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A Survey of Yami Nasal Substitution and its Subgrouping

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Abstract

This paper discusses linguistics features including word order, voice system, pronominal system, and the nasal substitution after affixation of actor voice *maN-* that Yami has exhibited and compares them with the Austronesian languages (also known as Formosan languages) spoken in Taiwan. Yami and Formosan languages share similarities in the word order, voice system, and pronominal system, but the nasal substitution is only observed in Yami. This phonological change is widely observed in some of the Austronesian languages spoken in southeastern Asia including Malagasy, Chamorro, Palauan, and the languages spoken in Philippines and western Indonesia〔BLUST, 2004〕. This feature – nasal substitution has implied that Yami is more closely related to the Austronesian languages spoken in southeastern Asia than to Formosan languages. Yami, the aboriginal language spoken on Orchid Island that geographically and politically belongs to Taiwan is more closely related to the Malayo-Polynesian (extra-Formosan) language family.

Keywords: nasal substitution, subgroup, actor voice affix, *maN-*, word order

雅美語鼻音替代規律探討與其分群

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〔摘要〕

雅美語（又稱達悟語）是蘭嶼島上原住民的母語，蘭嶼島位於台灣本島東南海域 。雅美語與台灣本島的原住民語都屬於南島語系（Austronesian language family）。在政治和地理位置上，蘭嶼島屬於台灣，但在語言上，蘭嶼島上所使用的語言與東南亞的南島語更為密切，本文探討雅美語中的語言結構與特徵，並與台灣本島的原住民語做比較，雅美語的語序、焦點系統與人稱代名詞跟台灣本島的原住民語非常相似，但鼻音替代規律（nasal substitution）卻是雅美語獨有的，鼻音替代規律是指主事者動詞詞綴 maN-加上詞根或詞幹後所產生的語音變化，此一變化包含了同化現象（assimilation）與詞根或詞幹開頭的輔音刪除現象（deletion）。台灣島上的其他原住民語並無此語音規律。然而，鼻音替代規律在東南亞的南島語中，卻非常的普遍。此一語音特點意味著雅美語雖與台灣本島的原住民語同屬南島語系，但雅美語與東南亞的南島語的關係更為緊密。

〔**關鍵字**〕鼻音替代規律、西馬來坡里尼西雅語族、主事者動詞詞綴、前綴 maN-、語序。

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I. Introduction

Yami, also known as Tao, is an aboriginal language spoken on Orchid Island that is located off the southeastern coast of Taiwan. This paper aims to discuss its relation with the aboriginal languages spoken in Taiwan, also known as Formosan languages, and the Austronesian languages spoken in the southeast of Asia via some linguistic features these languages have exhibited. Yami and Formosan languages belong to the Austronesian language family, but their relation with the Austronesian languages spoken in southeast of Asia differs as the linguistic features or structures they have exhibited differ.

Politically and geographically, Orchid Island belongs to Taiwan, but linguistically, Yami, the language spoken on this island, is more closely related to the languages spoken in southeast of Asia than to Formosan languages. This paper discusses linguistic features or structures that show the resemblance between Yami and Formosan languages and some features that are unique to Yami. The resemblance suggests that Yami and Formosan languages belong to the same language family – Austronesian, and the unique features suggest that Yami is a relative of Formosan languages but a distant relative according to the subgrouping that majority of Austronesian linguists has agreed upon. According to BLUST〔2009〕, at least ten primary subgroups could be identified for Austronesian language family and nine of them are represented in Taiwan including Atayalic, East Formosan, Puyuma, Paiwan, Rukai, Tsouic, Bunun,

Western Plains, and Northwest Formosan. Yami has exhibited some linguistic features that are not observed in Formosan languages, and these features are widely found among some of the Austronesian languages spoken in southeast of Asia - the tenth primary subgroup, namely Malayo-Polynesian that is not represented in Taiwan〔BLUST 2009〕.

In the following section, the geographical locations where Yami, Formosan languages, and the Austronesian languages of southeast Asia are discussed to show the relative distance of the areas where these languages are spoken. In section three, some of the linguistic structures that have been observed and discussed by LI〔2008〕among Formosan languages including word order, voice/focus system, pronouns, etc. are compared with the corresponding structures in Yami to show the resemblance between Yami and Formosan languages. Section four focuses attention on the unique features including the affixation of the actor voice maN- (the reflex of Proto-Extra-Formosan *maN-) in Yami and the phonological changes after its affixation. An example of the phonological changes after the affixation is provided in (1). The affixation of maN- to the stem *pareng* 'build' results in place assimilation and deletion. These changes have been discussed in previous literature on Yami〔HO 1990, RAU and DONG 2006〕, but have not been recognized as the nasal substitution that is widely observed in western Malayo-Polynesian[1] (WMP) languages.

[1] The existence of the west Malayo-Polynesian (WMP) language family remains debatable as Blust has suggested, "[i]t is possible that WMP is not a valid subgroup…" (2009: 30). The languages that he has included in WMP are languages that do not belong to the Central-Eastern Malayo-Polynesian (CEMP) language family. WMP and CEMP are two primary branches of Malayo-Polynesian language family.

(1) maN- + pareng → mamareng 'to build'

BLUST〔2004〕has documented the variations of the nasal substitution in various languages including Malagasy, Chamorro, Palauan, and languages of Philippines and western Indonesia, and identified four types of nasal substitution. The phonological changes after the affixation of the actor voice affix maN- in Yami are compares with the four types of nasal substitution. The comparison has shown that the phonological changes after affixation in Yami resemble the nasal substitution process that takes place in WMP languages. This resemblance suggests that Yami is linguistically more closely related to languages of Malayo-Polynesian subgroup, especially to WMP language, than to Formosan languages.

II. Geographical Location of Yami

Yami is the native language of the aboriginals resided on Orchid Island (also known as Lan-yu) that is located off the southeastern coast of Taiwan. Orchid Island is separated from Philippine archipelago by Bashi Channel, and is about 99km apart from the northernmost island of Batan islands – Y'ami. Batan Islands are composed of ten islands and islets (Y'ami, North Island, Dequey, Siayan, Mabudis, Ibuhos, Diogo, Itabayat, Batan, and Sabtang) and are 270km apart from Luzon mainland. Three of the Batan Islands including Itabayat, Batan, and Sabtang have inhabitants. The map in (2) shows that the distance between Lanyu (Orchid Island) and Y'ami and its distance with Taiwan mainland. Notice that the northernmost island of Batan island is Y'ami, its

spelling is similar to the language spoken on Orchid Island – Yami. In this paper, Yami refers to the language spoken on Lanyu (also known as Orchid Island) on the map shown in (2).

(2) Map of Lan-yu (Orchid Island) and Batan Island

III. Linguistic Structures of Yami and Formosan Languages

According to LI〔2008〕, it is believed that the Formosan languages have exhibited the most diversified linguistic structures within the entire Austronesian language family. He has discussed structures including word order, focus system, auxiliaries, numerals, personal pronouns, compounding, affixation, and

phonology of Formosan languages with examples to show the diversities among these languages. In this section, word order, focus system, and pronouns of Yami and Formosan languages are discussed and compared to show their resemblance. Notice that the term *voice* has replaced the term *focus* in recent literature on Austronesian languages, and these two terms are sometimes used interchangeably.

a. Word Order

According to LI〔2008〕, word order of most Formosan languages is verb initial except Saisiyat, Pazih, and Thao that have exhibited SVO, as shown in (3a-c). The word order of these languages is under strong influence of language contact with Chinese. However, verb-initial sentences could still be observed within these languages, as shown in (3a'-c').

(3)

a. Saisiyat Ta'ay[2]

ka	korkoring	Sibil-in	ray	taLoe'aen.	(SVO)
DEF	child	leave-PV	LOC	home	

'The child was left at home.' 〔LI 2008:526〕

[2] ASP – aspect, ACC – accusative, AV – actor voice, Aux – auxiliary, CM – case marker, GEN – genitive, IPFV – imperfective, IV – instrument voice, LIN – linker, LOC – locative, LV – locative voice, NOM – nominative, OBL – oblique, OV – object voice, P – plural, PERF – perfective, PN – proper name, PV – patient voice, RED – reduplication, RF – $^{\text{reference}}$, S – singular.

a'. m-waLi'=ila ka Loko'. (VS)
AV-come=ASP NOM loom
'The loom has arrived.' (1-9) 〔LI 2008:526〕

b. Pazih
yaku kasibat pazih a rahan. (SVO)
1S.NOM teach pazih LIN language
'I teach the Pazih language.' 〔LI 2008:527〕

b'. ma-laleng xani-xanisay a kawas, liaka partisan
AV-live RED-several LIN year then give.birth
adang a rakihan ki kalayu. (VOS)
one LIN child NOM name
'After living for several years, Kalayu had a baby.' 〔LI 2008:527〕

c. Thao
yaku inshiraq-in ama. (SVO)
1S.NOM scold-PV Dad
'I was scolded by Father' 〔LI 2008:527〕

c'. shkuda nak a shnaw maqa uka-wan
ache my LIN heart because not.have-yet
sa taun (VS)
CM house
'I feel bad because I don't have a house yet.' 〔LI 2008:527〕

Languages with case markers in front of noun phrases tend to have more flexible word order of S and O after sentence initial V and languages without or with a few case markers tend to have more rigid word order of S and O〔LI 2008: 524〕. Examples of Atayal (4), Amis (5), Kavalan (6) and Paiwan (7) show that languages that have case markers for noun phrases have relatively free word order of S and O. Notice that there is a tendency for the sentence initial position to be occupied by a verb in most Formosan languages. Similarly, majority of sentences in Yami is verb-initial, as shown in (8a-b). The word order of S and O is relatively free as every noun phrase is headed by a case marker in Yami.

(4) Atayal Mayrinax

nanuan	**ku'**	**taal-an**	nku'	'ulaqi"?	(VSO)
what	NOM	see-LV	GEN	child	

'What did the child see?' 〔LI 2008:525〕

(5) Amis

mi-patay	**ko**	**cahiw**	to	wawa.	(VSO)
AV-kill	NOM	hunger	OBL	Child	

'Hunger killed a child. = A child was starved to death.' 〔LI 2008:525〕

(6) Kavalan

sim-subut	tu	baqian	**a**	**sunis.**	(VOS)
REC-bow	OBL	old.man	NOM	Child	

'The child bowed to an old man.
= The child and old man bowed to each other' 〔LI 2008:525〕

(7) Paiwan

ka-kan	**a**	**kaLang**	tua	velvel.	(VSO)
RED<AV>eat	NOM	monkey	OBL	child	

'The monkey is eating a banana.' 〔LI 2008:526〕

(8) Yami

a.

ya	man-linas	so	lasey	**si**	**mapapo**	(VOS)
AUX	AV-wipe	OBL	mat	NOM	PN	

'Mapapo is wiping mats.' 〔HO 1990:92〕

b.

ya	man-bakbak	**si**	**mapapo**	so	kanakan	(VOS)
AUX	AV-hit	NOM	PN	OBL	child	

'Mapapo is hitting a child.' 〔HO 1990:69〕

b. Focus/Voice System

Focus system, as well as, voice system, in the present study refers to the relation between the verbal affixation and the thematic role of the clause subject, as the Mayrinax Atayal examples shown in (9). The actor voice (AV/AF) affix <*um*> signals that the clause subject is the doer of the action – actor; the patient voice/focus (PV/PF) affix *-un* signals that the clause subject is the entity that undergoes the influence of the action; the locative voice/focus (LV/LF) affix *-an* signals that the clause subject is the location where the event takes place.

(9) Mayrinax Atayal

a. t<um>utiN cku? ?ulaqi? ?i? yaya?
beat<AV>beat ACC.RF child NOM mother
'Mother is beating the child' 〔HUANG 2001:60〕

b. tutiN-un=mu ku? xuil
beat-PV=1S.GEN NOM.RF dog
'I beat the dog.' 〔HUANG 2001:60〕

c. ?<in>usal-an=mu ku? Bali? la
go<PFV>go-LV=1S.GEN NOM.RF Miaoli Part
'I have (already) been to Miaoli' 〔HUANG 2001:60〕

According to LI〔2008〕,voice/focus system is observed almost in all Formosan languages except Rukai. LI〔2008〕has reported that the most commonly observed focus system – the Philippine-type focus system that employs infix *-um- for AF, prefix *-en for PF, suffix *-an for LF, and prefix *si- (or *Sa-) for referential focus (RF) to form indicative clause. Formosan languages including Atayal, Seediq, Saisiyat, Paiwan, and Amis have exhibited this type of focus system. Examples in (10) are different focus/voice constructions in Paiwan. While some Formosan languages do exhibit the Philippine-type focus system, the verbal affixations of different focus/voice constructions are found to be diversified among Formosan languages, as summarized in Table 1.

(10) Paiwan

a. q<**m**>aɬup a tsautsau tua vavuy i
<AV>hunt TPC man OBL pig LOC
(tua) gadu tua vuluq
(OBL) mountain OBL spear
'The man hunts the pigs in the mountains with a spear.'
〔ROSS & TENG 2005:741〕

b. qaɬup-**en** nua tsautsau a vavuy i
hunt-PV GEN man TPC pig LOC
(tua) gadu tua vuluq
(OBL) mountain OBL spear
'The man hunts the pigs in the mountaions with a spear.'
〔ROSS & TENG 2005:741〕

c. qaɬup-**an** nua tsautsau tua vavuy a
hunt-LV GEN man OBL pig TPC
gadu tua vuluq
mountain OBL spear
'The man hunts the pigs in the mountains with a spear.'
〔ROSS & TENG 2005:741〕

d. **si**-qaɬup nua tsautsau tua vavuy i
IV-hunt GEN man OBL pig LOC
(tua) gadu a vuluq

(OBL) mountain TPC spear

'The man hunts the pigs in the mountains with a spear.'

〔ROSS & TENG 2005:741〕

Table 1 Focus systems in Formosan languages

	AV	PV	LV	RV
Philippine type	-um-	-en	-an	Si-
Tsou	-m-	-a	-i	-(n)eni
Puyuma	-em-	-aw	-ay	-anay
Bunun	m(a)-	-un	-an	'is-
Pazih	mu-	-en	-an	sa-~saa-
Amis	-um-	-en, ma- mi-…-an	-an	sa-
Kavalan/Basay	-m-	-an, ma-	∅	ti-
Siraya	-m-, m-	-en, -an	∅	

〔LI 2008:529〕

In Yami, there are at least four focus/voice constructions including AV, PV, LV, and I/BV that can be identified, as shown in (11). The verbal affixations for these four voice constructions for Yami are summarized in Table 2. Notice that the affix *man-* in the AV column could be realized as *man-*, *mam-* or *mang-* depending on the initial segment of the stems/roots it attaches to. This AV affix is sometimes represented as maN- in the literature 〔RAU & DONG 2006〕. Sound changes occur after the affixation of the actor voice affix maN- will be discussed in the following section on the Austronesian nasal substitution.

(11)

a. k-**om**-an so wakay si Salang
<AV>eat OBL sweet.potato NOM PN
'Salang wants to eat a sweet potato. (lit.) The one who wants to eat a sweet potato is Salang.'
〔RAU & DONG 2006:87〕

b. kan-**en** na ni Salang o wakay
eat-IPFV.PV 3.S.GEN GEN PN NOM sweet.potato
'Salang ate the sweet poatao. (lit.) What Salang ate was the sweet potato.'
〔RAU & DONG 2006:87〕

c. ni-akan-**an** na o mogis ori ni Salang
PFV-eat-LV 3.S.GEN NOM rice that GEN PN
'Salang ate some rice from there. (lit.) What Salang ate a little bit from there was rice.'
〔RAU & DONG 2006: 87〕

d. **i**-akan na ni Salang o among ya
IV-eat 3.S.GEN GEN PN NOM fish this
'Salang took this fish and ate it. (lit.) What was given for Salang to eat was this fish.'
〔RAU & DONG 2006:87〕

Table 2 Yami focus/voice affixes

	AV	PV	LV	IV/BV
Affix	-om-/m-/mi-/ma-/man-	-en/ni-	-an	i-

〔HUANG 2017:19〕

The only common feature shared by AV affixes of Formosan languages and Yami is that they all involve the labial nasal segment [m]. As for PV and LV, some Formosan languages and Yami make use of the affixes *-en* and *-an*, respectively. Furthermore, the affix *-an* could be used as PV in Yami as well as some Formosan languages – Kavalan, Basay and Siraya. That the affix *-an* functions as a patient voice affix in Yami is observed only with a particular set of roots; hence, it is not included under the PV column in Table 2 to avoid confusion. Notice that the AV affix *man-* is not observed in Formosan languages; hence, sound changes are also not observed in Formosan languages. BLUST 〔2004:75〕 has found a fossilized form *maŋayaw* 'to go headhunting' in Puyuma that has suggested the nasal substitution was a once-active process in Formosan languages. The Puyuma base *maŋayaw* is found to be comparable to the active verb forms of WMP languages. For example, in Isneg the base *káyaw* 'headhunting' forms active verb *ma-ŋáyaw* 'to go headhunting' after affixation. The nasal coda has replaced the base-initial segment but retained its place of articulation.

c. Pronouns

According to LI〔2008〕, three or four sets of personal pronouns are usually observed within Formosan languages and different case contrasts including

nominative, genitive, locative and oblique or accusative are made among them. Some languages might have more set as case distinction is also made between genitive and possessive (e.g. Saisiyat and Amis)〔LI 2008:536〕. A Formosan language with two sets of nominative and genitive pronouns can be frequently observed. One set referred as free pronouns can freely occur without attaching to a host, and the other set referred as bound pronouns requires to be attached to a host. Saisiyat, shows no sign of bound pronoun and Thao has limited number of bound pronouns; conversely, there is only a set of free pronoun in Mantauran dialet of Rukai〔LI 2008:536〕.While the number of sets of bound and free pronouns is diversified among Formosan languages, LI〔2008〕has suggested one shared common property among the pronoun systems of these languages – all of them lacks third person nominative bound pronoun except Tsou.

Yami as some Formosan languages has two sets of nominative pronouns, one bound and one free, and two sets of genitive pronouns, one bound and one free. With a set of locative free pronouns, Yami has five sets of pronouns in total. Within the five sets of pronouns, three case contrasts are made, as summarized in Table 3. Similarly, Yami also lacks the third person singular nominative bound pronoun, as most of Formosan languages. The lack of third person nominative bound pronoun can be illustrated by the examples shown in (12). When the predicate is affixed with PV affix *-en*, the genitive bound pronoun *na* is observed at the clause-initial position to signal that the actor is third person as in (12a). When the predicate is affixed with AV affix <*om*> in (12b), instead of having the third person singular nominative bound pronoun taking the clause-initial position, it is occupied by the auxiliary verb *ya*. Furthermore, Yami

also lacks the third person singular free pronouns as well as the third person plural nominative bound pronoun. Hence, these three slots are filled in with other elements in parentheses in Table 3, as these elements are sometimes used as substitutes for these pronouns in Yami.

(12)

a. na kan-en o soli
3.S.GEN eat-PV NOM taro
'He is eating the taro.'

b. ya k-om-an so soli wari
AUX <AV>eat OBL taro younger.sibling
'He is eating taro.'

Table 3 Yami personal pronouns

	Nominative (Bound)	Nominative (Free)	Genitive (Bound)	Genitive (Free)	Locative
1S	ko	yaken	ko	niaken	jiaken
2S	ka	imo	mo	nimo	jimo
3S	(ya)	(iya)	na	nia	jia
1P (EXCL)	namen	yamen	namen	niamen	jiamen
1P (INCL)	ta, tamo, takamo	yaten	ta	niaten	jiaten
2P	kamo/kanio	inio	nio	ninio	jinio
3P	(sia)	sira	da	nira	jira

〔RAU & DONG 2006:123〕

In this section, the word order, voice system, and pronouns of Yami and

Formosan languages are briefly compared and their shared features in these three aspects include a tendency of verb-initial word order, exhibition of several different voice constructions including AV, PV, LV, and RV, two sets of nominative and genitive pronouns (free vs. bound), and the absence of the third person nominative bound pronoun. When shared features among these languages are observed, one feature that Yami has exhibited is not observed among Formosan languages – the actor voice affix *maN-* that is the focus of attention of the following sections. This affix is frequently observed in the Austronesian languages spoken in southeastern Asia, and the sound change that occurs after affixation of this affix is observed among some of these languages. The presence of this affix *man-* in Yami has suggested that Yami is more closely related to the Austronesian languages of southeast of Asia and the sound change that occurs after its affixation has further suggested that Yami is more closely related to the group of languages that have also exhibited similar sound change after affixation of the actor affix maN-. The possible origin of the affix maN- and the sound change – the nasal substitution are discussed in the following sections.

IV. Nasal Substitution

BLUST has suggested that nasal substitution mainly occurs after prefixation of reflexes of PMP (Proto-Malayo-Polynesian) *maŋ- 'active verb' or PMP *paŋ- 'agent/instrument' among Austronesian languages〔BLUST 2009: 233〕.In addition to that, he has also suggested that "[r]elexes of *maŋ- are ubiquitous in the Philippines and western Indonesia, and are also found in

Malagasy, Palauan and Chamorro”〔BLUST 2009:365〕.

According to REID & LIAO〔2004:456〕, reflexes of PEF (Proto-Extra-Formosan) *maN- can be observed in most Philippine languages. They have also suggested that the affixation of the reflexes of maN- brings about the following sound change – “the final nasal assimilates to the point of articulation of the initial consonant if it is a voiceless obstruent.”〔REID & LIAO 2004: 457〕

RAU & DONG〔2006:108〕have suggested that the Yami reflex of the PEF *maN- is maN- and it tends to occur with two or three arguments including a nominative case-marked actor and oblique case-marked patient. In Yami, clauses initiated with maN- affixed predicates can be easily observed. Within maN- affixed predicate clause the entity that undergoes the influence of the action denoted by the affixed predicate is oblique case-marked and the entity that carries out the action is nominative case-marked, as illustrated in (13). The root *pareng* ‘build’ is affixed with the affix maN- and this clause contains two participants – the nominative case-marked actor *ko* ‘I’ and the oblique case-marked entity *vahay nio* ‘my house’.

(13)

ko	ma-mareng (maN-pareng)	so	vahay	nio
1.S.NOM	AV-build	OBL	house	2.P.GEN

‘I am building your house.’

HO〔1990〕in her thesis, and RAU & DONG〔2006〕in their reference grammar of Yami have both discussed the sound change after the affixation of maN-. But they do not relate the sound change to the nasal substitution of WMP languages. RAU & DONG〔2006〕have listed the conditions for the sound changes with examples, as cited in Table 4. The phonemes that they provided are not IPA symbols. The IPA symbols for these phonemes are provided next to them in slashes in Table 4. In this section, more data on this type of sound change in Yami are to be discussed and compared with the nasal substitution of other Austronesian languages spoken in southeastern Asia that has been surveyed and documented by BLUST〔2004〕.

Table 4 Morphophonemics of maN-

	Phoneme	Base form	Change to	maN + Base
[+labial]	p /p/	pili	m /m/	mamili ‘choose’
	b /b/	bedbed		mamedbed ‘tie’
	v /v/	vono		mamono ‘poke eyes’
[+velar] or [+vocalic]	k /k/ h /ʁ/ or any vowel	kaod hap item	ng /ŋ/	mangaod ‘row a boat’ mangap ‘take’ mangitem ‘combine’
[+alveolar]	t /t/ d /ɖ/	tapang dokdok	n /n/	manapang ‘sew’ manokdok ‘knock, beat’
	s /ʂ/	sazab		manazab ‘roast’
[+palatal]	c /tɕ/	cila		manila ‘pick up food scraps to eat’
Elsewhere			maN-+ Base	
		zogazoga		manzogazoga ‘bark wildly
		langi		manlangi ‘harvest millet’
		‘agnat		man’agnat ‘lift’
		wagwag		manwagwg ‘abandon’
		gazot		mangazot ‘reed out’
		mama		manmama ‘chew betal nut’

		nakenakem		mannakennakem ‘think’
		ngo		manngo ‘how’
		rahet		manraherahet ‘criticize, speak evil of’

〔RAU & DONG 2006:109〕

a. Austronesian Nasal Substitution (ANS)

BLUST〔2004〕has documented the variations of the nasal substitution in Malagasy, Chamorro, Palauan, and languages of Philippines and western Indonesia. According to BLUST, the nasal substitution is a process that “replaces a base-initial obstruent with the homorganic nasal under prefixation” 〔BLUST 2004:73〕. BLUST has reported that the prefixation of *maŋ ‘active verb’ or *paŋ- ‘agent/instrument’ in many Austronesian languages induces replacement of base initial segment, as examples shown in (14). The conditions for the nasal substitution rule to apply vary across languages according to BLUST’s documentation. Hence, it is difficult to come up with a unified phonological rule to account for the ANS.

(14) Malay

a. pilih ‘choice, selection’ → me-milih ‘to choose’

b. tujuh ‘pointing at’ → me-nujuh ‘to point at’

c. sebut ‘saying, utterance’ → me-ñebut ‘to say, mention’

d. kail ‘fishing with rod and line’ → me-ŋail ‘to fish with rod and line’

〔BLUST 2004:73〕

Furthermore, BLUST〔2004〕has suggested three types of phonological

processes that resemble the ANS, but are distinct from it. These processes include pseudo nasal substitution (PNS), Pohnpeic nasal substitution, and Lamaholot nasal substitution. PNS is a phonological process that involves a truncation of initial CV that has a much narrower environment than the true ANS. The truncation is motivated by an avoidance of sequences of bVm- and pVm-, as shown in (15).

(15) Toba Batak

a. pate 'finish, extinguished' p-um-ate → mate 'to die'

b. boŋgal 'rising up quickly' b-um-oŋgal → moŋgal 'to seesaw'

〔BLUST 2004:77〕

Pohnpeic nasal substitution is observed only in Pohnpeian and Mokilese. The phonological change applies to a sequence of two identical voiceless consonants that results from reduplication; the first segment changes to a nasal that agrees with its following segment with place of articulation, as shown in (16).

(16) Pohnpeian

pap 'swim' pampap (from pap + pap)

kak 'able' kaŋkak (from kak + kak)

sas 'stagger' sansas (from sas + sas)

did 'build a wall' dindid (from did + did)

〔BLUST 2004:80〕

Lamaholot nasal substitution involves two morphological processes. The first one involves the replacement of initial consonant by a nasal segment that retains the place of articulation with the replaced segment while verbs are converted into nouns, as shown in (17). The second one involves prefixation of *mə-* and the replacement of the base-initial consonant with a fixed consonant *n-* that change the part of speech of the affixed stems, as shown in (18).

(17) Lamaholot

buʔa 'eat' → muʔa 'food'

dira 'to fan' → nira 'a fan'

takə 'to cover a roof' → nakə 'roof'

〔BLUST 2004:81〕

(18) Lamaholot

baʔat 'heavy' → mə-naʔt 'a heavy thing'

dorok 'push forward' → mə-norok 'container for transporting goods'

hamo 'sweep' → mə-namo 'broom'

ungar 'wound' → mən-ungar 'wounded; one who is wounded'

〔BLUST 2004:81〕

Among the 48 languages (19 spoken in the Philippines, 11 in Borneo, 6 in the Malay peninsula and Sumatra, 4 in the Java-Bali-Lombok region, 6 in Sulawesi, and 2 in western Macronesia) that BLUST〔2004〕has surveyed, he has employed four terms to describe the phenomena after the affixation of the reflexes of PMP *maŋ 'active verb' and *paŋ 'agent/instrument' in western

Malayo-Polynesian languages. These four terms are nasal substitution (NS), nasal accretion (NA), nasal deletion (ND), and vowel epenthesis (VE). NS is a process of replacing the base-initial obstruent with a homorganic nasal that has been mentioned in the previous paragraph and illustrated with examples of Malay in (14); NA refers to a process of the retention of the prefix coda that assimilates in place to the base initial segment[3]; ND refers to a process where the coda of the prefix is deleted; VE refers to a process where a vowel is inserted between the prefix and the base, as the examples shown in (19).

(19) Examples of NS, NA, ND, and VE

	Example
NS	Kapampangan bugbúg 'bruise, lump' → ma-mugbúg 'to bruise' 〔BLUST 2004:103〕
NA	Kapampangan dagdág 'something added' → man-dagdág 'to add something' 〔BLUST 2004:103〕
ND	Gorontalo sadiya 'prepared' → mo-sadiya 'to prepare' 〔BLUST 2004:98〕
VE	Kiput dalaw 'anger' → ŋe-dalaw 'be angry at someone' 〔BLUST 2004:104〕
	Malay/Indonesian tik 'tap, tick' → meŋe-tik 'to type'[4] 〔BLUST 2004:85〕

BLUST's survey has provided a description of variations of the nasal

[3] Blust (2004) has mentioned that nasal assimilation might be a better description for this process, but he has kept using nasal accretion in his paper. Hence, the term nasal accretion is used in the present study to avoid confusion.

[4] Blust (2004) has cited these examples from Macdonald and Soenjono (1967: 45) to illustrate that vowel epenthesis is one of the two options while the prefix attaches to monosyllable bases in Malay/Indonesian. The other option for this example is NA: tik 'tap, tick' → m**en**-tik 'to type'

substitution the he has observed in the 48 languages, and the tendency for the NS, NA, ND, and VE to occur. He has suggested that NS is frequently observed with bases initiated with voiceless obstruents, NA is usually observed with bases initiated with voiced obstuents, ND is often observed with bases initiated with nasals, liquids, or glides, and VE normally appears with bases initiated with voiced obstruents or monosyllable bases. In addition to that, BLUST has also discussed exceptions and variations that exist among these 48 languages and suggested that these variations are hardly accountable via phonological theories nowadays. BLUST's description is helpful while one seeks to describe a similar sound change pattern, namely, the nasal substitution in an individual language. In the following section, the sound inventory of Yami and its nasal substitution are discussed and related to the terms used in BLUST〔2004〕.

b. Yami Sound System and Nasal Substitution

HUANG〔2017〕has briefly discussed the prefix *man-/mang-* as one of the actor voice affixes in Yami and the sound change of base-initial segment after affixation via the comparison between the affixed predicates of actor and patient voice constructions, as shown in (20a) and (20b), respectively. The initial segment of the base *takaw* 'steal' is replaced by an alveolar nasal that has the same place of articulation with the original initial segment. The surface form of the actor voice affixed predicate becomes *ma-nakew* 'to steal'. Conversely, the base initial segment remains unchanged while the perfective affix *ni-* is affixed to it. The *ni-* affix also serves the function of the patient voice affix while no other voice affix is present. By comparing the actor and patient voice

constructions in Yami and observing the change of the initial segment of the base *takaw* after the affixation of *maN*-, that the nasal substitution process has taken place in Yami is confirmed. In the following sections, Yami sound inventory is briefly discussed followed with examples of Yami nasal substitution and its distribution within the language.

(20)

a. ya ni-ma-nakew (man-takew) si mapapo so kois
AUX PFV-AV-steal NOM PN OBL pig
'Mapapo sole pigs.'
〔HO 1990:103〕

b. ni-takew na ni mapapo o nizpi mo
PFV.PV-steal 3.S.GEN GEN PN NOM money 2.S.GEN
'Mapapo stole your money.'
〔HO 1990:103〕

c. Sound Inventory

According to HO〔1990〕, RAU & DONG 〔2005〕, and Chang〔2016〕, there are twenty consonants and four vowels in Yami, as shown in Table 5 and Table 6, respectively. There are twelve obstruents and eight sonorants. Obstruents include seven stops – four voiceless /p, t, k, ʔ/ and three voiced /b, ɖ, g/, three fricatives – one voiceless /ʂ/ and two voiced /v, ʁ/, and two affricates – voiceless /tɕ/ and voiced /dz/. Eight sonorants include three nasals /n, m, ŋ/, two approximates /l, ɹ/, one trill /r/, and two glides /w, j/.

Notice that Yami does not have writing system. The invention of the writing system is after the contact with outside world – Japan's colonization from 1895 to 1945 and the reign of Chinese. The missionaries have translated Bible into many aboriginal languages in Taiwan using the romanization system and Yami is one of them. Hence, Yami and Formosan languages have continued using the romanization system as their writing system. The alphabets beside the phonemes that are placed in slashes (//) are the writing forms of these phonemes in Yami.

Table 5 Yami consonants

	Labial	Alveolar	Retroflex	Palatal	Velar	Uvular	Glottal
Stop	/p/ p /b/ b	/t/ t	/ɖ/ d		/k/ k /g/ g		/ʔ/ ’
Fricative	/v/ v		/ʂ/ s			/ʁ/ h	
Affricate				/ʨ/ c /ʤ/ j			
Nasal	/m/ m	/n/ n			/ŋ/ ng		
Approximate		/ɹ/ r					
Lateral		/l/ l					
Trill		/r/ z					
Glide	/w/ w			/j/ y			

Table 6 Yami vowels

	Front	Central	Back
High	/i/ i		/o or u/ o
Mid		/e/ e	
Low		/a/ a	

d. Yami Nasal Substitution

According to RAU & DONG〔2006〕, the sound change applies not only to

voiceless obsturents /p, t, k, ʂ, tɕ/, as in (21)[5], but also to voiced labial stop /b/, retroflex stop /ɖ/, labial fricative /v/, and uvular fricative /ʁ/, as in (22), in Yami. However, nasal substitution does not consistently apply to the bases initiated with these phonemes in Yami. Variations will be discussed in the following subsection with reference to the four terms – NS, NA, ND, and VE that BLUST〔2004〕 has used in surveying the ANS among the 48 languages.

(21)

/p/ maN + paring 'build' → mamaring 'to build'

/t/ maN + taktak 'wet' → manaktak 'to wet'

/k/ maN + kali 'carry' → mangali 'to carry'

/ʂ/ maN + sidong 'help' → manidong 'to help'

/tɕ/ maN + cita 'see' → manita'to see'

(22)

/b/ maN + bakbak 'hit' → mamakbak[6] or man-bakbak 'to hit'

/ɖ/ maN + dengdeng 'cook → manengdeng 'to cook'

/v/ maN + vezed 'reserve' → mamezed 'to reserve' or man-vezed

/ʁ/ maN + hap 'take' → mangap 'to take'

In addition to RAU & DONG's list, stems initiate with the alveolar

[5] Notice that the examples provided in (20) and (21) are from author's own field notes to further confirm Rau and Dong's generalization that are cited in Table 4 in the previous sections (RAU & DONG 2006:109).

[6] The affix *maN-* attaches to the base *bakbak* 'hit' has two surface forms in Yami, one is *manbakbak* 'to hit', and the other one is *mamakbak* 'to hit'. The first one is more frequent than the second one, and the second one *mamakbak* is found in the Bible.

approximant /ɹ/ in Yami, are found to undergo NS after affixation of the *maN-*, as shown in (23). The affixation of actor focus/voice affix trigger NS. Notice that NS varies freely with the NA with the bases *raing* 'kill fish' and *rakep* 'catch' in examples (23b) and (23c), respectively, but application of NS is obligatory with the base *rotong* 'cook'. The ungrammaticality of *man-rotong* 'to cook' has suggested that NA is not permitted in this case.

(23)

a. maN- + rotong → manotong 'cook' (*man-rotong)

b. maN- + raing → manaing or man-raing 'to kill fish'

c. maN- + rakep → manakep or man-rakep 'to catch'

Furthermore, NS does not necessarily apply to bases that initiate with voiced labial stop /b/ and fricative /v/ in Yami, as show in (24a) and (24b), respectively. The base initial segment of these two examples has not been replaced by the nasal segment. Furthermore, the affix coda has not undergone assimilation – NA does not apply in these two cases as the affix coda does not assimilate to labial – the place of articulation of the base initial segment. These two examples might have suggested that the underlying form of the actor voice affix in Yami is *man-*.

(24)

a.	ya	man-bakbak	si	mapapo	so	kanakan
	AUX	AV-hit	NOM	PN	OBL	child

'Mapapo is hitting a child.' 〔HO 1990:69〕

b. ko ni-man-vozaw so angito
1.S.NOM PERF-AV-chase OBL ghost
'I have chased a ghost.'

The two examples in (24) have shown that the unpredictability of the nasal substitution process with bases initiated with voiced obstruents. The examples in (25) are exceptions found with bases that initiated with voiceless obstruents /p/, /k/, and /ʂ/, respectively. Similarly, the base initial segment is not replaced by a nasal segment and the assimilation process has not taken place with the affix coda in these three examples. From the examples in (24) and (25), the affix coda remains unassimilated, the NA process discussed in BLUST〔2004〕is not attested in Yami. The affix coda of examples in (23) should not be considered to have undergone an assimilation process as the affix coda might originally be the alveolar nasal /n/ that has happened to share the same place of articulation with the following base initial segment /ɹ/ (alveolar approximate).

(25)

a. ya man-pising si Macinanao so vakong
AUX AV-tear NOM PN OBL book
'Macinanao tears off a book.' 〔HUANG 2017:68〕

ko man-kava so lilisnan
1.S.NOM AV-tear OBL chair
'I break a chair.' 〔HUANG 2017:68〕

c. ya man-sagit so sakop si Macinanao
AUX AV-hook OBL hat NOM PN

'Macinanao is hooking a hat.' 〔HUANG 2017:68〕

Examples of monosyllable bases are rarely observed in Yami data. The most frequently observed monosyllable content bases are *(a)ngay* 'go', *ai* 'come', and *kan* 'eat'. Affixation of *maN-* is not observed with these bases. However, there is one monosyllable base found in RAU & DONG 〔2006〕 and no vowel epenthesis is observed after affixation of *maN-,* as shown in (26a). A possible monosyllable content base *mey* 'taro cake' shows no sign of VE as well and is provided in (26b).

(26)

a. maN + ngo → manngo 'how' 〔RAU & DONG 2006:109〕

b. maN + mey 'taro cake' → mangmey 'making taro cake'

For ND, no sign of deletion after the affixation of *maN-* has been observed, as shown in (27). The affix coda is not deleted after attaching to the bases initiated with the glide /w/, lateral /l/, and trill /r/ (written as *z* in the example), respectively, in (27).

(27)

maN + wakwak 'die' → manwakwak 'to kill'

maN + laik 'weed' → manlaik 'to weed'

maN + zakat 'die' → manzakat 'to kill'

For bases initiated with the lateral segment, ND seems to apply in some

cases, as shown in (28). The clause in (28) is a typical example of the actor voice construction in Yami – the nominative case-marked subject is the doer of the action, namely, the actor, and the entity that undergoes the influence of the action is case-marked by oblique case – *so*. Hence, the prefix *ma-* is glossed as actor voice (AV) affix. This *ma-* might be a variant of *maN-*. If this is the case, then a possible ND process might be found with the base that initiates with lateral segment /l/ in Yami.

(28)

ya	ma-lapoy	so	soli	si	Macinanao
AUX	AV-peel	OBL	taro	NOM	PN

'Macinanao is peeling a taro.'

Nasal substitution is an active phonological process in Yami that can be evident from its application to Japanese loanword *saki* 'wine', as shown in (29). The retroflex fricative /ʂ/ is replaced by the alveolar nasal after the affixation of the actor voice affix *maN-*.

(29)

na	ni-ai	ni	Macinanao	a	saki	am,	ya
3.S.GEN	PFV.PV-come	GEN	PN	LIN	wine	PAR	AUX
yop-en	nam,	ya	ji	ma-**naki**	so	tao	
drink-PV	PRT	AUX	NEG	AV-wine	OBL	people	

'The wine that Macinanao brought won't make people drunk.'

〔Huang 2017:150〕

There is no instance of NA and VE found in Yami. As for ND, the actor affix *maN-* is sometimes found to surface without its coda while it attaches to bases initiated with lateral segment. Furthermore, NS does not consistently apply across the language as exceptions could be found with bases initiated with voiceless obstruents /p, k, ʂ/, voiced obstruents /b, v/, and /ɹ/. The actor voice affix *maN-* always surfaces as *man-* while NS does not apply. Hence, it seems probable to postulate that the underlying form of actor voice affix in Yami is *man-*.

V. Conclusion

Yami and Formosan languages spoken in Taiwan belong to the same language family – Austronesian. According to BLUST〔2009:29〕, there are at least ten primary subgroups and nine of them are represented in Taiwan, as listed in (30).

(30) Ten primary subgroups of Austronesian language family

1. Atayalic (Taiwan): Atayal, Sediq (northern Taiwan)
2. East Formosan (Taiwan): Basay-Trobiawan (extinct), Kavalan, Amis, Siraya,
3. Puyuma (Taiwan): Puyuma
4. Paiwan (Taiwan): Paiwan
5. Rukai (Taiwan): Rukai
6. Tsouic (Taiwan): Tsou, Saaroa, Kanakanabu

7. Bunun (Taiwan):
8. Western Plains (Taiwan): Faokas, Favorlang/Babuza, Papora, Hoanya, Thao
9. Northwest Formosan (Taiwan): Saisiyat, Pazeh, Kulon
10. Malayo-Polynesian (extra-Formosan)

〔BLUST 2009:29-30〕

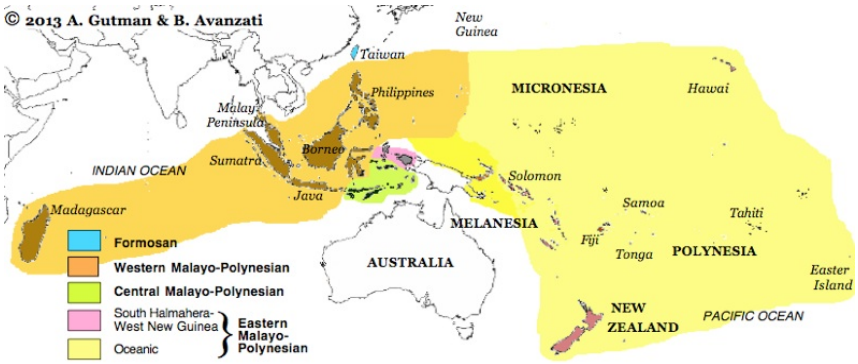
This paper discusses some share features between Yami and Formosan languages. The share features that have been discussed in this paper include voice system, pronominal system, and word order. The voice system is unique to Austronesian languages as its subject can bear different thematic roles including actor, patient, location, instrument, etc. In addition to that, word order and pronominal system of Yami also resemble Formosan languages. There is a tendency for these languages to initiate clauses with verbal elements and to have different case bearing pronouns (nominative and genitive) in both free and bound forms. These features clearly show the relativeness of Yami and the Formosan languages.

There are features that Yami has exhibited that are not observed in Formosan languages. These features include the existence of the actor voice affix maN- and the nasal substitution after its affixation. The actor voice affix maN- in Yami as RAU & DONG〔2006〕have suggested is the reflex of PEF *maN- and its arguments involve a nominative case-marked actor and oblique case-marked patient. By examining maN- affixed predicates and comparing them with the four types of ANS that BLUST has suggested, instance of NA and VE is not found in Yami, but NS does apply across the language with some

inconsistencies. Bases initiated with voiceless obstruents /p, k, ʂ/, voiced obstruents /b, v/, and /ɹ/ are found to participate in NS in some cases.

The affixation of maN- is not found among Formosan languages; hence, the absence of the phonological process – ANS. This has suggested that Yami is somewhat more closely related to the Malayo-Polynesian languages as NS is widely observed in some of the languages in this subgroup – the WMP languages. The languages that have exhibited ANS that BLUST has discussed include Malagasy, Chamorro, Palauan, and languages of Philippines and western Indonesia and from the map in (31) these languages are mainly spoken in the southeastern part of Asia. Hence, Yami geographically and politically belongs to Taiwan where Formosan languages are spoken, but is linguistically more closely related to the WMP languages that belong to the tenth primary subgroup (Malayo-Polynesian) of Austronesian language family.

(31)



The nasal substitution process of Yami has suggested its relativeness with

the WMP languages. WMP as a subgroup of Malayo-Polynesian remains controversial as the areal feature – nasal substitution after the affixation of the actor voice affix maN- remains debatable. This debate might still remain puzzled if works on similar phonological changes of individual language remain undone.

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