

Toward Structuralizing Murik Sentence and Paragraph

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I. Introduction

"The ability of people to develop or discuss a proposition is assumed to be a human universal". (Pike and Pike. 1978. pg 25) Linguistic application of this statement would assert that every language has the potential to combine predications in order to communicate a particular semantic idea. One potential combination of predications would be two or more concatenated, functioning as a whole so that elimination of one or more would result in ambiguities and/or incompleteness. i.e.

The man cooked the pig. + The man ate the pig. = The man cooked and ate the pig.

I saw the boy. + The boy stole the chicken. = I saw the boy who stole the chicken.

He cut the tree. + The tree fell. = He cut the tree and the tree fell.

If it rains tomorrow... + I will not go. = If it rains tomorrow I will not go.

Because language has proven to be intrinsically systemic one would deduce that system would be inherent within concatenated predications. Therefore, a language universal could be derived from these basic assumptions:

Every language has a systematic^c methodology for concatenating predications. Linguistic devices used to signal concatenation would be potentially phonological, grammatical, and/or semantic (lexicon + meanings).

1. phonological - perhaps intonation marking unit initial/terminus could be the linguistic clue signaling unitness.

i.e. In a phonological analysis of Wik-Munkan, an aboriginal language spoken on the Cape York Peninsula, Australia, Barbara Sayers defined sentence as:

- a. consisting of one or more phonological clauses which have a single stress,
- b. characteristic feature of pitch at the onset (pitch described as when sentence-stress occurs in the first phonological-clause in a sentence of two or more phonological-clauses, the phonological sentence has an overall downdrift of pitch of successive phonological clause stresses) (Sayers 1976a: 48),

c. bounded by obligatory pause. (Sayers 1976a:42).

However, phonological clues might not be an integral component of predicate-concatenation-system identification. Language specific phonological systems, such as intonation marking sentence boundaries cannot be superimposed on another language expecting duplicity of function. Phonological features do not share the same functional load from language to language. i.e. In a Mazatec language in Mexico tone markings carry a greater functional load than do vowels. "I strongly suspect that a Mazatec could read more easily if vowels, rather than tone, were eliminated". (Gudschinsky 1973. pg 122)

ti (with low falling tone) = 'boy'

ti (with low rising tone) = 'water jug'

ti (with high level tone) = 'verbal particle'

ti (without tone marker) = '??' (meaning unknown)

2. grammatical - devices such as conjunctions, medial-final verb relations, or relative clause markers help define source constituency in many languages. However, not all languages have overt conjunctions or medial-final verb relations but that does not preclude that the language without them cannot concatenate predications or higher level hierarchical units. Suppose that a language has very few, inconsistent, or no phonological and/or grammatical features signaling unitness above the clause, does the sparsity, or inconsistency, or absence of these features preempt systematic relations of units above the clause? Emphatically not; system and/or structure must not be limited to being identified only in phonological and/or grammatical terms.

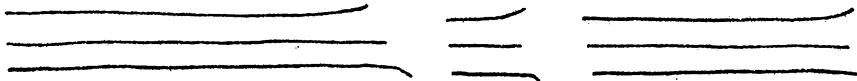
3. semantics - interconstituent function and relation above clause could be determined on the basis of semantic criteria. Context spaces as a group of utterances with reference to a single issue (Reichman 1978 pg284) could be the domain within which concatenated predications are distributed. The purpose

II. Language in Focus

i.e. /wanga-verb root-rogo ewa/ signals relative clause construction
rel. agr. dem.
cl.mkr.

Other grammatical features signaling boundaries or interconstituent relations above the clause are sparse while phonological features are inconsistent and sparse. i.e. Initial phonological analysis indicated contrastive intonation contours distinguishing phrase and sentence. However, ^ufurther analysis revealed that Murik speakers used these contours in an arbitrary and unpredictable manner concerning clause and noun phrase strings. The same intonation contour potentially marked phrase and/or sentence level units.


/mi k- w-amba- o-rogo ewa/ ma k- wa- ra- o-ga/ 'If you go I will go.'
 2S fut-2s - if-go-if dem 1S fut-1s -spkr-go-tns
 tns SPN agr tns SPN ct. agr.
 asp




 /gwan gangan o-piṅayt-ara/ o-ara/ o-pwaritakim-ara/ 'The little boy run-
 boy little 3s-run -temp 3s/temp 3s -fall -temp ning, going, fell.'
 SPN mkr SPN mkr SPN mkr

NOTE: Pauses optional and intonation contours freely variant.

Further evidence supporting lack of unit identifying functional load of phonological features is the lack of contrast between interrogative and declarative units. Straight to mid-falling intonation can occur on both declarative and interrogative units. i.e. (see declarative above)



 /mi amwo-tamari-namena/ 'What are you doing?'
 2S inter-make-inter.agr.
 mkr.



 /mi marit-me- o- ara-mena/ 'Where are you going?'
 2S inter-2s-go-temp-inter.agr.
 mkr SPN mkr

The semantic function of interrogation is signaled by the lexicon and morphology with no phonological feature distinguishing interrogation from declarative. Therefore, a non-grammatical non-phonological heuristic is needed to determine source constituency above the clause.

III. Semantic Criteria

In a paper on distributional structure (focusing on phonemes) Zellig Harris noted, "...a set of data is structured in respect to some feature, to the extent that we can form in terms of that feature some organized system of statements which describes the members of the set and their interrelations...". (Harris 1954 pg 146). Various extended linguistic applications of the term 'structure' have obscured the semantic components of the term. For the purpose of this paper structure will be defined as: a speech span made up of more or less interdependent elements in which each element has a function and relation

within the span.

The non-grammatically non-phonologically signaled constituent relations could be identified by determining interconstituent meaning restrictions. Analysis of indeterminate juxtaposed interconstituent relations will begin with the following definition: any constituent which decreases the range or scope of meaning or textual/contextual ^finference of another constituent together with ^tthat constituent is defined as a semantically bound unit. A unit defining feature of this semantically bound unit is the sentence initial constituent as the unit topic which sets the spatial, temporal, or logical domain within which the semantically bound constituents are distributed.

Interconstituent relations of concatenated units vary as to restriction potential.

i.e. In English the potential for (...cooked and...) to be restricted is much lower than for (...breathed and...). That is, there is a much greater range of predications which can concatenate with second example than the first. Kasem, a Ghanaian language of West Africa, has a grammatical and phonological system for linking clauses together to form clause series. Hewer, concluded that a Kasem speaker links clauses together in a series on the basis of inter-clausal lexical affinity. He has systematized verbal relations as to lexical association and clause series co-occurrence restrictions.

i.e. Five types of clusters which form clause series in perfect aspect:

Initiator Cluster,	Start:			Rise
Speech Cluster,	Say:	(Talk)		Quote
Motion Cluster,	Move:	(Go-How)	(Leave)	Go-To
Transport Cluster,	Carry:	(Go-How)	(Take)	Hold Go-To (Give)
Action Cluster,	Act:	(Take)	(Use)	Do (Give)

Each element of the clause is entered on a verb with the particular lexical feature indicated. Peripheral elements are enclosed in parentheses and are optional. (Hewer 1976 pg22).

Similarly, hypothesis for the Murik language is: units with low potential for restriction have a greater lexical affinity than do the higher potential

restriction units. The following sequences (...cooked and...) and (...put it and...) are highly predictable in Murik.

/m̥n̥ n̥mben o- di-r̥i u-t̥im-ari o-ma -r̥i/ 'He killed the pig, cooked it,
 3S pig 3S-kill-pst 3S-cook-pst 3S-eat-pst
 SPN tns SPN tns SPN tns

/ma mwan t- wa-sabwa t -o- pya/ 'I put something and it remains.'
 1S something comp-1S -put comp-3S-remains-
 asp SPN asp SPN

Murik morphological support to this hypothesis is illustrated by the following:

/m̥n̥ o-p̥iŋayt-ara + o-ara/ = /m̥n̥ o-p̥iŋayt-g-o-ara/ 'He running going.'
 3S 3S-run -temp 3S-temp 3S 3S-run -go- temp
 SPN mkr SPN mkr SPN mkr
 +go

/gay mwan k-age- ra-dwerapwa-ga + menge- ra-rak̥im̥ŋ-ga/ =
 1D some- fut-1D -spkr-broadcast-tns 1D/fut-spkr-walk -tns
 thing tns SPN ct agr ct agr
 asp asp

/gay mwan k-age- ra-dwerapwa-rak̥im̥ŋ-ga/ 'We two will broadcast
 1D some- fut-1D -spkr-broadcast-walk -tns. something around.'
 thing tns SPN ct agr.
 asp

When two verbs have a great degree of lexical affinity with one decreasing the range or scope of meaning of the other, the Murik speakers optionally economize morphological inflection by concatenating the verb roots and inflecting them as a single unit.

The following examples illustrate application of the previous definition for units of varying lexical affinities, both in cases with and without overt grammatical signals. These examples demonstrate sentential cohesion not textual boundaries. Examples illustrative of both sentential cohesion and textual boundary identification will be provided in the textual analysis section VI. NOTE: Double underlined language data below indicates grammatical features identifying hypotactic relation between clauses.

Topic:	Logical Domain	Cl 2: Restriction	Cl 3: Restriction
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1. /gar ko-bo-ta-timari/ nagun to-bo-atagamin/ kankampwap k- a- ra-
 feast fut-1Pl-des-make skin comp-1Pl-straighten victory fut- 1Pl-spk-
 tns SPN asp SPN leaves tns SPN ct
 Cl 4: Restriction asp

rakimari-ga/ nīm -rāk dag aritambo k- a- ra-kokosa/
walk -tns woman-pl grass good fut-1Pl-spk-put on
agr skirt tns SPN ct
asp

'Wanting to make a feast, (when) we have straightened our skin, we will walk around with victory leaves (Taetsia Fructicosa), and the women will put on good grass skirts.'

Topic: Logical Domain Cl 2: Restriction

2. /'kwayn ajin a'in arewatana mi maning apajarogo/ mi ma-na nasen
beachcrab ground talk all same 2S strong big-have 2S 1S-poss daughter
 said

k -o- ta-meri-na/
fut-2S-des-marry-interr.
tns SPN asp mkr

'Beachcrab, the ground says you have big strength (therefore) do you want to marry my daughter?' NOTE: Textual inference criteria applied for rendering.

Topic: Logical Domain Cl 2: Restriction

3. /Arim narin k - w- amba -tumon-dogo ewa/ ma o ongwende/
rain tomorrow fut -3PS-suppose-come- dem 1PS go negative
tns SPN down

'If it rains tomorrow I will not go.'

Topic: Logical
Domain Cl 2: Restriction

4. /nor nasen t - o - sanaytinara/ kwayn t - o - aminara/
 man girl comp-3PS- get beachcrab comp-3PS-give
 Asp SPN asp SPN

Cl 3: Restriction

t - o - merinara /
Comp-3PS- marry
Asp SPN

'The man got his daughter, gave her to the beachcrab, and he (beachcrab) married her.'

Topic: Temporal
Domain

Cl 2: Restriction Cl 3: Restriction Cl 4: Restriction

5. /momwan t - e - timari/ t - e - kibin / t - e - gigata / meigo t - e - koray /
 food Comp-1Pl-made Comp-1Pl-finish Comp-1pl- get table Comp-1pl-put /
 Asp SPN Asp SPN Asp SPN Asp SPN

'When we made the food, we finished it, got it, and put it on the table.'

Topic: Logical
Domain

Cl 2: Restriction

6. /ma gwan t - wa - sobo/ gobar wanga - tagomakotina -rogo ewa /
 lpS boy Comp-1PS - see chicken Rel Cl steal dem
 Asp SPN Mkr

'I saw the boy who stole the chicken.'

Three of the examples above are grammatically as well as semantically bound.

The first clause in example three is in hypotactic relationship with the second clause as a supposition. The second clause in example six is relativized in hypotactic relationship with the first clause. A case could be made in example five that all of the clauses should be conjoined on the grammatical basis of sharing same grammatical subject and object. However, in examples one, two and four clauses with different grammatical subjects are semantically bound. According to the previously stated definition, basis for conjoining is the decreased range or scope of textual/contextual inference of the constituents.

IV. Orthographic Representation

Identifying systematic interconstituent relations above the clause is obligatory for accurate orthographic representation of a language. Although grammatical and/or phonological criteria might not necessarily overlap consistently with semantically-bound-unit terminus, to arbitrarily mark sentence and paragraph in vernacular literature would be detrimental to reading fluency and/or comprehension. Sarah Gudschinsky asserts:

1. Every time a contrast is not symbolized an ambiguity is created and no matter how small an ambiguity it is, the material is to that extent harder for people to read and to understand. (Gudschinsky 1973, pg 120.)

2. Depending upon context to clarify an ambiguity often forces the reader to re-read, and if this happens frequently reading becomes slow and inefficient. (Gudschinsky 1973, pg 125.)
3. It is seldom that a beginning reader goes back to correct a mis-reading in the first part of a sentence. (Gudschinsky 1973, pg 121.)

Pike notes:

1. Wrong or ambiguous symbolization obscures or destroys communication potential. (Pike 1947, pg 208.)
2. It is a hindrance to reading skills and understanding to break up units into more or smaller units than represent the actual language structure. (Pike 1947, pg 210)

While both Gud^Sschinsky and Pike were writing in regard to lower level features such as phoneme symbolization or word boundaries, their observations are applicable to sentence and paragraph symbolization as well. Testing of vernacular literacy materials among newly literates in a basically illiterate ethnic group in Papua New Guinea has established that improper organization of discourse constituents resulted in a breakdown of comprehension and reading skills. (McDonald 1979, personal comm.)

If juxtaposition carries an equivalent functional load in language₁ as conjunctions or conjoining intonation does in language₂ then separation of the juxtaposed clauses in L₁ (i.e. by full stop) would create the same ambiguities as deletion of a conjunction would in L₂. Therefore, systematic description of individual discourse constituents functioning as a whole and their interrelationships is essential, i.e. clauses concatenated functioning as "sentences": sentences concatenated functioning as "paragraphs"; and paragraphs concatenated functioning as discourses, ^{use} of the terms 'sentence' and 'paragraph' is simply for convenience. They are labels for concatenated units functioning as a whole at a hierarchical level above the comprising constituents.

V. Systematic Constituent Description

A corpus of discourse data was analysed, ^p applying the semantic criteria

discussed in section III, in an attempt to identify sentence, paragraph, and discourse constituents, their function and interrelation. Various genre (narrative, procedural, behavioral, and expository) and oral versus written text materials were included within the corpus of data. From the analysis the following formulae were produced exemplifying functional structure by describing the constituents of the various hierarchical levels and their interconstituent relations.

Sentence Root Hcl.

Sentence Root ₁ = +				
	Topic	Clause		
	Proposition	-		
Sentence Root ₂ = +				
	Topic	Clause	+	Restriction Clause
	Proposition	Grammatically & Semantically Bound to Following Clause		Proposition -
Sentence Root ₃ = +				
	Topic	Clause	+	Restriction Clause
	Proposition	-		Proposition Grammatically & Semantically Bound to Preceding Clause

Sentence Hcl.

Paratactic Sentence = +				
	Nucleus	Sentence Root Hcl	+	Margin
	Topic	-	-	Restriction
				Sentence Root Hcl
				Semantically Bound To Topic (only 1 topic per sentence)
Hypotactic Sentence = +				
	Nucleus	Subordinate Clause	+	Margin
	Topic	Grammatically & Semantically Bound to Sent.	-	Restriction
				Sentence Root Hcl
				Semantically Bound to Topic (only 1 topic per sentence)

+	Margin	Subordinate Clause
-	Restriction	Grammatically & Semantically Bound to Sentence

This hypotactic sentence type was discovered by eliciting sentence constituents in alternate distribution within the sentence. Alternate distribution potential of a grammatically marked subordinate clause within a sentence is interpreted as evidence for subordination to the sentence as a whole rather than to a juxtaposed clause. This alternative clause order is also objective evidence that this string of four clauses is a unit. i.e.

Logical		Cl 2: Restriction	Cl 3: Restriction
Topic:Domain			
/min	k- o- ro-dikara- ga /	k- w-anta- rakimɪŋ- ga/	nor-o nabin
3pS	fut-3pS-spkr-get up-tns tns SPN ct agr	fut-3pS-des- walk tns SPN asp	-tns man-loc eye agr
		Cl 4: Restriction	
k- o- ta-sarakimɪndi/ yara-mo ewa/			
fut-3pS-des-look for blood-drink dem			
tns SPN asp			

(Original order) 'He (a mosquito) will get up, to walk around, to look for a man, to drink blood.'

Paragraph Root = +	Topic	Clause	+	Restriction	Sentence Hcl
	Proposition	-		Proposition	Grammatically & Phonologically Free but Semantically Bound to Topic
Paragraph = +	Margin	Introducer Word or phrase/ NP + darewa	+	Nucleus	Paragraph Root
	Introducer/ Conjunction	Cannot contain predication		Topic	-

Discourse Root =	+	Topic	Paragraph	+	Restriction	Paragraph
		Item	-		Item	Grammatically & Phonologically Free but Semantically Bound to Topic

Discourse =	+	Margin	Clause/ Sentence Hcl	+	Nucleus	Discourse Root
		Topic Intro- duction	-		Topic Restriction	Agreement of Genre parameters

+	-	Margin	Clause Sentence Hcl
		Closure	-

VI. Textual Analysis

The following discourse was written by Micah Yarong of Darapap Village, Murik Lakes, East Sepik Province, after a seminar concerning malaria contraction and prevention. Analysis will illustrate the preceeding formulae. The semantic criteria discussed in section III will be applied to concatenated clauses, sentences, and paragraphs.

A. Clause Concatenation

The strings of clauses below are concatenated functioning as structural units. In each, the initial clause sets the spatial, temporal, or logical domain within which the semantically bound clauses are distributed. This initial clause is referred to as the topic. The semantically bound units as a whole are defined as sentence context spaces. Sentence context

space boundaries are determined on the basis of:

a. change of concatenated-clause topic,

i.e. Clause ₁ below: 'I will talk the mosquito talk...' as the initial sentence constituent and therefore sentence topic is restricted by the following Clause ₂: '...about the mosquito that has sickness.' However, the following juxtaposed Clause ₃: 'Mosquitos are like this...' does not decrease the range of meaning of Clause ₂ because Clause ₂ is specifically about malarial mosquitos while Clause ₃ is about mosquitos in general. Therefore, Clause ₃ signals a new topic (in this particular case, paragraph topic.).

b. no decreased range or scope of meaning or textual/contextual inference between juxtaposed clauses.

Topic: Logical Domain

Cl 2: Restriction

1. /nawk- na a'in to- k- wa-ata-ga / nawk ewa yagot-arogo /
 mosquito-poss talk imm-fut-1S-talk-tns mos. dem. sick -have
 asp tns agr

'I will talk the mosquito talk (about) the mosquito that has sickness.'

Paragraph

Topic:LD Topic:LD

Cl 2: Rest

2. /nawk darewa / abeba ongwende / abetabeta /
 mosquito dem one negative many

'Mosquitos are like this, there is not (just) one (kind but) many.'

Topic: LD

Cl 2: Rest

3. /nawk mwaga yagot-a-gu-rara / nago abeba Mokomap nawk ewa yagot-arogo /
 mosquito some sick- have-neg only one Mokomap mosquito dem sick-have

'Some mosquitos do not have sickness, only one, Mokomap, this mosquito has sickness.'

Paragraph

Topic: LD

Topic: TD

Cl 2: Rest

4. /min-a pasin ewa / akin apambo / min k- o- ra- ga-ragari-ga/
 3S-poss custom dem sun big 3S fut-3S -spkr-dur-sleep-tns
 tns SPN ct asp agr
 asp

'His custom is, (when) the sun is big, he will sleep first.'

Topic: TD

Cl 2: Rest

5. /sisinakat akin k- w-amba-si -rogo ewa / min k- o- ro-dikara-ga/
 afternoon sun fut-3S -if -down-if dem 3pS fut-3S-spkr-get up-tns
 tns SPN agr tns Spn ct agr
 asp

Cl 3: Rest

Cl 4: Rest

/k- w -anta-rakimin-ga / nor-o nabin k- o- ta- sa-rakimindi /
 fut-3S-des-walk -tns man-loc eye fut-3S- des-look-walk
 tns SPN asp agr tns SPN asp for

Cl 5: Rest

yara-mo ewa /
 blood-drink dem

'If the afternoon sun goes down he will get up, to walk around, to look
 for a man, to drink blood.'

Topic: LD

Cl 2: Rest

6. /nor k- w-amba-sobo-rogo ewa / ayba k- o- ra-baba -sasa-ga /
 man fut-3S- if- see- if dem quickly fut-3S-spkr-quick-sit -tns
 tns SPN agr tns SPN ct asp agr
 asp

Cl 3: Rest

Cl 4: Rest

g-anda-gaymatin-ga / manimb gan k- o- ro-sabwatikimindi / k- o- ra-ba- o-ga/
 3S-spkr-bite -tns (germs) fut-3S-spkr-leave fut-3S-spkr-it-go-tns
 Spn unct agr tns SPN ct tns SPN ct asp agr
 asp asp asp

'If he seen a man, quickly he will sit down, bite him, leave germs, and go
 back again.'

Paragraph Sent.

Topic & Topic: LD Cl 2: Rest

7. /g-amba-gaymatin-rogo / yaran mi-nago k- w-amba-rakimin-dogo ewa /
 3S-if -bite -if blood 2pS-poss fut-3S-if -walk -if dem
 SPN agr tns SPN agr

Cl 3: Rest

manimb gan ewa nariba k- o- ra-rakimin-ga mi-na yaran-sar-o ewa /
 (germs) dem with fut-3S-spkr-walk -tns 2pS-poss blood-inside-loc dem
 tns SPN ct agr
 asp

'If he bites you (and) if your blood circulates (then) the germs will walk
 with it (blood) inside your blood stream.'

Topic: SD

Cl 2: Rest

8. / k- w-amba- o-rogo ewa / yaran abe aritogo k- w-amba-hobo-rogo ewa /
 fut-3S-if -go-if dem blood one good fut-3S-if -see -if dem
 tns SPN agr tns Spn agr

Cl 3: Rest

Cl 4: Rest

k- o- ra-napaketi-ga dewana / yagot k- w-anta-yrina /
 fut-3S-spkr-attach -tns finish sick fut-3S-des -come up
 tns SPN ct agr tns SPN asp
 asp

If they go (and) if they see 'some good blood, they will attach to it
 (and) sickness will come up.'

Topic: LD

Cl 2: Rest

9. / manimb abetabeta ki- r-amba-marirara / yaran ko- bo- ra-kibigamon-ga /
 germs many fut-3Pl-if -made blood fut-3pl-spkr-finish -tns
 tns SPN tns SPN ct agr
 asp

Cl 3: Rest

gime- ra-prena /
 fut/2S-spkr-die
 tns SPN ct
 asp

'If many germs are made, they will finish (your) blood, and you will die.'

Topic: LD

Cl 2: Rest

10. / nawk yaran k- w-amba-kibigamon-dogo ewa / marasin k- o- ba-mon-dogo ewa /
 mosquito blood fut-3S-if-finish -if dem medicine fut-2S-if-drink-if dem
 tns SPN agr tns SPN agr

Cl 3: Rest

Cl 4: Rest

manimb ki- ra- ra-pepeta-ga / mi asiba gime- ra-ba -dana /
 germs fut-3Pl-spkr-die -tns 2pS good fut/2S-spkr-it -exist
 tns SPN ct agr tns SPN ct asp
 asp

'If the mosquito finishes (your) blood, (but) you drink medicine again,
 the germs will die, (and) you will be all right again.'

Topic: LD

Cl 2: Rest

11. / marasin ma-gu -mba ewa / gime- ra-prena /
 medicine drink-neg-if dem fut/2S-spkr-die
 tns SPN ct
 asp

'If you do not drink medicine, you will die.'

Paragraph

Topic: SD

12. /nawk ewa kwasan-sar-o o-daga-rogo /
mosquito dem marsh-in -loc 3S-exist-# agr

'These mosquitos live inside the marsh.'

Topic: SD

Cl 2: Rest

13. /kwasan k- o- ba-sokoapi-rogo ewa / nawk ane da ongwende /
marsh fut-3S -if -fill -if dem mosquito there exist neg
tns SPN agr

'If you fill the marshes, mosquitos cannot exist there.'

Topic: SD

Cl 2: Rest

14. /min kuja kwasan-sar-o o-daga-rogo / tin pipian batak gerib arim ga'in
3S only marsh-in -loc 3S-exist-# agr tin rubbish coconut half water canoe

mwan era aribo sisakimarara ewa /
thing dem water fills dem

'He only exists in the marshes where water fills tin cans, coconut shell halves, (and) all of these kind of things.'

Topic: LD

Cl 2: Rest

15. /ki- ra-ba-kayti mari-rara ewa / nawk mi abe ti- k- na-gaymati-name /
fut-2Pl-if-ruin -if dem mosquito 2S one imm-fut-2Pl-bite -neg
tns SPN agr asp tns SPN

'If you ruin all of these things, mosquitos cannot bite one of you.'

Topic: LD

Cl 2: Rest

16. /darewa nawk -o rausim-o gime-ba-mari-rogo ewa / tin pipian batak
therefore mosquito-loc remove-loc fut/2S-if-want-if dem tin rubbish coconut
tns SPN agr

gerib kwawn ewa ko-rausim-inka /
half hole dem imp-remove-imp
agr

'Therefore, if you want to remove mosquitos, remove tin rubbish, coconut halves, and these (type of) holes.'

Topic: SD

Cl 2: Rest

Cl 3: Rest

17. /arimanj apo ewa / tant ko-rinabata-ka / tant nawk-na gawg
waterhole large dem fish imp-put in -imp fish mosq-poss egg
agr

Cl 4: Rest

Cl 5: Rest

k- o- ra-maŋ-ga / k- o- ra-kibigamaŋ-ga / nawk k- o- ra-kaymari-ga /
 fut-3Pl-spkr-eat-tns fut-3Pl-spkr-finish -tns mosq fut-3Pl-spkr-terminate-tns
 tns SPN ct agr tns SPN ct agr tns SPN ct agr
 asp asp asp

'(For) the large water holes, put in fish (and) the fish will eat the
 mosquito eggs, will finish them, (and) the mosquitos will be terminated.'

Topic: LD Cl 2: Rest

18. / dewana / storin t- o-kibin /
 finished story comp-3S-finish
 asp SPN

'It's finished, the story is complete.'

B. Sentence Concatenation

The chart below symbolizes concatenated sentences functioning as paragraphs. The initial sentence sets the spatial, temporal, or logical domain within which the semantically bound sentences are distributed. This constituent is referred to as the paragraph topic. The semantically bound units as a whole are defined as paragraph context spaces. Paragraph context space boundaries are determined on the basis of:

- a. change of paragraph topic,
- b. no decreased range or scope of meaning or textual/contextual inference between juxtaposed sentences,
- c. Noun Phrase + darewa or introducer word or phrase i.e. (vocative),

TOPIC
INTRODUCTION:

1. I will talk the mosquito talk about the mosquito that has sickness.

RESTRICTIONS:
PARAGRAPH A

2. Mosquitos are like this, there is not just one kind but many.
3. Some mosquitos do not have sickness, only one, Mokomap, this mosquito has sickness.

PARAGRAPH B

4. His custom is, when the sun is big, he will sleep first.
5. If the afternoon sun goes down, he will get up to walk around, to look for a man, to drink blood.
6. If he seen a man, quickly he will sit, bite him, leave germs, and go back again.

PARAGRAPH C

7. If he bites you and if your blood circulates the germs will walk with it inside your blood stream.
8. If they go and if they see some good blood, they will attach go it and sickness will come up.
9. If many germs are made, they will finish your blood, and you will die.
10. If the mosquito finishes your blood, but you drink medicine, the germs will die, and you will be all right again.
11. If you do not drink medicine, you will die.

PARAGRAPH D

12. These mosquitos live inside the marshes.
13. If you fill the marshes, mosquitos cannot exist there.
14. He only exists in the marshes where the water fills tin cans, coconut halves, and all of these kind of things.
15. If you ruin all of these things, mosquitos cannot bite one of you.
16. Therefore, if you want to remove mosquitos, remove tin cans, coconut halves, and these types of holes.
17. For the large water holes, put in fish and the fish will eat the mosquito eggs, will finish them, and the mosquitos will be terminated.

CLOSURE:

18. It's finished, the story is complete.

NOTE: The arrows denote the direction of interconstituent restriction.

C. Paragraph Concatenation

Concatenated paragraphs functioning as the discourse whole are best illustrated by indicating their specific function within this 'mosquito talk' discourse. The initial discourse constituent sets the spatial, temporal, or logical domain within which the semantically bound paragraphs are distributed. This constituent is referred to as topic. The semantically bound units as a whole are referred to as a discourse context space. Discourse context space boundaries are determined on the basis of:

- a. change of discourse topic,
- b. no decreased range or scope of meaning or textual/contextual inference between juxtaposed discourses.

Mosquito Talk Narrative Discourse = + Topic Introduction + Restricting Paragraphs + Closure

+ Topic Introduction: Sentence 1 'malarial mosquitos'

+Restricting Paragraphs:

Paragraph A: Sentences 2-3 'malarial mosquito species identified'

Paragraph B: Sentences 4-6 'malaria contraction'

Paragraph C: Sentences 7-11 'malarial parasites'

Paragraph D: Sentences 12-17 'carrier eradication'

+ Closure: Sentence 18

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