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## 1. INTRODUCTION

*Siroi grammar* is for the most part an orderly presented account of Siroi language data. Siroi is a Non-Austronesian language spoken by approximately 700 people living on the Rai Coast of the Madang Province of Papua New Guinea. In her description of the grammar, from stem to discourse, Wells has followed the principles of tagmemic theory as developed by Longacre. I will first make some comments about the contents of the volume. Having done that, I will draw the reader's attention to some Siroi phenomena that may illustrate some theoretical insights about language, hence the title of this review.

## 2. GENERAL COMMENTS ABOUT THE CONTENTS

As many other tagmemic descriptions, this volume, too, follows the general hierarchical outline of language: stem, word, phrase, clause, sentence, paragraph and discourse. An inherent problem of this hierarchy is also shown by Siroi grammar. Each level is defined in terms of other levels, without ever grounding the theoretical terms in a system-independent way. Wells has tried to curb the proliferation of construction types. She notes for example that an earlier description had included 28 different paragraph types. The present volume lists only seven. As Wells says, it is increasingly difficult to use only grammatical criteria when distinguishing types at these higher levels (p.135). Unfortunately, she lacked time to pursue a more thorough semantic analysis of paragraph and discourse. However, the five discourse types, narrative, procedure, descriptive, hortatory and epistolatory, are characterised by semantic features, which she does correlate with grammatical ones. For example, the narrative genre is typified by past tense, chronological order and participant orientation (cf. Longacre 1974). A corollary of these features is

the frequency of Tail-Head linkage (cf. Thurman 1975 for this term), i.e. most sentences in narrative texts begin with a recapitulation of the last clause of the preceding sentence.

The differentiation of paragraph types seems to me less motivated. The distinct advantage of the sections on paragraph and discourse is that they provide a wealth of examples in the context of natural speech. It might have enhanced the value of earlier sections, in particular those describing word and phrase level, if those examples had also been given in more context, as some of my comments below will indicate.

## 2.1 MORPHOPHONEMICS

The introduction gives two kinds of morphophonemic rules: additions and contractions. The additions list a few rules for epenthetic vowels: u, i and a. It would seem that a more careful analysis would assign some of these vowels to either the stem or affix between which they occur. The contraction rules are either too powerful or should be intrinsically ordered following the epenthesis rules. For example, one of the contraction rules says that a root-final consonant is deleted if followed by a consonant. But all the addition rules list various vowels to be inserted in the same environment C \_ C. Besides that, if *nomben* 'up there' is derived from *not* 'that' + *amben* 'up there', as given on p.8, then there must be a rule that deletes a C in the environment V \_ V. By the way, *not* 'that', is said to contract with all demonstratives, e.g. *te* 'this', *nzi* 'down there' and *si* 'over there', *noten*, *nonzin*, *nosin*, except with *ta* 'that' (p.21), forming conclusive demonstratives. I think it likely that *not* is in itself a contraction of *no* + *ta* 'that' with elision of the final vowel, so that there is no exception here. A further conjecture: *no* might be a phonological variant of *nu*, which is listed as a nominalising clitic.

A revision of the morphophonemics might turn some of the irregularities in certain verbs (pp.32-34) into more regular processes.

## 2.2 WORD

As a subcategory of word, Wells lists three clitics: *-nge* 'specific' *-nu* 'nominaliser' and *-ok* 'attributive'. If these are clitics, they are not isolatable units as other words. It is not clear why other clitics,

such as -k 'in, out of' (p.22) and -am 'locativiser' (p.21) are not mentioned here. I will discuss the status of both -nu and -am later, as both of these morphemes are also called intention suffixes (p.77). It does not become clear why -ok 'attributive' also appears as -kok, cf. (1).

- (1) dune - kok 'undomesticated'; ndin - ok 'forthright' (p.14)  
 bush - ATT    road - ATT

"The clitic -nge occurs phrase-finally and marks Location, Time and Subject, and Object of a Motion clause" (p.12). It only marks the subject when this needs to be contrasted to someone or something else. If both subject and object are animate and the subject follows the object, the subject needs to be marked with this clitic (p.73). It is not restricted to animate subjects, however. Most of the occurrences of this clitic in the texts (Ch.7, Discourse) are found on locative expressions. There is one clear example of contrast between subjects, on p.206:

- (2) tango - nge wangil ul - ig\* ta ...  
 man - SPEC wallaby shoot-3-P.PR that 'When men shoot a  
 age - nge wangil make - ede\* ta ... wallaby... '  
 dog - SPEC wallaby bite -EP.PR that 'When dogs bite a  
 \* Morphological alternants (see page 30) wallaby... '

The various functions of -nge do not seem to make it possible to establish some system of ergativity.

With regard to verbs (2.2 on p.27), Wells lists five verb-classes: Ng, K, T Zero and Object-oriented verbs. These are five possible affixes to the verb-stem. She observes that -ng has the form of the verb 'to say', -k of the verb 'to do', and -t of the verb 'to take', and suggests that an alternative analysis would be to treat these combinations as complex verb-stems. Unfortunately, she does not pursue this suggestion, for example, by investigating whether certain verbs may take more than one of these. Or, if that were not possible, by stating which kinds of verbs take either of these three class-markers. One thing becomes clear and that is that -k may occur instead of non-singular object suffixes, but, she says, this morpheme should not be confused with the class-marker -k, since they are mutually exclusive. If the morpheme is actually the stem of 'to do', then mutual exclusive-

ness would in fact be an argument for identifying the two -k's as one and the same thing, and there would be a slight difference between (3) a and b, whereas they are given with the same gloss (p.28).

- (3) a Kanger - ning - et            'I am seeing them'  
       see     - them - 1S.PR  
       b Kanger - k - et            'I am seeing them'  
       see - GENERAL OBJECT- 1S.PR

## 2.3 PHRASE

In 2.1.1.2 nu is identified as the 'nominalisation clitic', which has a number of functions. It functions in the 'Location Compact Noun Phrase' (p.41), as in (4).

- (4) Banu - nu tango                'a Bongu man'  
       Bongu- NS man

It also appears in the 'Possessive Compact Noun Phrase' (p.41), as in (5).

- (5) mbo kupe - nu                'the leg of a pig'  
       pig leg - NS

The form nu is also used for the third person singular pronoun (p.19), which is made into a possessive pronoun by suffixing -ne > nuŋe (p.20). When this possessive pronoun is used, we find ourselves dealing with another phrase: the 'Possessive Pronominal Phrase' (pp.41-42), as in (6).

- (6) nuŋe bara    nuŋe            'his brother'  
       his    brother his

As (6) indicates, this phrase may have two instances of the possessive pronoun. None of these examples indicate why nu has been called 'nominalising clitic'. Before I venture some comments regarding the phrases (4), (5) and (6), I will first give examples that seem to warrant the label 'nominalising':

- (7) waŋ kopra kil - anu            'the boat which collects copra'  
       boat copra take =NS                                    (p.14)  
       (8) tango bale - mba ny - anu 'those who kill and eat a man'  
       man    kill - DEP eat - NS                                (p.14)

One of the morphophonemic rules inserts an a between root-final consonant and nominaliser -nu. I would hazard that this a is the same morpheme that Wells identified as dependent marker (p.32), which then

is taken to be an allomorph of *-mba*. I will come back to these verbal affixes below, section 3.1.1.

It is rather unfortunate that these examples are not given in the wider context of a clause or sentence, which may have helped to identify the – presumably rather subtle – differences. As things are, I would like to be allowed some conjectures.

First, it may not be accidental that the geographical identification of people, as in (4), makes use of the same morpheme that also indicates a part-whole relationship, as in (5). A similar feature occurs in *Waskia* (cf. my review of Ross with Paol 1978 in Reesink 1978). It must be conceded that *Siroi* has a different order, whereas the corresponding *Waskia* examples had identical order. At the same time, *nu* in (5) is optional, as Wells notes, and its absence would yield a structure attested in many other Papuan languages:  $N_1 + N_2$  in which  $N_1$  modifies  $N_2$ .

Secondly, with regard to (6), it seems strange that most possessive NP's conform to the general Papuan structure Possessor + Possessed, while only kinship terms allow an occasional reversion, i.e. with second or third person possessors (p.42), or a combination of preceding and following possessive pronouns. One wonders if the wider context would not give some more clues, as, for example, is the case with another spurious phrase, the 'Pronominal Phrase' (p.46).

The 'Pronominal Phrase' is given as 'Specifier + Head', the specifier being filled by various NP's, the head by a personal pronoun. Both (9) and (10) are given as illustrations of this phrase.

- |      |                   |                            |
|------|-------------------|----------------------------|
| (9)  | <i>sine tango</i> | 'We men', i.e. PRON + NOUN |
|      | <i>we man</i>     |                            |
| (10) | <i>Rut nu</i>     | 'Ruth', i.e. NOUN + PRON   |
|      | <i>Ruth she</i>   |                            |

In chapter 5, Sentence, sentence topic is given as one of the sentence peripheral items. One example actually incorporates (9) and it negates (9) as an example of the pronominal phrase, whose formula does not allow for (9) in the first place, cf. (11).

- (11) *Sine tango ande tumbran masken kin - it le ...* (p.77)  
*we man one village far go -3.S.PR and*  
 'We (people), when a man goes to a distant village...'

Another example (p.76) shows how the Pronominal Phrase is used for a topicalisation device which is also known as NP + Pronoun copy:

- (12) mbeŋ fe nu make - n - uwa ta ...  
 snake taipan it bite-you-3S.PO that  
 'The taipan snake, if it bites you...'

There do not seem to be any structural reasons why this phrase could not be included in the 'Apposition Phrase'.

Most of the phrases are differentiated on the basis of the semantic content of their postpositions.

A separate 'Positional Phrase' (p.53) is set up, which does not seem to be structurally different from other phrases. The chart of clause constituents (p.72) indicates that this phrase covers 'after-thoughts', i.e. the only constituent that follows the predicate. No examples in context are given.

Finally, I would have liked to see some discussion of the difference between the nominal negator kuga (p.51) and the verbal negator nda (p.59). Moreover, no motivation is given for pre- or post-verbal position of nda, as in (13)a and b.

- (13)a nda katese - na 'He did not understand.'  
 NEG understand - 3S.PA  
 b nye nda - k - ina 'He did not eat (the lizard).'  
 eat NEG - CM - 3S.PA

## 2.4 CLAUSE

Chapter 4, Clause, makes use of transitive, intransitive and semi-transitive verbs, which are nowhere clearly discussed. A separate type of clause is set up to account for the expressions of emotions. Both psychological and physiological states are covered by this term, with a special clause type. As Wells notes, the third person singular subject affix on the verb could be considered to represent the emotion in question (p.64). Like many other Papuan languages, Siroi may mark the clause preceding the emotion clause as same subject-referent following, even though the clause has a different subject, i.e. the third person, whereas the clause itself is always marked for different subject-referent following. This pattern conforms to what I have described for

other Papuan languages (Reesink 1981). It is illustrated by (14).

- (14) Ye pasa ta is - mba\* ye kiki - y - ina le\*\*  
 I talk that hear - DEP I shame me - 3S.PA and  
 "Hearing that talk I was ashamed and...."

\* mba 'dependent marker' signals same referent as following subject:

\*\* le 'and' signals different referent as following subject.

The chapter on clause ends with only a few examples of relative clauses here called 'included clause' (p.73). Although we do not learn which functions can be relativised on, the examples do indicate that it is the far deictic ta 'that' that is being used as the relativiser, cf. (15).

- (15) am ruga - nge nayo - ng - ina ta minya - ng - ina  
 eye mud - SPEC ruin - CM - 3S.PA that wash

'She washed the eye which the mud had injured.' (p.73)

Example (15) also illustrates that the relative clause in Siroi is of the 'replacive' type (cf. Downing 1978), i.e. the head noun is internal to the RC. It also indicates that the head noun, having the status of topic, is fronted within the RC: am 'eye' precedes ruga 'mud', with the result that its subject is marked as such by the specific clitic -nge.

## 2.5 SENTENCE

Most important in the description of sentence structures are the conjunctions that are used. Since these conjunctions give rise to my theoretical extrapolations in section 3, I will not discuss them here. If conjunctions are diagnostic for various sentence types, the absence of any conjunction may also be of importance.

Wells has labelled sentences without a grammatical link 'correlation sentence', which may encode a number of different semantic relations: contrast, coupling, a variety of paraphrases, etc. It seems a rather general feature of languages to strongly prefer a  $\emptyset$  link for what Grimes (1975) has called 'equivalence' between two arguments. Longacre (1976) has listed these same examples under the heading 'paraphrase'. Siroi is no exception in disallowing a grammatical link. A major pause is often all that is needed between two equivalent, or paraphrasing clauses, or sentences. (Notice, the same relationship exists between sentences to form the 'Counterpart Paragraph' (p.147)).

An example is (16).

- (16) Nu isukus - am kumun kuga Ø nu gubak ndo min - na  
 he eat - int enough not he hungry only be - 3.S.PA  
 'He was unable to eat, he just remained hungry.' (p.122)

Clauses juxtaposed this way may express a number of other semantic relations, such as warning, circumstance, efficient cause, assessment (pp.124-125). As an example (17) is given.

- (17) Kurau - k - a.Ø bari - ng - i - k - at  
 be careful-CM-2.S.PO fall - CM - PO CM 2D.IP  
 'Watch out or you might fall.' (p.125)

Notice that the English gloss makes use of 'or'. Fillenbaum (1978) has pointed out that 'or'-sentences are the preferred paraphrases for English IF-warnings, as contrasted with 'and'-sentences for IF-promises. A more literal gloss would be 'Watch out, you may fall.' A sentence like (17) is clearly related to (18), which is called a 'Non-Speech Quotation Merged Sentence' on p.81.

- (18) Ne pate-ng-a bari-ng-i -k -at ng -a biy -it  
 you jump-CM-DEP fall-CM-PO-CM-2S.IP QUO-DEP hold-3S.PR  
 'So that you will not trip and fall, he is holding you.'

I will discuss this type of sentence further in 3.2.2. Here, I will only raise the question why constructions such as (17) are analysed as one sentence. In spite of the close semantic relationship, they can still be seen as a sequence of sentences, bearing in mind that many, if not all, languages prefer juxtaposition when the cause follows the effect, or the warning precedes the events to be prevented, etc.

Finally, *Siroi grammar* gives only scarce information about questions, indirect questions, rhetorical questions, imperatives and other pragmatic aspects of grammatical structures.

### 3. CLAUSE AND SENTENCE CONJUNCTIONS

What does all this have to do with the Whorfian hypothesis? As it is generally known, the Whorfian hypothesis contends that people's cognition is determined by the structure of the language they speak. This view has been challenged: English speakers, for example, even if they lack the richness of the Inuti vocabulary for 'snow', can still perceive



the various states in which snow appears. Subsequently linguists have proposed various readings of the linguistic relativity hypothesis.

Fishman (1960), for example, discusses four levels of analysis with regard to the Whorf hypothesis. The two deepest levels refer to the correlation between linguistic structure and its cultural and behavioural concomitants. This correlation is very difficult to establish if one wants to avoid circular reasoning. Fishman suggests that we forget 'proving' or 'disproving' the hypothesis as such, but that we investigate the types of language structures and behavioural categories that seem to be affected and the degree and modifiability of such affects. Haiman (1976) has difficulty with the premise that the categories of different languages are obviously different. He suggests that "any meaningful distinction made in one language will be made in every language" (p.270), whether overtly or covertly.

The original hypothesis may have implied to some people that certain languages are more primitive than others, e.g. when they are not able to handle lexicalisation of many aspects of a highly technological society. The hypothesis that there is a close connection between the worldview of a culture and the structure of its language is not meant to have any such evaluative implications. Many structural features of a language reflect the way in which a particular culture views categories as same or different. In an illuminating extension of the concept 'metaphor', Lakoff and Johnson (1980) have shown how we understand one thing in terms of another. Our conceptual system is structured according to metaphorical understanding. They maintain that the word '*in*' (19) is the same word in every sentence.

(19) Father is *in* the kitchen.

They will arrive *in* an hour.

He is deeply *in* love.

Try to say it *in* other words.

The basic meaning of *in* represents a spatial orientation. It can then be used in the other sentences on the basis of a number of metaphors that English allows: TIME is SPACE, LOVE is an OBJECT, a CONTAINER, WORDS are CONTAINERS. Not every language would be able to use the spatial preposition *in* in the same set of functions. Different speech communities develop different speech conventions, they develop different

metaphors in order to understand abstract concepts.

To conceive the word *in* in (19) as the same lexical item is rather different from saying that the four instances of the word are homonyms. It is also different from saying that this is a case of polysemy. In many grammars, especially of so-called 'exotic' languages, morphemes of similar form are very often handled as homonyms. A form can be translated by very different English glosses. Hence, it is claimed, they could not possibly represent the same morpheme. The very use of the term 'exotic' when referring to lesser known languages that seem very different from Indo-European languages reflects the same attitude. I do not say this to impute unethical attitudes to 'ethnocentric' linguists, but only to indicate how difficult it is for any person to step outside his own conceptual system.

Quite a step away from treating similar morphemes as homonyms is to see that they form instances of polysemy, as Haiman (1978) did for the morpheme *-ive* in Hua, which not only functions as a disjunctive co-ordinator, but also as an interrogative particle, a condition marker and a topic marker. One should keep in mind at this point, that I am not denying the existence of accidental homonyms, which may result from sound changes, or whatever. Instances such as can 'container' and can 'being able' probably exist in all languages. Such cases of homonymy form an exception to what Haiman (1980) calls isomorphism: the one-to-one relation between sound and meaning, or rather: the signans and signatum. Given this principle of language, the existence of absolute synonymy has been questioned by many linguists. For example, Chafe (1970) as well as Bolinger (1977) have argued against meaning-preserving transformations. They contend that every different surface structure has a unique meaning, even if the difference with other structures is so subtle that it is not always easy to determine. As a corollary of this view, Bolinger has challenged the idea that English there and it, or is, could just be dummy symbols, without any content. He says that there is still some locative sense in there, whenever it is used.

It seems to be that Lakoff and Johnson have made a step towards what we could call the relativity theory in linguistics. By this I am not referring to the strong reading of the Whorf hypothesis, that of cultural relativism determined by language. But I think that their

development of metaphorical understanding can help us to analyse each language in its own right, while maintaining the basic theoretical concepts as linguistic tools that can be used universally. Concepts such as nouns, verbs, demonstratives, conjunctions, etc. will still be applicable to most, if not all, languages. But if, say, a certain demonstrative in language A is used in a number of contexts where language B uses other categories, that does not mean that the demonstrative in language A is a set of homonyms. As Haiman (1978) suggested, it is a good test to exclude homonymy if two (un)related languages use two forms that clearly are not cognate in a set of identical environments. In Reesink (1978) I compared the Usan demonstrative *eng* with Waskia *mu*. In both languages these demonstratives are used in various contexts, with the result that the English glosses include: 'the', 'embedder', 'if', 'but', 'because', 'when'. My conclusion was that the different glosses do not indicate homonyms in Usan or Waskia, but rather that the material determined by *eng* or *mu* is similar in its syntactic function. This could be captured by a pragmatic function: 'GIVEN that'.

When I describe the clause and sentence conjunctions and their functions as they are presented in *Siroi grammar*, I will base myself upon these principles. One form stands for one meaning, unless the reasoning necessary to arrive at the one meaning seems too much contrived. If Siroi joins Waskia and Usan in its use of a demonstrative, then that is a clear indication that the demonstrative is one form with one meaning.

In order to establish the meaning of some of these conjunctions, I will make use of the insights I received from Lakoff and Johnson. This I expect will help to show the 'genius of the language'. In other words, we will discover which metaphors Siroi uses and how it is similar to or different from other Papuan languages.

### 3.1 CO-ORDINATING CONJUNCTIONS

I take it as a universal feature of languages that the basic unit of communication can be added to another unit as well as embedded into it. In other words, that which we call clause or sentence can be co-

ordinatingly and subordinatingly conjoined to a member of the same category. (Some readers may be irritated by the fact that I do not clearly distinguish clause from sentence; others may wonder why I bother to mention this as a problem. In what follows I will simply take Siroi clauses and sentences for granted as they are presented by Wells.)

Siroi grammar lists only three conjunctions which I would call co-ordination: *le* (ds = different subject following) 'and' and *sulumba* (ss = same subject following) 'and', both used as links in a sequence sentence, and *ko* 'or'. I will disregard *ko* 'or' here. I will, however, include in my discussion the morpheme *-a* with its allomorph *-mba*, which are described as marking a dependent verb.

### 3.1.1 *-a* AND *-mba*

The Dependent Sequence Suffix [*-a*] signals that another action is to follow. The verb thus affixed, relies for tense, person and number on the independent verb which follows it.

The Dependent Sequence Allomorph *-mba* is obligatory on certain verbs, but seems mutually exclusive with the general object suffix *-k* (which, recall, is at least homophonous with the stem of 'to do'). *-mba* optionally occurs on all other verbs. (cf. p.32).

It is significant to note that the form *mb-* is the stem of 'to ascend'. To see that the dependent sequence *a* allomorph *-mba* could be in fact *mb-* + *-a* 'ascend + dep. seq. sx.'. it is only necessary to hypothesise that Siroi uses the metaphor ASCENDING when moving from one clause to another. It clearly does not do that always, because there are many dependent verbs that do not have *mb*, but use one of the class markers. In other words, when you 'say' (= *cm ng*), or 'do' (= *cm k*) or 'take' (= *cm t*), you do not 'ascend'. But in all these cases the verb is still dependent, marked with *-a*. And in all instances of *-a*, the subject of the following clause has the same referent as the subject of the preceding one.

If I am allowed some further conjecturing, consider the following motivation for the choice of ASCEND for most of the dependent, i.e. non-final clauses. Lakoff and Johnson connect the metaphor UNKNOWN IS UP; KNOWN IS DOWN with sentences such as (20), but also with the fact that

statements typically end with 'falling' intonation and questions with 'rising' intonation.

(20) That's still up in the air.

Now, I do not have Siroi equivalents for (20), I do not even know whether dependent clauses receive a rising intonation and final clauses a falling one. But I would not be surprised if at least the intonation did confirm this hunch. The hunch would include the expectation that a dependent verb with -mba has some more distance between it and the following clause than other dependent verbs, as for example in (21).

(21) Ye tuku tol - mba wakei - mba biret kuer - k - a  
 I REL pour - DEP make - DEP bread slice -CM - DEP  
 s - ina  
 give.me-3S.PA

*'She poured and fixed (one) for me and cut bread and gave it to me.'* (p.79)

I have not been able to apply any formal test for the alleged distance that mb- 'ascend' creates (NOTE). One could inquire, for example, whether the negative can only extend its scope across a dependent verb with -a, as in (22), and not across a verb with -mba, as in (23), both examples given to illustrate the 'Closely Knit Merged Sentence' (p.79).

(22) Ye nyamgan nda so -t -a ny - am - ngit  
 I food not seek -CM-DEP eat - INT - 1S.FU  
*'I will not seek and eat food.'*

Teg armba bale - mba kuapi - k - at  
 fowl two kill - DEP cook - CM - 3S.PA  
*'He killed and cooked two fowls.'*

### 3.1.2 sulumba AND le

sulumba is one of the connectives used in a 'Sequence Sentence'. It functions as 'and' when the same subject follows, but le is 'and' when a different subject follows. As possible members of the conjunction Wells lists clause, and almost all the different sentence types that are distinguished in her analysis. But inspection of all the sentence, paragraph and discourse examples shows that not ANY clause can be co-ordinated by these connectors. Both sulumba and le only follow fully inflected verbs, i.e. dependent clauses with final verbs, as in (24).

- (24) Kum - na le rare -mba pik - mba son ar - nail  
 die-3S.PA and singe -DEP cut - DEP bundle two - 3D.PA  
 sulumba paso - k - a mambo nuge sa - na  
 and roast - CM - DEP younger.brother his say - 3S.PA  
 'It died, and he singed off (the hair), cut it up and  
 made two bundles and having cooked it, he said to his  
 younger brother, ...'

The two connectives seem odd. The one denoting same subject following (from now on: SR for same referent) is more complicated than the one denoting different referent as following subject (DR). This does not conform to the general pattern I have established for many Papuan languages in which a sequential SR relationship is morphologically LESS complex than DR relationships (Reesink 1981). But notice that sulumba has as last syllable mba which we saw in 3.1.1. is probably made up of mb- 'ascend' and -a. If we find also that sulu means 'to finish' (p.57), the oddity is removed. We find that Siroi -a signals a SR relation and le means DR 'and'. A DR relation is never expressed with a dependent or non-final verb. But if a final verb, i.e. fully inflected for tense and subject person/number, is used in a chain of SR relations, it would appear that Siroi speakers conceive this as a series of actions that have to be finished before another action can go on.

Unfortunately, there is no explicit statement regarding the restrictions and possibilities of the SR and DR markers -a and le regarding the shifts in actual referents of the subjects in consecutive clauses. The fact that sulumba is used in (24) as a bridge between ar - naik 'two - ED.PA' and sa - na 'say - 3S.PA' indicates that in Siroi the transition plural → singular may be SR, as in many other Papuan languages (Reesink 1981). Similarly, in the pattern of other Papuan languages, a temporal clause may be skipped by the switch-reference mechanism if it is background material, as (25) illustrates (this is a shortened version of a sentence on p.183).

- (25) Ait ande balus puro - naig sulu - mb - a  
 time one aircraft come - 3P.PA finish-ascend - DEP  
 (...) makau (...) ire ny - umb - a min - naig  
 cattle kunai.grass eat-ascend - DEP be -3.P.PA

le balus -nge puro - mb - a  
 and aircraft-SPEC come - ascend - DEP

*'One day the aircraft came and then, while the cattle were eating kunai grass, the aircraft came and ...'*

Whereas *le* as *'and'* seems to be a clear-cut co-ordinator (p.15 says that it also co-ordinates nominal material), the instances of SR sequences are conceived of as ASCENDING or FINISHING, with the suffix *-a*, the origin of which I wouldn't want to guess.

### 3.2 SUBORDINATING CONJUNCTIONS

One clause or sentence may be embedded in the place of an argument of another clause or sentence. This is illustrated by the fact that such embedded clauses take the same determiner as a nominal constituent does. This is one form of subordination that Siroi uses: sentences may be seen as nominal elements. Or, using Lakoff and Johnson's terminology description of EVENTS as OBJECTS is one of the basic metaphors in Siroi (and many other languages). Another way of embedding sentences is to see them as OBJECTS of certain verbs, notably the verb *'to say'*.

#### 3.2.1 DEMONSTRATIVES

The far deictic *ta* *'that'* is not only used as a deictic to refer to real world referents. There are many examples to indicate that textual reference is also accomplished with this demonstrative, cf. (26).

(26) ngarɔnak sugo kenmba ta ndon  
 whiteman big-PL three that with

*'With the three foreign leaders.'* (p.51)

*ta* is only used if the nominal element has been mentioned before. An introduction of a participant is marked with *ande*, *'one'*, as in (27).

(27) le mare ande Siyapan ande nyunu Kubu...  
 and day one Japanese one his.name Kubu

*'And one day, a Japanese named Kubu (came) ...'* (p.182)

In other words, *ta* *'that'* is used to refer to a given element. As everything which is in the speaker's perceptual field is given (one does not refer to a tree that is right in front of the speaker as *'a tree'*), so everything that has been mentioned has been given. We understand

DISCOURSE as SPACE. It should not be surprising then, to find that EVENTS that are GIVEN (or treated as such) are referred to by the same demonstrative. As connectives for the 'Corollary Sentence', Wells lists *ta* 'that' and *tanu* 'that'. She notes that *nu* is the nominalising clitic. As the examples in 2.3. showed, it is not easy for speakers of an Indo-European language to find one meaning for this morpheme. In many examples it seems to convey a possessive, (4) and (5), or a purposive meaning, as in (7). This latter meaning is also apparent in (28).

- (28) ... *ambonga ailsu - nu kin - it*  
*first poles - for go - 3S.PR*  
*'... first he goes for poles.'*  
*Ailsu kil - mba puro patikate sulumba*  
*poles take.them - DEP come he.puts.them and*  
*muli - nu kin - it*  
*vine - for go - 3S.PR (p.198)*  
*'After collecting the poles he goes for the vines.'*

In examples on pp.105-112, both *ta* and *tanu* are glossed as 'since', 'so', 'whenever', 'but', 'if', 'although'. The difference between *ta* and *tanu* may be very subtle, but given the meaning of *nu* in the examples (4), (5), (7), (8) and (28), *tanu* may indicate a little stronger sense of consequence. This could explain why *tanu* is not used in a sentence expressing 'Frustrated Modality' (p.109), that is, when the desired action is not realised, as in (29).

- (29) *Nu wi - nu tuku ta nu kiko - na*  
*he call - INT REL that he shy -3S.PA*  
*'He wanted to call out but he was shy.' (p.109)*

One more example may suffice: *tanu* in (30) is glossed as 'whenever', since it is used in a 'Corollary Sentence encoding conditionally with a Universal Quantifier' (p.106).

- (30) *Fe - nge tango make - te tanu ail ngaro ande*  
*taipan- SPEC man bite - 3S.PR that tree bark one*  
*ny - am tuku mine nda - k - ate*  
*eat - INT REL be NEG - CM - 3S.PR*  
*'Whenever a taipan bites a man, there is no tree bark*  
*for him to eat (and be cured).' (p.107)*



The universal quantifier seems to be deduced from the fact that the verbs are in the present tense. Hypothetically (p.108) requires potential and future tenses. It can be readily seen that the embedded clauses in (29) and (30) are structurally quite similar to the relative clause, as in (15). Siroi uses its demonstrative in the same way as Usan or Waskia use theirs: as determiner on a GIVEN NP, as relativiser, and as conjunction covering English glosses as 'if', 'when', 'but', 'since'. These Papuan languages take all these constructions as instances of something that is GIVEN. The same demonstrative occurs also in ndeta, glossed as 'if', as in (31).

- (31) Sawe piy - wa ndeta ye min - am - ngit  
 rain rain - 3S.PO if I be - INT - 1S.FU  
 'If it should rain, I will stay.' (p.128)

Even though it is not listed as a conjunction on p.16, the form ndetanu also occurs as a conditional conjunction (p.128). Again, the semantic difference between the two forms is rather subtle, and not easily recoverable from the given examples.. Nor is the difference between tanu-hypothetical sentences and ndeta(nu)-conditionals easy to see. In both cases, the protasis has almost always a potential tense affix. Presumably this is a less certain future tense, or a subjunctive. Since the indefinite article is ande 'one', cf. (27), I would suggest that nde - ta is a compound of 'one'+ 'that', used for sentences that might be less GIVEN than those that are subordinated by ta or tanu.

Another use of ande 'one' is in the connective kande, which is glossed as 'and', 'but', and 'if' (p.113). The origin of k- in this word is not clear. It could come from k- 'to do' but I think it more likely that the word ko 'or' is contracted with ande. One of its uses is to express contrafactuality, in which case both the protasis and apodosis end with this connective, as (32) illustrates.

- (32) Ye min - en kande ye kanger - en kande  
 I be - 1S.PA if I see - 1S.PA if  
 'If I had been (there) I would have seen it.' (p.119)

There are other Papuan languages that mark both protasis and apodosis of a contrafactual conditional with a form that is reminiscent of the disjunctive connective 'or'. If this analysis is correct, Siroi would understand the contrafactual conditional as a case of : X or one, Y or one.

The final subordinating conjunction that I want to discuss, does not use a demonstrative. It is tukunu 'because', which, as Wells notes, "consists of the relator *tuku* plus the nominaliser *nu*" (p.129). We have already seen the relator *tuku* in example (29). As the postposition in the referential *tuku* phrase, it is translated as 'on behalf of', 'about', 'for', 'in view of' (p.52), as in (33).

- (33) *nguromuŋ tuku (kubɛ - wam - ngit )*  
*sweet potato REL relate - INT - 1S.FU*  
 '(I will talk) about sweet potatoes.' (p.52)

It is also used to indicate a form of possession, as in a 'Modified Noun Phrase' (p.44, cf. (34)) which might be better seen as a NP following a benefactive: 'Those two old houses for him.', if more of the context were known.

- (34) *Nu tuku wande urfu - nu armba ta*  
*He REL house old - NS two that*  
 'Those two old houses of his.' (p.44)

The glosses given for *tuku* are close enough to the meaning of 'because', when a clause is embedded as the nominal element in the postpositional phrase, cf. (35).

- (35) *Ne kuayar - at tuku - nu ne tango te ndoŋ pasa*  
*you steal -2S.PA because you man this with talk*  
*sungo - mba sa - k - ate*  
*big - DEP say- CM - 2S.PR*  
 'Because you stole it you are arguing a great deal  
 with this man.' (p.130)

To conclude this section, I want to point out that all of these subordinate clauses have two things in common: they occur first in the sentence, and they are all marked with a determiner that is used in noun phrases, which indicate either an introduction of the nominal element or its givenness. The subordinated clauses share these features with those NP's that are considered as topics, the things a speaker wants to talk about and accordingly assumes to be recoverable in the listener's immediate consciousness. Topics are seen as either an instance of a class of things, when they are not in view, or as a particular item that can be pointed out when it is in the perceptual field.

## 3.2.2. THE VERB 'TO SAY'

So far, we have not discussed sentences that convey 'purpose'. In Siroi as in many other Papuan languages (cf. Deibler 1971 for Gahuku), purposive meanings are expressed by the verb 'to say'. It is as if these languages have lexicalised the theory developed by Russian psychologists (e.g. Vygotsky 1962) that cognition is derived from speech, which they call 'inner speech'. Language originates in social interaction (cf. Halliday 1978). Once it has developed, it is used in thought processes. Intention is a typical human faculty. We say and do things with a certain purpose. We can conceive of actions as consequences of some deliberation, or speaking in our minds. Siroi is a typical example of Papuan languages in that it understands various semantic relations in terms of actual speech. The verb 'to say' is used not only for intention, as in (36), but also for prevention (37), pretence (38) and (39) and wish (40).

- (36) Tango nane wa pik - am ng - a idus - de sulumba  
 man they boat cut - INT say - DEP think - 3S.PR and  
 ambonga ail so - t - a du e sinam kin - ig  
 first tree see- CM - DEP bush inside go - 3S.PR  
*'When men decide to make a canoe, first of all they go  
 to the bush to find a suitable tree.'*

(Notice that the word ambonga 'first' could very well be a compound of ambe 'up there' (related to mb 'ascend') and ng- 'say' and -a 'dependent verb marker : 'and SR').

- (37) Ye kusre - y - i - k - at ng - pinder - k - it  
 I leave me - PO - CM - 3S.IP say-DEP run - CM - 1S.IP  
*'So that he would not leave me behind, I ran.'*

Or: *'Saying, he was doing (kat) may leave me (kusreyi) I ran.'*

Compare (37) with (18) and its counterpart (17), where the event to be prevented is stated following the preventive action.

The use of the potential and immediate past tenses in these purpose sentences may need some clarification. This is somewhat hazardous, since it would involve a reinterpretation of the given glosses. But

notice that the gloss for (18) makes use of a future tense for the final verb of the embedded sentence. Taking the class markers ng as instances of the same verb 'to say', I would suggest the following gloss for (18): 'He is holding you, saying 'you were doing you may fall after you said jump', or: 'You said jump and you were doing as if you were going to say fall', saying this he is holding you.'

(38)..tumbran tango... ta ne kanger - k - ate sulumba  
village man that you see - CM - 2S,PR and  
tumbran kise puro - waig ng - a ne  
village different come - 3P.PA say - DEP you  
ngumneniq - mba ...  
turn.away.from.them - and (p.212)

'(When) you see men from our village, you ignore them  
as if they were (strangers) from another village...'

The same meaning is expressed with reduplicated verbs, in which case the "final form always takes the Ng class-marker" (p.36), as in (39).

(39) Kiny - et kiny - et - ng - ate  
sleep - 1S.PR sleep - 1S.PR - CM - 3S.PR  
'He is pretending to sleep.' (p.36)

As the interlinear translation indicates, the class-marker ng in fact functions as the verb 'to say' in a way that is consistent with a normal quotation, cf. (41), in that the verb of the quoted material has a first person subject affix: 'I am sleeping, I am sleeping, he is saying'. A 'Sequence Sentence' may encode contrafactuality, if Base 1 is filled by a 'Quotation Clause' (p.95). As example (40) shows, this sentence is structurally similar to the other intention-sentences.

(40) Ndam te nguromu ng - a le ye ny - i  
stone this sweet potato say - DEP and I eat - 1S.PO  
'I wish these stones were sweet potatoes so that I  
might eat (them).'

or: 'Saying these stones are sweet potatoes, and I may eat them.'  
Although Siroi appears to have various verbs denoting 'to say', the form ng is the one used for quotations. The regular quotation in (41) shows that the above mentioned instances of thought are understood in terms of speaking.

- (41) Wapu sa - k - ina "Ye siŋka sa - k - et.  
 Wapu say - CM - 3S.PA I truly say - CM - 1S.PR  
 Ye yiŋe piro mbol - nge t - it", ng - ina  
 I my garden on - SPEC take -1S.IP say - 3S.PA  
 'Wapu said: "I am speaking the truth. I took it  
 from my garden", he said.' (p.131)

#### 4. CONCLUSION

*Siroi grammar* is a good data paper. At various places Wells has indicated which morphemes are used in crucial function words, such as conjunctions. I have taken these morphemes as instances of the principle 'one form for one meaning'. This requires an understanding of the unique way in which the language understands one thing in terms of another thing. A consistent application of this principle would enable the linguist to reduce construction types even further than Wells has already tried. The frequent use of NP elements such as demonstratives and postpositions as conjunctions between clauses and sentences indicates how *Siroi* treats subordinate clauses as newly introduced for established topics. The widespread use of the verb 'to say' illustrates how *Siroi* speakers express intention and other thought content in terms of actual speech.

The way in which *Siroi* uses the verbs *mb* 'ascend' and *sulu* 'finish' in sequences of actions ascribed to the same referent illustrates a metaphorical understanding of such sequences that is probably unique. That is, as far as ASCEND is concerned. FINISH seems more common for Papuan languages, which may use this verb also for DR sequences, which is also illustrated by the fact that Tok Pisin uses *pinis* in a very similar way.

The use of demonstratives, illustrating the metaphor DISCOURSE is SPACE, seems typical not only for Papuan languages. It may well be a universal feature of language. I am not suggesting that every language includes the same set of conceivable semantic relations in the use of the same demonstratives or postpositions. For example, Usan uses the near deictic *e* 'here', where *Siroi* uses the far deictic *ta* 'that' as subordinating conjunction. Lakoff and Johnson (1980:134) have shown

why English understands an instrument as a companion: Accompaniment uses the instrumental preposition 'with'. But Siroi uses mbi for instrument and ndoŋ for accompaniment. Not all languages will encode REASON in terms of a BENEFACTIVE relation as Siroi does with tuku.

I am not saying that speakers of a language readily recognise the fact that they understand many linguistic relations in terms of spatial relations. There are probably not many English speakers that would concede that the infinitive marker to in (42) is the same as the locative marker to in (43).

(42) To know someone is to love him

(43) They went to the market.

But it seems more than accidental that different languages use locative markers on infinitive-like verbs. Siroi uses -am both as locativiser, as in (44), and as infinitival suffix on the verb when this is part of an intentional clause, as in (45).

(44) tumail - am                    'in front of' (p.8)  
face - LOC

(45) Kite ye pastor tuku fonde kus - am k - at  
today I pastor REL fence tie - INT go - 1S.IP  
'Today I went to fix the pastor's fence.' (p.86)

Notice, however, that Siroi also uses another intention-suffix: -mbim (46), which might be related to the instrument postposition mbi.

(46) Agan sungo ta ka - mbim sa - k - ina  
thing big that go - INT say - CM - 3P.PA (should be  
'That big thing was wanting to go.' (p.85) 3S.PA)

The fact that language users fail to see this kind of metaphorical use of locative elements is due to the same reason that they do not recognise 'dead' metaphors as they do poetic ones.

I hope to have shown how an analysis of a language in its own right indicates how speech communities understand certain linguistic relations in terms of spatial relations. This is based upon the fundamental metaphor DISCOURSE is SPACE. If we base ourselves on the principle of 'one form for one meaning' we are able to illustrate the uniqueness of a language. In so far as certain metaphors appear to have universal validity we can understand what languages have in common.

Studying human languages in this way allows us an insight in the conceptual systems of different cultures. When the conclusion is that "the structure of thought in its turn reflects the structure of REALITY" (Haiman 1980:537), one is committed to an objectivist philosophy. As Lakoff and Johnson have pointed out, an objectivist view of metaphor implies that certain similarities are part of the real world. The objectivist philosopher would have to show that metaphorical understanding highlights similarities that are there, independent from human observers, that they are part of an objective truth.

The fact that different speech communities categorise the linguistic relations in different ways indicates that the similarities on which such categorisation is based are *not* objectively given. Rather, the world can only be known, i.e. categorised, through the medium of language. And human beings, through the use of language, categorise the objectively given features in terms of similarity and difference. New metaphors as we are learning them, for example, when we are exposed to other languages, give us a new understanding of the world. The similarities are created by the particular metaphors a language employs in dealing with linguistic entities and relations. When we understand Whorf's hypothesis this way, there is no danger of evaluative comparison of languages in terms of primitive versus sophisticated. Each language serves each culture equally well in understanding the world as its members encounter it.

The principle of 'one form for one meaning' may show the uniqueness of each language, but it does not imply, of course, that the one form of language A should always be translated by one form of language B. The meaning of ng 'to say' or ta 'that', for example, has to be translated by various forms in English, as Wells has done. The unique categorisation in each language of semantic roles, known as cases, or of subordinate clauses implies that translatability varies from language to language. Givón (1978) has pointed out this problem with regard to semantic categories such as definiteness and referentiality between certain Bantu languages and English.

In order to translate naturally, however, it would seem necessary that the translator understands how various language structures are related to each other within the conceptual systems of the speech

communities between which the translation process takes place. In other words, only after the basic metaphors of a language are known is it possible to see how particular instances should be mapped onto the metaphors of another language. This indeed means that translatability between two languages is only partial. This should not be too disconcerting. If the understanding of the metaphorical relations between concepts by individual speakers within a speech community is at least partially based upon personal experience, then even here, mutual understanding is only partial at best. Communication exists in order to approach perfect understanding between two members of the same community. In the same way, translation from one language to another can come close enough to be an effective communication. We are not so much imprisoned by the language we speak that we can not acquire a second language with a different conceptual system, but easy it is not.

I am grateful to Margaret Wells for setting out the data of Siroi grammar so clearly that it was not too difficult to find the essential meanings of crucial morphemes which indicate some of Siroi's basic metaphors.

NOTE: In response to this hypothesis, Margaret Wells (personal communication) suggested the Aspectual Morphemes as described on p.98ff - particularly puro 'arrive' and ndek 'descend' - seem to give a flavour to the text similar to that of mb- 'ascend', as I am suggesting here.

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