

Aspect versus the serialization parameter*

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Ìyà ní ʒòkòtò àgbàwò.

Borrowed/shared/rented trousers are sheer torture.

1 Parametric inflection

Benue-Kwa (or East Volta-Congo) is the residue of Niger-Congo after subtracting Mandekan, Atlantic, Gur, Iẓõn and some smaller clusters (Givón 1975). Williamson & Blench (2000) describe it as a “dialect continuum” but maybe not, because it’s bifurcated by the descriptions in (1), which shows a bundle of four correlated properties across several modules of grammar (Déchaine & Manfredi 2000; Manfredi 2003, 2005),

- | | BK1 | BK2 | |
|--------|-----|-----|---|
| (1) a. | – | + | A finite eventive predicate with minimal inflection allows a present perfect reading in addition to a past one. |
| b. | – | + | Aspectually unrelated events are excluded from a single clause. |
| c. | – | + | Minimal finite inflection is an aux/proclitic particle (as opposed to a suffix or root-borne tone pattern). |
| d. | – | + | At least three surface tones contrast on roots of the same category (as opposed to two tones plus downstep). |

BK1={Àkán, Èdó, Ìgbo, ‘Bantu’...}; BK2={Gbè, Yorùbá, [Nupe], [Ìdomà]...}¹

Because (1) separates Gbè and Àkán, it contradicts either version of the Kwa vs. Benue-Congo subgrouping (Greenberg 1963; Williamson 1989). (1b) and (1c) each independently contradicts the “serial verb parameter” of Stewart (1998a) and Baker & Stewart (1999b). Consider Ìgbo.

2. Derived stativity in Ìgbo (nonserial contexts)

In Ìgbo, finite predicates (‘verbs’ in Africanist usage) undergo the equivalent of destressing: a lexical pitch accent/“H tone” on the root is left unpronounced. This is Welmer’s “low tone replacive” process morpheme (1970a, 51).² Most finite roots are additionally suffixed, by a variety of elements which lack intrinsic temporal denotation and whose distribution and interpretation interact with event structure, yielding rich patterns of past and nonpast reference (Welmers & Welmers 1968a, 76; Déchaine 1991, 1992, 1995). With some justification, Green & Ígwe (1963, 53) insisted that no Ìgbo suffix is either obligatory or inflectional. Barring an analysis of prosodic inflection, however, they were left with no alternative to listing sentence templates, at which point any attempt to attribute grammatical meaning to individual grammatical morphemes is bound to posit multiple homophonous items of the same phonetic shape—a procedure as endless, in principle, as the set of contexts itself.³

In affirmative finite contexts, lexical pitch accent is suppressed as already noted, for all roots. One set of roots also requires a toneless epenthetic suffix which in standard Ìgbo has the shape *-rV* (2b, 3b). With this *-rV*, a nonpast interpretation is evoked. To obtain a past tense, these roots need a double suffix *-V-rV* (2c, 3c). The predicates in question translate psych verbs and notional adjectives. I’ll call them A/N-based, following Hale & al (1995). A second class of lexical items require no suffix in a nonpast context, denote past with one single *-rV*, and convert into activity predicates with the double, *-V-rV* suffix (Welmers & Welmers 1968a: 162f.; Winston 1973, 151f.; Nwáchukwu 1976b, 135; 19; 1984, 84ff.; Williamson 1982). These class, call it P-based, is also large and open, and denotes concepts like body adornment (4) and stance (5), as well as holding and carrying (illustrated further below). It also includes a handful of copulas including *-nò* ‘stay’ and *-bí* ‘inhabit’.

- | | | | |
|-------|---|-------|--|
| (2)a. | *Ó tè ánya.
3s far.INFL eye
[OK in Ìgboẓò] | (4)a. | Ó tì tráwzà.
3s put.INFL long.pants
‘S/he is wearing trousers [now]/has trousers on’ |
| b. | Ó tè-re ánya.
3s far-SF eye
‘It is distant [in space]’ | b. | Ó tì-ri tráwzà.
3s put-SF long.pants
‘S/he put on some trousers/had trousers on’ |
| c. | Ó tè-e-re ánya.
3s far-SF -SF eye
‘It was distant[in space]’ | c. | Ó tì-i-ri tráwzà.
3s V-SF -SF long.pants
‘S/he put some trousers on herself/himself’ |
| (3)a. | *Ó vù ívù.
3s V obesity | (5)a. | Ó t̄hú-kwù ala.
3s down-squat.INFL ground
‘S/he is squatting’ |
| b. | Ó vù-ru ívù.
3s V-SF obesity
‘3s is fat’ | b. | Ó t̄hú-kwù-ru ala.
3s down-squat-SF ground
‘S/he was squatting’ |
| c. | Ó vù-u-ru (NP) ívù.
3s V-SF -SF obesity
‘3s was fat [but no more]’
OR ‘3s is fat for NP’s benefit’ | c. | Ó t̄hú-kwù-u-ru ala.
3s down-squat-SF-SF ground
‘S/he squatted herself/himself down’ |

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¹ Mambila among other “Bantoid” languages is called “a language with four level tones” (Connell 1996), which would be bad for (1d), except for Connell’s subsequent observation that uninflected roots of predicate type choose from only two distinct pitch values (2000, 167). Similarly, while a few “narrow Bantu” languages (Kamba, Chaga) are described as possessing “four tone levels”, (1d) can still shelter in the fact that include “secondary superhigh and superlow” (Kissebirth & Odden 2003, 59, emphasis added). The term *Bantu* is given in scare quotes because it’s “impossible to draw a clear line between Bantu, however defined, and non-Bantu Niger-Congo” (Nurse & Philippson 2003, 5). The Nupe and Ídomà clusters are both provisionally BK2, but available sources don’t determine the status of Nupe with respect to (1a), or of the Ídomà cluster with respect to (1b), hence the square brackets.

² Mbàisén and other southern varieties (Swift & al 1963; Éménanjò 1981; Nwáchukwu 1983, 1995) distinguish two classes of lexically accented roots; in one, the pitch accent (“lexical H tone”) is not suppressed in the bare finite form, but is preceded by a spurious downstep (foot boundary). In this paper, examples are cited promiscuously from a range of dialects, without precise attribution unless relevant, thus both forms of prosodic inflection are randomly represented.

³ “[N]othing is intended to be implied as to the degree of relationship or difference between the various suffixes; the symbolization is simply a convenient way of representing certain small but precise differences of behavior, whether of two ‘different’ suffixes or of ‘the same’ suffix in two different uses” (Winston 1973, 143).

The labels *A/N-based* and *P-based*, and the distinction between them as just introduced, presume in “lexical syntax”—the combinatorics which Hale & Keyser (1993) introduced as an alternative to Theta Theory (Gruber 1965; Baker 1988a; Grimshaw 1990). Hale & Keyser (2005) insist however that lexical syntax is not responsible for all properties which have ever been attributed to lexical items, and in particular they claim that stativity is orthogonal. Igbo proves the point: unlike textbook presentations of Latin conjugation, membership of the two stative paradigms above is not stable, for any given root or lexicalized phrase, but is influenced in surface syntax by compositional factors of a quantificational, scopal nature. For example, the expression *-má mmá* fits the A/N-based paradigm in (4) if the subject is definite (6), but it ‘leaks’ (Sapir’s metaphor) into the P-based paradigm, so far as audible inflection and tense interpretation are concerned, in case the subject is generic (7a).

- | | |
|---|--|
| (6)a. *Ézè má mmá.
E. V beauty | (7)a. Údharà má mmá.
<i>Chrysophyllum</i> V beauty
‘Údharà is intrinsically good’ |
| b. Ézè má-ra mmá.
E. V-SF beauty
‘E. is handsome’ | b. Údharà má-ra mmá.
<i>Chrysophyllum</i> V-SF beauty
‘Údharà seem good [now] (e.g. to eat)’ |
| c. Ézè má-a-ra mmá.
E. V-SF-SF beauty
‘Ézè was [once] handsome’ | c. Údharà má-a-ra mmá.
<i>Chrysophyllum</i> V-SF-SF beauty
‘Údharà were [once] generically good (e.g. to eat)’ |

Intuitively at least, the above difference is comprehensible if P-based predicates entail existential quantification, like other locatives (Freeze 1992), while A/N-based predicates do not, and if this quantification takes the subject argument into account. Apparently, a definite or referential subject such as the proper name *Ézè* fails to match the logical type of the A/N predicate in (6a), but predication demands an implicit, type-matching existential argument, so one is introduced by the single *-rV* inflection in (6b). Understood in this way, *-rV* inflection is not any kind of tense marker (anyway in doubt), but rather a clitic pronoun whose presence makes sentence-level denotation possible. Independent evidence that *-rV* inflection licenses an implicit argument is of course the applicative construction, which is not limited to finite contexts, for example it occurs inside nominalizations. Without taking a compositional road in this way, the distinction between (6a) and (7a) will require a template that includes components of both the subject and the predicate—a computational explosion.

Another nonlexical factor that reliably shifts *Aktionsart* in certain instances is progressive (nonhabitual) ‘viewpoint aspect’.⁴ Normally a predicate of the A/N-class, like *-vú ívù* ‘fat’ in (3), is coerced by the progressive form to an inchoative i.e. change of state (8a).⁵ But for *-má mmá* ‘beautiful’ (8b), the activity reading replaces inchoative in the progressive, as regularly occurs with members of the P-based class (9) - (10). (11) shows a lexical doublet along the same lines, where one and the same root *-chá* (*-chà* in the south) plus a bound nominal complement inflects like a regular predicate adjective, but with a cognate, free noun complement it gets coerced by progressive to a (noninchoative) quasi-activity.⁶

- | | |
|--|--|
| (8)a. Éghu à vu-ghe ívù.
goat this V-SF obesity
‘This goat is fattening up’ [inchoative] | (10)a. Ọ gbà ọtọ.
3s move.INFL nudity
‘S/he is nude’ |
| b. Ézè má-gha mmá.
E. V-SF beauty
‘E. is acting handsome/on an ego trip’ [activity] | b. Ọ gbà-gha ọtọ.
3s see-SF nudity
‘S/he is parading around in the nude’ |
| (9)a. Ó tí-ghe tráwụzà.
3s put-SF long.pants
‘S/he is putting her/his trousers on’ | (11)a. Údhará à chá-gha a-cha.
<i>Chrysophyllum</i> this ripe-SF NOM-ripe
‘This <i>údhará</i> is ripening’ |
| b. Ó kpù-gha ọmù.
3s grip-SF palmfrond
‘S/he is [ritually] holding a palmfrond between the lips’ | b. Ézè chá-gha úcha.
E. V-SF paleness
‘E. appears pale’ (‘...is looking pale’) |

Where the change of state in (8a) come from? It’s not intrinsically part of the A/N-based predicate, which is clearly nondynamic in example (3b); nor is it part of progressive viewpoint aspect *-ghal-ghe*, which adds no change of state in (8b). Someone inclined to homophony will now leap to postulate twin suffixes, *-ghal-ghe_{PROG}* and *-ghal-ghe_{INCH}*, not blinking at the complementary distribution which is the price of this move. To avoid this, it is possible to factorize the phenomenon. Of the two interpretations, change of state and activity, the former requires particular real-world knowledge about different kinds of states, but the latter can describe any animate actor. A closely similar pragmatic inference, between extrinsic (agentive) and intrinsic changes of state, is invoked for Berber by Guerssel (1986; 1987) and arrives like a free gift from general cognition whereas it fits implausibly among grammatical features and categories, which can differ arbitrarily cross languages (Hale 1986, 1995).

Psych predicates, like P-based roots, give an activity reading in the progressive form (12c), but in the pattern of interpreted tense they resemble the A/N-class: single inflection nonpast (12a), double inflection past (12b). Here the direction of aspect shift may well be reversed, since other, independent instances exist of coercion from activity to state. With a simple nominal complement, *-chọ* ‘seek/want’ is ambiguously past or not (13a), but with an infinitive complement nonpast is the only outcome (13b). With the progressive affix, it reverts to an activity, as regularly for any dynamic predicate; (13c) is not inchoative.

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|--|--|
| (12)a. Ọ kpọ-rọ í asị.
3s call-SF 1s anathema
‘S/he hates me’ | (13)a. Ọ chọ-rọ éde.
3s seek-SF <i>Colocasia esculentum</i>
‘S/he wants <i>éde</i> [now]/sought <i>éde</i> [before]’ |
| b. Ọ kpọ-ọ-rọ í asị.
3s call-SF-SF 1s anathema
‘S/he once hated me’ | b. Ọ chọ-rọ írí éde.
3s seek-SF INF-eat <i>Colocasia esculentum</i>
‘S/he wants/*wanted to eat <i>éde</i> ’ |
| c. Ọ kpọ-gha í asị.
3s call-SF 1s anathema
‘S/he is seething at me with revulsion’ | c. Ọ chọ-gha éde.
3s seek-SF <i>Colocasia esculentum</i>
‘S/he is searching for some <i>éde</i> ’ |

⁴ Progressive is achieved by auxiliiation in northern dialects, but for brevity all examples here are cited in the southern, suffixed form.

⁵ The productivity of this alternation causes Nwachukwu to remark that “[t]he progressive and imperative tests, which are supposed to be acid tests for stative verbs in English, fail in most cases in Igbo” (1984, 92).

⁶ The strings are all consistently either ...*chán* or ...*chán*, in dialects which preserve syllable nasality or convert it to aspiration with stops (Ladefoged & al. 1976)

A third effect of argument type is pointed out by Ọnwụeméne (1981, 105): the locative copula-*nwé* ‘have’ exceptionally requires segmental inflection in the nonpast, just in case the object is a bare referential noun (14a); lacking inflection, an unsuffixed form is possible just in case the object can be construed as a lexical constant (*money*→*wealth*), as with the other P-based items (14b). The suffixed forms pattern with the A/N-class as far as tense (interpreted *Aktionsart*) is concerned, so double *-V-rV* is required in order to denote the past.⁷

- | | | | |
|--------|---|--------|---|
| (14)a. | Ó nwé egho/*igwè.
3s have. INFL money/iron
‘S/he is rich’ [*‘S/he has a bicycle/sewing machine’] | (15)a. | Ó nwé-re egho/igwè.
3s have- SF money/iron
‘S/he has money/a bike/a sewing machine on hand’ |
| b. | Ó nwé egho à / igwè à.
3s have. INFL money this iron this
‘Àdḥá is the owner of this money/bicycle/sewing machine’ | b. | Ó nwé-e-re egho/igwè.
3s have- SF-SF money/iron
‘S/he was rich/owned a bicycle/sewing machine’ |

Without a scope-taking element like the *-rV* suffix somewhere in the predicate, the complement noun in (14a) is not interpretable as an argument, just as a kind of adverb. This effect is Case-related, in the theory of Bittner & Hale (1996) as applied to Igbo by Déchaine & Manfredi (1998). An abstractly incorporated noun receives so-called Inherent Case (Baker 1988), but for some reason ‘iron’ can’t do so in (14a).

Argument type conditions *activity*→*state* shift in still more ways. The root *-hú* ‘see’ (*-hún* in nasalising dialects) generally has the tense pattern of a so-called incremental theme predicate like *-kò* ‘plant’ (16): both yield past with single *-rV*. With a lexical constant (so-called Inherent Complement) like *úzo* ‘pathway’, the root has the tense pattern of an activity, yet the translational *Aktionsart* of a state (17). Given (18a), where the transitive idiom *-hú X n’anya* ‘love’ (literally ‘see X in eyes’) is nonpast with a single inflection, it’s not obvious why *-V-rV* inflection would be ungrammatical (18b). The fact, anyway, is that a past denotation of this predicates requires a periphrastic ‘prior’ suffix (18b), extensively described by Éménanjọ (1981). Moreover, whatever blocks *-V-rV* in (18b) also blocks the progressive form (18d), which might have been expected to bring an inceptive interpretation, comparable to (8a).

- | | | | |
|--------|---|--------|---|
| (16)a. | Ọ hụ-rụ Ézè/édè.
3s see- SF E./ <i>Colocasia esculentum</i>
‘S/he saw E./édè [before now]’ | (18)a. | Ọ hụ-rụ Ézè n’anya.
3s see- SF E. LOC-eye
‘S/he loves Ézè’ |
| b. | Ọ kò-rọ édè.
3s plant- SF <i>Colocasia esculentum</i>
‘S/he planted édè [before now]’ | b. | *Ọ hụ-ụ-rụ Ézè n’anya.
3s see- SF-SF E. LOC-eye |
| c. | Ọ hụ-/kò-gha édè.
3s see-/plant- SF <i>Colocasia esculentum</i>
‘S/he is looking at/planted édè’ | c. | Ọ hụ-bu-ru Ézè n’anya.
3s see-prior- SF E. LOC-eye
‘S/he loved Ézè [before now]’ |
| (17)a. | Ọ hụ-rụ úzo.
3s see- SF path
‘3s could see [despite the dim light]’ | d. | *Ọ hụ-gha Ézè n’anya.
3s see- SF E. LOC-eye |
| b. | Ọ hụ-gha úzo.
3s see- SF path
‘3s can see [despite the dim light]’ | | |

In both (18b) and (18d), the recorded ungrammaticality is strange, if the predicate ‘love’ is intrinsically stative, but less so if—as suggested by the robust eventiveness of the same root in (16) and (17)—the stativity in (18a) is not intrinsic, but rather supervenient on the whole V NP1 P NP2 array, in which NP2 happens to be a transitive or relational noun (psychological body part). At any rate, the minimal difference between (16a) and (18a) diagnoses the stativity (nonpastness) of (18) as a binding-theoretic effect (scope), rather than as an intrinsic lexical feature.

Linear order (or scope) also has tense effects, which by hypothesis reflect aspect shift. One case is (19), cited from Nwáchukwu (1987). (19b), with its otherwise unexpected loss of the past reading with single *-rV*, is a middle construction (rare in Igbo). Externalization in (20) has the same tense effect, but this time the displacement is more plausibly characterized as anticausative; the derived stativity and nonpast interpretation recall the passive participle in Indo-European languages.

- | | | | |
|--------|--|--------|--|
| (19)a. | Ó shì-ri ánu n’ókḥụ..
3s boil- SF animal on fire
‘S/he cooked [some] meat [in a pot]’ | (20)a. | Ụdḥa égbè gbá-fù-ru yá obì.
sound gun run-away- SF 3s heart
‘[The] gunshot scared Àdḥá’ |
| b. | Ánu shì-ri n’ókḥụ.
animal boil- SF on fire
‘[Some] meat is cooking [in a pot]’ | b. | Obì gbá-fù-ru yá.
heart run-away- SF 3s
‘S/he is scared’ |

The causative of certain P-based classifier predicates demands an overtly marked inchoative, namely the bound root *-wel-wa* (21a), and the appearance of this inherently dynamic, closed-class item is accompanied by a tense difference. As noted by Nwáchukwu (1987: 93f.), other items that work this way are *-bì* ‘dwell in’, *-dḥà-bil-gbá-bi* ‘rest upon’, *-kḥò* ‘be spread out/hung up on’ and *-kḥwú*. ‘hang, dangle from’, plus the stance verbs *-kpò-ghu* ‘be sitting’ and *-túkḥwú* ‘be squatting’, cf. (5) above. By themselves the non-stance locatives can appear in a finite context with a single suffix, in which case they’re nonpast (21b), just like the putative middle in (19b). Igbo systematically rejects zero causatives (not shown here; cf. Lord 1975; Hale & al. 1995), and the affix-mediated alternation in (21) fits this generalization by treating *-wel-wa* not as an operator, but as the lower, ‘main’ verb: a light inchoative predicate to which the P-based root is added as causative operator cum manner classifier, in the “bipositional” causative mould. Whatever the thematic analysis, (21) parallels (19) and (20) above, insofar as an aspectual difference correlates with external/internal linearization. Similarly with the psych-predicate in (22), except that the aspect shift fails to bring the temporal reference out of the past. In (22a), the element responsible for the dynamic interpretation is the applicative suffix itself, governing the “object of anger”. (22b) is nondynamic because no applicative is possible, since the experiencer immediately follows the verb.⁸

7. Compare the tense alternation determined by object type in Haitian (Déchaine 1991, 32):

- | | | | |
|-----|--|------|--|
| (i) | Pyè vann bèf.
P. sell cattle
‘Pyè habitually sells cattle’ | (ii) | Pyè vann bèf yo.
P. sell cattle DEF.PL
‘Pyè sold the cattle’ |
|-----|--|------|--|

8. The forms and interpretations in (22) are reported by (C. Úchèchúkwu p.c.). Welmers & Welmers (1968b, 175; Úwalaáka 1988: 164) cite (22a) with a single suffix, an omission which is not surprising since *-V-rV* inflection, like lexical not to mention grammatical tone, is usually ignored in Igbo orthography.

- (21)a. Ó ḳḥẉù-wa-ra ebelé yá n'osisi.
3s hang-INCH-SF calabash 3s.GEN in tree
'S/he hung her/his calabash in [the] tree'
- b. Ánu ḳḥẉù-ru n'anya oḳù.
meat hang-SF in-eye fire.GEN
'There is [some] meat hanging in the chimney'
- (22)a. Ó wè-e-re (NP) íwe.
3s V-SF-SF grievance
'S/he became angry (at NP)'
- b. Íwe (NP) wè-re yá.
grievance V-SF 3s
'S/he was angry (at NP)'

The remaining examples show that neither variation in argument type, nor linear order alternation, is a necessary in order for one and the same root to leak between active and stative paradigms. -*Vú* 'carry' acts P-based in (23a), and like an activity predicate (call it V-based) in (23b), thus straddling paradigms (4/5) and (16) respectively. But this ambivalence is no accident: (24) shows that the imperatives of both types are available with this root: the imperative of a stative regularly takes -*rV* (24a), that of an activity doesn't (24b), cf. Williamson (1982); Nwachukwu (1984).

- (23)a. Ó vù édè.
3s on.head.INFL *Colocasia esculentum*
'S/he has [a load of] *édè* on the head'
- b. Ó vù-ru édè.
3s on.head-SF *Colocasia esculentum*
'S/he carried [a load of] *édè* on the head [somewhere]'
- (24)a. Vù-rú édè!
on.head-SF grievance/*Colocasia esculentum*
'Pick up [a load of] *édè* onto your head!'
- b. Vù-ó iwé/édè!
on.head-SF grievance.GEN/*Colocasia esculentum*
'Carry [a load of] *édè* on the head [somewhere]!'

The same root can also take an abstract object like *íwe* 'anger', bringing more factors into play (C. *Úchèhúkwu*, p.c.). *Íwe* as a relational noun always implies a human target of anger, so all grammatical examples of -*vú* *íwe* have an optional overt applicative NP.⁹

- (25)a. *Ó vù íwe.
3s on.head.INFL grievance
- b. *Ó vù-ru íwe.
3s on.head-SF grievance
- d. Ó vù-u-ru (NP) íwe.
3s on.head-SF-SF grievance
'S/he was angry [with NP/someone presupposed]'
- c. Ó vù-ghe (NP) íwe.
3s on.head-SF grievance
'S/he is angry [with NP/someone presupposed]'
- (26)a. *Vù-rú iwé!
on.head-SF grievance.GEN
[OK as a fragment of a serial construction]
- b. Vù-ó iwé!
on.head-SF grievance.GEN
'Be angry [at someone presupposed]!'
- c. Vù-ó yá iwe!
on.head-SF 3s.GEN grievance
'Be angry at 3s!'

In summary, (27) tabulates the major temporal outcomes of—and therefore implicit aspectual inputs to—finite affixation, registering for illustrative purposes a few of the above-noted leakages, effects which depend on the logical type of arguments as well as their linear order. These leaky templates are sorted by coarse predicate type and given Hale & Keyser-inspired lexical syntax labels:

- | | | | |
|------|---|--|----------------------------------|
| (27) | A/N-∅ →* | V-∅ →* | P-∅ →nonpast |
| | A/N- <i>rV</i> →nonpast | V- <i>rV</i> →past (+ PP <i>psych</i> → past applied OR nonpast) | P- <i>rV</i> →past |
| | A/N-V- <i>rV</i> →nonpast applied OR past | V-V- <i>rV</i> →pluperfect OR past applied | P-V- <i>rV</i> →past (± applied) |
| | A/N-PROG →inchoative | V-PROG →activity (+ constant →generic) | P-PROG →activity |

Welmers & Welmers neatly cover the first two lines of (27) by distinguishing “verbs, largely those with a descriptive meaning or referring to a situation” which have a nonpast reading with single -*rV* (1968a, 76); “verbs...which refer to an activity or motion...[and] refer to the past” with single -*rV* (1968a, 76); and “states” i.e. items with no -*rV* whatsoever in a nonpast reading (1968a, 161-63, 180f.). But intuitively pleasing as their pedagogic-semantic labels may be, they offer little guidance as to the patterns of cross-paradigm leakage, let alone about the more complex suffication effects in the bottom half of (27).

Assuming, as one must in the absence of any alternative, that temporal interpretation in Ìgbo is driven by aspectuality in at least the broad sense (i.e. without committing to what are the crucial aspectual properties and at what stage of the derivation they're evaluated), the issue raised by (27) is: are linguistically significant generalizations lost if event types are annotated directly on lexical items, rather than waiting to “LF” (or the appropriate stages of interpretation, assuming a phased interface) in order to calculate the aspectual inputs to tense?

Older literature on Ìgbo finite affixation tells a winding tale. The project to attribute intrinsic temporal denotation to the suffixes in (27), so as to maintain that Ìgbo indeed possesses Priorian tense operators (Enç 1996), was only tepidly embraced by Green & Ígwè (1963), who merely distinguish “-*ra* (time)” from “-*ra* (non-time)”, the latter being the applicative. But time in itself is not a tense value, just a morphological clue that certain morphemes are tense-related or not, moreover the authors denied the existence of suffixal inflection in Ìgbo altogether, treating all the suffixes as adverbs. These points could be correct or not (and I find myself agreeing more and more as the years go by), but they have no ambition to go beyond listing paired forms and interpretations. After 1963, two roads diverged, either: (i) attempting to refine the -*rV* classification for tense (Winston 1973, Nwachukwu 1976b), multiplying homophony; or (ii) denying that Ìgbo morphology manipulates tense at all (Welmers & Welmers 1968; Carrell 1970; Úwalaàka 1981). Road (ii) accounts for fewer examples but does so ‘better’ in the sense that lexical aspect is invoked as a compositional factor in the Fregean way. But road (ii) did not apply its clever aspectual calculus *outside* the lexical predicate root, a domain where a lot happens, as we've seen. Both roads overlook the temporal effects of applicative syntax (slightly sampled above)—effects which mock Green & Ígwè's Aristotelian “time/non-time” dichotomy.

Today, in light of the above data, any exercise of assigning intrinsic *Aktionsart* to individual predicate-type roots, in the ontological style of Vendler and his followers, must also appeal to derivational rules of aspect shift (coercion) *alla* Zucchi (1994). So now the question turns around: is anything gained by “doing aspect” twice, or does it lead to diminishing returns/unlearnability/computational explosion? In retrospect this question seems obvious, given the small phonetic size (monosyllabic CV) and population (<500) of predicate-type roots in most languages of this family, as well as the fact that predicate roots tend to be tonally underspecified, i.e. unable to bear the full range of lexical tonemes (or any at all, in Èdó, cf. Wescott 1963, 136; Elugbe 1989, 299). Roots being so few, why must they be the only locus of [± ADD TO], Verkuyl's Boolean feature of dynamism? As for Verkuyl's other aspectual feature [± SQA], the status of an argument expression as mass/count/bounded is also underdetermined in Ìgbo and other BK languages, which as a parametric matter lack obligatory morphemes of cardinality and definiteness. But the whole problem dissolves if we accept that predicate-type lexical items are not limited to mere roots in these languages, in which case the lexicon gives just an arbitrary preview of the definitive aspectuo-temporal calculation, which occurs only ‘after’ sentential syntax, at LF.

⁹The object of an affirmative imperative regularly inflects with Genitive, which is marked prosodically (Williams 1971; Déchaine & Manfredi 1998).

The preceding paragraph highlights a truism: aspectual calculus is a domain of grammar which is crosslinguistically variable. The less trite question is whether this variation is encoded in the lexicon directly as world knowledge (a given predicate denotes a certain kind of event) or indirectly in some arbitrary feature of a predicate which interacts with other parts of the grammar, such as denote cardinality or finiteness, or more radically such as determine the linear order of argument-type expressions. Serial constructions offer an ideal further terrain on which to test this notion, for two reasons: (i) as complex clauses they introduce still more compositional factors below the sentence; and (ii) they are found in several unrelated language families, but not universally, so they present a parametric distribution.

3. Derived stativity in Ìgbo (serial contexts)¹⁰

Among the aforementioned Ìgbo stance predicates is *-kwù ọtọ* ‘stand up’. Like other members of the class which I call P-based (*- ihú-kwù* ‘squat down’ and so on), *-kwù ọtọ* displays zero tokens of suffixal inflection in the nonpast, and either one or two in the past—the double form licensing an applicative which, in the absence of an adjacent argument, is bound by either the structural subject or perhaps by a presupposed topic, roughly as in the English translation of (28c).¹¹ By contrast, *-nyà-mótò* ‘steer/drive a car’, like huge number of other activity predicates (V-based), needs a minimum of one suffix as the main verb of a simplex finite clause (29), and gets a past interpretation. In particular, (29a) is ungrammatical.¹² Double suffixation (29c) with these same lexical ingredients and in this clause type is either pluperfect or applicative. The predicate *-gbá-ọsọ* ‘run’ (not separately illustrated) works the same.

- | | |
|---|---|
| (28)a. Ọ kwù ọtọ.
3s V.INFL straightness
‘S/he is in a standing posture’ | (29)a. *Ọ nyà mótò.
3s turn.INFL car |
| b. Ọ kwù-rù ọtọ.
3s V-SF straightness
‘S/he stood up’ | b. Ọ nyà-ra mótò.
3s turn-SF car
‘S/he drove [a] car’ |
| c. Ọ kwù-ù-rù (NP) ọtọ.
3s V-SF-SF straightness
‘S/he stood herself/himself upright’
OR ‘S/he stood upright for the benefit of NP’ | c. Ọ nyà-a-ra (NP) mótò.
3s turn-SF-SF car
‘S/he did previously drive [a] car/used to drive [a] car’
OR ‘S/he drove a car for the benefit of self or NP’ |

In serial constructions denoting a single complex eventuality as opposed to a sequence of unrelated events, the affixation of both predicate types (28) and (29) is systematically altered, keeping tense values constant. The control is possible because, as is near-universally agreed, serial constructions are restricted to denote just one single tense value, hence the tense of any individual finite predicate in a serial construction equals the tense of the entire serial clause.¹³ Given furthermore the already observed dependency of temporal interpretation on *Aktionsart* in Ìgbo, it follows that in the appropriate kind of serial construction, if tense is constant and if the predicates in question change their inflectional pattern, they have undergone aspect shift coerced by the serial context which creates a complex event construal. Because not all serializing languages are restricted to complex event construals, a sequence of unrelated events being another possibility, it is necessary to set the latter type aside but is not difficult to do with pragmatic criteria. Having set unrelated events aside, it turns out that the remaining phenomena demonstrate a unique kind of shift in inflectional morphology. It differs both in its form (distribution of affixes) and in its context (the trigger is located outside the minimal predicate domain. The phenomenon has been repeatedly observed, but before now it has never met a compositional theory of aspect!

To my knowledge, Welmers & Welmers (1968a, 162) were the first to describe, or at least to worry about, the inflectional pattern in (30), which shows predicates like (28) and (29) serialized in a clause which denotes a single complex event.¹⁴ The observed pattern is an option of either zero affixes or two, excluding the possibility of just one, without any effect on interpretation so far as anyone has ever mentioned. Additionally, of course, a constant across both options is the suppression of lexical pitch accent on the predicate root, ensuring that, even in the absence of any affix, the root remains morphologically finite—this is the situation glossed V.INFL throughout this paper.¹⁵ (31), from Íhìọ̀nù (1988), illustrates the corresponding situation if the sentence denotes a sequence of potentially unrelated events—often called “consecutivization” following Hyman (1971), because temporal precedence is the only semantic restriction on the minimal predicates. Note that, as expressed by parameter (1b), sentences like (31) are never found in BK2 languages. For brevity the multi-event/consecutivized counterpart is given for only one of the cases in (30); the other two are assumed to work likewise. Constructional labels aside, the pertinent fact remains that the two constructions differ *both* in event structure, *and* in the permissible inflection of the component finite predicates.¹⁶

- | | |
|--|--|
| (30) a. Ọ kwù(-ù-rù) ọtọ kwu-e okwú.
3s V-SF-SF straightness talk-SF speech.GEN
‘S/he spoke standing up’ | (31) Ọ gbá(*-a)-ra ọsọ bja.
3s move-SF-SF escape come.INFL
‘S/he ran [somewhere] and [then] came [here]’ |
| b. Ọ nyà(-a-ra) mótò gá-a ahyá.
3s turn-SF-SF car go-AFF market.GEN
‘S/he drove to market’ (‘...got to market while driving’) | |
| c. Ọ gbá(-a-ra) ọsọ bja.
3s move-SF-SF escape come.INFL
‘S/he came running and is still here’ [Idiomatically: ‘S/he is here as a refugee’] | |

¹⁰ This section summarizes §3.2 of Manfredi (2005).

¹¹ Binding of an argument position by *-rV* inflection is less constrained in nominalizations, as compared to finite predicates (Manfredi 1991, 169), suggesting a less Fregean/more Aristotelian analysis of the applicative suffix: not an argument taking expression (quasi-preposition in the manner of Baker 1988) licensed by thematic discharge, but a clitic pronoun licensed by predication. The more limited options in finite clauses would then be explained by the richer configurational matrix as compared to nominalizations.

¹² Green & Ígwe (1963, 74) report a usage of unsuffixed, prosodically inflected [... *-gbà ọsọ...*] in a tenseless sentence fragment under ellipsis, irrelevant here. The translations in (25b-c) are awkward, due to the open semantic type of the internal argument, but the pertinent formal pattern is unaffected.

¹³ The alleged exceptions to tense-matching are discussed in Manfredi (2005) and literature cited therein.

¹⁴ Ûwaláaka (1982, 66) gives an example analogous to (30) but with the inflectional options as zero or one affix, rather than zero or two, however this may represent a simple omission rather than a contradiction or a hitherto unnoticed dialect, since the phonological difference between single and double affixation does not always register in descriptive literature which employ ‘enriched’ orthographic transcription in the standard practice of generative grammar.

¹⁵ With the exception of (30c), where the notation as applied to the second predicate *-bja* ‘come’ denotes the latent ‘Open Vowel Suffix’ (Déchaine 1993, 520).

¹⁶ Lord (1973, 270) went further, to deny the status of a finite predicate to the initial roots in (30), based apparently on the inflectional variant in which no affix appears (and ignoring the prosodic effect of finite inflection), however it’s difficult to imagine how this idea could accommodate the inflected forms, quite apart from the need to grammaticise an infinite number of morphological casemarkers in the language. Despite all these problems, it is common to read examples like (30) described in typological literature as nonserial.

The inference from (30b-c) is that activity predicates are contextually stativized in Ìgbo single-event serial constructions. This conclusion is the more striking, because the morphological evidence takes the form of affixes whose domain of attachment are limited to one single predicate within the multi-predicate clause. In effect, inflection does not ‘see’ the intrinsic *Aktionsart* of the predicate to which it attaches, which would predict the same pattern as in (31); instead it necessarily ‘waits’ until the entire complex event has been calculated, for any given tense value, before spelling out in a pattern which would otherwise not be possible. Even the stance predicate in (30a) has undergone aspectological shift from its intrinsic pattern as in (28); this fact goes along with the crosslinguistic considerations underlying the parameter in (1b) and discussed at length elsewhere, to demonstrate that calculation of *Aktionsart* is made at the sentence level. This finding reinforces the effects noted for simple (nonserial) clauses in §2, whereby properties of the external argument also affect the choice of inflection via aspect shift.

Overall the situation replicates with Déchaine’s (1997) argument against Baker’s analysis of serial constructions in terms of matching Theta-roles, because it shows that key properties of arguments in serial constructions are determined compositionally at the semantic interface, rather than being lexically annotated on predicate heads. Theta roles being lexical taxonomies, the only way to maintain them in a compositional setting is to be prepared to multiply them without constraint, as when Baker (1989) lets a lexical “verb” denote an “optional” instrument role, depending just on whether it happens to be preceded by an instrument argument.

4. How many parameters?

Carrying forward the project to reduce crosslinguistic aspectual differences to independent properties, and based on their sample which includes Korean alongside representative cases from Romance, Germanic and part of western Benue-Kwa (including Ìgbo and Yorùbá), Zubizarreta & Oh (2005, 57) arrive at three parameters, paraphrased here:

- (32)a. A *serialization parameter* (ON in Benue-Kwa and Korean) which allows lexical phrases of the same category (e.g. VP) to merge to each other, effectively as adjuncts.
- b. A *compound rule* (ON in Germanic) which allows heads of the same category (e.g. V) to merge to each other, effectively as adjuncts.
- c. A *lexical parameter* (ON for many roots in Italian) which allows individual manner of motion verbs to occupy a dedicated unaccusative phrase structure position.

While the descriptive coverage of these statements is extensive, a good *prima facie* case could be made for collapsing (32a) and (32b), given some independent difference between serializing and non-serializing languages which would differentiate between adjoined words and adjoined phrases. I set Korean aside for the present, acknowledging its radical head-finality and strongly agglutinative word-structure as compared to the other language.s. which are all more or less isolating and SVO. Then, if Ìgbo and Yorùbá represent BK1 and BK2 serializing languages, the crucial distinction with respect to Germanic may be related to the intrinsic content of tense, which is patently richer in Germanic and Romance than in Benue-Kwa.

The manner of motion constructions studied by Zubizarreta & Oh are closely comparable to Ìgbo sentences like (30b-c), in which a V-based expression occurs initially in the complex predicate. My thought is that these Ìgbo examples prove the dispensability of parameter (32a), because the inflectional shift which occurs in the initial root of the construction is an effect at the level of the “head” not of the phrase. Aspect composition, a requirement of single-event serialization, is not confined to matching intrinsic lexical properties of phrases, such as is assumed in theta-matching approaches like Baker (1989), or Baker & Stewart (2002)—theories which supply Zubizarreta & Oh’s baseline analysis of serial constructions. On the contrary, however, given an independently needed analysis of aspect, the effects handled by (32a) and (32b) need not be distinguished explicitly by the grammar.

As a conclusion, consider the following paradigm from Yorùbá, which makes exactly the same point about aspect composition in a language with radically different morphological type, cf. (1c) above. Yorùbá is a language with no suffixes at all, nor is finite prosody marked in any way on the root. In Yorùbá, as a consequence, inflection whether segmental or prosodic cannot not differentiate between serial and nonserial uses of a given predicate: informally speaking because inflection is too far away, being limited to the aux domain of the clause. Nevertheless, it is remarkable to observe aspect composition effects at the level of individual roots, constituting the direct analogues of aspect shift in its Ìgbo guise of tense paradigm leakage, in the following way.

Certain Yorùbá roots are ambiguous in terms of whether they denote a bounded or unbounded activity. The predicate *wẹ*, for example, spans the (intrinsically unbounded) process of swimming and the (intrinsically bounded) activity of taking a bath or shower (which should perhaps be labeled a creation verb, like its English light verb translation). (33) shows that both readings of *wẹ* are possible in a serial construction, so long as there is some macro-event in which every verb can be interpreted. As Yorùbá happens to be, it is impossible to focus-front a (nominalized) copy of the second verb alone, in any serial construction in the language, but nothing prevents fronting a nominalized copy of the first verb, as in (34a). The surprise in (34a) is that the ‘bathe’ interpretation of *wẹ* disappears under focus (‘Ş. Adeşólá, p.c.) leaving only the interpretation of ‘swim’. This precise reason for the narrowing of lexical denotation under focus is less important, for present purposes, than the sheer fact that one reading is eliminated. Independently, in a nonserial context, there’s nothing wrong with focus-fronting *wẹ* in the meaning of ‘bathe’ (33b).

- | | | | |
|------|--|-------|--|
| (33) | Mo wẹ lọ.
Is wẹ go
‘I went off somewhere by swimming’
OR ‘I took a shower and then, suitably clean, went off somewhere’ | (34)a | Wí-wẹ ni, mo wẹ lọ.
NOM-wẹ COP IS wẹ go
‘I went off somewhere <i>by swimming</i> ’
[*‘I <i>showered</i> and then went off somewhere’] |
| | | b | Wí-wẹ ni, mo wẹ.
NOM-wẹ COP IS wẹ
‘I <i>swam</i> ’ OR ‘I <i>showered</i> ’ |

Examples like (34a), which can be multiplied, support the idea of Déchaine (1997), herself following Awóyalé (1988), that general aspectual mechanisms can, and should, entirely replace the serialization parameter. Refusing such reduction, Baker & Stewart (2002) cannot avoid resorting to the phrase structure parameter in (32a), *in addition to* a rich array of functional projections for aspect (Event Phrases and their kin), at which point any redundancy between the two layers can at best be stipulated. On top of all that, Baker & Stewart (1997) and Baker (2003) require massive redundancy within the lexicon itself, between a class of “Adjectives” and a homophonous class of “Verbs”, differing only in aspectual properties.

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