Accounting for variation in Western Benue resultative verb constructions

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Since the work by Lord (1975) and Déchaine (1993), it has been observed that Western-Benue languages fall into two groups as regards to resultative verb constructions (RVC): Whereas in languages as Yorùbá or Ẹ̀dóid languages resultatives exhibit word order typical for serial verb constructions (SVC) NP_{subj} V_1 NP_{obj} V_2 (cf. 1), Ìgbò resultatives surface as compounds NP_{subj} V_1 V_2 NP_{obj} (cf. 2):

(1) Òjè hǫ́ǫ́ ǫ́lí úkpùn fúán.[1]
Òjè wash DET.S cloth be.clean
'Òjè washed the cloth clean.' EMAI

a. Òjè hǫ́ǫ́ ǫ́lí úkpùn.
Òjè wash DET.S cloth
'Òjè washed the cloth.'

b. ǫ́lí úkpùn fúán-ì.
DET.S cloth be.clean-FACT
' the cloth is clean.'

(2) ọ́ tù-fù-rù ákwúkwọ́.[2]
3S throw-be.lost-rV paper
'He threw away the paper.' ÌGBÒ

a. ọ́ tù-rù ákwúkwọ́.
3S throw-rV paper
'He threw the paper.'

b. ákwúkwọ́ fù-rù.
paper be.lost-rV
'The paper got lost'

Apart from their diverging word orders, resultatives may differ across languages with respect to their verbal inflection. Emai and other Ẹ̀dóid have a so-called factative suffix (*-ì* in Emai), which attach to past intransitive verbs and transitive verbs whose NP was fronted (cf. 1b). Whenever an intransitive verb is part of a resultative SVC (RSVC) it fails to bear the factative suffix (cf. Schaefer and Egbokhare 2017: 27–29, Ogie 2009: 83–103). In addition to the *-ì*-suffix, some Edoid languages have an rV suffix with a similar function, as shown by Yuka and Iyamu (2016: 1,1 9).

In contrast, Ìgbò has the factative -rV suffix, which attaches to all eventive verbs with past interpretation and most stative verbs with present interpretation (cf. Nwachukwu 1984, Ọnụkawa 1994, Mbah and Evelyn 2014). It consists of the sonorant [r] and a copy of the stem vowel of the verb to which it belongs (2a–2b). It does not occur with the copulas and small subclass of stative verbs in the present tense but, rather it would yield a past tense interpretation with these verbs. It also attaches to V_2 of resultative compounds and mirrors its stem vowel (cf. Nwachukwu 1984: 92–94, Emenanjo 2015: 457–459).

Despite all the variation discussed above, resultative verb constructions in Benue-Kwa languages are characterised by the features typical to serial verb constructions (SVCs), such as (i) shared value of polarity, (ii) shared value of TAM specification (cf. Stahlke 1970: 60, 78, 80, Baker 1989: 513, Déchaine 1993: 799-800, Collins 1997: 486, Aikhenvald 2006: 1, Aboh 2009: 3, Shluinsky 2017: 379). RVC are considered to be two-place predicates which typically involve an agentive subject referent selected by V_1 and a THEME which acts as the direct object of V_1 and the subject of V_2 at the same time (cf. Baker 1989: 529–532).

The aim of the study presented here is to provide an analysis which accounts for both the general characteristic of resultative verb constructions in Western Benue languages and the cross linguistic variation among them.

As shown by Lord (1975: 24–26) and Déchaine (1993: 807), there are two types of resultatives which differ with respect to the reference of the unrealised subject of V_1: object oriented resultatives whose subjects referents for V_1 and V_2 have disjoint reference (eg. $SUBJ_1$=Òjè and $SUBJ_2$='cloth' cf. ex. 1) and subject oriented resultatives whose subjects referents for V_1 and V_2 are coreferential. The study outlined here focuses on the object oriented type, which appears to be more complex. However, the analysis for subject oriented resultatives can be achieved with some minor tweaks

The first question which arises is how the shared noun phrase is adequately analysed. One challenge concerns the fact that the subject argument of V_2 is surfacing with object case. Most Benue language have developed case in their pronominal paradigm which distinguishes subject case, object case and possessor case (cf. Stahlke 1973: 192–193, Pulleyblank and Orie 2009: 874; Ogie 2009: 19, Schaefer and Egbokhare (2017: 236–237);

[1] Example from Emai taken from Schaefer and Egbokhare (2017: 698–701).

[2] Example from Ìgbò taken from Lord (1975: 24–25).

Atoyebi 2009: 170–184; Déchaine 1993: 812, Emenanjo 2015: 303–306, 358). As data from Yorùbá (3), Ọ̀kọ Ìgbò (5) demonstrate, the THEME argument in RVC surfaces with object case, indicating it has a stronger link to the transitive V_1 whose object it is, rather than to the V_2 whose subject it is.

(3) Ebí pa á/*ó kú.[3]
hunger kill 3S.O/3S.S die
'Hunger killed him.' YORÙBÁ
'He was extremely hungry.'

(4) Àde tă-mọ ẹba falẹ.[4]
Àde push-1S.O hand fall
'Àde pushed me down.' ỌKỌ

(5) ó rì-chà-rà yá/*ó.[5]
3S.S eat-be.finished-rV 3S.O/3S.S
'He ate it up.' ÌGBÒ

Turning to standard GB/Minimalist approaches, it is not entirely clear how the unrealised subjects of V_2 *kú* 'die' and *chà* 'be.ripe/finished' are to be analysed; There is no consensus whether they are a traces of subject-to-object raising/AcI or object control with small pro (cf. Collins 1997: 482, 484–485, 494) or some entirely different operations (cf. Baker 1989: 529–532, Baker and Stewart 1999: 17–20; Déchaine 1993: 811–812). As there is no necessity in HPSG to postulate empty categories, it is assumed here that the relation between the unrealised subject of V_2 and the coreferential realisation of the direct object of V_1 are an instance of structure sharing: the THEME-NP is realised as object of V_1 but being co-referential with the INDEX-value of the subject of V_2, as illustrated in Figure 1.

Following the spirit of Müller's (2002: 241, 2006: 873, 2013: 359) analysis, it is assumed here that RSVC are a result of applying a lexicon rule to a certain class of lexical full verbs which alters their valency by adding a resultative predicate to their COMPS-list, turning them into complex predicates which attract the subject argument of the unaccusative V_2 and assigns object case to them. It is plausible to suppose that there is a more general type of this lexicon rule which holds across all Benue-Kwa languages, as the one sketched in Figure 1, which in turn is possibly only inherited by a universal rule. Each of the individual Benue-Kwa languages is considered to have more specified version, which contains language specific idiosyncrasies and which inherit the features they have in common from the general rule via an inheritance hierarchy, as exemplified in Figure 5 and 6.

The basic idea is that object oriented RVCs are *head-complements* or *head-cluster* structures, in which V_1 is the syntactic head and V_2 is its complement. This is illustrated by the fact that the overall RVC (6) inherits V_1's ability to form imperatives (6a), even if V_2 cannot be used as imperative when it occurs alone (6b):

(6) Jẹ ọbẹ̀ ewédú tán![6]
eat soup jute.leaf be.finished
'Finish up the ewédú!' YORÙBÁ

a. Jẹ ọbẹ̀ ewédú!
eat soup jute.leaf
'Eat the ewédú!' YORÙBÁ

b. # tán!
be.finished
Intended: 'Be finished!' YORÙBÁ

Other arguments for considering V_1 as the head are provided by Ogie (2009: 476–480) and Déchaine (1993: 806–807, 811–812). The general lexicon rule for Benue-Kwa languages determines the essential properties of RVC in these languages, as illustrated in Figure 1. Firstly, the COMPS-list of the overall RVC contains a shuffle operator, as proposed by Bender (2008), which connects the THEME-argument with the index *j* and the embedded unaccusative predicate. This shuffle operator allows to account for the word orders variation in among RVC in these languages either realised as NP_{subj} V_1 NP_{obj} V_2 (Yorùbá or Emai type) or as NP_{subj} V_1 V_2 NP_{obj} (Ìgbò type). Secondly, this rule enables RVCs to attract the complements introduced by V_2 (cf. 2) into its own COMP-list. Thirdly, it accounts for the examples in Ìgbò discussed by Lord (1975: 33), in which the overall RVC can retain inherent (cognate) objects of V_1 (cf. 1). In its use as a simple verb, *lù* 'fight' always requires the presence of an cognate object *ọ̀gù* 'fight', whose realisation remains mandatory even in RVCs (cf. 7).

(7) Há lù-sò-rò ànyí ọ̀gù.
3P.S fight-against-rV 1P.O fight
'They fought against us.' ÌGBÒ

Finally, this lexicon rule is capable of accounting for the well known fundamental properties of RVCs in Benue-Kwa, according to which all the verbal components share the same values polarity and TAM (cf. Stahlke 1970: 60,78,80, Baker 1989: 513, Aikhenvald 2006: 1, Bisang (2009) or Shluinsky 2017: 379). Bohnemeyer, Enfield, et al. (2007: 497, 502–508) and Bohnemeyer and Van Valin (2017: 144–148) argue that syntactic constructions differ with respect to whether or not they have the macro-event property (MEP). A construction *C* has the MEP if all its sub-events are always necessarily in the scope of time-positional adverbials such as *at 11:13 am*.

(8) Macro-event property (MEP)
A construction *C* that encodes a (Neo-) Davidsonian event description $\exists e.P(e)$ ('There is an event e of type/property *P*') has the MEP iff *C* has no

[3] Example provided by Olúwadára Ọmọtọ̀ṣọ́ and Abídémi Jimoh.

[4] As quoted in Atoyebi 2009: 291–292.

[5] Example provided by Chinedu Úchèchukwu.

[6] The following examples provided by Olúwadára Omotoso and Abídémi Jimoh.

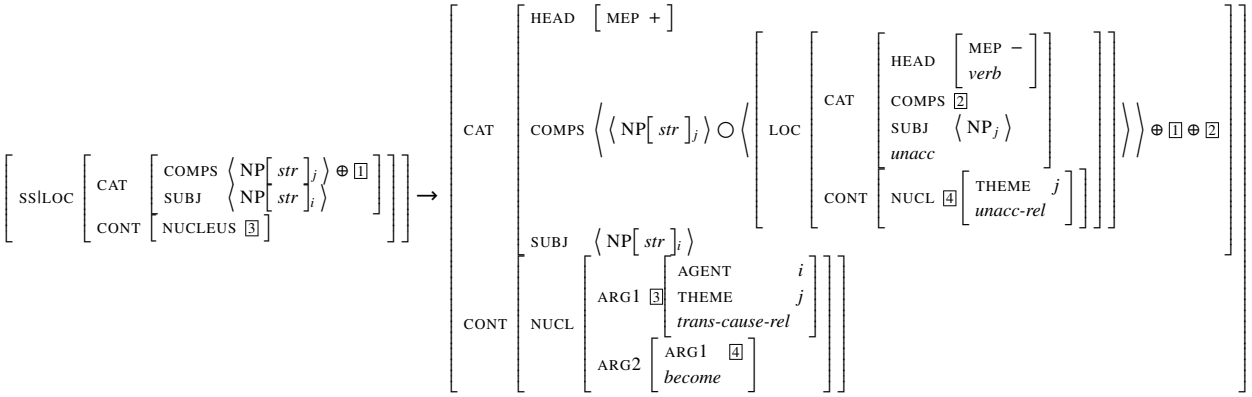


Figure 1: Lexicon rule for object oriented RVCs in Benue languages based on Müller (2002: 241–243, 2006: 873, 2013: 359)

> constituent C' that describes a proper subevent e' of e such that C' is compatible with time-positional modifiers that locate the runtime of e', but not that of the larger event e.

In their studies, Bohnemeyer, Enfield, et al. (2007: 506–507, 509–511) and Bohnemeyer and Van Valin (2017: 171–177) demonstrate that simple SVCs in Kwa languages have the MEP. Accordingly, RVC in Benue languages are considered here to exhibit the MEP, too. Thus the head of entire RVC must be specified as MEP+. In contrast, verbs which can be component of an SVCs have to be underspecified for the MEP: If they selected as component of an SVC they bear the feature MEP−, as they fail to be modified by time-positional adverbs. If they occur as a single main verb they exhibit the specification MEP+, in order to be able to be modified by time-positional adverbs. As it seems here, it is the distinctive property of languages which allow SVCs that (some) verbs can be specified as MEP−. Taking this into account, the lexicon rule can be modelled as follows: As the V_1 in RVCs functions as the head of the overall construction and as it cannot be independently modified without the modifier taking scope over V_2 too, V_1 is specifed for MEP+. In opposition, the component V_2 itself does not constitute a macro-event, thus specified as MEP−, as shown in Figure 1.

Note that what is considered as a (macro)-event in a given language is not defined by a general objective ontology. Since each observable event can be decomposed into sub-events, it is impossible to define a repertoire of universally and cross-culturally accepted 'atomic' events. The event of eating for instance involves the movement of several muscles in the body and physiologically complex processes of digestion, which each can be split up into chemical reactions such as reorganising molecular structures et cetera. As proposed by Durie (1997: 322) and Aikhenvald (2006: 10–12), it differs from culture to culture what may be perceived as linguistically relevant (macro-)event.

In order to account for subject oriented RVCs, the lexicon rule is almost identical except for the CONTENT-value

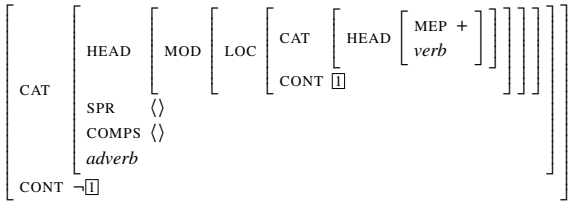


Figure 2: Lexicon entry for negation in Benue languages based on Müller (2020: 223) and Kim (2021: 817)

of the embedded V_2, in which the THEME-argument bears the index *i* referring to the AGENT-argument of the transitive or unergative V_1 rather than the index *j*.

Returning to grammatical properties of SVCs, it was already mentioned that negation cannot scope over separate verbal SVC components, in a similar manner as time-positional modifiers. Thus negation is considered to be limited to modify verbal elements which are specified for MEP+, as illustrated in Figure 2. Given the negation's selectional restrictions, it becomes evident why V_2, bearing the feature MEP−, cannot be independently negated. A parallel analysis can be assumed for the remaining TAM markers. In order to ensure that simple verbs outside RVC can be negated, they are considered to have the macro-event property, hence MEP+.

Note that NPs with structural case are independently necessary for Benue-Kwa languages to explain the fact that there are at least 50 verbal lexemes listed in Abraham's (1958) dictionary for Yorùbá that involve a causative-inchoative alternation in which the THEME-argument can surface either as the direct object of the causative transitive variant or as the subject of the inchoative unaccusative variant. As Déchaine (1993: 807) following Awóbùlúyì (1971) pointed out, these verbs with alternation can even be the V_1 in resultatives, such as the light verb use of *pa* 'become.amalgated, get.in.contact' (cf. Abraham 1958: 538), as illustrated in the examples (9a–9b) below:

(9) a. Ó pa ìlẹ̀kùn yìí dé.
3SG strike door this close

‘S/he shut the door.’

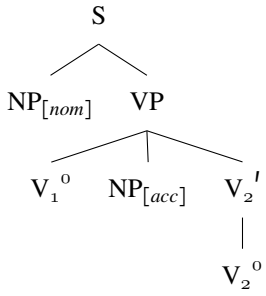
b. Ìlẹ̀kùn yìí pa dé.
door this;HTS strike close
‘This door is shut.’

The fact that the THEME-NP *ìlẹ̀kùn yìí* ‘this door’ is promoted to the subject position of *pa* once no AGENT is realised indicates that it must be assigned structural case by V_1. Inchoative-causative alternations with zero affixation are documented for other Benue-Kwa languages as well (cf. Stahlke 1970: 66–68; Ogie 2009: 21–22). The realisation of case is governed by the case principle as suggested suggested Meurers (1999), Przepiórkowski (1999) or Müller (2002: 15) then.

The analysis presented here builds on Lord’s (1975: 43–46) assumption on Ìgbò resultative compounds, according to which both the complete compound as well as its components V_1 and V_2 are listed in the lexicon. Furthermore, she concludes that compounds with compositional meaning are related to components by means of redundancy rules. The analysis consists of two major parts: firstly a lexicon rule inspired by Müller (2002: 241, 2006: 873, 2013: 359), which turns a transitive verb into a complex predicate, as already specified above, and secondly, ID-schemes inspired by Godard and Samvelian (2021: 441–443).

On closer inspection, it turns out that the contrast between Yorùbá and Ẹ̀dóid RSVC on the one hand side and compounds in Ìgbò on the other is fairly reminiscent of the contrast between complex predicates of the Italian type and Spanish type, as described in Godard and Samvelian (2021: 436–440). Yorùbá and Ẹ̀dóid RSVC are complex predicates with flat argument structure, in which V_1 and V_2 do not form a constituent, much similar to the Italian type but with diverging word order (cf. 10). In contrast Ìgbò compounds form a verb cluster (cf. 11).

(10) resultative SVCs in Yorùbá and Ẹ̀dóid

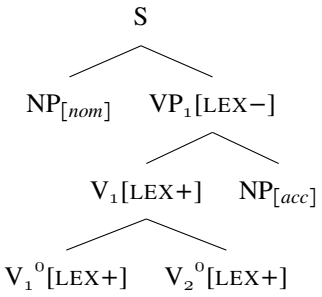


(11) resultative compounds in Ìgbò

head-complements-phrase ⇒

$$\left[\begin{array}{l}\textsc{synsem}\ \left[\textsc{loc|cat}\left[\begin{array}{l}\textsc{head|lex}\ -\\ \textsc{comps}\ \boxed{1}\end{array}\right]\right]\\ \textsc{head-dtr|synsem|loc|cat|comps}\ \boxed{2}\bigcirc\boxed{1}\\ \textsc{non-head-dtrs}\ \textit{synsem2sign}\left(\boxed{2}\right)\textit{ne-list}\end{array}\right]$$

Figure 3: Modified ID-schema for head-complements-phrase Godard and Samvelian (2021: 441)



Evidence for the analysis of Ìgbò resultatives as compounds comes from the behaviour of negation. As shown by Obiamalu (2014: 44), negation in Ìgbò is formed by a circumfix-like structure consisting of the harmonising prefix *e-/a-* and the suffix *ghí* embracing the verbal root, like the stative verb *mà* ‘be.beautiful’, (cf. 12). Turning to compounds, it can be seen that these circumfixes embrace the entire sequence of V_1 *rì* ‘eat’ and V_2 *chà* ‘be.finished’, demonstrating that the two verbal components are not seperable (cf. 13).

(12) Àda a-mā-ghí mmā[7]
Ada PFX-be.beautiful-NEG beauty
‘Ada is not beautiful.’

(13) Àda é-ríchá-ghí únèrè áhụ̀.[8]
Ada PFX-eat-be.finished-NEG banana DET
‘Ada didn’t eat up the banana.’

The typological difference between RSVC in Yorùbá and Ẹ̀dóid and resultative compounds in Ìgbò is mainly caused by the application of different ID-schemata, as suggested by Müller (2002: 87) and Godard and Samvelian (2021: 441–446): Whereas RSVC are licensed by the *head-complements*-scheme in Figure 3, resultative compounds are licensed by the *head-cluster*-scheme in Figure 4. The crucial difference relies on the specification of the feature LEX introduced by Hinrichs and Nakazawa (1989; 1994) and further developed by Müller (2013: 243–246) in order to account for predicate complex formation in German: Embedded predicates which bear the value LEX+, have COMPS-list that are not yet saturated when it is combined with the head daughter. In contrast, predicates specified as LEX− have an empty COMPS-list and all their complements already realised prior they are combined with a light verb or auxiliary.

[7] As quoted in Obiamalu (2014: 44), example (2b).
[8] Chinedu Uchechukwu (pers. comm).

head-cluster-phrase ⇒

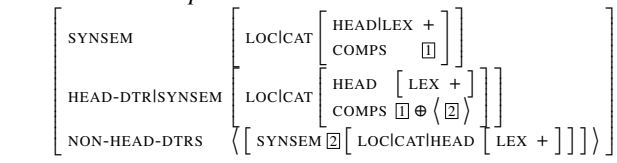


Figure 4: Modified ID-schema for head-cluster-phrase based on Müller (2002: 87, 347), Godard and Samvelian (2021: 443)

It should be noted that Godard and Samvelian (2021: 423) explicitly doubt whether Ẹ̀dó SVCs like *sàán rrá* 'jump cross' are to be analysed as complex predicates. However, as illustrated in great detail by Déchaine (1993) and Ogie (2009) what is dubbed as SVC in literature on Benue-Kwa languages encompasses a wide array of syntactically fairly diverse constructions. As shown above, RVCs in these languages display beyond any doubt properties of complex predication such as: argument attraction, shared polarity and TAM values.

Finally, the variation in verbal inflection can be accommodated by language specific lexicon rules for the formation of resultatives, which inherits from the general lexicon rule 1. In both languages, it is assumed that the presence of the FACTATIVE or *r*V-suffix is modelled by a boolean HEAD feature. As shown by Schaefer and Egbokhare (2017: 27–29) for Emai, the factative *ì*-suffix is only present with verbs which are not followed by a NP-complement. Such verbs would be marked with FACT+. In contrast, V_1 and V_2 in SVCs can never bear that suffix. This is achieved by the output of the lexicon rule for Emai illustrated in Figure 5: both the head V_1 and the embedded V_2 bear the feature FACT−.

In similar vein, Ìgbò has the boolean HEAD feature RV. As the *r*V-suffix always attaches to the last verbal element, the output of the lexicon rule sketched in Figure 6 yields a head V_1 specified for RV− and a complement V_2 specified for RV+.

Previous analyses in HPSG on related SVCs do either not explicitly address resultative SVCs and compounding (cf. Hellan, Beermann, and Andenes 2003), or they do not explain the variation in case assignment and the inflectional behaviour (cf. Ogie 2009: 476–480).

In contrast, most derivational approaches face serious challenges in providing an analysis for resultative SVCs, which forces the authors to make assumptions which contradict some of the core principles of these frameworks, such as head movement from an VP_2 adjoined to VP_1 to V_1 (cf. Déchaine 1993: 811–812), double headed VPs (Baker 1989, Baker and Stewart 1999: 17–20), object control structures with small pro as phonologically empty subject (cf. Collins 1997: 482, 484–485, 494). Finally, Aboh (2009) can only account for SVCs in which the first verb is semantically bleached light verb.

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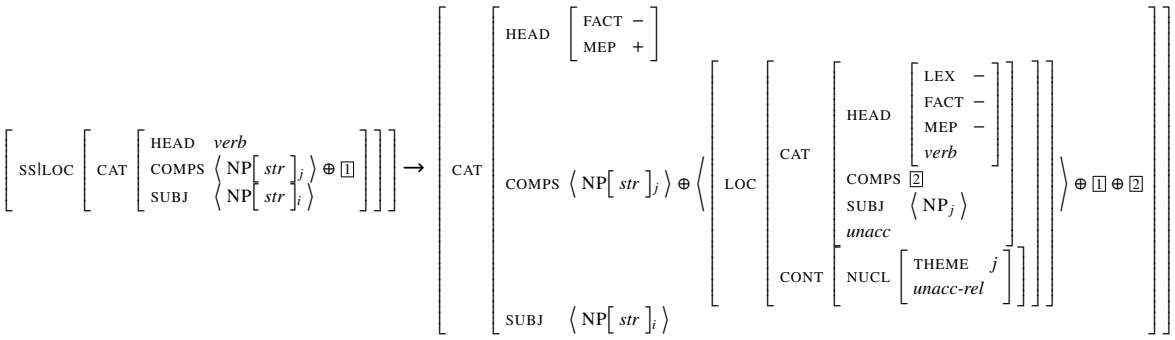

Figure 5: Language specific lexicon rule for RVC in Emai

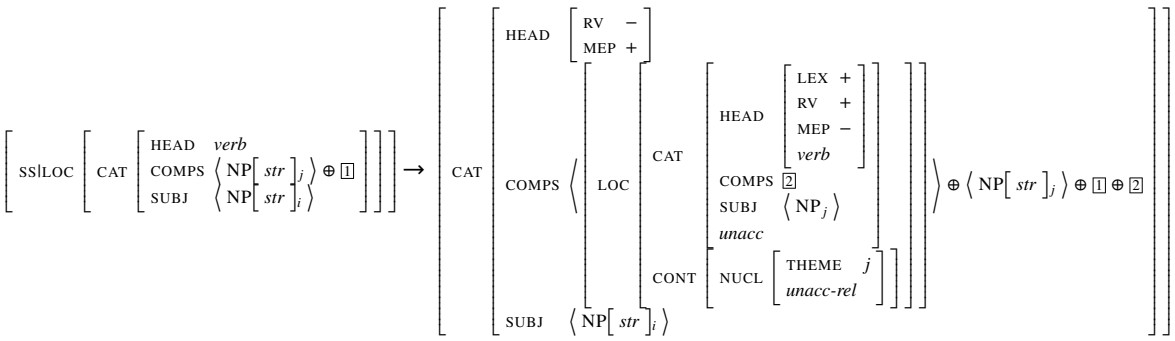

Figure 6: Language specific lexicon rule for RVC in Ìgbò

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