

A TYPOLOGICAL OVERVIEW OF PRONOMINAL SYSTEMS OF SOME FORMOSAN LANGUAGES

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1. Introduction

Formosan languages, forming very important subgroups of Austronesian languages, have recently attracted a lot of attention and have been investigated rather extensively. While the phonology of most of these languages has been well studied, their syntax still deserves more analyses. The present paper, being part of research projects on the grammatical typology of the Formosan languages,¹ attempts to present a typological overview of the pronominal systems of nine Formosan languages, including Amis [Central], Atayal [Wulai & Mayrinax], Saisiyat [Tungho], Bunun [Isbukun], Tsou [Tfuya], Rukai [Tona, Maga, Mantauran & Budai], Paiwan [Northern], Puyuma [Nanwang] and Kavalan [Hsinshe]. The data of the above-mentioned languages come from our own fieldwork,² collected during different periods of time between 1988 and 1996.

In the real world, all the happenings, occurrences, situations,

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² The data are from our own fieldnotes: Atayal, Amis, Bunun (Kaohsiung), Puyuma and Kavalan by Huang (1995a, 1995b, 1995c & 1995d); Tsou by Zeitoun (1992); Rukai by Zeitoun (1995b, 1995b); Saisiyat by Yeh (1991); and Paiwan by Chang. Concerning the dialects of each language and the one(s) studied in this paper and their geographical distributions, see Huang et al. 1998. As for Kavalan, its native speakers reside in Ilan, Hualien and Taitung, and the dialect studied here is that spoken in the village of Hsinshe, Hualien Prefecture.

except for natural phenomena such as weather, are manifested in two aspects: participant(s) and types of events. The grammatical manifestations of participants in languages usually include pronominal systems and nominal case marking systems. The pronominal systems can further be divided into three categories: personal pronouns, demonstrative pronouns and interrogative pronouns. In this paper, we will limit ourselves to the discussion of the personal pronouns of the above-mentioned nine Formosan languages (or dialects).

2. General characteristics of personal pronominal systems in Formosan languages

In the discussion of the personal pronominal systems of the Formosan languages (or dialects) under investigation, several issues need to be examined, including:

- (i) how many sets of personal pronouns each language has;
- (ii) how each set of personal pronouns is classified;
- (iii) whether the personal pronouns in a language are free/independent or bound/dependent forms;
- (iv) among bound personal pronouns, whether they are affixes or clitics, and whether they are prefixes/infixes/suffixes, or enclitics/proclitics;
- (v) if two or more personal pronouns cooccur, in what order they appear.

Moreover, in the present typological study of Formosan personal pronominal systems, we will further discuss the phonological, morphological, syntactic, semantic and functional resemblances and variations among these personal pronouns.

Below we will begin by presenting the sets of personal pronouns each language has.

2.1 Sets of personal pronouns

The following table sums up the total sets of personal pronouns, bound and/or free, each language has:

Table 1 Sets of personal pronouns in the investigated Formosan languages³

Pronouns	Total	Bound				Free							
		Nom	Acc	Gen	Obl	Neu	Nom	Acc	Loc	Gen	Poss	Ben	Obl
Amis	4	-	-	-	-	-	+	+		+	+	-	-
Atayal-Wu	4	+	-	+	-	+	-	+		-	-	-	-
-Ma	3	+	-	+	-	+	-	-	-	-	-	-	-
Saisiyat	6	-	-	-	-	-	+	+	+	+	+	+	-
Bunun -Is	7	+	-	-	+	+	+	+	+	+	-	-	-
Tsou	3	+	-	+	-	+	-	-	-	-	-	-	-
Rukai -To	4	+	-	+	-	-	+	-	-	-	-	-	+
-Mg	4	+	-	+	-	-	+	-	-	-	-	-	+
-Bd	4	+	-	+	-	-	+	-	-	-	-	-	+
-Mt	3	+	-	+	+	-	-	-	-	-	-	-	-
Paiwan	5	+	-	+	-	+	-	+		-	+	-	-
Puyuma	6	+	-	+	-	+	-	-	-	+ ⁴	-	-	+
Kavalan	6	+	-	+	-	+	-	+	+ ⁵	+		-	-

As shown in the above table, Isbukun Bunun spoken in Kaohsiung has most sets of pronouns (i.e. two bound sets and five free ones), and Saisiyat as well as Puyuma and Kavalan the second, each having six sets, with Saisiyat having only free forms. Mayrinax Atayal, Tsou and Mantauran Rukai have the least, each having three sets, with Mantauran Rukai having only bound pronouns. Below we will

³ The abbreviations and symbols used in this paper are as follows: 1S 1st Person Singular; 1PE 1st Person Plural Exclusive; 1PI 1st Person Plural Inclusive; Acc Accusative; Act Active voice; AF Agent focus; Asp Aspect; Ben Benefactive; BF Benefactive focus; Caus Causative; Com Comitative; Excl Exclusive; Fut Future tense; Gen Genitive; Imp Imperative; Incl Inclusive; LF Locative focus; Lin Linker; Loc Locative; NAF Non-agent focus; Neg Negator; Neu Neutral; Nom Nominative; Nrf Non-referential; Nsp Nonspecific; Obl Oblique; Part Particle; Prf Perfective aspect; PF Patient focus; Pl Plural; Poss Possessive; Prep Preposition; Real Realis; Red Reduplication; Rf Referential; Sg Singular; Sp Specific; = indicating the following pronoun is a clitic; < > indicating the enclosed elements are infixes and their glosses.

⁴ It is rather interesting to note that in Puyuma, there are two sets of free Genitive pronouns, one serving as Nominative and the other Oblique. Some examples and a discussion are given later in Section 2.2.

⁵ For some speakers, Locative pronouns can sometimes be used as Accusative ones.

present the personal pronominal systems of the Formosan languages under study; sentences containing each pronoun will not be given until they are needed in the later discussion.

Table 2 Personal pronouns in Amis⁶

	Free			
	Nom	Acc/Loc	Gen	Poss
1S	kaku	kakunan; kakuwanan; takunan; takuwanan; takuwan	aku	maku
2S	kisu	kisunan; kisuwanan; tisunan; tisuwanan	isu	misu
3S	ciŋra	ciŋranan; ciŋraan	nira; niŋra	nira; niŋra
1PI	kita	kitanan; kitaanan; titanan; titaanan	ita	mita
1PE	kami	kaminan; kamiyanan; taminan; tamiyanan	niyam	niyam
2P	kamu	tamuanan	namu	namu
3P	caŋra	caŋraan	naŋra	naŋra

Table 3a Personal pronouns in Wulai Atayal

	Bound		Free	
	Nom	Gen	Loc	Neu
1S	-saku? ; -ku?	-maku?; -mu; -ku?	knan	kuziŋ; kun
2S	-su?	-su?	sunan	isu?
3S	---	-nya?	hiyan	hiya?
1PI	-ta?	-ta?	itan	ita?
1PE	-sami	-myan	sminan	sami
2P	-simu	-mamu	smunan	simu
3P	---	-nha?	hgan	hga?

⁶ In the languages/dialects investigated, there are totally nine vowels and thirty-six consonants. The notation employed here follows normal convention except that /tj/ stands for a voiceless palatal stop and /dj/ for a voiced palatal stop. All the illustrative examples are cited in phonemic transcription.

Table 3b Personal pronouns in Mayrinax Atayal

	Bound		Free
	Nom	Gen	Neu
1S	-cu; -ci?	-mu; -mi?	kuiŋ
2S	-su?; -si?	-su?; -si?	isu?
3S	---	-nia?	hiya?
1PI	-ta?; -ti?	-ta?; -ti?	ita?
1PE	-cami	-niam	cami
2P	-cimu	-mamu	cimu
3P	---	-nha?	nha?

Table 4 Personal pronouns in Saisiyat

	Nom	Acc	Loc	Gen	Poss	Ben/Dat
1S	yako; yao	yakin	kanman	ma?an	?anmana?a	?iniman
2S	ʃo?o	?iʃo?on	kanʃo?	niʃo?	?anʃoa?a	?iniʃo?
3S	sia	hisia; ?isia	kansia	nisia	?ansiaa	?iniʃia
1PI	?ita?	?inimita?	kan?ita?	mita?	?anmita?a	?inimita?
1PE	yami	?iniya?om	kanyami	niya?om	?anya?oma	?iniya?om
2P	moyo	?inimon	kanmoyo	nimon	?anmoyoa	?inimon
3P	lasia	hilasia	kanlasia	nasia	?annasiaa	?inilasia

Table 5 Personal pronouns in (Kaohsiung) Isbukun Bunun

	Bound		Free				
	Nom	Obl	Nom	Acc	Gen	Loc	Neu
1S	-ik	-ku?	saikin	maðaku?	inak	ðakuan	ðaku?
2S	-as	-su?	kasu?	masu?	isu?	suuan	su?
3S	---	---	saia?	masaicia?	isaicia?	---	saicia?
1PI	-ta?	-ta?	kata?	maita?	imita?	kat-an	kata?
1PE	-im	---	kaimin	maðami?	inam	ðamian	ðami?
2P	-am	-mu?	kamu?	mamu?	imu?	muuan	mu?
3P	---	---	naia?	manaicia?	inaicia?	---	naicia?

Table 6 Personal pronouns in Tsou

	Bound		Free
	Nom	Gen	Neu
1S	-ʔo; -ʔu	-ʔo; -ʔu	aʔo
2S	-su; -ko	-su; -ko	suu
3S.Vis	-ta	-ta; -taini	taini
3S.Inv	---	-si	icʔo
1PI	-to	-to	aʔati
1PE	-mza	-mza	aʔami
2P	-mu	-mu	muu
3P.Vis	-hinʔi	-hinʔi	hinʔi
3P.Inv	---	-he	hee

Table 7a Personal pronouns in Tona Rukai⁷

	Bound		Free	
	Nom	Gen	Nom	Obl
1S	ko-	-ili	kakə	(na)koa
2S	si-	-iso	koso	mosoa
3S.Vis	ni-	-ini	kin(a)i	nianə
3S.Inv	---	-iɕa	kiɕa	ɕianə
1PI	ta-	-ita	kiti; kita	mitia
1PE	namə-	-inamə	kinamə	namia
2P	mo-	-imo	komo	moanə
3P.Vis	---	-ini	kin(a)i	nianə
3P.Inv	---	-iɕa	kiɕa	ɕianə

Table 7b Personal pronouns in Maga Rukai

	Bound		Free	
	Nom	Gen	Nom	Obl
1S	ku-	-li	kiki	ŋkua
2S	su-	-su	musu	sua
3S.Vis	---	-ni	kini	nia
3S.Inv	---	-ɕa	kiɕi	ɕja
1PI	ta-	-ta	miti	mtia

⁷ The Rukai pronominal systems presented in Tables 7a-d are different from Li's (1977 & 1996).

1PE	nami-	-nami	kname	nmaa
2P	mu-	-mu	mumu	mua
3P.Vis	---	-ni	kini	nia
3P.Inv	---	-ɖa	kidj	ɖja

Table 7c Personal pronouns in Budai Rukai

	Bound		Free	
	Nom	Gen	Nom	Obl
1S	-(n)aku; naw-	-li	kunaku	nakuanə
2S	-su	-su	kusu	Ɂusuanə
3S.Vis	---	-ini	kuini	iniane
3S.Inv	---	---	kuiɖa	---
1PI	-ta; ta-	-ta	kuta	mitaanə
1PE	-nai	-nai	kunai	naiane
2P	-numi; -nu	-numi	kunumi	numiane
3P.Vis	---	-ini	kuini	iniane
3P.Inv	---	---	kuiɖa	---

Table 7d Personal pronouns in Mantauran Rukai

	Bound		
	Nom	Gen	Obl
1S	-[ao; nao-	-li	-iaə
2S	-moʔo	-ʔo	-imiaʔə
3S.Vis	---	-ni	-inə
3S.Inv	---	-ɔa	-iɔə
1PI	-mita; ta-	-ta	-imitə
1PE	-nai	-nai	-inamə
2P	-nomi	-nomi	-inomə
3P.Vis	---	-ilini	-ilinə
3P.Inv	---	-iliɔa	-iliɔə

Table 8 Personal pronouns in Paiwan

	Bound		Free		
	Nom	Gen	Neu	Acc/Loc	Poss
1S	-akən	ku-	tiakən	tjanuakən	niakən
2S	-(ə)sun	su-	tisun	tjanusun	nisun
3S	---	?	timadju	tjaymadju	nimadju
1PI	-itən	ta-	titjən	tjanuitjən	nitjən
1PE	-amən	nya-	tiamən	tjanuamən	niamən
2P	-(ə)mun	nu-	timun	tjanumun	nimun
3P	---	?	tjyamadju	tj(a)yamadju	nyamadju

Table 9 Personal pronouns in Nanwang Puyuma

	Bound		Free			
	Nom	Gen	Neu	Obl	Gen+Nom	Gen+Obl
1S	-ku	ku-; ti-; -li	kuiku	kanku	nanku	kananku
2S	-yu	nu-	yuyu	kanu	nanu	kananu
3S	---	tu-; -taw	taytaw	kantu; kantaw	nantu; nantaw	kanantu; kanantaw
1PI	-ta	ta-	tayta	kanta	nanta	kananta
1PE	-mi	niam-	mimi; maimi	kaniem; kanmi	naniem	kananiem
2P	-mu	mu-	muimu	kanmu	nanmu	kananmu
3P	---	tu-	naʔunu; naɟiyu na ʔau	kanatunu	nantaw	

Table 10 Personal pronouns in Kavalan⁸

	Bound		Free			
	Nom	Gen	Neu	Acc	Loc/Dat	Gen
1S	-ikuʔ	-kuʔ; -aka	aykuʔ	timaykuʔ	tamaykuan; timaykuan	ɔakuʔ
2S	-isuʔ	-suʔ	aysuʔ	timaysuʔ	timaysuan	ɔasuʔ
3S	---	-naʔ	ayzipnaʔ	timayzipan na	timayzipan na	ɔanaʔ
1PI	-itaʔ	-taʔ	aytaʔ	timaytaʔ	tamaytaan; timaytaan	ɔataʔ
1PE	-imiʔ	-nyaq	aymiʔ	timaymiʔ	timaymian	ɔanyaq

⁸ The Kavalan pronominal system presented here is different from Li's (1978:589).

2P	-imu?	-numi?	aymu?	timaymu?	tamaymuan; timaymuan	ðanumi?
3P	—	na qanyau?	qanyau?	taqanyau?	taqanyauan	ðana qanyau?

2.2 Classification of pronouns

As indicated in Table 1, the Formosan languages under study have Nominative, Accusative, Locative, Genitive, Possessive, Benefactive/Dative, Oblique and Neutral pronouns. Saisiyat and Isbukun Bunun have six of them, and are the languages that have the most diverse pronominal forms of all. Thus in the following discussion, we will first use the Saisiyat personal pronominal system to illustrate how one set of pronouns can be classified as Nominative, Accusative, etc., and what functions each set serves. Table 4 which presents the complete pronominal system of Saisiyat is repeated below:

Table 4 Personal pronouns in Saisiyat

	Nom	Acc	Loc	Gen	Poss	Ben/Dat
1S	yako; yao	yakin	kanman	maʔan	ʔanmanaʔa	ʔiniman
2S	ʃoʔo	ʔiʃoʔon	kanʃoʔ	niʃoʔ	ʔanʃoaʔa	ʔiniʃoʔ
3S	sia	hisia; ʔisia	kansia	nisia	ʔansiaa	ʔinisia
1PI	ʔitaʔ	ʔinimitaʔ	kanʔitaʔ	mitaʔ	ʔanmitaʔa	ʔinimitaʔ
1PE	yami	ʔiniyaʔom	kanyami	niyaʔom	ʔanyaʔoma	ʔiniyaʔom
2P	moyo	ʔinimon	kanmoyo	nimon	ʔanmoyoa	ʔinimon
3P	lasia	hilasia	kanlasia	nasia	ʔannasiaa	ʔinilasia

Now let us examine some equational sentences (e.g. [1a]) or intransitive sentences which manifest events/states with one participant (e.g. [1b-c]):

(1) Saisiyat

a. yako ʔoβay

[1S.Nom ʔoβay]

‘I am ʔoβay’

b. yami m-panra[an

[1PE.Nom AF-walk]

‘We walk’

- c. *sia* *kərpə*
 [3S.Nom *fat*]
 'He is fat'

Since there is only one participant in each of the above sentences, the pronoun *yako* '1S.Nom' (*yami* '1PE.Nom' or *sia* '3S.Nom') expressing this participant is then legitimately treated as the (grammatical) subject of the sentence and analyzed as Nominative. Such Nominative pronouns may also appear in sentences manifesting two-participant events. Observe:

(1) Saisiyat

- d. *sia* *ʃ<om>əβət* *yakin*
 [3S.Nom *beat<AF>beat* 1S.Acc]
 'He beat me'
- e. *yako* *sarara?* *ʔiʃoʔon*
 [1S.Nom *AF.like* 2S.Acc]
 'I like you'

Again we may consider the Nominative pronoun in each sentence above the (grammatical) subject, manifesting the agent participant in events 'beating' and 'liking'. Notice that besides this Nominative pronoun, each of the above sentences has a second participant which serves as the patient in each event. We thus may call the pronoun *yakin* '1S.Acc' (or *ʔiʃoʔon* '2S.Acc') and the like Accusative. The Accusative pronouns may manifest the recipient participant in a three-participant sentence, as shown below:

(1) Saisiyat

- f. *βaki?* *β<om>əlay* *yakin* *ʔəhæ?* *tatpo?*
 [grandfather *give<AF>give* 1S.Acc one hat]
 'Grandfather gave me a hat'

The third set of pronouns in the language may represent a location or a source, and is then called Locative. Examples follow:

(1) Saisiyat

- g. *sia* *kanman* *ray* *tawʔan* *s<om>iʔæl*
 [3S.Nom 1S.Loc Loc home eat<AF>eat]
 'He ate at my place'
- h. *rayhil* *inaray* *kanlasia* *s<in>iβæ|æh*
 [money from 3P. Loc borrow<Prf>borrow]
 'The money was borrowed from them'

The next set of pronouns may either designate possessive relationship or manifest the agent participant in a NAF (non-agent focus) sentence, as illustrated by the following sentences:

(1) Saisiyat

- i. *rayhil* *maʔan* *ray* *talka|* (possession)
 [money 1S.Gen Loc desk]
 'My money was on the desk'
- j. *sia* *ra|am-ən* *maʔan* (agent)
 [3S.Nom know-NAF 1S.Gen]
 'He is known to me'

Notice that the possessive relationship may also be expressed by another set of pronouns, namely, possessive pronouns. Consider:

(1) Saisiyat

- k. *tatpoʔ* *ray* *talka|* *ʔokik* *ʔamanaʔa*
 [hat Loc table Neg 1S.Poss]
 'The hat on the table is not mine'

The last set of pronouns in Saisiyat may manifest a beneficiary participant and thus the set of pronouns in question is called Benefactive. For instance:

(1) Saisiyat

- l. *sia* *βa|iw* *ʔiniman* *ka* *tatpoʔ*
 [3S.Nom buy 1S.Ben Acc hat]
 'He bought a hat for me'

As discussed above, Saisiyat has six sets of pronouns. There are

two other sets of pronouns Saisiyat does not have but some Formosan languages do; namely, Neutral and Oblique pronouns. Below let us first examine the Neutral pronouns which exist in languages like Mayrinax Atayal, Isbukun Bunun, Tsou and Puyuma. The reason to call this set Neutral pronouns is that they behave as do nouns; they alone do not manifest any grammatical relationship. They may serve as Topic (e.g. [2a]) or predicate (e.g. [2b]), function as a response to a question (e.g. [2c]), or follow case markers and manifest different semantic roles (e.g. [2d-f]):

(2) Atayal (Mayrinax)

- a. *ʔiʔ kɯŋ yaʔ pa-qaniq cuʔ qulih* (topic)
 [Neu 1S.Neu Top Fut.AF-eat Acc.Nrf fish]
 'As for me, I will eat fish'
- b. *ʔiʔ kɯŋ kuʔ tawqiʔ naʔ itaal* (predicate)
 [Neu 1S.Neu Nom.Rf chief Gen Atayal]
 'The Atayal chief is me'
- c. Q: *imaʔ kuʔ tawqiʔ naʔ itaal*
 [who Nom.Rf chief Gen Atayal]
 'Who is the Atayal chief?'
- A: *ʔiʔ kɯŋ* (response)
 [Neu 1S.Neu]
 '(It's) me'
- d. *tutiŋ-un=siʔ⁹ kɯŋ* (manifesting patient)
 [beat-NAF=2S.Gen 1S.Neu]
 'You beat me'
- e. *tayhoq kiʔ kɯŋ ʔiʔ yumin* (manifesting location)
 [AF.arrive Loc 1S.Neu Nom Yumin]
 'Yumin arrived at my place'
- f. *m-hahapuy niʔ kɯŋ ʔiʔ yayaʔ*
 [AF-cook Ben 1S.Neu Nom mother]
 'Mother is cooking for me'

As for the last set of pronouns, i.e. Oblique pronouns, they only appear in Isbukun Bunun, Rukai and Puyuma. In Rukai and Puyuma

⁹ The pronoun *siʔ* here is derived from *suʔ* and the Nominative case marker *ʔiʔ*. For details, see Huang 1995a.

(but not in Isbukun Bunun), regardless of the distinction between free and bound forms which will be discussed in the next section, there are relatively fewer sets of diverse pronouns. As presented in Tables 7 and 9, the above-mentioned two languages have Oblique pronouns in addition to Nominative, Genitive and perhaps Neutral pronouns. Consequently, Oblique pronouns may manifest various semantic roles. Consider the following examples from Budai Rukai and Puyuma:

(3) Rukai (Budai)

- a. w-a-[umað-aku musuanə (patient)
[Act-Real-beat-1S.Nom 2S.Obl]
'I beat you'
- b. w-a-kəla musuanə ka takanaw (location)
[Act-Real-arrive 2S.Obl Nom Takanaw]
'Takanaw arrived at your place'
- c. w-a-saaw[i ka aama musuanə ku paysu (beneficiary)
[Act-Real-exchange Nom father 2S.Obl Obl money]
'Father exchanged money for you'

(4) Puyuma

- a. na suan i amauw nantaw kanu walak (possession)
[dog Top be 3S.Gen.Nom 2S.Obl child]
'This dog is your child's'
- b. ulaya na suan kanu amaw (location)
[exist Nom dog 2S.Obl Q]
'Is the dog at your place?'
- c. sagar-ku kanu (patient)
[AF.like-1S.Nom 2S.Obl]
'I like you'
- d. ba-bulay-ku kanu da tili[(recipient)
[Fut-give-1S.Nom 2S.Obl Obl book]
'I will give you a book'
- e. nu-piwawalak-aw i sigimul[i kanu amaw (agent)
[2S.Gen-adopt-NAF Nom Sigimul[i 2S.Obl Q]
'Will you adopt Sigimul[i?'

Before ending this section, there are two more things worth mentioning. As pointed out in Section 2.1, there are two sets of free

Genitive pronouns in Puyuma, one serving as Nominative and the other as Oblique. Examine the following examples:

(5) Puyuma

- a. ku-tima-anay la nanku ruma
 [1S.Gen-sell-NAF Part 1S.Gen.Nom house]
 'I sold my house'
- b. m-uka mu-arak nanku walak
 [AF-go AF-dance 1S.Gen.Nom child]
 'My child went dancing'
- c. p<un>ukpuk kananku walak i sigimulji
 [beat<AF>beat 1S.Gen.Obl child Nom Sigimulji]
 'Sigimulji beat my child'
- d. i manay na p<un>ukpuk kananku walak
 [who Nom beat<AF>beat 1S.Gen.Obl child]
 'Who beat my child?'

Apparently, the pronouns in the above examples illustrate a combination of two different case functions; i.e. Genitive + Nominative (e.g. [5a-b]) and Genitive + Oblique (e.g. [5c-d]). Such a phenomenon seems unique to Puyuma and is not found in any other Formosan languages under study.

The last thing to point out is that, as shown in Tables 2-10, some pronominal forms in certain Formosan languages may be categorized as having the same case function. Such alternate forms may not exhibit any syntactic and/or semantic differences. They may be used according to speakers' preference; for instance, *kakunan*, *kakuwanan*, *takunan*, *takuwanan* and *takuwan* all mean '1S.Loc' in Central Amis. Or they may be phonologically conditioned, e.g. *-cu* or *-ci?* '1S.Nom', *-mu* or *-mi?* '1S.Gen' in Mayrinax Atayal (Huang 1995a); *-ʔo* or *-ʔu* '1S.Nom/Gen' in Tsou (Zeitoun 1992). In addition to the above phonologically conditioned variants, Tsou has other alternate forms which are syntactically and semantically conditioned. Consider *-ta* and *-taini*. They are both classed as '3S.Gen', but while *-ta* always refers to the agent (in both AF and NAF constructions) and always attaches to the auxiliary, *-taini* only indicates possession and is suffixed to an NP (Zeitoun 1992), as exemplified below:

(6) Tsou

oh-ta eobaka ʔo oko-taini
 [NAF-3S.Gen beat.NAF Nom child-3S.Gen]
 'He beat his child'

Similarly, in languages like Puyuma, Kavalan, Budai and Mantauran Rukai, different forms categorized as the same set (cf. Tables 7c-d and 9-10) also exhibit syntactic, semantic and/or functional differences. For example, in Puyuma, there are three bound Genitive pronouns for the first person, i.e. *ku-*, *ti-* and *-li*. Among them, *ku-* has a broader distribution and more uses than the other two. As noticed below, both *ku-* and *-li* may indicate possessive relationship, but they differ in that while *-li* only attaches to kinship terms like 'father', 'mother' and 'elder sibling' (e.g. [7a]), *ku-* is used elsewhere (e.g. [7b]):

(7) Puyuma

a. nama-li

[father-1S.Gen]
 'my father'

b. ku-wadi

[1S.Gen-young:sibling]
 'my younger brother/sister'

As for *ku-* and *ti-*, they both can be used in manifesting the agent participant in NAF constructions; yet they designate some semantic/functional differences. That is, while *ku-* can attach to verbs designating past, present or future events as shown in (7c-e), *ti-* is only added to verbs expressing future events with an additional implication of the speaker's volition, as illustrated in (7f):

(7) Puyuma

c. ku-əkan-aw la na biʔənun

[1S.Gen-eat-NAF Part Nom egg]
 'I ate the egg'

d. ku-ta-takel-ay na ənay

[1S.Gen-Red-drink-NAF Nom water]
 'I am drinking water'

- e. ku-piwawalak-aw i sigimul[i]
 [1S.Gen-adopt-NAF Nom Sigimul[i]
 'I am about to adopt Sigimul[i]'
- f. ti-salpit-ay i sigimul[i]
 [1S.Gen-whip-NAF Nom Sigimul[i]
 'I *want* to whip Sigimul[i]'

Similarly, the first person singular Genitive pronoun in Kavalan can be expressed by either *-ku?* or *-aka*; however, while the two can be used in NAF constructions, they differ semantically. That is, while *-aka* can only be used in a future event with the speaker's volition implied (e.g. [8c]), *ku?* can appear in a broader context, though no implication of the speaker's volition (e.g. [8a-b]):

(8) Kavalan

- a. tə-pəkpək-ku? tu wasu wa pəkin
 [IF-beat-1S.Gen Acc dog Nom stick]
 'I beat a dog with a stick'
- b. tə-pəkpək-pa-ku? tu wasu wa pəkin
 [IF-beat-Fut-1S.Gen Acc dog Nom stick]
 'I am about to beat a dog with a stick'
- c. pəkpək-aka tu wasu wa pəkin
 [beat-1S.Gen Acc dog Nom stick]
 'I *want* to beat a dog with a stick'

Like Kavalan, Budai Rukai has two forms for '1S.Nom', i.e. *-(n)aku* and *naw-*, but only *naw-* may imply the speaker's volition, the sense of which is not found in *-(n)aku* ([9a] vs. [9c]). Furthermore, the two pronouns have different syntactic distributions. That is, while *-(n)aku* is a suffix and attaches to the end of a verb, *naw-* is a prefix and appears at the beginning of a verb. Also, while *-(n)aku* may attach to a negator, *naw-* cannot ([9b] vs. [9d]):

(9) Rukai (Budai)

- a. naw-apəcə
 [1S.Nom-Act.sleep]
 'I *want* to sleep'

- b. *naw-*kai* [i-apəcə
[1S.Nom-Neg Fut-Act.sleep]
c. [i-apəcə-naku
[Fut-Act.sleep-1S.Nom]
'I am about to sleep'
d. *kai*-naku [i-apəcə
[Neg-1S.Nom Fut-Act.sleep]
'I am not about to sleep'

2.3 Free or bound pronouns

While investigating the pronominal system of a language, one needs to determine whether these sets of pronouns are free/independent or bound/dependent forms. As we notice, free pronouns tend to consist of more than one syllable. Furthermore, they do not have a fixed distribution; that is, they may appear in more than one position in a sentence and designate different roles. Recall (2a-f) and also consider the following examples:

(10) Atayal (Wulai)

- a. n-βiq tali? qutux kopu te knan hira? (patient)
[Prf-give Tali? one cup Loc 1S.Loc yesterday]
'Tali? gave me a cup yesterday'
a'.musa? knan m-ima? kira? (agent without volition)
[Asp 1S.Loc AF-bathe later]
'It will be my turn to bathe later' (whether I like it or not)
b. kuziŋ ya? tayan
[1S.Neu Top Atayal]
'I am Atayal'
b'.sayun m-ima? kuziŋ (patient)
[Sayun AF-wash 1S.Neu]
'Sayun is washing me'

As for bound pronouns, they usually have fixed syntactic distributions. For example, in Mayrinax Atayal bound pronouns always have to attach to the first element of the predicate, whether this element is a noun, a verb, an auxiliary or a negator, as shown below:

(11) Atayal (Mayrinax)

- a. *ʔulaqi ʔ=cu naʔ tawqiʔ*
 [child=1S.Nom Gen chief]
 'I am the chief's child'
- b. *m<in>βainay=ciʔ cuʔ situŋ*
 [AF<Prf>buy=1S.Nom Acc.Nrf clothes]
 'I bought clothes'
- c. *hani ʔan=ciʔ m-anɪq cuʔ qulih*
 [Asp=1S.Nom AF-eat Acc.Nrf fish]
 'I am eating fish (now)'
- d. *ini ʔ=cu usaʔ cuʔ hisaʔ*
 [Neg=1S.Nom go Part yesterday]
 'I didn't go yesterday'
- e. *ini ʔ=miʔ swa-i yumin*
 [Neg=1S.Gen like-PF Yumin]
 'I don't like Yumin'

To conclude this section, we present the following table to show whether the languages under examination have free or bound pronouns:

Table 11 Free or bound pronouns in the investigated languages

	free	bound
Amis	+	-
Saisiyat	+	-
Rukai -Mt	-	+
-To	+	+
-Mg	+	+
-Bd	+	+
Atayal-Wu	+	+
-Ma	+	+
Bunun-Is	+	+
Tsou	+	+
Paiwan	+	+
Puyuma	+	+
Kavalan	+	+

As illustrated in the above table, Amis and Saisiyat have only free pronouns without any bound forms, whereas Mantauran Rukai has only bound pronouns but no free forms;¹⁰ the other Formosan languages in question have both bound and free forms.

2.4 Affixes or clitics

After the decision is made about whether certain sets of personal pronouns are free or bound, the next question concerns whether the bound personal pronouns are affixes or clitics. Take the bound personal pronouns in Mayrinax Atayal for example. In the dialect, stress generally falls on the last syllable of a word.¹¹ When the bound personal pronouns (especially the monosyllabic ones, e.g. *-cu/-ci?* '1S.Nom', *-mu/-mi?* '1S.Gen') are added, they are not stressed as would be a sequence of two words, but take a weaker stress. Examine the following examples with the underlined words having stressed penultimate syllables:

(12) Atayal (Mayrinax)

- a. m-aniq=ci? cu? βuŋa?
 [AF-eat=1S.Nom Acc.Nrf sweet:potato]
 'I ate a sweet potato'
- b. tutiŋ-un=mu ku? ʔulaqi?
 [beat-NAF=1S.Gen Nom.Rf child]
 'I beat the child'

In other words, the presence of the bound personal pronouns has no effect on the stress of the word they attach to. Consequently, the bound personal pronouns in Mayrinax Atayal should be better treated as clitics instead of affixes. Moreover, they are enclitics, not proclitics. On the other hand, the bound pronouns in Tsou should be treated as affixes (suffixes, to be exact). In that language, stress always falls on the penultimate syllable. When a bound pronoun is added to a noun, stress shifts to the new penultimate syllable, e.g. *oko*

¹⁰ While the present paper adopts Zeitoun's (1995b) analysis that Mantauran Rukai has only bound pronouns, Li (1996) considers that there are free pronouns in this dialect.

¹¹ The same phenomenon is also present in other Atayal dialects, e.g. Wulai Atayal (cf. Huang 1989).

'child' with the first *o* stressed, but *okɔ-ŋu* 'my child' with the second *o* stressed. As for the bound personal pronouns in languages like *Bunun*, *Rukai*, *Paiwan*, *Puyuma*¹² and *Kavalan*, since no phonological evidence can be found as in *Atayal* and *Tsou*, the bound personal pronouns in the named languages are treated as affixes (either prefixes or suffixes), but not clitics.

To sum up, based on whether the bound pronouns in the languages investigated here are clitics or affixes, these languages can be classified as follows:

Table 12 Clitic or affix bound pronouns in the investigated languages

	clitics		affixes	
	enclitics	proclitics	prefixes	suffixes
Atayal-Wu	+	-	-	-
-Ma	+	-	-	-
Bunun-Is	-	-	-	+
Tsou	-	-	-	+
Rukai -To	-	-	+	+
-Mt	-	-	+	+
-Mg	-	-	+	+
-Bd	-	-	+	+
Paiwan	-	-	+	+
Puyuma	-	-	+	+
Kavalan	-	-	-	+

2.5 Ordering of personal pronouns

As noticed in Table 1, languages like *Amis* and *Saisiyat* have only free pronouns and languages like *Maga Rukai*, *Kavalan* and *Bunun* have more than one set of free pronouns. Note that when such free pronouns cooccur, they form some pattern. Take *Amis* for example. Consider:

(13) *Amis*

a. *mi-sti? kaku cinraan*

[AF-beat 1S.Nom 3S.Loc]

'I will beat him'

¹² Tan (1997: 28-33) argues that in *Puyuma*, bound Nominative pronouns are clitics and bound Genitive pronouns are prefixes. Further research is needed.

- a'. mi-sti? ciŋraan kaku (rarely used)
 [AF-beat 3S.Loc 1S.Nom]
 'I will beat him'
- b. ma-sti? aku ciŋra
 [PF-beat 1S.Gen 3S.Nom]
 'I beat him'
- b'. *ma-sti? ciŋra aku
 [PF-beat 3S.Nom 1S.Gen]

As remarked by one of the Amis informants, (13a) is better than (13a'), and even if/when both are acceptable, (13a') is rarely used. As for (13b-b'), only (13b) is grammatical. Comparing the grammaticality and order of the pronouns in these sentences, we note that the pronoun (either Nominative or Genitive) manifesting agent need (or had better) precede the other pronoun(s) designating non-agent participant. In other words, it is the semantic role that determines the order of cooccurring personal pronouns in Amis sentences, i.e. agent > non-agent. Maga Rukai exhibits a similar case (at least in active sentences), as shown below:

(14) Rukai (Maga)

- a. u-stiti kiki sua
 [Act/Real-beat 1S.Nom 2S.Obl]
 'I beat you'
- b. *u-stiti sua kiki
 [Act/Real-beat 2S.Obl 1S.Nom]

A different pattern appears in Saisiyat. In this language, when two (or more) free pronouns cooccur in a sentence (either AF or NAF), Nominative pronoun serving as grammatical subject and manifesting either agent or non-agent participant always appears in sentence initial position, as exemplified below:

(15) Saisiyat

- a. sia ʃ<om>βət yakin (AF)
 [3S.Nom beat<AF>beat 1S.Acc]
 'He beat me'

- b. *sia* ʔam homawæh ʔiniman ka katəsnənan (AF)
 [3S.Nom Irr open 1S.Ben Acc door]
 'He will open the door for me'
- c. *yako* nisia ʃəβət-ən (NAF)
 [1S.Nom 3S.Gen beat-NAF]
 'I was beaten by him'

Thus, it is the syntactic function not the semantic role (of the pronouns) that determines their ordering.

As for bound personal pronouns in other Formosan languages, when two (or more) cooccur, certain restrictions are observed as well. First, notice that in languages like Paiwan and Puyuma, since one of the two cooccurring bound pronouns is a prefix (i.e. Genitive pronoun) and the other a suffix (i.e. Nominative pronoun) and both attach to the same constituent, the pattern is then *Genitive-V-Nominative*. In this case, no confusion arises, as shown by the following Puyuma examples:

(16) Puyuma

- a. *ti-pukpuk-aw-yu*
 [1S.Gen-beat-NAF-2S.Nom]
 'I want to beat you'
- b. *ti-pa-pukpuk-anay-yu*
 [1S.Gen-Caus-beat-NAF-2S.Nom]
 'I want to make you beaten'

However, in languages like Isbukun Bunun, Mantauran Rukai and Kavalan in which all bound pronouns are suffixes, when two bound pronouns cooccur, pronouns manifesting agent (i.e. Nominative or Oblique pronouns in Isbukun Bunun, Genitive pronouns in Mantauran Rukai and Kavalan) must precede the other bound pronoun, as illustrated in the following sentences:

(17) Bunun (Isbukun)

- a. *masaiv-ik-su* tasa ahil (AF)
 [give-1S.Nom-2S.Obl one book]
 'I gave you a book'

- b. *tahuan-ku-as* *itu* *bunun* *tu* *halina* (NAF)
 [teach-1S.Obl-2S.Nom Bunun Lin word]
 'I taught you the Bunun language'

(18) Rukai (Mantauran)

- a. *o-kə[akə]aŋə-ka-l-imiaʔə*
 [Act/Real-beat-Neg-1S.Gen-2S.Obl]
 'I did not beat you'
 b. **o-kə[akə]aŋə-ka-imiaʔə-li*
 [Act/Real-beat-Neg-2S.Obl-1S.Gen]

(19) Kavalan

- a. *pa-kuna-an-na-iku*
 [Caus-go:first-NAF-3S.Gen-1S.Nom]
 'He let me go first'
 b. **pa-kuna-an-iku-na*
 [Caus-go:first-NAF-1S.Nom-3S.Gen]

From (17-19), we note that it is the semantic role that determines the order of cooccurring bound pronouns in Isbukun Bunun, Mantauran Rukai and Kavalan.

A different and more complex phenomenon is found in languages like Atayal. For instance, the bound pronouns in Mayrinax Atayal, when cooccurring, need to follow the restrictions stated below (Huang 1995a:28-36):

- (a) 1st/2nd person (singular or plural) > 3rd person (e.g. [20a-a']);
 (b) singular > plural (when 1st and 2nd person pronouns cooccur) (e.g. [20b-c]);
 (c) patient > agent (when 1st and 2nd person plural pronouns cooccur) (e.g. [20d-d']).

(20) Atayal (Mayrinax)

- a. *tutiŋ-un=cuʔ=niaʔ*
 [beat-NAF=1S.Nom=3S.Gen]
 'He beat me'
 a'. **tutiŋ-un=niaʔ=cuʔ*
 [beat-NAF=3S.Gen=1S.Nom]

- b. *tutiŋ-un=miʔ=cimu*
 [beat-NAF=1S.Gen=2P.Nom]
 'I beat you all'
- b'. **tutiŋ-un=cimu=mu*
 [beat-NAF=2P.Nom=1S.Gen]
- c. *tutiŋ-un=siʔ=cami*
 [beat-NAF=2S.Gen=1PE.Nom]
 'You (sg) beat us'
- c'. **tutiŋ-un=cami=suʔ*
 [beat-NAF=1PE.Nom=2S.Gen]
- d. *tutiŋ-un=cimu=niam*
 [beat-NAF=2P.Nom=1PE.Gen]
 'We beat you all'
- d'. **tutiŋ-un=niam=cimu*
 [beat-NAF=1PE.Gen=2P.Nom]

To sum up the present discussion, we list in the following table the factors that determine the order of personal pronouns in the Formosan languages under study here:

Table 13 Factors determining the order of personal pronouns

	semantic role	subject vs. non-subject	person	plurality	prefix vs. suffix
Amis	+	-	-	-	-
Saisiyat	-	+	-	-	-
Atayal-Wu	-	-	+	-	-
-Ma	+	-	+	+	-
Bunun-Is	+	-	-	-	-
Tsou	+	-	-	-	-
Rukai -To	+	-	-	-	-
-Mt	+	-	-	-	-
-Mg	+	-	-	-	-
-Bd	+	-	-	-	-
Paiwan	-	-	-	-	+
Puyuma	-	-	-	-	+
Kavalan	+	-	-	-	-

3. Typological perspective of pronominal systems in Formosan languages

In Section 2, we discussed the general characteristics of the personal pronouns of nine Formosan languages. Below we will examine these pronominal systems from a typological viewpoint. We will compare them in terms of their phonological, morphological, syntactic and functional features.

3.1 Phonological resemblances/differences

A cross-linguistic/dialectal comparison of the pronominal sets shown in Tables 2-10 reveals that on the one hand, these pronouns represent cognates; in other words, they have the same 'phonological core', such as (a)ku '1S', su '2S', ta '1PI', mi '1PE', mu '2P'. However, the pronouns under study also illustrate some phonological variations. Such phonological differences found across languages/dialects may result from the following factors:

- (a) Sound changes, e.g. assimilation, dissimilation, deletion and weakening. For instance, Maga Rukai has undergone both backward and forward assimilation,¹³ e.g. *mumu* '2P.Nom' and *ŋkua* '1S.Obl' (vs. *komo* '2P.Nom' and *nakoa* '1S.Obl' in Tona) (Zeitoun 1995a). Also, the following examples illustrate vowel and consonant deletion in Maga Rukai: *knamɨ* '1PE.Nom' (vs. *kinamə* in Tona), *ɕia* '3S.Obl' (vs. *ɕianə* '3S.Obl' in Tona and Budai). In Tsou, we find an example of consonant weakening: *aʔo* '1S.Nom' (vs. PAN *aku '1S').
- (b) Morphological case marking, e.g. *-i...ə* is an Oblique case marking in Mantauran Rukai and corresponds to *-a(nə)* in Tona. Thus, the pronouns *-imitə* '1PI.Obl' and *-inə* '3S.Obl' in Mantauran while *mitia* '1PI.Obl' and *nianə* '3S.Obl' in Tona (Zeitoun 1995a & 1995b).
- (c) Innovation of part of the pronominal system, e.g. *-lao* '1S.Nom' and *-nomi* '2P' in Mantauran have nothing to do with PAN *aku '1S.Nom' and *mu '2P' (Zeitoun 1995a).

¹³ Such a phenomenon is also found in nouns like *mama* 'father' and *nina* 'mother' (vs. *tama* and *tina* in all the other Rukai dialects).

3.2 Morphological resemblances/differences

Morphologically, the personal pronouns in these named Formosan languages resemble each other with respect to the following characteristics:

- (a) They lack a gender distinction, i.e. no masculine-feminine contrast.
- (b) The first person plural pronouns have a distinction between 'inclusive' (speaker + addressee) and 'exclusive' (addressee not included).

On the other hand, these personal pronouns differ from each other with regards to the following features:

- (a) Presence/Absence of the third person bound Nominative pronouns:
In most languages that have bound pronouns, there is no bound nominative pronoun for third person, either singular or plural. However, both Tsou and Tona Rukai have a bound Nominative pronoun for third person which refers to a **visible** participant. Note that such pronouns in the two languages also differ with respect to plurality; while Tsou has both singular and plural third person pronouns (i.e. *-ta* '3S.Nom' and *-hin ŋi* '3P.Nom' in Table 8), Tona Rukai has only a singular form (i.e. *ni-* '3S.Nom' in Table 9a).
- (b) Case marking: Certain sets of pronouns in some of the Formosan languages under study are marked for case, and very often these pronouns in question are free pronouns, as in Amis, Saisiyat, Paiwan, Puyuma and Kavalan, but they may be bound pronouns, though very rarely, as in Mantauran Rukai; such case markers are also found in full nouns. Table 14 illustrates the different case markings¹⁴ existing in the pronominal sets of the named Formosan languages (those with * only apply to the third person singular pronouns, and those with **, the third person plural):

¹⁴ As for the case marking systems of the Formosan languages investigated here, please refer to Huang, et al., 1996.

Table 14 Case marking in personal pronouns

	Nom	Acc	Gen	Loc	Ben	Poss	bl
Amis	k-; *ci-; **ca-		n-	-an			
Atayal-Wu				-an			
-Ma				-an			
Saisiyat		hi-	ni-	kan-	?ini-	?an...a	
Bunnu -Is		ma(s)-		-an			
Rukai -To	ki-; ko-						-a(nə)
-Mg	ki-						-a
-Mt							-i..ə
-Bd	ku-						
Paiwan	ti-; **tjya-	*tjay-; **tj(a)ya-				ni-; **nya-	
Puyuma							kan-
Kavalan		t-	n-	t...-an			

- (c) Pronouns derived from demonstratives: In Rukai (Tona, Maga and Budai, but not Mantauran), Isbukun Bunun, and perhaps in Tsou as well, the third person pronouns seem to be derived from demonstratives. The following are examples from Maga Rukai:

(21) Rukai (Maga)

- a. o-slara kidj vlaki na aθoo
[chase that child Obl dog]
'That child chases/chased a dog'
- b. o-slara kidj na aθoo
[chase that/3S.Nom Obl dog]
'He chases/chased a dog'

- (d) Plurality: In some Formosan languages, the third person pronouns have a morphologically marked singular-plural distinction. For example, the element *a* in Amis (e.g. *cinra* '3S.Nom' vs. *canra* '3P.Nom') and Paiwan (e.g. *tjaymadju* '3S.Acc/Loc' vs. *tjayamadju* '3P.Acc/Loc'), *l* in Mantauran Rukai (e.g. *-inə/-iðə* '3S.Obl' vs. *-ilina/-iliðə* '3P.Obl'), which is illustrated along with the case marking in Table 14.

- (e) Visibility: While the pronouns in Rukai and Tsou make a distinction between visibility and invisibility, the other Formosan languages under study make no such distinction. In Rukai, for instance, visibility and invisibility are morphologically marked by *n* and *d/ǝ*, respectively (cf. Tables 5a-d).
- (f) Genitive vs. Possessive pronouns: While Amis and Saisiyat have distinct forms for Genitive and Possessive pronouns (cf. Tables 2 & 4), most of the other named Formosan languages have only one single set, i.e. Genitive pronouns.

3.3 Syntactic resemblances/differences

Not only having phonological and morphological resemblances and differences, the personal pronouns in the Formosan languages under investigation also exhibit some syntactic resemblances as well as differences, as examined in Section 2 and summarized below:

- (a) Pre- or post-verbal position: As discussed in Section 2.5, some languages like Atayal, Tsou and Mantauran Rukai have post-verbal bound pronouns, whereas languages like Paiwan and Puyuma have both pre- and post-verbal pronouns.
- (b) Genitive vs. Possessive: Some Formosan languages like Saisiyat and Amis have both Genitive and Possessive pronouns; however, the two sets in the two named languages exhibit different syntactic distributions. For instance, in Saisiyat, the Genitive pronouns usually follow the head noun and the Possessive pronouns often precede the head nouns, as exemplified below:

(22) Saisiyat

a. rayhil maʔan karmaʔ-ən

[money 1S.Gen steal-NAF]

‘My money was stolen’

b. hiniʔ ʔamanaʔa rayhil

[this 1S.Poss money]

‘This is my money’

In Amis, on the other hand, while both sets may appear after the head noun, the Possessive pronouns may also precede the head noun, with or without a linker in between:

(23) Amis

- a. ʔuʔax aku
 [candy 1S.Gen]
 'my candy'
- a'. *aku (a) ʔuʔax
 [1S.Gen Lin candy]
- b. ʔuʔax nu maku
 [candy Gen 1S.Poss]
 'my candy'
- b'. (nu) maku (a) ʔuʔax
 [Gen 1S.Poss Lin candy]
 'my candy'

- (c) Order of cooccurring personal pronouns: As examined in Section 2.5, most Formosan languages (except Mantauran Rukai) have more than one set of free personal pronouns, and similarly, most of them have more than one set of bound personal pronouns as well. When either free or bound pronouns cooccur in a sentence, factors such as semantic role, grammatical subjecthood, person, plurality and types of affixes (i.e. prefix and suffix) may determine the order of these cooccurring pronouns, as shown in Table 13.
- (d) Syntactic restrictions of bound personal pronouns: As pointed out in Section 2.3, normally bound personal pronouns are characterized as being attached to the first element of the predicate, in spite of its being a noun, a verb, an auxiliary or a negator (recall examples [9a-e]). While most languages follow such a syntactic restriction, Kavalan illustrates a different case. First, consider the bound pronouns in AF constructions in the language. Whether the AF sentences have a negator/auxiliary appearing sentence initially or not, the bound pronouns follow the above-mentioned pattern and attach to the first element:

(24) Kavalan

- a. q<əm>an-iku? tu ɛaq
 [eat<AF>eat-1S.Nom Acc wine]
 'I drink/am drinking/drank wine'
- a'. may-iku? q<əm>an tu ɛaq
 [Neg-1S.Nom eat<AF>eat Acc wine]

'I don't drink/am not drinking/didn't drink wine'

a". yaw-iku? q<əm>an tu ɤaq

[Asp-1S.Nom eat<AF>eat Acc wine]

'I am drinking wine'

However, the bound pronouns in the language designate different patterns in NAF sentences, depending on whether the sentences have a negator/auxiliary or not. Without any negator/auxiliary cooccurring, the bound pronouns attach to the verb in the order of Genitive-Nominative:

(24) Kavalan

b. hobataŋ-an-ku ʔ-isu?

[beautiful-NAF-1S.Gen-2S.Nom]

'I am more beautiful than you'

b'. *hobataŋ-an-isuʔ-ku?

[beautiful-NAF-2S.Nom-1S.Gen]

c. hobataŋ-an-su ʔ-iku?

[beautiful-NAF-2S.Gen-1S.Nom]

'You are more beautiful than I'

c'. *hobataŋ-an-ikuʔ-su?

[beautiful-NAF-1S.Nom-2S.Gen]

d. hobataŋ-an-na ʔ-iku?

[beautiful-NAF-3S.Gen-1S.Nom]

'He is more beautiful than I'

d'. *hobataŋ-an-ikuʔ-na?

[beautiful-NAF-1S.Nom-3S.Gen]

When there is a cooccurring negator/auxiliary, though the two pronouns may both attach to the verb (e.g. [24e-24g]), one of the bound pronouns may be added to the negator/auxiliary, leaving the other pronoun still added to the verb (e.g. [24e'-24g']):

(24) Kavalan

e. may hobataŋ-an-ku ʔ-isu?

[Neg beautiful-NAF-1S.Gen-2S.Nom]

'I am not more beautiful than you'

- e'. may-ku? hobataŋ-an-isu?
 [Neg-1S.Gen beautiful-NAF-2S.Nom]
 'I am not more beautiful than you'
- f. may hobataŋ-an-su ?-iku?
 [Neg beautiful-NAF-2S.Gen-1S.Nom]
 'You are not more beautiful than I'
- f'. may-su? hobataŋ-an-iku?
 [Neg-2S.Gen beautiful-NAF-1S.Nom]
 'You are not more beautiful than I'
- g. may hobataŋ-an-na ?-isu?
 [Neg beautiful-NAF-3S.Gen-2S.Nom]
 'He is not more beautiful than you'
- g'. may-isu? hobataŋ-an-na?
 [Neg-2S.Nom beautiful-NAF-3S.Gen]
 'He is not more beautiful than you'
- g''. *may-na? hobataŋ-an-isu?
 [Neg-3S.Gen beautiful-NAF-2S.Nom]

Comparing (24e'-f') with (24g'-g''), we may note when the two bound pronouns are the first and second person, the Genitive pronoun manifesting the agent participant may be added to the negator/auxiliary. However, when one of the two bound pronouns is the third person, then the first/second person pronoun gets to attach to the negator/auxiliary. Such a syntactic restriction is rather unique to Kavalan; no similar instances have been found in any of the other Formosan languages under study. Moreover, Kavalan presents another interesting syntactic restriction. That is, when the verb in a NAF sentence contains the future/irrealis affix *pa*, the Genitive pronoun needs to precede *pa* which is in turn followed by the Nominative pronoun; thus Genitive-Fut-Nominative. Examples follow :

(25) Kavalan

- a. pa-qatyu-an-ku ?-pa-isu?
 [Caus-go-NAF-1S.Gen-Fut-2S.Nom]
 'I wili let you go'
- b. pa-kuna-an-na- pa-iku?
 [Caus-go:first-NAF-3S.Gen-Fut-1S.Nom]

'He will let me go first'

The above-mentioned syntactic restriction is peculiar and is found in none of the other Formosan languages investigated.

3.4 Functional resemblances/differences

In the pronominal systems of the Formosan languages under study, we may also find some functional resemblances and differences. First, we may notice that the Formosan languages investigated here resemble in the following aspects:

- (a) Neutralization of semantic roles: In all the Formosan languages discussed here, agent, patient as well as some other roles may be manifested by Nominative pronouns, depending on whether the construction is AF or NAF. Also, participants such as patient, recipient and location can be expressed by Accusative or Locative pronouns. In other words, different semantic roles are manifested by the same forms.
- (b) Diversification of semantic roles: In addition to neutralization of semantic roles, diversification exists as well. That is, the same semantic role may be manifested by different personal pronouns. For instance, the agent participant can be expressed by either Nominative or Genitive pronouns, and the patient role can be indicated by Accusative/Locative or Nominative pronouns, depending on whether the sentences in question are AF or NAF constructions.

On the other hand, the named Formosan languages differ from each other in terms of the following aspects:

- (a) Plurality: In most Formosan languages, the third person pronouns have a distinction in number. However, in Tona, Maga and Budai Rukai (but not in Mantauran Rukai), such a singular-plural distinction does not exist; that is, in the named three dialects of Rukai, third person singular and plural pronouns are expressed identically.
- (b) Visibility: In Tsou and Rukai as shown in Tables 6-7, pronouns for third person, both singular and plural, make distinction with respect to visibility. Such distinction is not found in the other Formosan languages investigated.

- (c) Genitive vs. Possessive: While most Formosan languages have only the Genitive pronouns which alone may designate possessive relationship or manifest the agent participant in NAF constructions, Saisiyat has both Possessive and Genitive pronouns, both of which can express possessive relationship, but only the Genitive set of which can additionally manifest the agent participant in NAF constructions. Another difference between the two sets in Saisiyat is that the Possessive pronouns may serve as predicate while the Genitives can not.

4. Concluding remarks

In this paper, we present a typological study of personal pronouns of nine Formosan languages. We first examine the complete sets of personal pronouns the named Formosan languages have and how each set is classified. We then discuss whether these pronouns are free or bound forms, clitics or affixes, and what order the cooccurring pronouns exhibit. We further discuss the phonological, morphological, syntactic and functional resemblances and differences among these pronouns under study. It is hoped that the present paper may give some ideas to linguists who just start (or would like) to work on Formosan languages, concerning what aspects of the pronominal systems that need to be explored. It is also hoped that the paper will help linguists better understand, from a typological perspective, the similarities and differences existing in the personal pronominal systems of the Formosan languages.

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