Nominalization of Interrogatives in Kucapungan Rukai[*]

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This paper aims at investigating the nominalization of verbal interrogatives in Kucapungan Rukai. These verbal interrogatives have undergone a morphological process incorporating an underlying argument into the verbal base *-tumane*. Through this common base, a complex set of interrogatives is derived, in which the members exhibit distinct grammatical functions and differ in morphology, syntax and semantics. The data adducted in the discussion regarding their morpho-syntax suggest that these verbal interrogatives undertake nominalization as other verbs in general do.

Key words: Austronesian language, Formosan language, Rukai, Budai, Kucapungan, interrogatives, incorporation, nominalization, morphosyntax

Rukai is an Austronesian language spoken in southern Taiwan. According to previous linguistic surveys, Rukai includes six main dialects (Budai, Labuan, Tanan, Maga, Tona and Mantauran). The dialectal variant under investigation in this paper is spoken in the *Kucapungan* village and subgroups with *Budai*.

Based on the criteria employed in Huang et al. (1999), it is observed by Chen (1999) that Kucapungan Rukai exhibits three types of interrogatives: nominal, adverbial and verbal. As shown in Table 1, they differ in their morphology, syntax and semantics.

Table 1: Interrogatives of Rukai

Type	Category	Rukai Interrogatives	Meaning
I	**Nominal**	aneane	who
		manemane	what
		ngituatumane[2]	what kind
		piya / thaynu	how many (much)
II	**Adverbial**	inu	where
		kuygane	when
		luygane	when
III	**Verbal**	a-[3]	why
		watumane / (L)itumane / kiatumane / (L)ikitumane / satumane	do what
		matumane / (L)ikatumane / ngiatumane	how
		pangiatumane / (L)ipangitumane / kiapangitumane / (L)ikipangitumane	how

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[2] The interrogative **ngi**-*tua*-**tumane** is composed of two parts: the prefix *ngi*-, and the *tumane*-base which is partially reduplicated. While **ngi**-*tua*-**tumane** is expected to occur as a verb as in (ia), it also functions as a nominal (ib):

(i) a. *ngi-a-tua-tumane*   ka   ta-sibengeraz-ane?
         NGI-NF-RED-IRB   NOM   NF-wear_flower_NMZ
         'How does she look like as she wears flowers?'

   b. ma-da-dalame-su   ki   *ngituatumane*?
       STAT-RED-like-2S.BN   OBL   what_kind
       'What kind (of thing) do you like?'

In (b), *ngituatumane* is the object marked in oblique case. This case-marking suggests that *ngituatumane* should be considered as a nominal, derived from its verbal counterpart. However, this is not the case for *ma-tumane* and (*L*)*i-katumane*. For this reason, we group the interrogative *ngituatumane* in the nominal type.

[3] The interrogative *a-* 'why' is a bound morpheme. It always precedes the personal suffixes as affixation. For the reason that it attracts bound personal pronouns and is only followed by infinite verbs as in serial-verb constructions, *a-* is treated as a verbal interrogative. For example:

(i) a. *a*-su   kela   kucapungan?
         why-2S.BN   come   Kucapungan
         'Why did you come to Kucapungan?'

   b. *a*-ni   ngu   kucapungan   (ka   lasu)?
       why-3S.BN   go   Kucapungan   (NOM   man)
       'Why did he/the man go to Kucapungan?'

Among the type III interrogatives (i.e., verbal interrogatives) a productive nominalization process is observed. All are formed with the base -*tumane* (see the shaded part of Table 1). To my knowledge, this phenomenon has not been reported in other Formosan languages.

These are the points covered in this paper: morphology of the verbal interrogatives (sec. 1); their syntax, including the notions of transitivity and grammatical relations (sec. 2); their indefinite usage (sec. 3). Section 4 is a summary of findings.

By profiling a complex morpho-syntactic phenomenon in Rukai, the data in this paper shed new light on the differences between Rukai and the other Formosan languages.

1. Morphology

Here I shall discuss the morphology of certain interrogatives sharing the morphological base -*tumane* (henceforth **tumane-words**) and examine the nominalization processes they undergo. A close inspection of the internal structure of the base -*tumane* reveals that a syntactically covert argument is incorporated into this fossilized base thus excluding the co-occurrence of redundant arguments. I shall then discuss how tense, voice, and reduplication are morphologically realized within these nominalized interrogatives.

1.1 Formation of interrogatives with the -*tumane* base

The verbal interrogatives of Rukai containing the base -*tumane* are created by the affixation of different categories, including:

a. **tense** affixes: -*a*- (non-future) and (*L*)*i*- (future);
b. **voice** and **verb category** affixes: *w*- (active voice, action verb), *ma*- (active voice, state verb) and *ki*- (passive voice);
c. other affixes designating other syntactic and semantic functions: *sa*-, *ngi*- and *pangi*-.[4]

Table 2 analyzes the internal structure of the *tumane*-words. In sets I and III they are active, subcategorizing internal arguments, while those in set II are stative, not

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[4] The prefix *sa*- (< PR *sa*-) in the nominalization of the verbal interrogatives indicates instrument, use, application or purpose. This reflex is realized as *'a* in Mantauran (Zeitoun 2000).

subcategorizing any internal argument. They differ from one other in morphology, semantics, and syntax, and should not simply be considered active/stative counterparts.

Table 2: Internal structures of the *tumane*-words

Set	tumane-words	Morphology	Meaning
base	-tu-mane	VERBZ-MANE	
I	w-a-tu-mane	ACT-NF-VERBZ-MANE	'do what' (ACTION)
	ki-a-tu-mane	PASS-NF-VERBZ-MANE	
	(L)i-tu-mane	FUT-VERBZ-MANE	
	(L)i-ki-tu-mane	FUT-PASS-VERBZ-MANE	
	sa-tu-mane	INST-VERBZ-MANE	
II	ma-tu-mane	STAT-VERBZ-MANE	'how' (STATE)
	(L)i-ka-tu-mane	FUT-KA-VERBZ-MANE	
	ngi-a-tu-mane	NGI-NF-VERBZ-MANE	
III	pangi-a-tu-mane	PANGI-NF-VERBZ-MANE	'how' (MANNER)
	(L)i-pangi-tu-mane	FUT-PANGI-VERBZ-MANE	
	ki-a-pangi- tu-mane	PASS-FUT-PANGI-VERBZ-MANE	
	(L)i-ki-pangi-tu-mane	FUT-PASS-PANGI-VERBZ-MANE	

Before going any further into morphology, let us take a brief excursus into the syntax of the *tumane*-words, with focus on their non-future realization.

Set I *tumane*-words are transitive verbs, taking objects or infinite verbs as complements:

ACTIVE

(1) *w-a-tumane*-su?[5]
ACT-NF-IRB-2S.BN
'What did you do?'

(2) *w-a-tumane*-su mu kucapungan?
ACT-NF-IRB-2S.BN go Kucapungan
'What did you do to go to Kucapungan?'

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[5] The abbreviations used in this paper are: ACT, active; B, bound; DEM, demonstrative; F, free; G, genitive; IRB, interrogative base -*tumane*; FUT, future; INST, instrument; N/NOM, nominative; NMZ, nominalizer; O/OBL, oblique; PASS, passive; PERF, perfective; NF, non-future; RED, reduplication; REF, reflexive; S, singular; STAT, stative; VERBZ, verbalizer; 1, 1st person; 2, 2nd person; 3, 3rd person.

(3) *w-a-tumane* ki Lulay ka tina-ini?
ACT-NF-IRB OBL child NOM mother-3S.BG
'What did the mother do to her child?'

PASSIVE

(4) *ki-a-tuman*-aku musuane kuiya?
PASS-NF-IRB-1S.BN 2S.FO yesterday
'What did you do to me yesterday?'

Set II *tumane*-words are intransitive; they query the state of an action or event:

(5) *ma-tumane*-su?
STAT-IRB-2S.BN
'What happened to you?/Are you alright?'

(6) *ngi-a-tumane*-su?
NGI-NF-IRB-2S.BN
'How are you?'

Set III *tumane*-words are transitive. They query the manner of an action or event. Like set I, set III *tumane*-words can take objects or infinite verbs as complements.

ACTIVE

(7) *pangi-a-tumane* ituku kuy Lava?
PANGI-NF-IRB leap DEM flying_squirrel
'How did the flying squirrel leap?'

(8) *pangi-a-tuma-tumane*-nga ki alisu ku cegaw?
PANGI-NF-RED-IRB-PERF OBL young_woman NOM Cegaw
'How did Cegaw treat the young woman?'

PASSIVE

(9) *ki-a-pangi-tumane* ki-puaLa ka Lava?
PASS-NF-PANGI-IRB PASS-catch NOM flying_squirrel
'How was the flying squirrel caught?'

The *-tumane* base itself may well have been derived from a productive process that operates on nouns. In (10), it is apparent that the internal structure of the *tumane*-words is parallel to that of the denominal verb *tu-lacenge* 'grow vegetables'. The nominal root *lacenge* 'vegetable' is prefixed by the verbalizer *tu-* 'do, make' to create a new verb *tu-lacenge*. Compared with the denominal verb in (10), *-tumane* can then be analyzed as having two components, *tu-* and *-mane*.

(10) i-**tu**-laceng-aku.
    FUT-VERBZ-grow_vegetable-1S.BN
    'I will grow vegetables.'
(11) w-a-**tu**-mane-su?
    ACT-NF-VERBZ-MANE-2S.BN
    'What are you doing?'

The surprising morphological similarity between -*mane* in the -*tumane* base and the nominal interrogative *manemane* 'what' looks impressive, at first glance. The root -*mane* is disyllabic (CVCV), while *manemane* looks like its full reduplication. Grammatically, -*mane* does not occur independently, and is only part of the -*tumane* base, but *manemane* is free to stand on its own. Keeping this in mind, I shall return to this issue later (sec. 1.2), considering -*mane* as an incorporated argument. Let us now turn to the internal structure of the *tumane*-words.

    The first step in their formation deals with non-tense affixation to the -*tumane* base. Tense affixes are inserted into medial position for NON-FUTURE -*a*- or initial position for FUTURE (*L*)*i*-. Table 3 lists the *tumane*-words of set III, which morphologically is the most elaborate:

Table 3: Morphological process of the *tumane*-words in Set III

	pangi-a-tu-mane	ki-a-pangi-tu-mane	(L)i-ki-pangi-tu-mane
Bare root of *manemane* 'what'	**-mane**	-mane	**-mane**
Denominalization of the verbalizer *tu*-	**tu**-mane	**tu**-mane	**tu**-mane
Prefixation of *pangi*-	**pangi**-tu-mane	**pangi**-tu-mane	**pangi**-tu-mane
Infixation of the non-future marker -*a*-	pangi-**a**-tumane	----	----
Prefixation of the passive marker *ki*-	----	**ki**-pangi-tu-mane	**ki**-pangi-tu-mane
Infixation of the non-future marker -*a*-	----	ki-**a**-pangi-tumane	----
Prefixation of the future marker (*L*)*i*-	----	----	**(L)i**-ki-pangi-tu-mane
	pangi-a-tu-mane	ki-a-pangi-tu-mane	(L)i-ki-pangi-tu-mane

Tense affixes (such as -*a*-: NON-FUTURE and (*L*)*i*-: FUTURE) and non-tense affixes (such as *w*-: ACTIVE, *ki*-: PASSIVE, *ma*-: STATIVE/NON-FUTURE, ka-: STATIVE, *ngi*-, *sa*-:

INSTRUMENTAL, and *pangi-*) do not cause change in lexical category, but they do affect transitivity, subcategorization, and meaning in these interrogatives.[6]

1.2 Incorporation

We can factor *-mane* out of its *-tumane* base, in analogy with the nominal roots of other denominalized verbs affixed with the verbalizer *tu-*; cf. the following examples:

(12) *tu*-daane   >   w-a-*tu*-daane   >   w-a-*tu*-daane
     VERBZ-house   ACT-NF-VERBZ-house   ACT-NF-VERBZ-house
                                         'He built a house.'

(13) *tu*-lacenge   >   w-a-*tu*-lacenge   >   w-a-*tu*-lacenge
     VERBZ-vegetable   ACT-NF-VERBZ-vegetable   ACT-NF-VERBZ-vegetable
                                         'She grew vegetables.'

(14) *tu*-**mane**   >   w-a-*tu*-**mane**   >   w-a-*tu*-**mane**?
     VERBZ-MANE   ACT-NF-VERBZ-MANE   ACT-NF-VERBZ-MANE
                                         'What did he do?'

In addition to this morphological parallel, other semantic and syntactic considerations support the treatment of *-mane* as the nominal root of the *-tumane* base and the underlying non-reduplicated root of *manemane* 'what':

(15) w-a-*tu*-**mane**-su?
     ACT-REAL-VERBZ-MANE-2S.BN
     '<u>What</u> did you do?'

(16) w-a-*tu*-**mane**   ki   Lulay   ka   tina-ini?
     ACT-NF-VERBZ-MANE   OBL   child   NOM   mother-3S.BG
     '<u>What</u> did the mother do to her child?'

In (15) and (16), unspecified patients or themes are involved with the realization of *-mane* in the *-tumane* base. An example like (17) is considered ill-formed because of the co-occurrence of *manemane* 'what' and *watumane* 'what to do/do what'.

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[6] According to Paul Jen-kuei Li (p.c.), *ka-* is the underlying counterpart of *ma-*. But unlike *ma-*, *ka-* is realized without tense itself, for we can notice that *ka-* does co-occur with (*L*)*i-*. For greater detail on Rukai verbal morphology, see Li (1973) and Zeitoun et al. (1996, 2000) and Zeitoun (2000).

(17) *w-a-tu-**mane**-su ki **manemane**?
ACT-NF-VERBZ-MANE-2S.BN OBL what
'What did you do?'

This ungrammaticality indicates that an implicit underlying object represented by the morpheme *-mane* is incorporated in the *-tumane* base, which in turn has become fossilized and functions as the morphological base of Rukai verbal interrogatives.

A similar morphological incorporation is also observed in other languages, such as Chuckchee (Palmer 1994, from Kozinsky et al. 1988) and West Greenlandic (Van Geenhoven 1998). As in Rukai, nouns in Chuckchee and West Greenlandic can be incorporated with verbs, as shown in the following examples, where shading marks the objects:[7]

(18) CHUCKCHEE (Palmer 1994:191)
ətləg-e utkuč-ən təkeč?ə-*pela*-nen.
father-ERG trap-ABS bait-leave-3SG+3SG+AOR
'Father left the bait at the trap.'
(19) WEST GREENLANDIC (Van Geenhoven 1998:15)
Arnajaraq eqalut-*tur*-p-u-q.
A.ABS salmon-eat-IND-[-tr]-3SG
'Arnajaraq ate salmon.'

Likewise, in West Greenlandic, interrogatives can also undergo incorporation:

(20) WEST GREENLANDIC (Van Geenhoven 1998:15, from Sadock 1991:96)
Su-*tur*-p-i-t?
what-drink/eat-INTER-[-tr]-2SG
'What did you drink/eat?'

By comparing incorporation in Rukai, Chuckchee, and West Greenlandic, we can observe a similar process in which complicated verbal elements (verbal complexes, phrasal clauses, etc.) are derived, only that different orders of internal constituents are involved. Two other characteristics of incorporation on the *-tumane* base should be pointed out: 1) the fossilization of the derived form prevents the intervention of affixes between *tu-* and *-mane*; and 2) the incorporated object (usually a patient or theme) has a

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[7] In the Chuckchee examples, ABS stands for absolute and AOR aorist; in the West Greenlandic examples, ABS stands for absolutive case, IND indicative, [-tr] intransitive, and INTER interrogative.

non-referential sense (see Comrie 1973 and Palmer 1994). We shall attest to the fossilization of the *tu-mane* base in section 1.3.2.

The evidence of this section shows that in the *-tumane* base, from which most Rukai verbal interrogatives are derived, an implicit underlying object, represented by *-mane*, combines with the verbalizer *tu-* through an incorporation process. The syntactic crash caused by semantic redundancy also attests to a connection between *-mane* and *manemane*.

1.3 Nominalization of the interrogatives

Discussions of nominalization in Rukai can be found in Li (1973), Kuo (1979), and Li (1997), and recent discussions of nominalization in Budai Rukai appear in Sung (2000) and Li (2000). These surveys deal primarily with the verb derivation in general. Here I shall investigate the nominalization of verbal interrogatives from a morphological perspective; in the next section, I shall tackle syntactic issues.

A prominent aspect of Rukai nominalization is the affixation of the nominalizer *-ane* to a base. Following is a table listing nominalized *tumane*-words:

Table 4: Nominalization of the *tumane*-words

Set	nominalized *tumane*-words	Morphology
I	**ta**-tuman-**ane**	NF-IRB-NMZ
	ta-ki-tuman-**ane**	NF-PASS-IRB-NMZ
	sa-tuman-**ane**	INST-IRB-NMZ
II	**ta**-ka-tuman-**ane**	NF-KA-IRB-NMZ
	ta-ngi-tuman-**ane**	NF-NGI-IRB-NMZ
III	**ta**-pangi-tuman-**ane**	NF-PANGI-IRB-NMZ
	a-pangi-tuman-**ane**	FUT-PANGI-IRB-NMZ
	sa-pangi-tuman-**ane**	INST-PANGI-IRB-NMZ

At this point I wish to discuss two morphological issues: 1) retention of tense and voice, and 2) reduplication.

1.3.1 Retention of tense and voice

When a *tumane*-word is nominalized, tense is no longer expressed within the stem but through prefixation. Tense or other types of prefix can indicate temporal relation instead of *-a-* (non-future) and (*L*)*i-* (future); e.g., *ta-* (non-future, and sometimes

referring to generic events, involving no tense reference), *a-* (future), and *sa-* (instrument), occur with the nominalizer *-ane*. Cf. the following examples:[8]

INTERROGATIVE

    (21) w-*a*-tumane-su?

        ACT-NF-IRB-2S.BN

        'What did you do?'

NOMINALIZATION

    (22) **a-tumane-su?

        FUT-IRB-2S.BN

        'What will you do?'

    (23) *ta*-tuman-ane-su   (cf. *w-a-tumane-su*)

        NF-IRB-NMZ-2S.BG

    (24) *ta*-pangi-tuman-ane-su   (cf. *pangi-a-tumane-su*)

        NF-PANGI-IRB-NMZ-2S.BG

The active/passive distinction in Rukai is also rigidly maintained in the *tumane*-words. While the active voice is marked by a zero morpheme, the passive voice is marked by *ki-*. Compare the previous active examples (23-24) with the following passives:

    (25) *ki*-a-pa-ngituluk-aku   musuane.

        PASS-NF-CAUS-fear-1S.BN   2S.FO

        'You scared me!' (Lit: I was scared by you!)

    (26) ta-*ki*-tuman-ane   kay   dula-su?

        NF-PASS-IRB-NMZ   DEM   scar-2S.BG

        'What did you do to get this scar?'

        (Lit: What was done to you that you had this scar?)

In the literature, retention of tense, aspect, or voice has been regarded as an index of whether a deverbalized element maintains its verbal nature (Comrie and Thompson 1985).

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[8] Although the prefix *ta-* does not necessarily have any reference to a time scale, we gloss it as NF (non-future), comparing it to other prefixes implying such a temporal reference.

1.3.2 Reduplication

Reduplication in Rukai has several functions. With nominal elements, it implies a multiplication in quantity. With verbs, it gives a sense of continuation or proximate occurrence of a state, activity, or event; in other words, reduplication in verbs can express *progressive* aspect.[9] The retention of tense through the use of different nominalizers was discussed in the preceding section. Progressive aspect, on the other hand, is morphologically realized within the interrogative stem, not through external nominalizing affixes, as can be seen in the following examples:

(27) kay-naku   wa-thingale   ku   **ta**-*tua*-tuman-**ane**-su.
     NEG-1S.BN   ACT-know   OBL   NF-IRB(RED)-NMZ-2S.BG
     'I don't know what you are doing.'

(28) a-su   piya   kay   **ta**-*tua*-tuman-**ane**-su?
     why-2S.BN   do   DEM   NF-IRB(RED)-NMZ-2S.BG
     'Why what you were doing turns out to be this way?'

In (27) and (28), the verbalizer *tu-* is reduplicated and then followed by an intrusive vowel [a]. The latter should not be considered a tense marker; cf. example (29). In the interrogative stem, tense is represented by **-a-** (in bold-face), not by the *-a-* of *-tua-*.

(29) kay abaybay ki   nguDaDekay pangi-**a**-*tua*-tumane cunu ki   lasawvalay?
     TOP woman   GEN Rukai   PANGI-NF-IRB(RED) enjoin OBL man
     'How are the Rukai women enjoining Rukai men?'

Another use of reduplication concerns the nominal root *-mane*, as in example (30). The semantics associated with the reduplication of *tu-* and *-mane* awaits further investigation.

(30) Q: kikay   apuy   **sa**-tu-*mane*-man-**ane**-su?
         DEM   fire   INST-IRB(RED)-NMZ-2S.BG
         'What are you going to do with this fire?'
     A: **sa**-tu-apuy-**ane**-li.
         INST-VERBZ-fire-NMZ-1S.BG
         'I will (use it to) make a fire.'

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[9] According to Lakoff and Johnson (1980), reduplication can be applied to different lexical categories to indicate singularity/plurality on nouns, continuation/completion on verbs, or intensification on adjectives via a generalization of metaphor, in which 'more of forms' stands for 'more of content'.

As shown in section 1.2, the *-tumane* base has undergone incorporation and is now fossilized. This claim is supported by a third kind of reduplication observed in (31). What is reduplicated is not *tu-* or *-mane*, but *-tuma-*. By assuming that the *-tumane* base is composed of two morphemes belonging to two distinct categories, one verbal and the other nominal, reduplication across the morpheme boundary suggests that the incorporation of these two morphemes was strong enough to lead to morphological fossilization.

(31) w-a-*tuma*-tumane-su?
ACT-NF-IRB(RED)-2S.BN
'What are you doing?'

Summarizing this section, I have examined three aspects of the morphology of Rukai interrogatives: 1) I have discussed the internal formation of verbal interrogatives sharing the same *-tumane* base; 2) I have explored and supported the speculation raised in Chen (1999) that the *-tumane* base involves an incorporation of two morphemes belonging to two distinct categories; and 3) I have dealt with the formation of nominalization on the *tumane*-words in terms of the retention of verbal morphology and reduplication.

Next, I shall turn to the syntax of nominalized *tumane*-words to determine whether nominalization affects transitivity, and how *tumane* interrogative words construe their arguments.

2. Syntax

The investigation of nominalization, whereby nominal elements are derived from non-nominals (such as verbs or adjectives in a number of languages), has led to the shared view that derived nominal elements are syntactically equivalent to nouns in general. In this section, two syntactic phenomena of Rukai nominalized interrogatives are surveyed: the seeming disparity between nominalized transitive and intransitive interrogatives; and grammatical relations underlying nominalized interrogatives.

2.1 Transitivity

Tumane-word formation has already been covered in section 1.2. For the most part, *tumane*-words are nominalized by suffixing *-ane*, divisible into three sets, one intransitive (set II) and the others transitive (sets I and III). In principle, transitive verbs subcategorize one internal argument (i.e., an object), whereas intransitive verbs

subcategorize no internal arguments. This principle leads us to wonder whether nominalization can affect the transitivity of these three sets of interrogatives. Each set is examined in turn below.

Set I *tumane*-words are transitive: they subcategorize internal arguments or infinite clauses as complements, as in the following two examples:

Set I (transitive)

(32) *ki-a-tuman*-aku   [musuane]   kuiya?
     PASS-NF-IRB-1S.BN   2S.F.OBL   yesterday
     'What did you do to me yesterday?'

(33) *w-a-tumane*-su   [mu   kucapungan]?
     ACT-NF-IRB-2S.BN   go   Kucapungan
     'What did you do to go to Kucapungan?'

Nominalization of set I *tumane*-words is attested in these examples:

(34) ta-*tuman*-ane   kay   dula-su?
     NF-IRB-NMZ   DEM   scar-2S.BG
     'What did you do to get this scar?'

(35) ta-*ki-tuman*-ane   kay   dula-su?
     NF-PASS-IRB-NMZ   DEM   scar-2S.BG
     'What happened to you that you got this scar?'

(36) sa-*tuman*-ane   kuini vaga-su?
     INST-IRB-NMZ   DEM   word-2S.BG
     'What will your words be good for?'

In (34), it is *wa-tumane* that is nominalized, and similarly, the passive *ki-a-tumane* in (35) and *sa-tumane* in (36) can be nominalized as well.

Set II *tumane*-words are intransitive in that they only subcategorize external arguments (i.e., subjects):

Set II (intransitive)

(37) *ma-tumane*-su?
     STAT-IRB-2S.BN
     'What happened to you?'

(38) *ngi-a-tuma-tumane*-nga   [ku   ta-tu-dama-damaz-ane-su?]
     NGI-NF-IRB(RED)-PERF   NOM   NF-VERBZ-vegetable(RED)-NMZ-2S.BG
     'How is your cooking?'

In (37) the subcategorized argument surfaces as a bound form in the nominative case, while in (38) the subject is in its full form. In the following examples, we can see that intransitive set II *tumane*-words can be nominalized:

(39) kaDua   ku   ta-*ka-tuman*-ane-li.
     NEG   NOM   NF-KA-IRB-NMZ-1S.BG
     'I am alright.'

(40) ta-sibengeraz-ane   ka   ta-*ngi-tuman*-ane?
     NF-wear_flower_NMZ   NOM   NF-NGI-IRB-NMZ
     'How come she wore flowers?' (The speaker would ask this question if someone were to wear more flowers than she should.)

Set III *tumane*-words are transitive interrogative verbs. They subcategorize internal arguments or infinite clauses as complements, and are syntactically quite similar to set I *tumane*-words. Consider the following examples:

Set III (transitive)

(41) i-*pangi-tumane*-su   [nakuane]?
     FUT-PANGI-IRB-2S.BN   2S.F.O
     'What will you do to me?'

(42) *pangi-a-tuma-tumane*   [tu-damay]   ku   tina-ita?
     PANGI-NF-IRB(RED)   VERBZ-vegetable   NOM   mother-1PI.BG
     'How does our mother cook vegetables?'

Nominalization in set III interrogatives can be observed as well in the following:

(43) ta-*pangi-tuman*-ane   ku   ta-sibengeraz-ane?
     NF-PANGI-IRB-NMZ   NOM   NF-wear_flower-NMZ
     'How come she wore flowers?'

Thus either transitive or intransitive *tumane*-words can be nominalized. In Rukai, transitivity has no effect on the interrogatives to be nominalized.

2.2 Grammatical relations

The assumption that nominalization derives nominal elements, and that its output usually involves a process of morphological modification, leads us to ask two questions: What grammatical roles do the nominalized interrogatives represent? What grammatical

relations do they hold?[10] In Rukai, grammatical relations between predicates and arguments are established by syntactic allocation and a set of case markers. Hence the possibility of gaining access to case marking decidedly determines whether these nominalized interrogatives are nominal elements or not. Both questions directly concern an important grammatical issue raised by Comrie and Thompson (1985), namely, when a verbal element undergoes nominalization, it is necessary to determine to what extent this verbal element retains its verbal nature.

Here we begin discussion of the grammatical relations in which the nominalized interrogatives are realized as arguments and predicates. Then we turn to the syntactic characteristics of nominalized interrogatives in terms of their nominal and verbal nature. And finally we come to the conclusion that Rukai nominalized interrogatives are mixed nominals, retaining both nominal and verbal characteristics.

2.2.1 Argument and predicate

As discussed in the literature, Rukai, like most Formosan languages, has V(O)S word order:

(44)   **V**   **S**
        ma-barenger-*aku*   [*ka*   lingaw-*ini*].
        STAT-miss-1S.BN   OBL   voice-3S.BG
        'I miss her voice.'

(45)   **V**   **O**   **S**
        w-a-langay   [*ki*   laymay]   [*ku*   ina].
        ACT-NF-buy   OBL   clothes   NOM   mother
        'Mother bought clothes.'

In each of these two examples, nominal elements are distinguished from verbs by their case-markings.

(46) kay-naku   w-a-thingale   [*ku*   **ta**-pangi-tuman-**ane**-*su*].
      NEG-1S.BN   ACT-NF-know   OBL   NF-PANGI-IRB-NMZ-2S.BG
      'I don't know how you did it.'

On the one hand, the nominalized interrogative in (46) is suffixed with the second-person genitive marker -*su*. But, on the other hand, the entire element *ta-pangi-tuman-ane-su* is marked as an oblique case by *ku*. It is therefore feasible to

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[10] Dylan Wei-tien Tsai has inspired these thoughts.

believe that these nominalized interrogatives behave like nouns in general, which in turn suggests that these nominalized interrogatives can function as arguments.

It has been shown that transitivity does not affect nominalization (sec. 2.1; see also Table 4). With respect to grammatical relations, all members of the interrogative sets can become arguments via nominalization. Examples (47-48) contain nominalized verbs in general, wherein nominalized elements represent subject and object respectively. Notice that the nominalized elements are case-marked and stand for arguments, whether subject or object:

(47) Q: manemane ku *ta-buLu-ane*?
   what   NOM NF-teach-NMZ
   'What did he teach?' (What was his teaching?)
  A: pangu kay ki *ta-ceke-cekel-ane*.
   about DEM OBL NF-village/family(RED)-NMZ
   '(Something) about the family.'
(48) ara ngi-tatupela-ela ku *ta-kisusu-ane-su*.
  NEG REF-change(RED) OBL NF-believe-NMZ-2S.BG
  'Don't change your belief.'

Now compare them to examples (49-50):

(49) **As Subject**
  manemane ku *ta-tuman-ane-su*?
  what   NOM NF-IRB-NMZ-2S.BG
  'What did you do?' (Context: used as a reprehension to the hearer)
(50) ta-sibengeraz-ane ka *ta-ngi-tuman-ane*?
  NF-wear_flower-NMZ NOM NF-NGI-IRB-NMZ
  'How come she wore flowers?'
(51) **As Object**
  Q: a-su   piya [kay *ta-tua-tuman-ane-su*]?
    why-2S.BN do   DEM NF-RED-IRB-NMZ-2S.BG
    'Why does what you did turn out to be this way?'
  A: paya-nga-ku!
    try_one's_best-PERF-1S.BN
    'I have tried my best!'

In (49), the set I interrogative *w-a-tumane* is nominalized and marked nominative in subject position. The nominal interrogative *manemane* 'what' is predicated and occurs

in initial position. In (50), the set II interrogative *ngi-tumane* undergoes the same process. In (51), the set I interrogative *w-a-tumane* undergoes nominalization and is projected as the object subcategorized by the verb *piya* 'do'. Below are more examples in which the nominalized interrogatives, including those in sets I and III, represent the objects of the verb *w-a-thingale* 'know/knew':

(52) kay-naku   w-a-thingale   ku   *ta-tua-tuman-ane-su*.
     NEG-1S.BN   ACT-NF-know   OBL   NF-RED-IRB-NMZ-2S.BG
     'I didn't know what you did.'

(53) kay-naku   w-a-thingale   ku   *ta-pangituman-ane-su*.
     NEG-1S.BN   ACT-NF-know   OBL   NF-IRB-NMZ-2S.BG
     'I didn't know how you did (it).'

(54) kay-naku   w-a-thingale   ku   *a-pangituman-ane-su*.
     NEG-1S.BN   ACT-NF-know   OBL   FUT-IRB-NMZ-2S.BG
     'I have no idea how you are going to do (it).'

(55) kay-naku   w-a-thingale   ku   *sa-pangituman-ane-su*.
     NEG-1S.BN   ACT-NF-know   OBL   INST-IRB-NMZ-2S.BG
     'I have no idea how you will make use of it.'

Nominal elements derived from verbal interrogatives are basically non-specific in nature, so that (56) is ungrammatical because the oblique case marker *ki* is [+specific]. Its co-occurrence with the non-specific nominalized interrogative causes a semantic conflict.

(56) *kay-naku   w-a-thingale   **ki**   *ta-tua-tuman-ane-su*.
     NEG-1S.BN   ACT-NF-know   OBL   NF-RED-IRB-NMZ-2S.BG
     'I don't know what you did.'

Now I turn to nominalized interrogatives as predicates. Predicates, in opposition to arguments, are caseless and usually occur in sentence-initial position. In the following examples, nominalized interrogatives function as predicates. These are termed *predicate nominals* by Radford (1997).

(57) **As Predicate**
     ta-pangi-tuman-ane   ku   ta-sibengeraz-ane?
     NF-PANGI-IRB-NMZ   NOM   NF-wear_flower-NMZ
     'How come she wore flowers?'

(58) *sa-tuman-ane*   kuini   vaga-su?
      INST-IRB-NMZ   DEM   word-2S.BG
      'What will your words be good for?'

Sentence (59) is another example of the nominalized interrogative *sa-tuman-ane* being predicate, with *kuy cucunu-su* as topic:

(59) kuy   cucunu-su   *sa-tuman-ane*?
      DEM   enjoin(RED)-2S.BG   INST-IRB-NMZ
      'As for your enjoining, what is it good for?'

A comparison of (57) with (50) reveals a word-order alternation of nominalized elements. The crucial factor here could relate to old versus new information, but, with our limited materials, this hypothesis must be left for future study.

In Rukai, through a complicated possessive process, a predicate nominal can be encoded internally, which in turn denotes a grammatical relation among the nominalized form, the possessor (in the genitive), and the object subcategorized by the underlying verb. Consider the following example:

(60) Q: ma-tumane-su?
        STAT-IRB-2S.BN
        'What's going on with you?'
     A: [NP *ta-ungul-ane-li*   ki   bava].
        NF-drink-NMZ-1S.BG   OBL   wine
        'I drank wine.' (Context: the responder implied that he was drunk.)

The entire answer to the question *ma-tumane-su* is an NP representing the predicate in the form of a complex phrase, including an object (*bava* 'wine') marked oblique, and a possessor marked with the first person genitive pronoun (-*li*). This complex NP can be viewed as being a derived form base-generated from the following sentence:

(61) w-a-ungul-aku   ki   bava.
      ACT-NF-drink-1S.BN   OBL   wine
      'I am drinking/drank wine.'

This possessive relation, however, is reflected internally in nominalized interrogatives (as discussed in sec. 1.2). Consider the following:

(62) w-a-tuma-tumane-su?
ACT-NF-IRB(RED)-2S.BN
'What are you doing?'

(63) *a-tuman-ane-su*?
FUT-IRB-NMZ-2S.BG
'What will you use it for?'

Example (63) can be considered to be nominalized from a construction like (62). An implicit object is incorporated internally both syntactically and semantically, and subcategorization is hence complete.[11]

We have seen that all members of the *tumane*-word sets can undergo nominalization and become arguments or predicates. The following table illustrates their meanings:

Table 5: Semantics of the *tumane*-words

Set	nominalized tumane-words	Morphology	Meaning
I	**ta**-tuman-**ane**	**NF**-IRB-**NMZ**	*object*, *result* of an action
	ta-ki-tuman-**ane**	**NF**-PASS-IRB-**NMZ**	
	sa-tuman-**ane**	**INST**-IRB-**NMZ**	
II	**ta**-ka-tuman-**ane**	NF-ka-IRB-**NMZ**	*state* of an event
	ta-ngi-tuman-**ane**	NF-ngi-IRB-**NMZ**	
III	**ta**-pangi-tuman-**ane**	NF-pangi-IRB-**NMZ**	*manner*
	a-pangi-tuman-**ane**	FUT-pangi-IRB-**NMZ**	
	sa-pangi-tuman-**ane**	INST-pangi-IRB-**NMZ**	

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[11] Comparing these two examples, a difference emerges in case marking. The same case form (-*su*) is nominative in (52) but genitive in (53). Since the nominalized interrogative is a predicate in (53), it seems hard to justify this analysis. Here we get support from examples like the following Q & A. The verb is nominalized and -*li* is attached: this is a genitive pronoun (the nominative would have been -*aku*). Hence, the -*su* in constructions like (53) must be genitive as well.

Q: ta-ka-tuman-ane-su?
NF-KA-IRB-NMZ-2S.BG
'What's going on with you?'

A: ta-nguadek-ane-*li*.
NF-fall-NMZ-1S.BG
'I fell.'

2.2.2 Grammatical nature

According to Comrie and Thompson (1985), a deverbalized element can retain its original verbal nature after nominalization. In Rukai it is certainly true that nominalized interrogatives exhibit both nominal and verbal characteristics: they retain markings for tense (non-future/future) and voice (active/passive); see sec. 1.3. This would indicate that, although nominalized, these interrogatives are still finite, and this also suggests that they are still essentially verbal in nature. In section 2.2.1, the grammatical relations of nominalized interrogatives was discussed, and it was shown that a nominalized interrogative can function either as predicate or argument. With these two considerations in mind, we may conclude that these nominalized interrogatives are nominal in syntax, but verbal in morphology.

In this section we have noted several syntactic characteristics of the *tumane*-words, including the following facts: each member of a *tumane*-word set can be nominalized irrespective of its transitivity; and a nominalized *tumane*-word can be either an argument or a predicate; and, in accord with Comrie and Thompson's criteria (1985), Rukai nominalized interrogatives retain their verbal nature both morphologically and syntactically. Next, we shall briefly discuss nominalized interrogatives in terms of indefiniteness.

3. Indefiniteness

Tsai (1997) first surveyed indefiniteness in Formosan. Expanding on the notion of Rukai interrogatives as indefinites, Chen (1999) continued this line of thought from syntactic, morphological, and phrasal perspectives. Here interrogatives are perceived to be indefinite under licensing of triggers, including: conditional constructions, negative and modality expressions, as well as donkey sentences at the syntactic level, affixation and reduplication at the morphological level, and modification of the quantification words at the phrasal level. Nominalized interrogatives are therefore to be regarded as indefinite in negative constructions.[12]

Before taking up this issue, let us have a look at how a negative word such as *kay* triggers indefiniteness:

(64) kay   ngiabuale   ku   *manemane*   ikay   ki   angatungatuane.
     NEG   appear   NOM   what   exist   OBL   forest
     'Nothing appeared in the forest.'

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[12] So far we only have nominalized interrogatives as indefinites in negative constructions. A more detailed survey must be left to future investigation.

One might have expected that *manemane* 'what' would signal an interrogative, but under licensing of *kay* 'not', *manemane* is re-interpreted as indefinite. Understanding how indefiniteness comes about under the licensing of triggers, let us continue with the following examples:

(65) *i-pangi-tumane*   cunu   ku   labaybay   ki   nguDaDekay   ki
FUT-PANGI-IRB   enjoin   NOM   women   GEN   Rukai   OBL
lasawvalalay   ki   nguDaDekay?
men   GEN   Rukai
'How will the Rukai women enjoin the Rukai men?'

(66) **kay**-naku   w-a-thingale   *i-pangi-tumane*   cunu   ku
NEG-2S.BN   ACT-NF-know   FUT-PANGI-IRB   enjoin   NOM
labaybay   ki   nguDaDekay.
women   GEN   Rukai
'I don't know how the Rukai women will enjoin (them).'

In (65) the interrogative *i-pangitumane* 'how' gives the sentence an interrogative reading, whereas its counterpart in (66) is interpreted as indefinite in the presence of the negative *kay* trigger. Now consider (67):

(67) **kay**-naku   w-a-thingale   ku   *ta-pangituman-ane*   ku   ta-cun-ane
NEG-1S.BN   ACT-NF-know   OBL   NF-how-NMZ   NOM   NF-enjoin-NMZ
ki   labaybay   ki   nguDaDekay.
GEN   women   OBL   Rukai
'I don't know how Rukai women enjoined.'

Now, as per sec. 2.2.1, a nominalized interrogative can be an argument or a predicate. But nominalized interrogatives can only be interpreted as indefinites in the presence of certain triggers. Either the verbal interrogative or its nominalized counterpart requires a trigger for either of them to become indefinite.

The necessity of a trigger for a nominalized interrogative to be interpreted as indefinite implies that nominalization in the verbal interrogative does not alter its interrogative essence; in other words, the only effect is in form.

4. Summary

In this paper, I have discussed the nominalization of Rukai verbal interrogatives in terms of morphology and syntax. It has been observed that all verbal interrogatives (except for *a-* 'why'), i.e., the *tumane*-words, can undergo nominalization irrespective

of their inherent transitivity. This allows the possibility of their being not only predicates, but arguments as well.

The important issue of the composition of the *tumane*-base is addressed here: it consists of a verbalizer (*tu-*) plus incorporated argument (an object). According to Comrie and Thompson (1985), if a nominalized element retains its verbal categories morphologically, it is verbal in nature. This is the case in Rukai. Nominalized interrogatives retain tense and voice marking, and can also undergo reduplication to indicate continuation or proximate occurrence of a state, an activity or an event. They can further function as nominal predicates. Hence Rukai nominalized interrogatives can be said to be mixed nominals, in that they exhibit both nominal and verbal characteristics. Finally, the indefiniteness of nominalized interrogatives under appropriate licensing reveals that interrogatives, nominalized or not, need triggers to be interpreted as indefinites.

In this paper, we have thought about how Rukai permits verbal interrogatives to be nominalized, to what extent the nominalized interrogatives act like nouns, and to what extent they do not. Although quite a few issues regarding nominalized interrogatives have been touched upon, uncertainty still remains as to what semantic roles nominalized interrogatives can play. And lastly further research is needed to determine whether other Formosan languages have such nominalized interrogatives as we have in Rukai.

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魯凱語疑問詞的名物化結構

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　　本文目的在於探討好茶魯凱語中動詞性疑問詞的名物化現象。動詞性疑問詞透過構詞將一基底論元併入詞基 *-tumane*，此衍生詞基成為這些複雜疑問詞的構詞基礎，它們彼此呈現相異的語法功能，而這些差異顯見於構詞、句法與語意三個層面。本文所引證的構詞與句法介面材料說明了魯凱語動詞性疑問詞與一般動詞相同，能透過相似的過程衍生名物化結構。

關鍵詞：南島語，台灣南島語，魯凱，霧台，好茶，疑問詞，合併 (incorporation)，名物化，構詞與句法介面