To the left, to the right, and much in between: *A Festschrift for Katharina Hartmann*

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Two types of prosodic diversity masking Universal Grammar, exemplified in Ìgbo (Benue-Kwa, Niger-Congo)

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> *The popular phonemic concept was pushed into an untried field.*
> (Bolinger 1965: 3)

> *The assignment ... to a tone or pitch accent category depends entirely on the depth of the analysis. ... Viewed in this light, a tone language ceases to be a special, exotic type of language.*
> (Williamson 1967: 864)

1 *Exoticisme, non merci*

Expectedly or not, major traits of prosodic diversity across natural languages track morphosyntax. (i) The iambic vs. trochaic option, set already *in uterō*, predicts the asymmetric linear order of phrasal heads and complements after birth and after SpellOut (Nespor et al. 2008). (ii) Controlling for the direction of headedness, F_0 excursion is a proxy for covert wh-movement (Richards 2010). For starters.

Such generalizations, being "intermodular" (Scheer 2010) i.e. derivationally abstract, are unreachable from primary data tagged *ab initiō* with morpheme glosses and construction labels by an inductive "discovery procedure" (Chomsky 1957: 51). Nor does descriptive opacity dissolve simply by copying taxonomic artefacts into generative notation – not without first reanalyzing them with 'native' i-language concepts like cyclic ('nuclear') stress, a rule predicting peaks of perceived pitch in compounds and sentence constituents (Chomsky et al. 1956: 71ff., Bresnan 1971, Cinque 1993, Zubizarreta and Vergnaud 2006, Richards 2017 among many others).

Exhibit A of prosodic underanalysis is the toneme. Trialled in British Hong Kong, South Africa and southeast Nigeria as shorthand for "the tunes of the

texts" (Jones and Woo 1912: ix, cf. Jones and Plaatje 1916, Ward 1933, 1936), it spread worldwide after WW2 as a cookbook "technique for determining the number and type of pitch contrasts in a language" (Pike 1948, cf. Colby 1995) – mainly, contrasts between items glossable as graphic 'words' in a foreign analyst's foreign language. Colonial and missionary fieldwork percolated to MIT Building 20 – "the magical incubator" of Cold War military spinoffs that midwifed the computational cognitive sciences (Penfield 1997, `libraries.mit.edu/mithistory/research/labs/lcs`) – to become the secondary sources for a "generative theory of suprasegmentals" alias "the autosegmental theory" (Goldsmith 1976: 27, 50).

2 Tonemark trouble

Early generative complaints that tonemes block descriptive adequacy (McCawley 1978, Woo 1967, Williamson 1968, Clark 1978, Kim 1979) were rapidly rebuffed on mostly theory-internal grounds (Clements and Ford 1979, Clements and Goldsmith 1980, Poser 1984: 37), but while tonologues won the high-altitude skirmishes in the "battle of the mind-fields" (Goldsmith and Laks 2019), down on the ground the Westafrican *Lebenswelt* was less impressed. Àkan and Ìgbo literates, although early adopters of phonemic alphabets, remain tonemark refuseniks until today, e.g.:

> *As a tone language, every syllable (all vowels and consonants) are tone bearing units in Akuapem Twi. But tone marking is not a feature of the orthography of Akan, or of any Ghanaian language, hence tone is not marked in writing.* (Kotey 1998: 12)

Passive resistance is prudent, if "marking tone reduces fluency" (Bird 1999) and "can be confusing, even for native speakers" (Dolphyne 1996: 5). Dolphyne's Twì L2 primer is toneless, save for two examples and an audiotape attached on the behaviorist theory that "tone is best learnt by listening… over and over again" (Dolphyne 1996: 5).

One difficulty is downstep. A Twì "pronunciation dictionary" translates English 'box' as *àdákā* with a final macron (Kotey 1998: 20) while a "proficiency course" gives *àdá!ká* a phonetic juncture sign (Bodomo et al. 2010: 115) but neither marking helps much. The distribution of "!" between adjacent high tones is "nonautomatic" (Stewart 1965) i.e. arbitrary, and the 'mid' macron is worse because it entails the absurdity that "a tone following a mid tone on the same [pitch] level is a high tone" (Green and Ígwè 1963: 6f., cf. Winston 1960, Welmers 1973: 84). This 'mid' rule is inobtrusively vacuous for phrase-final word-final vowels, but pre-final downsteps abound in Ìgbo and the 'mid' macron tricked an Ìgbo-speaking linguist into writing a level final span with two completely fictive downsteps (Ògbońnàyá 1975: 111).

(1) "ákwā ụ̄fǭdū̱" [sic] 'some cloth(es)'
(vs. intended *ákwā ụ̄fọdụ* with two downsteps, not four)

'Mid' malfunction notwithstanding, an Ìgbo-speaking phonetician confidently denied downstep (Íkekeọnwụ́ 1982), then her Ìgbo-speaking student defended a denialist dissertation (Ányaanwụ́ 1998: 47) and caused new confusion by combining the 'mid' mistake with the juncture diacritic (Ányaanwụ́ 2003: 14).[1]

(2) a. "É!dé!lé !yá" [sic] 'Don't write it!'
(vs. intended *É!délé yá* with one downstep, not three)
b. "Á!dǫ́!lǫ́ !yá" [sic] 'Don't drag it!'
(vs. intended *Á!dǫ́lǫ́ yá* with one downstep, not three)

Similar mistakes crop up in student scripts too often to be individual lapses versus fallout of a paradigmatic flaw. Christaller's neat tonemarking of Twì (Christaller 1875: 15) was conceivably unknown to Ìgbo-speaking linguists, even after L. Boadi the top Twì grammarian spent two years as department head at the University of Nigeria, but it's less believable they could have missed three landmark Ìgbo books transcribing pitch by Christaller's syntagmatic economy: (i) a syllable with no mark is read as copying the preceding pitch, and (ii) successive H-marks mark successive H domains separated by phonetic downsteps (Swift et al. 1962: 49f., Welmers and Welmers 1968: iv, Nwáchukwu 1976a: 20f., cf. Tucker 1964: 600f., Roberts 2011: 84). [2]

(3) Ìgbo (LL) Úchèńdù (HLHL)
Nwáchukwu (HHH) Éménanjọ (H!HHH)

Christaller-style tonemarks (3) are useful across BK – the Benue-Kwa/East Volta- Congo "dialect continuum" of Niger-Congo (Williamson and Blench 2000: 17f., cf. Stewart 1994) – except for BK2, a geographically contiguous

[1] In (2) I've replaced Ányaanwụ́'s IPA vowel glyphs with their Ìgbo orthographic counerparts.

[2] For Swift et al. (1962) and Nwáchukwu (1976a, 1983), non-initial H marks in a sequence are not acutes [´] *à la* Welmers but vertical lines [ˈ] or macrons [¯] (Williamson 1984: 42). Nwáchukwu (1984), Nwáchukwu (1987: 3f.), Nwáchukwu (1995) made them all acute. In I zǭn ["I jo"]. (Williamson 1965: 25) used syntagmatic marking with initial L stretches unmarked *à la* Christaller, but later switched to paradigmatic tones, marking all H syllables individually while leaving all LS unmarked (Williamson 1978, 1988). A special diacritic was then needed for downstep (in eastern varieties), while (in central dialects) a phrase-final run of H syllables got a hachek [ˇ] to show an extended run of H starting on the hachek (Nwáchukwu 1983: xxvii). At Nsụ́ká the taboo on Nwáchukwu's work and the departmental turn to downstep denial may not be unconnected to official ostracism of Nwáchukwu in retribution for his resolute trade-union activism (cf. Nwáchukwu 2006).

and syntactically innovative subclade comprising Yorùbá, Ìdọmà, Nupe and Gbè, where lexical pitch contrasts are ternary, so each syllable must be separately labeled H [˝] or L [ˆ] or else left unmarked as a true M – the glottal rest state of "neutral tone" or " 'natural' pitch" (Woo 1969: 13, 246, cf. Siertsema 1958: 583, Akinlabí 1985, Manfredi 2009, 2020). Paradigmatic ternary tonemarks – popularly known in Nigeria by the *solfeggio* slogan *dò-re-mí* – were so well received in Yorùbá schools Crowther (1852: ii) (cf. Àjàyí 1960) that, when Ìgbo literacy started to reboot "after the blackout" of Biafra (Émènanjọ 1984a, cf. Áfìigbo 1975, Ọ́gbàlụ́ 1975, Àchebé 1976, Nwáchukwu 1983). Ìbàdàn linguists prescribed *dò-re-mí* to the southeasterners without pausing to check whether the downstep-heavy, binary prosody of the BK1 zone would be better served by Christaller's tonemark economy than by Crowther's.

Paradigmatic *dò-re-mí* tonemarks work well in Yorùbá but they're still imperfect, because the BK2 languages don't lack syntagmatically conditioned pitch lowering effects sometimes called downstep (Armstrong 1968, Courtenay 1971). For example Bámgbóṣé (1966) introduced a diacritic " ̩ " for "assimilated low tone" in order to distinguish minimal pairs which, after elision of a vowel supporting L tone, would otherwise merge upon the page (4-a-b). No diacritic is needed in (4-c) because the initial L of *òwú* 'cotton' is independently audible on the following syllable [... wùú] thanks to famous coarticulation effects between the two positively specified pitch gestures H and L in either order (Akinlabí 1985, Akinlabí and Liberman 2001).

(4) a. *Oló.kun* (MH!M) 'epitome/possessor of *òkun* LM the ocean'
olókun (MHM) 'epitome/possessor of *okun* MM energy'
b. *oló.dù* (MH!L) 'epitome/possessor of an *òdù* LL clay cauldron'
olódù (MHL) 'epitome/possessor of an *odù* ML 8-bit oracle sign'
c. *olówùú* (MHLH) 'epitome/possessor of *òwú* LH cotton'
olówú (MHH) 'epitome/possessor of *owú* MH jealousy'

Bámgbóṣé himself would write *olówùú* as *oló.wú* (parallel to *kẹ́.kọ́*, Bámgbóṣé 1965a: 26), using " ̩ " less as a downstep juncture – the pitch drop there is not abrupt – than as a placeholder for an abstract (phonologically implicit) L. Similarly in *Oló.kun* (4-a), the L of *òkun*'s elided initial vowel doesn't lower the final M like a downstep, so much as it raises the preceding H, suggesting to a tonologist that "floating L tones survive into phonetic interpretation rather than being deleted" (Láníran 1992: 247, cf. Connell and Ladd 1990: 16-19), unless more simply the floatingness is just a phantom of elided spelling. The juncture marking becomes superfluous when (4) is retranscribed with disjunctive spelling (5), and this transparency is to be expected in a representation closer to "systematic phonemics ... determined by properties of both the syntactic and the phonological component" (Chomsky 1964: 946).[3]

(5) a. *Oní-òkun*
oní-okun
b. *oní-òdù*
oní-odù
c. *oní-òwú*
oní-owú

Disjunctive (5) also enhances transparency of semantics, reducing the ambiguous glosses of (4) to the regular alternation of *ní* between locative and possessive predication (Manfredi 1994, cf. Hale 1986: 239, Freeze 1992). But Yorùbá speakers may still prefer conjunctive (4) due to the phonological opacity of "syntactically motivated" *n*∼*l* alternations (Oyèlá.ràn 1970: 224f., cf. Halle 1969: 24), nor can disjunctive spelling function as a general replacement for junctures, as it would be "futile" to impose it on "verb-nominal collocations" whose elisions can be morphologically opaque like *jó.kó/jókòó* 'sit', *já.de* 'exit' and *fẹ́.ràn* 'like' (Bámgbóṣé 1964, Bámgbóṣé 1965b: 27). Sometimes conjunctive phonemic writing enhances syntactic transparency: eliding the vowel of the verb root supports a referential direct object while a pseudo-incorporation reading arises if the vowel of the nominal prefix elides instead, e.g. [VP *gbé orí*] → *gbérí* 'rear (raise up) one's (own) head' versus *gbórí* 'pick up (somebody's) head' (Oyèlá.ràn 1972: 184-187). Other cases of lexical opacity caused by prosodic footing are independent of vowel elision such as the deletion of lexical L, which is automatic even before a C-initial nominal as well as before the C-initial complementiser of a complement clause.[4]

Thus the initial plausibility of paradigmatic *dò-re-mí* tonemarks in BK2 languages, portraying Welmers' discrete-level type (Welmers (1959)), is overrated. *Ā fortiōrī*, tonemic analysis of his terraced-level languages, typified in BK1, is much less successful.

Perhaps inspired by Christaller, Stewart (1965) treats downstep as a relation between successive tokens of H and L, but the domain of downstep is syntax not phonology. No principle of grammar forbids a lemma – a string with "the property of 'listedness' " (Sciullo and Williams 1987: 2) – to have internal phrasal complexity, as is apparently the general case for open-class vocabulary (Hale and Keyser 1993). The downstep in Twì *àdá!ká* is abstract only if this item is treated as a taxonomic "minimum free form" (Bloomfield 1926: 156)

[3] Cases like (4-b) of avoidable opacity induced by taxonomic-phonemic conjunctive spelling, occur in vowel elision contexts even in prosodically binary (BK1) languages like Ẹ̀dó (Ámayo 1976: 168).

[4] Before a clausal *adjunct*, L is unaffected because phrase-final, and its appearance correlates with an adverbial, non-argument interpretation of the clause (Déchaine 2001, cf. Awóyalé 2018).

alias “syntactic atom” (Sciullo and Williams 1987: 46), overlooking the fact that Twì can use this same listeme *sans* article as a referential indefinite (Sáàh 1994: 152, no tonemarks given).

(6) Me-hu-u adaka.
1SG-see-PST box
‘I saw a box’

If so, the string-internal downstep points the hearer away from a ‘word’ parse of *àdá!ká* towards a phrase with a segmentally null article that anchors referentiality prosodically. Other prosodic cues of typeshift from ‘bare noun’ to DP include pitch accent retraction in Greek and Germanic (Longobardi 2001: 362 fn.29, citing Lazzeroni 1995, Zwart 2003), linear “N-to-D” reordering in Romance (Longobardi 2005: 13), epenthesis of a “preprefix vowel in a noun… associated with definiteness or indefiniteness” (Valinande 1984: 431) in Nande (BK1) and a “sophisticated abstract version of the nuclear stress rule” in Slavic (Kučerová 2007: 131).[5]

Peak global toneme arrived when the triumphal declaration of “English as a tone language” (Goldsmith 1978) begat universal “autosegmental-metrical” annotation of pitch (Pierrehumbert 1980, Ladd 1996) but ToBI the hand-coded hybrid struggles to shake off the toneme’s taxonomic heritage and has proved to be crosslinguistically frail: “each language’s ToBI system is unique” and “labor-intensive” even for “a confident labeler” (Jun 2022: 172, cf. Dilley et al. 2006, Dilley and Breen. 2022). Despite its fragility in the wild, ToBI’s luxuriant growth in the hothouses of “laboratory phonology” has overshadowed more restrictive metrical formats – be they arboreal or grid-based – which are abstractly shaped by syntax (Liberman 1975, 1995, Leben 1982, Zubizarreta 1982, Giegerich 1985, Idsardi and Purnell 1997).

In sum, intractable theoretical as well as practical difficulties betray the toneme’s taxonomic origin. A toneless, derivational alternative avoids these failures.

[5] Kučerová actually rejects prosodic analysis, opting instead for “semantics choosing from syntactically available structures” by an external “evaluation component” (Kučerová 2007: 108f.) but this choice amounts to tolerating an unrestrictively direct “phonology-semantics interface” (Jackendoff 2002: 126). The empirical question is whether PF-LF mapping is mediated by cyclic spellout (Chomsky 2001) but no answer is forthcoming in a permissively parallel “architecture” where syntax can be freely skipped (Jackendoff 2007). Similar modesty of theoretical ambition attends precompiled templatic syntax, where surface diversity is directly hard-wired into cartographic ‘parameters’ (Bošković 2008, 2012).

3 UG without tones

Leading tonologists belatedly agreed to collapse discrete tone features into “monodimensional ... scales ... directly interpreted in the phonetics” (Clements et al. 2011: 20f., Hyman 2011) effectively reducing them to “realisation ... trajectories” (Liberman 2018: 201) and inadvertently reprising Halle’s original argument about Russian voicing assimilation (Halle 1959: 22f.), namely not to split one phenomenon between two rule systems depending on whether a lexical contrast is accidentally subserved. A similar fate may meet the phonemic tones of ToBI, replacing them by automated pitch tracks as big data harvesting scoops up the untidy entities scattered in the wake of tonology’s “catastrophic success” (Downes 2021). But robots can’t fix collateral damage of a conceptual kind.

The toneme’s supreme mystery is its unbalanced typological distribution. This follows from nothing in phonology so, unless the tone map’s global lumpiness can be blamed statistically on genomes or the weather – (Dediu and Ladd 2007, Everett et al. 2015, cf. Liberman 2007, Wong et al. 2012, Hammarström 2016) – it must be a methodological mirage. Trubetzkoy already started down the road less traveled when, on reading Ward (1933), he noticed that non-lexical F_0 peaks appear in Ìgbo both on a dependent phrase and on its preceding, governing head (Ward 1936: 979 fn. 2), e.g. the bold and underlined H tones below.[6]

(7) àn̩ (LL) ‘land’ + òké (LH) ‘rat’ = àn̩**́** **ó**ke (L**H**!**H**H) ‘land of rats’

As Clark remarks (Clark 1980: 107), it’s not going to be easy to explain two non-lexical H domains, split by a downstep, with just one constructional, ‘floating’ toneme, whether this is defined as a phonological L (Williamson 1970) or more commonly H (Welmers 1963: 442, Voorhoeve et al. 1969: 80, Hyman 1974: 118, Williams 1976: 481, Goldsmith 1976: 183f., Williamson 1984: 207, Clark 1989: 266). The floating L analysis rides on Stewart’s (1965) elegant theory of Twì downstep, but to succeed in Ìgbo it needs *ad hoc* rules of polarization and metathesis (Williamson 1970: 85f.). The floating H approaches, increasingly complex over time, gain enhanced descriptive coverage at the cost of extrinsically ordered, unrecoverable stratal interactions and proliferating abstract tones, becoming so stipulative as to be unfalsifiable.

Playing by the rules of the phonological “game” (Kaye 1988), Clark was unfortunately dissuaded from a “dynamic” analysis (Clark 1978) of Ìgbo and Japanese pitch patterns as McCawleyan accentual domains. Trubetzkoy had again anticipated this possibility, conjecturing that the superficially diverse phonetic profiles of ‘tone’ and ‘pitch accent’ mask abstract identity behind

[6] Trubetzkoy didn’t cite particular data but he must have seen this example in Ward (1936: 31).

independent differences of syllable weight (Trubetzkoy 1939: 180). Jakobson also reportedly endorsed this thesis of tone/accent isomorphism – 'Ìgbo is Russian' as paraphrased by M. Halle (*p.c.* 2004) – but any such reconciliation of comparative prosody has waited long for Ìgbo studies to catch up. Two enduring problems furnish preliminary proofs of concept.

4 Unpronounceable roots

Welmers & Welmers' Ìgbo "learner's dictionary" does not list "independent monosyllabic roots" (Welmers and Welmers 1968: iv). Instead, each lemma is given as a polysyllable with one or other prefix, making the string formally indistinguishable from a nominal expression. Any resulting homophony is tractable to the extent that a lexical item's phrasal syntax is inferable from its gloss without a word-class label, as in this triplet:

(8) *íbè* HL 'to cut [**x** into pieces]' ⇒ transitive predicator
íbè HL 'to perch [on location **x**], to roost' ⇒ locative predicator
íbè HL 'counterpart/companion/opponent [of **x**]' ⇒ relational argument

Besides unpronounceability, a second weakness of CV – the Africanist 'verb' – as a lexical address is the massive ambiguity of most such items unless accompanied by phrasal 'inherent complements' of great variety and abundance (Émènanjọ 1984b, Nwáchukwu 1987, Hale et al. 1995, Úchèchúkwu 2005).

A third listing problem is tonal. Already for the dialect of Green and Ígwè (1963), the premise that a CV root is lexically specified with either H or L forces analysts to proliferate homophonous tonal affixes and absolute neutralization rules (Welmers 1970: 51, Goldsmith 1976: 122, Clark 1989: 10). Then, in a large dialect area that overlaps much of the post-1996 Ímò State and some nearby environs, matters get more difficult because predicate-type roots divide not in two prosodic classes but into three, of roughly equal size (Swift et al. 1962: 90-106, Émènanjọ 1981, Clark 1989: 38ff., Déchaine 1993: 504), distinguished by the following pattern:[7]

(9)

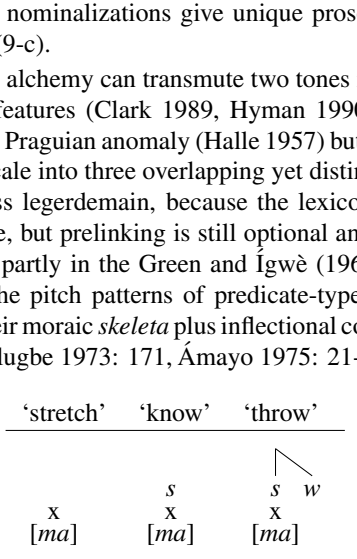
		'stretch'		'know'		'throw'	
a.	infinitive	HL	*ị́-mà*	H!H	*ị́-má*	H!H	*ị́-má*
	negative	HL	*á-mà*	H!H	*á-má*	H!H	*á-má*
b.	subjunctive	LH	*mà-á*	LH	*mà-á*	HH	*má-a*
	affirmative	LL	*mà-ra*	LL	*mà-ra*	!HH	*má-ra*
c.	gerund	LLL	*ọ̀-mụ-ma*	LLH	*ọ̀-mụ-má*	LHH	*ọ̀-mụ́-ma*

[7] N.b. a bad typo in Nwáchukwu (1995: 16) writes affirmatives of the 'throw' class with L instead of H.

The prefixed/nonfinite forms of 'know' and 'throw' are homophonous in Ímò (9-a) just as in the Green and Ígwè (1963) dialect, but suffixed/finite forms diverge: in Ímò, 'know' gets the pitch pattern of 'stretch' (9-b) and reduplicated nominalizations give unique prosodic contours to each of the three classes (9-c).

Tonal alchemy can transmute two tones into three tone classes with ternary valued features (Clark 1989, Hyman 1990, 2001, Mutaka and Kavutirwaki 2008), a Praguian anomaly (Halle 1957) but the real trick is to flip one paradigmatic scale into three overlapping yet distinct syntagmatic outcomes. Metrics need less legerdemain, because the lexicon is not forbidden to prelink foot structure, but prelinking is still optional and opacity can erode such information, as partly in the Green and Ígwè (1963) dialect and completely in Èdó, where the pitch patterns of predicate-type expressions are fully predictable from their moraic *skeleta* plus inflectional context (Wescott 1962: 22, Ogieraikhi 1973, Elugbe 1973: 171, Ámayo 1975: 21-23, Ámayo 1976: 230).

(10)



To merge the listemes in (10) consistent with the pronunciations and inflections in (9) requires at least the following indepedent assumptions: (i) TP and DP are phases, (ii) Ìgbo is *pro*-drop with pronominal clitic agreement (Ézè 1995), (iii) reduplication is PF epenthesis in the head of *n*P, (iv) adjoined segments are nondistinct i.e. form a syntactic atom alias 'word', (v) trochaic feet parse left-to-right and (vi) 'degnerate' (nonbranching) feet are parsed only as a last resort.

(11)

a. infinitive/negative [TP PRO [T ***i/a*** [VP ___ ...]]]

b. subjunctive [CP C [TP PRO [___$_i$] -T [VP t$_i$ ...]]]

affirmative [TP [T *pro* [VP ___ ...]]]

c. gerund [DP PRO [*n*P [*n* RED$_i$] [VP ___$_i$]]]

5 Grammatical tones in search of grammar

A logical consequence of tonology – coding the inherent pitch of translated lexical items taxonomically – is that any residual pitch differences obtained when 'words' combine in phrasal construction are ascribed to analogous tonal entities:

> [T]he tone or pitch of the voice may serve two purposes: it may be the bearer of meaning in that it, and it alone, distinguishes one word from another (semantic tones) and it may be used to show grammatical relationships (grammatical tones). (Ward 1933: 30)

Enthusiastically applied by other colonial and missionary pioneers (Green 1949, Sharman and Meussen 1955, Welmers 1959, Voorhoeve 1965), "grammatical tones" were unevenly productive in fieldwork. Their density turned out to be systematically greater in binary, BK1 languages than among their ternary cousins of BK2. The great tonal riches harvested from the Cameroun 'grassfields' post-counterinsurgency (Deltombe et al. 2011) led academic phonologists to treat "floating tones" as a feature not a theoretical bug, and to explain their existence with the historical conjecture that such entities are left behind after the erosion of archaic vowels and consonants behind (Hyman 1976, Hyman and Tadadjeu 1976, Williamson 1984 etc.).

The computational explosion of abstract tones accrued gradually, as Africanists moved from translated wordlists and short phrases to more complex Comriean frames, but studies of unbounded syntactic environments eventually encountered new anomalies, where no presumptive morpheme is plausibly available to serve as a hypothetical tonal host. Such patterns are well described in Ìgbo (Swift et al. 1962: 247f., 303ff., Green and Ígwè 1963: 88, Welmers and Welmers 1968: 152, Nwáchukwu 1976a: 102ff., Nwáchukwu 1995) and analogous phenomena in Twì have inspired a new prosodic ontology: "tonal reflexes of movement" obtained by "a process of tonal overwriting" (Korsah and Murphy 2020). But before jumping on the bandwagon it's excusable to ask whether adding a new set of tonemic epicycles might not enhance, but actually *reduce*, descriptive adequacy by obscuring more general patterns that would be expected if prosody is syntactic spellout.

In these examples, non-lexical pitch values are bolded in the text and underlined in the adjacent pitch transcriptions.[8]

[8]These data sample a much larger set collated in a publically available manuscript (Manfredi 2011). The interlinear gloss of the *-ru* and *-rv* suffixes as -CL abbreviating 'argument-type clitic' is one of many morphological analyses of this formative (Green and Ígwè 1963, Nwáchukwu 1976b, Clark 1989).

(12) a. Ùgo **wu**-ru úl̩ọ̀. [LL L̲L HL]
U. emplace.**AFF**-CL house
'Ùgo built [a/the] house'

b. Ùgo **me**-re íhe. [LL L̲L HH]
U. do.**AFF**-CL thing
'Ùgo did something [w/positive implicature]'

(13) a. úl̩ọ̀/ù̩lọ Ug**ó wù**-ru [HL/L̲L L**H̲ L̲**L]
house/house.L U.H̲ emplace.AFF-CL
'the house that Ùgo built'
'the fact that Ùgo built a house'

b. (úl̩ọ́) kè Ug**ó wù**-ru [(H!H̲) L LH̲ L̲L]
house.H the.*pro* U.H̲ emplace.AFF-CL
'(the house,) the one that Ùgo built'

c. (Ọ́ bù) úl̩ọ́ áhù ka Ug**ó wù**-ru. [(H L) HL HL L L**H̲ L̲**L]
3s be house DEIC that U.-H̲ emplace.FIN-CL
'It's that house that Ùgo built'
'That's the (only relevant) house Ùgo built'

d. Òléé ihe Ù**gó mè**-re? [LH HH L**H̲ L̲**L]
which.*one*.Q thing U.H̲ do.AFF-CL
'What did Ùgo do?' [no positive implicature]
('Which is the thing that Ùgo did?')

e. Kè-dú ihe Ù**gó mè**-re? [LH!H HH L**H̲ L̲**L]
Q.*pro*-BE thing U.H̲ do.AFF-CL
'What did Ùgo do?' [no positive implicature]
('Which is the thing that Ùgo did?')

f. Gíń kà Ug**ó mè**-re? [H!H L L**H̲ L̲**L]
what.Q that U.H̲ do.AFF-CL
'What did Ùgo do?' [no positive implicature]

In both (12) and (13), the derived L̲ pitch of the roots *-wú* 'emplace' and *-mé* 'do' exemplify weak footing as expected in affirmative finite inflection *à la* (11-b) above.

In (13), each token of *Ùgo* is LH̲ instead of the LL observed in (12).[9] Rather than invent a new theory for a new observation, Tada (1992) compared this phenomenon to another successive-cyclic effect, the (mis-named) "stylistic" subject inversion in Romance (Kayne and Pollock 1978: 606, cf. Goldsmith 1981, Zubizarreta 2001). Then in a toneless theory the remaining task is less exotic: to derive the appearance of a phrasal *accent* on the edge of the subject

[9]Temporarily setting aside the constructionally derived, underlined tones of *úl̩ọ́* 'house' in (13-a,b).

argument at the edge of a spellout phase that's crossed by a *wh*-dependency. An accent, but not a tone, potentially qualifies as an item of "intermodular translation" (Scheer 2010) e.g. as a candidate relational index by which "metrical boundaries… in narrow syntax" can become "prosodically active" (Richards 2016: 77) in a convergent derivation. By contrsast, the systematic pitch effect in (13) is not reducible to a taxonomic morpheme of any conceivable kind unless a *deus ex machīnā*, contrived simply to protect a fragile faith in tonemes from justified syntactic scepticism.

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