

Is It Real? Or Is It Even Realis?*

Larry Erdman and Tim Goring

The University of Texas at Arlington and Summer Institute of Linguistics

1. Introduction

It has long been recognized that many Austronesian languages tend to mark clauses with one of two features commonly termed “realis” and “irrealis”. This marking is said to indicate the “reality” or “actuality” of the event(s) described: realis clauses describe past or present events known to have happened or to be happening. Irrealis clauses indicate future, hypothetical, or conditional events.

Siar¹ is an Austronesian language spoken by some 2200 people living in the Lak and Kandas census districts of the New Ireland Province in Papua New Guinea. An examination of the use of realis and irrealis in a Siar historical narrative text suggests that these markers may have discourse functions that differ from those typically associated with them. In particular, our study found that a particle that was initially analyzed as marking realis, actually marks “foreground” or “mainline” in historical narrative. “Off-mainline” clauses are irrealis (unmarked).

This calls into question the analyses of the functions of realis/irrealis in other Austronesian languages. Is marking “reality” vs. “non-reality” its only function, or are there other equally important functions as well? Could it be that in Siar, and perhaps other related languages, “realis” is a misnomer, and the particle actually marks emphasis or prominence?

* Many thanks to Ilah Fleming for her time and valuable input into this text analysis.

² Lithgow and Classen (1968) surveyed New Ireland in the mid 60's and placed Siar in the Patpatar-Tolai subfamily of languages. In 1969 Capell used a typological approach to divide the NGAN languages into two groups: AN1 and AN2 depending on whether they were event or object dominated. At that time he classified Siar as an AN2 language. For reasons unknown to us, he reversed the classification in his 1971 work. Following the later work, Siar would be classed as AN1.

2. Realis and Irrealis in Austronesian Languages

The meaning and use of the term *realis* seems to be an area of confusion and consternation among linguists working in New Guinea Austronesian languages (NGAN) ever since Dempwolff noted the phenomenon in his 1939 grammar of Yabem² saying:

... the Yabem verb is no "time word" ("Zeitwort", the usual German term for a verb); it lacks specific "tenses." Moreover, there is no distinction made between intransitive and transitive verbs, no causative and other derived form, no passive construction. Rather the only psychological idea formation that is expressed in the event is the attitude of the speaker to it, whether he is speaking of a reality or whether the act is presented to him as a picture (image). It is a difference of Real Mode and Imaginative Mode. (translation from Capell 1971:288)

In his discussion of Austronesian languages, Capell (1971:288) noted that:

A further feature of [Austronesian] languages worthy of attention is the general presence of a *realis-irrealis* distinction in the verbal systems, i.e., a basic distinction between actions which are regarded as actually occurring and actions which are merely thought about.

In her study of Tolai,³ a closely related language and member of the same family as Siar, Mosel (1984:113) distinguishes an *irrealis* particle *gala* which she says indicates that the action, process or state denoted by the nucleus of a verbal phrase is not real, but that the wish exists that it occurs, that it would occur or would have occurred under certain conditions, which, however, are or were not fulfilled.

Hutchisson (1986), working in Sursurunga,⁴ a language on New Ireland closely related to Siar, also notes a *realis/irrealis* distinction. *Realis* is unmarked, while *irrealis* is marked by the particle *na* on the subject marker preceding the verb.

In his grammar of the New Ireland language Tungak,⁵ Fast (1988:36) refers to the

²Yabem is an Austronesian language in the Rai Coast-Northwest New Britain family of languages spoken as a first language by about 2000 people in the Huon Gulf area of the Morobe Province in Papua New Guinea (Grimes 1988:685).

³Tolai, officially known as Kuanua, is the first language of 60,000 people on the Gazelle Peninsula in the East New Britain Province of Papua New Guinea. Like Siar, which it is closely related to, it is a member of the Patpatar-Tolai subfamily of languages (Grimes 1988:681). Under Capell's 1971 classification, Tolai would be viewed as an AN1 language.

⁴Sursurunga is an Austronesian language in the Patpatar-Tolai subgroup of the Patpatar family of languages (Beaumont 1972) spoken by approximately 3000 people in the New Ireland Province of Papua New Guinea (Hutchisson 1987:1). In addition to being closely related to Siar linguistically, and thus classified as an AN1 language in Capell's typological scheme, it is geographically near to the area where Siar is spoken.

⁵Tungak, currently called Tungang by those who speak it, is an SVO AN1 Austronesian language spoken by approximately 9365 people living on the islands of New Hanover, Tingwon, and Umbukul in the New Ireland Province of Papua New Guinea. It is a member of the Northern New Ireland subgroup of the New Ireland-Tolai family of languages (Grimes 1988:681).

possibility mood suffix *-b* on the subject marker and the mutually exclusive intention marker *ka*. He states:

The marker *-b* follows the subject agreement. It expresses the speaker's view that the action or state might be true.

He also says:

The intention marker *ka* marks the attitude of the speaker as being one of desire or intention to do the action. It can occur only with first person singular and never cooccurs with the possibility mood marker *-b*.

It appears that *-b* and *ka* function as realis and irrealis respectively, even though Fast does not use those particular terms in his description.

Regarding verb phrase modality in yet another New Ireland language, Madak,⁶ Lee (1989:84) writes

A state or event in Madak marked for modality would not in actuality have happened. It would merely be dealing with the hypothetical, the possible, or the uncertain. In Madak there is only one marker *gi* which covers all the possibilities.

Lee (p. 79) also notes a certainty contrast between the remote future tense and certain future tense, saying, "While the time range is the same, the degree of evidentiality is not. The certain future, marking an event, states that the event will certainly take place." However, he does not posit any correlation between the certain future tense and the [irrealis] particle *gi*, even though they occur in identical positions within the verb phrase.

Discussing modality in Mangap-Mbula,⁷ Bugenhagen (1989) argues that irrealis should not be treated as a single homogeneous linguistic category. Instead, he tries to break it into several more basic notions, based on "the amount of certainty [factuality] that a speaker has regarding a proposition" (p. 12). His focus is

that the common denominator of much of what comes under the rubric of "irrealis" is non-factuality, which is then modulated by other modal parameters, including: 1) degree of certainty and 2) whether the factuality is presupposed or asserted. (p. 12)

After examining Mangap-Mbula modal forms, Bugenhagen goes on to distinguish twelve categories of the irrealis realm, including the unmarked "asserted factuality" (p. 13). It appears he is building a case for realis as a cline as Hopper and Thompson (1980) have done for transitivity.

⁶Madak is an SVO "Austronesian language located in the central part of the New Ireland province of Papua New Guinea. More than 2600 people speak this language which consists of five separate dialects" (Lee 1989:65). It is an ANI language which comprises the Madak subgroup of the New Ireland-Tolai family of Oceanic languages (Grimes 1988:661).

⁷"Mangap-Mbula is an Austronesian language spoken by some 2200 people on Umboi Island in the Morobe Province of Papua New Guinea" (Bugenhagen 1989:37). It is a part of the Rai Coast subgroup of the Rai Coast-Northwest New Britain family of languages (Grimes 1988:662).

All of the analyses to this point have examined the realis modal on a clause or sentence level. Linguists are now discovering things normally thought to function only on the clause level have an all together different role on a discourse level. Cooper (1992) shows how *mate*, normally glossed "that", functions not as a space-related deictic (pointing) device, but as a discourse topic overlay device in 98% of the texts he has examined.

Those linguists who have examined the use of realis/irrealis in texts and inter-clausal relations have found functions similar to those we find in Siar. Hinton (1991:93-94) finds that irrealis in Tugun (a language of Indonesia) marks future events; past and present events are unmarked (realis). This is what one would expect given the traditional definition of "realis/irrealis". However, in looking at interposition relations, Hinton finds that irrealis is also used to signal purpose (i.e., the goal of a prior action):⁸

- 1) *Manu kihou carak ra-ma le marr-inu er.*
 bird Kihou many 3p-come rel 3p.IRR-drink water
 'A bunch of Kihou birds came to drink water.'

In this example, the verb in the purpose clause ('to drink water') is marked with *marr-* 'irrealis'.

Results (situations that follow from other prior conditions), on the other hand, are in the unmarked realis form:

- 2) *Ni n-inu er mohon le ni-kanen peu.*
 3s 3s-drink water cold REAL 3s-stomach pain
 'He drank cold water, so his stomach hurts.'

Discussing aspect in Miniafia,⁹ Wakefield (n.d.), like Hinton, also notes that realis functions supra clausally. He found that sequential narratives are normally marked by the irrealis particle, while realis is used for procedural discourse. The marker then switches to its opposing counterpart to identify background material within each discourse genre. Wakefield identifies background material as "quotes, non-germain scenes, events stating purpose or cause, and events used as modifiers of major participants in a relative clause."

⁸ Abbreviations

1s	first person singular	DIRL	directional	NM	noun marker
3s	third person singular	DU	dual	PL	plural
1pn	first person plural inclusive	EXCLAM	exclamatory	PN	proper name
1px	first person plural exclusive	FUT	future	REAL	realis
3p	third person plural	IRR	irrealis	REC	reciprocal
CAUS	causer	KT	kin-term	SG	singular
COMPL	completive	LOC	located	TR	trial
CONJ	conjunction				

⁹ Miniafia is an AN2 language in the Oro province of Papua New Guinea.

3. Realis and Irrealis in Siar Historical Narrative

Siar exhibits what appears to be a realis/irrealis contrast. Lula Mitalis, whose mother tongue is Siar, once informed me that if a Siar speaker says to me "On Monday the men will (realis) put the roof on your house", they will do it, barring a tidal wave, earthquake or other unforeseen act of God. On the other hand, if they say "On Monday the men will (irrealis) put the roof on your house", it may or may not get done. This parallels the Madak modal particle *gi*, which Lee says is best translated as "perhaps" (Lee 1989:84).

As Dempwolff found for Yabem (Capell 1971:288), Siar speakers mark realis with *k* in the verb phrase. Specifically in Siar, with a singular AGENT, *k* occurs as a prefix on the singular verbal pronouns. With any non-singular AGENT, the plural verbal pronoun occurs first, and the realis *k* follows it prefixed to the free-standing third person singular verbal pronoun. Irrealis is unmarked.

The Siar marking of realis with a non-singular AGENT, closely parallels Mosel's (1984:113) findings on the marking of irrealis in the closely related North Coast dialect of Tolai. She found the marked items to be juxtaposed with those in Siar as the irrealis marker *gala* occurs between the subject marker and the nucleus of the verb phrase.

Analysis of a Siar historical narrative,¹⁰ makes it immediately clear that the realis *k* is not marking either tense¹¹ or the speaker's presumption of factuality. All events in the text are historical and factual. Only in a quotation is the future tense used — and then with *k*. Even a conditional future is marked with *k*:

3) PH 012-13

"*Aoh, da-tul k-i-l is.*

EXCLAM 1pn-three REAL-3s-FUT return

Sak na da-tul k-i-l is ap toh

not.good if/then 1pn-three REAL-3s-FUT return and NM:PL

keken da-tul k-i-l ongrong mah."

leg 1pn-three REAL-3s-FUT lazy yes

"'Oh boy, let's go back. It won't be good if we go home and don't do anything because we're so tired.'"

¹⁰ The material used in this analysis is a text I collected in March 1987 that I call the Pig Hunt narrative. It was given to me by John Tonting, a young man who was then about 21 years old, just a few days subsequent to his returning from a pig hunt. It is roughly 68 clauses long, and is a good representative of a Siar narrative discourse. Each example given below includes a designation (PH 0xx) where xx is the clause number.

¹¹ "Siar has a binary tense system with a future versus non-future split. Future tense is marked whereas non-future is not" (Erdman 1991:47). Both the future and non-future tenses may occur with or without the realis marker *k*. For further information on the Siar tense system, see Erdman (1991).

In many cases, a statement is repeated to show ongoing or long-term action. The *k* usually appears in the first statement, but is not used in the repetitions:

4) PH 032-33

Ma-tuh k-i ar-li.

1px-TR REAL-3s REC-run

Ma-tul ma-tuh ar-li ma-tuh ar-li ma-tuh ar-li.

1px-three 1px-TR REC-run 1px-TR REC-run 1px-TR REC-run

'We (3) ran there. We went and went and went.'

So, it is clear that *k* is not a simple indicator of tense or reality, since the repetitions are further description of the same past, factual event.

The *k* tends to appear in the first line of a referent span (a section of text in which the mainline verbs have agreement with the same subject), but is not present in all spans. It rarely occurs more than once in any span (see repetition example above). It disappears entirely for the last 16 lines of the text.

The realis marker *k* functions to highlight those events the speaker considers salient in historical narrative text. This can be found in an examination of the relationships between the propositions in the text. Events which follow logically from other events, reiterations, elaborations, and culturally script-predictable events are unmarked (irrealis).

4. Quotations and Logical Arrangements

All semantic quotatives (S-QUOTATIVE)¹² in the text are marked with *k*. A QUOTATIVE is one of two constituents of a semantic Conversation Block, the other being a QUOTATION.

S-Conversation Block = QUOTATIVE + QUOTATION

5) QUOTATIVE

PH 050-51

Ap yau k-a warai,

and 1s REAL-1s said

¹²The analysis that follows in this paper was done using the stratificational (strat) linguistics model as taught by Ilah Fleming at the Summer Institute of Linguistics and The University of Texas at Arlington. Strat "models language as a system of several related layers (or 'strata') of structure" (Crystal 1991:327). Although Fleming posits 5 stratal layers, in this paper our emphasis has been on the inter-proposition construction relationships on the semantic stratum. We are using an upper case letter followed by a dash "-" to denote the stratum being discussed. A construction name begins with an upper case letter with the rest of the letters in the name being lower case. The constituents of a construction have all upper case letters. Thus in the example below, we are talking about the semantic stratum (S-) construction of Elaboration with its constituents of something ELABORATED and an ELABORATION.

S-Elaboration = ELABORATED + ELABORATION

QUOTATION

"*Dat i-l DUP-yahwɪth sah mah tigau.*"
 1pn 3s-FUT *-mumu that's.it yes here
 'And I said, "We will mumu (that's it yes) here.'"

However, no other type of proposition construction is consistently marked. This suggests to us that *k* indicates something about the relationships between the propositions in the text, and that quotations have a particular function in this narrative.

Consistent patterns of the use of *k* can be seen in interproposition relationships. In logical arrangements (LA) in which one event follows logically from a preceding one, the prior condition is usually marked with *k*, and the subsequent result is not. Instead, it is followed by *rakana* 'thus' or 'so'.

S-Logical Arrangement (LA)= LA (Prior) + LA (Subsequent)

6) a. LA (Prior)

PH 011-13

...*ap yau k-a warai e siat ning,*
 and 1s REAL-1s said NM:KT age.set those

"*Aoh, da-tul k-i-l is*
 EXCLAM 1pn-three REAL-3s-FUT return

Sak na da-tul k-i-l is ap toh
 not.good if/then 1pn-three REAL-3s-FUT return and NM:PL

keken da-tul k-i-l ongrong mah."
 leg 1pn-three REAL-3s-FUT lazy yes

'..and I said to the group, "Oh boy, let's go back. It won't be good if we go home and don't do anything because we're so tired.'"

6) b. LA (Subsequent)

PH 014

Ma-tuh is rakana ka tim an e.
 1px-TR return thus DIRL south LOC down
 'We thus headed back down to the beach.'

7) a. LA (Prior)

PH 017-18

Ap e Douglas k-i warai,
and NM:KT PN REAL-3s said

"Dat i-l bas mor i ning aloh ep malum
lpn 3s-FUT first follow 3s those again NM:SG fresh.water
ning na kamtan an-ding i nor."
those that ??? LOC-that 3s flows

'And Douglas said, "We will first follow again this water that still flows."'

7) b. LA (Subsequent)

PH 019

Ma-tuh inan rakana.
lpx-TR go thus
'So we went.'

There is one interesting exception to this:

8) a. LA (Prior)

PH 003-04

Ap yau k-a warai tar di-rau, "Ma-tuh k-i inan."
and 1s REAL-1s said COMPL 3-two lpx-TR REAL-3s go
'and I said to them, "We go."'

8) b. LA (Subsequent)

PH 005

Ma-tuh k-i inan ap ka tong an Siur rakana.
lpx-TR REAL-3s go and DURL north LOC PN thus
'So we until we thus come to Siur.'

Here, the subsequent event is also marked with *k*. In this case, the subsequent event contains crucial location information that was not given in the prior (quotation).

For the most part, quotations form the prior conditions for subsequent actions: the speaker's suggestion or command is followed by activity by the other participants. This explains why quotatives are consistently marked with *k*.

Although the following semantic propositions of Reiteration and Elaboration appear on the surface to be quite similar, they differ in one critical aspect. A semantic Reiteration restates known information while a semantic Elaboration takes a proposition and adds new information in order to flesh it out. Reiterations have the first statement marked with *k*, and leaves the repetitions unmarked:

S-Reiteration= REITERATION + REITERATED

9) a. REITERATED

PH 005

Ma-tuh k-i inan ap ka tong an Siur rakana.
 lpx-TR REAL-3s go and DIRL north LOC PN thus
 'So we went until we came to Siur.'

9) b. REITERATION

PH 006-07

Ma-tuh inan on ep bang sen ka ungat.
 lpx-TR go to/for NM:SG night yet DIRL on.top
Ma-tuh inan ap ma-tuh inan ap ma-tuh inan.
 lpx-TR go CONJ lpx-TR go CONJ lpx-TR go
 'We went long into the night. We went and went and went.'

Likewise, elaborations have the elaborated statement marked and leave the elaborations unmarked:

S-Elaboration = ELABORATED + ELABORATION

10) a. ELABORATED

PH 024

Ma-tuh k-i talar mah ari-n ep malum na
 lpx-TR REAL-3s confused yes REC-3s NM:SG
 fresh.water that
pin an-ding i nor.
 still LOC-that 3s flows
 'We were confused there in the water where it was flowing.'

10) b. ELABORATION

PH 025-28

E Terry i ar-li ka sai gali.
 NM:KT PN 3s REC-run DIRL west on.top
Douglas di-ra Toni an toh gali i-ning ep
 PN 3-DU PN LOC NM:PL on.top 3s-those NM:SG
deh malum. Ma-ra mah-e Katang ma-ra
 other.side fresh.water lpx-DU yes-NM:KT PN lpx-DU
ni gau on malum. Ma-ra tur lik.
 stop here inside fresh.water lpx-DU stand little
 'Terry ran (west) to the top of the mountain. Douglas and Toni were on top at the other side of the water. Katang and I stopped there in the water. We stood still'

In this example, the first statement is a summary of the situation, and the following statements give the details.

5. Transitions

Quotations, logical arrangements, elaborations, and reiterations account for most of the uses of *k* in this narrative. In a few cases, *k* seems to mark transition from one activity to another:

- 11) a. PH 038-39
Ma-tuh k-i is mah.
 lpx-TR REAL-3s return yes
Ma-tuh inan ma-tuh inan ma-tuh inan ma-tuh inan,
 lpx-TR go lpx-TR go lpx-TR go lpx-TR go
 ‘So we headed back. We went and went and went.’
- 11) b. PH 040
ap ma-tuh mah lik kes ma-tul DUP-mai.
 CONJ lpx-TR yes little sit lpx-three *-chew.betelnut
 ‘and we took a little rest and chewed some betelnut.’
- 11) c. PH 041
Ma-tuh k-i mah lik lolos is.
 lpx-TR REAL-3s yes little carry return
 ‘We carried (it) on our shoulders for a little way.’
- 11) d. PH 042-43
Ma-tuh k-i inan. Ma-tuh inan ma-tuh inan
 lpx-TR REAL-3s go lpx-TR go lpx-TR go
ma-tuh inan ap ka tong mah-an-e.
 lpx-TR go CONJ DIRL north yes-LOC-down
 ‘We walked some more. We walked until we went down.’

Here it appears that *k* marks a shift in the activity being described: sitting and chewing to carrying and walking. The question remains why sitting (11b) and chewing are not marked with *k*. One explanation is that *k* may mark shifts between transitive (two-participant) and intransitive (one-participant) activities. Going, sitting, and betelnut chewing are all single-participant actions, so no transition is needed.

6. Script-Predictable Events

The only remaining problem is the absence of the realis marker *k* in certain parts of the text that do not fit into the above patterns. One interesting section immediately follows the killing of the pig:

12) PH 035-36

Ap e Douglas k-i pos a-mat ep boroi
and NM:KT PN REAL-3s hold.nose CAUS-die NM:SG pig

sai-an lon malum. Ma-tuh anat kawas
west-LOC inside fresh.water 1px-TR come ascend

ma-tuh DUP-dot i ma-tuh ep ngas i-inan sen.
1px-TR *-bind 3s 1px-TR NM:SG road 3s-go yet

'And Douglas killed the pig in the water. We came up, tied up the pig, and headed back down the path.'

Our hypothesis is that these are predictable events based on cultural scripts: the normal thing to do after killing a pig is to tie it up and start for home. It would be interesting to see what details would be given if this story were told to another Siar speaker instead of to an outsider. Script-predictability makes these sections of the narrative similar to the logical arrangements discussed above: the steps follow logically from the initiation of the script.

7. Conclusion

In summary, it appears that the realis marker *k* indicates the outline of the story, the elements that the narrator considers salient. This corresponds roughly to what has been called the "backbone" (Longacre 1983), "event-line" (Grimes 1976), "communication situation mainline" (Fleming 1988), or "foreground" (Hopper and Thompson 1980) of the narrative. Propositions not marked with *k* are off-mainline, and elaborate the salient propositions or are predictable from them to some degree. Whether the *k* actually marks realis in other contexts, or is always a prominence marker (which may share some characteristics of realis) remains to be explored.

Our most important conclusion is that text analysis must be included as an integral part of linguistic research. Accurate understanding of syntax depends on it. It would be interesting to see how the realis/irrealis distinctions in the Austronesian languages mentioned by Capell (1969, 1971) actually function in texts. Our guess is that some surprises would be in store for the linguists who do the research.

References

- Beaumont, C., D. T. Tryon, and S. A. Wurm, eds. 1972. *Papers in Linguistics of Melanesia 3*. Canberra: Australian National University.
- Bugenhagen, Robert. 1989. Modality in Mangap-Mbula: an exploration of its syntax and semantics. *Language and Linguistics in Melanesia* 20:9-39.
- Capell, A. 1969. *A Survey of New Guinea languages*. Sydney: Sydney University Press.
- _____. 1971. The Austronesian languages of Australian New Guinea. *Current Trends in Linguistics* 8:240-340.
- Cooper, Russell E. 1992. That's what I'm talking about: discourse level deixis. *Language and Linguistics in Melanesia* 23:95-105.
- Crystal, David. 1991. *A Dictionary of linguistics and phonetics*. 3rd ed. Cambridge: Basil Blackwell.
- Dempwolff, O. 1939. *Grammatik der jabem sprache auf Neuguinea*. Hamburg: Friederichsen de Gruyter.
- Erdman, Laurens B. 1991. A grammatical sketch of a Siar text from the perspective of two strata. M.A. thesis, University of Texas at Arlington.
- Fast, Lesley. 1988. *Tungak grammar essentials*. ms: SIL, Ukarumpa, Papua New Guinea.
- Fleming, Ilah. 1988. *Communication analysis, a stratificational approach*. 2 vols. Dallas: Summer Institute of Linguistics.
- Grimes, Barbara F., ed. 1988. *Ethnologue, languages of the world*. 11th ed. Dallas: Summer Institute of Linguistics.
- Grimes, Joseph. 1976. *The thread of discourse*. The Hague: Mouton.
- Hinton, Bryan. 1991. Aspects of Tugun phonology and syntax. M.A. thesis, University of Texas at Arlington.
- Hopper, Paul J., and Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56:251-99.
- Hutchisson. 1986. Sursurunga pronouns and the special uses of quadral number. In *Pronominal Systems*, ed. by Ursula Wiesemann. Tubingen, Germany: Gunter Narr Verlag Tubingen.
- _____. 1987. Verb serialization in Sursurunga. ms: SIL, Ukarumpa, Papua New Guinea.
- Lee, Robert. 1989. The Madak verb phrase. *Language and Linguistics in Melanesia* 20:65-114.
- Lichtenberk, Frantisek. 1983. *A grammar of Manam*. Oceanic Linguistics Special Publication No. 18. Hawaii: University of Hawaii Press.
- Lithgow, David and Oren Claassen. 1968. *Languages of the New Ireland district*. Port Moresby: Dept. of Information and Extension Services.
- Longacre, Robert. 1983. *The grammar of discourse*. New York: Plenum Press.
- Mosel, Ulrike, 1984. *Tolai syntax and its historical development*. Pacific Linguistics D-92. Canberra: Australian National University.
- Wakefield, David C. n.d. A contextually-constrained aspect-switching rule in Miniafia. ms: SIL, Ukarumpa, Papua New Guinea.

Presented 23 May 1991

Revised 8 July 1992

Larry Erdman
SIL, Box 74
Ukarumpa via Lae
PAPUA NEW GUINEA

Tim Goring
Apartado 466
2350 San Francisco de Dos Rios
San Jose, COSTA RICA