

# THE STATUS OF VERBAL SUFFIXES IN PAPUA NEW GUINEA LANGUAGES

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For several years, linguists of the Summer Institute of Linguistics, working on languages in Papua New Guinea, have been impressed by the fact that some of the affixes on verbs really have more effect upon the relations between Clauses than upon the structure of the Clause in which they appear. Recently, Philip Staalsen has brought the problem into clearer focus in his paper 'Clause Relationships in Iatmul'<sup>1</sup>, in which he divides each Clause into two segments. One segment, the 'endocenter', includes all the Clause from the beginning of the Clause to the end of the verb stem, and the other segment, the 'exocenter', includes all the suffixes on the verb. (Verbs are always clause-final in Iatmul.) Other linguists have described verbal suffixes as occurring in clusters, e.g. Mary Ruth Wise, 'Six Levels of Structure in Amuesha (Arawak) Verbs'<sup>2</sup>, but their motives were different. Tables 1 to 4 give a representative sample of Staalsen's Clauses.

Table 1: Iatmul Declarative Exocenter.

Endocenter	Exocenter		
	aspect	tense	actor
Any Normal or Dubitative Clause Endocenter	- <u>l</u> <u>ɨ</u> 'durative'	- ∅ 'past'	- <u>wun</u> '1s'
	- ∅ 'punctiliar'	- <u>ka</u> 'present'	- <u>m</u> <u>i</u> <u>n</u> '2s. masc'
		- <u>kiya</u> ~ 'future'	- <u>ny</u> <u>ɨ</u> <u>n</u> '2s. fem'
			- <u>d</u> <u>ɨ</u> '3s. masc'
			- <u>l</u> <u>ɨ</u> '3s. fem'
			etc.

Example:

du bak s t l t kiya t

<u>du</u>	<u>bak</u>	<u>s t</u>		<u>-l t</u>	<u>-kiya</u>	<u>-d t</u>
man	pig	shoot		-durative	-future	-he

'The man will be shooting the pig.'

Table 2: latmul Conditional Exocenter.

	Endocenter	Exocenter		
	aspect	actor	tense	conditional marker
Any Normal Clause Endocenter	<u>-l t</u> 'durative'	<u>-w</u> '1s'	<u>-ey</u> 'future'	<u>-an</u> 'if'
	- ∅ 'puncti- liar'	<u>-m</u> '2s. masc'	- ∅ 'past'	
		<u>-ny</u> '2s. fem'		
		<u>-d</u> '3s. masc'		
		<u>-l</u> '3s. fem'		
		etc.		

Example:

yideyan

<u>yi</u>		<u>-d</u>	<u>-ey</u>	<u>-an</u>
go		-he	-future	-if

'if he goes'

Table 3: Iatmul Relational Exocenter.

Endocenter	Exocenter
	Relational Marker
Any Normal Clause Endocenter	<p><u>-laa</u> 'completed before next action'</p> <p><u>-s ð bla</u> 'concurrent motivation for following action'</p> <p><u>-k ð va</u> 'occurring during following action'</p> <p>etc.</p>

Example:

v ð laa

<u>vi</u>		<u>-laa</u>
see		-having

'having seen'

Table 4: Iatmul Auxiliary Exocenter.

Endocenter	Exocenter
	Auxiliary Marker
Any Normal Clause Endocenter	<p><u>-ka</u> 'action in addition to following action'</p> <p><u>-lapman</u> 'action subtracted from following action'</p> <p><u>-vat</u> 'purpose of following action'</p>

Example:

<u>vi</u>	<u>lapman</u>	
<u>vi</u>		<u>-lapman</u>
see		-without

'without seeing'

Stalsen uses his exocenters to build a calculus for determining inter-clausal relationships by assigning a valence number to each exocenter. "Declarative, Hortatory, Imperative and Volitional Exo-Centers have valence 4. Conditional Exo-Centers have valence 3; Relational Exo-Centers, valence 2; and Auxiliary Exo-Centers, lowest valence 1." He then applies a few rules to the valence numbers and arrives at the ranking of the clauses in the Sentence. For example:

<u>wun-okwinala</u>	<u>yi-vat</u> <sup>1</sup>	/	<u>wa-d-ey-an</u> <sup>3</sup>	/
I-a long.with	go-in.order.to		say-he-future-if	
<u>kai</u>	<u>wa-iko-wun</u> <sup>4</sup>	/		
no	say-future-I			

'If he wants to go along with me, I will say no.'

The Clause ending with the Auxiliary exocenter '-vat' is marked with valence 1, and is a complement to the next Clause which ends with a Conditional exocenter '-d-ey-an' which is given a valence of 3. These two Clauses are subordinate to the last Clause which has the Declarative exocenter '-iko-wun' and is given the valence number 4.

Stalsen's analysis has one questionable aspect. In *latmul*, pronominal suffixes for the Subject fall at or near the end of the Clause exocenters. Some feel that such suffixes belong to the Clause endocenter rather than to the exocenter because they are more relevant to Clause structure than to inter-clausal relationships. Stalsen argues that since change-of-subject and non-change-of-subject are important in inter-clausal relationships, it is appropriate to include the subject suffixes in the Clause exocenter. Actually, although the subject suffixes are a part of the exocenter, they must play a dual role of indicating the Subject of the Clause when there is no other overt Subject in the Clause, and of relating Clauses together in the Clause exocenter.

As a consultant, I have used Staalsen's ideas, and several people have found them useful in early analysis. As they have looked at their high-level grammar, they have found that the verb suffixes (the clause exocenter) are especially relevant to sentence structure.

In their analysis of Nabak, Edmund and Grace Fabian<sup>3</sup> found that it was easier to describe their verbs by describing an inner layer of verb stem plus object affixes and an outer layer of inflections. The inner layer reflects the transitivity of the verb and Clause, while the outer layer reflects the structural status of the Clause.

In Nabak, the inner layer for an intransitive verb contains only the intransitive verb stem, but the inner layer for the transitive verb contains an obligatory direct object marker prefix, the transitive verb stem, and an optional indirect object marker suffix. (See Table 5.)

Table 5: Nabak Transitive Verb Inner-layer.

+ direct object marker	+nucleus	+indirect object marker
<u>na-</u> 'me'	transitive verb stem	<u>-ne</u> 'for me'
<u>ga-</u> 'you'		<u>-ngge</u> 'for you'
∅- 'him/her/it'		<u>-mpe</u> 'for him/her/it'
etc.		etc.

The outer layer includes a prefix slot where the continuous and progressive aspect markers occur and a suffix slot where a large inventory of portmanteau person-tense-aspect-mood suffixes occur, including both final-verb and medial-verb suffixes.

The following exemplify Nabak verbs and Clauses:

mambien  
ma        ||        -bien  
live        ||        -they<sup>3</sup>, remote.past  
'They lived long ago.'

<u>butuk</u>	<u>manimambanup</u>				
<u>butuk</u>	<u>ma-</u>		<u>ni</u>		<u>-mambanup</u>
sweet .potato	continuous-		eat		-continuous .we3 .remote . future

'We will always eat sweet potatoes.'

<u>neng</u>	<u>zema</u>	<u>nâit</u>			
<u>neng</u>	<u>ze</u>	<u>-ma</u>	/	<u>nâ</u>	<u>-it</u>
I	talk	-I.heterosubject		hear	-you3.imperative

'I am talking, you all listen!'

Nabak has three types of Verb Phrases. Two of them, the 'Basic Verb Phrase' (a verb with an optional preposed negative word) and the 'Predicate Complement Verb Phrase' (a verb with an obligatory preposed particle or noun) always have the main verb in final position, so that the verb suffixes are naturally verb-phrase-final. One Verb Phrase, however, consists of a verb stem with a desiderative suffix, an optional intensifier word or clitic, and, finally, an auxiliary verb carrying the verbal suffixes. E.g.:

<u>gaki-sât</u>	<u>penang</u>	<u>m</u>		<u>-ge</u>
die	-desiderative intensifier	do		-he . remote . past

'He really wanted to die.'

The auxiliary verb stem must be one of a class of four verb stems with such meanings as 'do/make', 'say', 'know/hear' and 'like.'

The fact that the final auxiliary verb is the one to receive the verbal suffixes makes it tenable to consider the verbal suffixes to be an immediate constituent of at least the Verb Phrase in Nabak. Since the Predicate is usually in the final position in a Clause, the verbal suffixes could be considered to be immediate constituents of the whole Clause, which is what Staalsen has done.

The Fabians' tentative analysis of Nabak sentences shows that on sentence level, clauses are frequently joined together by either free or bound conjunctions and connectives which supplement the verbal suffixes as markers of sentence structure. Hence, the verbal suffixes would seem to be a bit less important in sentence structure than they are in Iatmul. However, this would not prevent the analysis of Nabak verbal suffixes as exocenters in an immediate constituent relation to the rest of the clause.

Similar situations exist in other languages. I will cite only two such languages here: Salt-Yui as analysed by Barry Irwin<sup>4</sup>, and Daga as analysed by Elizabeth Murane<sup>5</sup>.

For Salt-Yui verbal suffixes for the independent and dependent verbs see Tables 6 and 7.

Table 6: Salt-Yui Independent Verb Suffixes

nucl.	neg.	tense	subject	accompaniment	aspect	mode
verb stem	<u>h-</u> ~ <u>-ki</u> 'not'	<u>-na</u> ~ <u>-a</u> ~ <u>-ra</u> 'fut'	<u>-l-</u> <u>-i</u> 'I' <u>-min</u> 'I/we' <u>-n</u> 'you' <u>-m</u> 'he/ they' <u>-bil</u> 'two'	<u>-i</u> 'with'	<u>-u</u> 'imperf' <u>-g</u> 'perfect' <u>-i</u> 'only/ just'	<u>-a</u> 'indicative' <u>-i</u> 'declarative' <u>-e</u> 'assertive' <u>-o</u> ~ <u>-e</u> 'interrog' <u>-a</u> 'imperative' etc.

Table 7: Salt-Yui Dependent Verb Suffixes.

nucl.	neg.	tense	subject	accompaniment	aspect	dependency marker
verb stem	<u>h-</u> ~ <u>-ki</u> 'not'	<u>-na</u> ~ <u>-a</u> ~ <u>-ra</u> 'fut'	<u>-l</u> ~ <u>-i</u> 'I' <u>-min</u> 'I/we' <u>-n</u> 'you' <u>-m</u> 'he/ they' <u>-bil</u> 'two'	<u>-i</u> 'with'	<u>-g</u> 'perfect' <u>-i</u> 'only/ just' <u>-b</u> 'concess'	<u>-ere</u> 'indefinite' <u>-a</u> 'conditional' <u>-mala</u> 'dubitative' <u>-oro</u> 'temporal'

The two tables of Salt-Yui verb suffixes are identical except for the exponents of the last two columns. The independent verb has mode (or mood) markers, and the dependent verb has dependency markers

Irwin stresses the fact that the tense, aspect, and mode or dependency markers are more relevant to the sentence level than to the word level.

Salt-Yui has a number of Verb Phrase types involving verbs, particles, and auxiliaries. In all these Phrases, it is the last word of the Phrase that takes the verbal suffixes. When a Verb Phrase embeds in another Verb Phrase, it loses its suffixes unless it is final in the total Verb Phrase. In other words, the suffixes are always final to the whole Verb Phrase, and must be an immediate constituent of at least the rest of the Verb Phrase.

Salt-Yui has two major types of Clauses: the Independent Clause, and the Dependent Clause; and the only difference between the two kinds of Clause is the presence of independent-verb modes versus the presence of dependent-verb dependency markers. Furthermore, the Clauses always have their Predicates in final position, each Clause ending with a verb followed by the verbal suffixes. Hence, the verbal suffixes are always clause-final, and it would be entirely possible to analyse them as being an immediate constituent of the rest of the Clause, as Staalsen has done.

Irwin agrees that this analysis is a possibility, but he also feels that while the Dependent Clause exocenters are relevant to inter clausal relationships within a Sentence, the Independent Clause exocenters are often more like immediate constituents of the whole Sentences. In such Sentences, the Subject and possibly one or two other Clause items are named in the first Clause of the Sentence; intermediate Clauses contain just verb stems with the dependence markers indicating the relations between the Clauses; and the tense, aspect and mode are all saved to be indicated on the last verb of the Sentence.

The situation in Daga, as analysed by Elizabeth Murane, is similar. The general patterns for the Daga verb suffixes are shown in Table 8.



Table 8: Daga Verb Suffixes.

PRIMARY VERB

+	<u>+</u>	<u>+</u>	+
verb stem	direct-object exhaustive intensive	continuous aspect	person- tense- mood

SECONDARY VERB

+	<u>+</u>	<u>+</u>	+
verb stem	direct-object exhaustive intensive	continuous aspect	secondary suffix

Clauses, in Daga, always end with the verb and its suffixes, so the suffixes are also clause-final. Daga also has a number of Verb Phrases. The verb suffixes always occur only on the last verb in a Verb Phrase, the only exceptions being the Verb Phrase ending with 'stop' and the Verb Phrase ending with 'finish'. These two Verb Phrases have verb suffixes on both verbs in the Phrase. In the "Object Focus Verb Phrase", the last slot is expounded by a pronominal root plus the verb suffixes. Thus, even when the last root of a Verb Phrase is not a verb root, the verbal suffixes still occur on it, and are thus final to the Clause.

Again, in the Clause structure in Daga, the Predicate is always the last item in a Clause, hence the verb suffixes are always clause-final and could well be considered to be immediate constituents of either the Verb Phrase or of the Clause. The analysis of Daga Sentences shows that many Sentence types do depend upon elements of the verbal suffixes in the Clauses. Thus, an analysis similar to that of Staalsen could be applied to Daga.

And so, having looked at four widely separated languages of Papua New Guinea, we see that Staalsen's suggestion could be applied to each case. The cluster of suffixes on the clause-final verb can be analysed as an immediate constituent of the whole remainder of the

Clause. Thus, one immediate constituent of a Clause is its Subject, Object, Location, Time, Instrument, Benefactee, etc., and the Predicate (except for the suffixes). The other immediate constituent is the sequence of suffixes at the end of the Clause. The first immediate constituent contains the main part of the Clause; the second contains the affixes that relate the Clause to its context, to its neighboring Clauses and to the 'thread of discourse'.

The analysis suggested here is somewhat similar to the analysis that Fillmore presented in his "The Case for Case"<sup>6</sup>, in which his first rule was:

"Sentence → Modality + Proposition"

where Modality includes "negation, tense, mood, and aspect", and the Proposition is a "tenseless set of relationships involving nouns (and embedded sentences, if there are any)."

(p. 23) Fillmore refers to a paper by Lyons<sup>7</sup> who wrote that "'Grammatical' categories ... include ... Negative, Tense (past v. non-past), Modal (will, may, etc.), Perfect Aspect, Progressive Aspect, Number and Definiteness. Of these it would appear that Negative, and perhaps also Tense and Modal, are associated directly with the Theme [equivalent to Fillmore's 'Proposition']", that Perfect and Progressive Aspect are categories of the Predicate and that Number and Definiteness are categories of the Noun." (p. 223 - 224).

Neither Fillmore nor Lyons sees the 'Modality' or 'Grammatical categories' as being relevant to inter-clausal relationships, as Staalsen does, but neither has pursued the matter very far.

Lyons and Fillmore were studying the deep structure of English, while in this paper, we are concerned with a feature of surface structure in Papua New Guinea languages, in which it seems to be a peculiar feature that the 'Modality' is encoded more or less into surface structure Clause exocenters that might appear to be only suffixes on the clause-final verb.

Recently, Robert Longacre<sup>8</sup> has proposed four calculi to account for the various levels of deep structure. These are: 1) the Increment Calculus; 2) the Predicate Calculus; 3) the Statement Calculus; and 4) the Repartée Calculus. The Increment Calculus deals with the additions that can be made to the verb of a clause and includes such things as causative, inceptive, cessative, and various other aspectual features. The Predicate Calculus deals with the Predicate and the terms (Noun Phrases) related to it. Fillmore's Case Grammar would fit into the Predicate Calculus. The Statement Calculus deals with the ways clauses are put together in particular relationships to make sentences. The Repartée Calculus deals with the elements of a conversation and is outside the interest of this paper. Longacre discusses how these four calculi are encoded into words, phrases, clauses, sentences, and paragraphs

in a very non-one-to-one manner. His particular interest is in how these different calculi are encoded into sentences in Papua New Guinea languages.

If a language were truly 'well behaved', we might expect the Increment Calculus and the Predicate Calculus to be encoded in the Clause endocenter (to use Staalsen's term), and the Statement Calculus to be reflected in the Clause exocenter and in the inter-clausal connectives and conjunctions. It is almost an axiom, however, that no language is entirely well behaved. And it turns out that in Sentence-level analysis, while the Clause exocenters do figure heavily, we also often need to reach into the Clause endocenters to find the distinctive features of Sentence structure. Some Sentences from Salt-Yui and Daga will illustrate the role of Clause endocenters in Sentence structure.

Table 9 gives the bidimensional array for the Salt-Yui Antithetical Sentence. For distinctive features, Irwin gives only the requirement that the exocenter of the first exponent must end with the concessive marker -ba. However, one of the common features of an Antithetical Sentence is that there must be one or more semantic contrasts between the two exponents; different actors, different actions, different location, different time, and/or different manner, etc. These contrasts all involve Clause endocenters.

Table 9: Salt-Yui Antithetical Sentence.

Thesis	Antithesis
Clause ( <u>-ba</u> )	Clause
Sentence ( <u>-ba</u> )	Sentence

Example:

na kun weni hane-ba /  
 I pig truly I.saw-but  
han sinalga paikungwi  
 rope I.shall.strike it.rests.not

'I saw the pig all right, but I couldn't catch it.'

Table 10: Salt-Yui Contrast Comparison Sentence.

Statement	Marker	Comparison
Clause	<u>-mere</u>	Clause
Corr. Sentence	'the	
Juxt. Sentence	same as'	
<hr style="border-top: 1px dashed black;"/>		
same predicate	.....	same predicate
future tense	.....	non-future tense
non-negative	.....	negative
negative	.....	non-negative

Example:

hara    unangwo-mere    /    hungwe  
 car    it.will.come-the.same.as    it.has.not.come

'The car will come, but it hasn't yet.'

Another Salt-Yui Sentence type that involves Clause endocenters even more explicitly is the Contrast Comparison Sentence shown in Table 10. In this Sentence type, the first exponent must end with a Clause exocenter that contains future tense and, optionally, the negative marker. The exocenter of the second exponent must contain a non-future tense and the negative marker if the first exponent did not have a negative marker, or no negative marker if the first exponent did contain a negative marker. The Clause endocenters of the two exponents must contain the same verb root.

In Salt-Yui, the negative and the tense belong to the Clause exocenter, but the verb root belongs to the Clause endocenter. The verb root, then is functioning both as a part of the Clause endocenter and as a distinctive feature of the Sentence type, a mismatch between the Calculi and the surface structure.

Another example of a Sentence type which takes some of its distinctive features from

the Clause endocenters is the 'Parallel Sentence' in Daga. It consists of two or three slots expounded by Clauses or Coordinate Sentences, the final verbs of which must have the same tense and the same negation or non-negation. Furthermore, the verb roots of the final verbs must be synonymous, or at least, they must refer to the same action or situation. Two examples follow:

kaum wakorai ta-iwan / uram gur-iwan  
 water fishing do.3s.pres.cont eel kill-3s.pres.cont

'He is fishing in the river, he is killing eels.'

ya w-ane / ya di-ane  
 not say-2p.imperative not declare-2p.imperative

'Don't say it, don't declare it!'

In Daga, the verb roots and the negatives are parts of the Clause endocenters, and hence in this case, they have double function: they are relevant to both the internal structure of the Clause and to the structure of the Sentence.

The three previous Sentence types have illustrated how most Sentence types draw some of their distinctive features from the Clause exocenters and some, surprisingly, from the Clause endocenters; illustrating that the deep structure calculi are not separately encoded in the exocenters and endocenters.

Another kind of mismatch can be seen in the latmul data, in which the actor-person suffix is a part of the exocenter. In the Sentence cited from Staalsen's paper, it may be noted that not one of the three Clauses has its own overt subject.

wun-okwinala yi || -vat /  
 me-along.with go || -in.order.to

wa || -d -ey -an /  
 say || -he -future -if

kai wa || -iko -wun /  
 no say || -future -I

'If he wants to go along with me, I will say no.'

The first Clause has only an understood subject. In the second and third Clauses, the subjects are supplied by the actor-person suffixes in the Clause exocenters. The actor-person suffixes have a double function; although they are a part of the exocenter, they also have to supply the subject to the endocenter. Thus we have another type of mismatch between deep structure calculi and the surface structure.

In conclusion, this paper shows how verb suffixes in Papua New Guinea languages are immediate constituents of clauses and how they figure in inter-clausal relationships. However, we have also seen that inter-clausal relationships usually involve features from both the Clause endocenters and the Clause exocenters.

#### FOOTNOTES AND BIBLIOGRAPHY:

1. Staalsen, Philip, "Clause Relationships in Iatmul," to appear in Pacific Linguistics, Series A, No. 31, pp 45-69.
2. Wise, Mary Ruth, "Six Levels of Structure in Amuesha (Arawak) Verbs," International Journal of American Linguistics, vol. 29, no. 2, April, 1963. pp 132-152.
3. Fabian, Edmund, and Fabian, Grace, "Nabak Grammar Essentials," 1971; unpublished manuscript.
4. Irwin, Barry, "Salt-Yui Grammar," Part I and Part II, 1971; unpublished manuscript.
5. Murane, Elizabeth, "Daga Grammar, from Morpheme to Discourse," to appear in Summer Institute of Linguistics Publications in Linguistics and Related Fields.
6. Fillmore, Charles J., "The Case For Case," Universals in Linguistic Theory, edited by Emmon Bach and Robert T. Harms. New York: Holt, Rinehart and Winston, Inc., 1968. pp 1-88.
7. Lyons, John, "Towards a 'Notional' Theory of the 'Parts of Speech'," Journal of Linguistics, vol. 2, no. 2, October 1966. pp 209-236.
8. Longacre, Robert E., Hierarchy and Universality of Discourse Constituents In New Guinea Languages: Discussion. Washington, D. C. : Georgetown University Press, 1972. (esp. Chapter 3).