Morphosyntactic parameters and the internal classification of Benue−Kwa (Niger−Congo)

ABSTRACT: Niger−Congo's Kwa and Benue−Congo zones, jointly covering most of tropical Africa, run between isolating and agglutinative types. Historical phonology finds few shared innovations above the local cluster, but assuming the phase theory of generative syntax, a sharp division emerges based on the timing (early/VP vs. late/TP) of PF−spellout.

UPDATE 18 July 2007: A letter in the current issue of *Nature* reports that paleontological and genetic data converge in reconstructing human origins to an area which — as I can't help noticing — happens to coincide closely with the current Benue−Kwa speaking area. See this screenshot of Fig. 2. Likely origin of anatomically modern humans from p. 347 of A. Manica *& al.*, "The effect of ancient population bottlenecks on human phenotypic variation" (*Nature* **448**, 346−48, 19 July 2007). Of course the observation is anachronistic, because the physiological reference point is >50K years old while BK's collective identity is presumably much younger, but the areal coincidence is still striking. A more neutral paraphrase: present BK−speaking populations include the greatest phenotypic as well as genetic diversity of any large−scale human aggregate. This result cannot lessen the general interest of comparative BK studies, but I predict that someone soon will conveniently forget the "K" (Kwa) part of "BK" (Benue−Kwa) and try to interpret these maps in a Bantuist vein!

UPDATE 15 April 2011: It's disappointing that anyone would be counting "phonemes" nearly a century after Jakobson, Karcevsky & Trubetskoy discovered binary distinctive features and implicational universals (la regularité des rapports de corrélations), cf. "Quelles sont les méthodes les mieux appropriées à un exposé complet et pratique de la grammaire d'une langue quelconque?" (*Actes du premier congrès international de linguistes à La Haye, du 10−15 Avril 1928*, 32−36; reprinted in *Roman Jakobson Selected Writings* **1**; *Phonological Studies*, 3−6. Mouton, The Hague) and 25 years after Kaye, Lowenstamm & Vergnaud refined this idea as a sub−syntax of unary/privative phonological elements, cf. "The internal structure of phonological elements; a theory of charm and government" (*Phonology Yearbook* **2** [1985], 305−28). Nevertheless it's still probably significant that the demography of taxonomic (pre−Jakobsonian) lexical contrast units — roughly, phonetic phenotypes — converges on the same originating population as does the demography of human anatomical genotypes: once again, the presently−existing historically−defined linguistic unit most closely corresponding to the set of languages in question is Benue−Kwa. Twice lucky? See the top half of " Fig. 2. Likely area of language origin" from p. 347 of Q. Atkinson, "Phonemic diversity supports a serial founder effect model of language expansion from Africa" (*Science* **332**, 346−49, 15 April 2011) or this screenshot.

UPDATE 15 September 2012: Some of the same issues are covered in Hyman (2004), a learned survey enlarging Westermann's (1927) broad observation of east−to−west decline in morphosyntactic complexity and in the maximum size of predicate roots. In the absence of theory, of course, there can be no expectation of quantal restructuring. Instead, Hyman suggests (i) that the innovations under investigation "modified the proto system… in an areal fashion" (p. 71) and (ii) that the process was not unidirectional, since Ìgbo is cited as a language in which "doubtless… extensions have arisen via renewals" (p. 86). But how far can a theoretically untrammelled picture of reversible *Wellen* be maintained while still admitting a large−scale structural shift towards isolating syntax and monosyllabic roots? Can such a dramatic diachronic asymmetry, expressed across vast stretches of time and space, be more than a statistical fluke? Part of the problem may be that Hyman bravely assigns himself the whole of "Niger−Congo" (the world's oldest and most complex language family) as the canvas for his illustrations, whereas Westermann's original observations were restricted to the more tractable — but still impressively big — zone which came to be known as "Benue−Kwa" (e.g. Elugbe & Williamson 1977). It's also surprising that someone who went on to write Hyman (2011) would not follow up his own observation that "almost all Bantu languages show stembound phonological prosodies" (p. 85) by mentioning the markedly richer tonemic inventories at the "Kwa" end of the spectrum. (Either that's another accident, or else tone is really "different" after all. Not both.) Aligning his three parameters of change, Hyman notes that "at least relics of the original morphology survive beyond the syntactic and phonological restructurings" (p. 86), entailing that "syntax" changed autonomously to some extent, and hinting at no mechanism connecting syntax to the shape of roots. Coincidence upon coincidence.

Elugbe, B. & K. Williamson. [1977]. Reconstructing nasals in Proto-Benue Kwa. *Linguistic Studies Offered to Joseph Greenberg*, edited by A. Juillard, 339−63. Anma Libri, Saratoga.

Hyman, L. [2004]. How to become a 'Kwa' verb. *Journal of West African Languages* **30**, 69−88. [free prepress version]

———. [2011]. Tone; is it different? *Handbook of Phonological Theory*, 2nd edition, edited by J. Goldsmith & al., 197−239. Blackwell, Oxford. [free prepress version]

Westermann, D. [1927]. *Die westlichen Sudansprachen und ihre Beziehungen zum Bantu*. [=MSOS **29** Beiheft]. DeGruyter, Berlin.

UPDATE 16 May 2013: BK2's birth being the hypothetical result of *deletion* (specifically, the erosion of finite inflection), or so I say, risks the irrelevance of a linear branching model of substantial inheritance — as opposed to *dis*inheritance. It makes you wonder what share of i−language speciations are of this general type, and whether identification of more such events could reduce apparent radiation/multibranching in archaic *Stammbäume* — a matter which continues to disquiet Indoeuropeanists, most of whom understandably were trained to study e−language (e.g. Garrett 1999). Genetic reduction is a live topic in celular phylogeny (Bapteste & Gribaldo 2003) though not as hot as incongruence/lateral transfer (Leigh & al. 2011).

Bapteste, E. & S. Gribaldo. [2003]. The genome reduction hypothesis and the phylogeny of eukaryotes. *Trends in Genetics* [ISSN 0168−9525] **19**, 696−700.

Garrett, A. [1999]. A new model of Indo−European subgrouping and dispersal. *BLS* [ISSN 0363−2946] **25**, 146−56.

Leigh, J. & al. [2011]. Evaluating phylogenetic congruence in the post-genomic era. *GBE* [ISSN 1759−6653] **3**, 571−87.

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Morphosyntactic parameters and the internal classification of Benue-Kwa (Niger-Congo)*

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19.1 How flat is BK?

Benue-Kwa (BK), main branch of the Niger-Congo language family, combines the subgroups earlier called Kwa and Benue-Congo (Greenberg 1963: 30–8; cf. Westermann 1927: 20). Spanning most of tropical Africa's population and area, BK has more than ten big clusters including mega-Bantoid; these can be arrayed roughly west-to-east under a duplex, *n*-ary tree (1).[1]
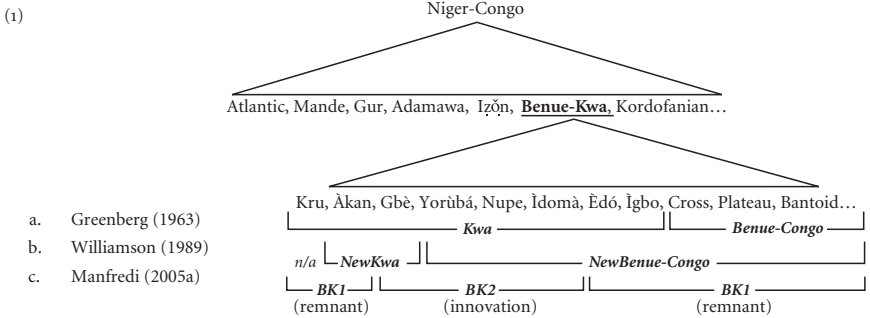
(1)

a. Greenberg (1963)
b. Williamson (1989)
c. Manfredi (2005a)

[1] For Greenberg '[t]he affiliation of Kru and Ijo [Iẓọ̌n] to the Kwa group is to be considered tentative' (1963: 39 n. 13, cf. Westermann 1927: 12). Williamson (1989) promotes both of them above BK in the tree, whereas Williamson and Blench (2000: 18) put Kru inside a coordinate branch. I assume

Given Greenberg's proof that the 'Bantu family' is coordinate with Kwa, transitivity brings along the intermediate languages of Plateau, Cross and the rest of Bantoid (1a), plus an old fragmentation zone 'in Nigeria and the Cameroons . . . more specifically the Central Benue valley' (1963: 38, cf. Meinhof 1899; Greenberg 1972).[2] The BK hypothesis was a pregnant afterthought: 'Kwa and Benue-Congo are particularly close to each other and in fact legitimate doubts arise concerning the validity of the division between them' (Greenberg 1963: 39n. 13). Elugbe and Williamson agreed that '[i]f Kwa and Benue-Congo can no longer be separated on the customary typological grounds . . . , then we conclude that, pending the production of new types of evidence, Benue-Congo and Kwa form a single subfamily of Niger-Congo' (1977, 351).[3] Williamson (1b) tried a new partition based on lexicostatistics plus 'lexical innovations' (1989: 249), but these data are equivocal (Armstrong 1983: 146f; Bennett 1989: 40) and Williamson and Blench eventually revived the null hypothesis of BK as a 'dialect continuum' also known as 'East Volta-Congo' (2000: 17f).[4]

This chapter restates the 'traditional' claim that typology holds the key to BK subclassification after all, but only on a particular view of morphosyntax. BK spans a range of diversity including (i) an east-to-west, affixing-to-isolating cline (Westermann 1927; Voorhoeve 1967; Hyman 1976, 2004; Winston 1970; Welmers 1973; Williamson 1985) and (ii) a correlated shift from quasi-free scrambling to rigid VO order, often analysed as E-language drift i.e. grammaticalized 'word order change' (Givón 1975; Hyman 1975; Lord 1977; Williamson 1986a). Scenario (ii) is dubious, because *finite* OV need not be reconstructed: in Niger-Congo it is limited to Ị̀zǒn (Heine 1976, 1980: 109) while nonfinite OV strings are produced synchronically in several branches by leftward object shift (Manfredi 1997; Aboh 2004).[5] Scenario (i) is descriptively better grounded, but begs the question of smooth versus punctuated evolution. I propose that much of BK's diversity subvenes a single abrupt, large-scale innovation in I-language (Chomsky 1986: 20), namely a switch

Kru is BK1 and Ị̀zǒn is non-BK; what matters for this paper is that neither is BK2. BK1 tone-marking in this paper: no mark   same tone as previous mark; sequence of two H marks   downstep starting on the second H.

[2] I leave 'Bantu' in quotes because it's 'impossible to draw a clear line between Bantu, however defined, and non-Bantu Niger-Congo' (Nurse and Philippson 2003: 5, cf. Greenberg 1974; Marten 2006).

[3] Stewart (2002), echoing Mukarofsky (1965), does not foreclose the possibility that the nearest common ancestor of the BK languages is Proto Niger Congo itself.

[4] (1b) persists in the Bantuist handbook, in a family tree misleadingly labeled as 'adapted from Williamson & Blench (2000)' (Schadeberg 2003: 154).

[5] Other synchronic possibilities can be dismissed: extraposing non finite V (Marchese 1984) or V2 fronting of finite V from underlying OV (Koopman 1984).

from late to early timing of phase-based Spell-Out (Chomsky 2001). This yields the partition in (1c).

(1c) rests on descriptions of four interface traits—two semantic, two phonetic—listed in (2) and mapped to clusters in (3). The subset defined by all positive specifications of (2a–d) is a contiguous area (BK2) comprising Gbè, Yorùbá and probably also Nupe and Ìdọmà (3b), while negative values of the same features hold in a *non*-contiguous area (BK1) including the Àkan, Ẹ̀dó, Ìgbo, Cross, Plateau, Bantoid and probably also Kru clusters (3a). The discontinuous, negative set is more likely to diagnose a conservative or remnant area, from which BK2 subtracted itself thanks to contraints of language acquisition for which the BK 1/2 speciation event becomes, in turn, a source of evidence.

Mixed plus and minus feature values for the four traits in (2) are attested in few-to-none of the hundreds of BK languages, i.e. set (3c) is effectively empty. Unless this skewed outcome is illusory, it points to a single I-language parameter as the motor of BK2's emergence. An anonymous reviewer suggests that 'any of the features used to define the family tree [in 1c] is a plausible candidate for areal diffusion under conditions of bilingualism', but I assume that the semantic traits (2a–b) are not directly learnable from primary language data—indeed (2a) has to my knowledge never been previously observed, even by speaker-linguists, and (2b) on its own would be an unmotivated complication of grammar. As for the phonetic traits (2c–d), there's no contradiction if one or both of them spread via borrowing in early BK—as in Meillet's (1922) wave model of early Indo-European—but the fact that that they now hold quasi-uniformly across the large and heterogeneous BK2 population and area entails that at some was triggered a shift to non-gradient, inherited status. The question is how that occurred.

(2) a. A finite eventive predicate with minimal inflection is either present-perfect or past.

   b. Aspectually unrelated events are excluded from a single clause.

   c. Minimal finite inflection is an auxiliary/proclitic particle, not a suffix or root-borne tone pattern.

   d. At least three surface tones contrast on roots of the same category.

(3) a. *4 minus settings*: {[Kru (?2a)], Àkan, Ẹ̀dó, Ìgbo, Bantoid . . . }=BK1

   b. *4 plus settings*:   {Gbè, Yorùbá, [Nupe (?2a)], [Ìdọmà (?2b)] . . . }=BK2

   c. *mixed settings*:   { $\simeq \emptyset$ }

In sum, a historical, I-language event is inescapable in the origin of BK2. It remains to check if such a scenario is compatible with known E-language changes e.g. sound shifts (Section 19.2), to examine I-language properties on each side of the BK2 line (Section 19.3) in the hope of finding a necessary and sufficient E-language trigger for their quantum shift (Section 19.4), and to consider why the appearance of BK2 should follow from BK initial conditions, under a plausible theory of diachrony (Section 19.5).

19.2 Compatible sound laws

Comparing root-initial consonants of 'Akanic' (the immediate protolanguage of the macro-Àkan cluster) and some version of 'Proto-Bantu', Stewart (1973, 1993, 2002) reconstructs four sets of regular sound correspondences, contrasting in two orthogonal manner features and covering roughly 100 roots in all. (4) gives coronal examples; cthe labial, velar, and labiovelar series receive parallel treatment.[6]

(4)

"Proto-Bantu-Potou-Tano"
[±voiced, ±glottalized]
*{t, d, 't̚, ɗ}

"Akanic"
*{s, θ, t, d}

"Proto-Bantu"
*{t, d/t, t, d/l}

—BK2—

	Akuapem	Nkonya	Gbè	Yorùbá	[…]	Ìgbo	[…]
'ear'	-sṍ	-sṍ	-tó	-tí		-thì	*-tʊ́
'stopup/close'	-sìw	-tǐ	-tú	-tì		-chí	*-dìb/-tìb
'roast/burn'	-tɔ̌	-tɔ̀	-tɔ̀	-jó		-rú	*-tùmb
'eat'	-dì	-jì	-ɗù	-jɛ́		-lí	*-dí

Stewart remarks that '[i]t has proved extremely difficult to find regular sound correspondences across Èwè and Àkan...It has in fact proved much less difficult to find regular sound correspondences across Àkan and Proto-Bantu...' (1994: 176; cf. Capo 1985; Stewart 2001). This observation in itself doesn't disprove (1b) because it refers to archaism, but I've added Gbè, Yorùbá, and Ìgbo reflexes in between Stewart's forms in (4), showing that

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[6] Williamson and Blench (2000: 35) and Schadeberg (2003: 156) note that 'Proto-Bantu' reconstructions vary depending on how much of the 'wide' north-west is included. Stewart's 'Akanic' data are not tone-marked; I've added citation tones from Kotey (1998).

BK2 collapses the reconstructed four-way distinction among onset conson-
ants into only two outcomes, whereas at least three distinct reflexes are found
in BK1. If BK2 restructured roots, consistent with the silence of Stewart's Law
in those languages, this is a plausible concomitant of innovating a three-way
prosodic contrast on roots (2d), potentiated by phonation effects (Hyman
1973) as is still the case in modern Gbè (Stahlke 1971).

Direct evidence disproving (1b) includes a velar-to-labial shift shared by
Gbè and Yorùbá:[7]

	BK2				BK1			
	Gbè	Yorùbá	Nupe	Ìdọmà	Àkan	Ìgbo	Èdó	"Proto Bantu"
(5) 'hunger (v.)'	wù		gùn	ŋmú		g(ḥ)ú		* guid 'seize'
'hunger (n.)'		ebi			òkọ́m	ág(ḥ)ụ́ú/ọ́		
'journey'		ebi	ezì	ềyề		íj(ḥ)è		* gend
'bend/bent'	bò	wó			kòtów	gọ́	gọ	* gòb
'needle/thorn'	àbí	àbẹ́bé	èkin	ìgyẹ́		àg(ḥ)ị̀g(ḥ)á		
'pierce/split/sew'		bẹ́		gá	chwá	g(ḥ)á	gia	

Counterevidence to (1c), such as a soundshift crosscutting the BK1/2 divide,
has not been found.

19.3 I-language outcomes

The partitioning in (1c) and (3) has a quantum nature, as shown by the
synchronic status of each of the correlated I-language features in (2). The
following examples contrast all four at once.[8]

Yorùbá(BK2)   Ìgbo (BK1)

(6) a. Ǹgìgè-é bi Ìgè (*jádèe).   (7) a. Ǹgige jụ-rụ   Ige (fụ-ọ́).
     N.-FIN ask I. exit   N. ask.FIN-CL I. (exit-AFF).
     'Ǹgìgè (has) asked Ìgè   'Ǹgige asked Ìge (and then left)'
     (*and then left)'
     LLL-H M LL (HLM)   LLL L-L LL (L-H)

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[7] Here dotted *gh* denotes aspirated [gh], whereas dotless *-gh* is fricative [ɣ], and the non roman
vowel symbols of Gbè and Àkan orthographies have been Nigerianized with subdots. All Gbè data in
(5) are Ewè. The Àkan devoicing is regular (Stewart 1993: 34; 2002: 219), as is the palatalization in the
Nupe and Ìgbo forms of 'journey' and the Ìdọmà form of 'thorn'.

[8] In <Yorùbá> MLH, tonally unmarked syllables are mid. The H tone glossed FIN is normally
written on the last syllable of the subject, thus in (6) <Ǹgígé> LLH, but this is not phonetically distinct
from the more analytic transcription [ǹgìgè é] LLL H, thanks to regular tone spread (Akinlabí and
Liberman 2001). In the BK1 tone marking convention adopted here, an unmarked syllable has the same
value as the previous mark, thus in (7) <Ǹgige> represents [ǹgìgè] LLL. A downstep precedes the
second H mark in sequence, thus in (13e) below, <Óbọ́...> represents [ó!bọ́...] H!H.

b. Ìgè-é gbé agbòn (báàyìí).
I.-FIN lift basket thus
'Ìgè (has) lifted [a/the] basket (now)'
LL-H H ML (HLLH)

b. Ìge vu-ru   ábọ (*ùgbú à).
I. lift.FIN-CL basket now
'Ìgè lifted [a/the] basket (*now)'
LL L-L HH (LH L)

As stated in (2a), BK languages differ in the tense outcomes of a minimally inflected clause: (6) but not (7) allows a present-perfect reading in addition to simple past (Awóyalé 1991: 201). The extra option in (6) can be foregrounded by adverbs (*báàyìí* 'thus', *ní ììsìn yìí* 'right now') or preverb particles (*sẹ̀sẹ̀* 'just', *ti* 'from') of temporal deixis (Abraham 1958: 99, 320, 614, 639f.).[9] For an accomplishment like 'lift a basket', (6b) is true even if the basket remains held aloft ('Ṣ. Adéṣọlá, Ọ. Ajíbóyè p.c.), but the same entailment is blocked in (7b) where inclusion of *ùgbú à* 'now' yields ungrammaticality (Ụ. Íhìọnụ́, C. Úchèchúkwu p.c.).

The difference just described eludes a syntax-free, E-language analysis of similar sentences in these two languages, whereby '[p]erfective forms (simple nonstative verb) are interpreted as referring to the past' (Comrie 1976: 82, citing Welmers 1973: 346f). Short of entertaining a 'semantic parameter' of *Aktionsart*, the contrast proves that the mapping from aspect to tense is not a direct default to semantics (Comrie *après* Reichenbach) nor to pragmatics (Dowty 1986). Neither is it possible to appeal to a crosslinguistic difference in tense-marking, because the suffix pronounced *-rụ* in (7) lacks temporal content: as is well known, it fails to deliver a past interpretation in case the lexical predicate is static, e.g. adjectival *-vù ívù* 'fat' or psych *-kpọ́ asị* 'hate'.[10]

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[9] In (i), *ti* has been described as marking 'perfective tense' (Bámgbóṣé 1966a: 94f., cf. Abraham 1958: 639), however a homophonous item shows up obligatorily with certain adjuncts (Abraham 1958: 640; Carstens 1986), be they *in* or *ex situ* (ii, iii), suggesting an analogous structure for (i) with a null deictic reference time foregrounding one of the readings described in (6).

(i)   Ǹgìgè é ti*ᵢ* lọ   ["now"]*ᵢ*.
       N. FIN TI go
       'N. has already gone'

(ii)   Ǹgìgè é [ti Èkó   ] lọ.
       N. FIN TI Lagos go
       'N. left from/via Lagos'

(iii) [Ní ìgbà wo]*ᵢ* ni   Ǹgìgè é ti*ᵢ* lọ [t]*ᵢ*?
       at time which COMP   N. FIN   TI go
       'When did N. go?'

[10] To label the item glossed CL in (7) a past tense suffix (Green and Ígwè 1963: 54; Nwáchukwu 1976) is to posit a homophonous non past item in complementary distribution. Much easier is a non tense analysis of this morpheme, either as null aspect (Welmers and Welmers 1968: 76; Éménanjọ 1978; Manfredi 1991), affirmative polarity (Carrell 1970; Williamson 1983; Ùwaláàka 1988; Déchaine 1992) or an aspectually active argument type clitic (Déchaine 1991; Manfredi 2005b).

I conclude that the only relevant, audible asymmetry between (6) and (7) is scopal: (6) but not (7) is auxiliated, cf. (2c). In standard Yorùbá, the auxiliary element glossed FIN is pronounced as a pitch accent (lexically spurious H tone) on the right edge of a non-clitic subject (Abraham 1958: xix, Awóbùlúyì 1975).

   Linearization of FIN suffices to explain the tense difference at hand, as shown by an independent fact also cited by Comrie: in Yorùbá as well as (northern) Ìgbo the bare durative auxiliary is compatible with either past or non-past topic time. The items in question are Yorùbá *ń* and Ìgbo *nà* (Abraham 1958: 433 ex. le; Éménanjọ 1978: 174).[11] However, many southern Ìgbo dialects form progressives with a suffix not an auxiliary, and these unauxiliated progressives are *never* ambiguous as to tense (Éménanjọ 1985: 122–5; Déchaine 1991). Conclusion: ambiguity if and only if auxiliation (2c).[12]

   The H glossed FIN in (6) is indeed an auxiliary, not a quirk of phonology, and counts as a scope-taking element, because it stands in complementary distribution with the set of irrealis auxiliaries including future and clausal negation (Awóyalé 1991; Oyèláràn 1989; Déchaine 1992, 1995). In Standard Yorùbá the same irrealis auxiliaries which block auxiliary H also trigger 3sg subject *pro-drop*, perhaps diagnosing a Case split since 3sg accusative happens to be segmentally null (Manfredi 2003a).[13]

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[11] In Yorùbá, Awóyalé (1991: 201f) reports that any past reading of bare *ń* must be habitual, not progressive, but this does not alter the auxiliary's basic durative meaning, on which habitual is parasitic. A second example of the same effect is the element *máa*, which in a non finite context suffices to denote a habitual eventuality, but which in a finite context cannot occur without accompaniment of an explicitly durative auxiliary, yielding either [*a máa*] or [*máa ń*] (Oyèláràn 1989).

[12] Relying on Comrie's summary of Welmers, Hornstein (1990: 216 n. 25) imagines that 'in some languages the same morpheme marks the past and the present tense' and takes this to support Reichenbach's rich temporal meaning postulates, but that's mistaken: real tenselessness (temporal ambiguity) in BK requires auxiliary scope, i.e. it's a configurational property not attributable to morphological 'marking' by itself. Perhaps recognizing this, Comrie's second draft on 'tenseless languages' (1985: 50 2) drops all Niger-Congo data.

[13] Overt FIN is blocked, in the Yorùbá examples in (8), by the overtly nominative subject clitic. After a non clitic subject, Yorùbá orthography usually glosses over the presence of FIN, whose phonetic linearization is subtle and requires instrumental study: for example, after non clitic subjects of certain tone patterns such as ML, it may be less audible on the subject to its left than on the predicate root to its right (F. Adékéyè p.c.)   perhaps as an effect of foot structure (Manfredi 1995). Another example could be the 'optional' (Bámgbóṣé 1966a: 35) occurrence of FIN before *á*, the prospective auxiliary:

(i)   Èrò/Èró   á   pọ̀.
      crowd   PROS   plentiful
      'There will be many people'

(ii) Wọn/Wọ́n   á   pọ̀.
      3P   PROS   plentiful
      'They will be numerous'

Affirmative FIN takes prosodic shape also in Ìgbo, but its position and pronunciation are opposite from what was just described for Yorùbá: Ìgbo FIN synchronizes with the predicate root itself, and its effect is suppression of root H, not addition of non-lexical H. This difference can be understood as Ìgbo deaccenting of the roots -*jú* 'ask' and -*vú* 'carry', versus Yorùbá accenting the head of TP.[14] In this way, (2c) captures the fact that Yorùbá but not Ìgbo locates the clause's point of greatest morphological redundancy (Kaye 2003) to the predicate's left, causing Yorùbá- but not Ìgbo-learning infants to conclude that the minimally inflected clause contains a tense-related auxiliary—an 'extra' scopal position which can freely anchor to topic time, even though the verb's event is construed in the past.

(2d) is uncontroversial (Green & Ígwè 1963; Bámgbóṣé 1966b; Akinlabí 1985), setting aside asymmetries in toneme distribution (Manfredi 1993, 1995, 2003b, 2004).

(2b) refers to the ungrammaticality of the parenthesized serial predicate in (6), versus its counterpart in (7) which is fine. Bámgbóṣé (1974: 28) was the first to discuss this difference, observing (8a). (8b) is parallel with the second predicate transitive. The Ìgbo equivalents of both are fully grammatical (9a–b), and no less 'serial' (Ùwaláàka 1982; Manfredi 2005a) despite the E-language label of 'consecutive construction' (Hyman 1971; Lord 1973; Stewart 1998; Baker and Stewart 2002).

	Yorùbá		Ìgbo
(8) a.	Mo ta iṣu (*wá).	(9) a.	Ḿ rè-re jí (wè-é) bya.
	1SG sell yam come		1SG sell.FIN-CL yam take-AFF come.AFF
	'I('ve) sold [the] yams		'I sold [the] yams and
	(*and came)'		(then) came'
b.	Mo se e.ran (*ta bàtà).	b.	Ḿ shì-ri ánụ (wè-é)
	1SG boil meat sell shoes		1SG boil.FIN-CL meat take-AFF
			re-e shuù.
			sell-AFF shoe
	'I('ve) boiled [the] meat		'I boiled [the] meat and (then)
	(*and sold [the] shoes)'		sold [the] shoes'

'Ṣ. Adéṣọlá (p.c.) finds 'no obvious [semantic] difference between each pair' above, so I'm inclined to invoke phonetic spread of the lexical H from the onsetless mora of *á* within its phase i.e. leftward; the alternative is to assume that Oyèláràn's [± realis] feature is simply undefined for this auxiliary. The picture in dialects is different (Fresco 1970) but thus far has not been analysed.

[14] The analysis of FIN's lowering effect in Ìgbo as phonology somehow triggered by the clitic *rụ* (Goldsmith 1976, following Welmers 1970: 51) can't be true because the distributions are independent: the appearance of CL is compositionally determined by predicate *Aktionsart* and sentential aspect, whereas FIN marks a non auxiliated, finite indicative affirmative with any aspectual content, so there are unlimited examples of FIN lowering in the absence of CL.

(3) claims that all BK languages sort themselves into one or the other camp, Yorùbá-like or Ìgbo-like, with respect to (2). This is true, to the limit of available descriptions. (2a) holds in Ìdọmà (Armstrong 1963: 143f.). It's unclear in standard Nupe, but seems to hold in the north of the cluster in Gbagyi ('Gwari'), where 'yesterday' and 'before yesterday' forms are built on a morphological present perfect (with object shift) plus modifying auxiliaries (Hyman and Magaji 1970: 57). In BK1, by contrast, the recent/remote past distinction is orthogonal to the difference between past and present perfect in Àkan, Èdó and Ìgbo, and probably also in traditional 'Bantu' (Welmers 1973: 348).

(2b) holds in both Fɔ̀n-Gbè (da Cruz 1997: 31) and in Nupe (Stewart *et al.* 2000: 3):

	Fɔ̀n-Gbè		Nupe
(10)	Kɔkú sɔ̀ asɔ̀n lɛ́ yi axi mɛ.	(11)	Musa du etsi (*gi nakàn).
	K. take crab PL go market interior		M. cook yam eat meat
	'K. has brought the crabs to		'M. has cooked [the] yams
	the market'		(*& ate [the] meat)'
	[*'...took the crabs somewhere		
	& then went...']		

(2b) has the BK1 value throughout the macro-Àkan cluster (Christaller 1875; Stewart 1963; van Leynseele 1979; Dolphyne 1988; Campbell 1988; Sáàh 1992, 1995; Larson 2005), and the same goes for 'all [Bantu] languages for which there is adequate data' thanks to a 'consecutive tense'—comparable to the non-initial predicates in (7) and (9)—with the requisite properties of being a finite 'dependent form' (morphologically distinct from an infinitive) in which 'tense distinctions are neutralized' i.e. supplied by the preceding verb (Nurse 2003: 101f.).

(2c) is challenged in Gbè by a range of suffixed main verbs (Fabb 1992; Kinyalolo 1992; Aboh 2004), but on second thought all these are either overtly auxiliated progressives (Mínà-Gbè, Fɔ̀n-Gbè), or else generic/nonreferential (Gɛ̀n-Gbè, Èwè-Gbè). To refer to either past or future, the generics need a suppletive auxiliary—a stative modal lexically related to a predicate meaning 'remain' (Westermann 1930: 75f.)—but such suppletion is absent in the suffixless generics of Yorùbá. Overall, the fact that Gbè sentences can have zero overt inflection—prosody included—is more consistent with a positive value for (2c) than a negative one, assuming that infants allow null finite inflection as a last resort, localized by scopal considerations in the Middle Field. Apparently this bias can be undone by slight audible counterevidence like the Ìgbo version of FIN described above, or the 'final

vowel' which is 'part of [Bantu] inflectional morphology' (Schadeberg 2003: 71) in complementary distribution with finite aspectual -*ile* (Meinhof *et al.* 1932: 45). In sum, Gbè shows that the unmarked value of (2c) is the one chosen by BK2.

Potential counterexamples to (2d) are few and unconvincing. Mambila (Bantoid) is called 'a language with four level tones' (Connell 1996), but uninflected roots of predicate type choose from only two distinct pitch values (Connell 2000: 167). Similarly, Kamba and Chaga (of 'narrow Bantu') possess 'four tone levels' only by counting '*secondary* superhigh and superlow' (Kissebirth and Odden 2003: 59, my italics). In Gbè, the M/L distinction is fully reducible to phonation type, but only if syntactic phrasing is taken into account (Stahlke 1971; Manfredi 2004). In BK2, 'tones' are more typically underspecified relative to position (Yorùbá onsetless prefixes can't bear H, Gbè prefixes don't contrast M and L) than they are to lexical category (as is the norm for BK1, see above). Such asymmetries matter, because the generalization in (3) cannot hold unless paradigmatic properties like tone contrasts are systematically related to morphosyntax.

Absent synchronic evidence for mixed values of (3c), I conclude that BK contains only two parametric states, BK 1/2. Given the large population of BK languages, such a result is beyond the coincidence of drift, and is irreducible to gradient borrowing. The remaining possibility is common origin.

19.4 Speciation of grammar—rare and catastrophic

As noted in passing above, the hypothesis of singular historical origin for the asymmetric, bimodal distribution in (3) poses issues of learnability and markedness. Two out of the four distinctive I-language features of BK2 are purely semantic, not easily detectable in primary acquisition data: a secondary reading of default tense which is often doubled and masked by a temporal adverb (2a); and a missing aspectual class of serial verbs easily effable in a multiclause alternative (2b). A third feature of BK2—a three-way pitch contrast over roots (2d)—is phonetically robust but is *a priori* difficult to connect to clause-level semantics. The remaining feature is more promising as a speciation trigger: synchronization of FIN exclusively before the predicate (2c) is scopal and thus potentially semantic. FIN is usually audible in Yorùbá, but never in non-auxiliated sentences of Gbè, thus it's learnable in Gbè only with the help of a UG bias which points children towards BK2 by default.

Following earlier generative studies of Niger-Congo languages (Koopman 1984; Baker 1985), the differing morphological profiles of (2c) have been

analysed in terms of head movement or its checking-theoretic equivalent (Manfredi 1991; Déchaine 1992; Stewart 1998), but this approach to linearization foundered on conceptual and empirical problems (Lasnik 1995; Hyman 2003) and led to dubious results. Stewart (1998) appealed to Baker's Mirror Principle in order to group Ẹ̀dó together with Yorùbá versus Ìgbo, based on a claimed correlation between finite affixation and the typology of serial constructions, but both sides of this equation are mistaken (Manfredi 2005a). So far as I-language is concerned, and setting aside traditional construction labels, Ẹ̀dó is more like Ìgbo than like Yorùbá: its minimal finite form of an eventive predicate does not span past and present-perfect (2a) and the so-called 'consecutive' serial is freely available (2b). Nor is suffixation a reliable inflectional cue in Ẹ̀dó; that job is primarily done by prosody (Melzian 1942; Ámayo 1976; Aikhiọnbare 1988). As shown directly below, facts of inflectional prosody support (2c) and group Ẹ̀dó with Ìgbo not with Yorùbá.

If so, the superordinate question remains, how can prosody determine syntactico-semantic type? An answer is available in a phase framework, with two further assmptions: Spell-Out domain is parametrized and inflectional prosody tracks cyclic accentuation. The former idea seems inevitable if any category variation can be registered in syntax; the latter is supported by the Minimalist derivation of Nuclear Stress effects in Germanic (Wagner 2005). Cyclic accentuation is not improbable in BK languages, so long as one is prepared to drop the taxonomic assumption (Pike 1948; Welmers 1959) that 'grammatical tone' enters the computation as phonology (Goldsmith 1976; Hyman 1979, 1989; Odden 1988). If prosodic inflection is phrasal *syntax* (Manfredi 2006), (2c) entails that in BK1 the derivation 'waits' before spelling out the predicate until after merging the main Tense-related head, whereas BK2 languages pronounce the lexical predicate (roughly, the bare VP) before that point.[15]

Given the parameter, the next question is the direction of the parameter resetting event. Theory-neutral E-language evidence reviewed above suggests that late (TP) Spell-Out was the archaic/initial state of BK, with early (VP) Spell-Out the innovation: BK1 languages are non-contiguous, separated by the large but territorially unified BK2 area, hence a singular innovation is demographically more likely to have affected BK2 than BK1. A historical analysis of (3) then requires two more steps: (i) identify the trigger which reset cyclic Spell-Out from TP to VP, and (ii) show how this resetting leads simultaneously to all four I-language properties of BK2.

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[15] As noted by Déchaine (2001b), this parameter contradicts both uniform (e.g. Late) Lexical Insertion (Halle and Marantz 1993) and Lexical Uniformity (Reinhart 1997).

As Greenberg (1963: 37) observed, the dichotomy 'Sudanic=isolating, Bantu=agglutinative became fundamental for African linguistics' already since Westermann (1927). Thereafter, evidence accumulated that western BK shows 'an advanced state of decay and the extensive loss of affixes' (Greenberg 1963: 37), but this E-language observation leaves two problems. (i) The gradual cline of 'decay and loss' across BK says nothing about which restructuring cues account for the sharply discontinuous emergence of the BK2 type. (ii) These 'decay and loss' effects are typically described in segmental terms, with tonal phenomena set apart as 'stable' in 'floating' phonology (Hyman and Tadadjeu 1976; Williamson 1986b), but on the contrary, the comparative evidence shows that BK2 underwent radical prosodic restructuring.

Èdó is a paradigm of both (i) and (ii). Stewart (1998) could save the Mirror Principle and group Èdó parametrically with Yorùbá (BK2) rather than Ìgbo (BK1) only by two E-language assumptions: enshrining a privileged relation between suffixation and tense while arbitrarily discounting tonal inflection; and resorting to definitional *fiat* to escape the serial nature of so-called 'consecutive' constructions (following Hyman 1971 and Lord 1977). But from the I-language perspective in (2), Èdó remains with Ìgbo in BK1, despite the dramatic surface effects in Èdó of consonant lenition and vowel elision in both synchronic and diachronic terms (Wescott 1962; Ọ̀mọ́zùwa 1989; Elugbe 1989).

Consider (12). Comparison of (12a) and (12b) shows that the segments pronounced -(*r*)*è* appear only in the absence of a phrasal complement, and that tense is coded adequately by pitch alone when the object is *in situ* (12c–d). Far from -(*r*)*è* being a tense-marker *à la* Stewart, (12) shows it to be a footing device which fits the H in (12b) as a branching trochee (*sw* = HL), as opposed to the H in (12d) which does not fall. In Èdó, inflectional prosody is more easily parsed because predicate-type roots do not display 'any minimal tonal contrasts…independently of their grammatical contexts' (Ámayo 1976: 230). Ìgbo on the other hand does possess at least a few minimal tone pairs in lexical roots, nevertheless prosodic inflection remains possible in various ways: either deaccent the root as in (13a–b), or else make the subject clitic accentually dependent on the root. The latter option is shown by a minimal pair in Ágbọ̀ (at the western edge of the Ìgbo cluster), where the lexical pitch contrast between -*jén* 'go' (H) and -*bọ̀* (L) is pronounced in a finite context, not on the roots themselves which are both realized H, but on the accentually 'opposite' subject clitic pronounced respectively L (13d) and H (13e). In between, both geographically and typologically, is the Ìsele Úku dialect (13c) described by Ọ́nwụeméne (1984: 6), which extends root deaccenting *à la* Ìgboúzọ̀ (13b) to the auxiliary domain *à la* Ágbọ̀ (13d). The interest of the

paradigm in (13) is that in all the variations, the predicate root and the Tense domain are prosodically *inter*dependent, just as required by (2c). This situation is parametrically identical to (12).[16]

Ẹ̀dó (BK1)

(12) a. Ọ̀ bọ́ (ò)wá.
        3SG build.H house
        'S/he built [a] house'
        [L H !H]

      b. òwa n-ọ bọ́-(r)è.
        house DEF-3SG build.FIN-AFF
        'the house that s/he built'
        [L L L H-L]

      c. Ọ̀ bọ (o)wá.
        3SG build.L house
        'S/he is building [a]
        house [now]'
        [L L (L)H]

      d. òwa n-ọ bọ́
        house DEF-3SG build.H
        'the house that s/he is
        building [now]'
        [LL L H]

north & west Ìgbo (BK1)

(13) a. Ó jè-lụ áfịa.   (Ọ̀ nị cha)
        3SG go.FIN-CL market
        'S/he went to [the] market'
        [H LL HH]

      b. Ó jè áshịa.   (Ìgboúzò)
        3SG go.FIN market
        'S/he went to [the] market'
        [H L HH]

      c. Ó-ò je áfịa.   (Ìsele Úku)
        3SG-FIN go.FIN market
        'S/he went to [the] market'
        [H LL HH]

      d. Ò jén afịá.   (Ágbọ̀)
        3SG.FIN go market.GEN
        'S/he went to [the] market'
        [L H H!H]

      e. Ọ́ bọ́ anụ́   (Ágbọ̀)
        3SG.FIN butcher animal.GEN
        'S/he butchered [an/the]
        animal'
        [H !H H!H]

So, what dissuaded the learner of any BK language from spelling out Tense and the predicate root *together*? Although suffix erosion is complete in western Ìgbo, it nonetheless remains BK1, so some additional factor must have compelled the shift to early Spell-Out in BK2 languages. The only

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[16] As flagged in the glosses of (13d e), Ágbọ̀'s 'capture' of the subject clitic into the domain where root tone contrasts appear, leads to loss of Accusative case-marking with finite verbs. Thus the tonal inflection of the notional object in these sentences is Genitive [H!H], versus citation/Accusative [HH] as found in the other dialects. This is Burzio's generalization without A-movement. Another E-language factor nudging prosody leftward in Ágbọ̀ is phonetic contraction of the vowel of the verb root before a V-initial direct object. In this, Ágbọ̀ resembles Ẹ̀dó, its neighbour, as well as Yorùbá. But Ẹ̀dó unlike either Ìgbo or Yorùbá maintains a length contrast between CV and CVV roots, compensating for the lack of lexical verb tone contrasts (Ámayo 1976).

remaining possibility, on current knowledge, is (2d), thus I claim that a three-way lexical tone contrast pushes prosodic inflection over the edge to aggressive (early) root Spell-Out. Such an inference sounds absured if tone is mere phonology, but is possible and indeed inescapable, if tonemic contrasts are epiphenomena of accentual footing (Liberman 1995; Idsardi and Purnell 1997; Manfredi 2004). Thus I claim that a three-way lexical pitch contrast rules out a prosodic dependency between Tense and VP—the primary cue of late Spell-Out—because no foot can be constructed spanning both positions. Any E-language change introducing a third lexical tone in a BK grammar is sufficient to produce the I-language outcome of BK2, starting with (2c).

It remains to account for the semantic traits (2a–b). As argued in Section 19.3, temporal ambiguity is independently correlated with auxiliation, in other words (2c) directly accounts for (2a). As for (2b), I have proposed (14), supported by (15).

(14)   A sequence of aspectually unrelated events cannot be expressed in a single clause . . . unless each root is either local to Tense or audibly tense-marked.

(15)   a. A (quantized) event must be tense-marked (Enç 1987; Verkuyl 1993).
        b. Non-local tense-marking must be overt (morphological head-marking).
        c. A complex event is tense-marked if any of its segments is.

19.5 Hegelian diachrony

> '[P]er [Hegel] non si tratta di avere belle e pronte le
> idee per poi vedere come esse si manifestino, si
> svolgano e si applichino, ma lo svolgimento stesso
> della storia nella sua realtà e concretezza è la
> rivelazione del fine ideale umano.'[17]

Even assuming that (2a) and (2b) were somehow directly learnable as 'semantic parameters' (Chierchia 1998), their historical linkage to each other, and to the phonetic cues in (2c–d), show that the four changes in BK didn't happen separately or coincidentally. The need for a quantum analysis along these lines is perceived by Hyman (2004), despite his preference for incremental grammaticalization. I claim that the *Primum Movens* of the historical

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[17] 'Hegel didn't treat ideas as ready made or as merely something to watch how they'd later turn out, unfold or be applied. Rather, it is the unfolding of history in its concrete reality that reveals the ideal human *telos*' (Labriola 1871: 130).

clock—grammar-external (E-language) phenomena of segmental erosion in affixes and roots—led to lexical restructuring via tonogenesis (2d), which forced a shift to early Spell-Out (2c), with direct semantic effects (2a–b). Most speakers of BK2 languages may agree with Koster (1986: 376; cf. Zeeman 1972) that this kind of evolution is a 'happy accident'.

The large-scale restructuring event that created BK2 sits uneasily with current views of both macro and micro parameters (Baker 1996; Kayne 2005; cf. Newmeyer 2004). A lone micro change can't plausibly explain the huge contrast in (3), and if several micro changes had been additively involved, more than two I-languages ought to appear in the very large sample. An improvement could be to correlate several micro outcomes together by appealing to implicational universals (Greenberg 1966), except that none of the structural generalizations in (2) seems to be valid outside the BK universe. Since it's unlikely that UG knows specifically about BK, I suggest it is sufficient for UG to know about cyclic Spell-Out, even though this parameter in itself is too abstract to describe the grammars of BK1 and BK2 in descriptively adequate detail.

Fortunately, typology can be studied in conjunction with history (Greenberg 1970) just as Labriola taught in the epigraph to this conclusion. In Heglian style we can run the BK movie 'forwards in time' (Watkins 1962: 7) and sort many small E-language differences among the BK daughters according to the UG *telos* of one large I-language difference. Segmental erosion opened the prosodic door that let BK2 cross the threshold of (2d). (2d) set off a 'catastrophic' reset of BK grammar, analogous to 'radical creolization' (Bickerton 1981; cf. Oyèláràn 1982) but limited to one parameter, the choice between TP and VP for cyclic Spell-Out. Standard objections to Bickerton (Muysken 1988; Mufwene 2001) don't apply to the markedness account of BK2 being proposed here. (i) The suggested triggering condition for BK2 is not a vague 'heterogeneity' of primary data, but a narrowly defined class of monolingual E-language inputs. (ii) The unmarked quality of a Bickertonian 'radical creole' is grammar-wide, but the unmarked property of BK2 in comparison to BK1 is limited to clausal inflection—leaving many other I-language properties which are shared between BK1 and BK2, and which erosion didn't touch.[18]

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[18] Instead of the metaphor of 'decay' (Greenberg 1963; Keenan 1998, 2002, this volume), I prefer *erosion* because it fits the specific process at work here, incremental loss of material at edges; because it avoids the Romantic degeneration trope; and *pace* the anonymous reviewer mentioned in 19.1 because it matches BK2 ontogenetic myths like the verses from *Ogbègúndá* (Abímbọ́lá 1975: 19f).

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