowenstamm, A. Nevins, D. Odden, 'S. Oyèláràn, W. Poser, late K.-L. Sáinz Almoguera, T. Scheer, R. Schuh, A. Szczegielniak, M. Wagner, Y. Xu, J.-W. Zwart and the 1980-81 members of the Department of Linguistics & Nigerian Languages, University of Ìlòrín. Caveat on Yorùbá spelling: this paper applies the standard orthography (Bámgbósé 1965, 1966b) even to proper names, at the cost of some authors' traditional nomenclature which can be recovered from the bibliographic references.

¹ Benue-Kwa—alias *Tano-Congo* (Stewart 1983, 20) and *East Volta-Congo*—is a “dialect continuum” (Williamson & Blench 2000, 17*f*). Its subgrouping was specially debated at the 15th West African Languages Congress (Port Harcourt, 1982) “as a consequence of the abandonment of the Kwa/Benue-Congo dichotomy” (Williamson 1989, 17, cf. de Wolf 1971). Conflicting results of word counts (Bennett & Sterk 1977, Schadeberg 1986) vs. grammar innovations (Stewart 2002, Manfredi 2009a) leave Yorùbá in classificatory limbo between “(New) Benue-Congo” (Williamson 1989), (Old) “Kwa” (Aboh & Essegbey eds. 2010) and other possible subclades.

² Even adopting linear (“string-based”) as opposed to autosegmental representation doesn't alter the conclusion that tone rules, located within the standard hierarchy of formal language complexity, are computationally closer to syntax than segmental phonology is (Jardine 2016, 263, 276).

³ *Optimality theory* (OT) is a misnomer: a theory is falsifiable whereas OT is a mere *procedure*—a compiling technique to emulate any given theory (E. Keenan *p.c.*, cf. Fodor & Pylyshyn 1988 Idsardi 2006, Scheer 2010b, 214). So-called “stratal” OT straddles the two incommensurate worlds, bolting OT's parallel calculus onto lexical phonology's extrinsic order (Kiparsky 1982, 2015, cf. Pesetsky 1979), but the hybrid is still stuck with an unbridgeable separation of phrasal grammar from listed ‘words’ whose consequences are descriptively inadequate (Kaye 1988b, Lowenstamm 2013, Giegerich 2015).

⁴ A similar argument had already been made by Clements (1984, 289) in order to rescue the tonemic analysis of Gíkūyū (alias “Kikuyu”).

⁵ *Lexically spurious* is undefined in a lexicon where all relevant outputs are already “precompiled” in parallel lemmas (Hayes 1990).

⁶ Yorùbá linguists use various labels for the sets in (1), but the glosses matter less than membership in some closed (“functional”) class as opposed to either the “semi-lexical” (Corver & Riemsdijk 2001) or open-class (“lexical”) vocabulary. The lexical L of the *wù* (2a) fails to parse in (2b), arguably because of footing in the surface accusative context (Déchaine 2001).

⁷ A third possibility is that the tonal listemes of English are “psychologically... holistic” (Liberman & Sag 1974, 421) i.e. “ideophonic” (Liberman 1975, 146*f*) and not “morphemic” (Pike 1945, Bolinger 1958, 145). But it's hard to detect an “iconic... mode of meaning” in any of the data in (1), even though Yorùbá is rich in tonally inflected ideophones (Awóyalé 1974b, 256, cf. 1995c).

⁸ After public browbeating by Clements & Goldsmith (1980), Clark recanted her (1978, 1980a,b) McCawleyan pitch-accent analysis.

⁹ And not just for tone: in the CV skeleton, taxonomy discovers multiply homophonous verb extensions, the “-rV suffixes of Ìgbo” (Nwáchukwu 1976, cf. Green & Ígwè 1963, 54-58, Winston 1973), but a generative alternative—CV epenthesis at PF—is viable because -rV is toneless, its segments are phonologically unmarked, and all the insertion slots are independently motivated in phrase structure (Manfredi 2005b). By parallel reasoning across Benue-Kwa, the taxonomic—or “morphocentric” (Hyman 2002)—mystery of variant linearization of alleged “suffixes” in conjunctively written agglutinative words reduces to ordinary LF scope ambiguity.

¹⁰ PF and LF tests converge on the derivational opacity of vP (or VP), separate from TP, in the tonally ternary clusters of Benue-Kwa (Nupe, Gbè, Yorùbá, Ìdòmà), whereas vP (or VP) is derivationally transparent in the remaining clusters (Àkan, Èdó, Ìgbo, Cross, Plateau, Bantoid) which are all tonally binary. This difference can be expressed as an i-language parameter of T as a phase head (Manfredi 2005a, 2009a). Dobashi (2004) finds the same contrast for Èwè vs. Chichewa, albeit using different data and notations. Restated in dynamic terms (Szczegielniak 2016), a lack of interpretable features in T “freezes” the phase complement at vP (or VP).

¹¹ Rotenberg dismissed the use of phonological boundary symbols in generative grammar as “fatalistic and slightly empty” (1974, 16), adding:

Such symbols are necessary, precisely because of the inflexibility of the bottom-up analytical procedure. ...The reason, incidentally, that boundary symbols are used only in phonology is that they were inherited directly from American structuralism, which of course had not recognized the exactly parallel “boundary effects” in syntax. (1974, 72*f*.)

¹² A reviewer objects to (10a) that “[p]honological theory *does not* have a two-segment epenthesis at the same time” (emphasis original). Exactly so, because the CV in question has nothing to do with phonology, rather it is part of PF spellout under the direct interface theory referenced immediately above, in which it represents a government domain. This CV is the GP counterpart of the structuralist

concept of “tonal morpheme”, with the crucial difference that the distribution of the initial CV is not arbitrary, but is determined automatically by the Spellout operation—something independently required by the grammar. A similar treatment awaits other “floating tones” in the Africanist literature.

¹³ In Government Phonology this parameter can be expressed as different valuations of nuclei (V-units). This predicts a crosslinguistic tradeoff between tonal and syllabic density (Manfredi 1993, 176f.; 2009b, Duanmu 2004) that’s not expressible in e-language metrics such as (\pm bracketed) “grids” or “prominence” (Prince 1983, Selkirk 1984, Halle & Vergnaud 1987).

¹⁴ Unless (10b) is translatable into a strictly “lateral” format (Scheer 2004, cf. Kaye 2001, Scheer & Szigetvári 2005, Pöchtrager 2006), perhaps the “initial CV” site can be reformulated as a free metrical foot.

¹⁵ Relevant patterns of segment-tone interaction are discussed by Awóbùlùyi (1985), Awóyalé (1995b) and Ajíbóyè (2005).

¹⁶ I can now withdraw the references in the original abstract of this paper to “optional subjunctive” (Quirk & al. 1985, 155), as well as to the “inconsistent specialization” of *will* and *shall* as [\pm volitional] modals (Fries 1925).

¹⁷ Although they draw a different conclusion from the fact, Bisang & Sóná.yà helpfully observe that H anticipation before the *á* modal is easier after a lexical subject ending in lexical M (1999, 6 *fn.* 5). This is to be expected if the H anticipation is an enhancement or interpolation effect, moreover, it contrasts categorially with the failure of nominative spurious H to parse after a singleton final-M subject like *òbúkò* ‘he-goat’ (Abraham 1958, xix, 109). Less helpfully, they assert that the modal “(y)óò is a dialectal variant of *máa*... mostly heard among speakers of the Òyó dialect... where speakers of Standard Yorùbá use *máa*” (1999, 6 *fn.* 5). But this presumed equivalence is disproved by Awóyalé who notes that *máa* is not intrinsically future but durative/habitual, which is why *máa* combines freely and nonpleonastically with (y)óò, as in *Èbùn yóò máa ló* ‘E. will be going routinely’ (1991, 211). Oyèláràn (1989) makes the same point with a host of relevant data including gerunds like *mí-máa-máa-ló* ‘the fact of habitually going’ where no hint of futurity arises.

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