Ineffable tenses in Benue-Kwa and Romance
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ABSTRACT: Some natural languages can't distinguish past from present perfect without recourse to periphrasis or context. This expressive gap is unexpected if tenses are autonomous meaning postulates (Reichenbach 1947, Hornstein 1980, Giorgi & Pianesi 1997), but is grist for theories where tense interpretations emerge from syntax-pragmatics interaction indirectly (McCawley 1971, Vikner 1985, 1987). English has an unambiguous present perfect (*I have danced yesterday, Klein 1992) but French doesn't (J'ai dansé hier taking over Je dansé hier), and the atrophy of the simple preterite in northern Romance coincides with several other developments related to case, agreement and aspect (Zamboni 2000, 87 cited by Ledgeway 2012, 314). In the Benue–Kwa (BK) subgroup of Niger–Congo, an unambiguous present perfect occurs in most of the major clusters, including Akan, Êdò, Igbo, Cross, Plateau and Bantoid, but does not exist in a substantial, contiguous subset — call it BK2 — comprising Gbè, Yorùbá, Nupe and Idomá, where any finite affirmative episodic predicate in principle allows either present perfect or simple past construal. This bifurcation of BK arguably followed on the erosion of finite affixation in BK2, and introduced other correlated changes of a quantal nature in its wake (Manfredi 2005a, 2009). One reason IUG doesn't need to stipulate a tense system is that time reference is partly redundant with default interpretation of lexical Aktionsart (Green & Ígwè 1963, 53; Welmers & Welmers 1968, 76; Dowty 1986, Dëchaine 1991, Sorace 2000). But the crosslinguistic parallelism is incomplete: in southern Romance, present perfect morphology automatically codes for recent past, but in BK these two traits are orthogonal (Welmers 1973).

Tense parameters and serial verbs

Invited in 2002 to a project originally entitled Studies in the Syntax of Kwa: a generative perspective, edited by E. Aboh & J. Essegbey. Second draft, much revised in response to substantive comments from the editors, was withdrawn 9 May 2007 after the (technically anonymous) external reviewer refused to even read it on the creative excuse that it's "dense" and "flowery" — if he meant "al dente" and "floury" he may be pardoned on orthodontic and dietary grounds although he should nevertheless have been ethical enough to disqualify himself instead of shirking the job while accepting the reviewer's honorarium! Less excusable was the decision of the editors not to insist that the publisher obtain an actual review of the chapter, in the absence of which I was unfairly placed in the position of having to guess how much of the reviewer's problem was due to his delicate stylistic sensibilities and how much was an unwillingness to read substantive criticism of his own work and that of his close cumpari. (No empirical or theoretical errors were indicated in the non-review which he provided.) Another debilitating confusion on the part of the editors was their concept of "Kwa" whose descriptive coverage doesn't coincide with any proposed historical use of this term (e.g. Greenberg 1963; Williamson 1989), conforming instead more or less to Westernman's lexico-typological sense of those "Sudanic" languages which tend to monosyllabic roots (1927, 20). In this way the project lost its coherence as a comparative syntax handbook, and the volume which eventually appeared (see: Springer, with the title Topics in Kwa Syntax, ISBN 978–90–481–3188–4) would have been more transparently titled Syntactic studies in some of the more isolating Benue–Kwa clusters, namely Gbè, Akan & Yorùbá, with special reference to Gùn–Gbè (cf. review by M. Dakubu, Studies in Language 34, 442–52).

UPDATE: Omoruyi (1991) — a lucid article which has belatedly come to my attention — presents further massive evidence of the inflection of Êdò finite predicates by prosodic morphology. It confirms and clarifies cited observations (Melzian 1942, Aikhenvalde 1988) which were already enough to falsify the view of Stewart (1998a, 2001; cf. Baker & Stewart 1991, 199b, 2002) as to the position of Êdò in the parametric division of Benue–Kwa. To be clear, no one disputes that both finite inflection and serialization differ structurally across the vast and complex Benue–Kwa group. The controversy concerns (i) what counts as finite inflection as well as serialization and (ii) how these two nonuniform states of the human language faculty are causally related to each other. A revised version of my manuscript should integrate Omoruyi's generalizations about inflection, plus those of Ogie (2009) about possible serializations in the language. Both Omoruyi's and Ogie's studies also falsify the subsidiary claim that Êdò needs to distinguish bare predicate roots with the diacritic labels "verb" versus "adjective" (pace Baker 2003).

Tense parameters and serial verbs
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1. Fuzzy definition, uneven spread
For Stahlke (1970, 60, 80), a serial construction consists of multiple finite roots (“verbs”) in one clause—sharing one grammatical subject and one tense value. Some definitions are narrower, banning conjunctions or multi-events (see §2 and §5); others are more inclusive, dropping the finiteness requirement and allowing a change of subject (Law & Veenstra 1992).¹

Finite inflection in Benue-Kwa is relatively light, lacking person/number features and barely denoting tense.² Most Benue-Kwa infinitives are set apart by the presence of a quasi-nominalizing proclitic or “prefix” (Schadeberg 2003, 80). In most Ígbò varieties, this item is pronounced -i- or -ì- and adds a downstep—the prosodic cue for a phrasal edge—before an accented (H tone-bearing) root. Ì-ì́ (tonally H/H) is indifferent to aspecto-temporal context, whether past-telic (1a) or nonpast-generic (1c), but other affixes co-variety: telic (1b) has serial suffixes ì-ì-ì… ì-ì-ì-ì-ì (generic 1d) has serial prefixes è-è-è-è-è-è-è-è.¹ In Yorùbá the infinitive begins with an accented (H-bearing) vocalic mora of unspecified quality—historically probably ì as in modern Ígbò (Bàmìgbòṣé 1966, 76 citing Crowther 1852).¹ It appears twice in (2a) and is necessarily absent in (2b). The extra mora before -hè́ ‘return’ in (2c) is different: it acts like an allomorph of ̀ì, the progressive aux which always accompanies -hè́. If the ̀ì is dropped, no extra mora occurs before -wà́ (2d).² In Gbè, nonfinite morphology can be inferred from object shift which implicates a nominalizing proclitic.³

(1) a. Mì jè-ì̀ ahyà jì-ì̀ ànu.
ì go-ì̀ aff market ìnfì aff buy animal
‘I went to market in order to buy meat’

b. Mì jè-ì̀ ahyà yù-ù aì̀ ànu.
ì go-ì̀ aff market buy-ù aff animal,gen
‘I went to the market and bought [some] meat’

c. Mì nà e-je ahyà jì-ì̀ ànu.
ì dìrì nomì go market,gen ìnfì aff buy animal
‘I usually go to market in order to buy meat’

d. Mì nà e-je ahyà à-ù aì̀ ànu.
ì dìrì nomì go market,gen nomì aff buy animal,gen
‘I usually go to market and buy meat’

(2) a. Wò̀n pì̀ ì̀ koÒkò ó wà̀.
3p.aff want infn learn vehicle infn paddle/propeł
‘They want to learn to drive a car’

b. Wò̀n wè̀ (* è́) kò.
3p.aff swim/bathe infn go
‘They swim/washed before going’

c. Wò̀n ǹ gbè këngè̀ è bò̀.
3p.aff prog carry keg asp return
‘They’re bringing the keg’

d. Wò̀n gbè këngè̀ (* è́) wà̀.
3p.aff carry keg come
‘I brought the keg’

On the semantic side, a finite form entails a temporally interpreted aspect. It can be deduced from (1b,d), but not from (1a,c), that meat-buying occurred. Similarly, (2b) entails that some going-away took place, (2c) that the keg approached and (2d) that it arrived, but (2a) doesn’t mean that anyone has learned how to drive. Tense-matching requirement follows from this entailment (see §5.3).

By the above reasoning, (1b,d) and (2b-d) are all Stahlkean serial constructions, and serial verbs so defined are abundant in western Benue-Kwa. The precise extent in a given language may, however, be masked by morphological quirks such as root “splitting” and “compounding” (§3.3) as well as by irregular inflection of certain stative roots occupying initial serial position (§3.2 and §3.4). Serial verbs are relatively sparse in eastern Benue-Kwa, e.g. in Bantu. Outside Niger-Congo they occur in typologically diverse language families (Muysken 1977; Craig & Hale 1988; Li 1990; Lee 1992) and even marginally in Germanic and Romance (§5.4). This uneven spread suggests that serial verbs have no special raison d’être, but appear automatically in the absence of a heterogeneous list of blocking factors (Manfredi 1988). Serial verbs may therefore be less interesting in themselves than as a backdrop against which to observe substantive parameters.

1.1 Frege and Aristotle on safari
One reason serial verbs aren’t universal is category skewing related to inflection (Larson 1991; Déchaine 1993b, 297). Roots that resist finite inflection in Indo-European are traditionally labeled predicate adjectives, prepositions, particles, adverbs or nouns, but in Benue-Kwa on distributional grounds many closely synonymous items are called verbs (Bàmìgbòṣé 1972; Ìwàlàka 1983). For example, Benue-Kwa inflection needs no copula in order to combine with roots translatable as adjectives like ‘broken’ (Ígbò -wà́, Yorùbá -fò́) or as prepositions like ‘off’ (Ígbò -gbò, Yorùbá -wò́). This crosslinguistic asymmetry is grist for theorizing.

Baker holds that “all natural human languages have the same three lexical categories [V, N, A]… [but] differ… in some details about how they are packaged” (2003, 302). If so, how exotic of Ìdò to have packaged the counterparts of English beautiful and down as lexical verbs—Baker glosses them as “beautiful”, and “fall” (2003, 228)—or how dull of English not to have figured out how to do the same.⁴ Alternatively, “substantive listemes… are devoid of any syntactic properties… and… lexical projections are characterized [only] via functional structure” (Borer 2005, 27; cf. Marantz 1997).⁵ Each premise leads to a different analysis of serial constructions. If serial verbs are ‘verbs all the way down’ i.e. Fregean unsaturated lexical functions, then serial constructions are the means by which “the lexical θ-role-assigning properties of [several] verbs are satisfied” within one phrase (Baker 1989, 521). But if serial verbs are category-neutral Aristotelian predicates i.e. rhemes (cf. Moro 1997, 248-61), the task is to
“...look beyond the argument structure of individual verbs to some principle or principles which relate these argument structures to each other. ...The ‘lexical’ approach seems to imply that verb serialization is required just in order to license a complex argument structure. The approach we take to these issues is different: it is the verbs themselves that are licensed in the formation of complex predicates. (Awóyale 1988b, 6, 8)

To accommodate multiple finite verbs in one clause, both frameworks use predicate adjunction, but in contrary formats: projected up from the lexicon as a “double-headed verbal phrase” (Baker) or licensed top-down in an aspectual “template” (Awóyale). Subsequently, Baker’s θ-roles have been enriched with event arguments and matching Event Phrases (Stewart 2001, cf. Travis 1994), and Awóyale’s template reduced to aspectual quantification at LF (Déchaîne 1993a, 1997; cf. Krifka 1989; Verkuyl 1993).

Conceptual divergences aside, both camps accept that the language-particular form of inflection is an independent variable determining, in part, which kinds of serial strings occur where. This chapter joins the consensus, but proposes a different internal parametrization of Benue-Kwa (§1.3) based on different assumptions about inflectional prosody (§4).

1.2 Benue-Kwa until further notice

Westermann’s Kwa subgroup includes the Kru, Âkân, Gbô, Yorùbá, Nupe, Èdò, Igbo and Izôn clusters (1927, 20); he could have added Ídonà among others. Greenberg however voiced “legitimate doubts... concerning the validity of the division between” Kwa and Benue-Congo, the subgroup containing Bantu (1963a, 39; cf. 1963b) and 40 years later it’s still “impossible to draw a clear line between Bantu, however defined, and non-Bantu Niger-Congo” (Nurse & Philippson 2003, 5).

Mindful of these penumbras, the 15th (1982) West African Languages Congress endorsed Elugbe & Williamson’s cautious stance that “pending the production of new types of evidence, Benue-Congo and Kwa form a single subfamily of Niger-Congo” (1977, 351), namely Benue-Kwa. Soon thereafter, Williamson (1989) proposed to shift the Kwa border from east of Ègô to west of Yorùbá by recalculating Bennett & Sterk’s (1977) lexicostatistics. Her “New Kwa” was reduced to the Âkân and Gbô clusters (= Westermann’s Ewe-Tschi-Gruppe), relegating Yorùbá, Nupe, Ídonà, Èdò and Igbo to “New Benue-Congo” and setting Izôn and Kru apart in other branches. But the New labels are fragile: their lexicostatistical support does not exceed the method’s margin of error (Armstrong 1983, 146f; Capo 1985), and New Kwa unity is split by the fact that Âkân shares more sound correspondences with Bantu than it does with Gbô (Stewart 1994, 176). Recently Old Benue-Congo was restored as “East Benue-Congo” coordinate with “West Benue-Congo” (Yorùbá, Nupe, Èdò, Ídonà, Igbo) and “Kwa” (Âkân, Gbô) all in a “dialect continuum” called “East Volta-Congo=Proto Benue-Kwa” (Williamson & Blench 2000, 17f., 27). Back to 1963, for the time being.

Old or New, Kwa also lacks typological coherence. Number-inflecting nounclasses are a Benue-Congo hallmark, but Welmers (1973a) finds “vestigial” classes (prefix alternations without matching agreement) in Kru, Âkân, Yorùbá and Igbo; he could have added Ídonà and Èdò. As for serial verbs, these may be ubiquitous in Old Kwa (Stewart 1971, 181) but by anyone’s definition they also appear in Old (and therefore in New) Benue-Congo: in Lower Cross, in Jukun (Welmers 1973b) and in “Grassfields Bantu” (Hyman 1971). The New labels face yet another potential challenge: they straddle a fourfold phonosyntactic parameter.

1.3 A fourfold surprise

Benue-Kwa languages divide according to four logically independent descriptions, which can be stated privatively as follows:

<table>
<thead>
<tr>
<th>BK1</th>
<th>BK2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. – +</td>
<td>– +</td>
</tr>
<tr>
<td>b. – +</td>
<td>– +</td>
</tr>
<tr>
<td>c. – +</td>
<td>– +</td>
</tr>
<tr>
<td>d. – +</td>
<td>– +</td>
</tr>
</tbody>
</table>

A finite eventive predicate with minimal inflection allows a present perfect reading in addition to a past one.

Aspects unrelated events are excluded from a single clause.

Minimal finite inflection is an aux/proclitic particle (as opposed to a suffix or root-borne tone pattern).

At least three surface tones contrast on roots of the same category (as opposed to two tones plus downstep).

Remarkably, the features cohere: it’s enough to know the choice made by a language for any one of them, to deduce the other three. Put another way: of 2^4=16 possible languages in the parametric space, only two apparently exist: BK1={Âkân, Èdò, Igbo, Bantu...} and BK2={Gbô, Yorùbá...}. Viewed on such a large demographic scale, this tentative result seems beyond chance.

Either (3) is wrong or it’s been wrongly overlooked, and the latter is not implausible. Properties (3a) and (3b), both semantic, are easily lost in translation or hidden behind traditional construction labels. (3a) is observed by Déchaîne & Manfredi (2000); (3b) is presented in §2. (3c) and (3d) are both audible; their correlation is not predicted by autosegmental phonology, the standard Africanist framework (Williams 1971; Goldsmith 1976), but a relationship between tone and affixation can be deduced from a morphosyntactic, accentual analysis of surface tone contrasts in which tonemes are epiphenomena (Manfredi 2003, 2004).

Why the two kinds of features—semantic (3a,b) and phonetic (3c,d)—go together (if they do) is another question for another day. Meanwhile the parameter as stated has consequences. For history: neither BK1 nor BK2 is contained in either New Kwa or New Benue-Congo. BK2 being geographically contiguous, it could be the innovation, with BK1 the archaic remnant. For synchronic analysis: (3c) is incompatible with Collins’ (2002) checking-theoretic analysis of root-root compounds (§3.3), and contradicts O. Stewart’s (2001) description of inflection in Èdò and Igbo (§4).
1.4 Data format

All data are cited orthographically but with some glosses simplified or resegmented (at my risk). I’ve also used streamlined or more familiar labels for most of the clusters—e.g. Îgbọ/ Yorùbá/ Âkán instead of Îgboid/Defoid/Nyo.

To establish (3c-d) demands surface tonemarking. All BK2 languages enjoy settled conventions for transcribing lexical tones on individual syllables, though grammatical tones are rarely indicated or glossed. In Yorùbá, every unmarked syllable is mid (toneless, neutral). In Gbè, unmarked syllables are low or mid; some sources also mark low or superlow. For many BK1 languages, tone orthography is less well established, in part perhaps because of more extensive tonal underspecification and grammatical tone effects. Here I adopt the accentual notation of Christaller, Swift, Welmers and Nwàchukwu comprising two rules:

By (4), the syntagmatic relationship between two acutes efficiently indicates one downstep, without introducing special symbols like a macron (the Îbádán convention), a raised exclamation point (phonetic juncture notation) or a vertical arrow.

2. The aspectual restriction

One phenomenon thrown into relief by the uneven distribution of serial verbs across Benue-Kwa is described in (3b). For example, multi-event serial verb constructions exist in both BK1 and BK2, but Îgbọ has more and the question is why. Îgbọ (BK1) examples like (5), in which a single subject is predicated over random consecutive events, don’t translate directly into Yorùbá (BK2), cf. (6). To render (5), Yorùbá needs a fully biclausal structure (8) with two overt subjects (possibly referentially distinct) and two independent instances of inflection (glossed here as AFF or NEG)—the second one optionally followed by an auxiliary like sì or dë (Báŋgbọ́sé 1966, 70f.). Conversely, adding a second subject to Îgbọ (5) renders it ungrammatical, cf. (7).16

Báŋgbọ́sé’s asterisk upon (6a) is endorsed by other speaker-linguists (’S. Oyèläràn, O. Yusuf p.c.) who add that the context can be fixed as in example (16) below. The contrast of (5) and (6) is nevertheless sharp, because accepting (5) requires no pragmatic exertions.

To exclude (6) while allowing (5) would be easier if (5) and (8) could both be treated as realizations of a multiclausal (i.e. non-serial) structure. Consistent with that premise, an English translator may be tempted to gloss wè-è, sì or dë as temporal conjunctions, but in fact none of these items demands an event sequence. Nonconsecutive examples of sì are cited by Abraham (1958, 589). The expletive nature of wè-è is clear in examples from Ọnjọcha oral literature. In (9a), the progressive actions introduced by wè-è are simultaneous, the second wè-è merely marking change of subject. In telic (9b) the tokens of wè-è all translate temporally but the third one does not block internal argument sharing, thereby violating O. Stewart’s definition of covert coordination. Similarly in the Âkán cluster, the examples in (10), with and without fa ‘take’, differ in the tone of the last root but not in the published translations.

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Anyû (12), but in (8) as well as (11), negation can mark either root independently of the other, cf. (13) and (14).

Ànyû (13) a.

Sentential negation parallels the other clausehood diagnostics already mentioned. Only the first predicate root in (5) can be negated, cf. (12), but in (8) as well as (11), negation can mark either root independently of the other, cf. (13) and (14).

Concerning the asterisk on (6a), and with grammatical examples like (5) implicitly in mind, Báñgbọ̀sé wrote as follows:

"[T]here is nothing wrong with the sequence of actions… One could say that the… transformations deriving serial verb constructions will not be constrained from producing ill-formed sentences such as […] (1974, 28 and fn. 18)"

In other words, there’s no logical necessity to compare (5) and (6), but it’s also possible to argue that they must be compared.

Following Hyman (1971), Lord calls (5) a “consecutive construction” 1977, 145). Applying Givón’s theory of “diachronic drift along universal semantic rivers” (1975, 93 f.), she lets the Igbo consecutive express “unspecified meaning relationships” whose “interpretation [is] left to pragmatic inference” (1975, 38). Similarly for Stewart, (5) is an example of “covert coordination” with “quantification over two completely separate events”, i.e. “separate VPs which are dominated by separate (symmetric) projections of E[vent] P[hrase], and subsequent VPs” (1967, 39 f.; 1963, 176; 1967, 93 f.). On the other hand, one could attempt to find sequences of classes of verbs which admit of serialization… (Williamson 1963). Perhaps this is another question which will depend on the nature of the language being described: It may be easier in some languages than others to build in syntactic constraints.” (1974, 28 and fn. 18)

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For Lord, (16) is presumably serial, and therefore grammatical in Yorùbá, because unlike (6) it permits an action-result interpretation. But then some other reason must be responsible for the failure of the closely synonymous examples in (15) to be expressed in Ìgbo as a root-root compound—Ìgbo’s preferred structure for action-result sequences according to Lord’s analysis. A plausible excuse could be the transitivity of the first root, but Lord excludes this possibility by citing well-formed compounds in which the first root is independently transitive. For example, the simplex predicates in (17a-b) are formed from semantically lightweight -gbá plus a thematically contentful noun complement (gbáo, égbé…). (18) shows that suppression of the noun occurs when forming a compound with either of the roots in (17c-d), even though major ambiguity can result as in (18a). 27

‘I went to school and read/become literate’

b. Mì rí-rí ji (wè-ê) nyù-ô nshí. Is eat-AFF yam take-AFF excrete-AFF shit.GEN
‘I ate [the] yam and [then] passed stool’

(16) a. Mo gbá oye kọ ìwé. Is receive title write paper
‘I graduated and [thereby] became literate’

b. Mo je ìṣù ọ̀ya ìgbé. Is eat yam divide shit
‘I ate [the] yam and [then] passed stool’

Lord understood her own discovery to show that compounds are derived templatically in the lexicon:

“For the special action-result meaning of compounds…they are not derivable by transformational rules. … But since the compounding process appears to be productive in Ìgbo, and new compounds are readily created and understood, the grammar should also account for this… by setting up combinatory rules…” (1975, 47)

Taken literally, Lord’s solution overgenerates: some action-result sequences, expressible in Ìgbo as “consecutive” constructions, fail as compounds, e.g. * -da-nwùj ‘fall-die’ and * -nwùj ‘die-rot’ The string -dà-nwùj does actually occur in a phrase O da-nwùj-ô-na which refers to the shriveling of a contact-sensitive wild plant known in Nigerian English as Touch-and-Die (C. Ìchtechíkúwu, p.c.). But as is clear from the context, the plant’s death or withering is not the result of falling, as should be the case if compounds use an action-result template. Instead, -da in this and similar strings (e.g. -da-pù ‘cause to leak’, cf. -pù ‘perforate’, Èmenanjọ 1984) is a pure causative operator, and the phrase O da-nwùj-ô-na is therefore anticausative, not a spontaneous inchoative event. Causative -da also occurs apart from compounds, as a light verb in expressions like -dá ògbú ‘cause [a] vendetta’ and -dá ògu ‘cause [a] fight’ (Ìgwé 1999, 134). To express the fact that intransitive resultative compounds are systematically absent in Ìgbo, a lexical analysis could stipulate a root like * -dá ‘fall’ to be intrinsically nonagentive, but then the problem becomes how to analyze (16a) as an action-result sequence in Yorùbá, since it seems forced to classify as agentive the expression gba oye ‘graduate’ (literally, ‘receive a degree’). A last ditch way to deny uniform treatment of (15) and (16) would be to let event structure itself differ between languages, with Ìgbo insisting that “actions” be agentive while Yorùbá has no preference in the matter. At best, the Whorfian expedient restates the problem abstractly.

The issues are similar for Stewart: (16) could not be a “consequential” serial construction, in his terms, since it has no “object sharing mediated by an empty category” (2001, 54). For example he calls (19a) “a typical illustration of the C[over] C[oordination] where each verb has its own distinct object” (2001, 71), no less than (19b).

(17) a. Ògbá-rà òqò. 3S gba-AFF escape
‘She ran [somewhere]’

b. Ògbá-rà (Ìché) ìgbé. 3S gba-AFF U. gun
‘She shot (Ìché)”

c. Òfù-rù ìbù-ò. 3S lost-AFF NOM-lost
‘3S got lost’

d. Ògbù-rù ìché. 3S cut-AFF U.
‘She killed Ìché or ‘It [= the knife] cut Ìché’

(18) a. Ògbá-fù-rú (*ógbá-fù-ôgbé...). 3S gba-lost-AFF escape/gun
‘She ran away’ OR ‘…shot wastefully/indiscriminately’

b. Ògbá-gbú-rù ìché (* ìgbé). 3S gba-cut/kill-AFF U. gun
‘She shot Ìché to death’ [not: ‘…ran and killed Ìché’]

ébà (Stewart 2001, 71, 49)

(19) a. Òzó hín ìtìn kàpàì nìvì. O. climb.AFF tree detach.AFF coconut
‘Ózó climbed [the] tree and picked [a] coconut’

b. Òzó bòlù ìkà gboò ìvì. O. peel.AFF corn plant.AFF coconut
‘Ózó peeled [some] corn and planted [some] coconut’
3.2 Endless diacritic homophony

A second reason not to put different constructional labels on (5) and (6) is that Igbo has examples like (20a) denoting a single event but morphologically resembling (5=20b). The overt inflection of the first root in telic multi-root sentences (20a-b) is identical to that in simplex (20c-d), and the same thing holds for the progressive counterparts in (21).\textsuperscript{19} In single-event (20a) the first inflection is optional, whereas it’s obligatory in two-event (20b), but this is not a peculiarity of the item -ji, it’s a general property of single-event serialization in the language (\textsc{Nwàchukwu} 1976b, 134ff). Therefore any attempt to deny ji the status of a full root ("verb") in (20a) is destined to drown in homophony.\textsuperscript{20}

\textsc{Igbo} (\textsc{Welmers} & \textsc{Welmers} 1968, 163; \textsc{Uwaláàka} 1982, 66)

(20) a. Ö jì(-ri) ınımà bá-a jì.
3s hold-AFF knife peel-AFF yam.GEN
'S/he peeled [the] yams with a knife'

b. Ö rè-re jì bya.
3s sell-AFF yam come.AFF
'S/he sold [the] yams and (then) came'

c. Ö jì(-ri) egö.
3s hold-AFF money
'S/he was holding [some] money'
(i.e. ‘…had money in possession’)

d. Ö rè-re jì.
3s sell-AFF yam
'S/he sold [some] yams'

(21) a. Ö jì ınımà a-bá jì.
3s hold knife NOM-peek yam.GEN
'S/he is peeling [the] yams with a knife'

b. Ö rè-ghe jì a-byà.
3s sell-PROG yam NOM-come
'S/he is selling [the] yams and (then) coming'

c. Ö jì égo.
3s hold money
'3s is holding [some] money'
(i.e. ‘…has money in possession’)

d. Ö rè-ghe jì.
3s sell-PROG yam
'S/he is selling [some] yams'

If one ignores the variant in which jì bears a suffix, -bá ‘peel’ would be the only inflected item in (20a). This impression—enhanced by English rendering of the phrase jì ınımà as ‘with a knife’—encourages the idea that jì in (20a) marks a grammaticalized "case relationship… [of] Instrumental" (Lord 1973, 270), i.e. "a fixed instrumental construction" (Baker & Stewart 2002, 39 fn 17). If so, then (20a) is no serial construction, (20a) and (20b) have different syntax and (5) and (6) different structures. End of problem again, except for two facts. (i) Suffixed jì is indeed possible in (20a), nor is a Case-like translation of jì inevitable: Nigerian English most often expresses (20a) as 'S/he used a knife to peel (the) yams'. Moreover, as noted by Stahlke (1970, 83-87), an abstract noun like ńnà 'gentle' etc. (ii) The optionality of inflection in (20a) is not the idiosyncrasy of one lexical item jì which happens to have two homophonous variants 'with' (20a) and 'hold' (20c). The same effect occurs for two large sets of predicates, which can be called inherent and derived subject depictives. The former may be listable, but the latter definitely not. For either type, when used in a single-event serial construction like (20a), there is an optional inflection of a special kind; otherwise, when used either in a non-serial context to describe a freestanding eventuality or in a multi-event construction, an obligatory inflectional pattern takes over.\textsuperscript{21}

Inherent subject depictives, denoting a subject's location, stance, wearing and holding properties, include the following items:

\textsc{Igbo} (\textsc{Welmers} & \textsc{Welmers} 1968: 162 ff.; \textsc{Winston} 1973, 151 f.; \textsc{Nwàchukwu} 1976b, 135; 1984, 84ff.)

(22)  - bi ‘inhabit’
- má akwà ‘wear a loincloth’
- n’ọ ‘stay’
- tí trauzá ‘wear long pants’
- kwú ọtò ‘stand up’
- jì uwé ‘wear a dress’
- gbà akì ‘be empty-handed’
- sì ‘come from/via [a location]’
- gbà gbà ‘wear a ring’
- sò ‘follow [a moving entity]’
- gbú okpú ‘wear a hat’
- bù ‘carry [something on the head]’
- kpu oghu ‘have a goat in tow’

The inherent set sampled in (22) may be finite, but the derived set can’t be, because it includes possible manner expressions, including all manner of motion predicates: -gbà osú ‘run’, -gbà mọtò ‘ride in [a car]’, -nyá [mọtò] ‘steer/drive [a car]’ ad aeternitatem.

(23) shows that both types of subject depictive resemble jì in (20a) in optionally dropping inflection in a single-event serial construction. The difference between the two classes emerges in simplex predication: by itself, an inherent subject depictive needs no inflection and returns a nonpast interpretation (24a) whereas a derived subject depictive does need a suffix (24b-c).\textsuperscript{22}
This correlation of (un)necessary inflection with serial context is impossible to express by generalizing Lord’s hunch that $j_i$ in (20a) is a closed-class item rather than a token of the ‘hold’ root. Maybe UG can tolerate twinning every inherent subject depictive, listing one as a fixed construction, but no lexicon can enumerate all possible manner expressions. That’s what syntax is for, and the only viable analysis is one which generates subject depictives compositionally (Awójálé 1988a,b; Déchaine 1993a, 1997).

Subtler data reinforce the conclusion that the inflectional pattern in (23) is syntactically derived and not a lexical feature. The option of taking either -$V$-$rV$ or zero as in (23) is reserved for a single-event serializations like (25a); in multi-event (25b) only single -$rV$ is possible. In a non-serial clause, a derived subject depictive takes -$V$-$rV$ only with an extra event-related feature: either either ‘emphatic past’ or ‘pluperfect’ (26b), or else in the presence of an ‘applied’ (ethical dative) argument (26c).

The foregoing casts doubt on the idea that an aspectual-pragmatic property like the relationship between two events ($\S 3.1$), or the difference between one and many events ($\S 3.2$), is directly encoded in a grammatical construction-type. This negative conclusion arrives back at the initial question: why Igbo allows event sequences like (5) which are excluded from Yorùbá. Before answering, there’s another reason not to define serialization so narrowly.

3.3 Homeless compounds

In divorcing “serializing” Yorùbá from “consecutivizing/covert coordinating” Igbo, Lord and Stewart assert the absence of resultative serial constructions in Igbo. Yet Baker & Stewart candidly remark that “Igbo does seem to have R[esultative] SVCs underlyingly…” (2002, fn 6), posing the empirical question of what produces the linear order of Igbo compounds, and the theoretical question of whether that disqualifies them as serial verbs (cf. Nishiyama 1998). Furthermore, all Igbo compounds are not resultative: some are applicative, and the latter have Yorùbá serial counterparts too. Igbo resultative (or causative) compounds don’t reverse the Yorùbá order of roots, but Igbo applicative compounds do. All inflect uniformly in each language, so the fact that both types exist means that inflectional differences between Igbo and Yorùbá can’t explain the two different Igbo linearizations.

First, the diachronic story. Following Givón (1975) and Hyman (1975), Lord assumes that “Niger-Congo, including Benue-Kwa, was SOV [and] non-serializing at some earlier stage” (1977, 146). Then the alleged lack of serial verbs in Igbo arose with

“...the SOV $\rightarrow$ SVO shift first affecting Bantu and Yorùbá but not Igbo and Igbo, which meanwhile develop serialization while still SOV. Later, Yorùbá takes up serialization, and Igbo acquires verb compounds [by virtue of] shifting to SVO [i.e. SOV$\rightarrow$ SVVO].” (Lord 1977, 153, emphasis in original, emendations by VM)

This scenario generates Igbo “VVO” strings, followed by lexicalization of “VV compounds”, but says nothing about how Yorùbá managed to acquire at least two dozen discontinuous, bisyllabic idiomatic expressions (27). Many of these have Igbo counterparts (28), all of which presumably qualify as compounds since they’re both idiomatic and adjacent.
In synchronic terms, Stewart calls both (27a) and (28a) "resultative secondary predication" (2001, 151, 170). The linear order of (28a) can be derived from that of (27a) by raising the second root across the internal argument, and Stewart ties this to an inflectional property (2001, 155); by (29b), the two roots -géba and -jú in (28a) can’t remain discontinuous. Yorùbá inflection lacks this requirement, so the hypothetical base order in (27a) is unperturbed.

To do the job, (29) needs three more assumptions. (i) The moved root in Igbo must have a V-feature—even for adjective- or preposition-ish items like -jú ‘full’ in (28a) and -jú ‘out’ in (28b). (ii) Roots must be licensed across-the-board in Igbo, or else the second root could stay in situ. (iii) Compounds must separately be banned in Yorùbá, as for Èdó. Notice that all three addenda pertain to lexical categories not to inflection. There is independent evidence that compounding is not caused by inflection as a general matter.

The categorial ambiguity of CVCV roots is more general: in Standard Yorùbá, if vowel elision yields a predicate of the shape [CV-VCV], V can in principle be lexically related either to the C of the preceding root, or to the CV of the following noun. The former option (call it predelision) is usually associated with semantic opacity and is best analyzed as a bisyllabic root i.e. a true compound (32), while the latter tends to have a literal interpretation and full phrasal syntax (33).

(27) a. Ò bá kéké jé. 3S touch bicycle [?]  
'S/he ruined the bicycle'

b. Ò pà mú nún. 3S hit 1S vanish  
'S/he hid me'

c. Ò bá mi wí. 3S meet 1S talk  
'S/he scolded me'

d. Ò bá mú ní. 3S meet 1S [?]  
'It fits me'

e. Ò rí de/ton/ nún mú jé. 3S cut/soften/examine/choose 1S eat  
'S/he cheated me'

f. Ò gba mú gbú. 3S accept 1S hear  
'S/he believes me'

(28) a. Ò gbá ju-nú mòtò. 3S pour-full-aff car  
'S/he fueled [the] car, i.e. filled the car [with fuel]'

b. Ò jò gè- [fú-] ní. 3S hide-out-aff 1S  
'S/he hid me away'

c. Ò kùi- gidé - re ní. 3S talk-[hold]-aff 1S  
'S/he criticized me'

d. Ò kùw - sù- ní. 3S agree-against-aff 1S  
'It fits me'

e. Ò rí-gbú ní. 3S cut-aff 1S  
'S/he cheated me'

f. Ò me-jo-ní 3S do-bad-aff 1S  
'S/he offended me'

(30) a. Mo gbâgbè è Môsìùlù. 1S forget GEN M.  
'I forgot about Moshood'

b. Mo gbâgbè rë. 1S forget GEN 3S  
'I forgot about him/her/it'

A more plausible factor in generating these variants is prosodic ambiguity of V/VP. Standard Yorùbá bisyllabic roots mimic noun incorporation insofar as any free internal argument (Môsìùlù or 3S) needs genitive case, realized before a consonant-initial item as a toneless (M tone-bearing) mora (Elimelech 1982), cf. (30). Only if the predicate splits into a discontinuous sequence of two CV roots as in (31) can the first root assign structural accusative.
In Igbo, lexical factors are crucial in compounds so far as linear order is concerned. For Igbo 'cheat x = 'eat cut x' (28c), derivational reversal of the roots is suggested by comparison with Yoruba 'cheat x = 'cut x eat' (27c). This implies raising Igbo 'eat' to the left of 'cut'. Similarly for Igbo 'criticize x = 'talk hold x' (28c) versus Yoruba 'scold x = 'meet x...talk' (27c). Both examples defy the communis opinio that

"[t]he order of verbs in a verbal compound is the same as the order of verbs in a corresponding serial construction. ...As far as I know, there are no exceptions..." (Collins 2002, 5).

Unless the reversing compounds in (28c) and (28e) are random accidents, we need a computationally friendly way to distinguish them from the order-preserving paradigm expected by (29) and exemplified by (28a=36a) and (36e). Both types inflect exactly the same, so a mere property of inflection can’t suffice.

In sum, the reversing construction (28c) and (28e) is applicative—the roots share, not a thematic relationship to the overt internal argument, but a superficial EPP-type subject—while the nonreversing construction (28a=36a) and (36e) is causative/resultative.

Noting that the internal argument can externalize with order-preserving -jú 'full' and -jí 'out', but not with reversing -ri 'eat' and -kwú 'talk', Hale & al. (1995, 89 ff.) appeal to a trait [+ predicate] denoting an obligatory 'lexical subject'. Like the English noncausative transitives which they translate, Igbo -ri 'eat' and kwú lack the [+ predicate] feature but get subjects eventually, thanks to the so-called [EPP] property of 'little see' or Tense. In sum, the reversing construction (28c) and (28e) is applicative—the roots share, not a thematic relationship to the overt internal argument, but a superficial EPP-type subject—while the nonreversing construction (28a=36a) and (36e) is causative/resultative.

In (28a=36a), the roots don’t reverse but the internal arguments do: droyóm precedes káikai, which is just what den Dikken observes about double objects: "In triadic constructions, whenever incorporation of the embedded predicate takes place, the underlying Theme-Goal order is reversed" (1995, 162). A reversing root like -ri in (28e) has no effect on argument order because its own internal argument is suppressed—something not generally possible in isolation (37a/38a), but required in the context of narrow focus excluding the object (37b/38b).
(27e/28c) also plausibly involve operator-licensing—not focus-related like (37b/38b), but supplied by a local antecedent, portrayed in (39) as coindexing between the object of VP1 and the corresponding pro in VP2. Root reversal is represented in (39b) as standard left-adjoining head movement (Baker 1988). Den Dikken’s double object generalization applies to non-reversing forms like (36a) which arise not by head movement but by XP raising as in (40b).\textsuperscript{30}

The irrelevance of inflection to the reversing property is confirmed by the fact that the surface order of both types is stable in ìgbò across all nonfinite derivatives, surveyed in (41). All are prefixed and all suffixless.

\textit{Ìgbò} (cf. Òmènà ñò 1978, 148 f.)

(41) a. \textit{í-ri-gbu} ‘to cheat’ (cf. 28c) b. \textit{í-gbà-ju} ‘to fill by pouring’ (cf. 35a)

\textit{è-ri-gbu} ‘cheating [bound form]’ \textit{à-gbà-ju} ‘filling by pouring [bound form]’

\textit{n-ri-gbu} ‘cheating [free form]’ \textit{nì-gbà-ju} ‘filling by pouring [free form]’

\textit{ò-ri-gbu} ‘cheater’ \textit{ò-gbà-ju} ‘one who fills by pouring’

\textit{nì-ri-gbu} ‘instrument/result of cheating’ \textit{mì-gbà-ju} ‘instrument/result of filling by pouring’

To accommodate the foregoing observations, Collins’ nonreversing rule (34) can itself be reversed:

(34') The order of roots in a serial construction is reversed, in forming a compound, unless the second root is [+ predicate] in Hale’s sense.

(34') by itself does not say in what context compounding occurs; that is addressed in §4.1.

3.4 Constructions against structure

In Êkùn, combinations of finite roots which Christaller (1875, 153f, §253a) calls “essential” (inherently linked in one event) as well as those which are “accidentally related” can be expressed in Stahlkean serial form. A recent review concludes that, while the distinction may be semantically valid if “construed as a cline” and not a dichotomy, “it still has to be emphasized that as far as patterns of aspect marking and negation go, the two construction types behave identically…” (Hellan \& al. 2003, 22). Consider (42), with two “accidentally related” intransitives, and (43) with two surface transitives sharing a notional object.\textsuperscript{31}
(42) a. ṓ-sà-nè gua-rè.  
1s-get.up.AFF swim.AFF  
'She got up [and] had a bath'  

b. Mé-sà-nè mì-gua-rè.  
1s-get.up.AFF swim.AFF  
'I got up [and] had a bath'

(43) a. ᶠôkoنمو na kye-ree akôko no wè-c.  
hawk DEF catch.AFF fowl DEF eat-AFF  
'The hawk caught the chicken and ate it'  

b. ᶠôkoنمو no kye-ree akôko no kum-i no.  
hawk DEF catch.AFF fowl DEF kill.AFF 3SANIM  
'The hawk caught the chicken and killed it'

For some reason, the subject clitic repeats just if it's first person singular (42b) and this doesn't depend on event structure. A second potential diagnostic is the presence of an object clitic after the second root in (43b), but what does it diagnose? Translation is indeterminate: J. Stewart renders Twi (43a) as a sequence of (related) events, but van Leynseele prefers a one-event gloss for its counterpart in closely-related Ånyí; instead of ‘…catch…eat…’, she interprets (44a) as ‘…eat…’ with -cú ‘catch’ a kind of light or transitivizing head, an “epenthetic verb” (1979, 190). No single-event paraphrase is offered for the Ånyí version of (43b), with two overt objects, and there object pronoun also triggers a lexical effect in the translation of (44b), where the inherent animacy of the 3s clitic shifts the interpretation of the root -dí from ‘eat’ to ‘copulate’. If a very similar sequence of roots ‘grab…eat’ is inflected with an object gap, parallel to (44a), there is no coercion to ‘copulate’ and the interpretation is ‘believe/trust’ (45a). Van Leynseele concludes that the sequences of roots in (44a) and (45a) “constitute one single entry in the lexicon” and calls both of them “verb complexes” in contrast to the (b) examples, which she calls “consecutive coordination” (1979, 196).

(44) a. Cúsi ci áko di.  
dog catch.HAB fowl eat  
'[The] dog (catches and) eats a [a] chicken'

b. Cúsi ci áko ô-dí j.  
dog catch.HAB fowl 3S-eat 3SANIM  
'[The] dog catches [a] chicken and copulates with it'

Grants that object clitic distribution distinguishes between two construction types, still these do not align with the difference between (5) and (6). Van Leynseele’s “consecutive coordination” in (44b) translates successfully into Yorùbá as one serial clause, therefore it can’t be “covert coordination” in Lord and O. Stewart’s sense unless there’s another semantic parameter, orthogonal to (29), by which the actions in (44b) count as related in Yorùbá but not in Twi, forcing Twi to pronounce the object twice in contrast to (44a). Such reasoning also founders on a more general observation (which happens to have been made in Ånyí’s immediate relative Baule) that “whether the pronoun is optionally or obligatorily absent in such situations differs from example to example” (Larson 2002b, 17). Yet regardless of the number of events expressed, whenever the pronoun is absent, M. Larson finds that the gap has uniform semantic properties—it can antedate a reflexive and is necessarily bound by a local antecedent. In sum the morphosyntax does not give any hint of caring about semantic consecutiveness.

Same for inflection: both Twi examples in (44) have suffixes on every root, so (29) can’t tell them apart morphologically. In Ånyí, most of van Leynseele’s data are cited in an unsuffixed habitual form, i.e. tenseless generics, but a rare tensed example (46) is indeed suffixed, and presumably this pattern would also hold for tensed versions of the Ånyí examples in (44).

K. build-AFF house give-AFF K.  
‘Kasi built a house for Kofi’  

K. build-AFF house take-give-AFF K.  
‘Kasi built a house for Kofi’

If the contrast in object pro-drop between the (a) and (b) examples of (43) and (44) does not align with the aspectual difference between (5) and (6), it may nevertheless be informative about structure. In the Ákán cluster, pro-drop of definite inanimate objects in simplex clause is freer than in Igbo and Yorùbá. (47a) contrasts directly with (36a) and (37a) repeated from above.

(47) a. Ọ ọ pàm.  
3S PROG sew  
‘S/he is sewing [it]’  

b. Ọ ọ pàm adì.  
3S PROG sew thing  
‘S/he is sewing (something)’
Object pro-drop depends on more than lexical factors and animacy, cf. (48) and Larson (2002a). There is also a prosodic angle: the overt object pronoun no, usually reserved for animates (48b), can refer to an inanimate just in case it’s nonfinal in the phrase (49b).

Larson (2005) shows that object pro-drop opens a window on the serial patterns in (43) and (44). As Van Leynseele notes, the first root in a “verb complex” does not subcategorize for the following argument: (45b) “is ungrammatical because the verb de cannot by itself take a human object, whereas de…di ‘trust’ [in (45a)] can only take a human object phrase” (1979, 195). This makes Anyi “verb complexes” resemble Igbo and Yoruba applicative serials insofar as the contents of the two internal argument positions are not evaluated independently. The representation in (50a), equivalent to (39a), accounts for object pro-drop in such cases: the internal argument of the second root is not referentially distinct from that of the first one. The same holds for other “verb complexes” like (44a) and its Twi counterpart (43a), and explains their interpretation: according to (50b) the dog doesn’t literally eat the chicken, but only some inanimate entity which is referentially non-distinct from the chicken, i.e. chicken body-parts. Conversely, in a VP-adjunction approach to multi-event serializations (Déchaine 1993b, 211 ff.), the c-command relations are reversed in examples like (44b) and (43b), cf. (51), and this explains both the form of such sentences—why the object pronoun is overt—and how they are interpreted—why the animate chicken is respectively ‘eaten’ i.e. copulated with, and killed.

\[\text{applicative serial, cf (39) above}\]

\[\text{multi-event serial (also instrumental serial)}\]

\[\text{(50a)} \quad \text{[= Anyi} \; (45a)]\]

\[\text{yP} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2}\]

\[\text{V} \quad \text{Ko} \quad \text{Ko} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}}\]

\[\text{b. [= Twi} \; (43a)]\]

\[\text{yP} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2}\]

\[\text{V} \quad \text{\textit{kye \\textit{akoko} \\textit{i}}} \quad \text{\textit{we} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}}\]

\[\text{(51a)} \quad \text{[= Anyi} \; (44b)]\]

\[\text{yP} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2} \quad \text{VP1} \quad \text{VP2}\]

\[\text{V} \quad \text{\textit{di} \textit{ak}\textit{we} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}} \quad \text{\textit{di} \textit{pro} \textit{i}}\]

The overtness of the object in (51) reduces to the Akan-specific requirement that the [+animate] feature must “spell out” at all costs (cf. Manfredi 1995). But this calculus does not ignore structure. In (50), object pro is already identified by the c-commanding antecedent so no animate pronoun is required, but the same escape is unavailable in (51) where the first direct object fails to c-command the second one, hence the overt pronoun. From this follows the appearance of parasitic subject agreement in so-called consecutive examples in Anyi: “an object pronoun cannot be present without a subject pronoun being also present in Anyi, which differs in this respect from Twi” (van Leynseele 1979, 192). In other words, the second instance of subject agreement in (44b) does not supply a reason to liken (44b) to undisputed multiclausal examples like Yoruba (8) and Igbo (11).
Interpreting van Leynseele’s observations in this way, all the multi-root constructions discussed in her article are Stahlkean-serials, and the syntactic trees concatenated in what she calls “consecutive coordination” are not larger than those which combine in what she calls a “verb complex”. The applicatives, instrumentals and multi-events just discussed are all adjoined VPs à la Awoyale, while the causatives and double objects are complex predicates in the small clause tradition as in (40). \*b

The lack of any event restriction on multi-event serialization in Akan, first observed by Christaller, follows from (52b).

(52) a. A (quantized) event must be tensemarked (Enç 1987; Verkuyl 1993).
    b. Nonlocal tensemarking must be overt (morphological head-marking).
    c. A complex event is tensemarked if any of its segments is.

With the exception of - de ‘take’ as in (48d), if one root in an Akan serial construction bears a tense affix, all of them do, and all the affixes agree, cf. (42), (43), (46). The definiteness of ‘take’ is no different from what obtains in Igbo examples like (20a): its stativity is configurational, as first pointed out by Stewart: in simple sentences, - de “is invariably in the continuing (stative) tense. In [non-stative] simple sentences the usual word for ‘take’ is - fa...” (1963, 146). Following Awóyale, Déchaine (1993b, 1997) argues that this stativization is possible in a left-adjointed VP, i.e. that instrumental serials inhabit the same structure as (51).

The descriptive effect of (52) across Benue-Kwa can be summarised as follows:

(53) A sequence of aspectually unrelated events cannot be expressed in a single clause (i.e. as a Stahlkean serial construction) unless each root is either local to Tense or audibly tensemarked.

The general force of (53) follows from the conjunction of parameters (3b) and (3c). This conclusion obviously depends on (52b) and the mechanics of tensemarking, to which we now turn.

4. Prosodic inflection in BK1

Serial constructions aside, both the checking-based parameter (29) and the prosodic alternative in (3) rest on descriptions of finite inflection in the individual languages. (29) separates Igbo from Edó, but on closer examination, Igbo and Edó inflections are more similar than (29) permits. The parameter in (3) unites both languages in BK1, while explaining prosodic phenomena that (29) chooses to treat as phonological accidents, unrelated to either serialization or inflection.

4.1 Igbo

If §3.3 works and checking theory can’t account for the differing linearization of Igbo “compounds”, two questions remain.

(i) How do - gbá and - jù both come to precede a single instance of inflection, the - AFF (= - RV) in (35a), versus the two separate inflectional tokens found in noncompound examples like multi-event (5b) and single-event (20a)? Part of the answer is obvious: after predicate raising (40b), - gbá and - jù are already in correct linear order with respect to each other and to their arguments, and are arguably also phrase-mates (Chomsky 1986, 7, 9). Everything therefore boils down to the position of - AFF with respect to the roots, and there are independent reasons to think that this is determined prosodically. The most important observation is that - AFF always accompanies a pitch effect. In Standard Igbo and most dialects, the effect is to suppress the lexical pitch accent (so-called H toneme) if any of the inflected root, for example - jé ‘go’ in (54a) surfaces with L tone. The pitch accent is also suppressed in those western dialects like Êbóojizo and Êse Êuku where - AFF has no CV content whatsoever (54b-c).

In Standard Igbo, the primacy of the prosodic component of inflectional morphology is clear from examples where the inflected root doesn’t require a CV affix, e.g. for any of the inherently stative items in (22), all of which surface with L tone as shown in (24a) and (55). \*

Another indication that accent, not segmental - AFF, is the primary inflectional marker in Igbo comes from examples where the lowering effect of pitch accent suppression partly precedes the root. Êse Êuku displays this anticipatory lowering—glossed here “AL”, without implying that it is an independent morpheme—with a 3S clitic subject (54c); elsewhere in the Igbo-speaking area, AL happens in case the subject is a lexical item, as in Ómááháyá (56) and Óweré (57). That AL is not an independent item or process, but a mere side-effect of the suppression of the root’s lexical pitch accent, regulated by constraints on phrasing, is proved by the minimal contrast in (57). AL fails to occur just in case the pitch accent is not deleted, a situation which occurs in Mbaísên and Óweré. In those dialects among others, a so-called strong H root like - ni ‘eat’ (57a) does not surface L but remains H (preceded by a downstep) in the minimal inflected form. L does appear on another class of roots including - kwá ‘speak’ (57b). The latter set is labeled “HL” by Swift & al. (1962), “weak H” by Déchaine
(1993b, 504) and TCL2 by Nwàchukwu (1995, 16) because its lexical pitch accent disappears in these finite forms, even though it surfaces in most other derivatives of the same root.

\[ \text{Omááhyá Ígbo (Green & Ígwè 1963, 75, 180)} \]

(56) a. Óvi ́ i ji ŋ. cold AL hold AFF 1S
   I have a fever
b. Êghu ́ ga-rà ́ hya. goat AL go-AFF market
   'Goats went to market (i.e. sold well)'

(57) a. Êkhe ́ ñ wú-ru ́ úkhi. I. AL speak-AFF talk
   'lyke spoke'
b. Êkhe rí-ri rìn á. n.b. [Íkhe ́ é rí-…]
   I. eat-AFF food this
   'lyke swept the house'

In other words, despite apparently discontinuous pitch and affixation effects before, during after the root, examples like (54c) and (57a) involve just one single inflectional morpheme whose primary reflex is pitch. To set up an autonomous inflectional element, e.g. an abstract "floating tone" prefix/aux, as the cause of anticipatory lowering, can only obscure this fact.44

Turning to compounds, the prosodic conditioning of inflection shows up again as a locality restriction. Welmers’ phonemic orientation leads him to analyze the pitch correlate of -AFF as a "low tone replaceive" morpheme (1970a, 51), but not every root in a compound becomes low, as Welmers notes: the lexical pitch accent of the first root is suppressed in (46a) but not in (58b-c). In the latter cases, the compound contains a complete trochaic (HL) foot, i.e. the accent of the first root is separated from -AFF by a root which is lexically unaccented (L). The first root can be lexically accented, like -chìì in (58b), or not, like -wè in (58c); both end up with an accent, so long as the the second root (-fù, in these examples) has none.46

\[ Êgho (Welmers 1970b, 267; 1973, 141) \]

(58) a. Ò mè-chìì-rì ìzò. n.b. [‘Ò mè-…]
   3S do-closed-AFF path
   'S/he closed the door'
b. Ò chìì-ù-ù Êzè. n.b. [‘Ò chè-…]
   3S chase-out-AFF E./king
   'S/he chased Mr. Eze/the king away'
c. Ò wè-fù-rì ànyà. n.b. [‘Ò wè-…]
   3S take-out-AFF eye
   'S/he looked away/paid no attention'

One more prosodic characteristic of -AFF (with or without segmental content) is its intrinsic relationship to information focus: like Bantu “conjoint” morphology (Wal 2005), -AFF extends the scope of non-negative assertion (Carrell 1970, 29; Ïwalàìka 1981) to the right of the finite root by prosodically subordinating the root to its internal argument—not unlike the English Nuclear Stress Rule (Cinque 1993; Wagner 1995). Conclusion: -AFF appears to the left of nonpresupposed argument-type expressions.

(ii) If inflection feature checking doesn’t cause either kind of movement (root-reversing or argument-reversing) in compounds, is it then a coincidence that Ígbo exhibits both types and Yorùbá neither? If the two types do tend to cooccur crosslinguistically, despite their hypothetical formal difference (head-movement versus XP predicate raising), and if they don’t reduce to a ‘pull factor’ like feature-checking, then there should exist a ‘push factor’ such as scope. Helpfully, Ígbo displays a third potential case: one which does not itself involve compounding, which is not directly sentive to inflection, and which is scopal in nature. The “bound verb complement” (BVC, clause-final nominalization) has four main distributions. It’s both obligatory and anaphoric, recovering a discourse referent, in transitive contexts e.g. with -ì ‘eat’ (58a=37b) and -kù-ù ‘break by knocking’ (58b), if no lexical object is expressed. It’s also obligatory with intransitives, for example -wà ‘break’ (59a) and the anticausative of -kù-ù ‘break by knocking’ (59b), but in those cases it lacks detectable meaning. It’s optional in transitive contexts if the direct object is overt (60a,b), in which case it recovers an event-related topic (like argument clitic-doubling, cf. Cinque 1991). Finally, it’s marginal in the present perfect form, which is morphologically intransitive as shown by the fact that an overt object must be inflected as inherent/genitive case (e.g. …akpu ́ H/H) rather than in the citation phonetic shape i.e. structural/acususive case (…akpu HH), cf. 61).46

\[ Ígbo (Éménanjo 1984; Êná ëchúkuwù 1987, 115; Hale ñ-äl. 1995, 100) \]

(59) a. Ò kù-ù-ù ñ ́ ã-ri. (58a=37b)
   3S hit-break-ASP NOM-hit-break
   'S/he indeed broke [a breakable, topical thing]'

(60) a. Ò kù-ù ì akpu ́ (é-ìì). 3S hit-break akpu NOM-eat
   'S/he ate [the] akpu (as expected)'

\[ Òkè (cf. Êménanjo 1985, 120 f) \]

(58a) a. Ò rí-ri ñ ̀ akpu ́ (é-ìì).
   3S eat-AFF akpu NOM-eat
   'S/he ate [the] akpu (as expected)'

b. Ò kù-ù-ù ñ ́ ã-ri. (58a=37b)
   3S hit-break-ASP NOM-hit-break
   'S/he indeed broke [a breakable, topical thing]'
(59) a. Ôh'á 'wa-ra *(a-wá).
    gourd this break-AFF NOM-break
    'This gourd is split open'

   b. Ôh'á 'kú-wa-ra *(a-kú-wá).
    gourd this knock-split-AFF NOM-knock-split
    'This gourd split open as a result of knocking'

(61) a. Ô rí-ele *(akpú).
    3s eat-AFF akpú,GEN
    'S/he has eaten (akpú)'

   b. †Ô rí-ele *(akpú) ć-rí.
    3s eat-AFF akpú,GEN NOM-eat
    'S/he has eaten (akpú) as expected'

Assuming that structural accusative is realized internal to the Êdó present perfect suffix as an incorporated argument (Déchina & Manfredi 1998, 86ff; cf. Bittner & Hale 1996), the generalization in (58) - (59) is that the BVC is required in the absence of an accusative. This state of affairs follows from a particular interpretation of (62a) and from its paraphrase (62b). The latter version suffices to compel the reordering in (39b). The reordering in (40b) would also follow, if (62b) applied to all roots across the board. It is also relevant to observe the absence of a BVC-type element in either Yorùbá or Êdó.

(62) a. “All Êdó verbs are transitive” (Èmènànjọ 1975, 166)
    b. In Êdó, every finite root must be followed by an argument-type expression.

In this way, the generalization in (62) brings the reorderings in (39b) and potentially (40b) into a larger set of phenomena in Êdó which are all characterized by considerations of predicate-internal scope, ultimately related to information-theoretic properties of inflectional pitch accent, not by tensemarking requirements as claimed by (29).

4.2 Ê dó

The part of (29) which divides Êdó from Êdó can, in principle, be falsified by two kinds of observations:

(63) a. that Êdó roots in serial constructions do indeed bear “morphological tense inflection” at least as much as Êgbo roots; or
    b. that Êgbo verbs are not in fact inflected for tense to a greater extent than Êdó roots are.

Both statements have ample empirical support. Consider the following description of finite inflection in Êdó:

Êdó (Baker & Stewart 1997, 44 = Stewart 2001, 180)

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Êdó Form</th>
<th>English Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>“one syllable verb ‘cry’”</td>
<td>só (H)</td>
<td>‘he cries’</td>
</tr>
<tr>
<td>“two syllable verb ‘cry-PL’”</td>
<td>só-ló (L-H)</td>
<td>‘they cry’</td>
</tr>
<tr>
<td>“present (habitual)”</td>
<td>só (L)</td>
<td>‘he cries’</td>
</tr>
<tr>
<td>“simple future”</td>
<td>ghá só (H L)</td>
<td>‘he will cry’</td>
</tr>
<tr>
<td>“past perfective”</td>
<td>só-ró (H-L)</td>
<td>‘he has cried’</td>
</tr>
</tbody>
</table>

Sorting the paradigm by syllable type takes the consensus view the Êdó lexicon contains no minimal pairs of roots distinguished only by pitch; instead, the surface tone of a root is wholly determined by its inherent syllable structure (CV, CVV or CVCV) plus inflection. On this premise, to protect (29) from (64) requires the stipulation that “tense marking is not inflectional” (Stewart 2001, 205 fn. 10), but which is a nonstarter for an elementary reason: to separate the lines labeled “simple past” (64a) and “past perfective” (64d) conceals the fact that these two forms are synonymous and in complementary distribution. In fact, the CV suffix in (64d), henceforth -(r)è, is always required in order to mark past tense, with two systematic exceptions: (i) in simple clauses if a direct object happens to be pronounced in situ, e.g. (65a versus b), and (ii) in a portion of Stahlkean serial constructions, to be discussed below. Otherwise, if neither condition is fulfilled and if -(r)è is absent, a ‘past’ interpretation fails for unsuffixed H, as illustrated in (65c-d). (65d) by itself already disproves (64b), which would expect L instead of H on the root. (66) fills out the paradigm, showing that -(r)è triggers a past reading with a null object (66b), and that when the object is in situ, nonpast is expressed with L on the root. (67) shows that the presence versus absence of -(r)è in front of a wh-type variable signals the difference between past and nonpast. Inescapably, therefore, lines (64a) and (64d) differ only phonetically—disproving (29) as a syntactic generalization.

Êdó (Melzian 1937, 188; 1942, 21, 43; Aikhišı̄nbare 1988, 205 ff.; cf. Stewart 2001, 178, 182)

(65) a. Ô só ọ́hún-à.  → [ọ́hún-à] LH!H
    3s noiseH song
    'S/he sang a song’

   b. Ô só-(r)è ọ́hún-à.
    3s noiseH-AFF song
    ‘S/he is shouting to call him/her’

c. Ô só tie ẹ̀rè.
    3s noiseH callLL 3s
    'The rain is making a racket, i.e. pelting down’

d. Âme só.
    water noiseH

(66) a. Ô dè̀ ìbè.  → [ìbè] LH!H
    3s buyH book
    'S/he bought [a] book’

   b. Ô dè-(r)èìbè.
    3s buyH-AFF
    'S/he bought [something]’

c. Ô dè.
    3s buyH
    'S/he is buying [something]’

d. Ô dè ìbè.
    3s buyL book
    'S/he is buying [a] book’
Following Ámayo (1976, 236) in detail, Agheyisi derives the forms described in line (64a) from those described in line (64d) by a mixture of tense allomorphy (for the distribution of the consonant) and abstract phonology (for the verb-final vowel and tone):

> "Whenever the verb is followed immediately by its Direct Object…, the P[ast] T[ense] M[arker] form that occurs with the verb is the variant without the initial consonant /r/, and then, the processes of assimilation and contraction… result in the total elision of the PTM vowel, leaving only the Floating Low Tone to indicate the tense of the sentence" (1990, 71)

As Ámayo (1976, 238) carefully points out, this hypothetical “Floating L” must also delete before the direct object, otherwise the surface tone of a H-initial direct object should downstep after a past tense verb. In fact, the failure of downstep to appear in the past form (68a) makes it phonetically identical to the nonpast form (68b), leaving (68a) with no phonetic cue to “indicate the tense of the sentence”.

From the homophony of (68) it follows that, contra Agheyisi’s quotation directly above, the appearance of a downstep in (67a) can’t be traced to any autosegmental residue of an underlying -(-r)é. In order to insist that -(-r)é is underlyingly present before a direct object requires its deletion in that context to be phonetically unrecoverable, i.e. it’s totally abstract. Thus, total circularity dogs any attempt to treat past tense inflection as an underlying suffix. The alternative is to deny that -(-r)é is a suffix of any kind, treating it instead as a mere epenthetic syllable whose appearance is a secondary enhancement, in certain phrasal context, of a prosodic marker.49

As to the second column of (64), -so-lo is bimorphemic. Êdó does have genuine roots which aren’t transparent compounds or extended forms, and about these Aikhi®nbare observes that “CVCV(V) verbs in the language seem not to inflect for plurality” (1988, 218), where “plurality” refers to the suffix -lo in (64), cf. Stewart (1997). -lo is thus another so-called suffix in Êdó with a prosodic default character.

For the purpose of satisfying (69), it seems uncontroversial that an unsubcategorized locative N, a PP and a parenthetical CP all begin a separate phrase; this is consistent with the appearance of -(-r)é before the bracketed material in (70).
The regular past tense effect of -(r)è in null object constructions. This effect is blind to aspectual type, whether telic eventive (71a/72a), inchoative (71b/72b) or inherent stative (71c/72c). For this reason, Ōmòrùyi describes -(r)è as "the simple past tense suffix" (1986, 288; 1988, 31) and Aikhiònnbàre (1988) concurs. (69) only slightly modifies their view, by reanalyzing -(r)è as phrase-final realization of the more basic inflectional pitch accent which triggers a past interpretation.

\[\text{Edò (Melzian 1942, 59f; cf. Aikhiònnbàre 1988, 206 f.) Ōmòrùyi 1986, 1988)}\]

(71) a. Ọ bò-(r)è. 'S/he built [something]'  
    Ọ dè-(r)è. '3S bought [something]'  
    Ọ mòmò-(r)è. '3S lent [something]'  
    Ọ dè-cè. '3S fell down'  
    b. Ọ vbiè-(r)è. '3S went to sleep OR was asleep'  
    c. Ọ fè-cè. '3S was rich'  
    Ọ rř-c(r)è. '3S was far away/long ago'  

Other data support a more nuanced gloss for -(r)è as "completive" rather than past (Âmânyo 1975; cf. Welmers 1973b). The difference hinges on the ambiguity in English translation of certain inchoative predicates.

\[\text{Edò (Ōmòrùyi 1986, 291, cf. Wescott 1963, 145)}\]

The nonpast resultative readings of the suffixed inchoatives in (73) show that tense interpretation depends on root Aktionsart as well as on choice of inflection, but to a lesser extent than in Igbo. The limit on the dependency in Edò, compared to Igbo, can be appreciated from two observations. (i) These roots are inherently nonstatic, because even the nonsuffixed forms (74) receive only dynamic interpretations. (ii) The suffixed forms (73) still allow a past reading even if they don't compel one. By contrast, an activity like -vbiè 'sleep' suffixed with -(r)è is necessarily past (71b), and the same goes for an inherent state like -fe 'rich' (71c). Thus the data in (73) may undermine the claim that -(r)è denotes Priorean "true or referential tense" (Enç 1996, 353), but they don't rescue the tendentious separation of lines (64a) and (64d), which remains falsified by (65) - (68) and (71).

A few more Igbo data speak directly to (63b). Comparing finite forms of inherently static and dynamic roots, it's clear that the Igbo counterpart of Edò -(r)è does lack a consistent temporal value: -chò plus -rò (75a) is unambiguously nonpast, -kò plus -rò (76a) unambiguously past. If Edò was at least as 'tenseless' as Igbo, both sentences in (71c) should be nonpast like (75a).

\[\text{Igbo (Nwàchukwu 1976a, 136; Williamson 1982)}\]

(73) a. Ọ gò-è. '3S bent OR is crooked'  
    Ọ guòghò-(r)è. '3S broke OR is broken'  
    Ọ vboò-(r)ò. '3S became OR is ripe'  
    b. Ọ fè-è. '3S was rich'  
    Ọ rřè-è. '3S is far away/long ago'  

Based on contrasts like (75) versus (76), Welmers & Welmers conclude that "[w]e do not talk about 'tenses' in Igbo because tenses are supposed to have something to do with time" (1968, 76). Ĭnàwùmènà (1981) insists that the nonpast reading of (77a) does "refer to some past experience", but if so the lived history has left no evidential trace: unlike the Edò forms in (73), Igbo (77a) is not temporally ambiguous. On the contrary, the appearance of segmental inflection in (77a) depends on the lack of a definite or overtly referential object as in (77b). Haitian provides another example of interpretive dependency between an unmarked verb and its internal argument (78), with the difference that Haitian unlike Igbo allows an eventive predicate to be morphologically bare.

\[\text{Haitian (Déchaine 1991, 32)}\]

(77) a. Ọ nwè-re yì. 3S hold-AFF yam  
    'S/he has or owns yams'  
    b. Ọ nwè jì ndì ạ. 3S hold yam pro.3P this  
    'S/he has or owns these yams'

(78) a. Pyè vann bèf. P. sell cattle  
    'Pyè habitually sells cattle'  
    b. Pyè vann bèf yo. P. sell cattle DET  
    'Pyè sold the cattle'
In this way, Ònụgwọ́mẹ́nẹ́’s defense of a uniform ‘past’ denotation for -aff ends up proving the opposite, while undermining the structuralist tenet that grammatical morphemes are stable signs with fixed denotations. On the contrary, the pattern in (77) shows that the presence of inflectional material in the syntactic derivation depends on information located outside the minimal domain of affixation, in particular that the segmental content of -aff in Igbo is epenthetic based on the interpretation of the direct object. This semantic dependency goes along with its phonetic dependency on phrasing and root prosody as described in §4.1.

Gathering together the above strands, there is phonetic similarity between Èdó - (r)è and its Igbo counterpart. Both are segmental fill-ins, comprising a weak consonant plus a default vowel, arising as side-effects of inflectional accent and providing the minimal morphology by which past readings are achieved. The precise conditions of appearance differ, however, between the two languages. Èdó - (r)è ensures phrasal realization of the pitch accent (sv or HL) denoting past tense/completive aspect in a branching domain containing the root, just in case no syntactic complement is present. Igbo -rV by contrast is a pronominal clitic which referentially binds a right-branching predicate’s inherent Aktionsart by suppressing pitch accent on the nonrecursive side (the root), shifting information prominence over to the complement. Past tense interpretations in Igbo arise from the predicate as a whole, not from the inflected root itself. Of the two, therefore, the Èdó item has the better claim to be “morphological tense inflection”, supporting (63) and undermining (29). In multi-root constructions, tense matching as a semantic consideration holds equally in both languages (and see §5.3), but morphological inflection-matching is more characteristic of Èdó than Igbo (but see §5.4).

Even if (29) could be salvaged as a description of Èdó finite morphology, not to mention crosslinguistic typology, the only explanatory work it performs within Èdó is to ensure the absence of - (r)è in “serial” constructions narrowly defined. But an alternative explanation is at hand, namely the prosodic constraint in (69), so the task is to compare the two accounts. Consider (79) and (80). In both examples, the (a) form has the direct object of the first root in situ, so by (69) the -(r)è should be blocked in both instances on prosodic grounds, just as it was in (65a), (66a) and (67a), and this expectation is fulfilled. A contrast emerges in the (b) examples: -(r)è is possible in (80b) but not (79b).

\[(79)\]

(79) a. Òzò gá ìrhùnnùmùnùn kèrèhè.
Ó. cut grass small
‘Òzò cut the grass a little bit’

b. Ìrhùnnùmùnùn o- rè Òzò giá (-rè) kèrèhè(-rè).
grass 3S-COP O. cut-AFF small-AFF
‘It’s the grass that Òzò cut a little bit’

(80) a. Òzò gá ìrhùnnùmùnùn kèrèhè.
Ó. cut grass small
‘Òzò cut the grass short’

b. Ìrhùnnùmùnùn o- rè Òzò giá- rè kèrèhè.
grass 3S-COP O. cut-AFF small
‘It’s the grass that Òzò cut short’

Assuming (29), Stewart draws the conclusion that examples like (80) belong to a construction other than serial, which he calls an “A[djective] P[hrase] resultative” (2001, 181). But there’s more than one way to be non-serial, and the presence of - (r)è in (80b) requires comment in either theory. In the Èdó literature, items like kèrèhè in (80) are called “derived adjectives” (Ọmọrụyì 1986, 297; cf. Wescott 1963, 124) on the reasonable view that they’re formed from basic predicate roots like kèrèhè in (79) as reduced relative clauses. In that case they denote attributes, which explains the presence of the copula in predicative construction (81a). This analysis is compatible with the contextual interpretation of an object depictive attribute as result, both in Èdó (80a) and (81b) and also in English (82a), compared with (82b) where a canonical resultative adjunct is less than fully felicitous.

(81) a. Òkhuò ní yè̀ nì̀sìmì̀sìmìsìmì.
women this COP beautiful
‘That woman is beautiful’

b. Òsàrò bì ìmò̀ ̀gàbà.
birth child strong/healthy
‘Òsàrò gave birth to a strong/healthy child’

(82) a. Òsàrò delivered a healthy/fine child.

b. Òsàrò̀fì delivered a child[health] [fìjìjì].

Assuming that a postnominal attribute like kèrèhè in (80) follows a right phrase boundary, (69) requires - (r)è to be pronounced if the root is accented and there is no object in situ. By contrast, the inflected event-oriented adverbial kèrèhè in (79) is presumably within the c-command domain of the finite root gá’ cut’, hence (69) is satisfied without - (r)è epenthesis.

If the Èdó facts ended at (81), we could declare a draw between (29) and (69) as far as serial constructions go, not minding (29)’s problems with the inflection of single-root Èdó clauses or with crosslinguistic comparison. But - (r)è does in fact appear in some Èdó multi-root clauses which are presumptively usable to refer to single events (83). Both examples therefore violate (29), whereas (83a) satisfies (69) because the first root koko is used intransitively therefore the second root de cannot occupy its right branch. It’s also plausible that (83b) has a right phrase boundary before bìgềbề, judging by the optional intervening elements.
In (83b), the LLH pitch pattern on [bìgòò] is also informative. If it was a bisyllabic root, the pitch ought to be LH, according to the inflectional table in (64). Agheysi (1986, 16) lists [bìgòò] as an unsegmented trisyllable. But the LLH pitch pattern can be derived by assuming just enough syntactic complexity as required anyway in order to express a derivational relationship to the monosyllabic roots bì 'move/push' (Melzian 1937, 18) and gò 'bend' (cf. 74 above). Concretely, in a compound structure [[bì ] gò] with bì as a left adjunct and the right-hand segment gò inflected on its own, [gòò] is the expected outcome, based on the regular LH treatment of a serialized monosyllable inflected in the past, as shown in (84b) and (85b).

For the purpose of this demonstration, it doesn’t matter if the basic morphological operation applied to monosyllabic gò (83b), tu (84b) and gbe (85b) is the lengthening, with the LH tone pattern regularly derived from that in accordance with the general rule in the right-hand column of (64a), or vice versa if the root lengthens in order to bear the complex tone. Either scenario is conclusive against (29), showing that a non-initial monosyllabic root in a serial construction is indeed targeted by inflection, otherwise a bare monosyllabic root would be obtained (as in Yorùbá for example). Moreover, “tense matching” as a phonological operation (“Copy the tone feature...” Stewart 2001, 202) can’t help; it has nothing to say about the LH on the second root in (83b), (84b) or (85b), since in none of those examples is there any LH on the first root to be copied, yet in all of them an inflectional operation targets the second root. The roots need not be string-adjacent either: they can be separated by a direct object, cf. (86).²⁵

The resultant state interpretation of [bìgòò] as ‘crooked’ in (83b) follows in the analytic approach, and need not be listed, since the same stativity occurs with the inchoative root gò by itself when inflected in the past or so-called “completive” form, cf. (73a). The only fact requiring a compound analysis, as opposed to free syntax, is the lack of an independent pitch accent on bì in [[bì ] gò].

A different situation occurs in (87a), which is a multi-event by any reckoning. For Stewart this is covert coordination, a type which he exempts from tense-matching (2001, 202f.), but -(r)è nevertheless fails to appear when the internal argument of the first root is replaced by a gap (87b). The published data are typographically garbled, but the accompanying prose observation is that “there are tone changes only on the first verb”, with reference to the difference between ‘climb’ (H₁H) and ‘detach’ (LH). In other examples, the “special high-downstep-high” tone pattern found on the first root in (87a) can appear on both roots: if the gap follows the second root (87b), if two gaps are construed Across-the-Board (87c). If the root is monosyllabic, no H¹H occurs at all (88).

<table>
<thead>
<tr>
<th>Òdò (Ogie 2003, 18)</th>
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(83) a. Ìgòò kẹkọ- ẹ̀rò ɗì̀mòtò.
3S gatherH-AFF buy car

‘They bought a car together’

b. Ìgòò ràìràn (àbàbànnà) (dòò) bìgòò vbeniànià.

nail 3S-COP O. pressH-AFF now 3S come “crooked” thus

‘Ozò ruined the nail (just now) by nailing it bent like this’ [gloss as in source]

(84) a. Ò dà tù. → [òdástu = LHH]

3S severe cry

‘S/he is screaming’

b. Ò dà tù-ù. → [òdástu = LH!H]

3S severe cry-AFF

‘S/he screamed’

(85) a. Ò dé gbeè ótò. → [òdégbotò = LHHL]

3S down hit ground

‘3S is fallen down’

b. Ò dé gbeè-cè ótò. → [òdégbl òtò = LHHL]

3S down hit-AFF ground

‘3S fell down’

(86) a. Ì rhie ère na è. → [ìrhì̀rèèè = LLLHHL]

1S take 3S give 3S

‘I’m giving 3S to 3S’

b. Ì rhie ère nà-à è. → [ìrhì̀rèèè = LHH!HHL]

1S take 3S give-AFF 3S

‘I gave 3S to 3S’

(88) a. Èmiòwò ọ̀-rè Òzò dè le ẹ̀yàn.

meat 3S-COP O. buy cook yam

‘It’s meat that Òzò bought and cooked some yams’

b. Èmiòwò ọ̀-rè Òzò dè ẹ̀miòwò le.

yam 3S-COP O. buy meat cook

‘It’s yams that Òzò bought some meat and cooked’

c. Íyàn ọ̀-rè Òzò kòkò dúnìwùn.

yam 3S-COP O. gather(H₁H) pound(H₁H)

‘It’s yams that Òzò gathered and pounded’

(Stewart 2001, 69 ff.; Baker & Stewart 1999b, 12)

(87) a. Èrùàn ọ̀-rè Òzò hùn kpaèn inùn.

tree 3S-COP O. climb(H₁H) detach(LH) coconut

‘It’s a tree that Òzò climbed and picked [a] coconut’

b. Èrùàn ọ̀-rè Òzò hùn è rìàò kpaèn.

coconut 3S-COP O. climb(H₁H) tree detach(H₁H)

‘It’s a coconut that Òzò climbed a tree and picked’

c. Èrùàn ọ̀-rè Òzò kòkò dúnìwùn.

yam 3S-COP O. gather(H₁H) pound(H₁H)

‘It’s yams that Òzò gathered and pounded’

(Stewart 2001, 69 ff.; Baker et al. 1999b, 12)
Stewart (2001, 67) characterizes H as resumptive or “anaphoric agreement” (cf. Haïk 1990): a noncanonical form displayed along a wh-extraction path. Ignoring the contradiction between describing H as agreement and claiming that “tone marking is not inflectional” (Stewart 2001, 205), and setting aside the absence of this agreement on monosyllabic roots (88), let’s still suppose that the first root takes H in (87b) because it’s followed by a gap, and the second root fails to take H in (87a) because it’s not. As Stewart (2001, 85, fn. 46) acknowledges, such an analysis is orthogonal to (29) because it appeals to linear order (phonology) rather than hierarchical phrase structure. (29c), the Bare Stem Condition, offers no guidance as to the non-appearance of -(r)è in any of these cases, since the Baker-Stewart taxonomy regards all of them as concealed coordinate structures.

Even supposing that (29) could be extended to cover the absence of -(r)è in (87) and (88), the patch would backfire for typological purposes, removing the only independent evidence for separating covert coordination from serial constructions, in which case the parametrization in (29) would fail to divide Igbo from the rest of Benue-Kwa. Q.e.d.

5. Loose threads
5.1 Suffixation in BK2 serials
In BK2, on the ‘plus side’ of the parameter in (3), if individual finite roots are not audibly inflected (3c), the semantic predictions are (i) that minimally inflected eventive roots are ambiguous between simple past and present perfect (3a); and (ii) that aspectually unrelated events can’t serialize (3b). Prediction (i) is not discussed here. Prediction (ii) is borne out in Yorùbá, exemplified by Bāǹgbọ̀ṣe’s observation in (6), and apparently by two other clusters, Nupe and Gbà. Nupe (89) is uncontroversial, differing little from Yorùbá in relevant respects. In Gbà, the restriction shows up in (90a) in comparison with the Igbo example in (90b).

Nupe (Stewart & al. 2000, 3)

(89) *Musa du etsi ă nakan.
M. cook yam eat meat

F̐ì-Gbà (da Cruz 1997, 31)

(90) a. Kọkù sà ăsìn lè yì așì mè.
K. take crab pl go market interior
‘Kọkù brought the crabs to the market’
‘*Kọkù took the crabs (somewhere) and [then] went to the market’ [explicitly excluded in the source]

Igbo (Uwálááka 1982, 65, 68 as annotated in source)

b. Ô wè-re iteit bàjà.
s3 take-AFF pot come
‘He came with a pot’ (incorrectly glossed by Hyman 1971 as ‘He brought a pot’)

‘It feels intuitively that two propositions are implied…the subject’s coming and his taking a pot.’

Suffixed finite roots in Gbà—such as the progressives in (91) and habituals in (92)—require comment, since they potentially fall on the minus side of (3c).

Mínghè

(91) a. Mù lè ăblò dji-̀.
1s AUX ablo eat-NOM
‘I am/was eating ablo’

Èngbè

(92) a. Kòfì sà-nà ăgblàn.
K. sell-HAB crab
‘Kòfì habitually sells/sold crabs’

F̀ngbè

b. Ìn dò m̩ènkùn dji-̀ wè.
1s AUX rice eat-NOM
‘I am eating rice’

Èngbè

(94) Kòfì lè ń mì țò-̀m nà Àsìba.
K. AUX mouth beat-NOM PREP A.
‘Kòfì is talking to Asiba’

G̀ngbè (Aboh 2001)

b. Sètù to ăkà lò زة dji.
S. AUX biscuit DET take eat-NOM
‘Sètù is eating the biscuit’

At second glance, however, the suffixed progressives are all auxiliated, the multiple roots do not occasion multiple suffixes, and the suffixed is nonfinite: either the entire lexical predicate (93), or its first segment (94), is under a nominalizing phrasal head which has the secondary property of triggering either reduplication or object shift, in various ways in different Gbà varieties (Fabb 1992a,b; Kinyalolo 1992; Houngues 1997; Manfredi 1997; Aboh 2001). The link between nonfiniteness and object shift recalls the Yorùbá example (2a) above.
The habitual suffix does serialize with multiple tokens (95), therefore supposing it to be finite, the construction in (95) should escape the aspectual restriction (3b), predicting that a sequence like ‘cook-HAB yam eat-HAB meat’ is possible. Assuming that it’s not, implies either (i) that the force of (3b) does not reduce to tensemarking as (52) claims, or else (ii) that the suffixes in (95) are licensed under a single, null tense operator (aux), moving them onto the ‘plus’ side of (3c). Support for hypothesis (ii) includes the fact that the habitual suffix is banned from past or future tense contexts: periphrastic constructions are required (96).

(95)  
| E-tsɔ-ŋa | akɔŋi qɔ-ŋa.
| ‘S/he habitually eats bananas’ |

(96)  
| Me-nɔ dɔ wɔ-ŋi.
| 1s-stay work do-NOM
| ‘I always used to work’ |

b.  
| M-ɔ-ŋa dɔ wɔ-ŋi.
| 1s-FUT-stay work do-NOM
| ‘I shall always work’ |

The idea that ‘true’ habituals in Benue-Kwa are morphologically bipartite is also required to Standard Yorùbá, which has two durable auxes,  a and  n, neither one of which is habitual by itself.  a is inherently finite: it triggers third singular subject pro-drop and is not directly negatable—both properties are shared with the future aux yóó and with clausal negation itself.  n (or its allomorph  ū ) is nonfinite because it lacks both properties, and is unambiguously progressive unless negated or under a universal quantifier (Abraham 1958, 433). Either item forms an unambiguous habitual only in combination with the element māa, and in different orders: a māa or māa n. By itself, māa gets a future interpretation, though it seems to possess internal structure of its own because it’s just minimally different from the negative imperative modal māa (Abraham 1958, 416f.; Oyélárá 1989, 8).

5.2 Configurational finiteness
As mentioned in §1, Mufwene & Dijkhoff (1989) consider the feature [±finite] alien to the grammar of languages like Sranan and Haitian, based on the absence of morphological cues. But if diagnostics like reflexivization are relevant, then finiteness also has a syntactic dimension. In Haitian, given the availability of Exceptional Case Marking to license a reflexive in (97), the failure of reflexive tèt li ‘3S self’ in (98c) can only indicate that kwè ‘believe’ requires its clausal complement to be (abstractly) tensed.

Haitian (M. DeGraff, p.c.)

(97) a.  
| J. make M. laugh
| ‘Jan made Mari laugh’ |

b.  
| J. make head 3S laugh
| ‘Jan made himself laugh’ |

c.  
| J. believe head 3S ANT laugh
| ‘Jan believes 3S to have laughed’ |

Haitian (Westermann 1930, 75f.)

(98) a.  
| J. believe M. ANT laugh
| ‘Jan believes Mari to have laughed’ |

b.  
| J. believe 3S ANT laugh in dream 3S
| ‘Jan believes himself to have laughed in 3S’s dream’ OR ‘Jan believes 3S to have laughed in 3S’s dream’ |

c.  
| *J. believe head 3S ANT laugh
| ‘Jan believes 3S to have laughed’ |

Conversely, (99) is a potential example of a Yorùbá infinitive which is morphologically unmarked, because the infinitive H mora seen in (2a) is absent here. This is so because (99) does not entail that they have yet sold the cloth. But if bare root infinitives are generally possible, then (6a) repeated here should have been able to escape the aspectual restriction by allowing a biclausal parse like ‘I sold yam in order to come’—contrary to fact.

Yorùbá (Bàírígbọ̀c 1966, 158)

(99)  
| Wọn ra ṣo tा.
| ‘They bought cloth to sell’ |

(6) a.  
| *Mo tа ṣu wá.
| 1s sell yam come |

The fact that (6a) can’t be saved indicates that the second root in (99) is only a pseudo-infinitive, and that English translation is not probative. The alternative is to treat the sequence of roots na… ta as a listed idiom meaning ‘…buy for resale’. The worth of this speculation obviously depends on the actual number and flavor of such examples, at present unknown.

Despite their similarity, Yorùbá finite inflection and the infinitive marker are phonetically distinct. The infinitive, with two tokens in (2a), necessarily adds phonetic length. Finite inflection, glossed here as AFF(irmative), does not: it is a pitch accent (H) pronounced at the right edge of any nonclitic subject not already ending in H. Unlike the infinitive, the accent does not require a syllable (mora) of its own. In (99) for example, the pronominal clitic won ‘3pl’ is inherently toneless (M, unaccented) and acquires H as the grammatical subject without added duration. Speaking informally and with orthography in mind, Bàírígbọ̀c describes the phonetic lengthening of a HL noun such as ìfọ́sa ‘teacher’ in finite subject position by saying that “a high tone syllable is added” to yield a form which he writes ìfọ́sà (1966, 34), but such length is the minimum necessary to accommodate the pitch rise. The infinitive is different: in (2a) fè ‘want’ has inherent H but its vowel still must lengthen before the nonfinite root. No phonetic motivation exists for pre-infinitive lengthening, so it’s direct audible evidence for the infinitive as a syntactic category.*
5.3 Tense mismatch

One published example (in two versions) reported from the northeast edge of the Igbo cluster has been cited as an exception to serial tense matching, but the evidence is problematic. The gloss of (100a) seems garbled because it denotes a physical impossibility. (100b), quoted by Baringboi (1974, 17, 27; 1982, 19 fn. 6), is a substring of (100a) whose implausibility it inherits, also because it comes from the same fieldwork team.

(100) a. Ō sì-tu Ḗ-a-Gbo ngi ẹ-rí. 3S pound-AFF yam,GEN NOM-pound NOM-eat
   “S/he prepared food and is eating it”
   [translation as in source, which also indicates that “[t]he last two actions are simultaneous”]

b. Ō sì-tu Ḗ-a-Gbo ngi ẹ-rí. 3S boil-AFF yam,GEN NOM-eat
   “S/he cooked yam and is eating it”
   [translation as in source]

Until the data can be checked, the most likely explanation is morphological opacity: prefixed forms like ẹ-rí in (100) seem to occur as infinitives in the dialect in question (Meir & al. 1975, 154-56). To express the translation of (100b) as given, Standard Igbo needs a biclausal construction, which gaps the second subject before an accented (H-tone bearing) variant of the durative aux na and which also overtly repeats the shared (inanimate) direct object in pronominal form:

Igbo (C. Ùchùchùkwu p.c.)

(101) Ō sì-tu ìta ṣà nà ẹ-rí yá ụgbú à 3S pound-AFF mash but DUR.AGR NOM-eat 3S,GEN present this
   “S/he prepared food and is eating it right now”

In Twi, while convincingly explaining away several kinds of alleged mixed-tense serial examples, Osam (1994, 211; 2003, 19) does cite sentences similar in translation to (i-b), however these are not possible in Baule (Larson 2005, 81).

5.4 The coordination fatwa

Our survey of Benue-Kwa shows that if phenomena aren’t defined independent of language-particular properties, parametric circularity results. A case in point is the mention of coordinating conjunctions in certain definitions of serial constructions:

(102) a. “A serial verb construction is a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt marker of coordination or subordination.” (Collins 1997, 462, emphasis added)

b. “SVCs are constructions in which more than one verb appears in sequence with a single overt subject and no markers of coordination or subordination.” (Baker & Stewart 1999a, 24, emphasis added)

The tension around conjunctions goes beyond markers. Baker also excludes multi-event, “veiled coordination” (i.e. without overt conjunctions) from the definition of “serial verb construction proper” (1989, 514f., emphasis in original), but by the end of the article the opposite conclusion is reached.39

(103) “[C]onverted coordination and serialization constructions… coexist not only in Yorùbá and Sranan, but also in Ákín…, Fòn… and Chinese… The simple theoretical statement that serializing languages allow double-headed VPs captures this generalization elegantly… Thus, it is legitimate to use the term ‘serialization’ in a broad sense, referring both to ‘true serialization’ and ‘covert conjunction,’ since the same principles and parameters make both structures possible.”
   (Baker 1989, 549 and fn. 27)

The correlation in (103) is also endorsed by Baker & Stewart (1999b, 3), but Baker & Stewart (2002, 38 fn. 17) disagree, citing Stewart’s (2001) arguments for “structural differences between Covert coordinations and C[onsequential] SVCs…” 39

The coordination fatwa thus exists in two forms: material (overt conjunctions banned) and spiritual (covert banned too). It raises a more basic issue: the relationship between coordinating conjunctions and syntax. Unless this is direct and unproblematic, the fatwa cannot add explanatory force, and can have the opposite effect. §4.2 showed how the banning of spiritual conjunctions caused problems for the analysis of tensemarking in Èdó. But there are good reasons not to ban material conjunctions either. First of all, there is as yet no theory of coordination at the syntax-semantics interface. Some model-theoretic semanticists imply the existence of such a theory, with claims like the following:

(105) “[W]e do not know of any languages that lack a word that is more or less synonymous with and, joining expressions from different syntactic (and semantic) categories—sentences, noun phrases or prepositional phrases—by using what can be seen as the same semantic operation.” (Chierchia & McConnell-Ginet 2000, 9f.; cf. Jacobsen 1996, 93f.)

Space restrictions forbid a full demonstration here, but it’s safe to say that (105) is directly falsified by Igbo, Yorùbá and other Benue-Kwa languages, which have at most category-specific conjunctions. There is no morpheme in these languages which blithely conjoins both argument-type and predicate-type expressions. The most neutral items found in argument-type conjunction, namely ná (Igbo) and àti (Yorùbá), are necessarily missing in the predicate-type conjunctions in (107):
Another issue is the existence of mismatches between overt coordinating conjunctions and syntactic type, for example in sentences violating the Coordinate Structure Constraint:

English (Ross 1967; Ñuñúñú 2003)

(108) a. I went to the store and bought some wine.

Japanese (Kuno 1973, 205; cf. Déchaine 1993b, 265)


5.5 Parameters au sens large

The working hypothesis motivated §1 is that serial constructions appear in the absence of blocking factors. Alternative ideas have been pursued in the literature, in which serial phenomena correlate with some positive morphosyntactic trait. Example (110) with two static 'light verbs' is ungrammatical without the adverbial clitic -te.

Based on the grammaticality of ex situ dependencies like (108b-c), it has been argued in defiance of the fatwa that English either has serial verb (Déchaine 1993b; cf. Stahlke 1970, 91f.; den Dikken 1991) or that it has something "corresponding" to them (Muysken & Veenstra 2002, 3; cf. Carden & Pesetsky 1977, Cormack & Smith 1994; Corne & al. 1996; Cardinaletti & Giusti 2001; Larson 2005). Japanese (109b) is similar: an internal argument phrase scrambles across an intervening VP which is syntactically neither subordinate nor superordinate to the extraction site. If -te is defined as a conjunction based on its translation (Stewart 2001, 5), the status of (109b) is equally mysterious as that of (108b-c), but if language-internal considerations recommend treating -te as "an allomorph of the past tense" (Nakatani 2002, 2), then (109) escapes the fatwa, which is puzzling given its similarity to (108).

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(113) a. “[T]here are two reasons why SVCs are not possible in non-serializing languages: either because V2 fails to get agreement morphology, if it does not move out of the second VP, or [because] the movement of V2 to Infl to get agreement morphology would violate the H[ead] M[ovement] C[onstraint], since V2 is not properly governed.” (Law & Veenstra 1992, 205)

b. “[T]he absence of V-to-I movement sets serializing languages apart from non-serializing languages which have V-to-I movement in overt syntax or at LF.” (Muysken & Veenstra 2002, 25)

The parameters expressed in (113) are testable insofar as there exist independent grounds to characterize morphological patterns as inflectional—not always an obvious call, as shown in several examples above—or else to decide whether V-to-T occurs in a given language. This latter is also controversial. In French, if overt verb raising à la Emonds (1978) and Pollock (1989) survives the objections of Iatridou (1990) and Williams (1994), one predicts the absence of serial verbs, correctly. In English, finite verbs have also been argued to check a V-feature in T, even if covertly (Lasnik 1994), and in terms of (113) this would rule out serialization—correctly, apart from cases like (108) and the other Germanic and Romance examples discussed in the references cited there.

From a Benue-Kwa perspective, a problem immediately arise with either proposal in (113): identification of tense and agreement morphology in many of these languages is a theory-internal exercise, compared to the kinds of cues available to infant learners of French and English. This goes not only for verb inflection but for the existence of a morphosyntactic class of adverbs which could be used as signposts for the detection of linear order effects in the manner of Cinque (1999). Setting adverbs aside, application of the other criteria leads to contradictory results, on certain assumptions:

(114) “French… does not seem to have consequential and. One possibility is that French has movement of V to Tense… By contrast, English ‘Infl-lowering’ applies in an Across-the-Board fashion. But this should rule out even ‘true’ V-bar coordination in French. In a similar vein, Law & Veenstra (1992) propose a correlation between movement of V-to-Tense and the absence of serial verb constructions… However, the parameter cannot be this simple, since Igbo has serial verb constructions… and V-to-Tense…, but also verbs inflected by head-head agreement.” (Déchaine 1993b, 197)

Alternatively, one could claim that Igbo finite inflection doesn’t count for the purposes of (114), for example if it denotes not Tense but something hypothetically ‘lower’ in clause structure such as polarity (Úwalááka 1988, 53; Déchaine 1993b, 461) or an aspectual feature (Manfredi 1991, 149), or is some kind of default agreement with no interpretable content whatsoever. Then Igbo is a serializing language in good standing, and certain kinds of serial constructions such as resultatives are masked by independent effects like predicate raising, which in that case could not be analyzed as a side-effect of V-to-T. This was the gist of §4.1, and to the extent it’s convincing, (113) remains viable as a UG parameter of the ‘blocking’ kind.
Notes

1. Mufwene & Dijkhoff also assume that "a serial construction… cannot involve an infinitive" (1989, 326 fn. 26) but they cast doubt on the relevance of finiteness in languages like Haitian and Sranan, to which Law & Veenstra refer. A similar claim would be difficult to maintain in Benue-Kwa, as they acknowledge. They observe that Kituba (vehicular Kikongo) dialects allow either bare roots or morphological infinitives in purpose constructions, but only bare roots (traditionally called "narrative tense") in serial constructions. They further assume that the absence of infinitives leads to "general restructuring" (1989, 325f.) in favor of parataxis e.g. serialization, but admit that such an inference does not require that finiteness is absent, just its "traditional morphological conception" (1989, 302).

2. Crowther comments, "I have hitherto used the word times instead of tense, because tense is a nicer distinction of times, the which distinction I do not think can easily be made in the Yorùbá language" (1843, 16; cf. Welmers & Welmers 1968; Déchaine 1991). In Bantu, some reportedly rich tense distinctions reduce to aspekturn forms plus incorporated adverbials (Welmers 1973b, 348-50), and apparent person/number agreements may be better analyzed as pronominal clitics (Kinyalolo 2003, cf. Bresnan & Mchombo 1987).

3. An Igbo can contain aspecto-temporal morphology which is independent of the main clause, e.g. í-ní-chá-ala 'to have eaten up' ends with -ala which is the (Southern) version of the present-perfect ('perfective') suffix (Émenanjo 1985, 32). Déchaine (1992) gives a syntactic analysis of infinitive downstream.

4. An H-bearing mora of this type probably also marks the Baule "intentional" inflection (Larson 2005, 63, citing Creissels & Kouadio N'Guessan 1977,191), although vocalic length is not explicit in the quoted description. In Êdó, Melzian (1942, 109, 124) notes lengthening after a future aux, while declaring himself agnostic as to its morphological source, which is understandable given the number of alternative explanations made available in the language by consonant deletion.

5. Yorùbá grammarians assume that -bò is the progressive version of -ônù because of their complementarity in (2c) versus (2d). Another pair of this kind is [+ progressive] -bè versus [- progressive] -ônù 'exist (somewhere)', cf. Ward (1952, 136).

6. In principle, (n) a 'future' can either be treated (i) as a specification of tense, or else (ii) as a modal operator which selects an infinitive. Aboh opts for (i), but (ii) does not contradict his demonstration that (n) a is not merged lower than Tense, and he does not firmly shut the door to viewing (n) a constructions as the Gbe' analogue of English for-to complementation (2004, 339, fn 6). On the modal view, obligatory repetition of (n) a before each root in a serial construction (Westermann 1930, 127) has a straightforward explanation, as the only way to ensure tense matching in the absence of a finite future. A set of infinitive constructions in Gbe displays OV order, similar to the Yorùbá example (2a).

7. Some Bantu "verb extensions" are serial constructions by the Stahlkean definition (Schadeberg 2003, 73) no less than Igbo "V-V compounds" and Yorùbá "splitting verbs" discussed in §3.3 below. The line between free predicate roots and bound derivational affixes is not sharp, and reliance on translation tends to mask the morphosyntactic productivity of idioms (Émenanjo 1978, 124 f.).

8. Inchoative or causative versions of these roots, meaning 'break' and 'shed/drop' respectively, also inflect. In Ìtìkù àìjì (Ìdònmà cluster), Stahlke (1970, 97) lists 14 roots which, left as simplex predicates, are inherently stative, and which combine with one or more tokens of the aspectual operator -bò to become either inchoative or causative. The transparent compositionality of these shifts tells against treating the inchoative meaning as basic and deriving the stative therefrom as has been argued to occur in Berber (Guerssel 1986). Stahlke cites the Ìtìkù roots in inflected form, including a prefix of fixed vowel quality (a- or i- depending on the root, apparently) which takes LH tone in the imperfective (or LM for auxes), and is toneless (unaccented or M tone) in what he calls "perfect tense" (1970, 80), translating as nonpast with stative roots.

9. Causative down independent exists in English (The missile downed the plane), but not the inchoative (*The airplane downed).

10. A third possibility is that some morphological distinctions, including the one at issue here, are orthogonal to both lexicon and syntax (Hale 1995, cf. Williams 1981, 203).

11. Baker (1989) allows top-down adjunction as well, but just for multi-events, see §5 below. Awoyálá’s says his "proposed template does not form part of the syntax" (1988a, 9), although the disclaimer sounds ever more quaint as the aspect literature burgeons.

12. The term Benue-Kwa was first published, to my knowledge, by Givón (1975, 105, 112 citing Welmers p.c.).

13. This is true although Hyman (1975, 136-40) defines serial verbs more narrowly than Givón (1975), employing the term “consecutive” even for single-event, multi-root constructions.

14. The Nupe and Ìdònmà clusters are both both BK2, but available sources don’t determine the status of Nupe with respect to (3a), or of the Ìdònmà cluster with respect to (3b). Mambilu among other “Bantoid” languages is called "a language with four level tones" (Connell 1996), presumpetively falsifying (3d), but in a subsequent paper, Connell notes that uninflected roots of predicate type choose from only two distinct pitch values (2000, 167), so alternative formulations of (3b) may be able to cut the cake in between BK1 and BK2 consistent with the other three parameters, depending on morphosyntactic analysis of surface pitch. Similarly, (3d) can take refuge in the fact that the few narrow Bantu languages (Kamba, Chaga) described as possessing "four tone levels" include "secondary superhigh and superlow" (Kissébürth & Odden 2003, 59).

15. Williamson (1989, 28) anticipates the correlation in remarking that “[t]one forms part either of lexical items or of grammatical contructions. Roughly speaking, the languages which have more tone levels tend to use tone more for lexical contrasts and thus less for grammatical constructions.”
16. For independent reasons, inclusion of \( \text{wē-č} \) after the second subject makes the examples in (7) grammatical. With the root - \( \text{bya} \) (5a) and a few others, the expected, default inflectional element—called "Open Vowel Suffix" (Green & Ùgwé 1963, 58)—is latent (Swift \& al. 1962, 76 fn 1). For some other roots and in some dialects, the suffix is optional and signals aspectual information (Nwáchukwu 1976a, 70, 81). So far as I know it is required, in all dialects, on the second root in (5b) and (9).

17. Cf. the agent noun \( ðžg\text{ó} \) ‘runaway, wanderer, fugitive’ (Williamson 1972, 431; Ùgwé 1999, 697) and the root - \( ñt\text{á} \) ‘avoid, start (out of fright)’ (Williamson 1972, 473; Ùgwé 1999, 746).

18. A non-ventive predicate like -\( j\text{í} \) ‘hold’ can take the progressive - \( \text{ghe/gha} \) only as a coerced inchoative (Nwáchukwu 1976b, 136). (21a/c) are southern forms; their northern counterparts use the durative auxiliary \( \text{nà} \) whose general meaning is generic i.e. habitual.

19. Green & Ùgwé (1963, 74.f.) and Winston (1973, 147) imply that inflection is also optional in (20c); Nwáchukwu (1976b, 136.f) disagrees. Green & Ùgwé’s view that Êgbó lacks obligatory inflectional suffixes apart from tones (1963, 12, 53.f.) is essentially O. Stewart’s analysis of Êdó, except that they do treat tone patterns as inflectional.

20. Southern varieties like Òwèrè also have a habitual auxiliary \( j\text{í} \) (Éménanjọ 1981, §5). Analyses of instrumental constructions as subject depictives include Collins (1993), Déchaine (1993b), Hale \& al. (1995) and Déchaine & Úchchukwu (2001).

21. The difference between single -\( rV \) in (20) and -\( VrV \) (so-called double -\( rV \)) in (23) may be trivial: Nwáchukwu (1976b, 136; 1984, 81, 92.f) reports the two forms as in free variation in simplex sentences for inherent subject depictives in a past reading. With single -\( rV \) on the first root, (23a) also has a multi-event reading: ‘S/he stood up and [then] spoke’, exactly as in (25b) below.

22. (25b) can also refer to a single event that lacks present salience. Discussing the nearby dialect of Òmààbàyà (Ọchùñmùn), Green & Ùgwé (1963, 111) imply that the second root should be preceded by antidownstep (i.e. should bear “higher than high” tone) in the multiple event interpretation of a sentence like (25b), but not in any single event reading of either type represented in (25), cf. Winston (1973, 172). A sensitivity of phrasing to the difference between multiple and single event interpretations would go with the “slight comma intonation” mentioned by Sebba (1988, 111) and cited by Baker (1989) as favoring a “covert coordination” analysis, although to use this fact as a phrase structure diagnostic requires a theory of downstep and phrasing which does not yet exist.

23. The SOV reconstruction of Proto-Niger Congo is contested by Heine (1976, 1980) and reaffirmed by Williamson (1986; 1989). There is only one finite OV language in the whole of Niger-Congo: Êzõn. Everything else is Aux-2nd, and the Benue-Kwa examples of OV order are derived by object shift (Manfredi 1997). Even assuming that Êzõn is a separate branch of Niger-Congo, co-equal with Mandekan or higher, it’s less likely for all the other branches to have lost finite OV than for Êzõn alone to have acquired this pattern. The probabilities are still further apart, if the divergence of Mandekan is older than that of Êzõn.

24. The idiomatic status of “splitting verbs” is not in doubt, but their semantic irregularity may be exaggerated. The H tone of the second root -\( j\text{é} \) in (27a) root is etymologically odd; compositionality would be restored if it was underlyingly M-bearing as in \( j\text{é} \) ‘eat, consume’ parallel to the cluster of expressions meaning to ‘cheat’ summarized in (27e). Àwòbùlùyí (1969, 154 fn. 8) identifies the second root in (27d) as -\( m\text{u} \) ‘drink’, but if M tone is spurious the etymon could be -\( m\text{u} \) ‘catch hold of (with one hand)’ with H tone and compositional semantics. Similarly in Êgbó, the complex root -\( \text{gide} \) (28c) ‘against’ is restricted to second position in compounds consistent with reanalysis as a bound element, but a phonologically related form -\( \text{jide} \) (with regular palatalization) occurs independently in the meaning ‘seize’ or ‘grab’ and transparently composed of -\( j\text{í} \) ‘hold’ plus -\( ð\text{e}/ð\text{ó} \) ‘keep’.

25. Òlú-Orí (2003) gives a non-syntactic, Optimality analysis to phenomena of this kind.

26. Êgbó -\( ð\text{e}/ð\text{ó} \) ‘eat’ is cognate to Yorùbá -\( ð\text{e}/ð\text{ó} \) and Êdó -\( ð\text{e}/ð\text{ó} \). The Êdó equivalent of the compound in (28c) is -\( \text{fian} x - x\text{-re} \) ‘bite/cheat x’ (Melzian 1937, 60), with linear order as in Yorùbá. A near-equivalent in Êdó to the compound in (28c) is -\( ð\text{u} x - ð\text{u} \) ‘criticise x’, literally ‘\( \text{APPL x} \) grumble’ (Melzian 1937, 67), isomorphic to Yorùbá. The Yorùbá example ‘believe x’ in (27f) is also consistent with an applicative structure ‘listen to x’, as expected if it is parallel to (27c) and (27e). Êgbó (28f), although not directly comparable to Yorùbá (27f), goes along the same lines: ‘offered x’ = ‘bad do x’ i.e. ‘be(have) badly to x’.

27. Êgbó lacks passives and middles. It does have anticausatives (intransitivized causatives), cf. §4.1 below, but not formed from noncausatives like ‘eat’ and ‘talk’. The [+ predicate] nature of Yorùbá \( \text{kun} \) is apparent from its intransitive variant ‘full’ (36b), but there remains the difference that such roots regularly allow a zero causative in Yorùbá (35d), not in Êgbó (36d). The [+ predicate] nature of Yorùbá -\( ð\text{e}/ð\text{ó} \) is suggested by the gloss in (35e-f). In English, [+ predicate] items are called adjectives and prepositions, but the matter is more intricate: unlike Yorùbá \( \text{kun} \) (36d) or English full, Êgbó -\( j\text{í} \) can’t causativize (36d) and is more like the non-dynamic part of English shelf (Hale & Keyser 1993, 56), a stance predicate meaning ‘kapka’ in [the] barrel plus the entailment that the barrel is full. English full works this way if the subject is countable and the location is not bounded: Shouts filled the air versus?” Wine filled the bottle. In Êgbó, the entailment is pragmatic -\( j\text{í} \) without an argument container means ‘be plentiful’, thus Ùgwé (1999, 279) contrasts Àn\( ð\text{u}j\text{-ru ìfèrè} \) ‘Meat filled the plate’ (36c) with Àn\( ð\text{u}j\text{-ru ìfèrè} \) ‘There’s plenty of meat in the plate’.

28. For Hale, among many others now, noncausative transitives are structurally like unergatives:

“We can assume, then, that the subject is in fact excluded from the L[exical] R[elational] S[tructure] representations of unergatives. … [A] subject, if present in an unergative LRS representation, would itself be uninterpreted for lack of a predicate in the complement position. The …subject of an unergative verb is therefore a ‘true external argument’ appearing in the Spec position of the functional projection IP…” (Hale & Keyser 1993, 76).

30. (40) is modeled on den Dikken’s double objects (1995, 164) but is compatible with Hale & Keyser’s location-verb shell (1993, 56), cf. Hale & al. (1995, 103). (40b) drops den Dikken’s assumption of string-vacuous raising of the head of XP2 to v. Baker (2003, 228.f) seems to agree that compounding is motivated thematically and not by the checking of inflectional features as in (29).

31. In the Ênñi=ə vesion of (42a-b) and (43b), van Leynseele reports that either predicate can be separately negated, pragmatics permitting (1979, 193), but no data are given, and the same is not true in either Twi or Baule, which require all roots to be negated or none (Boadi 1968; Ñsam 1994; Larson 2005, 83 ff.), therefore I must provisionally set this diagnostic aside.

32. Van Leynseele cites these Ênñi=ə examples in “unmarked present tense”, which she glosses as habitual, “in order to avoid phonological and sequential complications” (1979, 196 fn. 6). In Twi at least the progressive (an existential quantification) is formally different from the habitual (a universal quantification), cf. Dolphyne & Kropp Dakubu (1988, 74f).

33. Sààh (1992) argues that the suffix which appears as [-ii] in (48a) and (49a) is not a pronominal object clitic, but an allomorph of the past tense suffix in (48b) and (49b). It’s not limited to canonical transitives, is found only in sentence-final position, is restricted to past tense and with this root is tracked by nasality, cf. (48a). In closely related Nzema, the corresponding item is [-l i].

34. Similarly in English, I ate chicken yesterday is pragmatically easier than I ate [athe] chicken yesterday. The title of the comic film “Eating Raoul” (1982, dir. P. Bartel) plays on the default, non-alimentary interpretation of eat plus a proper name.

35. The source of this Ênñi=ə-specific implication mysterious. It does not hold in Baule (Larson 2002b, 7).

36. I don’t attempt to account for the uniform inflection of all these types, for the moment noting only the close similarities to prosodic inflection in Êgbo and Êdò, addressed in §4.

37. The Baule counterpart, fa, does not show defective inflection (Larson 2005, 73).

38. Æñụwụmènè (1984) reports that, in addition to the tone effect, a segmental suffix shows up in Òsele Êku as a vowel mora, unless followed by a vowel-initial word. He regards the mora as underlying and derives examples like (54c) by ellipsis, but the default character of the suffix throughout Êgbo may favor epenthesis instead; either way, the mora’s appearance is prosodically conditioned.

39. For example the intinitive ëkèwá, the present perfect ëkèwúele, and the gerund ëkèwúikwù, all show the root with H tone, see Nwùchukwu (1983). Readers of Nwùchukwu (1995) will want to correct a typo in the “past” column of example (1) on p. 16, where the prose discussion makes it clear that the three forms should be written nìn, ghwùn, gblá rather than nìn, gbinù, gblá. The glossary of Swift & al. (1962) contains 37 “HTLV” versus 40 “HTV” and 28 “LTV”, i.e. the three sets are roughly equal in extent.

40. Goldsmith (1976, 75f) cites two examples from Green & Êgùè (1963, 75, 77) in which a subject anticipates the tone of a finite verb (his “subject tone flop” rule), where the verb root is not L but downstepped H. It happens that in both examples the downstepped H is not an underlyng pitch accent, but reflects a finite root whose accent is suppressed but whose derived L is raised before another L in the context of prosodic phrasing, hence it doesn’t contradict the generalization in the main text. Unfortunately the Õwé-ré paradigm in (57) can’t be reproduced in Êgùè’s Onàsùmà dialect since the latter never pronounces the root on downstepped L in a sentence like (57b). The data in (57) have been streamlined for clarity, but there’s also a crucial typographical correctness: the L tone mark at the right edge of the subject of the model for (57a) is missing in example (42c) on p. 121 of the 1985 edition, although it is implied by the prose summary on the previous page and shows up correctly in the 1981 roneo-stencilled original manuscript (p. 224), as well as being confirmed by many other examples in both editions.

41. The pitch accent on the first root if any begins a new trochaic foot, i.e. the H tone is downstepped in (58b-c), just as with simplex predicates in Êowó and Êbaisèn like (57b). This regular phrasing effect shows up also in the present perfect as well as in the negative subjunctive (traditionally called negative imperative). These patterns can of course be transcribed autosegmentally, in terms of tonemes rather than foot structure, but the root initial downstep in (57b) and (58b-c) comes for free in the metrical theory. In Êkán, the inflection of string-adjacent serialized roots in “past tense” contexts displays a remarkably similar prosodic trait: only one suffix appears (after the second root), and the (lexically redundant) pitch accent (H tone) of the first root is not suppressed, as would happen if it were adjacent to a “past” suffix (Campbell 1988, 218-20). This applies regardless of whether the derived strings are resultative (-kw-e-kwëre ‘tie up’ < ‘tie-catch’) or non-resultative (-ka-kwëre ‘say to’ < ‘say-show’).

42. I assume that Ñòrúhá nonsplitting forms like (30) are listed as single bisyllabic roots. Also note that the nonvacuous movement claimed to occur in Ñòrúhá (40a) affects neither the relative order of roots, nor that of arguments.

43. Caveat lector: the notation in (59a-b), with an asterisk outside parentheses, indicates that the whole example is grammatical unless the parenthesized material is omitted.

44. (59b) with BVC present is incorrectly reported as ungrammatical by Manfredi (1997, 113). It becomes ungrammatical is if -zò-wá ‘break by stomping’ replaces -kw-uww ‘break by knocking’. Hale & al. (1995) analyze the both cases.

45. Exception to (62): predicates introducing an implicit location, e.g. Ùché bya-n ‘U. came [here’]. The BVC’s restriction to absolute sentence-final position seems to be related to two other facts: (i) the BVC is not a free form, in contrast to the clefted gerund used in verb focus in many other Benue-Kwa languages (Manfredi 1993); (ii) where the BVC is optional, as in (60) and (61), it marks the predicate as anaphoric by attracting the focus away to an epenthetic foot, cf. Manfredi (2004).
46. This is the view of Wescott (1963, 29) and Åmøy (1975, 22; 1976) versus Melzian (1942) and Ogieiriaikhi (1973). Roots are basically toneless also in Êdó, inflection is copied on all roots in an Êdó serial construction (Campbell 1988).

47. Baker (2003, 229) repeats the labels "past perfective" -(r)ē and tonally marked "past" as if they were semantically distinct and disregarding their allomorphy. Dunn & Agheyisi (1968, 85) reserve the term "past perfective" for a true present perfect form, something both semantically and phonetically distinct from (64f). Both the other semantic labels in (64) are tendentiously tense-like: "present (habitual)" is actually ambiguous between generic "present habitual" and progressive, while the "simple future" can alternatively be progressive (Melzian 1942, 107ff.) at least for some predicates, and if doubled forms a future progressive (Wescott 1963, 150).

48. The presence of the -(r)ē in -(r)ē is phonologically circumscribed for some speakers, and the vowel sometimes harmonizes with the vowel of the root. For Melzian’s consultants including Chief Egharevba, -(r)ē regularly occurs after all and only bimoraic roots including -CVV and CVCV; Åmøy agrees, but Aikhiñbare says that "...in the speech of much of the younger generation... the alveolar approximant never occurs. While noting its 'optionalness,' we shall assume that the /rV/ structure is basic." (1988, 226 fn. 5). Lenis onsets are historically fragile in Êdó (Eluge 1980, 1989), and their synchronic realization is sensitive to tempo (Wescott 1962; Omôrùyìwa 1989). In (67), I gloss the phonetic strings [ērē] and [ōrē] as expletive subject clitic plus copula, where Ò. Stewart has unanalyzed FOC.

49. Similar constraints operate in Yorùbá transitive VPs (Déchaine 2001) and Êdó genitive noun phrases (Manfredi 2003).

50. The dependency of tense morphology and interpretations on predicate-internal quantification in (77) and (78), respectively, recall Verkuyl’s (1993) compositional, Boolean approach to aspectual calculus.

51. The absence of a dedicated open lexical class of attributes in Êdó may account for varied judgements among Êdó linguists as to the precise form of such items, whether fully reduplicated, lengthened only on the final syllable, or simply given an inherent, uniform tone pattern H1 or L1. For example, Melzian’s pīrēته (LLL) ‘flat’ (1937, 173) is given by Òmôrùyìwa (1988) as pīrē (LL), and Melzian cites speaker variation between mōsēc (LLL) and mōsēmo (LLLL) ‘beautiful’ (1937, 123f.).

52. A similar argument could be made for the rising pitch of dōa ‘come’ in (84b), assuming a monosyllabic source for this item, however it has independent restrictions, according to Melzian (1937, 25), which make this hard to verify. The low pitch of bi in (83a), i.e. the absence of an independent pitch accent on that root, may well show that bi is compounded with go, but crucially without having been reanalyzed as a simplex, bisyllable morpheme, in which case it should inflect like kōlo in (79b).

53. The crucial example of non-matching tense in covert coordination, (68b) on p. 203, actually shows two instances of matching tense, but it is accompanied by the annotation "habitual + past tenses" confirmed in the prose summary, thus the second root is probably intended to have LH inflection, with “peeled” as the corresponding part of the translation.

54. ‘He brought a pot’ is simply expressed in Êgbo as Ŭ foi-te-ri te with the suffix -te ‘[towards speaker]’ (Üwałaáka 1982, 69).

55. Judging from the ambiguity of (90a), the past reading of (90b) may have been accidentally omitted by the source.

56. Finite pitch accent is usually called the "H tone syllable" or HTS (e.g. Awóbùlàyì 1973; Báñgbóṣé more aptly calls it "high tone junction" (1966, 33). A likely reason for the popularity of the HTS label in early generative literature was its easy integration into phonology at a time when abstract syllables could be guiltlessly added to underlying forms and then deleted by rule. Such deletion, even if permitted by phonology, mysteriously fails to affect Yorùbá infinitives, apart from two plausible cases of restructuring after -lọ ‘go’ or -wa ‘come’; this restructuring is limited to the Standard variety, according to Báñgbóṣé (1971, 42).

57. The data are illegible in the online version (Ọsam 2003); the English translations are ‘Abam has taken the fish and is eating it’, ‘Esi has washed the towel and is hanging it’, and ‘Abam has bathed and is sitting at home’.

58. Covert coordination analyses of serialization date at least from Báñgbóṣé’s “linking” analysis (1974), which was generative-semantic without apology. To set covert coordination aside in narrowly syntactic terms, the only test Baker (1989) applies to a Benue-Kwa language is to cleft both verbs of a serial construction together. This is possible in Yorùbá and excludes a multi-event reading (p. 549), but the result may be uninformative: Yorùbá verb cleft requires a gerund (Báñgbóṣé 1966, 56), described as equivalent to an abstract noun denoting an eventuality, i.e. event or fact (Awóbùlàyì 1974, 359 fn. Ekeündyọ 1976, 244 fn. 10, cf. Ajbóṣé & al. 2003). If a multi-event cleft requires multi-gerunds, this may reveal more about nominals than about VPs.

59. Specifically, Stewart remarks that “One of the major results of this book will be to criticize the spurious unification of the transitive plus result and transitive plus transitive S[erial] V[erb] C[onstruction]s” (2001, 10).
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