

THE INTERNAL RELATIONSHIPS OF RUKAI

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Abstract in Chinese

1. INTRODUCTION*

1.1 General Background¹

Rukai belongs to the Paiwanic group among the Formosan languages

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1. This section appeared as §1.2 of the monograph *Rukai Structure* (Li 1973) with the last paragraph left out here. The place names in Chinese are added in this paper.

of the Austronesian family. The language includes five dialects geographically distributed in three different areas: (1) the Tanan 大南 dialect situated in Pinan, Taitung hsien, to the east, (2) the Budai 霧台 dialect in Budai, Pingtung hsien, to the south, and (3) the three dialects—Maga 馬加, Tona 多納 and Mantauran 萬山—of the so-called “Lower Three Villages” (LTV) 下三社 located in Maolin, Kaohsiung hsien, to the north. Budai includes the villages of *kocapoyan* 好茶, *ʔadiri* 阿禮, *labuan* 大武, *karamomodisan* 佳暮, *kinulan* 去露 and *vədaɪ* 霧台. The Budai group is referred to as Rukai proper. The three sub-groups differ not only geographically but also, to a certain extent, culturally and linguistically (Chen 1955: 104).

Each of the Rukai tribes has its own tribal name that is also used to refer to the village: Tanan is called *taromak*, Maga *tulDika*, Tona *kogadavan*, and Mantauran *ʔoponoho*.¹ The name Maga was used by both the Chinese and Japanese before and during the Japanese occupation of Taiwan, but it is now called Maolin 茂林 in Chinese. Mantauran is now called Wanshan 萬山 in Chinese. Tanan was re-named Tung Hsing Hsin Ts'un 東興新村 after the village was destroyed by a big fire in 1969 and rebuilt in 1971.

According to Ogawa and Asai (1955: 331), the Tanan village used to be called *caLisian*, but the same term is also commonly used to designate the northern Paiwan, so confusion may arise (cf. Abe 1950: 69). Thus the term Rukai 魯凱 has been adopted by Ogawa and Asai to designate not only that village, but Rukai proper and the Lower Three Villages.

The Tanan tribe migrated to the present site on both sides of the Tanan stream at the foot of the mountain in 1920's, Maga to Maolin around 1945 and Mantauran to Wanshan in 1957.

1.2 Collection of Language Data

The investigator spent 15 weeks in the field collecting data on the

1. There are mistranscriptions for the tribal names such as *tulDika* and *kogadavan*, cf. Chen 1955: 104, Hsieh 1967: 195.

Tanan dialect between July 1970 and September 1971.¹ There are 26 texts (250 pages including the English translations) and over 3,000 vocabulary entries. Data on the Lower Three Villages were collected in the field during December 1971—January 1972: 19 texts (42 pages with translation) for Maga, 3 texts (9 pages with translation) for Tona and 12 texts (15 pages with translation) for Mantaaran. Vocabularies for the three dialects vary from some 700 entries to well over 1,000, and Swadesh's 200 word-list was used as basis for elicitations.² As for the Budai dialect, first I made use of second-hand sources: roughly 700 words and a few short sentences collected by Shigeru Tsuchida in three hours in August 1970. Then I checked with a Budai speaker in June 1972 after a list of cognates was prepared and discovered many more Budai cognates. Some mistranscriptions of the previous work were also corrected with the help of the informant.

Previous works on the Rukai dialects such as Ogawa and Asai (1935) are scanty and unreliable, so they are consulted with caution. As mentioned in the preceding paragraph, most data and source materials except some for Budai used in this study are exclusively the first-hand sources collected in the field by myself. I have aimed at phonetic accuracy of transcription. I have also consulted Shigeru Tsuchida's unpublished word lists (Tsuchida 1970a, 1970b, 1971), which are far more accurate and reliable than the publications of his predecessors. Some so-called Budai forms listed in Ferrell (1969) who collected them in the Tanan village are actually Tanan forms, e. g. *ramarám* "bone", *ʔatibaubay* "butterfly", *kayásaʔ* "today", *ʔuliʔuli* "white", *sasəvaraʔ* "wind", *bi'áʔ* "leaf", etc. None of these are used by Budai native speakers except those who immigrated to Tanan years ago.

1. A final check-up of the texts was done in March 1975 (see Li 1975a: i).
2. A check-up on the data of the Lower Three Villages was done in August 15-19, 1972, and further in March 7-17 and April 14-20, 1977. Some gaps were filled up in the field. Many more cognates were discovered in 1977 when my own 1,000 "wordlist of Formosan languages" was used for elicitations.

1.3 Method of Study

Upon completion of data collection, a list of comparative vocabulary of the five Rukai dialects was prepared and a preliminary analysis of historical reconstruction made. With the regular sound correspondences worked out and reconstructed forms based on two or more dialects, I was then able to elicit a number of missing cognates for the other dialects and to fill in quite a few gaps. The missing cognates of a particular dialect were due to the following two reasons: (1) The forms were not originally recorded in the data already collected, and that was particularly true of the dialects of Budai and Tona, for which only limited data were available. (2) The semantic shift could be so drastic that the cognate was not immediately identifiable, and that was true even of the Tanan dialect, for which more adequate data had been collected. By more careful examination, I discovered a good number of cognates—I asked the informant if such and such a form existed in his speech, and if it had such and such a meaning or related meaning.

1.4 Objectives of Study

Based on the vocabularies and regular sound correspondences of the modern dialects, I shall attempt to identify cognates and reconstruct a phonological system of Proto-Rukai(PR). It can then be determined how PR has split into the five dialects today, what sound changes have taken place in each dialect, and what internal relationships there are among the dialects of the language. Furthermore, I shall trace back many forms to Proto-Austronesian(PA) and relate them with the modern Rukai dialects by PR. I shall discuss some problems of Proto-Austronesian(PA) reconstruction in light of the Rukai evidence, particularly Dempwolff's voiced velar fricative *ɣ (Dyen's *R) and voiceless prepalatal stop *t' (Dyen's *s) in relation to Dyen's *S; see §2.3.

1.5 The Sound Systems of the Rukai Dialects

(a) Tanan Sound System¹

		Labi.	Dent. Alve.	Retr.	Vel.	Glott.		
Stops	vl.	(p) ²	t	(T) ³	k	ʔ	i	o
	vd.	b	d	D	g		ə	
Nas.	vd.	m	n		ŋ		a	
Affr.	vl.		c					
Fric.	vl.		θ, s			h		
	vd.	v	ɖ				i:	o:
Lat.	vd.		l	L			ə:	
Tri.	vd.		r				a:	
Semi.	vd.	w	y					

(b) Budai Sound System

		Labi.	Dent. Alve.	Retr.	Vel.			
Stops	vl.	p	t		k		i	o
	vd.	b	d	D	g		ə	
Nas.	vd.	m	n		ŋ		a	
Affr.	vl.		c					
Fric.	vl.		θ, s				i:	o:
	vd.	v	ɖ				ə:	
Lat.	vd.		l	L			a:	
Tri.	vd.		r					
Semi.	vd.	w	y					

1. The two vowels /o, ə/ were represented as /u, ɨ/ respectively in Li (1973). The phonetically long vowels were treated as geminates, e.g. i: as ii, a: as aa, etc. (see Li 1973: 20). The change of the symbols and representations does not mean any shift of my analysis or interpretation. The change is made mainly to keep in line with the other dialects (see discussion below).

2. /p/ is rare and occurs in a few suspicious words, probably loan words, obsolete words, rare plant names, and only a few common words (see Li 1973: 19 and §2.1.1 for examples).

3. /T/ is rare and appears in only a few words (see Li 1973: 44 and discussion below).

(c) Maga Sound System

		Labi.	Dent. Alve.	Retr.	Vel.			
Stops	vl.	p	t		k	i	ɨ	u
	vd.	b	d	ɖ	g	e	ə	o
Nas.	vd.	m	n		ŋ		a	
Affr.	vl.		c					
Fric.	vl.		θ, s			i:	ɨ:	u:
	vd.	v	(ɖ) (z) ¹			e:	ə:	o:
Lat.	vd.		l				a:	
Tri.	vd.		r					

(d) Tona Sound System

		Labi.	Dent. Alve.	Retr.	Vel.	Glott.		
Stops	vl.	p	t		k	ʔ	i	o
	vd.	b	d	ɖ	g		ə	
Nas.	vd.	m	n		ŋ		a	
Affr.	vl.		c					
Fric.	vl.		θ, s				i:	o:
	vd.	v	(ɖ) ²				ə:	
Lat.	vd.		l				a:	
Semi.	vd.	w	y					

1. The two voiced fricatives in parentheses occur only in a few items and loan words, e.g. /d/ in *kvádní* "a type of bamboo", *vnəəḍə* "plum" (see also below); /z/ in *makatonozōno* "a type of mushroom", *kzúlu* "thousand" (probably borrowed from the neighboring language: Paiwan *ta-kuzul*). In fact, Maga also uses the form *kDúlu* "thousand", a cognate with the other Rukai dialects. However, all these forms manifest the special phonological features of Maga, such as consonant clustering in the same syllable. For a more detailed description of Maga phonology, see Li 1975b.

2. Similar to Maga, /d/ occurs only in a few terms, e.g., *kavaḍáno* "a type of bamboo".

(e) Mantauran Sound System

		Labi.	Dent. Alve.	Retr.	Vel.	Glott.		
Stops	vl.	p	t		k	ʔ	i	o
Nasals	vd.	m	n		ŋ		ə	
Affr.	vl.		c				a	
Fric.	vl.		s			h		
	vd.	v	d				i:	o:
Laterals	vd.		l	L			ə:	
Trill	vd.		r				a:	

Of the five dialects, four have the four-vowel system like that of Proto-Rukai as well as Proto-Austronesian. Maga is the only dialect that has developed the vowel distinction of high /i, i, u/ and mid /e, ə, o/.

There is not much justification to claim phonemic length for vowels in Tanan, and the phonetically long vowels can be treated as geminates.¹ It is not clear if the same treatment can be adopted for the other dialects.² For the convenience of comparison, I shall leave vowel length as such in all the five dialects for the time being. If all the phonetically long vowels can be treated as geminates in all the five dialects, then all the long vowels can be dispensed with from these tables.

Note that only Tanan has the voiceless alveolar retroflexed stop /T/. The stop occurs only rarely in a few vocabulary items not cognate with the other dialects of Rukai. It has apparently been borrowed from the Puyuma language, as Tanan is geographically surrounded by the Puyuma

1. For a more detailed account of the various reasons for treating phonetically long vowels as geminates, see Li 1973: 20.

2. It has become clear since the preparation of this manuscript in 1972 that it is also simpler to treat phonetically long vowels as geminates in Maga, i.e. stress is more regular on the penult (see Li 1975b).

speakers, and the external influence inevitable.

The following differences in the presence or absence of certain speech sounds in various dialects are to be explained historically (see §2):

(1) The glottal stop occurs in Tanan, Tona and Mantauran, but not in Budai or Maga.¹

(2) Only Mantauran has no /θ/ (voiceless interdental fricative).

(3) The voiced interdental fricative /ð/ occurs only in Tanan, Budai and Mantauran.²

(4) Neither Maga nor Tona has the retroflexed lateral (or flap) /L/, although it occurs in the other three dialects.³

(5) Tona is the only dialect that has no trill /r/.³

(6) Only Mantauran has no voiced stops /b, d, D, g/.

(7) Only Mantauran has /h/, which occurs rarely in Tanan.

(8) The stop /p/ occurs rarely in Tanan.

(9) The semivowels /w, y/ occur in Tanan, Budai and Tona, but not in Maga and Mantauran.

Stress is phonemic in all the dialects except Mantauran, in which it falls on the first syllable of a stem. Stress would be more nearly predictable if the final echo vowels are not represented in the phonemic transcriptions, particularly in the dialect of Tanan (see Li 1973: 51-55). But the echo

1. Tsuchida (1970a) noted for Maga, "/ʔ/ occurs only in one word with its derivatives: ʔiu "goat", saŋiʔiu "smell of goat". It is dubious if a phoneme should occur in only one word. What is more, that particular form has no cognates in other dialects. It is probably a loan from Taiwanese ʔiu 羊 "goat".

2. The fricative /ð/ in Maga and Tona occurs only in a few suspicious items that are probably borrowed from Mantauran, e.g. Maga *vnəðdə*, Tona *vinoəðə*, Mantauran *vonəəðə* "plum"; Tanan *kavaða*, Tona *kavaðan*, Mantauran *kavaðə* "a type of bamboo". These forms do not manifest regular sound correspondences (see §2.1). Borrowing seems to have taken place among dialects at an earlier stage.

3. In Tona the retroflexed lateral /L/ and trill /r/ are optional in a few items, e.g. *poLôko* ~ *poôko* "ten", *ararâma* ~ *aâmə* "bird". But /r/ always appears in the item *karâra* "anteater", which is probably a loan word from Maga.

vowels must be phonemic, especially in Maga, Tona and Mantauran.¹ Furthermore, it would be very difficult to account for historical derivations of many forms if the final echo vowels were not treated as phonemic. See §2.1.16 for further discussion.

2. PHONOLOGICAL RECONSTRUCTION

2.1 Discussion of Reconstruction of Proto-Rukai(PR)

2.1.0 Based on the regular sound correspondences of the Rukai dialects, the following sound system can be reconstructed for PR (19 consonants, 2 semivowels and 4 vowels in addition to the diphthongs ay and aw):

p	t		k	ʔ	i	o
b	d	D	g		ə	
m	n		ŋ		a	
	c					
	θ, s					
	l	L				
	r					
w, v	y, ɛ					

There is no problem in reconstructing most of these segments. A few points concerning the sound correspondences and relevant phonetic features of the modern dialects are noted in the following paragraphs. The abbreviations are: PA, Proto-Austronesian; PR, Proto-Rukai; Tan, Tanan; Bud, Budai; Mag, Maga; Ton, Tona; Man, Mantauran.

The symbols of PA and the distinctions between *t and *C (See §2.1.3), *d, *D and *Z, *n and *N (see §2.1.8), as well as *S, *q, *ʔ, *H, *x, etc. follow Dyen (1965, 1971a), but with the numerical subscripts left out. The equivalents of the PA symbols as used by the different scholars are as follows:

1. In Mantauran, for example, *o-ʔipi* "count (past)", *o-ʔip-a* "count (imperative)", in which the final echo vowel *i* is dropped when suffixed, but *o-ʔipi* "dreamed(past)", *ʔipi-a* "dream (imperative)", in which the final echo vowel *i* is kept when suffixed.

Dempwolff:	i	ə	a	u	p	b	m	v	t	d	n	l	t	d			
Dyen/Tsuchida:	i	ě	a	u	p	b	m	w	t	C	d	n	N	l	T	D	Z
Dahl:	i	ə	a	u	p	b	m	u	t ₁	t ₂	d ₁	n	l	l	d ₂	d ₃	Z
Dempwolff:	!	t'	d'	ú	j	k'	g'	k	g	ŋ	ɣ	h	c				
Dyen/Tsuchida:	r	s	S	z	ñ	y	c	j	k	g	ŋ	R	q	h	H	?	x
Dahl:	r	t'	S	d'	ú	i	k'	g'	k	g	ŋ	ɣ	q		H(?)		

Both Dempwolff and Dahl's symbols involve hypotheses about phonetic realities, whereas Dyen and Tsuchida's symbols are more like formulas "without phonetic prejudice".

2.1.1 Tanan /ʔ/ regularly corresponds with /p/ in the other dialects, and that correspondence can be reconstructed as PR *p:

		crab	fire	foot	rice	seven ¹	dream
Tan	/ʔ/	aʔásə	aʔóy	Daʔálə	ʔagáy	ʔitó	wa-siʔi
Bud	/p/	apásə	apóy	Dapálə	págay	pító	wa-sipi
Mag	/p/	apási	apúru ²	Dpáli	pgé:	pítu	u-sipi ³
Ton	/p/	apásə	apóy	Dapálə	pagáy	pító	wa-sípi
Man	/p/	apaʔə	apoi	əpapalə	pahai	pito	o-ʔipi
PR	*p	*apasə	*apoy	*Dapalə	*pagay	*pito	*oa-sipi

Other examples:⁴ bitter, count, forehead, hunt, lame, navel, old (thing), pineapple, twenty

The stop sound /p/ in Tanan is extremely rare and occurs in a few suspicious words e.g. *poLoko* "ten", obsolete words used by old men in

1. Like many other Formosan languages, the Rukai dialects have three different forms for each numeral with different uses: cardinal, things and people. In this comparative vocabulary, only the cardinal form for each numeral is listed unless specified otherwise. Cf. the Tsouic languages (Li 1972).
2. See note 1 in §2.1.11 for the development of *ru* in Maga.
3. Hyphen indicates a morpheme boundary. The verbal prefixes *u-* (or *o-*) in Maga, *o-* in Mantauran, and *wa-* in Tanan, Budai and Tona indicate non-future tense and actor-focus.
4. See §4 for the examples of the Rukai forms. To save space, only English glosses are given here

narrating traditional folklore and thus unintelligible to young people e.g. *pinu*, rare plant names e.g. *apia* "opium poppy", and a few common words.

2.1.2 Mantauran /v/ corresponds with /b/ in the other dialects, and that correspondence is reconstructible as PR *b:

		ashes	banana	enemy	hair, body	jaw
Tan	/b/	abó	bələbələ	bađá	obálə	baθiŋi
Bud	/b/	ábo	bələbələ	báđa	obálə	báθiŋi
Mag	/b/	abú:	blɛbli	brá:	ubá:	bθéŋe
Ton	/b/	abó	bələbələ	baá	obálə	baθiŋi
Man	/v/	avo	vələvələ	vaLa	ovalə	vasiŋi
PR	*b	*abo	*bələbələ	*bađa	*obalə	*baθiŋi

Other examples: bamboo, belly, dizzy/drunken, give, pubic hair, pull, rotten, smell

On the other hand, /v/ in the other dialects corresponds with /φ/ in Mantauran, and such a correspondence is reconstructible as PR *v or *w as it is derived from PA *w.¹

		bee	left	rattan	thread	tooth
Tan	/v/	való	virí	ováy	vaLáy	valísi
Bud	/v/	válo	víri	ováy	vaLáy	válisi
Mag	/v/	vló:	vri-éni	uvé:	vré:	vlése
Ton	/v/	való	vii-anə	ováy	váyay	valísi
Man	/φ/	alo	iri-ə	oai	aLai	aliʔi
PR	*v	*valo	*viri	*ovay	*vaLay	*valisi

Other examples: flying squirrel, walk

The two correspondences, PR *b and *v, contrast in the same environments, initially e.g. "enemy" and "tooth", medially e.g. "body hair" and "rattan".

1. There is v~w alternation in the dialects of Tanan, Budai and Tona: w in the word-final while v in non-final positions. Maga also has the alternation o: (<*aw)~(a) v. See §2.3 "From Proto-Austronesian to Proto-Rukai." For the morphophonemic alternation and its historical implications, see Li 1974.

There are a few exceptions to the above regular correspondence; that is, PR **v* is kept as *v* in Mantauran in a few items, e.g., **bava>vava*: "wine", **vaLo>vaLo* "eight, both good cognates in all the other four dialects. There are altogether ten items that manifest such an irregular correspondence in Mantauran, and most of them show cognation only among two or three dialects, i.e. "type of bamboo", "betel-nut", "hoe", "long knife", "language", "plum", "pomelo", "ribs", "glutinous rice" whose forms may not go back to PR. Many of these terms are apt to be borrowed. An alternative solution to the irregularity is to state that PR **v* is kept as Mantauran *v* if the contiguous syllable contains a fricative in Mantauran. This explanation is rejected mainly because it is an unlikely development phonetically. Besides, three out of ten items cannot be explained away even in this manner. See §4 for the forms.

PR **v* was unexplainably lost in the environment of **a_i* in Tanan and Budai (or inserted in Maga and Tona only) in a few items:

		arrow	far	year	day
Tan	/φ/	Laíli	daíli	caíli	vayá
Bud	/φ/	Laíli	a-dáili	cáili	vayáñə
Mag	/v/	rvéle	me-dávili	cvéle	(vevá:)
Ton	/v/	avili	maʔa-dávili	cavili	(vivaʔáñə)
Man	/φ/	Laili	maʔa-daili	caili	—
PR	<i>*v</i>	<i>*Lavili</i>	<i>*davili</i>	<i>*cavili</i>	<i>*vaianə</i>

2.1.3 The correspondence of /t/'s is reconstructible as PR **t*:

		bridge	eel	seven	skirt (m.)	three
Tan	/t/	talóDo	tolá	ʔitó	labíti	toló
Bud	/t/	talóDo	tóla	pító	lábíti	toló
Mag	/t/	tlóDo	tlá:	pítu	lbéte	túru
Ton	/t/	talóDo	tolá	pító	labíti	tóo
Man	/t/	talođo	tola	pito	laviti	toLo
PR	<i>*t</i>	<i>*taloDo</i>	<i>*tola</i>	<i>*pito</i>	<i>*labiti</i>	<i>*toLo</i>

Other examples: nine, pork, salt, squirrel, star, taro

The correspondence of /c/'s is reconstructible as PR *c:

		<u>bear</u>	<u>eye</u>	<u>louse (head)</u>	<u>millet</u>	<u>stomach</u>
Tan	/c/	comáy	macá	kocó	bəcəŋə	bicoká
Bud	/c/	cómay	máca	kóco	bəcəŋə	bicóka
Mag	/c/	cmé:	mcá:	kcú:	bcəŋi	bcúka
Ton	/c/	comáy	macá	kocó	bəcəŋə	bicóka
Man	/c/	comai	maca	koco	vəcəŋə	vicoka
PR	*c	*comay	*maca	*koco	*bəcəŋə	*bicoka

Other examples: bite, excrement, sick, thorn, tooth (front), water

The two correspondences /t/'s and /c/'s contrast in the same environments. That is one of the pieces of evidence for Ogawa and Asai's (1935: 6) distinction between *t₁ and *t₂ and Dyen's (1965) positing the distinction between PA *t and *C.

2.1.4 The Mantauran voiced interdental fricative /d/ corresponds with both /d/'s and /D/'s in the other dialects, and the two correspondences are reconstructible as PR *d and *D respectively:

		<u>cooked</u>	<u>house</u>	<u>hundred</u>	<u>love</u>	<u>tongue</u>
Tan	/d/	madó:	da'ínə	idáy	madalámə	Lidámə
Bud	/d/	madó:	da'ínə	iday	madálámə	Lídámə
Mag	/d/	madú:	dánə	idé:	madlámi	rdámə
Ton	/d/	madoʔó	daʔánə	idáy	madalámə	idámə
Man	/d/	madoʔo	daʔanə	idai	madalamə	Lidámə
PR	*d	*madoʔo	*daʔanə	*iday	*madalamə	*Lidámə

Other examples: banyan tree, earth, mouth, walk, wounded

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		<u>back</u>	<u>big</u>	<u>bridge</u>	<u>dirty</u>	<u>foot</u>
Tan	/D/	DəLəkə	maDáw	talóDo	—	Daʔalə
Bud	/D/	Dələkə	máDaw	talóDo	ma:kóDoLo	Dapálə
Mag	/D/	Dríkɿ	maDó:	tlóDo	makDúru	Dpáli
Ton	/D/	Də́kə	maDáw	talóDo	makoDo:	Dapálə
Man	/d/	(dəLəhə) ¹	maɬao	talədo	makoðoLo	ɬapalə
PR	*D	*DəLəkə	*maDaw	*taloDo	*makoDoLo	*Dapalə

Other examples: camphor, fruit, iron, moon, old(person), others, pineapple, river

The Mantauran fricative /d/ has strong stop quality pronounced with the tip of tongue protruding between the teeth.

2.1.5 The correspondence of /k/'s is reconstructible as PR *k:

		<u>anteater</u>	<u>bite</u>	<u>drunk</u>	<u>eat</u>	<u>excrement</u>
Tan	/k/	karará	wa-ká:cə	mabosóko	wa-kánə	cakí
Bud	/k/	(karáda)	wa-ká:cə	mabosóku	wa-kánə	cáki
Mag	/k/	krára	—	mabusúku	u-káni	cke:
Ton	/k/	karára	wa-kaʔacə	mabosóko	wa-kanə	cakí
Man	/k/	ka:rara	o-kaʔacə	mavoʔoko	o-kanə	caki
PR	*k	*karara	*oa-kaʔacə	*mabosoko	*oa-kanə	*caki

Other examples: breath, camphor, cold, crooked, dirty, fish, goat, knife, head louse

Mantauran /h/ corresponds with /g/ in the other dialects, reconstructible as PR *g:

		<u>clever</u>	<u>fly (small)</u>	<u>grandchild</u>	<u>longan</u>
Tan	/g/	ma-Ligili	a-La-Ləgólə	agánə	giŋigiŋi
Bud	/g/	ma-Ligili	a-La-Ləgələ	agánə	giŋigiŋi
Mag	/g/	ma-rgili	arígli	agáni	giŋigiŋi
Ton	/g/	ma-igili	aəgələ	agánə	giŋigiŋi
Man	/g/	ma-Lihili	aLəhələ	ahanə	hiŋihiŋi
PR	*h	*ma-Ligili	*aLəgələ	*aganə	*giŋigiŋi

Other examples: know, language, mountain, rice plant, sharp, stone

1. The *h* of the Mantauran form is inexplicable, hence it is a doubtful cognate. Hereafter, doubtful cognates (a segment is not accounted for) are put in parentheses. Cf. the similar irregular sound change *k>h in PR *sabəkə>Man ʔavahə "spear" (N), and its derived verb form o-ra-ʔavahə "to spear" (V), and in *oa-əbəkə>o-əvəhə "to tie", *mabocoko>mavocoho "full (after eating)" if these Mantauran forms are historically inherited.

2.1.6 The glottal stop in Tona and Mantauran corresponds with ϕ in the other three dialects, reconstructible as PR $*\phi$:

		cooked	fish	full ¹	give	inside
Tan	/ ϕ /	madó:	ká:ŋə	si-a-ətó	wa-ba:y	aDíŋi
Bud	/ ϕ /	madó:	ká:ŋə	so-a-ətə	wa-bá:y	aDíŋi
Mag	/ ϕ /	madú:	akáŋə	sití:	o-bé:	aDíŋi
Ton	/ʔ/	madoʔó	kaʔáŋə	si-a-ʔətó	wa-baʔáy	ʔaDíŋi
Man	/ʔ/	madoʔo	kaʔaŋə	so-ʔətə	o-vaʔai	ʔaDíŋi
PR	$*\phi$	$*madoʔo$	$*kaʔaŋə$	$\begin{cases} *si-ʔətə \\ *so-ʔətə \end{cases}$	$*oa-baʔay$	$*ʔaDíŋi$

Other examples: earth, fat, hot, hurt, iron, neck, squeeze, tree, wash

The glottal stop in Tanan that is derived from PR $*p$, as mentioned above, is not to be confused with this.

2.1.7 Mantauran /s/ corresponds with /θ/ in the other dialects, reconstructible as PR $*\theta$:

		breast	chop	jaw	liver	suck
Tan	/θ/	θoθó	wa-θyábə	baθíŋi	aθáy	wa-θəʔəθəʔə
Bud	/θ/	θóθo	wa-θyábə	báθíŋi	áθay	wa-θəpəθəpə
Mag	/θ/	θúθu	u-θifbi	bθéŋe	aθé:	u-θpíθpi
Ton	/θ/	θoθó	wa-θyábə	baθíŋi	—	wa-θəpəθəpə
Man	/s/	soso	o-siavə	vasiŋi	asai	o-səpəsəpə
PR	$*\theta$	$*\theta o\theta o$	$*oa-\theta iabə$	$*ba\theta iŋi$	$*a\theta ay$	$*oa-\theta əpə\theta əpə$

Other examples: cook, dance, nurse (a baby), young

Mantauran /ʔ/ corresponds with /s/ in the other dialects, reconstructible as PR $*s$:²

1. The bound morpheme *-a-* between the verbal prefix and root indicates non-future tense (see Li 1975a: iii).

2. The sound change $s > ʔ$ in Mantauran seems uncommon. It has probably gone through the intermediate stage $s > h > ʔ$, as it is common to have the change $s > h$, and $h > ʔ$ involves only the change of the feature from continuant to stop.

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		<u>brain</u>	<u>count</u>	<u>crab</u>	<u>dream</u>	<u>drunk</u>
Tan	/s/	lo:so	w-asíʔi	aʔásə	siʔi	mabosóko
Bud	/s/	ló:so	w-ásipi	apásə	sipi	mabosóko
Mag	/s/	u-lúsu	u-sípi	apási	u-sípi	mabusúku
Ton	/s/	ló:so	w-asipi	apásə	sípi	mabosóko
Man	/ʔ/	loʔo	o-aʔipi	apaʔə	o-ʔipi	mavoʔoko
PR	*s	*loso	*o-asipi	*apasə	*sipi	*mabosoko

Other examples: camphor, eagle, fat, pubic hair, pestle, smell, tooth (general), twenty

The two correspondences contrast in the same environments, e. g. "breasts" and "brain", "jaw" and "count".

Still another correspondence ϕ - ϕ -s-s- ϕ is attested in but three items:

		<u>bladder</u>	<u>night</u>	<u>pine tree</u>	<u>Cf. four</u>
Tan	/ ϕ /	obó —	maóŋo —	aLéŋə —	soʔátə
Bud	/ ϕ /	óbo —	máŋoŋo —	áLəŋə —	səpátə
Mag	/s/	— sbú:	— masúŋu	— sríŋi	pátə
Ton	/s/	— sobó	— masóŋo	— saéŋə	pátə
Man	/ ϕ /	ovo —	maŋoŋo —	aLəŋə —	patə
PR	*s(?)	*obo *sobo	*maŋoŋo *masoŋo	*aLəŋə *saLəŋə	*səpatə

Other examples: bow, salt, tears

It is not clear why /s/ is kept only in Maga and Tona in these items if it is also assigned to PR *s and if they are treated as cognates. As for the item "four", it is just the other way around, i. e. /s/ is kept in Tanan and Budai, but lost in Maga, Tona and Mantauran.

2.1.8 Rukai is one of the Formosan languages that reflect the plausibility of positing a distinction between * n_1 and n_2 (Ogawa and Asai 1935: 6-7) and PA * n and * N (Dyen 1965) because the two correspondences

n-n-n-n and l-l-l-l contrast in the same positions: initially e.g. "pus" and "horn" and medially e.g. "eat" and "bamboo", to be reconstructed as PR *n and PR *l respectively, derived from PA *n and PA *N respectively.¹

		<u>bamboo</u>	<u>banana</u>	<u>brain</u>	<u>bridge</u>	<u>horn</u>
Tan	/l/	baləbálə	bələbále	ló:so	talóDo	laŋo
Bud	/l/	baləbalə	bələbələ	ló:so	talóDo	láŋo
Mag	/l/	bləblə	bləbli	u-lúsu	tlóDo	lóŋu
Ton	/l/	baləbalə	bələbələ	ló:so	talóDo	laŋo
Man	/l/	valəvalə	vələvələ	loʔo	talodo	laŋo
PR	*l	*baləbalə	*bələbələ	*loso	*taloDo	*laŋo

Other examples: buy, drink, eel, foot, body hair, hunt, small knife, lame,
leopard, swim, water

		<u>breath</u>	<u>eat</u>	<u>forehead</u>	<u>pus</u>	<u>sand</u>
Tan	/n/	nyákə	wa-kánə	ʔonó	naná	ənáy
Bud	/n/	nyakə	wa-kánə	póno	nána	énay
Mag	/n/	(nɛ́iki)	u-káni	t-punu-á	n:á:	iné:
Ton	/n/	nyákə	wa-kanó	ponó	naná	ənáy
Man	/n/	niakə	o-kanə	ta-pono-ə	nana	ənai
PR	*n	*niakə	*oa-kanə	*pono	*nana	*ənay

Other examples: house, mother, shoot, six, stone, thorn

2.1.9 The correspondence L-L-r-ø-L can be reconstructed as PR *L:

1. The Tsouic group also reflects the distinction of PA *n and *N, but it does not agree with the Paiwanic group such as Rukai with regard to the individual forms. For example, the reflexes in the Tsouic group indicate that the PA form for the item "right (side)" is *waNan, whereas the reflexes in the Paiwanic group for the same item would be *wanaN (see Li 1972: 326). In fact, the reflexes in Rukai dialects also show variants: *wanaN and *wanan (see §4).

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		<u>below</u>	<u>charcoal</u>	<u>five</u>	<u>hand</u>	<u>leopard</u>
Tan	/L/	LaóDo	Laŋéle	Limá	aLimá	Likoláw
Bud	/L/	LáoDo	Laŋéle	Líma	aLíma	Likólaw
Mag	/r/	róDu	rŋéle	ríma	aríma	rkúlo
Ton	/ø/	aóDo	aŋéle	imá	aíma	ikólaw
Man	/L/	Laoðo	(raŋəle)	Lima	aLima	Likolao
PR	*L	*LaoDo	*Laŋəle	*Lima	*aLima	*Likolaw

Other examples: cold, flower, head, mountain, neck, ripe, rotten, sputum, take, ten, thread, tongue, winnowing basket

2.1.10 The correspondence r-r-r-ø-r can be reconstructed as PR *r:

		<u>belly</u>	<u>left</u>	<u>lime</u>	<u>moon</u>	<u>push</u>
Tan	/r/	baráŋə	virí	rabóko	Damárə	wa-DoroDóro
Bud	/r/	baráŋə	víri	—	Dámarə	wa-DoróDoro
Mag	/r/	baráŋə	vri-éni	rbóko	Dmári	u-DrúDru
Ton	/ø/	baáŋə	vii-ane	abóko	Damáə	wa-DoóDo:
Man	/r/	varáŋə	iri-ə	ravoko	damarə	o-ðo-doro
PR	*r	*baráŋə	*virí	*raboko	*Damarə	*oa-DoroDoro

Other examples: forgetful, old(person), river, same, sharp, star

The last two correspondences indicate that PR *L and *r have merged into /r/ in Maga, but are both lost in Tona.

2.1.11 The correspondence y-y-ø-y-i that appears in the word-final position can be reconstructed as PR *y:

		<u>bear</u>	<u>buy</u>	<u>lame</u>	<u>rattan</u>	<u>fire</u>
Tan	/y/	comáy	wa-laŋáy	maʔiláy	ováy	aʔóy
Bud	/y/	cómay	wa-laŋáy	mapílay	ováy	apóy
Mag	/ø/	cmé:	o-lŋé:	maplé:	uvé:	apúru
Ton	/y/	comáy	wa-laŋáy	mapiláy	ováy	apóy
Man	/i/	comai	o-laŋai	mapilai	oai	apoi
PR	*y	*comay	*oa-laŋay	*mapilay	*ovay	*apoy

Other examples: blood, float, give, hundred, light, mouth, swim

In the final position PR *y is lost in Maga and the preceding vowel nucleus may be compensated by lengthening, e.g. *comay > cmê: "bear". There is but one case in which a final vowel is added and the *y is kept as r, viz. *apoy > apúru "fire" in Maga, whereas the final vowel is not added to the forms in the other dialects.¹

The correspondence ɖ-d/ɖ/y-r-ø-L² that appears only in the medial position could be reconstructed as PR *ɖ:

		above	bird	enemy	lake	thirsty	Cf. mango
Tan	/ɖ/	Dadá	aɖaɖámə	baɖá	baɖó	ma:kaɖámə	kamayá
Bud	/d/ɖ/y/	Dáɖa	aɖa:ɖamə	báɖa	báyo	ma:káɖamə	kamáɖa
Mag	/r/	Drá:	arámə	brá:	bro:	—	kamé:a
Ton	/ø/	Dəá	aámə	baá	baó	—	kamaya
Man	/L/	ɖaLa	aLaɖə	vaLa	vaLo	ma:kaLaɖə	—
PR	*ɖ	*Dadə	*aɖamə	*baɖa	*baɖo	*makadəɖə	*kamaia

Other examples: give (imperative form), tomorrow, yesterday

Alternatively, since the two correspondences y-y-ø-y-i and ɖ-d/ɖ/y-r-ø-L are in complementary distribution: the former in the final position and the latter elsewhere, they can both be reconstructed as PR *y, which is also derived from PA *y. If the semivowel *y is reconstructed for the correspondences, then it would seem better, for the sake of phonemic symmetry, to reconstruct *w for the correspondence v-v-v-v-ø mentioned previously (see §2.1.2).³

1. There may have been different rates of sound change in the different dialects. The Maga form was derived from *apoy through the intermediate stage *apoyo, in which a final vowel *o was added; thus, PR *apoy > *apoyo > *apodo > Maga apuru. Cf. the discussion below. The irregular correspondence also appears in Maga sbóro and Tona saboy "bamboo basket"; Budai dāmay, Maga s-damr-á:, Tona damay and Mantauran ?a-dāmai "side dish".
2. Budai reflexes are /d/ as based on Tsuchida's (1970b) transcription, but /ɖ/ as based on Ferrell's (1969) and mine (1972); only a few items have /y/, e.g. bayo "lake/pond", loya "tomorrow", (luɖá: 'in Ferrell) and koya "yesterday" (kudá' in Ferrell). Again there seems to be different rates of sound change in that the Budai forms show y instead of the anticipated ɖ. Interestingly enough, Budai ɖ also corresponds with y in the other dialects for the term "mango".
3. The derivations of PR *y > Tanan ɖ, Maga r and Mantauran L, and PR *w > Tanan and Maga v, is further supported by the morphophonemic alternations y~ɖ and w~v in Tanan, e: (derived from *ay)~ar and o: (derived from *aw)~(a)v in Maga, y~L in Mantauran (see Li 1974, §2.1-2.2 and §3 for examples and discussions).

In this analysis, both PR semivowels *y and *w changed into fricatives (or liquids) in the initial and medial positions in modern dialects. The gaps left by this change were later filled by high vowels /i/ and /o/ respectively in the environment of the low vowel:

	mango	chop	so	cook	chew	shoot (gun)
Tan	kamayá	wa-θyábə	myá	wagá	wa-ʔó:	wa-kwáŋə
Bud	kamáda	wa-θyabe	myá	wága	wa-pó:	wa-kwaŋə
Mag	kamé:a	u-θiɬbi	miá	—	u-pú:	u-kuəŋi
Ton	kamáya	wa-θyábə	myá	—	wa:póʔo	wa-kwáŋə
Man	—	o-syavə	mia	—	oa-poʔo	o-koəŋə
PR	*kamaia	*oa-siabə	*mia	*oaga	*oa-poʔo	*oa-koəŋə

Other examples for *i>y: day, chief, kill

*o>w: bowl, bring, east, gun, hawk

We can see how the high vowels changed into the semivowels, as there were no semivowels to confuse them.

An advantage of this analysis is that we can see a general sound shift, not just some disconnected sound changes. Another advantage is that we could save two phonemes for PR. Should our reconstruction forms be *kamaya “mango”, *wa-poʔo “chew”, etc., then there would be a contrast between *y and *ɬ, *w and *v in the initial and medial positions.

Note that the Budai form **kamáda* “mango” has gone one step further than the other dialects: PR *i>*y>ɬ.

2.1.12 The correspondences of bilabial and velar nasals present no problem in reconstruction:

		bitter	cooked	eye	five	flow	fruit
Tan	/m/	maʔalíli	madó:	macá	Limá	mwalóDo	maDó
Bud	/m/	ma:palíli	madó:	máca	Líma	mwáloDo	máDo
Mag	/m/	—	madú:	mcá:	ríma	molúDu	mDó:
Ton	/m/	mapálili	madoʔó	macá	imá	mwalóDo	maDó
Man	/m/	mapalili	maðoʔo	maca	Lima	molodo	maðo
PR	*m	*mapalili	*madoʔo	*maca	*Lima	*moaloDo	*maDo

Other examples: bear, big, cold, dizzy/drunken, hand, iron, lame, light, love, moon, old(person)

		belly	cat	charcoal	drink	fish	glass
Tan	/ŋ/	baráŋə	ŋyáw	Laŋólə	oŋólo	ka'ŋə	liŋó
Bud	/ŋ/	baráŋə	ŋyaw	Laŋólə	oŋolo	ká'ŋə	—
Mag	/ŋ/	baráŋə	ŋíu	rŋólə	uŋúlu	akáŋə	liŋú:
Ton	/ŋ/	baáŋə	ŋyáw	aŋólə	ʔoŋólo	kaʔáŋə	liŋó
Man	/ŋ/	varaŋə	ŋiao	(raŋələ)	ʔoŋolo	kaʔaŋə	liŋo
PR	*ŋ	*baraŋə	*ŋiaw	*Laŋələ	*ʔoŋolo	*kaʔaŋə	*liŋo

Other examples: horn, inside, jaw, millet, old(person), pineapple

2.1.13 There is no problem in reconstructing the four PR vowels *i, *o, *ə and *a.

		count	dream	eagle	lame	pull
Tan	/i/	w-asíʔi	siʔi	aDísi	maʔiláy	bilibíli
Bud	/i/	w-ásipi	sípi	aDísi	mapílay	bilíbili
Mag	/i/	u-sípi	u-sípi	aDísi	maplé:	u-blíbli
Ton	/i/	w-asípi	sípi	ʔaDísi	mapiláy	bilíbili
Man	/i/	o-aʔipi	o-ʔipi	ʔaǎiʔi	mapilai	o-vilivili
PR	*i	*o-asipi	*sípi	*ʔaDisi	*mapilay	*bilibili

Other examples: and, bitter, excrement, five, goat, pubic hair, hand, inside, seven, stomach

		brain	breast	eight	fire	flow	money
Tan	/o/	lo'so	θoθó	vaLo	aʔóy	mwaLoDo	ʔaysó
Bud	/o/	ló:so	θóθo	váLo	apoy	mwaLoDo	páyso
Mag	/u/	u-lúsu	θúθu	váru	apúru	molúDu	pésu
Ton	/o/	ló:so	θoθó	vaó	apóy	mwaLoDo	páyso
Man	/o/	loʔo	soso	(vaLo)	apoi	molodo	paiso
PR	*o	*losó	*θoθo	*vaLo	*apoy	*moaloDo	*payso

Other examples: ash, dizzy/drunken, drink, forehead, glass, body hair, public hair, horn, hunt, leopard, head louse, pineapple, push, rattan, seven, three

Maga /u/ is phonetically [o, u], similar to the /o/ in the other dialects, and Maga /o/ is phonetically [ɔ].

		<u>banana</u>	<u>eat</u>	<u>iron</u>	<u>low</u>	<u>mountain</u>
Tan	/ə/	bələbələ	kánə	aDémə	ma:-ləbə	LəgəLəgə
Bud	/ə/	bələbələ	kánə	aDémə	a:-ləbə	LəgəLəgə
Mag	/i/	blíbli	u-káni	aDími	ma-líbi	rgírgi
Ton	/ə/	bələbələ	kané	?aDémə	ma?aləbə	əgə:gə
Man	/ə/	vələvələ	o-kanə	?adəmə	mo-ləvə	LəhəLəhə
PR	*ə	*bələbələ	*kanə	*?aDəmə	*ma?aləbə	*LəgəLəgə

Other examples: back, charcoal, kidney, navel, pain, sand

Maga /i/ is phonetically [ə] or [i], similar to the /ə/ in the other dialects, and Maga /ə/ is phonetically [ʌ] or [ɐ].

		<u>anteater</u>	<u>belly</u>	<u>camphor</u>	<u>crab</u>	<u>eel</u>	<u>eight</u>
Tan	/a/	karará	baráŋə	Dakésə	a?ásə	tolá	vaLó
Bud	/a/	(karáda)	baráŋə	Dakésə	apásə	tóla	váLo
Mag	/a/	krára	baráŋə	Dkésə	apási	tlá:	váru
Ton	/a/	karára	baáŋə	Dakésə	apásə	tolá	vaó
Man	/a/	ka:rara	varaŋə	ɬakə?ə	apa?ə	tola	(vaLo)
PR	*a	*karara	*baraŋə	*Dakəsə	*apasə	*tola	*vaLo

Other examples: ash, big, bitter, cooked, crow, dizzy/drunken, eagle, eat, excrement, eye, fire, fish, five, foot, fruit

2.1.14 The Maga mid vowels are developed from diphthongs, vowel sequences, and high (or mid) vowel due to the loss of the low vowel.

The Maga long vowel /e:/ corresponding to the diphthong /ay/ or /ai/ in the other dialects is reconstructible as PR *ay.

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		<u>bear</u>	<u>buy</u>	<u>give</u>	<u>hundred</u>	<u>lame</u>
Tan	/ay/	comáy	wa-laŋáy	wa-ba:y	idáy	maʔiláy
Bud	/ay/	cómay	wa-laŋáy	wa-bá:y	iday	mapílay
Mag	/e:/	cmé:	o-lŋé:	o-bé:	idé:	maplé:
Ton	/ay/	comáy	wa-laŋáy	wa-baʔáy	idáy	mapiláy
Man	/ai/	comai	o-laŋai	o-vaʔai	idai	mapilai
PR	*ay	*comay	*oa-laŋay	*oa-baʔay	*iday	*mapilay

Other examples: cake, dove, exist, liver, net, rattan, rice plant, sand, sputum, thread, water

The Maga /e/ (or /e:/ if monosyllabic) corresponds to /i/ in the other dialects if the preceding low vowel has been lost. In other words, the low vowel "pulls" down the high vowel to mid before it is lost.

		<u>hemp</u>	<u>skirt (m.)</u>	<u>tooth</u>	<u>deer (f.)</u>	<u>excrement</u>
Tan	/i/	damili	labíti	valísi	θadí:	cakí
Bud	/i/	damíli	lábiti	válisi	θadí:	cákí
Mag	/e/	dméle	lbéte	vlése	θdé:	cké:
Ton	/i/	damíli	labíti	valísi	θadíʔi	cakí
Man	/i/	damili	laviti	aliʔi	sadiʔi	caki
PR	*i	*damili	*labiti	*valisi	*θadiʔi	*caki

Other examples: arrow, betel-nut, chopsticks, jaw, trousers

Two points should be noted: (1) More than one high vowel is "pulled" down by the low vowel before it is lost, so we get the echo vowel e-e in Maga, e.g. *dméle* rather than **dmeli**. (2) No high vowel in Maga is affected if the preceding low vowel is preserved and/or if the following vowel is also low:

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		<u>eagle</u>	<u>ear¹</u>	<u>five</u>	<u>hand</u>	<u>forgetful</u>
Tan	/i/	aDísi	caLiŋa	Limá	aLimá	marimóro
Bud	/i/	aDísi	caLiŋa	Líma	aLíma	marimóro
Mag	/i/	aDísi	caŋíra	ríma	aríma	marimúru
Ton	/i/	ʔaDísi	caŋíra	imá	aíma	maimó:
Man	/i/	ʔaɖiʔi	caLiŋa	Lima	aLima	marimoro
PR	*i	*ʔaDisi	*caLiŋa	*Lima	*aLima	*marimoro

Other examples: far, ground, mother, muddy, roof, root

The Maga /e/ corresponding to the vowel sequence /ai/ and /ia/ (or /ya/) in the other dialects is reconstructible as PR *ai and *ia respectively:

		<u>hungry</u>	<u>rope</u>	<u>chop</u>	<u>kill</u>
Tan	/ai, ya/	mo-baísi	—	wa-θyábə	—
Bud	/ai, ya/	mo-baísi	—	wa-θyábə	—
Mag	/e/	o-besi	tési	u-θiébi	pa-témdu
Ton	/ai, ya/	ʔa-baisi	taísi	wa-θyábə	pa-tyámodo
Man	/ai, ia/	—	(caiʔi)	o-siavə	—
PR	*ai, *ia	*-baisi	*taisi	*oa-θiabə	*pa-tiamodo

Exception: PR *ʔaiDi > Maga aiDi "blood".

Maga /o:/ in the stressed syllable corresponding to the vowel sequence /ai/ in Mantauran and to the diphthong /aw/ in the other three dialects is reconstructible as PR *aw:

		<u>big/many</u>	<u>wash (clothes)</u>
Tan	/aw/	maDáw	sináw
Bud	/aw/	máDaw	sinaw
Mag	/o:/	maDó:	u-sini-sinó:
Ton	/aw/	maDáw	sináw
Man	/ao/	maɖao	ʔənao
PR	*aw	*maDaw	*sinaw

1 There is a metathesis of PR *L and *ŋ in Maga and Tona. Cf. PA *Calíŋa. See also §2.2.7.1.

The Maga /o/ in the unstressed syllable corresponding to /aw/ or /wa/ in three other dialects is also reconstructible as PR *aw:

		<u>leopard</u>	<u>bowl (big)</u>
Tan	/aw/	Likoláw	—
Bud	/aw/	Likólaw	—
Mag	/o/	rkúlo	kóto
Ton	/aw/	ikólaw	kwátaw
Man	/ao/	Likolao	koatao
PR	*aw	*Likolaw	*koataw

Maga /o/ corresponding to the vowel sequence /ao/ in all the other dialects is reconstructible as PR *ao:

		<u>below</u>	<u>head</u>	<u>horn</u>
Tan	/ao/	LaóDo	aoLó	laóno
Bud	/ao/	LáoDo	aóLo	lácno
Mag	/o/	róDu	óru	lónu
Ton	/ao/	aóDo	aóo	laóno
Man	/ao/	Laoðo	—	laono
PR	*ao	*LaoDo	*aoLo	*laono

2.1.15 Long vowels in modern dialects are normally due to the loss of consonants, e. g. PR *kaʔayə > ka:yə 'fish' (Tanan and Budai), or monophthongization and compensation, e. g. PR *comay > cmé: 'bear' (Maga).

2.1.16 There are some residual problems to be settled in one way or another.

One of the problems is echo vowels after the final consonants. This is a phonetic feature shared by all the Rukai dialects, as well as the Tsouic languages (Li 1972). Did the echo vowels exist in PR? If not, there would be the difficulty of explaining how they developed so uniformly in all these dialects. Independent development in the individual dialect was very unlikely. What is more, it would be very difficult to account

for the historical derivations in Maga in particular, for example, PR **balabalə* > *blɛ̃blə* "bamboo" and PR **balabalə* > *blɛ̃bli* "banana". Hence a simpler solution is to treat the echo vowels as historically inherited from PR. But it does not necessarily follow that they must be represented in the underlying forms in all the modern Rukai dialects. In the Tanan dialect, it makes stress more nearly predictable (mostly in the final syllable) if the echo vowels are not written out (see Li 1973: 51-55). To make it clear, the echo vowels are written out in the Tanan forms in this paper for comparative reasons. However, echo vowels must be given in the Lower Three Villages (see examples in §1.5, Note 3).

Another problem closely related to that of echo vowels is stress. It is, as stated in the preceding paragraph, mostly in the final syllable in Tanan if echo vowels are not represented in the transcription. However, stress mostly falls on the penult in the other dialects, and there is little justification for not representing the echo vowels in these dialects. Was stress on the PR final syllable as in Tanan or on the penult as in the other dialects or otherwise determined?

2.2 Sound Changes from Proto-Rukai to Modern Dialects

In the following statements of sound change, I shall leave out the sounds that "remain unchanged". I shall, however, indicate phonemic coalescence and split in the individual dialect.

2.2.1 From Proto-Rukai to Tanan

*p > ʔ, e. g. **pagay* > ʔagay "rice plant", **Dapalə* > Daʔalə "foot"

*ʔ > ø, e. g. **ʔaDiŋi* > aDiŋi "inside", **oabaʔay* > waba:y "give"

*n > ø/a_ə#,¹ e. g. **tabalaŋaʔanə* > tabalaŋa: "arm", **aneanə* > anea "who"

*n > n/elsewhere, e. g. **ina* > t-ina "mother", **Lonale* > Lonale "cub"

*n is not lost after high vowels, and there are exceptions (see Li 1973: 45-50).

1. There are some exceptions to the general rule of the loss of the final *n in Tanan, e. g. **kanə* > kana "eat", **canə* > ca:nə "wet field", **naganə* > naganə "name". The same is true of Mantauran as well as Maga.

2.2.2 From Proto-Rukai to Budai

*ʔ>∅, e. g. *ʔaDəmə>aDəmə "iron", *madoʔo>mado: "cooked"

*d>d/y /non-final, e. g. *adəmə>ada:damə "bird", *bado>bayo "lake"

2.2.3 From Proto-Rukai to Maga

*ʔ>∅, e. g. *ʔaŋato>aŋato "tree", *oapəʔə>upə: "squeeze"

*L — e. g. *LəgəLəgə>rgirgi "mountain", *Likolaw>rkulo "leopard"

*r — —r e. g. *Damarə>Dmari "moon", *Dakəralə>Dkərle "river"

*d — /non-final, e. g. *Dadə>Dra: "above", *bada>bra: "enemy"

*y>∅, e. g. *comay>cme: "bear", *vaLay>vre: "thread"

In Maga, PR *L and *r completely merged, and PR *y>*d in the non-final position partially merged with them, elsewhere it was lost although the preceding vowel was compensated by lengthening.

Like Tanan, Maga has lost PR *n after *a in word-final:

*n>∅/a_ə# e. g. *didaʔanə>deda: "ground", *bəcəLakanə>bcərka: "middle"

*ay>e:, e. g. *abay>abe: "cake", *ponay>pne: "dove"

*ai — e. g. *taisi>tesi "rope", *ʔa-baisi>o-besi "hungry"

*i — —e /if the preceding low vowel was lost, e. g. *baθiqi>bθeŋe "jaw",
*damili>dmele "hemp"

*aw>o: e. g. *maDaw>maDo: "big", *oa-sinaw>u-sini-sino: "wash clothes"

*aw — e. g. *Likolaw>rkulo "leopard", *koataw>koto "bowl"

*ao — —o e. g. *LaoDo>roDu "below", *aoLo>oru "head"

*o — /if the preceding low vowel was lost, e. g. *taloDo>tloDo "bridge"

The *a in the prefix *oa- was lost, so *oa merged with *o:

*oa — e. g. *oa-ləŋay>o-lŋe: "buy", *oalopo>u-lupu "hunt"

*o — —u e. g. e. g. *odalə>udalə "rain", *koco>kcu: "head louse"

The mid central /ə/ has developed in contrast to the high central /i/ due to the loss of vowels, e. g. PR *bələbələ>blibli 'banana', PR *bələbələ>bləblə 'bamboo'.

For the illustrations of the developments of the mid vowels in Maga, see §2.1.14.

2.2.4 From Proto-Rukai to Tona

- *L — e.g. *aLima > aima "hand", *Laŋələ > aŋələ "charcoal"
 *r — —∅ e.g. *tariau > taiaw "star", *ma-roDaŋə > ma-oDaŋə "old"
 *d — /non-final, e.g. *adamə > aamə "bird",

Tona and Maga share the same innovation in the merger of PR *L, *r and *d, although Tona has gone one step further in the loss of the merged r, which is still kept in Maga. This is one of many pieces for the closer relationships between the two dialects.

2.2.5 From Proto-Rukai to Mantauran

- *b > v, e.g. *abo > avo "ashes", *baləbalə > valəvalə "bamboo"
 *v > ∅, e.g. *valo > alo "bee/honey", *vaLay > aLay "thread"

Exceptions: *bava > vava "wine", *kava > kava "hoe", *vaLo > vaLo "eight", etc.

The change *v > ∅ must have taken place before that of *b > v, or else there would be no /v/ in Mantauran.

- *d — —d e.g. *madoʔo > madoʔo "cooked", *daʔanə > daʔanə "house"
 *D — e.g. *LaoDo > Laoɔ "below", *maDaw > maɔ "many"
 *g > h, e.g. *ma-Ligili > ma-Lihili "clever", *Lənəgə > Lənəhə "stone"

All the voiced stops have changed into fricatives. That explains why there are no voiced stops in Mantauran.

For speakers under the middle age, there is one more sound change: *r > h, e.g. *damarə > damahə "moon" *barayə > vahayə "belly". In other words, *r has completely merged with *g in their speech. But *r is still kept as the trill /r/ in the speech of speakers above middle age.

- *θ > s, e.g. *θoθo > soso "breasts", *aθay > asai "liver"

PR *θ is derived from PA *s. It is not clear whether Mantauran has undergone the changes *s > *θ > *s or simply kept PA *s as /s/ more conservatively than all the other Rukai dialects. (See §2.3).

PR *s and *ʔ completely merged in Mantauran:

- *s— e.g. *apasə>apaʔə "crab", *oasipi>oaʔipi "count"
 *ʔ— e.g. *madoʔo>madoʔo "cooked", *kaʔaŋə>kaʔaŋə "fish"

The chronological order of the sound changes *s>ʔ and *θ>s must have been that the former preceded the latter, or else there would be no /s/ in Mantauran. (See §2.3)

- *L— e.g. *LaoDo>LaoDo "below", *Lima>Lima "five"
 *d— /non-final, e.g. *Dada>daLa "above", *aɬamə>aLamə "bird"

PR *d in non-final positions coalesced with PR *L

- *n>ø/a__ə#, e.g. *salaŋanə>ʔalaŋaə "deer(m.)", *taboθoboθoanə
 >tavosovosa:ə "leg(calf)"

- *oa>o, e.g. *oa-baʔay>o-vaʔai "give", *oa-laŋay>o-laŋai "buy"

An interesting case of HAPLOLOGY is observed in Mantauran, viz. one of two identical sequences of glottal stop plus vowel is dropped:

PR		Hypothetical		Mantauran		Glosses
*bosoʔo	>	*voʔoʔo*	>	voʔo		"bow"
*tokoʔoso	>	*tokoʔoʔo*	>	tokoʔo		"chest"
*kisisi	>	*kiʔiʔi*	>	ki:ʔi		"goat"
*saʔaloDo	>	*ʔaʔalodo*	>	ʔa:lodo		"knife(general)"

2.2.6 Summary of Sound Changes from Proto-Rukai to Modern Dialects

It is clear from the statements of the preceding sections (§2.2.1–§2.2.5) that Budai is the most "conservative" dialect in terms of sound change, whereas Mantauran is the most "innovative" involving most drastic changes. The former has undergone only one change: *ʔ>ø, whereas the latter has undergone the changes of ten segments (phonemes): *b>v, *d>d, *D>d, *g>h, *v>ø, *θ>s, *s>ʔ, *d>L/non-final, *n>ø/a__ə#, *oa>o-. Aside from the difference in detail (i.e. variation between y and d in the non-final positions for some items), Tanan has two more changes than Budai: *p>ʔ, *n>ø/a__ə#. Tona altogether has three changes: the loss of *L, *r, and *d/non-final. As for Maga, it is almost as drastic as

Mantauran. Eight segments have undergone sound changes: $*ʔ > \emptyset$, the merge of $*L$, $*r$ and $*d$ /non-final, loss of $*y/_\#$ or the monophthongization of $*ay > e$:, $*i > e$, $*ao > o$, $*aw > o$: or o , $*n > \emptyset/a_\#$. Many vowels have been dropped, hence there are many consonant clusters. Maga is the only Rukai dialect that has consonant clusters in the same syllable.

2.2.7 Sporadic Changes

2.2.7.1 Metathesis

A case of metathesis is attested in the item “ears”, for which Tanan, Budai and Mantauran have the same form *caliya*, but Maga have *cyira* and Tona *cayia*. The proto-form for both Maga and Tona would be $*cayila$, in which the $*\eta$ and $*L$ metathesized from PR $*caliya < PA *Caliya$. The metathesis of $*\eta$ and $*L$ is also attested in the item ‘big fly’, for which both Tanan and Budai have the same form *alalayaw*, but Maga *ayaro*:, Tona *ayá:w*, Mantauran *ayalao* < PR $*alayaw < PA *layaw$. Other examples are Tanan *calavi-a(n)*, Budai *cavali*, and Maga *cva:ri* ‘roof’, in which $*v$ and $*L$ metathesized. Still another example is the metathesis of PR $*p$ and $*k$ in PR $*sapakəpaka >$ Tanan *sakaʔəkaʔə* “wing”. The metathesis of $*p$ and $*l$ is attested in PR $*malilapaʔa >$ Mantauran *malipalaʔa* “wide”. There is also another example for the metathesis of PR vowels $*i$ and $*a$, e.g. $*\thetaimakolo >$ Budai *\thetaamikolo* “flea”.

2.2.7.2 Haplology

For example, two identical sequences of $\textcircled{a}$, $\textcircled{i}$, $\textcircled{a}$ are reduced to one in Mantauran (see §2.2.5).

2.2.7.3 Assimilation (The examples given below are not exhaustive.)

$*i > a$, e.g. PR $*masipəpəLə\etaə >$ Mantauran *maʔapəpəLə\etaə* “sleepy”

PR $*\etaisayisi >$ Budai *\etaisi\etaisi* “beard”

$*i > o$, e.g. PR $*mabitoLoʔo >$ Tanan *mabotoLo*, Mantauran *mavotoLoʔo* “fat”

$*l > n$, e.g. PR $*danolo >$ *danono* “middle finger”

2.2.8 Semantic Change

Even though the five Rukai dialects are fairly close to each other, some semantic shifts are noticeable. These sporadic semantic shifts are noted here and there in the footnotes in the list of cognates in Section 4. The semantic discrepancies between dialects also give hint to dialect subgrouping (see §3). Given below are only some of the typical examples for body parts, animals, plants, culture items, stative verbs, etc.

Body parts:

PR *tabalaŋaʔane>Bud tabalaŋa:nə "shoulder", Tan tabalaŋa:, Mag tbaŋani, Ton tabalaŋaʔane and Man tabalaŋaʔə "arm"

PR *aʔay>Tan and Bud aʔay, Man asai "liver", Mag aʔe: "pancreas"

Animals:

PR *korapaŋə>Tan ta-ko-ra-raʔaŋə, Bud ta-korapaŋə, and Man korapaŋə "toad", Mag t-korpaŋi and Ton ta-kwapapaŋə "frog"

PR *Lolay>Tan and Bud Lolay "child", Mag rle: and Ton olay "baby"
Man Lolai "child, baby"

PR *salaŋane>Mag sloŋa "goat", Tan salaŋa, Bud salaŋane, Ton salaŋane and Man ʔaloŋə "male deer"

Plants:

PR *sopoŋo>Tan soʔoŋo and Bud sopopo "branch of tree with leaves",
Mag spuŋu and Ton sopopo "leaves", Man ʔopoŋo "grass"

Culture Items:

PR *təbəθə>Tan təbəθə "aboriginal knife", Bud təbəθə "scarf", Mag tbiθi and Ton təbəθə "belt", Man təbəθə "woman ribbon"

Stative Verbs:

PR *maDaw>Tan and Bud maDaw "big", Mag maDo:, Ton maDaw and Man maɬao "many"

PR *magiʔimoco>Tan magi:moco "angry", Bud and Ton magiʔimoco, and Mag magimcu "anxious"

2.2.9 Loans

The lexical items that are suspected of being borrowed from the other dialects are excluded from the list of cognates (§4). Suspected loans are the ones that manifest close resemblance rather than the expected regular sound correspondences. For example, the Mantauran form *livasə* “long knife” is identical with that of Tona *livasə*, and similar to that of Maga *lvəsi*. We know that Maga and Tona /v, s/ correspond to Mantauran /ɸ, ʔ/ respectively; hence the Mantauran form can be determined as a loanword from Tona. Similarly, the Mantauran form *kavaɖaə* “bamboo (thorny type)” exhibits close resemblance to the forms of Tanan *kavaɖa*, Budai and Tona *kavaɖana*. Consequently, the Mantauran form is dismissed as a loan from the other dialects.

There are some Rukai loanwords from other Formosan languages as well as non-Austronesian languages. For example, the Mantauran form *saviki* “betel-nut” is identical with those in Paiwan and Bunun, but does not correspond with those in Tanan and Budai. The northern Rukai dialects all have the same form *pakisia* “Taiwanese”, which was probably borrowed from the Taiwanese term *paksia* “north village”.

2.3 From Proto-Austronesian to Proto-Rukai

*p > *p

- e. e. *pitu > *pito “seven”, *panaq > *pana “shoot”
 *xepat > *səpatə “four”, *xapuy > *apoy “fire”

*b > *b

- e. g. *beRay > *baʔay “give”, *qabu > *abo “ash”
 *cebus > *coboso “sugar-cane”, *babuy > *baboy “pig”

*t > *t

- e. g. *telu > *toLo “three”, *tuNa > *tola “eel”
 *utaq > *ʔota “vomit”, *tenuʔun > *tinono “weave”

*C > *c

- e. g. *Cebus > *coboso “sugar-cane”, *maCa > *maca “eyes”
 *kuCu > *koco “louse(head)”, *paCey > *pacay “die”

*Z>*d

e. g. *quZan>*odalə "rain", *Zalan>*daLanə "road"

*d —
— *D

e. g. *damaR>*Damarə "moon/month"

*D —

e. g. *Daya>*Daḍa "above", *DewSaʔ>*Dosa "two"

*k>*k

e. g. *kuCu>*koco "louse", *aku>*-ako "I"

*kaRaC>*kaʔacə "bite", *kaʔen>*kanə "eat"

*j — *ø/*i —

e. g. *pija>*pia "how many"

— *g/elsewhere

e. g. *pajay>*pagay "rice plant", *ajan>*naganə "name"

*s>*θ

e. g. *susu>*θoθo "breasts", *beRas>*bəraθə "rice"

*s>*s

e. g. *Cebus>*coboso "sugar-cane", *DewSaʔ>*Dosa "two"

*sulaR>*soLaʔa "snake"

*m>*m

e. g. *maCa>*maca "eyes", *ʔenem>*ənəmə "six"

*lima>*Lima "five", *ama>*ama "father"

*n>*n

e. g. *ina>*ina "mother", *wanan>*vananə "right"

*panaq>*pana "shoot", *wanaN>*vanalə "right"

*N>*l

e. g. *Zquan>*odalə "rain", *tuNa>*tola "eel"

*l>*L

e. g. *lima>*Lima "five", *walu>*vaLo "eight"

*liqer>*Ləʔə "neck", *Caliŋa>*CaLiŋa "ear"

*ŋ>*ŋ

e. g. *Caliŋa>*caLiŋa "ear"

*R>*r

e. g. *wiRi>*viri "left", *damaR>*Damarə "moon"

*beRas>*bəraθə "rice"

*R>*ʔ

e. g. *beRay>*baʔay "give", *sulaR>*soLaʔa "snake"

*kaRaC>*kaʔacə "bite", *busuR>*bosoʔo "bow"

R>∅

e. g. *waRi>*vai "sun"

*w>*v/non-final

e. g. *walu>*vaLo "eight", *uway>*ovay "rattan"

*Cawa>*ma-ca-cava "laugh", *waRi>*vai "sun"

*y>*y (or *d)/non-final

e. g. *Daya>*Daya (or *Dada) "above"

q>∅

e. g. *qaSelu>*asoLo "pestle", *qamaH>*oma "field"

*nanaq>*nana "pus", *Caqis>*caisi "sew"

ʔ>∅

e. g. *ʔenem>*ənəmə "six", *tenuʔun>*tinono "weave"

*kaʔen>*kanə "eat"

*x₁>∅

e. g. *x₁apuy>*apoy "fire"

*x₂ — *s e. g. *x₂epat>*səpatə "four"

*x — e. g. *ixu>*-so "thou", *xipi>*sipi "dream"

*H>∅

e. g. *qumaH>*oma "field", *beHi[]>*a-bay "woman"

*i>*i

e. g. *Calīṇa>*caLiṇa "ears", *pitu>*pito "seven"

*ina>*ina "mother", *wiRi>*viri "left"

*u>*o

e. g. *punay>*ponay "dove", *aku>*-ako "I"

*kuCu>*koco "louse", *susu>*θoθo "breasts"

*e>*ə

e. g. *ʔenem>*ənəmə "six", *liqer>*Ləʔə "neck"

*a>*a

e. g. *maCa>*maca "eyes", *Daya>*Daɬa "above"

*paCey>*pacay "die", *ama>*ama "father"

Generally speaking, sound changes from PA to PR are minor. Aside from the phonemes that "remain unchanged", noticeable changes include the following:

(1) PA *d and *D merged into PR *D. The reflexes of the same four dialects are the retroflexed stop /D/; only the Mantaurean reflex is the fricative /d/. That is to say, PA *Z, *d and *D have all coalesced into the Mantaurean /d/.

(2) *Z>*d The reflexes of four Rukai dialects are the dental /d/; only the Mantaurean reflex of PA *Z is the interdental fricative /d/. The change of (1) must have preceded that of (2), or else there would be no *d in PR.

(3) *j>*g except after PA *i. The reflexes of the same four dialects are /g/; only the Mantaurean reflex is a fricative /h/. PA *j after *i was lost.

(4) *R — *ʔ
 |
 — *r

PR *R split into the two phonemes *r and *ʔ in PR, but the conditions are unclear. Both reflexes occur in the same conditions, e. g. between identical vowels, between PA *e__a and *a__#. Now that the *R hitherto reconstructed for PA split into the two PR phonemes *ʔ and *r in the same environments, it requires further investigation whether it was the conditions of the original split having been wiped out by further sound changes in Rukai itself, or evidence from other Formosan or even Austro-nesian languages would support a reconstruction of a new PA phoneme. Cf. Dyen's (1953) article on Dempwolff's *R. Such a problem goes beyond the scope of the present study.

(5) *s > *θ¹

(6) *S > *s

The change of (5) must have preceded that of (6), or else there would be no *s in PR.

An alternative solution would be to have different reconstructions for the PA phonemes, viz. (5) PA *θ > PR *θ and (6) PA *s > PR *s. There are several advantages for this alternative: (1) There would be no problem about the chronological order of the sound changes as stated in the preceding paragraph. (2) The statements of the sound changes would be simpler, i.e. there was no change from PA to PR for the two sibilants. (3) PA and PR *θ > Mantauran /s/ involves only a single change, and that would be far better than the reverse statement: PA *s > PR *θ > Mantauran /s/. This is a piece of evidence supporting Dempwolff's conclusion that the phoneme was originally a stop *t' rather than a fricative *s (see Dempwolff 1934, §27).

(7) *N > *1

The Rukai reflexes of PA "alveolar nasal" are unanimously the lateral.

(8) *w > *v/non-final

(9) *y > *d/non-final

The PA semivowels *w and *y have changed into the PR fricatives *v and *d respectively except in the word-final position. In other words, there were the morphophonemic alternations w~v and y~d in PR, so allophones could be reconstructed for PR.

(10) *q —
 *ʔ —
 *x₁ —
 *h —

—ϕ

The PR reflexes of PA laryngeals are mostly nothing.

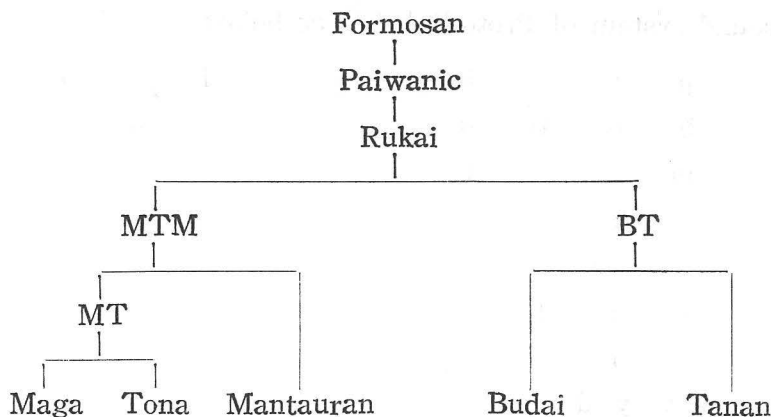
1. The reflexes of the PA phoneme *s are the stop /t/ in Paiwan and Thao, and affricate /c/ in Ami and northern Bunun dialect. Judging from the reflexes in these languages and Rukai, it would seem better to reconstruct PA *θ or Dempwolff's prepalatal stop *t' rather than Dyen's *s. Also cf. Dahl's (1973, §16.1) arguments against Dyen's construction of *s and for a palatal affricate.

3. SUMMARY AND LANGUAGE CLASSIFICATION

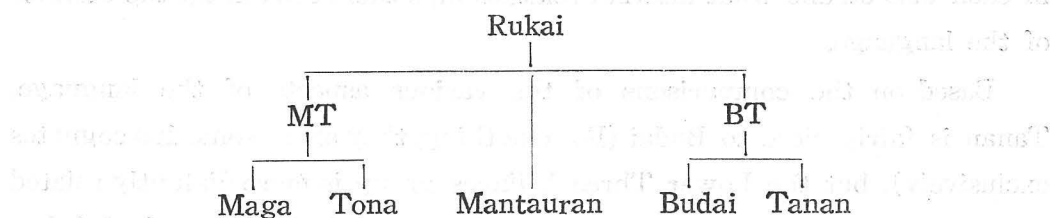
Based on the vocabularies and regular sound correspondences of the modern dialects, a Proto-Rukai phonological system is reconstructed and some 800 cognates identified. It can now be determined how Proto-Rukai has split into the five dialects today, with sound changes have taken place in each dialect, and what internal relationships there are among the dialects of the language.

Based on the comparisons of the various aspects of the language, Tanan is fairly close to Budai (For one thing, they share some 100 cognates exclusively), but the Lower Three Villages group is more distantly related to the other two groups. In terms of phonological change, Budai has retained most of the proto-forms. Tanan is mostly similar to Budai, but dissimilar in a few changes: *p>ʔ and *n>ø/a_ə#. The voiceless alveolar retroflexed stop /T/ occurs rarely and only in Tanan, which has apparently borrowed it from the neighboring language Puyuma. Although sound changes are drastic in Mantaauran, it has exclusively shared, aside from the common vocabulary stock for all dialects, many more (94) cognates with Maga and Tona than with Budai and Tanan (44). Four out of the five dialect shave the four-vowel system /i, o, ə, a/, but Maga has the extra high-mid distinction in vowels derived historically from diphthongs, vowel sequences or other vowels in special environments.

A family tree of the Rukai language can be represented as:



Judging from the facts that (1) the sound changes in Mantaauran are drastic and different from all the other dialects, namely /v/ vs. /b/, /ϕ/ vs. /v/, /s/ vs. /θ/, /ʔ/ vs. /s/, /h/ vs. /g/, /d/ vs. /d/ and /D/, and (2) Mantaauran shares 44 cognates with Tanan and Budai, not shared by Maga or Tona, one might not like to exclude the possibility of having Mantaauran separate from the node Rukai rather than MTM:



But the comparatively larger number of shared cognates with MT tends to support the first alternative.

At the same time, I have also traced the development from Proto-Austronesian to Proto-Rukai consonants: *p>*p, *b>*b, *t>*t, *C>*c, *Z>*d, *d and *D and *D>*D, *k>*k, *j>*g (except after PA *i), *R>*ʔ, *r or ϕ (PA *R may have to be split into two or even three phonemes, as based on the Rukai evidence), *m>*m, *n>*n, *N>*l, *ŋ>*ŋ, *s>*θ, *S>*s (The last two changes had better be revised to: *θ (or *t')>*θ, *s>*s, as based on the Rukai and some other Formosan evidence), *l>*L; vowels: *i>*i, *u>*o, *ẽ>*ə, *a>*a; semivowels: *w>*v and *y>*d (except word-final).

The sound system of Proto-Rukai is as below:

p	t		k	ʔ	i	o
b	d	D	g			ə
m	n		ŋ			a
	c					
	θ, s					
	l	L				
	r					
w, v	y, d					

4. COGNATES AND RECONSTRUCTED FORMS¹

	aboriginal	above	above/up		alive	all (people)
Tan	kacaLisia	Daá	bə́ləŋə	—	oDíʔi	makanaəLə́
Bud	kacaLisiáŋə	Dáda	bə́ləŋə	—	oDípi	makanaəLə́
Mag	kcarsía	Drá:	mu-blíŋi	ragári	muDípi	—
Ton	kacaisiáŋə	Daá	—	agáə	maoDípi	—
Man	(kataLisiə)	daLa	—	LaHaLə	moDípi	—
PR	*kacaLisiáŋə	*Daá	*bə́ləŋə	*LaGaLə	*m-oDípi	*makanaəLə́

	and ²	angry/ anxious ³	little animal/cub	annoyed	ant
Tan	si la	magi:móco	Lonálə	maoʔóŋo	a-ba-bó:ŋo
Bud	si la	(magirimoco)	Lənálə	maoʔoŋo	a-ba-bó:ŋo
Mag	si la	magímcu	—	mopuŋu	abúŋu
Ton	si la	magiʔimoco	onálə	maoʔoŋo	abóŋoʔo
Man	— la	—	Lonale	maoʔoŋo	avoŋoʔo
PR	*si *la	*magiʔimoco	*Lonale	*maoʔoŋo	*aboŋoʔo

	pangolin/ anteater	arm/ shoulder ⁴	arrow	sinew/ artillery	ashes
Tan	karara	tabalaŋa:	Laíli	wácə	abó
Bud	(karáda)	tabalaŋá:nə	Laíli	wácə	ábo
Mag	krára	tbaŋáŋi	rvéle	(u-vácə)	abú:
Ton	karára	tabalaŋáʔanə	avili	ʔwácə	abó
Man	ka:rara	tavalaŋaʔaə	Laili	ʔocə	avo
PR	*karara	*tabalaŋaʔanə	*Lavili	*ʔoacə	*abo

1. Suspicious cognates, i.e. one segment or two is not accountable, are put in parentheses. The list is given in the alphabetical order of English glosses. Forms which are found only in two or three closely related dialects, such as Tan and Bud or Mag, Ton and Man, are given doubtful reconstructed Proto-Rukai forms. These may be borrowings from the other languages which are presently unknown to me.

2. The form *si* is used as a word or phrase conjoiner, *la* as a sentence conjoiner in the four Rukai dialects, but the Mantauran *la* is used for all situations.

3. The Budai form means "anxious".

4. The Budai form refers to "shoulder", while the others refer to "arm".

The Internal Relationships of Rukai

	axe	(body) back	back flesh	bad	
Tan	—	DəLókə	—	ma:lisi	—
Bud	—	DəLəkə	(t-apəDə) ¹	ma:lisi	—
Mag	rtóko	Dríki	apíDi	—	makráci
Ton	itóko	Dəékə	apədə	—	makwácə
Man	Litoko	(dəLəhə)	apəðə	—	—
PR	*Litoko	*DəLəkə	*apəDə	*malisi	*makor/Lacə

	bag ₁	pocket/ bag ₂	(in stones) bake	bake/broil	bamboo (generic)	bamboo shoots
Tan	—	θobóŋo	icibi	wakámə	baləbálə	—
Bud	tələθə	θo-θóbŋo	icibi	wa-akámə	baləbalə	tóboro
Mag	tlíθi	θbúŋu	icibi	u-kámi	bləblə	tbúru
Ton	—	θobóŋo	icibi	wa-akámə	baləbalə	—
Man	—	sovoŋo	icivi	o-akamə	valəvalə	tovero
PR	*tələθə	*θobŋo	*icibi	*oa-akamə	*baləbalə	*toboro

	bamboo (type of)	banana	banyan tree	bark(of tree)	
Tan	kavaða	bələbələ	darələʔə	bakóro	—
Bud	kavaðánə	bələbələ	daralápə	bakóro	kacəkacə ²
Mag	kvádni	blíbli	drálpí	—	kcəkə
Ton	kavaðánə	bələbələ	da:lápə	—	kacəkacə
Man	(kavaðə)	valəvalə	daralapə	—	kacəkacə
PR	*kavaðanə	*bələbələ	*daralapə	*bakoro	*kacəkacə

1. Perhaps the affix *ta-* (or *t-* if the following stem begins with the vowel *a*) indicates place; cf. Li 1975a: 264-65.

2. The Budai form means "woman underwear (obsolete)". The Tona form means 'to peel or shells.

	storage barn	winnowing basket	bat		beads
Tan	Loŋólo	baLakó	ababiraw	—	siŋo
Bud	—	baLáko	ababiraw	—	siŋo
Mag	rŋúlu	bráku	—	tbára	—
Ton	oŋólo	baáko	—	taba:áʔo	—
Man	Loŋolo	—	—	tavaLoLaʔo	ʔilo
PR	*Loŋolo	*baLako	*ababiraw	*tabaLoLaʔo	*siŋo
	beak	beans	bear	beard	
Tan	(sa-toʔotoʔo)	ləʔələʔə	comáy	ŋisaŋisi	—
Bud	sa-toŋotoŋoc-an	ləpələpə	cómay	ŋisiŋisi	—
Mag	s-tuŋtúŋcu	lpílpí	cmé:	—	msámsi
Ton	sa-toŋotoŋoo	ləpələpə	comáy	ŋisaŋisi	misamisi
Man	ʔa-toŋotoŋoLo	lə-ləpə	comai	ŋiʔaŋiʔi	—
PR	*sa-toŋotoŋoc/Lo	*ləpələpə	*comay	*ŋisaŋisi	*misamisi
	bee/honey	behind	belly	below	belt ¹
Tan	való	li-koDaŋá	baráŋə	LaóDo	təbəθə
Bud	válo	li-koDaŋanə	baráŋə	LáoDo	təbəθə
Mag	vló:	koDŋá:	baráŋə	róDu	tbíθi
Ton	való	koDaŋánə	baáŋə	aóDo	təbəθə
Man	alo	(ʔa-li-koðəə)	varaŋə	Laoðo	təbəə
PR	*valo	*koDaŋanə	*baraŋə	*LaoDo	*təbəθə
	betel-nut		big/many ²	bird	bird nest
Tan	sabiki	—	maDaw	aðadamə	—
Bud	sabiki	—	máDaw	aða:ðamə	li-si:-soko
Mag	—	θvéke	maDó:	arámə	t-lisku-á
Ton	—	θaviki	maDáw	aámə	ta-lisok-anə
Man	—	(saviki)	maðao	aLamə	(ta-ʔiloko)
PR	*sabiki	*θaviki	*maDaw	*aðamə	*lisoko

1. The Tanan form refers to an aboriginal knife, the Budai form to a scarf, and the Mantauran form to a woman ribbon.

2. The forms in Tan and Bud mean "big" while those in the LTV mean "many".

The Internal Relationships of Rukai

	birthmark	bite	bitter/acrid	black	bladder
Tan	—	ka: cə	maʔalili	maicəLəŋə	obo —
Bud	odiŋi	ká: cə	ma: palili	maicəLəŋə	óbo —
Mag	—	—	—	t-maciciŋi	— sbú:
Ton	odŋi	kaʔácə	mapálili	maicə: ŋə	— sobó
Man	odŋi	kaʔacə	mapalili	(maəcəLəŋə)	ovo —
PR	*udiŋi	*kaʔacə	*mapalili	*maicəLəŋə	*obo *sobo
	blind	blink	blood		blood
Tan	mabotí:	mika-mikácə	əráy	—	—
Bud	mabóti:	mika-mikacə	əráy	—	—
Mag	—	mik-makci	—	aíDi	lú: bu
Ton	mabotiʔi	(miko-mikóco)	—	ʔaíDi	laóbo
Man	mavotiʔi	mika-mikacə	ərai	—	—
PR	*mabotiʔi	*mikacə	*əray	ʔaiDi	*laobo
	blow (breath)	blow (wind) ¹		blue/green	
Tan	i:ʔi —	masasəvére	—	salə: səsə	—
Bud	i: pi —	masasəvərə	—	salə: səsə	—
Mag	— u-bútu	—	u-bsíbsi	—	(t-malsiksíki)
Ton	ʔipi boʔóto	—	wa-bəsəbəsə	—	masaləkəsəkə
Man	— o-voʔoto	—	o-vəʔəvəʔə	—	maʔaləkəʔəkə
PR	*ʔipi *boʔoto	*masasəvərə	*oa-bəsəbəsə	*saləəsəsə	*masaləkəsəkə
	boat/canoe	bone	bottle/jar	boundary	
Tan	—	—	Lilóŋo	—	sagi-agísi
Bud	—	—	Lilóŋo	—	sagi-agísi
Mag	aváŋi	pDóro	—	cbáki	agís-nə
Ton	aváŋə	paDó:	—	cabákə	agísi
Man	(apáŋə) ²	—	—	cavakə	—
PR	*avaŋə	*paDor/Lo	*Lilóŋo	*cabakə	*agísi

1. Cf. "wind".

2. The Mantauren form may have been borrowed from some other language, Tsou *apəŋə* "boat".

The Internal Relationships of Rukai

	bow (N.)		bow (V.)	bowl, big	bowl, small
Tan	bo:	—	—	—	—
Bud	bó:	—	sokóbo	—	—
Mag	—	bsú:	u-skúbu	koto	tkúpli
Ton	—	bosóʔo	wa-sokóbo	kwátaw	takópili
Man	—	voʔo	(o-sokovo)	koatao	takopili
PR	*boʔo	*bosóʔo	*sokobo	*koataw	*takopili

	bracelet	brain		branch ¹		breast
Tan	kaláθə	loːso	—	ʔilaka		θoθo
Bud	kaláθə	lóːso	—	paláka		θóθo
Mag	—	u-lúsu	priŋi	plaka		θúθu
Ton	kaláθə	lóːso	piŋi	pilaka		θoθo
Man	—	loʔo	piriŋi	pilaka		soso
PR	*kalaθə	*loso	*piriŋi	*pilaka		*θoθo

	breath/life	bridge	bring	broad/wide	broken
Tan	nyákə	talóDo	wamécə	—	ma-ŋotó:
Bud	nyakə	talóDo	wa-amécə	—	—
Mag	(ní:ki)	tlóDo	i-míci	ma-rilápa	—
Ton	nyákə	talóDo	wa-amécə	ma-ilápaʔa	ma-ŋotóʔo
Man	niakə	taloðo	o-amécə	ma-ripalaʔa	ma-ŋotoʔo
PR	niakə	*taloDo	*oa-amécə	*ma-rilapaʔa	*ma-ŋotoʔo

	<u>broken</u>	<u>broom</u>	<u>bubble/foam</u>	<u>buffalo</u>	
Tan	—	swáʔə	Laʔóco	—	sakinikíni —
Bud	—	swápə	Lapoco	—	sakinikíni —
Mag	mapui	sépə	—	apcápcu	— skimikimil
Ton	mapoʔay	swápə	—	ʔapocapoco	— sakimikími
Man	mapoʔai	ʔopə	—	—	—
PR	*mapoʔay	*soapə	*Lapoco	*ʔapocapoco	*sakinikini *sakimikimi

1. The forms on the left column mean "smaller branches" or "shoots" and those on the right mean "bigger branches" or "fork-like branches".

The Internal Relationships of Rukai

	burn(vt.)		bury		buttocks
Tan	wa-laóbo		DaLékə	—	dəkélə
Bud	—		DáLəkə	—	dəkélə
Mag	u-lóbu		—	u-bulu	dkí:li
Ton	wa-láobo		—	wa-ʔabólo	—
Man	o-laovo		—	o-ʔavolo	—
PR	*oa-laobo		*DaLəkə	*ʔabolo	*dəkələ

	buy/sell	cake	camphor laurel	cat	catch
Tan	laŋay	abay	Dakəsə	ŋyáw	ʔwaLa
Bud	laŋáy	ábay	Dakəsə	ŋyaw	pwáLa
Mag	o-lŋe:	abe:	Dkəsə	ŋiu	u-pora
Ton	laŋay	abáy	Dakəsə	ŋyáw	pwaa
Man	o-laŋai	—	ɬakəʔə	ŋiao	poLa
PR	*laŋay	*abay	*Dakəsə	*ŋiaw	*poaLa

	centipede	charcoal	burning charcoal	chase away	cheek
Tan	garomaráse	Laŋələ	DaLáw	wa-sisáw	—
Bud	garomarasə	Laŋələ	DáLaw	wa-sisaw	cími
Mag	gromásə	rŋələ	Dró:	—	cmí:
Ton	gawma:sə	aŋələ	(Daó:)	wa-sisaw	cimí
Man	(aro-ma-maraʔə)	(raŋələ)	—	—	—
PR	*garomarasə	*Laŋələ	*DaLaw	*sisaw	*cimi

	chest	chew	chicken/fowl	chief	child
Tan	—	wa-ʔo:	tarokóko	talyalalay	la-valakə
Bud	—	wa-apó:	—	talyalalay	la-valakə
Mag	tkúsu	u-pú:	(tróka)	tlalé:	vlakə
Ton	tokóʔoso	wa-apóʔo	taókoko	talyalaláy	vala-valákə
Man	tokoʔo	o-apoʔo	tarokoko	a-talialai	(vala-valákə)
PR	*tokoʔoso	*oa-apoʔo	*tarokoko	*talialalay	*valakə

The Internal Relationships of Rukai

	child/baby ¹	chin/lower jaw ²		Chinese	chop
Tan	Loláy	baθiŋi	—	ʔayráŋ	θyabə
Bud	Loláy	baθiŋi	—	payraŋ	θyabə
Mag	rlé:	—	θrími	—	u-θiśbi
Ton	oláy	—	θaśmə	—	θyábə
Man	Lolai	—	sarəmə	—	o-siavə
PR	*Lolay	*baθiŋi	*θarəmə	*payraŋ	*θiabə

	chopsticks	choose	clamps	claw/ fingernail	clean
Tan	kacíʔi	wa-ʔiLi	—	—	ma-bola:
Bud	kacípi	wa-piLi:	—	—	ma-bola:
Mag	kcépe	u-prí:	tkéce	k-lúka	ma-bulá:
Ton	kacípi	wa-píi	takíci	ka-lóka	ma-bolaʔa
Man	ʔa-kacip-a	o-piLi	—	loka	—
PR	*kacipi	*piLi	*takici	*loka	*ma-bolaʔa

	clever	climb ³		close	clothing
Tan	ma-Ligili	mo-bələŋə	—	wa-ələbə	kiʔiŋi
Bud	ma-Ligili	mo-bələŋə	—	wa-ələbə	kipiŋi
Mag	ma-rgili	mu-bliŋi	mo-rgári	ilíbi	kpiŋi
Ton	ma-igili	—	mo-agáə	wa-ələbə	(kopíŋi) ⁴
Man	ma-Lihili	—	mo-LahaLə	o-ələvə	kipiŋi
PR	*ma-Ligili	*mo-bələŋə	*mo-LagaLə	*ələbə	*kipiŋi

1. The Tona and Maga forms refers to a baby, and the others to a child or baby.
2. The Tanan, Budai and Mantaaran forms refer to the lower jaw.
3. Cf. the forms for "above/up".
4. The *o* in the Tona form is irregular. Cf. Puyuma *kipiŋ*, a cognate with the Rukai dialects. Other Formosan languages have no cognate with these two languages for the item.

The Internal Relationships of Rukai

	cloud		fur coat	cockroach	palm tree/ coconut
Tan	əmə:mə	—	əbələ	a-ta-tabáŋə	abarə
Bud	əmə:mə	—	əbələ	a-ta-tábaŋə	abarə
Mag	—	kurŋu	ibili	tábŋə	—
Ton	—	koŋŋo	əbələ	atábaŋə	ʔabaə
Man	—	—	—	atávaŋə	ʔabarə
PR	*əmə:mə	*korŋŋo	*əbələ	*atabaŋə	*ʔabarə

	cold (as water)		cold (weather)	comb	
Tan	maŋaŋərécə	—	makəcələ	garóco	—
Bud	maŋaŋérəcə	—	ma:kəcələ	gároco	—
Mag	—	mat:ələkə	—	—	góθu
Ton	—	matatələkə	makəcə:	—	gáoθo
Man	—	ma:tələkə	makəcələ	—	haoso
PR	*maŋaŋérəcə	*matələkə	*makəcələ	*garoco	*gaoθo

	<u>container</u>	<u>cook/boil food</u>	<u>cooked</u>	<u>copper</u>	
Tan	—	wagá	—	madó:	bolavá
Bud	—	wa-ága	—	madó:	bolávanə
Mag	pciŋá:	—	u-θiθi	madú:	blávni
Ton	a-pəcəŋánə	—	θiθiʔi	madoʔó	bolávanə
Man	—	—	o-sisiʔi	madoʔo	—
PR	*pəcəŋanə	*oa-aga	*θiθiʔi	*madoʔo	*bolavanə

	corn		cotton	cough	count
Tan	ŋoDaŋóDo	—	kolóco	maθó:lo	w-asíʔi
Bud	—	lapánay	—	maθó:lo	wa-ásipi
Mag	—	lpá:ne	—	maθúlu	u-sípi
Ton	ŋoDáŋoDo	—	kolóco	maθoʔolo	wa-asipi
Man	—	—	koloto	masoʔolo	o-aʔipi
PR	*ŋoDaŋoDo	*lapanay	*kolot/co	*maθoʔolo	*oa-asipi

	cow	crab	crispy	crooked/ curved	crow
Tan	—	aʔásə	maramó	ma-kiLóno	tagagá
Bud	(lóaŋə)	apásə	marámo	ma-kiLóno	—
Mag	nuśŋə	apási	—	—	tgága
Ton	nwáŋə	apásə	—	—	tagága
Man	noaŋə	apaʔə	maramo	ma-kiLóno	(táŋaŋə)
PR	*noaŋə	*apase	*maramo	*ma-kiLóno	*tagaga
	cut ₁	cut ₂ ¹	cut (with scissors) ₃	dance	
Tan	kə:itə	ŋoto:	—	DaLay	—
Bud	kə:itə	—	wa-kaciánə	DaLáy	—
Mag	u-kítɿ	—	u-kcia	—	θeróbu
Ton	kəʔətə	ŋotóʔo	(wa-kacipi)	—	θiáobo
Man	o-kəʔətə	ŋotoʔo	o-kacia	—	siraovo
PR	*kəʔətə	*ŋotoʔo	*kacianə	*DaLay	*θiraobo
	day/daytime		deaf	deer, male	deer, female
Tan	vaya	—	—	salaŋə	θadí:
Bud	vayánə	—	macólə	salaŋanə	θadí:
Mag	—	vevá:	ma-ci-cili:	sloŋá ²	θdé:
Ton	—	vivaʔánə	ma-cə-cələ	salaŋánə	θadiʔi
Man	—	—	—	ʔaloŋə	sadiʔi
PR	*vaianə	*vivaʔanə	*macələ	*salaŋanə	*θadiʔi
	deer, pygmy		dew	die	
Tan	akécə	—	lamó	ʔacáy	—
Bud	akécə	—	lámo	pácay	—
Mag	—	θkécə	—	—	mamúdu
Ton	—	θəkécə	lamoʔo	—	mamódo
Man	akəcə	—	ko-lamoʔo	ma-pacay	—
PR	*akəcə	*θəkəcə	*lamoʔo	*pacay	*mamodo

1. Cf. PR *ma-ŋotoʔo "broken", which is a stative verb (see Li 1973: 238).

2. The Maga form means "goat".

The Internal Relationships of Rukai

	different	difficult/expensive ¹		dig	
Tan	makaəlá	makociŋaLə	—	Loko	—
Bud	ma:kaəla	makociŋaLə	—	Lóko	—
Mag	—	—	makcíŋe:	—	u-kiələ
Ton	maʔakaəlá	—	makociŋay	—	kiʔalə
Man	maʔakaəla	—	makociŋai	—	—
PR	*maʔakaəla	*makociŋaLə	*makociŋay	*Loko	*kiʔalə

	dirty	discard	disappointed/ dislike ²	dog	
Tan	—	ci:Li	masamáDə	tawʔoŋ	—
Bud	ma:kóDoLo	ci:Li	masámaDə	táwpoŋ	—
Mag	makDúru	—	masmáDi	—	aθó:
Ton	makoDó:	—	masamáDə	—	aθó
Man	makoθoLo	—	maʔamaθə	—	—
PR	*makoDoLo	*ciLi	*masamaDə	*tawpoŋ	*aθo

	door	dove	drag	dream	drink
Tan	sae-lə-ləbá	ʔonay	gorososo	siʔi	oŋólo
Bud	sae-lə-ləbánə	ponay	—	sipi	oŋolo
Mag	səlbá:	pne:	o-gros:u	u-sípi	uŋúlu
Ton	saelebánə	—	wa-gaósoso	sípi	ʔoŋólo
Man	ʔə:ləbaə	ponai	o-horososo	o-ʔipi	ʔoŋolo
PR	*saelebənə	*ponay	*garososo	*sipi	*ʔoŋolo

1. The two reconstructed PR forms suggest that there might be either a sound change $y > L$ in the TB group or $L > y$ in the MTM group when PR split into the two sub-groups. The latter change is more likely, for it is common for a lateral to be substituted by y as in child language.

2. The Tanan and Budai forms mean to be "disappointed", while the other dialects mean to "dislike".

The Internal Relationships of Rukai

	drunk	dry		dusk	dust
Tan	mabosóko	maməáɬə	—	masaLəməsəmə	θovógo
Bud	mabosóko	maməáɬə	—	masaLəməsəmə	θóvogo
Mag	mabusúku	—	ma-pcé:	masrəmsími	—
Ton	mabosóko	—	mapacáy	masaəməsəmə	—
Man	mavoʔoko	—	mapacai	—	—
PR	*mabosoko	*maməale	*mapacay	*masaLəməsəmə	*θovogo

	eagle	ear	ear discharge	ear-ring	
Tan	aDísi	caLiŋa	lókə	lidíŋi	—
Bud	aDísi	caLiŋa	lókə	lidíŋi	—
Mag	aDísi	cŋira	lɬkɬ	—	blácə
Ton	ʔaDísi	caŋía	lə-lókə	—	balácə
Man	ʔaɬiʔi	caLiŋa	ə-ləkə	—	—
PR	*ʔaDísi	*caLiŋa	*ləkə	*lidíŋi	*balacə

	earth/soil	earthworm	east	eat	eaves
Tan	daə	—	taLawa	kánə	—
Bud	dáə	—	taLáwan	kánə	təbətəbanə
Mag	—	—	—	u-káni	tɬitɬá:
Ton	daʔə	atoíki	—	kanə	təbətəbáne
Man	ɬaʔə	atoLiki	—	o-kanə	təvətəvəə
PR	*daʔə	*atoLiki	*taLaoan	*kanə	*təbətəbanə

	eel	egg	eight	embarrassed	enemy
Tan	tolá	batóko	vaLó	maLomáɬə	baɬá
Bud	tóla	batóko	váLo	maLomáɬə	báɬa
Mag	tlá:	—	váru	marmáli	brá:
Ton	tolá	—	vaó	maomáɬə	baá
Man	tola	—	(vaLo)	maLomalə	vaLa
PR	*tola	*batoko	*vaLo	*maLomalə	*baɬa

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	<u>enter (house)</u>	<u>evening</u>	<u>excrement</u>	<u>exhausted</u>	
Tan	mw-a-da:ne	myawaobo	caki	ki-doLo	—
Bud	mw-a-da:ne	myawaobo	cáki	ki-doLo	—
Mag	mu-dáni	—	cké:	—	mapré:
Ton	mw-a-da?áne	(ma?áobo)	caki	—	mapíáy
Man	mo-da?ane	—	caki	—	mapilai
PR	*mo-a-da?ane	*miawaobo	*caki	*ki-doLo	*mapilay
	<u>exist</u>	<u>exterminate</u>	<u>eye</u>	<u>face</u>	<u>faint</u>
Tan	y-a-kai	—	macá	Liñaw	marətəsə
Bud	y-a-kai	—	máca	Liñaw	marətesə
Mag	i-ké:	morípi	mcá:	—	martisi
Ton	?y-a-kai	ma?oipi	macá	—	maətəsə
Man	—	ma?oLipi	maca ¹	Liñao ¹	—
PR	*?i-a-kai	*ma?oLipi	*maca	*Liñaw	*marətesə
	<u>fall</u>	<u>far/distant</u>		<u>fast</u>	
Tan	—	daíli	—	marədərə	—
Bud	—	a-dáili	—	ma:ridərə	—
Mag	mulíli	—	medávli	—	mardé:
Ton	mwalíli	—	ma?adávili	—	maidáy
Man	—	—	ma?adaili	maridarə	—
PR	*moalili	*daili	*ma?adavili	*maridarə	*mariday
	<u>fat/grease</u>	<u>fat/obese</u>	<u>father</u>	<u>fear/afraid</u>	<u>feather</u>
Tan	simá:	mabotoLo	{t-amá (Ref.) n-amá (Add.)	mo-kolóDo	Lomó
Bud	síma:	mabitóLo	{t-áma (Ref.) ama (Add.)	mo-kolóDo	Lomó
Mag	smá:	—	m-amá: (Ref.)	a-klúDu	rmú:
Ton	simá?a	—	t-ama ²	?a-kolóDo	omó ³
Man	?ima?a	mavotoLo?o	ama	o-kolódo	—
PR	*sima?a	*mabitoLo?o	*ama	*koloDo	*Lomo

1. The Mantaurean *maca* means "eyeballs" and the Mantaurean *Liñao* means "eyes".

2. The Tona form refers to the elder and respected old man.

3. The Tona general term for "feather" is *aomwánə*; the term *omó* refers to "fine feather; down".

	feather (on head)	fence	few/little	field, swidden	
Tan	civárə	(aLáDə)	bəkəl-a	oma-omá	—
Bud	civarə	saLavaD-anə	bəkəl-anə	omá-oma	—
Mag	ci-cvári	srávDi	—	—	tomóma
Ton	civáə	saaváDə	bəkə-bəkóle	—	taomóma
Man	—	ʔaLa:ðə	vəkələ	o:ma	—
PR	*civarə	*saLavaDə	*bəkələ	*oma	*taomoma
	field, wet	fight	finger	finger, middle	finger, small
Tan	ca:nə	macabíri	galawgaw	—	—
Bud	cá:nə	ma-ca-cabíri	galawgaw	—	—
Mag	tpu-c:ánə	ma-ca-cbére	glo:gáv-a	—	vlivl-á:
Ton	cánə	ma-ca-cábi:	(gala:gwáv-anə)	danóno	vilivil-ánə
Man	—	macaviri	—	danolo	—
PR	*canə	*macabiri	*galawgaw	*danolo	*vilivil-anə
	finish	fire	firefly	fish	five
Tan	Ləʔəŋə	aʔóy	tanwa-pwa-poy	ka:ŋə	Límá
Bud	Ləpəŋə	apóy	tanwapoy	ká:ŋə	Líma
Mag	i-rpiŋi	apúru	(tlapúi)	akáŋə	ríma
Ton	əpəŋə	apóy	—	kaʔáŋə	imá
Man	o-Ləpəŋə	apoi	tania-poa-poi	kaʔaŋə	Lima
PR	*Ləpəŋə	*apoy	*taniapoy	*kaʔaŋə	*Lima
	flea ¹		flesh/meat	float	flood
Tan	θimakólo	—	bwátə	ʔəlay	—
Bud	θamikólo	—	béatə	ya-pélay	wa-Dakwásə
Mag	—	tapθá:kə	buátə	—	Dkóso
Ton	—	taʔopoθákə	bwátə	ʔya-pəlay	Dakóʔoso
Man	simakolo	—	—	mo-pəlai	—
PR	*θimakolo	*taʔopoθakə	*boatə	*pəlay	*Dakoʔasə

1. Note the metathesis of *i* and *a* in Budai alone. Cf. the same term also appears as *θimakolo* in the Labuan dialect, a village in the Budai county; see §5.

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	flow	flower ¹		fly (V.)	fly, small
Tan	mwalóDo	bəŋəLay	—	ani-ʔalay	a-La-Ləgələ
Bud	mwáloDo	bəŋəLáy	—	ŋy-a-pálay	a-La-Ləgələ
Mag	molúDu	—	vŋire:	—	arígli
Ton	mwalóDo	—	vəŋəy	ʔaŋi-pálay	aəgələ
Man	moloDo	—	—	ʔini-palai	aLəhələ
PR	*moaloDo	*bəŋəLay	*vəŋəLay	*ʔan/ŋi-palay	*aLəgələ
	fly, big	foam	fog/mist	foot	forbearing
Tan	a-La-Laŋáw	Laʔóco	—	Daʔálə	ky-adi-adili
Bud	a-La-Láŋaw	Lápoco	wa-kəpəkəpə	Dapálə	ky-a-adili
Mag	aŋáro:	—	u-kpəkəpə	Dpáli	ke:dili
Ton	aŋá:w	—	kəpəkəpə	Dapálə	ky-a-ʔadili
Man	aŋaLao	—	—	ɬapalə	o-ʔadi-ʔadili
PR	*aLaŋaw	*Lapoco	*kəpəkəpə	*Dapalə	*ʔadili
	forehead ²	forgetful	four	fragrant	frog/toad ³
Tan	ʔonó	marimóro	soʔátə	saŋəaLémə	ta-ko-ra-raʔəŋə
Bud	póno	marimóro	səpátə	saŋəaLémə	ta-korápaŋə
Mag	t-punu-á	marimúru	pátə	—	t-korpáŋi
Ton	ponó	maimó:	pátə	saŋiaémə	ta-kwapáŋə
Man	ta-pono-ə	marimoro	pətə	—	korapaŋə
PR	*pono	*marimoro	*səpətə	*saŋiaLémə	*korapaŋə
	front	fruit	full (after eating)	full (not empty)	gaiter
Tan	ta-li-coboŋ-á	maDo	mabocóko	sy-a-ətə	ʔi-cábo
Bud	co:-cóbongo	máDo	mabocoko	so-a-ətə	{ki-cábo pa-cabo
Mag	t-lu-cbúŋ-a	mDó:	—	sitɬ:	k-cábu
Ton	ta-lo-coboŋ-ánə	maDó	—	sy-a-ʔətə	ka-cábo
Man	ta-li-covoŋ-aə	maDo	(mavocoho)	so-ʔətə	pa-cavo
PR	*coboŋo	*maDo	*mabocoko	*si/o-ʔətə	*p/ka-cabo

1. The variation of the initials b and v between the two subgroups suggests that a change b > v might have taken place in MTM alone.

2. The affixes *ta-...-anə indicate 'place' (see Li 1973: 272; 1975: 258-65).

3. Tan, Bud and Man forms refer to "toad", while Mag and Ton forms refer to "frog".

	gall	get caught	give	glass(es)	go
Tan	—	mw-a-ciŋásə	ba:y	liŋó	mwa
Bud	pago	mw-a-ciŋasə	bá:y	—	mwa
Mag	pago	mu-tŋási	o-bé:	liŋú:	mua
Ton	pago	mw-a-tiŋasə	baʔáy	liŋó	mwa
Man	paho	mo-ciŋaʔa	o-vaʔai	liŋo	moa
PR	*pago	*mo-a-t/ciŋasə	*baʔay	*liŋo	*moa

	goat	good		gourd	grandchild
Tan	kisísi	maθarili	—	taboLólo	agánə
Bud	kisísi	ma:θárilí	—	—	agánə
Mag	ksi:si	—	margí:	tbúrlu	agáni
Ton	kisísi	—	ma:giʔi	tabó:lo	agánə
Man	ki:ʔi	—	—	taboLólo	ahanə
PR	*kisisi	*maθarili	*mar/Lagiʔi	*taboLolo	*aganə

	grandfather	grandmother		grass	
Tan	t-omó	kaingo	—	obólo	—
Bud	t-ómo	kaingo	—	óbolo	—
Mag	m-umú	—	ka-króngo	—	sró:
Ton	ta-ómo	—	kángo	—	soáo
Man	omo-ko	—	—	—	?oLao
PR	*omo	*kaingo	*kar/Longo	*obolo	*soLaw

	ground/earth		growl	gun
Tan	daədaə	—	—	kwəŋə
Bud	daədaə	—	—	kwəŋə
Mag	—	dedá:	u-θpiri	kuŋi
Ton	—	didaʔáne	wa-θəpə:	kwəŋə
Man	daʔədaʔə	—	o-səpərə	koəŋə
PR	*daʔədaʔə	*didaʔané	*θəpərə	*koəŋə

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	guts	hair, body	hair, head ¹		hair, gray
Tan	bó:ro	obálə	isíw	—	oDásə
Bud	bó:ro	obálə	isíw	—	óDasə
Mag	búru	ubáli	—	isívi	uDási
Ton	bó:	obálə	—	isívi	ʔoDásə
Man	voro	ovale	—	—	ʔodaʔə
PR	*boro	*obalə	*isiw	*isivi	*ʔoDasə

	hair, public	hand	hang	happy	
Tan	obísi	aLimá	kəLáy	ki-ragay	—
Bud	obísi	aLíma	kəLay	ki-ragay	—
Mag	ubísi	aríma	i-kré:	—	marbirbíri
Ton	obísi	aíma	kəáy	—	ma:bəabé:
Man	oviʔi	aLima	o-kəLai	—	maravəravəə
PR	*obisi	*aLima	*kəLay	*ki-ragay	*marabərabəə

	hard	hat ²	hawk	head
Tan	—	taLoʔono	kwáw	aoLo
Bud	—	taLopóno	kwáw	aóLo
Mag	matkí:	trupɲu	kuó:	óru
Ton	matəké	taopoŋo	kwáw	aóo
Man	matəkə	toLopoŋo	koao	—
PR	*matəkə	*taLopoŋo	*koaw	*aoLo

1. The Mag and Ton form indicates that there was a further development of the echo vowel *i* in word-final in the LTV: PR **isiw* > *isiwi* > *isivi* (see PR **w* > *v* in §2.1.2).

2. The two sub-groups differ only in the nasals *n*~*ɲ*. The dental nasal in Tan and Bud was probably an innovation; cf. *taLopoy* in Paiwan and Puyuma, *ceopuyɲu* in Tsou, *carapuyɲu* in Kanakanavu and *sarapuyɲu* in Saaroa "hat". Tan and Bud forms for the term "hat" may have been contaminated with the term for "forehead": Tan *ʔono*, Bud *pono*.

	hear	heart	heart (mind)	heavy	
Tan	ki-laLá	—	avavá	kiDəməDəmə	matəLəgə —
Bud	ki-laLa	—	avá:va	kiDəməDəmə	ma:təLəgə —
Mag	—	u-bcírɲi	—	kDɪDɪmi	— madíkri
Ton	—	bicí:ɲi	—	kiDəDəmə	— madikəə
Man	o-sia-laLa	—	—	(ʔidəDəmə) ¹	—
PR	*ki-laLa	*bicir/Liɲi	*avava	*kiDəDəmə	*matəLəgə *matikər/Lə

	hemp (plant)	hemp (fibre)	hide (someone)	hide (something)
Tan	damili	tino·LəkəLəka	—	ky-a-ləʔəŋə baláy
Bud	damíli	tino:-LəkəLəkán	—	ky-a-ləpəŋə báláy
Mag	dméle	—	dónnə	ki-lpɪɲi o-blé:
Ton	damíli	—	dawnánə	ky-a-ləpəŋə baláy
Man	damili	—	donə:ə	(ʔi-ləpəŋə) ¹ o-valai
PR	*damili	*tino-LəkəLəkan	*dawnanə	*ki-a-ləpəŋə *balay

	high/tall	hit/knock	hit	hoe
Tan	ma-bələŋə	wa-koŋokóŋo	sititi	—
Bud	ma:-bələŋə	wa-koŋókóŋo	si-a-titi	ta-tókono —
Mag	—	u-kyúkɲu	u-stiti	— kvá:
Ton	—	wa-koŋokóŋo	wa-sətiti	tokóno —
Man	—	o-koŋokóŋo	—	— (kava)
PR	*ma-bələŋə	*oa-koŋokóŋo	*sətiti	*tokono *kava

	hoe, small	hold by hand	hold in hand
Tan	—	wa-ləcəŋə	—
Bud	—	—	wa-əcəŋə wa-gəməgəmə —
Mag	clíki	u-lcíɲi	—
Ton	cələkə	—	wa-əcəŋə wa-gəməgəmə DaDásə
Man	—	—	o-əcəŋə o-həməhəmə —
PR	*cələkə	*oa-ləcəŋə	*oa-əcəŋə *oa-gəməgəmə *DaDəsə

1. Note the irregular sound change of k>ʔ/_i in both forms in Mantauran.

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	hole		horn	horse	hot (like pepper)
Tan	baroŋolo	—	laŋŋo	—	Lacéŋə
Bud	baroŋolo	—	láŋŋo	rígi	Lacəŋə
Mag	—	mobúŋu	lŋu	rgí:	o-rcíŋi
Ton	—	mawbóŋo	laŋŋo	igi:	wa:céŋə
Man	—	—	laŋŋo	rihi	o-Lacəŋə
PR	*baroŋolo	*mawbŋo	*laŋŋo	*rigi	*oa-Lacəŋə
	hot (weather)	hot/roast	house	how many	
Tan	—	DəŋəDáŋə	da:ŋə	ʔía	—
Bud	—	DəŋéDəŋə	da:ŋə	pía	—
Mag	marpá:	o-DŋéDŋə	dánə	—	píni
Ton	ma:páʔa	wa-DəŋéDəŋə	daʔánə	—	(piáni)
Man	maLapaʔa	o-ɬəŋəɬəŋə	ɬəʔanə	—	ma-pini
PR	*maLapaʔa	*DəŋəDəŋə	*daʔanə	*pia	*pini
	hundred	hungry		hunt	hurt/smart
Tan	idáy	mw-a-baisi	—	walóʔo	aŋəáŋə
Bud	iday	mw-a-baisi	—	wálopo	aŋəaŋə
Mag	idé:	—	o-bési	u-lúpu	—
Ton	idáy	—	ʔa-báisi	wa:lópo	ʔaŋəʔáŋə
Man	idai	—	—	o-alopo	o-ʔaŋəʔaŋə
PR	*iday	*mo-a-baisi	*ʔa-baisi	*oalopo	*ʔaŋəʔaŋə
	hut	I	inside	iron/metal	itchy
Tan	taoaná	ko-nakó	aDíŋi	aDémə	—
Bud	taovanánə	{ko-akó ko-nako	aDíŋi	aDémə	ma:Lacəacəŋə
Mag	tovaná:	—	aDíŋi	aDími	marcicíŋi
Ton	taʔoanánə	—	ʔaDíŋi	ʔaDémə	ma:cəacəŋə
Man	taʔonə	—	ʔaDíŋi	ʔaDémə	(maLacəacəŋə)
PR	*taʔoanə(?)	*-ako *ko-nako	*ʔaDíŋi	*ʔaDémə	*maLacəacəŋə

	Japanese		jaw	jew's harp	
Tan	Diʔóŋo	—	baθiŋi	ləbéərə	—
Bud	Diponŋo	—	báθiŋi	ləbəərə	—
Mag	—	kó:mu	bθéŋe	—	tɲátɲu
Ton	—	káwmo	baθiŋi	—	tonátɔŋo
Man	—	(ʔaomo) ¹	vasiŋi	—	tonatɔŋo
PR	*Diponŋo	*kawmo	*baθiŋi	*ləbəərə	*tonatɔŋo

	joint	kick		kidney	kill ²	
Tan	ʔokó	tətéré	—	ʔədé:	ʔa-ʔacáy	—
Bud	póko	tətərə	—	pédə:	pa:-pácay	—
Mag	—	—	o-kdánŋi	—	—	pa-témdu
Ton	—	—	wa-kadáŋə	padéʔə	—	pa-tyámodo
Man	poko	—	o-kadaŋə	pədəʔə	—	—
PR	*poko	*tətərə	*kadaŋə	*padéʔə	*pa-pacay	*pa-tiamodo

	knee	small knife		small knife	knife (general)
Tan	ʔacóLo	—	bakálə	takiθi	—
Bud	pacóLo	—	bákalə	takiθi	—
Mag	—	pkú:	bkálə	—	sálDu
Ton	—	pakó:	bakálə	—	saʔáloDo
Man	—	—	vákalə	—	ʔa:lodo
PR	*pacoLo	*pako:	*bakalə	*takiθi	*saʔaloDo

1. PR *k normally derived as Mantauran k (see §2.1.5). Yet there are some instances of PR *k > Mantauran ʔ, cf. Tanan *ki-tai* and Mantauran *ʔi-tai* "dig taro". The condition of such an aberrant change remains to be worked out.

2. Cf. the term "die".

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	knife, long ¹		know		lake	
Tan	Labo	—	θiŋálə	—	baðó	
Bud	Labo	—	θiŋálə	—	báyo	
Mag	—	lvási	—	u-rgú:	bró:	
Ton	—	livásə	—	igóʔo	baó	
Man	—	(lívasə)	—	o-Lihoʔo	vaLo	
PR	*Labo	*livasə	*θiŋalə	*Ligoʔo	*baðo	
	lame		language		laugh	lazy
Tan	maʔilay	vagá	—	—	—	—
Bud	mapilay	vága	—	—	—	—
Mag	maplé:	—	bká:	aŋirŋiri	markáθi	
Ton	mapiláy	—	baká	ʔaŋii	—	
Man	mapilai	(vaha)	—	—	marakasə	
PR	*mapilay	*vaga	*baka	*ʔaŋir/Li	*marakaθə	
	leaf ²	leak	mountain leech	water leech	left (side)	
Tan	soʔóŋo	wa-toDó	limátéko	vili	virí	
Bud	sopoŋo	wa-tóDo	limátəko	vili	viri	
Mag	spúŋu	mu-tDú:	lmátki	vli:	vri-éni	
Ton	sopóŋo	mw-a-toDó	limátəko	vili	vii-anə	
Man	ʔopoŋo	mo-toðo	limatəko	ili	iri-ə	
PR	*sopoŋo	*toDo	*limatəko	*vili	*viri	
	leg: calf		lge: thigh		leg	leopard-cat
Tan	—	vagísi	—	—	—	Likoláw
Bud	—	vagísi	—	—	—	Likólaw
Mag	t-bos-bós-a	—	Drosá:	kúku	rkúlo	
Ton	ta-boθo-bóθ-anə	—	(Da:swánə)	kóko	ikólaw	
Man	ta-voso-vos-a:ə	—	ðaLoʔanə	o-koko	Likolao	
PR	*ta-boθo-boθ-anə	*vagisi	*DaLosanə	*koko	*Likolaw	

1. The Mantaurean form *livasə* "knife" may have been borrowed from Tona.

2. Both the Tanan and Budai forms refer to a branch of tree with leaves on, while the Mantaurean form refers to grass.

	lie down		light (in weight)	lighted/bright	
Tan	saro-takaŋá	—	ma:-lyaʔáy	wa-ləDá	—
Bud	saro-takáŋa	—	ma:-lyápay	wa-ləDa	—
Mag	—	sierókə	ma-lápe	—	o-Dópsə
Ton	—	siaəaəké:	ma-lápay	—	Daópasə
Man	—	—	ma:-lapai	o-liəaʔa	—
PR	*saro-takaŋa	*siarəkə	*ma-l(i)apay	*oa-ləDaʔa	*Daopasə
	lightning	lime	lips	liver ¹	
Tan	Likácə	rabóko	bibiá	—	aθáy
Bud	Likacə	—	bi:bíanə	—	áθay
Mag	—	rbóko	—	smítu	aθé:
Ton	iká:cə	abóko	—	samító	—
Man	Lika-Likacə	ravoko	—	—	asai
PR	*Likacə	*raboko	*bibianə	*samito	*aθay
	lizard	long(object)	Longan	look askew	louse(of head)
Tan	ʔə-ʔókə	(ma-θaŋəLá)	giŋigíŋi	—	kocó
Bud	pə-pé:kə	—	giŋigíŋi	maθiLikanə	kóco
Mag	píki	ma-θŋéda	giŋigíŋi	maθríknə	kcú:
Ton	pókə	ma-θaŋédaʔa	giŋigíŋi	maθí:kanə	kocó
Man	pəkə	ʔo-saŋédaʔa	hiŋihiŋi	(maʔiLikaə)	koco
PR	*pəkə	*maθaŋédaʔa	*giŋigíŋi	*maθiLikanə	*koco
	louse (of body)		love	low	lung ²
Tan	da:có	—	madalámə	ma-ləbə	ba: ʔaracoŋá
Bud	dá:co	—	madálamə	a:-ləbə	— paracóŋanə
Mag	—	gácu	madlámi	ma-líbi	a-bá: —
Ton	—	gaʔáco	madalámə	maʔaləbə	baʔá —
Man	daʔaco	—	madalamə	mo-ləvə	— paracoŋə
PR	*daʔaco	*gaʔaco	*madalamə	*maʔaləbə	*baʔa *paracoŋə

1. The Maga form *aθé:* refers to an internal organ of the body, "pancreas"; its form for "liver" is *srágu*, which is not a cognate.

2. The Tanan form *ʔaracoŋa* refers to the head of lung.

The Internal Relationships of Rukai

	maggot/worm		man/male	man/human being	
Tan	əkáy	—	{ sawaláy savalay	omásə	—
Bud	əkay	—	saoválay	oma-ómasə	—
Mag	—	ə-kəlŋə	sovlé:	—	i-có:
Ton	—	kəʔəlŋə	saʔwaláy	—	c/w/áw
Man	ʔəkai	—	ʔaolai	—	o-caó
PR	*ʔəkay	*kəʔəlŋə	*saʔovalay(?)	*omasə	*caw
	mango	many	mat	middle/center	millet
Tan	kamayá	ma:kaLá	saʔá:	(ka-bəciaká)	bəcóŋə
Bud	kamáda	ma:káLa	sápa:	ka-bicəLákanə	bəcóŋə
Mag	kamé:a	—	spá:	bcərká:	bcɛŋi
Ton	kamáya	—	sapaʔa	bəcəakánə	bəcóŋə
Man	—	—	ʔapaʔa	(vécahaə)	vəcəŋə
PR	*kamaia	*maʔakaLa	*sapaʔa	*bəcəLakanə	*bəcəŋə
	money	moon/month	mortar	mosquito	
Tan	ʔaysó	Damárə	lo:ŋo	—	atatimalaw
Bud	páyso	Dámarə	lo:ŋo	—	—
Mag	pésu	Dmári	—	ckúlu	tatmólo
Ton	páyso	Damáə	—	cokólo	(atatiŋaʔolo)
Man	paiso	damarə	—	cokolo	—
PR	*payso	*Damarə	*lo:ŋo	*cokolo	*atatimaʔolaw
	mother	mountain	mouth	move	mud ¹
Tan	{ t-iná na-ina	LəgəLəgə	ŋodóy	wa-vələvələ	—
Bud	{ t-iná ina	LəgəLəgə	ŋódoy	ŋi-a-vələvələ	dokacə
Mag	n-iná:	rgɛrgi	—	u-vlɛvli	dukáci
Ton	ti-t-iná	əgə:gə	—	wa-vələvələ	dokácə
Man	{ ina-li ina-kə	LəhəLəhə	ŋodoy	a-ələələ	đokacə
PR	*ina	*LəgəLəgə	*ŋodoy	*vələvələ	*dokacə

1. The Budai form refers to left-over (food).

	mud/ earth	muddy	mulberry	mute/ dumb	name	
Tan	iLíci	ma-θa-limo	talióDo	—	nagánə	—
Bud	iLíci	ma-θa-límo:	talióDo	—	nagánə	—
Mag	—	malimú:	—	maŋlú:	—	arácə
Ton	i:ci	malimóʔo	—	maŋolóʔo	—	a'ícə
Man	—	malimoʔo	—	(máŋaLo)	—	aLacə
PR	*iLíci	*malimoʔo	*talióDo	*maŋaloʔo	*naganə	*aLacə

	nasal mucus		navel	near	
Tan	baókə	—	ʔókə	də:θə	—
Bud	baókə	ŋəθə	pókə	də:θə	—
Mag	biki	ŋíθi	píki	—	med:áli
Ton	baókə	ŋə-ŋəθə	pəpókə	—	maʔadadiáli
Man	(vəkə)	nə-ŋəsə	pəkə	—	maʔadi:ðali
PR	*baəkə	*ŋəθə	*pəkə	*dəθə	*maʔadidali(?)

	neck	neck back flesh	needle		net bag
Tan	Ló:	—	inamáy	—	kaDáy
Bud	Ló:	—	inámay	—	kaDay
Mag	i-rí:	udúnu	—	núme	kdé:
Ton	əʔó	odóno	—	nómay	kadáy
Man	Ləʔə	oðono	inəmai	—	—
PR	*Ləʔə	*oðono	*inəmay	*nomay	*kad/Day

	new	night	nine		nit
Tan	ba:wá	maóŋo	—	baŋátə	aLisó:sə
Bud	bá:vane	máóŋo	—	báŋatə	aLisó:sə
Mag	bo:vá	—	masúŋu	(vŋátɿ)	rsírsi
Ton	baʔoáne	—	masóŋo	(vaŋátə)	aəsəsəəsə
Man	vaoʔə	maoŋo	—	vaŋatə	aLəʔəʔə
PR	*baʔoane	*maoŋo	*masoŋo	*baŋatə	*aLisó:sə

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	no	nod	nose		not exist
Tan	inf	wa-DaŋóLə	ŋoŋoá	—	kaDwá
Bud	ini	wa-DáŋəLə	ŋoŋóanə	—	kaDwa
Mag	inf	o-tŋérə	—	tŋurúa	—
Ton	ʔa-ini	—	—	taŋoáne	kaDwá
Man	(ʔa-in-a)	o-təŋəLə	ŋoŋoʔo	—	—
PR	*ini	*t/DəŋəLə	*ŋoŋoʔanə	*taŋor/Lanə	*kaDoa
	numb	nurse (a baby) ¹	oblate	old thing	adult/ old person
Tan	masarəgesəgə	ʔa-θoθó	—	soʔíLi	ma-roDáŋə
Bud	masarəgesəgə	pa-θoθo	—	sopíLi	ma:-roDaŋə
Mag	masrigsɿgi	pa-θúθu	martíbli	ma-spíri	ma-rDáŋə
Ton	masaəgesəgə	pa-θoθo	maotíbili	ma-sopí:	ma-oDáŋə
Man	—	pa-soso	maLitivili	ma-ʔopíLi	ma-rodaŋə
PR	*masarəgesəgə	*pa-θoθo	*maLotibili	*sopíLi	*ma-roDaŋə
	one ²		orange	ornament, head	other
Tan	əá	—	—	—	Domá
Bud	(ísa)	—	—	—	Dománe
Mag	—	səsá:	mkatamné:	krávθi	Dumáni
Ton	—	sə-səsáne	makatámani	káávaθə	Domá
Man	ma-əa-əa	—	makatamani	—	doma
PR	*əa	*səsanə	*makatamani	{*karavaθə *kaLavaθə	*Doma(nə)
	wild orchid	outside		owl	palm/sole
Tan		latáDə	—	—	—
Bud	sa-ŋoliŋoli	látadə	—	koo	—
Mag	ŋulŋúli	—	bualá	—	kpá:ri
Ton	ŋoliŋóli	—	bwálan	—	kapáə
Man	ŋoliŋoli	lataðə	—	koʔo	kapaLə
PR	*ŋoliŋoli	*lataDə	*boalan	*koʔo	*kapaLə

1. Cf. "breasts".

2. The Man form refers to things or animals, while the Tan form is a cardinal.

	pan	papaya	paper		pass
Tan	ʔalóŋo	—	senátə	—	Libátə
Bud	palonjo	—	senátə	—	Líbatə
Mag	plóŋo	slítunju	—	slátɿ	u-rbátɿ
Ton	palóŋo	salítóŋo	—	solátə	ibátə
Man	palonjo	—	—	(solatə)	o-Livatə
PR	*palonjo	*salitonjo	*senatə	*solatə	*Libatə
	peck (bird)	fruit peel	penis		pepper
Tan	—	ŋicó	ciLákə	—	tavaŋólo
Bud	tonóco	ŋico	ciLákə	—	taváŋolo
Mag	u-tŋúcu	ŋcú:	—	itili	tvaŋolo
Ton	tonótonóco	ŋico	—	itili	tavaŋolo
Man	(o-tonotonoŋoro)	ŋoco	—	—	(tavaŋólo)
PR	*tonoco	*ŋico	*ciLakə	*itili	*tavaŋolo
	pestle	pheasant ₁	pheasant ₂		
Tan	asólo	tabáθə	—	tikoráy	—
Bud	asólo	ta:baθə	—	tikóray	—
Mag	asúru	—	tkuési	—	tmáθɿ
Ton	asó:	—	tikóʔasə	—	tamáθə
Man	ʔolo	—	—	tikoray	—
PR	*asolo	*tabaθə	*tikoʔasə	*tikoray	*tamaθə
	domesti- cated pig	pig (wild)	pigeon		
Tan	—	babóy	—	—	—
Bud	bé:kə	báboy	—	tavágo	—
Mag	bíki	—	vlísne	—	bkó:
Ton	bəkəʔə	—	valísanə	—	bakóʔo
Man	o-vəʔəkə	vavoy	—	tavahoʔo	vakoʔo
PR	*bəʔəkə	*baboy	*valisanə	*tavagoʔo	*bakoʔo

1. The Tanan form *tabáθə* refers to a Formosan blue-pie. The Maga speakers say *tkuési* is a smaller pheasant while *tmáθɿ* is a bigger pheasant.

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	pillar	pinch	pineapple	pine tree
Tan	oLóDo	gécéLə	ʔaŋoDále	aLəŋə
Bud	oLoDo	wa-gécəLə	paŋoDale	áLəŋə
Mag	—	u-gcíri	pŋúDlə	s-ríŋi
Ton	(sa:óDo)	—	paŋóDale	s-aəŋə
Man	ʔoLoðo	o-həcəLə	paŋoðale	aLəŋə
PR	*ʔoLoDo	*gəcəLə	*paŋoDale	*aLəŋə

	smoking pipe	pitiable		thatch/thin miscanthus: type of plant	
Tan	oŋocóy	ma-koro	—	aóbo ¹	igi
Bud	áŋoco	ma-koro	—	áoobo	igi
Mag	ŋícu	—	ma-gagúcu	s-obu	—
Ton	aŋíco	—	ma-gagoʔoco	s-áoobo	laʔici
Man	aŋocoy	—	ma-hohoʔoco	aóvo	laʔici
PR	*aŋico(y)	*ma-koro	*ma-gagoʔoco	*aobo	*laʔici

	thick mis.		fish-poisonous plant	to plant	
Tan	θaLá	—	Daʔólo	—	—
Bud	θáLa	—	Dapolo	LəDəkə	—
Mag	—	bsáŋi	Dpólo	—	u-dúku
Ton	—	boşáŋə	Dapólo	—	wa-dokóʔo
Man	—	—	ðapələ	o-Ləðəkə	—
PR	*θaLa	*bosəŋə	*Dapolo	*Ləðəkə	*dokoʔo

1. The Tanan form means "roof".

	plum	point to	polite	pomelo	
Tan	(vinwádə)	—	mai:nó	kamoráw	—
Bud	—	—	maí:no	kamóraw	—
Mag	vnə́ədə	u-θdúlu	menú:	—	vé:tɕu
Ton	vinwádə	wa-θodólo	maʔinó	—	váytoŋo
Man	(vonoádə)	(ʔódolo)	maʔino	—	(vaitoŋo)
PR	*vinoadə	*θodolo	*maʔino	*kamoraw	*vaitoŋo
	pond	poor	pork	pot	pound (rice)
Tan	—	—	botólo	—	sy-a-Lobó:
Bud	—	—	bótolo	taLolisi	sy-a-Líbo:
Mag	bláŋi	miłilími	btúlu	trúlsi	si-rbú:
Ton	baláŋə	maʔələʔələmə	botólo	taólisi	sy-a-ibóʔo
Man	valaŋə	maələləmə	votolo	(torolisi)	ʔo-Lovoʔo
PR	*balaŋə	{*maələləmə *maʔələʔələmə}	*botolo	*taLolisi	*si-a-Liboʔo
	powder	pregnant	pull	pus	pus head
Tan	—	—	bilíbili	naná	— —
Bud	—	—	bilíbili	nána	— cálasə
Mag	sbúa	mabíbi	u-blíbli	n:á:, naná	tálsə —
Ton	saboʔwánə	mabíbi	bilíbili	naná	talásə —
Man	(savoʔoʔə)	—	o-vilivili	nana	— calaʔə
PR	*saboʔoanə	*mabibi	*bilibili	*nana	*talasə *calasə
	push	quiet	keep quiet	rabbit	rafters
Tan	DoroDóro	—	icəLəbə	—	—
Bud	DoróDoro	—	icəLəbə	Lotoko	—
Mag	u-DrúDru	maDmírŋi	—	(tutúku) ¹	skacpá:
Ton	DoóDo:	maDamí:ŋi	—	otóko	saka:icipi
Man	o-đo-đoro	mađamiLiŋi	icəLəvə	(aotoko)	ʔakaLacipi
PR	*DoroDoro	*maDamiLiŋi	*icəLəbə	*Lotoko	*sakaLacipi

1. The initial consonant seems to have been assimilated to the following stop consonant. The anticipated form is **riuku* for Maga.

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	ragged		rain		rainbow		rat/mouse
Tan	—		odále	—	baLilawlaw		—
Bud	ma:porici		ódale	—	baLilawlaw		—
Mag	mapríti		udále	—	—		tmuθuá
Ton	mapíiti ¹		—	daʔólo	—		tamoθwáne
Man	—		—	daʔolo	—		—
PR	*maporit/ci		*odale	*daʔolo	*baLilawlaw		*tamoθoanə

	rat		rattan		red		rest/stop
Tan	—		ováy		dirəróle	—	isaDa
Bud	koLábaw		ováy		dirəróle	—	isaDá
Mag	kurábo		uvé:	—	madlé:ŋə		e-sa-sDá
Ton	koábaw		ováy	—	madiləaŋə		ʔisáDa
Man	koLabao		oai	—	madiləaŋə		ʔiʔaða
PR	*koLabaw		*ovay	*dirərəle	*madiləaŋə		*ʔisaDa

	return/ retort		return (home)		ribs		rice (husk of)
Tan	wa-biLi		mw-a-baLiW		vigwá	—	əcá
Bud	wa-biLi		mw-a-báLiw		vigwa	—	əca
Mag	u-brí:		—	—	bkuəsə		(icá:)
Ton	wa-bii		—	—	bikwəsə		əcá
Man	o-viLi		mu-valio		(vihoa)	—	—
PR	*oa-biLi		*mo-a-baLiw		*vigoa	*bikoasə	*əca

	rice (cooked)		rice (plant)		rice (husked)		rice (unhusked)
Tan	agá:		ʔagáy		hərátə	—	cobó
Bud	ága:		págay		bəratə	—	cobo
Mag	—		pgé:	—	bəəsə		cbú:
Ton	—		pagáy	—	bəʔasə		cobó
Man	ahaʔa		pahai	—	(vəʔao)		covo
PR	*agaʔa		*pagay		*bəratə	*bəʔasə	*cobo

1. Note PR *o > Tona i by assimilation to the following vowels.

	rice (glutinous)	carried on back/ride	right (side)		ring
Tan	—	—	vanálə	—	tara
Bud	—	ky-a-ódo	—	vánanə	tára
Mag	vlitúru	ki-údu	—	vnánə	trá:
Ton	valítoo	ky-a-ʔódo	—	va-ná-nanə	taá
Man	(valitoro)	(ʔi-ʔođo)	anal-aə	—	ʔa-tara
PR	*valitoro	*ki-ʔodo	*vanalə	*vananə	*tara

	ripe	river	road/path	roof	root	
Tan	maLémə	Dakərálə	ka-daLan-a(nə)	caLavi-a	balácə	—
Bud	maLémə	Dakəralə	ka-da:-daLán-anə	caváli	bálacə	—
Mag	marími	Dkérle	da-dránə	cvá:ri	—	amíci
Ton	maśmə	Dakəsalə	da-daánə	(caái)	—	ʔamíci
Man	maLəmə	ɬakəralə	—	caLai	—	ʔamici
PR	*maLəmə	*Dakəralə	*daLanə	{*cavali *caLavi	*balacə	*ʔamici

	rope		(smell bad) rotten (food)	rotten (as log)	rub
Tan	caLisi	—	mabálə	malaməkə	—
Bud	cáLisi	—	mabálə	malaməkə	—
Mag	—	təsi	mabró:	malmókə	—
Ton	—	taísi	mabáə	malamókə	ʔoDóʔoDo
Man	—	(caiʔi)	mavaLə	malaməkə	o-ʔođoʔođo
PR	*caLisi	*taisi	*mabaLə	*malaməkə	*ʔoDoʔoDo

	saliva	salt		salty/bitter	same
Tan	—	timó	—	maʔalíli	maramaw
Bud	—	tímo	—	ma:palíli	ma:-ra-rámaw
Mag	aplálu	—	tmúsu	—	ma:rámó:
Ton	ʔapolálo	—	timóso	mapálili	ma:ámaw
Man	ʔapololo	timo	—	mapalili	maramaw
PR	*ʔapolalo	*timo	*timoso	*mapalili	*maramaw

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	sand	saw (N.) ¹	scar ²	scoop	scratch
Tan	ənay	sa-giθigiθi	barici	kaDóro	gacəgacə
Bud	énay	—	—	—	gacəgacə
Mag	iné:	sa-giθigiθi	brece	o-kDóro	u-gcəgcə
Ton	ənáy	sa-giθigiθi	ty-a-baíci	wa-koDó:	(gaθəgaθə)
Man	ənai	?a-hisihisi	—	—	—
PR	*ənay	*sa-giθigiθi	*barici	*kaDoro	*gacəgacə
	scrotum	scrub	scythe	big scythe	see
Tan	bocó	koDokóDo	—	—	—
Bud	bóco	koDokóDo	giLisi	takawkaw	—
Mag	bcú:	u-kDúkDu	grísi	tkokó:	u-cəjələ
Ton	bocó?o	koDókoDo	giísi	takawkaw	cəjələ
Man	voco?o	koθokodo	hiLisi	—	o-cəjələ
PR	*boco?o	*koDokoDo	*giLisi	*takawkaw	*cəjələ
	grains seed	fruit seed	vegetable seed	seek	separate/leave
Tan	əá?ə	cá?ə	—	silá?ə	ma-o-vagáy
Bud	əápə	cápə	sapaivay	silapə	ma-o-vágay
Mag	iápi	cpí:	—	u-slápi	o-vgé:
Ton	?əápə	capə?ə	sapa?ivay	silapə	?a-vagáy
Man	?ápə	cápə	—	o-?ilapə	o-lo-ahai
PR	*?əapə	*capə?ə	*sapa?ivay	*silapə	*vagay
	seven	sew		shadow ³	sharp
Tan	?itó	caísi	—	a-la-liŋo	magaráŋə
Bud	pító	cáisi	—	a-la-liŋo	magaráŋə
Mag	pítu	—	u-cikú:	—	magráŋə
Ton	pító	—	cikó	—	magaáŋə
Man	pito	—	—	—	maharaharaŋə
PR	*pito	*caisi	*ciko	*a-la-liŋo	*magaraŋə

1. The Tan form refers to a tool to take up young rice plant; *giθigiθi* 'to shave'.

2. The Ton form means to "swell (after hitting)".

3. Cf. "glass(es)".

The Internal Relationships of Rukai

	shell	shocked	shoes	shoot (with arrows)	shoot (with a gun) ¹
Tan	tobákə	—		ʔaná	wa-kwaŋə
Bud	tóbakə	—		pána	wa-kwaŋə
Mag	tbáki	markími	θ-kuápi	u-pná:	u-kuéŋi
Ton	tobákə	maəkémə	kwapə	paná	wa-kwáŋə
Man	tovakə	marəkəmə	koapə	o-pana	o-koanə
PR	*tobakə	*marəkəmə	*koapə	*pana	*oa-koanə

	shore/edge	short (as object)	shoulder	shoulder blades	shout
Tan	babi-bilá	(əDəkay)	alivaDáŋə	—	kawkaw
Bud	babia-bíla	(əDəkánə)	—	—	káwkaw
Mag	t-bilá:	mək:ónə	—	skurtá:	o-kóko
Ton	ta-bilaʔ-anə	maəkəkónə	—	sakotánə	(kókaw)
Man	ta-vilaʔ-ə	—	aliadaŋ-aə	ʔakorotə	—
PR	*bilaʔ	*maəkəkənə	*alivaDáŋə	*sakorotanə	*kawkaw

	shrimp		sibling	sibling, elder (Ref.)	sibling, older (Add.)
Tan	tara-solóDo	—	botakánə	taka-taka	—
Bud	tara-sóloDo	—	botákanə	taka-táka	káka
Mag	—	taka-sulúDu	—	taka-taka	kaká:
Ton	—	taka-Doloso ²	—	taka-taka ³	káka
Man	—	—	—	taka-taka	—
PR	*tara-soloDo	*taka-soloDo	—	*taka-taka	*kaka

1. Cf. the nominal form *koanə "gun"; the verbal form must take the prefix *oa-

2. Note the metathesis of *s* and *D* in the Tona form.

3. The Tona form means "elder".

The Internal Relationships of Rukai

	sibling (younger)		sick	side dish	sing	
Tan	agi	—	macaśmə		sənáy	—
Bud	ági	—	macaśmə	dámay	sənáy	—
Mag	—	glí:	macími	s-damr-á:	—	u-θné:
Ton	—	gili	macaʔəmə	damay	—	θənáy
Man	—	—	macaʔəmə	ʔa-đamai	—	—
PR	*agi	*gili	*macaʔəmə	*damay	*sənay	*θənay

	sinicized tribes	six	skin	skirt (man's)	
Tan	—	ənəmə	ikidi	—	labíti
Bud	—	énəmə	ikidi	—	lábiti
Mag	oliá	inimi	—	pcíŋi	lbéte
Ton	aolyánə	ənəmə	—	picíŋi	labíti
Man	aoliaə	nəmə	—	piciŋi	laviti
PR	*aolianə	*ənəmə	*ikidi	*piciŋi	*labiti

	skirt (woman's)		sky		sleep	
Tan	kono	—	so-bələ-bələŋə	—	aʔəcə	—
Bud	kono	—	so-bələ-bələŋə	—	á:pəcə	—
Mag	kúnu	—	—	tbəŋá:	—	sierəkə
Ton	—	ʔimáy	—	tabələŋánə	—	sya:əkə
Man	—	ʔimai	—	təvələŋə	ʔapəcə	—
PR	*kono	*ʔimay	*so-bələ-bələŋə	*tabələŋanə	*ʔapəcə	*siar/Ləka

	sleepy	slender	slippery/ slide	small	smell
Tan	masiʔələŋə	makoláy	ma-θoLiDi	tikiá	sabaLi
Bud	masipələŋə	makólay	ma-θóLiDi	tikíanə	sabáLi
Mag	masipíŋi	mak:úle	maθuré:	—	u-sbáre
Ton	masipəpə:ŋə	ma-ka-kólay	ma-θoLiDi	—	sabái
Man	maʔapəpələŋə	makolai	—	—	o-ʔávaLi
PR	*masipələŋə	*makolay	*ma-θoLiDi	*tikianə	*sabaLi

	smell bad	smoke	smooth	smothered	snake
Tan		əbələ	ma-sa-solaʔə		—
Bud	maŋaθələ	əbələ	ma-sa-solapə	ma:-símətə	(soláo)
Mag	maŋáθri	ubiri	ma-súlpə	a-smítə	surá:
Ton	maŋáθə:	əbə:	ma-sólapə	ʔa-səmət-ánə	swáʔa
Man	(maŋacələ)	—	—	ma-ʔəmətə	ʔolaʔa
PR	*maŋaθələ	*əbələ	*ma-solapə	*símətə	*soláʔa
	sneeze	snore	snow/ice	so	
Tan	basən	—	aŋoraŋoro	ʔasabó	—
Bud	básən	—	so-aŋoraŋoro	pasá:bo	—
Mag	—	o-rámi	o-ŋraŋru	—	iśla
Ton	—	á:mə	—	—	ʔiśla
Man	—	aLamə	—	—	(ʔola)
PR	*basən	*Lamə	*aŋoraŋor	*pasabo	*ʔiəla
	soak/ immerse	soft/ weak/cheap	soul	sour	
Tan		ma-ma-məlś:	abákə	maLió	—
Bud	—	ma:-ma-mələ:	abákə	maLio	maŋaLələŋələ
Mag	u-siŋí:	mamrí:	abaki	—	—
Ton	wa-səŋəʔə	ma-ma-məlś:ʔə	ʔabákə	—	maŋaLələŋələ
Man	o-ʔəŋəʔə	mamələʔə:	—	—	maŋaLələŋələ
PR	*-səŋəʔə	*mamələʔə	*ʔabakə	*maLio	*maŋaLələŋələ
	sow ₁	sow ₂	sparrow	speak/say	
Tan	sabólo	—	ʔəaʔś	—	kawrivá
Bud	sábolo	—	—	—	kawaríva
Mag	—	porbó:	piyápi	kurlóni	—
Ton	—	—	pəʔapə	koolánə	—
Man	—	o-poLavo	—	koroloŋo	—
PR	*sabolo	*poLabo	*pəʔapə	*korolaŋə	*kawriva
					*ʔapo-baka

1. Cf. the term for "language".

The Internal Relationships of Rukai

	spear (N.)		spear (N.)	spear (V.)	spider
Tan	idfri	—	diŋidiŋi	—	taka-La-Lavaθə
Bud	idfri	—	diŋidiŋi	—	La:-Lávaθə
Mag	—	sbáki	s-diŋidiŋi	o-sbáki	tka-rváθi
Ton	—	sabákə	diŋidiŋi	wa-sabákə	taka-avaθə
Man	—	(ʔavahə) ¹	ʔa-diŋi-diŋidiŋi	(o-ra-ʔavahə)	—
PR	*idiri	*sabakə	*diŋidiŋi	*oa-sabakə	*Lavaθə

	spine ²		spirit	spit	split
Tan	bokólo	—	ʔələŋə	sw-a-ŋaLay	—
Bud	bokólo	—	pələŋə	sw-a-ŋaLay	bocóko
Mag	bkúlu	ldúŋu	pələŋə	u-su-ŋáre	bcuku
Ton	bokólo	loDoŋo	pələŋə	wa-so-ŋáay	bocóko
Man	vokolo	loðoŋo	pələŋə	ʔo-ŋaLai	o-vocoko
PR	*bokolo	*loDoŋo	*pələŋə	*so-ŋaLay	*bocoko

	spoiled (cooked food)	spoon	spouse	sprout (from the stump)	sputum
Tan	maʔaŋéLə	kidiŋi	ʔalaŋə	—	ŋaLáy
Bud	mapáŋəLə	kidiŋi	—	—	ŋáLay
Mag	mapáŋri	kdiŋi	pláŋi	u-tŋírsi	ŋré:
Ton	—	kidiŋi	paláŋə	wa-tiŋfisi	ŋáay
Man	mapaŋəLə	kidiŋi	—	o-ciŋiriʔi	ŋaLai
PR	*mapaŋəLə	*kidiŋi	*palaŋə	*t/ciŋirisi	*ŋaLay

1. All are regular except for the *h* that occurred in place of the anticipated *k* in the Mantaauran form. Cf. the similar irregular change in PR **DəLəkə* > Mantaauran *dəLəhə* "back" (see note 1 in §2.1.4.). Also PR **ki-ʔodo* > Mantaauran *ʔi-ʔoðo* "ride".

2. The forms on the left mean the upper part of spine while the ones on the right mean the whole spine in the Lower Three Villages.

	squeeze	squirrel	flying squirrel	stalk of taro plant	stand
Tan	—	bo-bóto	(ravar)	θi:rí	idi:
Bud	wa-pé:	bo-bóto	Lavá	θi:ri	idi:
Mag	u-pé:	bút:u	rvá:	θrí:	—
Ton	wa-pəʔé	bóto	(aváʔa)	θiʔi	ʔy-a-diʔi
Man	o-pəʔə	voto	La:	θiriʔi	idiʔi
RP	*oa-pəʔə	*boto	*Lava	*θiriʔi	*ʔidiʔi
	star	stay overnight	steal	steelyard	stem (tree)
Tan	tariáw	isoláy	kooʔá	tiŋitŋi	tóDo
Bud	tariáw	isólay	koópa	tiŋi-tiŋi	tóDo
Mag	—	isulé:	kiu-pu-pá:	s-tiŋtŋi	túDu
Ton	taíaw	ʔi-a-soláy	ki-a-ʔopá	sa-tiŋatŋi	tóDo
Man	tario	ʔiʔolai	o-koʔopa	ʔa-tiŋa-tiŋatiŋi	toðo
PR	*tariaw	*ʔisolay	*kiʔopa	*tiŋatiŋi	*toDo
	stick/pole		stick/adhere	sticky	sting ¹
Tan	okóDo	—	wa-dakíʔi	—	—
Bud	okóDo	—	wa-dákipi	—	—
Mag	—	skúDu	o-dkepe	o-rke-rképe	u-kpici
Ton	—	sakóʔoDo	wa-dokípi	—	wa-pəkécə
Man	ʔokodo		(o-Lakipi)	o-Lakipi	o-pəkəcə
PR	*okoDo	*sakoʔoDo	*dakipi	*Lakipi	*pəkəcə
	stingy	stomach	stone ₁ ²	stone ₂	story
Tan		bicoká	Lənégə	—	maolay
Bud		bicóka	Lənəgə	—	—
Mag	maŋéci	bcúka	rnígi	alápi	—
Ton	maŋaʔici	bicóka	ənégə	ʔalápi	maólay
Man	maŋaʔici	vicoka	Lənəhə	—	la-molai
PR	*maŋaʔici	*bicoka	*Lənəgə	*ʔalapi	*maolay

1. Note the metathesis of p and k in Maga. There are other cases of metathesis in the dialect.

2. It refers to boulder in Maga and Tona, but hard stone in Mantaaran.

The Internal Relationships of Rukai

	straight		long strap		stream, little
Tan	ma:DiŋəLəsə	—	ʔaláy	—	Lana
Bud	ma:DiŋəLəsə	—	pálay	—	—
Mag	—	maskúru	—	saba:	rná:
Ton	—	masokó:ʔo	—	—	ta:-ná:-nə
Man	—	(masokoLoʔo)	—	ʔava:va:	Lana
PR	*maDiŋəLəsə	*masokoLoʔo	*palay		*Lana

	strong	suck	sugar	sugar-cane	
Tan	makəcəŋə	θəʔəθəʔə	—	cobóso	—
Bud	makəcəŋə	θəpəθəpə	—	cobóso	—
Mag	makíçŋi	u-θpíθpi	kumusía	—	tbúsu
Ton	makiʔəcəŋə	θəpəθəpə	kamosía	—	tibóso
Man	makəʔəcəŋə	o-səpəsəpə	(kámosia)	covoʔo	—
PR	*makəʔəcəŋə	*θəpəθəpə	*kamosia	*coboso	*tiboso

	summit	sun	surprised	swallow	
Tan	—	vaí	—	—	Lə́:də
Bud	po(ŋo)ŋódo	vái	—	—	Lə́:də
Mag	puđu-á	a-vé:	—	markími	u-rídi
Ton	poŋodo-ánə	pa-váʔi ¹	kolíʔi	maəkémə	əʔədə
Man	—	—	koliʔi	maLəkəmə	o-Ləʔədə
PR	*poŋodo	*vaʔi	*koliʔi	*maLəkəmə	*Ləʔədə

	sweep	sweet	sweet potato	swell ₁	
Tan	swáʔə	malimémə	borasi	—	mo-baLakə
Bud	swapə	malimémə	(orási)	—	mo-baLakə
Mag	u-səpi	malimími	—	bráθi	a-bráki
Ton	wa-swápe	maləməmə	—	boáθi	ʔa-bá:kə
Man	o-ʔoa-ʔoapə	maliməmə	—	—	ʔo-vaLakə
PR	*soapə	*maliməmə	*borasi	*boraθi	*baLakə

1. The Tona form *pa-váʔi* means "to dry by the sun".

	swell ₂	swell ₃	swim	swing (N.)	
Tan	—	mo-simakə	laŋoy	taláisi	—
Bud	—	mo-simakə	laŋoy	taláisi	—
Mag	abóku	a-simáki	u-lhé:	—	póDu
Ton	ʔabaóko	ʔa-simákə	laŋóy	—	paóDo
Man	ʔavaoko	—	o-laŋoy	(toliʔi)	—
PR	*ʔabaoko	*simakə	*laŋoy	*talaisi	*paoDo
	tadpole	tail		take	take up
Tan	acacə:ré	taóθo	—	maLa	Logo
Bud	acacə:rə	taoθo	—	maLa	Logo
Mag	—	—	ikívi	mrá:	u-rúgu
Ton	acacəʔéə	—	ikívi	máa	ógo
Man	—	—	—	maLa	o-Loho
PR	*acacəʔərə	*taoθo	*ikívi	*maLa	*Logo
	talkative ¹	taro	dried taro	tattoo	tea
Tan	—	taí	koráy	—	—
Bud	—	tái	kóray	—	talawraŋə
Mag	sabkáni	a-té:	kré:	cikiciki	tloráŋi
Ton	si-a-bakánə	taí	koáy	cikiciki	talawáŋə
Man	—	tai	koLai	cikiciki	—
PR	*si-a-bakanə	*tai	*koLay	*cikiciki	*talawraŋə
	teach/instruct	tears	ten	thick	
Tan	boLoboLó	Ləsə	(poLóko)	makoDəmóLə	—
Bud	boLobóLo	Ləsə	póLoko	makoDəməLə	—
Mag	u-brubrú:	rsí:	prúku	—	marímDə
Ton	bo:bó:	ésə	pó:ko	—	maiʔéməDə
Man	voLovoLo	—	poLoko	—	maLiʔəməDə
PR	*boLoboLo	*Ləsə	*poLoko	*makoDəməLə	*maLiʔəməDə

1. Cf. the term "language". Note that *n is preserved in Maga *sabkani* "talkative", but not in Maga *bka*: "language". The irregular preservation of *n occurs only in a few items in the dialect (see §2.2.1-2.2.3 and note).

The Internal Relationships of Rukai

	thin (object)		thin/skinny	think/mind ¹
Tan	ma:robí:ri	—	mariláy	kiDəməDəmə
Bud	ma:robí:ri	—	marílay	kiDəməDəmə
Mag	—	maDlípsi	marlé:	apa-kDəD:émə
Ton	—	maDolípisi	mailáy	pa-kiDəDəDəmə
Man	—	maðolipisi	marilai	(apa-ʔi:ðə:ðəðəmə)
PR	*marobiri	*maDolipisi	*marilay	*ki-Dəmə-Dəmə

	thirsty		this	thorn	thou	
Tan	ma:kadámə	—	kay	cənəkə	ko-só	—
Bud	ma:kádámə	—	káy	cənəkə	kó-so	—
Mag	—	meDú:	—	cníki	—	mu-su
Ton	—	maiDó	á:-kay	cənəkə	kó-so	—
Man	ma:kaLamə	—	—	—	—	mo-ʔo
PR	*makadamə	*maiDo	*kay	*cənəkə	*ko-so	*mo-so

	thousand	thread	three	throat	
Tan	koDólo	vaLáy	toLó	LoLóŋo	—
Bud	koDólo	vaLáy	tóLo	LóLoŋo	—
Mag	kDúlu ²	vré:	túru	—	tlurá:
Ton	koDólo	váy	tóo	—	toláə
Man	koðolo	aLai	toLo	—	tolare
PR	*koDólo	*vaLay	*toLo	*LoLoŋo	*tolare

1. Cf. the term "heart (mind)".

2. The commonly used term for "thousand" in Maga today is *kzulu*, which is probably a loan from the neighboring language Paiwan *ta-kuzul*, with the first vowel of the root reduced to fit the modern Maga word shape.

	throw ₁	throw ₂	throw away		thumb/toe	
Tan	—	dokóLo	ciLi	—	sa-tomo	—
Bud	—	dokóLo	ciLi	—	—	—
Mag	o-bóŋu	u-dkúru	—	o-bóŋu	—	tmá:
Ton	báŋŋo	—	—	wa-báŋŋo	—	tama-tamánə
Man	—	—	—	—	tomo	—
PR	*baŋŋo	*dokoLo	*ciLi	*baŋŋo	*tomo	*tamanə
	thunder	tidy	tie (a knot) ₁		tie (a knot) ₂	
Tan	DəṛəDérə	—	əṛécə		ʔokó	
Bud	DəṛəDérə	—	əṛécə		póko	
Mag	DiDri	masnékti	u-ríci		u-pkú:	
Ton	—	masinókətə	ə́cə		pokó	
Man	ḍəḍərə	(masinəkətə)	o-əṛəcə		o-poko	
PR	*DəṛəDérə	*masinəkətə	*əṛəcə		*poko	
	tie	tight	tip	tobacco ¹	today	
Tan	—	—	—	tamakó	—	
Bud	—	makəθəkəθə	—	tamáko	—	
Mag	u-bíki	mikθíkθi	scúbu	tmáku	səsá:	
Ton	ə́bəkə	mwakəθəkəθə	(θacóbo)	tamáko	səsánə	
Man	(o-əvəhə)	məkəsəkəsə	ʔacovo-ə	tamako	—	
PR	*ə́bəkə	*makəθəkəθə	*sacobo	*tamako	*səsanə	
	tomorrow		tongue	tooth (general)	tooth (front)	
Tan	loḍa		Lidámə	valísi	sa-ŋocoŋoco	
Bud	lóya		Lídámə	válisi	sa-ŋocóŋoco	
Mag	—	ku-siá	rdámə	vlése	s-ŋucŋúcu	
Ton	—	siʔá	idámə	valísi	sa-ŋocoŋóco	
Man	—	—	Lidámə	aliʔi	ʔa-ŋocoŋoco	
PR	*loḍa		*Lidámə	*valisi	*sa-ŋocoŋoco	

1. The PR form was borrowed from the Dutch word *tabak*.

The Internal Relationships of Rukai

	tooth (molar)	top (of head)	tough	towel	trap
Tan	sa-taetáLə	—	—	—	—
Bud	sa-taetáLə	—	—	sibíni	táəno
Mag	—	—	maθúpci	—	téno
Ton	—	kaedəáne	maθopí:ci	sibíni	taʔəno
Man	ʔa-taLətaLə	karədəraə	(maʔopici)	—	taʔəno
PR	*sa-taetaLə	*karədəranə	*maθopici	*sibini	*taʔəno
	trapped	tree	trousers	try	turn (direction)
Tan	mw-a-tokóLo	aŋató	kaciŋi	a-lavalava	—
Bud	mw-a-tókoLo	aŋáto	kaciŋi	wa-lavalava	—
Mag	mu-tkúru	aŋátu	kcéŋe	o-lvalva:	aŋ-θakríŋi
Ton	—	ʔaŋáto	kaciŋi	lavalava	wa-θakóŋi
Man	motokoLo	ʔaŋato	—	o-la:-la:laa	ʔiŋ-sakoLiŋi
PR	*mo-a-tokoLo	*ʔaŋato	*kaciŋi	*lavalava	*θakoLiŋi
	turn (around)	twenty	twin	two ¹	unhappy
Tan	wa-ʔaLíci	ma-ʔosá-lə	—	Dosa	ma-sələmə
Bud	wa-páLici	ma-pósa-lə	tokapianə	Dósa	ma-sələmə
Mag	aŋ-parci	m-pús-lə	(tkopéa)	Dúsa	ma-slími
Ton	wa-paíci	ma-pósa-lə	tokapiánə	Dosa	ma-sələmə
Man	ʔini-paLici	ma-ma-poʔa-lə	{tokapiə tokape	ma-əoʔa	(masələmə)
PR	*paLici	*ma-posa-lə	*tokapianə	*Dosa	*ma-sələmə
	untie ²		urine		vegetable
Tan	mw-a-əréce	—	loro	—	lacəŋə
Bud	mw-a-əréce	—	loro	—	lácəŋə
Mag	—	u-ríci	—	isí	lcəŋə
Ton	—	ə:c-á	—	isí	lacəŋə
Man	—	o-əréce	—	—	(latəŋə)
PR	*mo-a-əréce	*əréce	*loro	*isi	*lacəŋə

1. The Tona and Mantaurean forms refer to things while those in the other dialects are cardinal.

2. Cf. the term "tie (a knot)".

	village	vomit	vulva		waist	
Tan	cəkə́lə	ota	ʔatí	—	cigia	—
Bud	cəkə́lə	poa-óta	páti	—	tali-cigia-anə	—
Mag	cək-cəklá:	ut:á:~ututá	—	ɲtáli	—	apíDi
Ton	ta-cəkə-cəkəl-an	ʔotá	—	ɲatále	—	apəDə
Man	cəkə-cəkələ	—	—	ɲatale	—	—
PR	*cəkələ	*ʔota	*pati	*ɲatale	*cigia	*apəDə

	wait	wake up	walk/leave	wall	wash/bathe
Tan	waDaw	—	davácə	—	ma-banáv
Bud	wa-áDaw	pacó:no	davácə	—	ma-banáv
Mag	o-Do-Dó:	—	o-dváci	s-domɲi-á:	a-ba-bnó:
Ton	wa-ʔaDa-ʔaDaw	pacoʔóno	davácə	sa-dómiɲi	ʔa-ba-banáv
Man	o-ʔada-ʔadaw	—	o-ða:cə	ta-domiɲ-aə	ma:-vanao
PR	*ʔaDaw	*pacoʔono	*davacə	*domiɲi	*banaw

	wash (clothes)	wash (face)	wash (foot)	wash (hands)
Tan	sináv	tao-maca	tao-Daʔalə	tao-Lima
Bud	sinaw	tao-maca	tao-Dápalə	tao-Lima
Mag	u-sini-sinó:	ma-to-mcá:	ma-to-Dpáli	ma-to-rimá:
Ton	sináv	ma-taʔo-ma-macá	ma-taʔo-Da-Dapálə	ma-taʔo-imá
Man	ʔenao	ma-taʔo-maca	ma-taʔo-ɖapalə	ma-taʔo-Lima
PR	*sinaw	*taʔo-maca	*taʔo-Dapalə	*taʔo-Lima

	wash (tools)	wasp/hornet		water	we (exclusive)	
Tan	θabəθabə	—		aciláy	ko-naí	—
Bud	θabəθábə ¹	—		aláloco	acilay	ko-nai
Mag	u-bə́bθə	tdíulu	—	acíle:	—	k-námə
Ton	θabəθabə	tidólo	—	acilay	—	kí-namə
Man	o-savəsavə	ka-tidolo	aLaloco	acilai	nai	i-namə
PR	*θabəθabə	*tidolo	*aLaloco	*acilay	*nai	*ki-namə

1. The Budai form means to immerse something in the water.

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	we (inc.)	weave	weep	weave (a mat)	west
Tan	ko-tá	tinóno	tobí	tw-a-saʔá	talioga
Bud	ko-tá	tinóno	tóbi	tw-a-sápa	talióganə
Mag	mí-ti	u-tnúnu	u-tubí:	te-spa:	—
Ton	kí-ti	tinóno	tobí	ty-a-sapáʔa	(taolioganə)
Man	mi-ta	(o-tiono)	o-tovi	to-ʔapaʔa	
PR	*ki-ta	*tinono	*tobi	*to-a-sapaʔa	*talioganə

	what?	when? ¹	where		white
Tan	manéma	koíga	ino	—	ma-ʔolí
Bud	manómanə	koíga:nə	ino	—	po-póli
Mag	—	—	—	i-ká-Da	ma-plí:
Ton	—	kogíanə	—	ʔi-kái-Da	ma-polí
Man	—	—	—	—	ma-poli
PR	*manəmanə	*koiganə	*ino	*ʔi-kai-Da	*ma-poli

	who?	whorl, hair	wind	
Tan	anáa	—	sasəvərá	—
Bud	anáanə	—	ma-sasəvéřə	—
Mag	—	tpalrá:	—	bsíbsi
Ton	—	tapalá:nə	—	bəsəbəsə
Man	—	tapalaLəə	—	vəʔəvəʔə
PR	*anəanə	*tapalaLanə	*sasəvəra	*bəsebəsə

1. Note the metathesis of *i and *g that probably took place in Tona. The prefix *ko-* indicates the "past" time, and the stem *-iga(nə)* also takes the prefix *lo-* to indicate "future" (see Li 1973: 275-76).

	window		wine/ alcohol	wine, native ¹	wing ²	
Tan	libáŋə	—	bavá	ka-bavá:	ʔarídi	sa-kaʔəkaʔə
Bud	libáŋə	—	báva	ka-bava:nə	páridi	sa-pakəpakə
Mag	—	tavŋá:	bvá:	kbavá:	—	s-pakipáki
Ton	—	taʔavaŋánə	bavá	ka-bavá:nə	—	pakəpakə
Man	—	(taʔavaŋə)	(vava:)	(ka-vava:ə)	—	
PR	*libaŋə	*taʔavaŋanə	*bava	*ka-bava-anə	*paridi	*pakəpakə
	winnow	winter	wipe	woman	wounded	
Tan	taʔóso	kalakəcəLá	(Disísi)	a-ba-báy	ma-dolá:	
Bud	tapóso	kalakəcəLánə	DisíDisi	a-bá-bay	ma-dóla:	
Mag	o-tpəsə	klakcɿra	u-DsíDsi	abe-á:	ma-dulá:	
Ton	tapésə	kalakəcəLánə	DisíDisi	abay-ánə	ma-doláʔa	
Man	o-tapoʔo	kalakəcəLə	—	avai	ma-dolaʔa	
PR	*taposo	*kalakəcəLanə	*DisiDisi	*abay	*ma-dolaʔa	
	wrap	wrestle	write/draw		yawn	
Tan	cabo	maolóco	ʔacásə	—	ma-swa-swabə	
Bud	cabo	maolóco	pacásə	—	ma-swa-swabə	
Mag	cbó:	maúlcu	—	u-slátɿ	ma-s(a)-swəbɿ	
Ton	cabo	maʔóloco	—	solátə	ma-sa-swabə	
Man	—	maʔoloco	—	o-solatə	ma-ʔovo	
PR	*cabo	*maʔoloco	*pacasə	*solatə	*ma-swabə	
	year	yesterday ³	you (pl.)		young (male)	
Tan	caŋli	kođá	—	ko-nomí	mwa-ka-θabar-a	
Bud	cáili	kóya	—	ko-nomí	mwa-ka-θabar-a	
Mag	cvéle	—	kusía	—	θbári	
Ton	cavili	—	kósiʔa	—	θabáə	
Man	caili	—	—	a:ŋa-nomi	a-sava-savarə	
PR	*cavili	*kođa	*kosiʔa	*nomi	*θabarə	

1. The affixes *ka...-anə*+N means "real, genuine".2. The form *paridi* means wings with feather while the form *sa-pakəpakə* means wings without feather. Note the metathesis of p (>ʔ) and k in Tanan.

3. Cf. the term "tomorrow".

ADDENDA

	Chinese cypress or juniper	<i>Solanum nigrum</i>	<i>Melia azedarach</i>	<i>Machilus spp.</i>
Tan	ba:li	amici	baŋásə	
Bud	bá:li	amíci	baŋásə	
Mag	báli	amicu	bŋásə	θaúku
Ton	baʔáli	amico	(tala-bəŋásə)	θaʔáwko
Man	vaʔali ¹	—	—	—
PR	*baʔali	*amico	*baŋasə	*θaʔawko

	<i>Ebulus formosana</i>	<i>Urtica thunbergiana sieb. et zucc.</i>	<i>Laportea</i>	<i>Lactuca indica</i>
Tan		ʔili	ʔagásə	samá
Bud	laráDə	—	—	sáma
Mag	lráDə	pli:	l-págsə	sma:
Ton	laáDə	(poli:)	paʔágasə	samá
Man	laraðə	pili	pahaʔə	ʔama
PR	*laraDə	*pili	*paʔagasə	*sama

	(big) <i>Alocasia macrorrhiza</i>	(small) <i>Alocasia macrorrhiza</i>	<i>Ipomoea spp.</i>	<i>Allium</i> ² <i>odorum</i>
Tan	bia ³		salyagómo	taŋaravá
Bud	—	kalaDérəŋə	θalyagómo	—
Mag	bía	klaDríŋi	slegúmu	tŋarvá:
Ton	biʔá	kalaDəéŋə	salyagomo	taŋa:vánə
Man	viʔa	(taladérəŋə)	(ʔalihomo)	taraŋa:ə
PR	*biʔa	*kalaDérəŋə	*θaliagomo	*taŋaravəno

1. The Mantauran form refers to "board", its term for "Chinese cypress" is *ravakə*.

2. The Tan form refers to "green onions". Note the metathesis of *ŋ* and *r* in Man.

3. The Tan form refers to "leaf". The leaves of the plant were used to wrap food.

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	edible wild plant	dye yam	type of fish	type of fish	type of fish
Tan	maóŋo	cacásə			
Bud	máono	cacásə	boláw	kálaw	
Mag	móŋu	(atási)	—	kló:	θmúlu
Ton	maʔóŋo	tatásə	boláw	kaláw	θamólo
Man	maʔoŋo	—	—	kalao	samolo
PR	*maʔoŋo	*t/cat/casə	*bolaw	*kalaw	*θamolo

	answer		arrive	bark (dog)	an omen bird
Tan	tw-a-balé	—	kélá	—	caLíkáw
Bud	tw-a-bálə	—	kéla	wa-léalə	caLíkáw
Mag	—	kubrí:	u-klá:	o-léli	—
Ton	—	ʔakobí:	wa-kélá	wa-léalə	—
Man	—	ʔakoviri	mo-kəla	—	caLíkao
PR	*to-a-balə	*ʔakobiri	*kəla	*oa-ləalə	*caLíkaw

	bump		cicada	collapse
Tan	mw-a-ʔoŋoʔóŋo	—	—	—
Bud	mw-a-poŋópoŋo	—	laláLi	—
Mag	u-pŋúpŋu	u-bŋúbŋu	—	matkémə
Ton	—	wa-boŋóboŋo	—	matakémə
Man	—	mo-voŋovoŋo	lalaLi	matakémə
PR	*poŋopoŋo	*boŋoboŋo	*lalaLi	*matakémə

	compensate	cut ₄	dance, type	diarrhea
Tan	—	gəLəgəLə	—	ʔabasəbasə
Bud	θávoŋo	gəLəgəLə	—	pabasəbásə
Mag	o-svoŋo	u-grígrí	u-klákli	pabsəbsə
Ton	savoŋo	wa-gəégə:	wa-kilákili	—
Man	—	—	o-kilakili	(pavasəvasə)
PR	*θ/savoŋo	*gəLəgəLə	*kilakili	*pabasəbasə

The Internal Relationships of Rukai

	earthquake	escape	exchange	eye secretion	
Tan	Linó	mw-a-bérə	wa-baLiθi	Liácə	
Bud	—	mw-a-bérə	wa-báLiθi	Liácə	
Mag	u-rinu:	a-bi-bíri	o-bréθe	ruáci	
Ton	inóʔo	ʔa-bə-bəə	wa-baíθi	oʔacə	
Man	—	—	o-valisi	—	
PR	*Linoʔo	*-bərə	*baLiθi	*Li/oacə	
	fan	hit the mark	horsefly	join/connect	
Tan	sa-vigivígi	—	asasəgólə —	coŋólo	
Bud	sa-vigivígi	—	asasəgólə —	cóŋolo	
Mag	s-bikbíki	o-skéla	— arúpsə	u-cŋúlu	
Ton	sa-bikibíki	wa-sakéla	— aópasə	wa-coŋólo	
Man	—	o-ʔakəla	— —	o-coŋolo	
PR		*sakəla	*asasəgələ *aropasə	*coŋolo	
	juice	leak ¹	loose	loquat	meet
Tan	əsébə	mocálə	—	Lədólə	ma-Da-Dəsəŋə
Bud	əsəbə	mocálə	masasoka	Lədələ	ma-Da-Dəsəŋə
Mag	isíbi	—	mas:óka	k-rídlí	ma-D-Dísŋi
Ton	ʔəsébə	—	—	ka-édələ	ma-Da-Dəsəŋə
Man	—	mocalə	—	ka-Lədələ	ma-éəʔəŋə
PR	*ʔəsəbə	*mocalə	*masasoka	*Lədələ	*ma-Dəsəŋə
	moan	mumps	not	quilt	raw
Tan	da:ŋə	maDaóLo	kay	caóbo	ma-ŋetá
Bud	da:ŋə	maDaóLo	kay	caóbo	ma-ŋéta
Mag	—	—	—	cəbí	ma-ŋtá
Ton	—	—	—	caʔəbə	ma-ŋetá
Man	o-əaʔəŋə	maðaʔoLo	kai	—	ma-ŋeta
PR	*daʔəŋə	*maDaʔoLo	*kay		*ma-ŋeta

1. Cf. the forms on p. 58. They have slight semantic differences.

5. POSTSCRIPT

As this paper was in press, I visited the Budai villages and checked speakers from various villages from April 21 to 26, 1977. There are actually two main dialects: the dialect of *labuan* 大武 and the dialect of *vadai* 霧臺 and the other four villages all called the "Budai" dialect, in the Budai county 霧臺鄉 (see §1.1).

Labuan has undergone the sound change $r > h$, not found in the other Rukai dialects except in the speech of the younger speakers of Mantauren (see §2.2.5), e. g., PR **darəlapə* > Labuan *dahəlapə* "banyan tree", **Damarə* > *Daməhə* "moon", **barəpə* > *bahəpə* "belly". The phonetic change is so drastic that it distinguishes Labuan from all the other dialects.

The Labuan dialect is linguistically closer to Tanan (taromak) than Budai. Labuan is similar to Tanan in both the vocabulary and sound changes: **nə* > $\emptyset/a$ __#, **ʔ* > $\emptyset$, e. g. *tabaləpəʔanə* > *tabaləpə*: "arm", **salaəpənə* > *saləpənə* "male deer" in addition to $r > h$, but different from Tanan in keeping *p* as *p*, e. g., **pagay* > *pagəy* "rice (plant or husked)", **capəʔə* > *cəpə* "seed, kernel of fruit", **poko* > *pəko* "joint" (cf. §2.2.1). Labuan stress is generally on the penult, e. g., *bəyən* "sea", *timən* "salt", *kopiciʔ* "fog", but on the final syllable if it is a diphthong, e. g., *ʔənəy* "sand", *dohəy* "silver", *ʔapəy* "fire", *waLiəw* "flood", *Likoləw* "leopard". The stressed syllables in Labuan are in higher pitch and phonetically longer than those in Budai. Phonetically a Labuan item never begins or ends with a vowel; a glottal stop or some other consonant is present word-initially or -finally when uttered in isolation.

Why is Labuan linguistically closer to Tanan, yet geographically closer to Budai (only 6.5 k. m. from the *vadai* village)? According to Mr. Yang-ch'un K'o 柯陽春, a native from Labuan, the villagers originally came from the old site of Tanan hundreds of years ago and the most recent migration took place in 1941, an older site of Labuan being about 20 k. m. away from the present site.

All the six villages in the Budai county are scattered in the mountainous areas. Transportation is extremely difficult although the distance between villages is not large, ranging from 5.5 k. m. to 13.5 k. m.. However, aside from *labuan*, there are only very minor phonetic differences from village to village. In *və dai*, stress is mostly on the penult, e. g., *bakóro* "bark", *bəyáLay* "flower", *kamóraw* "pomelo", occasionally on the antepenult or ultima, e. g., *bəlábələ* "banana", *doráy* "silver", *vasáw* "leaf", *tanwapóy* "firefly". In both *karamomodisan* and *kinulan* dialects, stress is generally on the antepenult for a polysyllabic form, and the penultimate syllables are phonetically long, e. g., *báko:roʔ* "bark", *ʔóbo:loʔ* "grass", *ʔába:rə* "palm tree". Occasionally different villages may use different terms, for instance, the term for "mouse" is *tílaʔ* in *və dai*, *ciici* or *takadadanánə* in *ʔadiri*, *toliki* in *labuan* (as well as *Tanan*) dialects.

Some Rukai people have moved out of the Budai county and settled in various places: some (18 families) in Tewun Ts'un 德文村, some in *ʔaóbaʔ* 阿烏村, both being in the Santi county 三地鄉; some in Sanhe Ts'un 三和鄉, Machia county 瑪家鄉, all in Pingtung hsien. Some have moved from Pingtung to Taitung and settled in *Tanan* and in Chialan Ts'un 佳蘭村, Chin-feng 金峯鄉.

Because my Budai data was collected from various different sources, working with different informants from different villages, it is possible that there is a little dialect mixture in my Budai data in this paper. Fortunately they are mostly only very minor phonetic differences. Now that I have personally visited Budai, I can settle some of the differences and discrepancies of transcriptions. For example, the consonant in the medial position for the items such as *Dáda* "above", *báda* "enemy", *má:kádamə* "thirsty" is definitely the voiced interdental fricative *d* (ð), not *d* or *L*, as based on the speech of the *və dai* villagers (cf. §2.1.11 and p. 19, n. 2).

6. APPENDIX: COMPARISONS OF PERSONAL PRONOUNS ()

(a) Independent Pronouns—Nominatives:

	1st sg.	1st pl. inc.	1st pl. exc.	2nd sg.	2nd pl.	3rd sg.	3rd pl.
Tan	ko-nako	ko-ta	ko-nai	ko-so	ko-nomi	{ko-ani ko-aDa	{ko-l-ini ko-l-iDa
Bud	{ko-ako ko-nako	ko-ta	ko-nai	ko-so	ko-nomi	{ko-ini ko-iDa	{ko-ini ko-iDa
Mag	{kiki k:i	mi-ti	knamɨ	mu-su	mu-mu	{kini kDo:	{kini kDo:
Ton	kakə	ki-ti	ki-namə	ko-so	ko-mo	kiDoay	kiDoay
Man	a:ŋa-li	a:ŋa-ta	a:ŋa-nai	a:ŋa-ʔo	a:ŋa-nomi	{a:ŋa-ni a:ŋa-da	{a:ŋa-li-ni a:ŋa-li-da

(b) Independent Pronouns—Accusatives:

	1st sg.	1st pl. inc.	1st pl. exc.	2nd sg.	2nd pl.	3rd sg.	3rd pl.
Tan	nako-a	mi-ta:	nai-a	mo-so-a	nomi-a	{ini-a iDa-a	{l-ini-a l-iDa-a
Bud	nako-anə	mi-ta:nə	nai-anə	mo-so-anə	nomi-anə	ini-anə	
Mag	ŋku-a	mti-a	nma:	su-a	mu-a	{ni-a Di-a	{ni-a Di-a
Ton	nako-a	mi-ti-a	nami-a	mo-so-a	mo-anə	{ni-anə Di-anə	{ni-anə Di-anə
Man	i-aə	i-namə	i-mitə	i-miaʔə	i-nomə	{i-nə i-da	{i-li-nə i-li-da

(c) Personal Possessives:

	1st sg.	1st pl. inc.	1st pl. exc.	2nd sg.	2nd pl.	3rd sg.	3rd pl.
Tan	-li	-ta	-nai	-so	-nomi	{-ini -iDa	{-l-ini -l-iDa
Bud	-li	-ta	-nai	-so	-nomi	-ini	-l-ini
Mag	-li	-ta	-namɨ	-su	-mu	{-ni -Da	{-ni -Da
Ton	-i-li	-i-ta	-i-namə	-i-so	-i-mo	{-i-ni -i-Da	{-i-ni -i-Da
Man	-li	-ta	-nai	-ʔo	-nomi	{-ni -da	{-li-ni -li-da

(d) Dependent Pronouns—Nominatives as Suffixes to Verbs:

	1st sg.	1st pl. inc.	1st pl. exc.	2nd sg.	2nd pl.	3rd sg.	3rd pl.
Tan	{-ako -nako -nao-	-ta	-nai	-so	-nomi	—	—
Bud	{-ako -nako -nao-	-ta	-nai	-so	-nomi	—	—
Mag						—	—
Ton						—	—
Man	Lao	ka-ta	ka-ʔo	nai	ka-nomi	—	—

REFERENCES

- Abe, Akiyoshi. 1930. 蕃語研究 [Study of languages of native tribes]. Taipei: Bango kenkyūkai, pp. 475.
- Chen, Chi-lu. 1955. Family and marriage of the Budai Rukai of Pingtung, Taiwan. Taipei: Bulletin of the Ethnological Society of China 1: 103-23.
- Dahl, Otto Christian. 1973. Proto-Austronesian. Sweden: Scandinavian Institute of Asian Studies Monograph Series No. 15, pp. 146.
- Dempwolff, Otto. 1934, 1937, 1938. Vergleichende Lautlehre des austronesischen Wortschatzes. Zeitschr. f. Eing.-Spr. Berlin.
- Dyen, Isidore. 1953. Dempwolff's *R. Language 29: 359-66.
- . 1963. The position of the Malayopolynesian languages of Formosa. Asian Perspectives 7(1/2): 261-71.
- . 1965. Formosan evidence for some new Proto-Austronesian phonemes. Lingua 14: 285-305.
- . 1971a. The Austronesian languages and Proto-Austronesian. Current Trends in Linguistics 8: 5-54.
- . 1971b. The Austronesian languages of Formosa. Current Trends in Linguistics 8: 168-99.

- 1975. A reconstructional confirmation: the Proto-Austronesian word for "two". *Oceanic Linguistics* 14(1): 1-11.
- Ferrell, Raleigh. 1969. Taiwan aboriginal groups: problems in cultural and linguistic classification. Taipei: Institute of Ethnology, Academia Sinica, Monograph No. 17, pp. 444.
- Hsieh, Jih-chang. 1967. The marriage of the Taromak Rukai. *Bulletin of the Institute of Ethnology, Academia Sinica*, 23: 195-227.
- Keiler, Allan R. (ed.) 1972. A reader in historical and comparative linguistics. Holt, Rinehart and Winston.
- Lehmann, W.P. and Yakov Malkiel (eds.). 1968. Directions for historical linguistics: A symposium. Austin: University of Texas Press.
- Li, Paul Jen-kuei. 1972. On comparative Tsou. *Bulletin of the Institute of History and Philology, Academia Sinica*, 44: 311-37.
- 1973. Rukai structure. Taipei: Institute of History and Philology, Academia Sinica, Special Publications No. 64, pp. 305.
- 1974. Alternations between semiconsonants and fricatives or liquids. Paper presented to the First International Conference on Comparative Austronesian Linguistics. Honolulu: *Oceanic Linguistics* 13.
- 1975a. Rukai texts. Taipei: Institute of History and Philology, Academia Sinica, Special Publications No. 64-2, pp. 274.
- 1975b. Maga phonology: A preliminary report. *Bulletin of the Department of Archaeology and Anthropology, National Taiwan University*, 37/38: 16-28.
- 1975c. 臺灣土著語言的研究資料與問題 [Research materials and problems of Formosan languages], *Bulletin of the Institute of Ethnology, Academia Sinica*, 40: 51-84.
- Ogawa, Naoyoshi, and Asai, Erin. 1935. 原語による臺灣高砂族傳說集 [The myths and traditions of the Formosan native tribes]. Taihoku: Taihoku Teikoku Daigaku Gengo-ganu Kenkyū-shitsu, pp. 783.
- Shih, Lei. 1976. Cognatic kinship systems among Formosan aborigines: A comparative study of Rukai, Paiwan and Puyuma. Taipei: Institute

- Journal of Ethnology, Academia Sinica, Monographs No. 23, pp. 182.
- Stockwell, Robert P. and Ronald K.S. Macaulay. 1972. Linguistic change and generative theory. Indiana University Press.
- Tsuchida, Shigeru. 1970a. Rukai (Maga Dialect) word list. Unpublished manuscript.
- 1970b. Rukai (Budai Dialect) word list. Unpublished manuscript.
- 1971. List of words of Formosan languages. Unpublished manuscript.
- 1973. Nursery words in central Formosan native languages. Tokyo: Asian & African Linguistics 2: 1-51.
- 1976. Reconstruction of Proto-Tsouic phonology. Tokyo: Institute for the Study of Languages & Cultures of Asia & Africa, Monograph Series No. 5, pp. 329.

魯凱語內部之關係

本文所使用的大都是第一手資料。魯凱五個方言的田野資料是在民國五十九年七月到六十一年八月間，又於六十六年三、四月間筆者數次到臺灣山地去蒐集的記音。

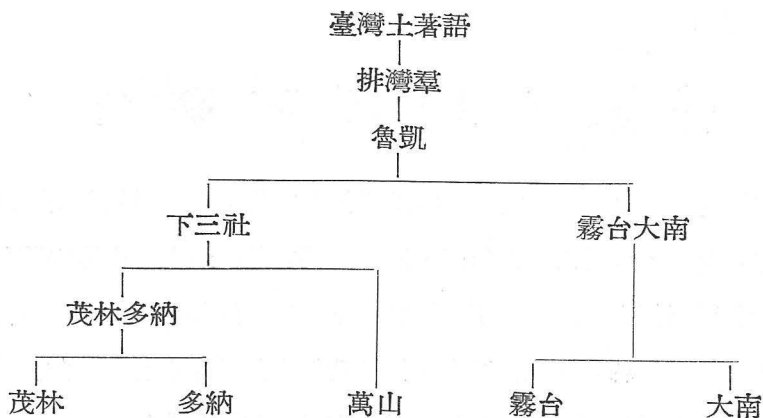
根據現代魯凱三個方言羣（大南，霧台，下三社）的詞彙跟對音，擬測了魯凱語的古音系統，並鑑定了約 800 個同源字，同時我們也知道了古魯凱語如何分裂成現代的五個方言，每個方言的語音如何演變，以及方言間的內部關係。

魯凱古音系統如下：

p	t		k	ʔ		i		o
b	d	ɗ	g			ə		
m	n		ŋ			a		
	c							
	θ, s							
	l		ɭ					
	r							
w, v	y, ɿ							

從魯凱語言的各種現象觀察，大南方言跟霧台方言最接近，而下三社的三個方言跟其他兩個方言羣（大南，霧台）的關係較疏。以語音演變而言，霧台最保守，保存最多的古語形式。大南跟霧台很相似，但有一些不同的演變：（一）雙唇清塞音 p 變成喉塞音 ʔ，（二）詞尾舌尖鼻音 n 在低元音之後消失，（三）大南借用了其鄰近卑南語的舌面後清塞音 T。雖然萬山方言的音變很劇烈（萬山的 v 對其他四個方言的 b，ø 對 v，s 對 θ，ʔ 對 s，h 對 g，ɿ 對 d 及 ɗ），但除了五個方言都有的同源字外，萬山跟茂林、多納又多了 94 個同源字，而萬山跟霧台、大南只多了 44 個同源字。

魯凱語的分支如下面的樹圖所示：



五個方言中有四個都跟古魯凱語及古南島語一樣，只有四個元音，但茂林方言因一些元音的幾種特殊變化使高元音與中元音對比而多出了三個元音。

本文也詳細列舉了從古南島語到古魯凱語的音變規則。大體上說，這兩種古語的形式相當接近，變化並不大。

從現代魯凱語的反映來觀察古南島語的擬音，我們發現了幾個值得進一步研討的問題，可以證實或糾正前人的研究結果：（一）戴安 Dyen 教授擬的 *s 宜改擬為舌面前清塞音 *t' 或塞擦音，同時該音牽涉他所擬的 *S 也宜改擬為 *s，這樣才更合乎語音演變的原則。（二）田樸夫 Dempwolff 擬的 *ɣ 可能還要多擬一個音（詳見 §2.3）。

本文正在排印的時候，筆者有個機會到霧台山地去調查，才發現霧台鄉的六個村子事實上有兩個主要方言：一是大武方言，一是霧台方言（五村大致相同）。大武方言的一個特點是所有的 r 都已變成 h 了（有如萬山方言的年輕人）。從詞彙以及語音演變的情形看來，大武方言都很接近臺東的大南方言，例如詞尾 n 的消失。但大武跟大南的不同是：除 r 變成 h 外，p 仍存為 p，不像大南變成ʔ，而且重音大都在倒數第二音節，不像大南多在最後音節。可是大武的詞彙幾乎都跟大南的同源，而很多不跟霧台的同源。所以我們也可以說魯凱一共有六個方言。本文所收的霧台方言材料因來源不同，可能稍有方言混雜的現象，好在大都只是微細的差別，特別是重音的位置。

文後有一個附錄，比較五個方言的人稱代名詞的各種形式。