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Bantu verbal extensions: a cartographic approach

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In this work I am going to discuss the nature, productivity and combinatory possibilities of verbal extensions in Bantu languages, considering some Tshiluba data. I will argue that this phenomenon is best accounted for within a cartographic approach to sentence structure.
Though verbal extensions are generally treated as a unitary phenomenon in the literature on Bantu, several important differences can be observed; hence I will argue that extensions should be divided into two main groups, 'syntactic' and 'lexical' extensions, and the latter into two sub-groups. I will assume that syntactic extensions are merged under specialized functional heads in the predicative domain, while truly lexical extensions are merged with the verb stem in the lexicon.
Finally, the analysis of the so-called 'lexical-argumental' extensions will lead to the assumption of a second vP projection immediately above VP, in whose head these extensions are merged. Therefore, the two phase heads, C° and v°, will exhibit a similar behaviour, in that they both consist of two separate heads, between which other functional projections are generated.

1. Introduction. Bantu verbal extensions

Verbal extensions, namely suffixes placed between the stem and the final inflection of a verb, in order to "extend" the radical and form verbal derivates, are a phenomenon that typically characterizes Bantu languages (cf. Alexandre 1981). However, the number, type and form of verbal extensions varies considerably among languages. For modern Tshiluba – one of the most conservative Bantu languages – I have highlighted eleven different suffixes (cf. Cocchi 1990, 2008), morphological variants aside[1]:

[1] In Table 1, some extensions exhibit different forms, which generally arise from the application of regular vowel and consonant harmony rules to the basic form. Thus [i] > [e], and [u] > [o], if the preceding syllable contains a middle vowel; analogously, [l] > [n] if the radical ends with a nasal sound (cf. Willems 1949). However, I have found no principled explanation for the alternation of voiceless and voiced palatal fricative consonant in the causative extension.
The reconstructed forms in Proto-Bantu are taken from Guthrie (1967-71).

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Table 1: Verbal extensions in Tshiluba

Tshiluba extensions	Definitions	Reconstructed forms in Proto- Bantu
-il- / -el- / -in- / -en-	Applicative	* -ID-
-ish- / -esh- / -ij- / -ej-	Causative	* -I- / * -ICI-
-angan-	Reciprocal	* -AN-
-ibu- / -ebu-	Passive	* -U- / * -IBU-
-ik- / -ek-	Neutro-Passive	* -IK-
-ik- / -ek-	Neutro-Active	* -IK-
-am-	Stative	* -AM-
-ul- / -ol- / -un- / -on-	Reversive	* -UD-
-ulul- / -olol- / -unun- / -onon-	Repetitive	* -UDUD-
-akan-	Extensive	?
-at-	Contactive	* -AT-

2. A preliminary classification

Though verbal extensions are generally treated as a unitary phenomenon in the descriptive literature on Bantu languages (e.g. Guthrie 1967-71, Alexandre 1981, Schadeberg 1983), several important differences concerning function, productivity, combinatory possibilities and mutual exclusion patterns can be observed. In particular, I will assume that, as a start, extensions should be divided into two groups, which share an analogy of behaviour; I will call them, respectively, 'syntactic' extensions and 'lexical' extensions.

2.1. Syntactic extensions

In this group we find causative, applicative, passive and reciprocal, exemplified in (1) to (4) below[2]:

(1)	mukaji	u-sumb-**ish**-a	muana	tshimuma	Causative
	woman	1-buy-CAUS	boy	fruit	
	'the woman makes the boy buy fruit'				
(2)	mukaji	u-sumb-**il**-a	mfumu	tshimuma	Applicative
	woman	1-buy-APPL	chief	fruit	
	'the woman buys fruit for the chief'				
(3)	tshimuma	tshi-sumb-**ibu**-a	(kudi muana)		Passive
	fruit	7-buy-PASS	(by boy)		
	'the fruit is bought (by the boy)'				
(4)	baledi	ba-nang-**angan**-a			Reciprocal
	parents	2-love-REC			
	'parents love each other'				

[2] Bantu verbal forms are composed of several parts, as indicated in the glosses (cf. Alexandre 1981): a subject prefix (glossed with a number, which indicates the noun class the subject belongs to), the radical, verbal extensions (if any), and the final inflection (often simply a vowel), which I will neglect in the glosses. I have purposefully abstracted away from more complex forms, which may involve a Tense/Aspect affix between the prefix and the radical, and eventually one or more object affixes between the radical and the extension, as their discussion would be immaterial for the present purpose.

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These extensions have several properties in common: they are highly productive, in that they virtually attach to any verb[3], they easily combine with other extensions in multiple derivations (always in a fixed order), and, most importantly, their presence deeply influences the argument structure of the verb, and causes a change in the grammatical functions of the constituents of the non-derived sentence.

Indeed, passive and reciprocal convert a transitive sentence into an intransitive one, by removing one argument, while causative and applicative add an extra argument, respectively called causee and applied object. Crucially, these new arguments acquire "real" object properties, as in Baker's (1988) definition: they can be expressed by an object pronominal affix, and become the subject of the corresponding passive sentence.

In many Bantu languages, such as Swahili or Chichewa (the so-called 'asymmetrical' languages; cf. Bresnan and Moshi 1990), the presence of the new argument causes the 'demotion' of the theme-DP, which loses the above-mentioned object properties. This does not happen in Tshiluba and the other 'symmetrical' languages (among which Kinyarwanda and Kichaga), where the theme maintains such properties, with the consequence that a derived transitive verb becomes ditransitive, and even 'tritransitive', if applicative and causative apply to the same stem. Likewise, a derived intransitive verb becomes transitive[4].

As an example of the symmetrical behaviour of DP-objects in Tshiluba, the causative sentence in (1) above is made passive in (5a-b) below: notice how either the causee or the theme may be promoted to the subject position and control subject agreement:

(5) a. muana u-sumb-**ish**-**ibu**-a tshimuma (kudi mukaji)
boy 1-buy-CAUS-PASS fruit (by woman)
'the boy is made to buy fruit (by the woman)'
b. tshimuma tshi-sumb-**ish**-**ibu**-a muana (kudi mukaji)
fruit 7-buy-CAUS-PASS boy (by woman)
'fruit is made to buy to the boy (by the woman)'

2.2. Lexical extensions

In this group we find neutro-passive, neutro-active, stative, reversive, repetitive, extensive and contactive, exemplified in (6) to (12) below:

(6) tshibi tshi-kang-**ik**-a Neutro-passive
door 7-close-NP
'the door closes /the door is shut'

(7) muntu u-shik-**ik**-a muana Neutro-active
man 1-sit-NA boy
'the man seats the boy'

(8) muana u-shik-**am**-a Stative
boy 1-sit-STAT
'the boy sits'

[3] Quite obviously, the passive extension may attach only to transitive verbs, and the reciprocal one to transitive verbs with a plural or conjoined subject.

[4] Only in symmetrical languages like Tshiluba it is possible to derive an intransitive verb with an applicative extension (Cocchi 1992). On the contrary, causative may apply to intransitive verbs in both groups of languages (cf. also Baker 1988).

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(9)	muana	u-kang-**ul**-a	mulangu	Reversive
	boy	1-close-REV	bottle	
	'the boy opens/uncorks the bottle'			
(10)	muana	w-amb-**ulul**-a	bulelela	Repetitive
	boy	1-say-REP	truth	
	'the boy repeats the truth/tells the truth again and again'			
(11)	bidia	bi-kwat-**akan**-a		Extensive
	maize pudding	8-stick-EXT		
	'the maize pudding sticks completely'			
(12)	kamelo	ka-lam-**at**-a	ku mutshi	Contactive
	camel	12-tie-CONT	to tree	
	'the camel is tied to the tree'			

Typically, these extensions are not very productive, in that they are typically found, in an almost idiosyncratic way, together with certain verbs or certain semantic classes of verbs (some of which hardly ever appear in the simple non-derived form). Moreover, they are always adjacent to the verb stem: they may combine with syntactic extensions – always preceding them – but not among themselves[5]. Finally, they change the meaning of the radical in a regular and often predictable way.

The preliminary conclusion that can be drawn at this point is the following: lexical extensions are simply suffixes which add an extra significance to the semantic import of the verbal radical, while syntactic extensions do not only change the semantic meaning of a verb, but also have important implications on argument structure, as seen in (5) above.

3. The position of syntactic extensions

In the spirit of a cartographic approach to sentence structure[6], I will propose that Bantu syntactic extensions represent the lexicalization of different functional heads. In particular I argue that syntactic extensions, whose presence influences the number and thematic role of the arguments of a clause, are functional heads generated in the predicative/thematic domain, i.e. between v° and V°[7]. The fact that they are rigidly ordered, as in (13) below, confirms that the hypothesis of a hierarchy of functional projections, where extensions are merged, is on the right track[8]:

(13) Verb stem > Causative > Applicative > Reciprocal > Passive > Final vowel

[5] See Section 6, ex. (22), for an exception.

[6] The literature on the cartographic approach to sentence structure is nowadays very vast and articulated. For a good compendium of the history and main features of this approach, as well as its relation to minimalism, see Cinque and Rizzi (2008) and the references cited therein.

[7] On theta-related functional heads see also Cinque (2006), whose assumptions may (partially) overlap with what is hypothesized in the present work.

[8] An analogous hierarchy is found in Damonte (2007) for Pular, an African non-Bantu language. Besides, double causatives and double applicatives are also possible (Cocchi 1990, 2008), hence these projections can be recursive. See again Damonte (2007) for other examples of double applicatives in Pular (often with a different function, as the applicative suffix may convey different meanings, such as benefactive and instrumental).

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The sentences which follow provide examples of the rigid order of verbal extensions, in obedience to the hierarchy in (13); the order of DPs following the complex verb is likewise rigid:

(14) mukaji u-sumb-**ish**-**il**-a mfumu muana tshimuma
woman 1-buy-CAUS-APPL chief boy fruit
'the woman makes the boy buy fruit for the chief'

(15) baledi ba-nang-**il**-**angan**-a muana
parents 2-love-APPL-REC boy
'parents love each other for the boy'

(16) baledi ba-nang-**ish**-**angan**-**ibu**-a kudi muana
parents 2-love-CAUS-REC-PASS by boy
'parents are made to love each other by the boy'

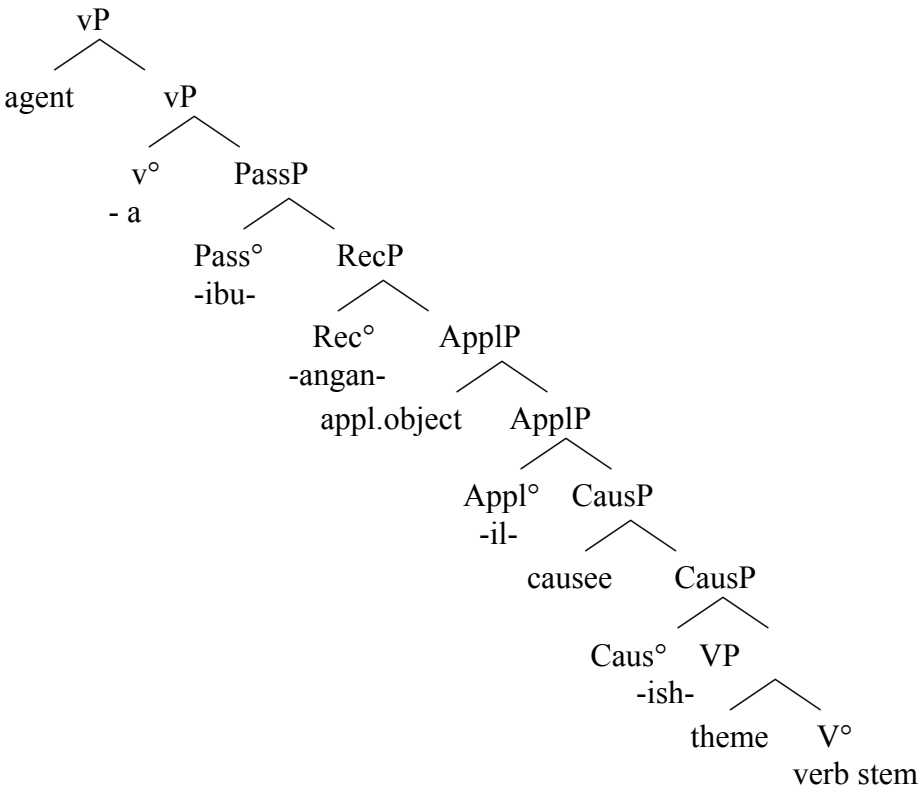
(17) tshimuma tshi-sumb-**ish**-**id**-**ibu**-a[9] mfumu muana (kudi mukaji)
fruit 7-buy-CAUS-APPL-PASS chief boy (by woman)
'fruit is made to buy to the boy for the chief (by the woman)'

Looking at the examples in (14) to (17), we immediately notice that the DPs following the complex verbal form are rigidly in the reverse order with respect to verbal extensions. In line with Baker's (1985, 1988) Mirror Principle, as well as its feature-based version proposed in Cinque (2006: 44), I will thus (provisionally) assume the structure in (18) to account for the hierarchy seen in (13). Accordingly, the verb stem is generated in the lowest V°-head; it then raises head-to-head and incorporates the extension suffixes, when present, until it reaches the final vowel/inflection in v°, which always follows all extensions and closes the verbal form:

[9] In Tshiluba, [l] > [d] whenever [i] follows (thus the suffix -il- > -id- when followed by -ish- or -ibu-, as in the example). The sequence -di- is always pronounced as a voiced palatal affricate.

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(18)



The structure in (18) will crucially enable us to account for the rigid order of the DPs following the complex verb[10]. In fact the DP-theme, which is regularly generated within VP, follows all of the other DP-objects. The causee is generated in Spec(CausP): it will then precede the theme and follow the applied object, as in (14). The latter is generated in Spec(ApplP); hence it is adjacent to the complex derived verb and precedes all of the other DP-objects.

The DP-agent, which precedes the whole complex verb, is generated in Spec(vP), as assumed in recent theory (Chomsky 1995, 1998 and related work); in the following phase of the derivation (which will not be discussed here), it will first move to Spec(TP) to become the sentence subject, and then further upwards[11].

The presence of the passive extension renders the sentence unaccusative. This fact was already captured by Baker, Johnson & Roberts (1989), who assumed that the passive morphology "absorbs" the external theta role. In modern terms, we can rephrase this intuition by claiming that, when the passive extension is present, no DP is base-generated in Spec(vP). As a consequence, one of the DP-objects will have to become the sentence subject and agree with the complex verb (by means of the subject

[10] Indeed, a structure where the suffixes were generated in the order we see them in the derived verb, i.e. with the causative suffix on top and the passive one at the bottom, would not account (unless with extra speculations) for the order of the DPs observed in examples (14) to (17).

[11] In previous studies (Cocchi 2000 and following work) I have argued that the Tense/aspect affix, which is present in most Bantu verbs, is generated in a C°-type head; hence the subject prefix, which always precedes this affix, will also be a head in the C°-domain. The DP-subject will presumably end its derivation in the specifier of such a head, thus preceding the whole complex verbal form.

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prefix, as seen in (5a-b) above). According to phase theory, the DP in question might first have to move to the edge of the phase, on its way to Spec(TP)[12].

Similarly, we may assume that the reciprocal extension (which detransitivizes the verb) 'absorbs' the internal theta-role. As a consequence, VP has no theme-object, when the reciprocal extension is present.

4. The position of lexical extensions

As for lexical extensions, I will assume that they do not represent the lexicalization of independent functional heads, but rather are derivational suffixes which merge together with the verb stem in the lexicon, prior to syntax. Indeed, these suffixes are always adjacent to the verb stem and, together with it, contribute to the semantics of the complex verb. This recalls the regular, purely morphological processes of verbal derivation in other languages, such as Italian and English, also exemplified in (19)[13]:

(19)	ku-kang-a	vs.	ku-kang-**ul**-a	(cf. (9) above)	similar to :		
	15-close		15-close-REV		tapp-are	vs.	**s**-tapp-are
	'to close'		'to open'		cork	vs.	**un**-cork

The different status of lexical extensions, with respect to syntactic ones, and their stricter relationship with the verb stem is confirmed by the fact that many stems always need a lexical extension, or different ones, and are not grammatical as bare forms (e.g. **kushika* vs. the derived forms *kushikika* 'to seat' and *kushikama* 'to sit' seen in (7)-(8) above; **kulama* vs. the derived form *kulamata* 'to attach (intr.)' in (12)). Cross-linguistically, a phenomenon like this is not unknown: see, for instance, the existence of Italian derived verbal forms like *s-gombrare* 'to clear away' and *in-gombrare* 'to obstruct', vis-à-vis the non-existence of either an underived verb **gombrare*, or a noun or adjective **gombro*.

The same conclusion is also suggested by the intuitions of native speakers, which are reflected by the compilers of dictionaries (e.g. Willems 1960): a verb + lexical extension, like *kukangula* 'to open' in (19), is listed in dictionaries as an independent entry (as is the case for Italian *stappare* and its English counterpart *uncork*), while this does not hold for a verb + syntactic extension, unless lexicalised. Indeed, syntactic extensions may undergo a morphological process of lexicalization: in this case, the extension must be adjacent to the verb stem (irrespectively of its usual position), and the complex verb + extension acquires a new idiosyncratic meaning, as shown in (20) for a lexicalised causative suffix:

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[12] The Phase Impenetrability Condition states that operations like Move and Agree cannot look into a strong phase below its head. Hence only the head and its specifier – but not its domain – are accessible to such operations (Chomsky 2001). Strong phases are assumed to be C and v*, namely v with a specifier.
In passive clauses, like the one under discussion, v° is assumed to be present (Chomsky 2001), but it does not project a specifier, hence it should not count as a strong phase. However, it has been recently suggested that any v should count as a phase; things being so, the DP-object should first move to the edge of v° - Spec(vP) - otherwise it would not be accessible for further operations.
However, this issue lies beyond the scope of the present paper and I will postpone its discussion to future research.

[13] Since the infinitive represents the nominal form of a verb, as traditionally assumed, in Bantu the infinitival inflection is expressed with a noun class prefix, which is class 15 '*ku*-' in Tshiluba.

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(20) mfumu u-long-**esh**-a muana
the chief 1-learn-CAUS boy
'the chief teaches the boy' < lit. 'the chief makes the boy learn'

5. A finer-grained distinction: 'Lexical-argumental' extensions

However, in spite of what they have in common, within lexical extensions a non-negligible distinction should also be drawn. Indeed, while contactive, extensive, reversive and repetitive suffixes provide a purely semantic contribution, the presence of neutro-passive, neutro-active and stative is instead linked to the number of arguments of the clause. Specifically, neutro-passive converts a transitive verb into an intransitive one (cf. *kukangika* 'to be open/to open (intr.)', in (6) above, vs. *kukanga* 'to open (tr.)'), while neutro-active and stative attach to intrinsically intransitive stems − often the same ones − giving as output a transitive verb in the former case (*kushikika* 'to seat', in (7)) and an intransitive in the latter (*kushikama* 'to sit', in (8)).

Things being so, why have these extensions been grouped together with lexical – rather than syntactic − extensions, in the present work?

The main reason lies in an extremely different degree of productivity with respect to syntactic extensions, coupled with the already mentioned fact that most of the stems they attach to are never observed without any extension (e.g. **kushika*), thus underlying the strict, almost idiosyncratic relationship between stem and suffix that we have observed to hold also for some truly lexical extensions (cf. **kulama* vs. *kulamata* 'to attach (intr.)/to be tied to').

This strict relationship, vis-à-vis the higher degree of autonomy shown by syntactic extensions, is also reflected in the fact that the extensions in question are always adjacent to the verb stem and precede the eventual syntactic extensions in multiple derivation:

(21) muana u-kang-**ik-ish-il**-a mfumu tshibi
boy 1-close-NP-CAUS-APPL chief door
'the boy has the door shut for (the benefit of) the chief'

Therefore, we may conclude that, while syntactic extensions are genuine and productive derivational suffixes, neutro-passive, neutro-active and stative extensions represent part of the lexical entry (on a par with truly lexical extensions), a part devoted to signal the (in)transitivity of a verb, as their contribution reduces to this. I will call them 'lexical-argumental (L/A) extensions'.

6. The position of lexical/argumental extensions

At this point we should discuss where lexical-argumental extensions are generated. Two hypotheses are available.

On the one hand, we might argue that, like the other lexical extensions, they represent part of the lexical entry, and are consequently merged with the verb stem in the lexicon, prior to syntax. This explanation would best account for their scarce productivity, as well as for their obligatory presence together with some specific stems. Conversely, this hypothesis raises some non-negligible problems. First, truly lexical extensions never interfere with argument structure, unlike L/A extensions; second, truly lexical extensions are always mutually exclusive, as L/A ones are, but

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we may (though seldom) observe one lexical and one L/A extension together, the former always preceding the latter:

(22) tshibi tshi-kang-**uk**-a (< tshi-kang-**ud**-**ik**-a)[14]
door 7-close-REV+NP
'the door stays open'

On the other hand, and in order to overcome the aforementioned problems, we may hypothesize a specialized functional head situated immediately above VP, different from those already postulated for syntactic extensions, where the mutually exclusive lexical-argumental extensions are generated. Hence L/A extensions would precede all syntactic extensions, and eventually follow lexical extensions, which we presume to be part of V°, as discussed above.

We may now wonder what the nature of such a head is. Notably, L/A suffixes do not provide a well-defined semantic contribution, unlike truly lexical extensions − but also syntactic ones − in the sense that they simply signal an (in)transitive reading.

Therefore, I will propose that L/A suffixes are generated under a v°-type head. This looks appropriate, in that light verbs are not semantically salient, as L/A extensions are not either, but crucially contribute to the argument structure of a predicate; indeed their existence has first been proposed (see Larson 1988 and related work) in the analysis of ditransitive predicates, where the presence of two internal arguments would otherwise clash with a binary branching requirement (since Kayne 1983).

7. Two v°'s

The hypothesis put forward in the previous section, namely that Bantu L/A extensions are generated under a v°-type head, inevitably leads to the conclusion that there are two v°'s in the structure, one immediately above V°, and the other immediately below T°. Bantu languages indeed provide a morphological realization for both: the upper one is lexicalized by the final vowel/inflection (as seen in (18)), while the lower one is available for L/A extensions. All syntactic extensions discussed in Section 2.1. above are thus functional heads comprised between them.

However, if we recast Larson's (1988) analysis in more modern terms, we might hypothesize, for independent reasons, the presence of two v°-heads in the structure, independently of their morphological realization.

Actually, in the minimalist program, most of the functional heads assumed in a P&P model, which did not have a specific semantic content − such as AGRs° and AGRo° − were eliminated from the inventory (Chomsky 1995 and subsequent work). Nonetheless, the so-called light verb, now labelled small v°, not only survives, but its function is considerably extended with respect to the P&P model. In fact in recent studies (cf. Chomsky 1995, 1998 and subsequent work) we find v° not only in the structure of ditransitive verbs, as in P&P, but also in the structure of simple transitive verbs, where it has the important function of introducing the external argument, which is generated in its specifier position[15]. Even more recently (since Chomsky 2001), all

[14] A verb like *tshikangudika* (with -udik- < -ul- + -ik-) can indeed be acceptable as an obsolete form. Anyway, this does not represent the sole case of morphological blending of extensions; see e.g. -uluj- < REP -ulul- + CAUS -uj-, -akibu- < EXT -akan- + PASS -ibu-, etc. (Cocchi 1990). Schadeberg (1983), however, considers -*uk*- as an independent suffix.

[15] Originally, v° would represent a causative light verb, in whose specifier the agent (= causer) was merged. Hence it would be present in all clauses with an agentive subject.

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verbs, unaccusatives included, are assumed to consist in a v-VP template; the difference between transitives and unaccusatives simply reduces to the fact that, in the latter case, Spec(vP) is empty.

Things being so, and in the spirit of a universal hierarchy of functional projections, we might always need to posit two v°'s in the structure: the upper v°, generated below T°, in whose specifier the DP-agent is merged (in transitive and unergative clauses), and the lower v°, generated above the lexical head V°, whose specifier will host the indirect object in ditransitive clauses[16].

In addition, in Bantu languages the lower v° can be available for an L/A extension. In case the L/A extension converts an intransitive verb into a transitive one (as for neutro-active *-ik-* in (7) above), the theme-argument it introduces (*muana* 'the boy' in (7)) will be merged in its specifier. If the reverse holds (as for neutro-passive *-ik-* in (6) above), we may suppose that the extension absorbs the internal theta-role of the transitive verb, as assumed above for the reciprocal extension. It goes without saying that, in Bantu ditransitive clauses, the lower v°-head will be phonologically empty, and the indirect object will regularly be merged in its specifier[17].

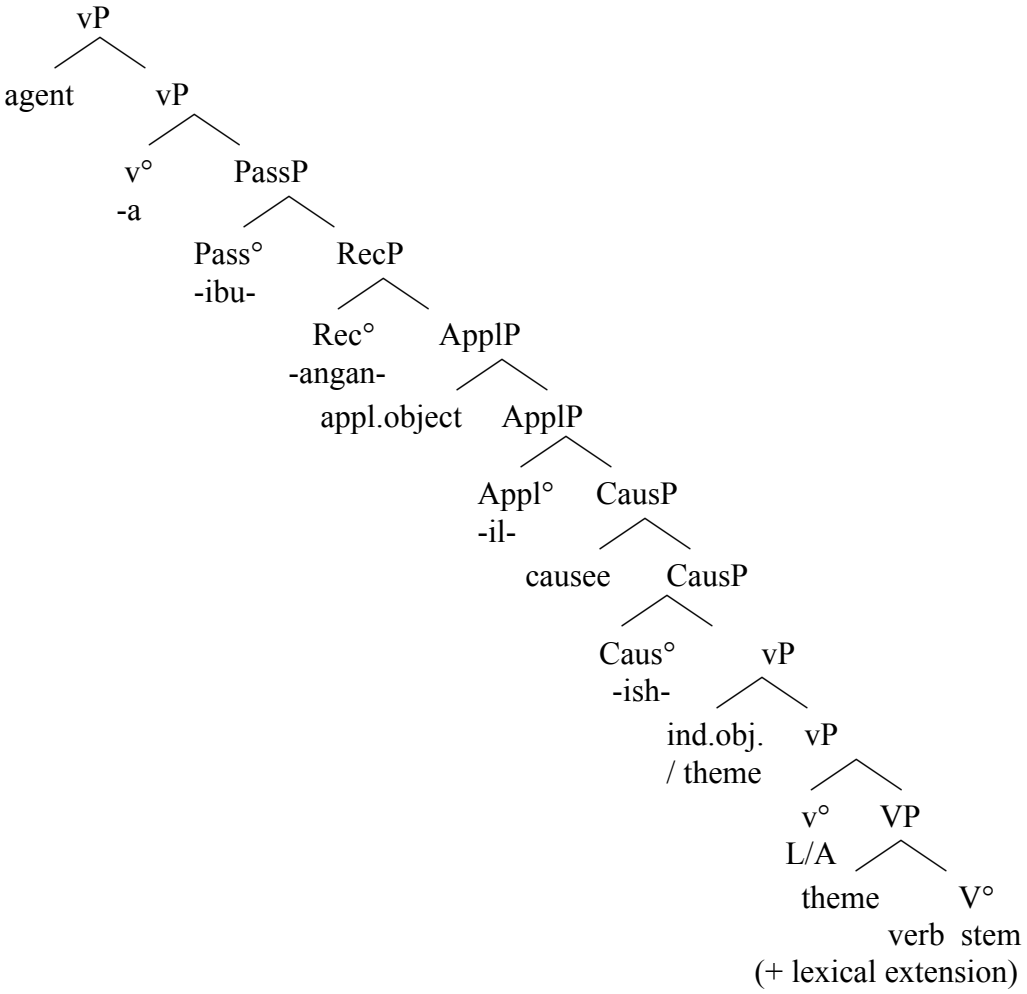
The structure seen in (18) above for Tshiluba should thus be slightly refined with the addition of a second vP, as in (23):

[16] Alternatively, we might argue that the direct and indirect objects are merged, respectively, in the complement and specifier of V°. However, the fact that a second v° must be assumed for Bantu languages (and see also D'Alessandro (2009), who argues for the existence of two v°'s for totally independent reasons), would favour the hypothesis that the indirect object is generated in its specifier, in line with Larson's original proposal.

[17] See Baker (1988), Cocchi (1992) for an analysis of ditransitive verbs and Dative shift in Bantu.

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(23)



Anyway, in my opinion, the presence of two v°-heads in the universal structure of functional projections is not only empirically, but also theoretically justified. Indeed in recent studies (Chomsky 2001, 2005, and related work), C° and v° have been recognised a special status among functional heads, in that they qualify as phases. However, since Rizzi's (1997) work, it has been universally accepted that C° is split in (at least[18]) two separate heads − that Rizzi calls Force and Finiteness − with other functional projections in-between (e.g. Focus, Topic), all pertaining to the modal domain. 'C°' thus becomes a label for an entire domain, not just for a single head.

Consequently, something similar can rightfully be assumed for the other phase head, v°. Indeed, according to the present proposal, also v° gets split into two separate heads, between which several functional projections pertaining to the predicative domain (Caus, Appl, etc.) are generated. Therefore, just like 'C°' for the modal domain, also 'v°' does not simply indicate a head, but rather becomes a label which comprehends the whole predicative domain.

[18] See Manzini & Savoia (2003) on more than two C°-heads in the modal domain.

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8. Conclusion

To sum up, in this work we have argued that Bantu verbal extensions should firstly be divided into two groups, here labelled 'syntactic' and 'lexical' extensions; the former are very productive and significantly contribute to the argument structure of the complex verb, while the latter are generally idiosyncratic and essentially add semantic information.

In the spirit of a cartographic approach to sentence structure, hence of a universal hierarchy of functional projections, I have assumed that syntactic extensions qualify as independent heads pertaining to the predicative domain, where theta-roles are assigned; the arguments they introduce are generated in their specifiers, in line with Cinque (2006) and related work. The order of both the suffixes and the arguments following the complex verbal form is rigid, with the arguments in the reverse order with respect to the suffixes, and this is best accounted for by positing a structure like (18)/(23), which complies with Baker's (1985, 1988) Mirror Principle.

Conversely, I have claimed that lexical extensions are attached to the verb stem in the lexicon, prior to syntactic derivations; their presence/absence indeed affects semantics and morphology, but not syntax. However, not all lexical extensions seem to behave alike in this regard, hence a further distinction is needed. In particular, some lexical extensions − here called 'lexical-argumental' (L/A) extensions − have a peculiar function, in that they hardly provide any semantic contribution at all, but crucially signal (in)transitivity.

I have assumed that L/A extensions should be generated under a v°-head immediately above V°; like light verbs, in fact, they do not change the semantic content of verbs but only their argument structure, by converting a transitive verb into an intransitive one or vice versa. Indeed, in most languages of the world we can find verbs which have either a transitive or an unaccusative reading; see for instance *sink* or *break* in English. In the latter case the two readings are morphologically identical, but it is perfectly reasonable that other languages, like Tshiluba or Bantu in general, may diverge on this point and use a morpheme to mark one of the two different readings, or both[19].

This proposal has as a consequence that two v°'s must be assumed in the structure, which both have a morpho-phonological realization in Bantu: the upper one contains the final inflection, i.e. the rightmost morpheme of a complex verbal form, while the lower one, besides introducing the indirect object in ditransitive clauses, in line with Larson (1988), may host a lexical/argumental extension, namely a suffix which is always adjacent to the stem and precedes syntactic extensions, and which provides no other contribution than signalling (in)transitivity, a function generally ascribed to light verbs.

This amounts to saying that, just as C° has been supposed to split into (at least) two independent heads, which delimit the modal domain, so v° should also be split into two heads, which delimit the predicative domain. Since C° and v° have a special status, in that they qualify as phases, an analogy of behaviour is not unexpected.

[19] See in this regard also the alternation between *rompere* 'to break (tr.)' and *rompersi* 'to break (intr.)' in Italian: what is generally analysed as a reflexive pronoun (*si*) is in this case nothing else than a marker of unaccusativity (cf. Burzio 1986). Indeed, a sentence like *il vaso si è rotto* gets interpreted as 'the vase has broken', and certainly not literally as 'the vase has broken itself'!

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