CHAPTER 17

Verbal Morphology of Formosan Languages

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17.1 Introduction[1]

In the Formosan languages, most of the functional load is on verbs, which thus exhibit very complex morphology. The present chapter deals with verbal morphology with a special emphasis on voice and verb classes. Topics relating to other aspects of verbs and verb phrases (e.g., valency-changing morphology, aspect, mood and modality, transitivity and alignment, and negation) are tackled in detail in other chapters of this handbook.

The discussion of verbal morphology is complicated by a number of factors: (i) differences in terminology, (ii) unsettled issues about the characterization

1 Unless mentioned otherwise, data are based on the authors' respective field notes.

of voice and verb classes, and (iii) lack of more general overviews covering all or most of the Formosan languages.

The voice system of the Formosan languages has been described in a parallel fashion with other Austronesian languages, and over time, the terminology has been adapted to descriptions of extra-Formosan languages and chosen according to each researcher's empirical assumptions and theoretical backgrounds.

The voice system of the Formosan languages is not homogeneous. Different voices can be distinguished, but some may have been lost, alternative strategies having been adopted, while others that are actually nominalized forms have sometimes been incorrectly analyzed (see Teng & Zeitoun 2016 for a discussion of the Kanakanavu and Saaroa voice system). As far as verb classes are concerned, different classifications obtain, according to whether one considers morphology (Tsuchida 1976, Ross 2015), semantics (Tsukida 2008), Aksionsart (Peng 2016), or cognition (Maya Y. Yeh 2013).

Verbalization (i.e., the morphological change of a nominal root into a verbal stem), and the verbal prefixes that are part of this process, has never been discussed from a cross-linguistic perspective.

To address the aforementioned issues, we first provide a definition of voice in § 17.2, followed by a short history of the terminology used by Formosanists, their views, and the ways in which they have evolved (§ 17.3). We examine voice in Formosan languages in § 17.4 and turn to a discussion of verb classes in § 17.5. Finally, § 17.6 deals with verbalization and verbal prefixes.

17.2 An Attempt at a Definition of "Voice" in Formosan Languages

As a preamble, most Formosan languages[2] exhibit a voice system characterized by multiple voice types—distinguished on morphological, syntactic, and discourse levels—that select a noun or a noun phrase (i.e., a subject) as the preferred syntactic argument.

Morphologically, voice selection is reflected in the obligatory linguistic marking of the verb through a designated voice affix (subject to mood and polarity) that correlates with the choice of the subject, a nominal argument prototypically marked on the syntactic level by a case marker. Voice selection is controlled by factors of discourse continuity and prominence, though this

2 Rukai will not be further discussed in this chapter, since it displays an active-passive voice dichotomy similar to that of Indo-European languages, with characteristics that are discussed elsewhere in Zeitoun (this handbook-c, Chapter 17).

might not be reflected in the decontextualized examples necessarily chosen to illustrate different concepts and situations in an overview of this sort.

At least two voice realizations can be distinguished, AV (actor voice) and UV (undergoer voice). Undergoer voice (UV) is a cover term that subsumes three voice types for the languages with such system and includes patient voice (UVP), locative voice (UVL), and circumstantial voice (UVC). Not all verbs appear in all four voices.

An AV-marked verb typically selects the actor as subject (1a) while a UV- or UVP-marked verb selects the patient (1b). A UVL-marked verb may select a goal, a location (1c), or a less affected undergoer as the subject (1c'), and a UVC-marked verb may subcategorize as subject an instrument (1d), beneficiary, or transported theme. There is usually a contrast between the subject, marked as nominative, and non-subject arguments. Though it is difficult to generalize, in most cases, non-subject actors are marked as genitive and non-subject undergoers as oblique.

(1) Mayrinax Atayal (L. Huang 1995a)

a. *c⟨**um**⟩abu' cu' qulih ku' nabakis.*
⟨AV⟩wrap ACC.NREF fish NOM.REF old.man
'The old man is wrapping/wrapped the fish.' (p. 41)

b. *niq-**un** nku' nabakis ku' bunga'.*
eat-UVP GEN.REF old.man NOM.REF sweet.potato
'The old man ate the sweet potato.' (p. 45)

c. *qilap-**an** ni' yaya' ku' paga'=su'.*
sleep-UVL GEN mother NOM.REF bed=2SG.GEN
'Mother slept on your bed.' (p. 52)

c'. *tal-**an** nku' nabakis ku' 'ulaqi'.*
see-UVL GEN.REF old.man NOM.REF child
'The old man saw the child.' (p. 52)

d. ***si**-cabu' cu' qulih nku' nabakis ku' abag.*
UVC-wrap ACC.NREF fish GEN.REF old.man NOM.REF leaf
'The old man used the leaf to wrap fish.' (p. 55)

Both dynamic verbs (1) and stative verbs (2) can be marked for voice.

(2) Wulai Atayal (L. Huang 1995b, p. 82)
a. ***s⟨m⟩yaqih***=*ku'* *Tali'.*
⟨AV⟩dislike=1SG.NOM Tali
'I dislike Tali.'

b. ***sqih-un***=*mu* *Tali'.*
dislike-UVP=1SG.GEN Tali
'I hate Tali.' (though he has done nothing wrong)

It is noteworthy that in some Formosan languages, voice markers and nominalizers are identical in form. They basically refer to the same mechanism: voice encodes the relationship between a verb and its subject through the occurrence of a voice affix (3a); nominalization expresses the relationship between a derived verb and its head noun through the occurrence of a nominalizing affix (3b).

(3) Tungho Saisiyat
a. *tawmo' ma'an* ***ka***-*si'ael*-***en***.
banana 1SG.GEN IRR-eat-UVP
'I will eat the banana.'

b. *ma'an* ***ka***-*si'ael*-***en*** (*ka*) *tawmo' book=ila.*
1SG.GEN IRR-eat-PAT.NMLZ (LNK) banana rotten=COS
'The banana that I wanted to eat is rotten.' (Lit. 'The banana that I will eat is rotten.')

17.3 A Short History of the Voice Terminology[3]

As shown in Table 17.1, a wide range of terminology has been utilized since the mid-1960s to characterize the verbal affixes that encode the subject in Formosan languages. Most of these analyses are based on studies of Western Austronesian languages (a geographical area encompassing the Austronesian languages spoken in Taiwan, the Philippines, mainland Southeast Asia, Indonesia, Borneo, and Madagascar, and including also Palauan and Chamorro) as the

3 The viewpoint adopted in this section differs slightly from (while complementing) those of Blust (2002), who discusses from a much broader perspective the history of "focus" in Austronesian languages, and Ross & Teng (2005, pp. 744–746), who provide a careful historiography of the Philippinist approach from its very beginning.

Formosan languages have been shown to display similar morphosyntactic features to those found in "Philippine-type" languages. Each approach provides a convenient way to account for the intricacies of the verbal morphology of the Formosan languages, and they reflect, as such, different empirical assumptions and theoretical backgrounds.

TABLE 17.1 Chronology of terminologies

Author	Language	Terminology	Status of the predicate
Egerod (1965, 1966)	Squliq Atayal	active	verbal
		passive	nominal
Tsuchida (1976)	Kanakanavu, Saaroa, Tsou,	focus	verbal
Ferrell (1982)	Paiwan	focus	nominal
Yeh (1991)	Taai Saisiyat	focus	verbal
Zeitoun (1992)	Tsou	focus	verbal
L. Huang (1993)	Wulai Atayal	voice	verbal
L. Huang (1995)	Mayrinax Atayal	focus	verbal
Lee (1997)	Kavalan	focus	verbal
H. Chang (1997)	Kavalan, Seediq	voice	verbal
Liu (1999)	Central Amis	voice	verbal
Wu (2006)	Central Amis	voice	verbal
		applicative	
A. Chang (2006)	Paiwan	symmetrical voice	verbal
Teng (2008)	Nanwang Puyuma	transitivity	verbal
H. Chang (2011)	Tsou	transitivity	verbal
		applicative	
Zeitoun et al. (2015)	Tungho Saisiyat	voice	verbal
L. Li (2018)	Isbukun Bunun	voice	verbal

Egerod (1965, 1966), following Bloomfield's (1917) approach, is one of the few Formosanists to have argued that verbs in Squliq Atayal are active or passive. He describes the active voice, marked by *m-*, ⟨*m*⟩, or zero, as a construction that "contains an implicit or explicit reference to a person, animal, or thing which possesses the characteristic or performs the action expressed by the verb" (Egerod 1965, p. 270). He mentions that "[t]he passive is a nominal form which can be modified by a secondary (possessive) pronoun or a noun preceded by the particle of adjugation *na'* (genitive) to designate the agent" (Egerod 1966,

p. 346). He further divides passive into three different types: the first (or definite) passive, *-an*, encodes a locative, the second (or indefinite) passive, *-un*, designates the goal as the subject, and the third (relational) passive, *s-*, "indicates a reason for the action or a means by which it is undertaken" and typically selects the instrument as a subject (ibid., p. 347).

From the early 1970s onward, until the early 21st century, the term "focus" was used to describe the Formosan languages, following a tradition established by members of the Summer Institute of Linguistics (SIL)[4] such as Thomas (1958) and Healey (1960). Its use was intended to draw attention to the fact that the verbal system of Philippine languages was quite different from the "voice" of the Indo-European languages in terms of subject selection and markedness. It was demonstrated that in Philippine languages, verbal affixes are used to signal the nominal selected as the most prominent argument of a clause, with non-actor foci more frequent and less marked than the actor focus. In contrast, in Indo-European languages, there is only one passive voice, which is more marked, with the demotion of the agent and the promotion of the patient. The term "subject" was also problematic, as this function is reflected differently on the morphosyntactic level in the Philippines than in Indo-European languages and was replaced with the notion of "topic" by McKaughan (1962). The descriptions of the focus systems of Mayrinax Atayal, Kanakanavu, Kavalan, Paiwan, Saaroa, Saisiyat, and Tsou correspond to the definition given in §17.2, so there was no misconception or misuse of "focus" among the Formosanist community, and this term continues to be used in linguistic studies written in Chinese. As mentioned in Blust (2002, p. 63), however, "the grammatical category of focus in Austronesian (AN) languages has been a source of descriptive and theoretical confusion for the better part of a century." In the late 1990s, the term was replaced with "voice" by H. Chang (1997) and Liu (1999), but while the former opposes the morphosyntactic notions of "topic" and "focus" as understood in the Philippine-type languages in favor of the pragmatic concepts of "topic" and "focus," the latter makes it clear that these can be viewed as alternative labels. From 2010 onward, the term "voice" has been largely adopted in Formosan linguistics because of the pressure to be understood academically by typologists around the world, though, for instance, H. Chang (2011) decided to adopt another term, as shown below.

4 SIL International, formerly known as the Summer Institute of Linguistics, is a non-governmental organization whose purpose is "to work with language communities worldwide to facilitate language-based development through research, translation and literacy." (Quankenbush 2005, p. 3).

In the early 21st century, three different terms appeared, "transitive," "symmetrical voice," and "applicative," which are defined in their contexts below. The "transitive" terminology was adopted by Ross & Teng (2005) and Teng (2008) in an attempt to characterize the voice system of Nanwang Puyuma in terms of transitivity.[5] They showed that Puyuma exhibits two types of constructions (intransitive (ITR) vs. transitive (TR)), distinguished in terms of valency: transitive sentences (subsuming three types of transitive clauses, TR1, TR2, and TR3) exhibit two core arguments, a nominative subject and a non-subject actor marked as genitive and cross-referenced on the verb through a proclitic; intransitive clauses only display one core argument but cannot be treated as anti-passive, despite the S/O alignment, because verbs are always marked morphologically for transitivity (or voice). Table 17.2 presents a comparison of the case marking and verbal morphology of Nanwang Puyuma with that of ergative Dyirbal and accusative English.

TABLE 17.2 Case alignment and transitivity in Dyirbal, Nanwang Puyuma, and English

	Dyirbal	**Puyuma**	**English**
Case marking	S + O	S + O	S + A
Verbal morphology	ITR + OVOICE	ITR + AVOICE	ITR + AVOICE

ROSS & TENG 2005, P. 752

A. Chang (2006, pp. 423–426) was one of the first writers to adopt the term "symmetrical voice" (following Himmelmann 2005) to characterize the voice system of Paiwan, which is neither ergative nor accusative but displays more than one basic construction, with different voices being marked equally in terms of verbal morphology, i.e., there is no increased or decreased morphological marking.

Wu (2006, pp. 107–113) introduced the "applicative" terminology in Formosan languages to account for the complex verbal system of Amis, summarized schematically in Table 17.3.

5 An applicative analysis was not adopted because the voice system of Nanwang Puyuma differs from typical applicatives (Ross & Teng 2005, pp. 758–759).

TABLE 17.3 Voice and applicative morphology in Central Amis

Voice			
actor voice (AV)	*mi-*	*⟨um⟩*	*ma-*
undergoer voice (UV)	*ma-*	*ma-*, (*ma-...⟨um⟩*)	(*ma-...ka-*)
	-en		*-en*, *ka-...-en*
Applicatives			
instrumental	*sa-pi-*	*sa-ka-...⟨um⟩*	*sa-ka-*
locative goal	*mi-...-an*	—	—
patient	*mi-...-an*	*⟨um⟩...-an*	*ka-...-an*
location	*pi-...-an*	*ka-...-an*	*ka-...-an*

WU 2006, PP. 108, 113

She shows that Amis voice exhibits an AV-UV dichotomy, marked by *mi-*/*⟨um⟩*/*ma-* and *ma-*/*-en*/*ka-...-en*, respectively, as in (4a–b), along with the applicative markers *sa-* and *-an*, which co-occur with both AV and UV markers (4c–e).

(4) Central Amis (based on Wu 2006)

a. ***mi-****tuniq ku kuwaq tu ti'ti'.*
AV-soft NOM.CN papaya OBL.CN meat
'The papaya will tenderize the meat.' (p. 174)

b. *tuniq-**en** aku/*n-u kuwaq ku ti'ti' aca.*
soft-UV 1SG.GEN/GEN.CN papaya NOM.CN meat a.little
'I/*the papaya will tenderize the meat a little.' (p. 174)

c. ***mi-****nanum-**an** ni Aki ku sayta.*
MI-water- LOC.APPL GEN.PN Aki NOM.CN soda
'What Aki drank is the soda.' (p. 346)

d. ***sa-pi-****adup ni mama tu lutuk ku*
INST.APPL-PI-hunt GEN.PN father OBL.CN mountain NOM.CN
iduc.
spear
'Father hunts mountain pigs with the spear.'
'The spear is what Father hunts mountain pigs with.' (p. 111)

e. ***ma-sa**-pi-sanga* *ni* *Aki* *tu* *takid* *Kuya*
UV-INST.APPL-PI-make GEN.PN Aki OBL.CN bottle NOM.CN.that
aol.
bamboo
'Father hunts mountain pigs with the spear.'
'The spear is what Father hunts mountain pigs with.' (p. 411)

H. Chang (2011, p. 289ff.) adopts both Ross & Teng's (2005) "transitivity" approach and Wu's (2006) applicative analysis in Tsou. He posits an AV-UV dichotomy, marked by the intransitive marker *m-* and the transitive (TR) marker *-a*, respectively, along with two applicative affixes, the locative *-i* and the benefactive/instrumental *-(n)eni*. He glosses nominal arguments ergatively, so that the nominative is relabeled "absolutive," and the genitive, "ergative." He offers three reasons to account for this change in terminology: (i) valency increases with voice markers; (ii) in causative and triadic constructions, a UV-marked verb (5a) or a verb suffixed by the locative applicative *-i* (5b) can be further suffixed by *-(n)eni*; (iii) the occurrence of different "voice" markers on the same verb stem yields different meanings, e.g., 'buy' vs. 'sell', incompatible, in H. Chang's view, with a voice system.

(5) Tsou (H. Chang 2011, p. 288)
a. *i=si* *poa-an-a-**neni*** *to* *Pasuya* *to* *Voyu* *'o*
TR=3SG CAUS-eat-TR-BEN.APPL OBL Pasuya OBL Voyu NOM
f'ue.
sweet.potato
'Voyu made Pasuya eat the sweet potatoes.'

b. *i=ko=n'a* *phin-i-**neni*** *to* *simeo* (*na*) *a'o.*
IRR=2SG=DIM buy-LOC.APPL-BEN.APPL OBL pork NOM 1SG
'Buy some pork for me!'

17.4 Voice

In this section, we examine the number of voices across the Formosan languages (§17.4.1) and voice paradigms (§17.4.2).

17.4.1 *Number of Voices across the Formosan Languages*

Most Formosan languages (Atayal, Seediq, Paiwan, Saisiyat, Bunun, Puyuma, and Tsou) exhibit four voices (AV, UVP, UVL, and UVC) even if in some of these languages (e.g., Saisiyat), the locative voice is more restricted in distribution. Thao has only three voices (AV, UVP, and UVL), but these are different from Saaroa, which displays AV, UVP, and UVC, the last of which is far less productive. Kanakanavu, Kaxabu, and Kavalan only display two voices, AV and UV, but while the UV morpheme is *-un* or *='en* in the former two languages, only *-an* is found in Kavalan. As was shown in §17.3, Amis distinguishes two voices (AV and UV) and two applicatives (LOC.APPL and INST.APPL).

TABLE 17.4 Number of voices across the Formosan languages

4 voices

Atayal	**Seediq**	**Paiwan**	**Saisiyat**
AV: *M*-stem[6]	**AV:** *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem
UVP: stem-*un*	**UVP:** stem-*un*	**UVP:** stem-*in*	**UVP:** stem-*en*
UVL: stem-*an*	**UVL:** stem-*an*	**UVL:** stem-*an*	(**UVL:** *ka*-stem-*an*)
UVC: *si*-stem	**UVC:** *se*-stem	**UVC:** *si*-stem	**UVC:** *shi*-stem

Bunun	**Puyuma**	**Tsou**	**Pazeh**
AV: *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem
UVP: stem-*un*	**UVP:** stem-*aw*	**UVP:** stem-*a*	**UVP:** stem-*en*
UVL: stem-*an*	**UVL:** stem-*ay*	**UVP:** stem-*i*	**UVL:** stem-*an*
UVC: *'is*-stem	**UVC:** stem-*anay*	**UVL:** stem-(*n*)*eni*	**UVC:** *saa*-stem

3 voices		**2 voices**		
Thao	**Saaroa**	**Kanakanavu**	**Kaxabu**	**Kavalan**
AV: *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem	**AV:** *M*-stem
UVP: stem-*in*	**UVP:** stem-*a*	**UVP:** stem-*un*	**UVP:** stem'=*en*	**UVP/UVL:** stem-*an*
UVL: stem-*an*	**UVL:**—	**UVL:**—	**UVL:**—	
UVC:—	(**UVC:** stem-*ani*)	**UVC:**—	**UVC:**—	**UVC:**—

6 *M*-stems refer to any type of AV marking, following Ross (2015).

TABLE 17.4 Number of voices across the Formosan languages (*cont.*)

2 voices and 2 applicatives
Amis **VOICES:** **AV:** *M*-stem **UVP:** stem-*en* **APPLICATIVES:** **LOC:** stem-*an* **INST:** *sa-pi*-stem

The most drastic change is from the suffix form *-en*, still found in Pazeh, as in (6a), to a clitic form *='en* in Kaxabu, as illustrated in (6b) (see Zeitoun & Lim, this handbook, Chapter 51).

(6) Pazeh (Lin 2000, p. 125)
a. *kalapu-**'en** ni ina ki rakihan.*
hold.in.arms-UVP GEN mother NOM child
'The child is held by (his) mother in her arms.'

b. Kaxabu (Zeitoun & Lim, this handbook, Chapter 51)
*titay ngazip=**'en ni** balan=lia.*
mouse bite=UVP GEN cat=COS
'The mouse was bitten by the cat.'

17.4.2 *Voice Paradigms*

Voice in Formosan languages interacts closely with mood (indicative and non-indicative) and aspect (perfective and imperfective). Both categories are marked on the verb, with some cross-linguistic variation (see Zeitoun, this handbook-a, Chapter 18). The indicative mood is used to make an assertion or ask a question. The non-indicative mood serves to make a command, a request, a wish, or a suggestion and subsumes imperative, hortative, and optative; the non-indicative may also encompass the subjunctive and nondependent verb forms. Table 17.5 shows voice contrasts in indicative and non-indicative affirmative moods.

TABLE 17.5 Interaction between voice and mood in affirmative clauses

Affirmative			AV[7]	UV		
				UVP	UVL	UVC
IND	REAL	**Mx Atayal**	*M*-stem	STEM-*un*	STEM-*an*	*si*-STEM
		Seediq	*M*-stem	STEM-*un*	STEM-*an*	*se*-STEM
		Saisiyat	*M*-stem	STEM-*en*	*ka*-STEM-*an*	*shi*-STEM
		Thao	*M*-stem	STEM-*in*	STEM-*an*	–
		Kavalan	*M*-stem[8]	STEM-*an*	–	
		Paiwan	*M*-stem	STEM-*in*	STEM-*an*	*si*-STEM
		Nw Puyuma	*M*-stem	STEM-*aw*	STEM-*ay*	STEM-*anay*
		Kanakanavu	*M*-C*a*-STEM	STEM-*un*	–	–
		Saaroa	*M*-C*a*-STEM	STEM-*a*	–	(STEM-*ani*)
		Isb Bunun	*M*-STEM	STEM-*un*	STEM-*an*	*'is*-STEM
		Tsou	*M*-STEM	STEM-*a*	STEM-*i*	STEM-(*n*)*eni*
NIND	IMP	**Mx Atayal**	STEM	STEM	STEM-*i*	STEM-*ani* *ani* STEM *an* STEM
		Seediq	STEM	STEM-*i*	STEM-*i*	STEM-*ani*
		Saisiyat	STEM	STEM-*i*	STEM-*ani*	STEM-*ani*
		Thao	STEM	STEM-*i*	–	
		Kavalan	(STEM-*ka*)	(STEM-*ika*)	–	–
		Paiwan	STEM-*u*	STEM-*u*	STEM-*i*	STEM-an
		Nw Puyuma	STEM	STEM-*u*	STEM-*i*	STEM-an
		Kanakanavu	*M*-STEM-*a*	STEM-*o*	–	–
		Saaroa	*M*-STEM-*a*	STEM-*u*	–	(STEM-*ani*)
		Isb Bunun	*M*-STEM-*a*	STEM-*av*	STEM-*av*	*'is*-STEM-*av*
		Tsou	–	–	–	–

7 While AV distinguishes many allomorphs, due to assimilation, dissimilation, or deletion processes, with several different morphemes signaling variegated verb classes (see §17.5), there are very few allomorphs for UVP, UVL, and UVC suffixes (see H. Huang, this handbook, Chapter 8).

8 Certain languages, such as Tsou, do not have any distinctive verbal morphology. In the non-indicative cells, this is indicated by '–'.

Atayal examples in the indicative (realis) were given in (1). For ease of comparison, Atayal examples in the non-indicative (imperative) are shown in (7).

(7) Mayrinax Atayal (L. Huang 1995a)

a. ***aras*** *cu'* *qusia'!*
bring.IMP.AV ACC.NREF water
'Bring water!' (p. 61)

b. ***aras*** *ku'* *qusia'!*
bring.IMP.UVP NOM.REF water
'Bring the water!' (p. 62)

c. *tal-**i*** *ku'* *'ulaqi'!*
see-IMP.UVL NOM.REF child
'Look at the child!'/'Take care of the child!' (p. 66)

d. *palalu'-**ani*** *ku'* *'ulaqi'!*
swing-IMP.UVC NOM.REF child
'Swing the child!' (p. 69)

Note that there are a few languages in which the AV voice marker ⟨*um*⟩ (or its phonological variants) is completely absent, and only *mu-* (and variants) is found. That is the case of Pazeh-Kaxabu and Sakizaya Amis, e.g., Kaxabu *meken* 'eat (AV)', Sakizaya Amis *mu-kan* 'eat (AV)' (as opposed to Paiwan *k⟨em⟩an* 'eat (AV)').

In Atayal affirmative imperative clauses, *ani* can occur as a suffix (8a) or an independent morpheme (8b), in which case the verb form that follows is not the stem but the UVC (realis/neutral) form. There is also a shortened form, *an*, as shown in (8c), encoding the same function. Thus, Atayal has three different ways of indicating the UVC imperative.

(8) Squliq Atayal (Huang & Hayung 2018)

a. ***sbw-ani*** *sumul* *i* *yaya'=su'.*
wrap-UVC.IMP glutinous.rice NOM mother=2SG.GEN
'Wrap glutinous rice for your mother!'

b. ***ani*** ***s-sabu'*** *sumul* *i* *yaya'=su'.*
UVC.IMP UVC-wrap glutinous.rice NOM mother=2SG.GEN
'Wrap glutinous rice for your mother!'

c. ***an*** ***s-sabu'*** *sumul* *i* *yaya'=su'.*
UVC.IMP UVC-wrap glutinous.rice NOM mother=2SG.GEN
'Wrap glutinous rice for your mother!'

In the non-indicative mood, Kanakanavu makes a distinction between imperative and directive in AV and UV clauses: AV-imperative verbs are marked by *M-…-a* (9a); imperative UV-marked verbs are suffixed by *-un* (9b). The directive is encoded by M-…*-an* in AV-marked verbs (9c) and *-on* in UV-marked verbs (9d).

(9) Kanakanavu (Zeitoun & Teng forthcoming)
a. ***m****-arosik-****a*** *'araravang!*
AV.DEP-sweep-IMP inside.of.house
'Sweep the floor (of the house)!'

b. *vo-****o****=ku* *vantuku!*
give-IMP.UV=1SG.NOM money
'Give me the money!'

c. *um-ala-****(a)n****=kasu* *tikuru* *ma-sinang*
AV.DEP-take-DIR=2SG.NOM clothes STAT-red
'Try to take the red clothes!'

d. *pana'-****on*** *tapenange* *isa!*
shoot-DIR.UV bird that
'Try to shoot that bird!'

There are two types of negative constructions in Formosan languages: one that allows the verb to occur in the indicative realis form, in e.g., Thao, Tsou, Kavalan, Bunun, and to some extent Kanakanavu, and another one, which requires a special form of the verb, which we call "con-negative" form, in e.g., Atayal, Puyuma, Saaroa, and to some extent Kanakanavu. Con-negative forms in Seediq and Saisiyat are homophonous with non-indicative imperative forms, which were shown in Table 17.5. Some languages exhibit specific con-negative forms that are different from the non-indicative imperative. Table 17.6 shows these special con-negative forms and their interaction with voice.

TABLE 17.6 Special con-negative forms and their interaction with voice

Con-negative form	AV	UV		
		UVP	UVL	UVC
Mx Atayal	STEM	STEM-*i*		STEM-*ani*
Puyuma	C*a*-STEM	C*a*-STEM-*i*		STEM-an
Kanakanavu	*M*-STEM	STEM-*e*	–	–
Saaroa	STEM	–	–	–

We showed in (7) that in the imperative, Atayal UV-marked verbs are unmarked for voice. They are marked by *i-* in their negative forms. Compare (7a) with (10a–b).

(10) Mayrinax Atayal (L. Huang 1995a, p. 63)
a. *kaa* ***ras-i*** *ku'* *qusia'!*
PROH bring.UVP.CONEG NOM.REF water
'Don't bring the water!'

b. *ini'=mu* ***ras-i*** *ku'* *qusia'!*
NEG=1SG.GEN bring.UVP.CONEG NOM.REF water
'I did not bring the water!'

Kanakanavu exhibits two types of negators. The verb occurs in the realis with the negator *ka'an* (11a), but a con-negative form is required with the negator *kuu* (see Zeitoun & Teng 2016, Zeitoun, this handbook-b, Chapter 48).

(11) Kanakanavu (Zeitoun & Teng 2016)
a. ***ka'an***=*ku* ***c⟨um⟩a~cи'ʁra*** *manu* *isa.*
NEG=1SG.NOM ⟨AV⟩RED~see child that
'I did not see that child.' (p. 172)

b. ***kuu***=*pa*=*ku* ***c⟨um⟩и'ʁra*** *cau* *isa.*
NEG=still=1SG.NOM ⟨AV⟩see person that
'I have not seen that person yet.' (p. 173)

The negators that occur in languages such as Isbukun Bunun and Tsou do not cause a change in verbal morphology, and the verb occurs in the indicative realis form, as shown in (12a–b) and (12c–d).

(12) Isbukun Bunun (L. Li 2018)

a. *ni saia* ***m⟨in⟩aun*** *tu kauman.*
NEG 3SG.NOM ⟨PFV⟩AV.eat LNK few/little
'He/She did not eat even a little.' (p. 247)

b. ***m⟨in⟩aun****=ik saitin tu 'iu mindudu=in.*
⟨PFV⟩AV.eat=1SG.NOM this.OBL LNK medicine recover=PRF
'I recovered after I took medicine.' (p. 126)

c. Tsou
oh=ta ***su'ngova*** *'o mamespingi.*
UV.REAL.REM=3SG.GEN angry:UVP NOM woman
'He is angry at the woman.' (based on Zeitoun 1992, p. 27)

d. *o'a oh=ta* ***su'ngova*** *'o mamespingi.*
NEG UV.REAL.REM=3SG.GEN angry:UVP NOM woman
'He is not angry at the woman.'

In Thao and Paiwan, only the prohibitive (i.e., negative imperative) requires the verb to bear a con-negative affix, as opposed to predicative negators, which occur in declarative clauses and do not cause any change in verbal morphology. Note that in Thao, the con-negative is homophonous with the non-indicative imperative from (see Table 17.5). An example is given in (13).

(13) Thao (Blust 2003)

a. *antu* ***qusaz-in*** *tilha.*
NEG:LNK rain-UVP yesterday
'Yesterday, it did not rain.' (p. 295)

b. *ata tu* ***kathaw-i*** *thithu!*
PROH LIG laugh-UVP.NEG 3SG.NEUT
'Don't laugh at him/her.' (p. 344)

17.5 Verb Classification

Different verb classifications have been proposed for the Formosan languages (Tsuchida 1976, Jeng 1981, Chen 1987, Y. Huang 1988, Zen 1989, Zeitoun & Huang 2000, Wu 2006, Meili M. Yeh 2003, Tsukida 2008, Maya Y. Yeh 2013, Peng 2016 among others). These studies were carried out from diverse perspectives (morphological, syntactic, semantic, and cognitive). Various morphosyntactic tests have been put forward to categorize verbs in Formosan languages, and different results obtain. The most representative are briefly summarized below.

17.5.1 *Tsuchida's (1976) Morphological Classification*

Tsuchida (1976) contributed to the very first classifications of Formosan languages with his synchronic description of Kanakanavu, Saaroa, and Tsou and is one of the few authors to have focused on the morphological markers of AV verbs ("AF" in his terminology) and their UV counterparts (his "NAF"), showing how voice and other verbal categories are intertwined. On the basis of the correspondence between a certain voice affix and a certain verb class, he defines four major word classes in Kanakanavu and Saaroa and five in Tsou, each with subclasses, as illustrated in Table 17.7. We do not provide the whole categorization system, since the display is sometimes difficult to understand, and Tsuchida mixes "mood" and "aspect", treating imperative as a kind of aspect, for instance.

TABLE 17.7 Tsuchida's (1976, pp. 43–47) verb classification of Kanakanavu (imperfective paradigm)

Imperfective				
Verb class		**AV**	**UV**	**Gloss**
I-1a	⟨*um*⟩~∅	*k⟨um⟩a~kaun*	*kaun-un*	'eat'
I-1b		*mu-a-pana'u*	*pana'-un*	'shoot'
I-2a		*r⟨um⟩a-cukucu*	*ra-cukuc-un*	'step on'
I-2b		*t⟨um⟩ani-ula'u*	*tani-ula'-un*	'maltreat'
II-1	*m-~∅*	*mali-su' ulu*	*ali-su' ul-un*	'pull'
II-2		*m-u-a-kusa*	*u-kusa-un*	'go toward'
III-1	*m-~p-*	*m-atu-punu*	*p-atu-punu-un*	'throw'
III-2		*m-a-a-cina*	*p-a-cina-un*	'wash oneself'
IV-1	∅	*taku-tavala'u*	*taku-tavala'-un*	'understand'
IV-2		*tu-a-puru*	*tu-a-puru-un*	'sit'

17.5.2 *Chen's (1987) Lexicase Classification*

Working in the Lexicase Theory proposed by Starosta (1972ff.), Chen (1987) attempted to provide a classification of Nataoran Amis verbs based on their case forms and case relations. A first classification is obtained by referring to the case-frame feature of each verb. To refine this classification, the author further examines the implicational relation between case forms (CF) and case relations (CR), the inherent semantic features and the morphological shapes of the verbs. The author primarily classifies verbs into three major classes, non-agentive, transitive, and impersonal, and seven subclasses. Subclasses are determined in terms of the semantic and morphological features of the subcategorized elements. Chen's (1987, p. 164) main purpose is to show that to a large extent, verb classes defined by case-frame features and the correspondences between CF and CR match the morphological classes of verbal affixes, as well as the classification based on inherent semantic features. In other words, case, morphological, and semantic features do converge on a cross-classification of verbs.

TABLE 17.8 Chen's (1987) verbal classification in Nataoran Amis

Verb classes	Verb types	Example	Gloss
Class I Non-agentive	Simple non-agentive	*maorip*	'alive'
	Intransitive locative	*tangasa*	'arrive'
Class II Transitive	Simple transitive	*taesen*	'hit'
	Transitive instrumental	*tomesen*	'fill'
	Transitive locative	*pabeli*	'give'
Class III Impersonal	Impersonal intransitive	*signaw*	'cold'
	Impersonal transitive	*rakatan*	'walk'

17.5.3 *The Dynamic/Stative Distinction (Zeitoun & Huang 2000)*

Zeitoun & Huang (2000) was written as a response to Blust's (1999) distinction between *pa-* and *paka-* causatives in Pazeh, as illustrated in (14), and his reconstruction of two PAN causative prefixes, *pa- and *paka-. It demonstrated that a distinction between dynamic[9] and stative verbs exists in Formosan languages, which corresponds to the morphological marking of different verb types and

9 The term "dynamic" was chosen instead of "active" for characterizing nonstative verbs in order to avoid confusion with the active/passive voice dichotomy exhibited by Rukai.

their correspondent nonfinite forms (caused, for instance, by the occurrence of the causative *pa-*). On the basis of this parallel, PAN *paka- was a reconstructed as a bimorphemic affix *pa-ka-.

(14) Pazeh (Blust 1999, pp. 347–348)

a. *mu-dader*	'choke on something'	*pa-dader*	'cause to choke'
b. *ma-ngesen*	'afraid'	*paka-ngesen*	'to frighten'

This dichotomy is encoded synchronically as follows: on the one hand, dynamic verbs are usually marked by *M*-forms in finite clauses but are unmarked in nonfinite clauses.[10] This contrast is exemplified in (15)–(16). Stative verbs, on the other hand, are usually marked by *ma-* (or ∅) in finite clauses and by *ka-* in nonfinite clauses, as shown in (17)–(18).

(15) Zeitoun & Huang (2000, p. 399)
Pazeh
a. *yaku* ***mi****-kita isiw.*
1SG.NOM AV-see 2SG.ACC
'I see you.'

b. Mayrinax Atayal
m*-aniq cku' bunga' ku' 'ulaqi'.*
AV-eat ACC.REF sweet.potato NOM.REF child
'The child is eating a sweet potato/sweet potatoes.'

(16) Zeitoun & Huang (2000, p. 399)
Pazeh
a. *kaakuxan ka asikis a punu mausay* ***pa****-kita*
have.a.heatstroke TOP painful LNK head IRR.go CAUS-see
takarat.
doctor
'I have (had) a heatstroke, I have a headache (and) I will go to the doctor.'

10 A verb occurs in its finite form (i) when it occurs in sentence-initial position in a (main) clause, (ii) if it is not preceded by any other verbal prefix (e.g., the causative *pa-*) thus referring to a past or present event (indicative/realis), or (iii) in certain languages (e.g., Rukai, Atayal, and Paiwan), if it does not follow any conjunction, e.g. 'then'. In Zeitoun & Huang (2000), the term "nonfinite" was chosen to designate a verb root, for lack of a better term. A verb occurs in its "nonfinite" form if it is affixed or preceded by a conjunction.

b. Mayrinax Atayal
pa-qaniq *cku'* *'ulaqi'* *'i'* *yaya'.*
CAUS-eat ACC.REF child NOM mother
'Mother is feeding the child.'

(17) Zeitoun & Huang (2000)
Pazeh
a. *b⟨in⟩aged yaku.*
⟨PFV⟩fat 1SG.NOM
'I used to be fat.' (p. 404)

b. Mantauran
ma-takolra *taotao* *ocao=ni.*
STAT-bad Taotao person=3SG.GEN
'Taotao is a bad person.' (p. 405)

(18) Zeitoun & Huang (2000)
Pazeh
a. *ana* ***pa-ka****-baged!*
PROH CAUS-STAT-fat
'Don't let (him/her) become fat!' (p. 404)

b. Mantauran
pa-ka*-takolr-a!*
CAUS-STAT-bad-IMP
'Make it bad!' (p. 405)

While Zeitoun & Huang's (2000) study only focused on five languages (Pazeh, Atayal, Rukai, Seediq, and Paiwan), it was later shown that the *ma-*/*ka-* alternation is found across the Formosan languages, as in Truku Seediq *k*(*e*)-, e.g., *paro* 'big' ~ *p⟨n⟩**k**-paro* 'make big, enrich (CAUS.PFV)' (Pecoraro 1979), Kavalan *q*(*a*-), e.g., ***ma****-yseng* 'dry' ~ *pa-**qa**-yseng* 'cause to dry (CAUS)', ***m-ipes*** ~ ***q-ipes*** 'dislike' (Li & Tsuchida 2006), and Saaroa *a-*, e.g., ***m-a-****lhavai* 'drunk' ~ *ara-**a**-lhavai* 'become drunk (INCHO)' (Pan 2012). The following two conclusions were reached: (1) the prefix *ka-*, which exhibits different variants, can be reconstructed as *ka- 'stative' in PAN and (2) the Formosan languages lack the particular class of adjectives. Adjectival concepts are encoded through stative verbs, and despite their distinct morphological distribution, dynamic and stative verbs can undergo the same morphosyntactic processes. This latter claim has been challenged by Marie M. Yeh (2022), who argues that a separate class

of adjectives can be identified in Saisiyat, while Zeitoun & Kaybaybaw (2021) argue that these very forms are actually derived from ideophones.

17.5.4 *Ross's (2015) Agentivity/Non-agentivity Distinction*

Ross (2015), who urges caution against the direct association of dynamic/stative functions with ⟨*um*⟩/*ma-* affixes because form-meaning irregularities are attested across Formosan languages, follows W. Huang (2012) in adopting the view of an agentive/non-agentive dichotomy as (i) there needs to be a form-meaning distinction based on a "lexical semantic" approach, and (ii) a majority of verbs encode either a state or a change of state. Following Tsuchida (1976), verbs are categorized into six morphological classes determined by stem shape (unaffixed, *p-*initial, and prefixed by *ka-*) and voice marking (Mstem containing an allomorph of ⟨*em*⟩, Mstem in which the root-initial *p-* is replaced by *m-*, MA stem consisting of *ma-* + root including ∅~*ma-* and *ka-*~*ma-*, and unaffixed stems). We provide in (19) the correspondences between the verbal forms and Ross's terminology.

(19)

Verbal marking	Ross's (2015) terminology
∅~⟨*um*⟩	U
p~*m*	P/M
∅~*ma*	∅/MA
∅~∅	∅/Z
ka-~*ma-*	K/MA
ka-~∅	K/Z

TABLE 17.9 Distribution of verb classes across Formosan languages

Language key:

NwPuy	Tso	TnRuk	MtRuk	Sar	Kan	Sir	Pai
IsbBun	Tha	Paz	Sai	TrSed	MxAta	Kav	Ami

Key

× the class is present
– the class is not present in this language

	U	MA	Z
∅	×××××××× –×××××××	×××–×––– ××–×××××	×××××××× ×××××××–

TABLE 17.9 Distribution of verb classes across Formosan languages (*cont.*)

K	×−××××××	×−−−−−−×
	××××××××	−−×××××××

ROSS 2015, P. 320

In order to accomplish a classification of Nanwang Puyuma verbs that reflects the correspondence between morphological marking and verb semantics, Ross (2015, pp. 289–293) employs an altered model of Foley's (2005) proto-role hierarchy. He categorizes verbs into ten classes: (1) agentive (with a subclass of collective), (2) weather, (3) perception, (4) movement, (5) position, (6) involuntary activity, (7) inanimate activity, derived with the anticausative prefix *mu-*, (8) mental event, (9) resultative, and (10) state. He further establishes a correlation between pair-meaning forms and demonstrates how morphology is associated with the different semantic classes of verbs, and this correlation serves as the basis for a large-scale study in Formosan languages resulting in the reconstruction of PAN verb classes.

TABLE 17.10 Semantic distribution of verb classes across Formosan languages

Language key:

NwPuy	Tso	TnRuk	MtRuk	Sar	Kan	Sir	Pai
IsbBun	Tha	Paz	Sai	TrSed	MxAta	Kav	Ami

Key

× the class is present
1 just one member of the class has been found in this semantic category
0 the class is absent from this semantic category
... relevant evidence is missing
– the class is not present in this language

		∅/U	∅/MA	∅/Z	K/MA	K/Z
{1}	agentive	××××××××	×××−−−−−	××××××××	0−000000	0−−−−−−0
		−×××××××	×1−0××0−	×00××××−	00000000	−−0000000
{2}	weather	×...1×11××	0...0−0−−−	0...0000...0	0−0000...0	0−−−−−−0
		...×××1××0	...0−0000−	...000000−	...000000×	−−0000000
{3}	perception	××1××1××	0...0−−−−−	0...0××001	0−000000	0−−−−−−0
		...××1×××0	...1−000×−	...110000−	...0000001	−−0×0000

TABLE 17.10 Semantic distribution of verb classes across Formosan languages (*cont.*)

{4}	movement	1 … 1 × … 0 × ×	× … 0 – – – – –	1 … 0 0 … × × 1	1 – × 0 … 0 0 0	0 – – – – – – 0
		… 1 × 1 × × 0 0	… 0 – 0 0 0 0 –	… 1 0 × × × 1 –	… 0 0 0 0 × 0	– – 0 0 0 0 0 0
{5}	position	0 … 1 1 … 1 … 0	0 … 0 – – – – –	0 … 0 0 … – … 0	× – 0 0 … 0 … 0	0 – – – – – – 0
		… … × 1 0 × 0 ×	… …– × × 0 0 –	… … 0 0 0 0 0 –	… … 0 0 0 0 × 1	– – 0 0 0 0 0 0
{6}	involuntary activity	0 1 × × 1 1 0 1	0 … 0 – – – – –	0 … 0 0 0 0 0 1	× – × 0 0 0 × 1	× – – – – – – 0
		1 0 × 0 0 × 0 0	… × – 0 × × 1 –	… × 0 × 0 1 0 –	… × 1 0 0 0 0 ×	– – 0 0 0 0 0 0
{7}	inanimate activity	0 … … … … … 0 0	0 … 0 – – – – –	0 … 0 0 … – 0 0	0 – … 0 … – × ×	0 – – – – – – 1
		… 0 × 1 … 1 × 0	… 0 – 0 … 0 × –	… 0 1 0 … 1 0 –	… 0 0 0 … 1 × ×	– – 0 … 0 0 0
{8}	mental state	1 × … × 0 0 0 0	0 … 0 – – – – –	0 … 0 0 0 × 0 0	× – × 0 × 0 × ×	1 – – – – – – 0
		… 0 0 1 × × ? 0	1 0 – … 1 0 … –	– 0 0 0 0 0 × –	… × × 0 0 0 0 ×	– – 1 × 0 0 0 0
{9}	resultative	0 … 0 0 … – … 0	0 … 0 – – – – –	0 – 0 0 … – … 0	× – × × … – … ×	0 – – – – – – 0
		… 0 0 … 0 0 0 –	… × – … 0 0 × –	… 0 0 … 0 0 0 –	… 0 1 × × × × –	– – 0 … 0 0 0 –
{10}	state	0 ? 0 0 … 0 0 0	0 … 0 – – – – –	0 × × 0 × × 0 ×	× – × × × × × ×	× – – – – – – ×
		0 0 0 0 0 0 0 0	0 × – 0 × 0 1 –	0 × 0 0 0 0 × –	× 0 × × × × × ×	– – × × × × × ×

ROSS 2015, P. 321

17.5.5 *Tsukida's* (2008) *Semantic Classification*

Tsukida (2008) proposes a verb classification in Fata'an Amis based on semantic features: ±stativity, ± affectedness (this feature refers either to the subject or to the situation expressed by the verb), and ±control (i.e., whether the actor controls the situation denoted by the verb, which may or may not be instigated voluntarily or intentionally). Verbs that are marked by *mi-* or are unmarked (∅-A verbs) are –stative, –affected, +control. Verbs marked by ⟨*um*⟩ are –stative, +affected, +control. Verbs marked by *ma-* include –stative and +stative verbs. The major feature that characterizes these two types of verbs is the feature +affected. Verbs which are non-stative include controlled verbs like 'run' and 'fly' as well as reciprocal verbs and noncontrollable verbs like 'sneeze' and 'fall down'. Stative verbs also include controllable verbs such as 'be violent' and 'be jealous' and reciprocal verbs such as 'like/hate each other'. Stative verbs that are noncontrollable include 'be clear', 'get tired', and 'forget'. Unmarked stative verbs (∅-B verbs) are considered inherent or permanent.

TABLE 17.11 Semantic classification of verbs in Amis

Voice affixes	Semantic description	Example	Gloss
mi-	–stative, –affected, +control	*mi-clem*	'dive'
		mi-danguy	'swim'
		mi-hulul	'play'
∅-A		*pa-fli*	'give'
⟨*um*⟩	–stative, +affected, +control	(*k*⟨*u*⟩*m*⟩*aen*	'eat'
		(*l*⟨*u*⟩*m*⟩*uad*	'stand up'
		(*r*⟨*u*⟩*m*⟩*adiw*	'sing'
ma-	±stative, –affected, ±control	*ma-fer*	'fly'
		ma-fkac	'run'
		ma-sadak	'go out'
		ma-fa'sing	'sneeze'
		ma-dudem	'be cloudy'
		ma-sa-'usi	'hate each other'
		ma-patay	'be dead'
∅-B	+stative, –affected, –control	*'angtul*	'smell bad'
		fuhcal	'be white'

AFTER TSUKIDA 2008

Tsukida (2008) also shows that many Amis verbs can take different affixes and discusses the case frame of some categories of verbs (*mi-* and *ma-*), as shown

in Table 17.11. Compare, for instance, *mi-patay* 'kill' vs. *ma-patay* 'die', *mi-luad* 'make something stand up' vs. *l⟨um⟩uad* 'stand up', *k⟨um⟩aen* 'eat' vs. *ma-kaen* 'eaten', *tu'man* 'be dark' vs. *ma-tu'man* 'be dark (resultative)'.

TABLE 17.12 Case frame in Amis

	Intransitive	**Transitive**		**Intransitive**
Conjugation	*mi*-verb	*mi*-verb	*ma*-verb	*ma*-verb
Case frame	NOM S	NOM A (OBL P)	(GEN A) NOM P	NOM S
Semantic alignment	A-verb	A-verb-P		verb-P
Semantic features	-stative			+stative
	-affected			+affected
	+control			-control

BASED ON TSUKIDA 2008, P. 292

17.5.6 *Peng's (2016) Verb Classification*

Peng (2016) establishes five classes of verbs in Mayrinax Atayal: (i) activity verbs, (ii) stative verbs, (iii) achievement verbs, (iv) accomplishment verbs, and (v) semelfactive verbs. Her study constitutes one of the few attempts to propose a classification of verbs that takes into account AV and UV marking. In this respect, she shows that inherent semantic and temporal properties of verbs (stativity, dynamicity, telicity, and punctuality) should be taken into consideration in the classification of verbs and that the AV/UV dichotomy encodes distinct semantic meanings with different types of verbs. Following Vendler (1967),[11] she provides a number of morphosyntactic tests. Interestingly, she also shows that a certain type of construction, e.g., 'for a certain amount of time', yields a distinct construction with different verb types. For instance, *magalpug cu' tumuting* 'for ten minutes' is followed by the linker *'i* when co-occurring with an activity (i.e., dynamic) verb, but by *ru'* with an accomplishment verb.

(20) Mayrinax Atayal (Peng 2016)
a. *magalpug cu' tumuting 'i' maktalyum 'i' Tiwas.*
ten LNK minutes LNK AV.run NOM Tiwas
'Tiwas has run for ten minutes.' (p. 81)

11 Wu (2006) also adopts an Aktionsart-based approach to classifying verbs in Amis.

b. *magalpug cu' tumuting* ***cu'*** *masqusia' ku' hulaqi'.*
ten LNK minutes LNK AV.melt NOM.REF snow
'The snow melted in ten minutes.' (p. 87)

17.5.7 *Maya Y. Yeh's (2013) Cognitive Classification*

Yeh (2013) establishes a classification of verbs in Squliq Atayal largely based on Talmy's (2000) Figure–Ground distinction. She shows that the class of a certain verb is determined by the (default) UV form and the default status of its subject. Five major verb classes are identified, as follows: UVP *-un* verb class, in which the undergoer is Figure; UVL *-an* verb class, with the undergoer as Ground; UVC *s-* verb class, with the undergoer as Figure and a combination of *s-* and *-un*/*-an* composite verb classes with both the figure and ground specified by *s-*, *-un*, and *-an*. Each major class of verb is further subdivided according to the type of encoding schema, as shown in Table 17.13.

TABLE 17.13 Verb classes (types and subtypes) in Squliq Atayal

Verb type	Subtype	Example
-un 'UVP'	Undergoer as Figure in *transformation* schema	*lom* 'burn', *pluk* 'burst out'
	Undergoer as Figure in *taking* schema	*beng* 'hold' *'agal* 'take'
	Undergoer as Figure in *gathering* schema	*imaw* 'mix up' *'ubuy* 'link, join'
	Undergoer as Figure in *causative motion* schema	*pakux* 'turn over' *huluy* 'pull'
	Undergoer as Figure in *self-moving* schema	*naga'* 'wait' *hbyaw* 'chase'
	Undergoer as Figure in *cognition* schema	*baq* 'know' *spi* 'dream'
	Undergoer as Figure in *stimulus* schema	*nkux* 'startle' *qas* 'happy'
	Undergoer as Figure in *triggering* schema	*gno* 'joke' *hmut* 'at will'
-an 'UVL'	Undergoer as Ground in *placement* schema (1)	*tuba'* 'poison (fish)' *tmami'* 'salten (meat)'
	Undergoer as Ground in *removal* schema	*bahuq* 'wash (clothes)' *salit* 'weed'
	Undergoer as Ground in *indivisibility* schema	*gyax* 'open (door)' *qlu'* 'close (door)'

TABLE 17.13 Verb classes (types and subtypes) in Squliq Atayal (*cont.*)

Verb type	Subtype	Example
	Undergoer as Ground in *transportation* schema	*ksyuw* 'borrow' *psyuw* 'return'
	Undergoer as Ground in *mediation* schema	*gluw* 'follow, take (bus)' *skluw* 'draw, bow'
	Undergoer as Ground in *fixedness* schema	*shga'* 'overtake' *pgiay* 'escape from'
	Undergoer as Ground in *placement* schema (2)	*kita'* 'see' *talam* 'taste'
s- 'UVC'	Undergoer as Figure in *pushing* schema	*piyok* 'rent' *tbaziy* 'sell'
	Undergoer as Figure in *generation* schema	*pqwas* 'sing' *puzit* 'rotate, drive car'
	Undergoer as Figure in *cause* schema	*galu'* 'sympathize' *laqux* 'win over'
s-/*-an* 'UV'	Undergoer as Figure and Ground in *conveyance* schema	*biq* 'give' *paqut* 'ask'
s-/*-un* 'UV'	Undergoer as Figure in *reciprocal* schema	*kayal* 'talk about' *syuk* 'respond, answer, revenge'

BASED ON M.Y. YEH 2013, PP. 328–329

17.5.8 *Summary*

We have shown that Chen (1987) uses case-frame features; Peng (2016) relies on semantic criteria; and Yeh (2013) examines UVP, UVL, and UVC forms to classify verbs. Tsuchida (1976), Zeitoun & Huang (2000), Tsukida (2008), and Ross (2015) classify verbs according to the morphology of AV verbs, which are viewed according to their nonfinite (Zeitoun & Huang 2000), finite (Tsukida 2008), or finite/nonfinite (Ross 2015) status.

17.6 Verbalization and Verbal Prefixes[12]

In addition to the voice affixes introduced in §17.4, the Formosan languages also exhibit a relatively high number of affixes, which form, with the base,

12 Causative and reciprocal verbal morphology is not discussed in this chapter, as it is treated by L. Li elsewhere in this handbook (Chapter 19).

"composite verbs" (Zeitoun et al. 2015, p. 521). There are two major types of affixes: (i) verbal prefixes (21a), which typically occur on verbal roots of dynamic verbs, and (ii) verbalizers (21b), which turn a noun (or a numeral) into a verb.

(21) Saisiyat

a. *yako ngizo', **(h)in**-tabo'=ila ray ship~shipa:,*
1SG.NOM fall rotate-roll.down=COS LOC RED~steep
shi-panngaeaeh ka ta'oloeh.
UVC-fall.down:head ACC head
'I fell, rolled down the slope, and fell down on my head.'

b. *yako 'am=**kit**-'oeso' no katin ka-si'ael-en.*
1SG.NOM IRR=chop-silver.grass DAT cow IRR-eat-UVP
'I am going to chop silver grass to feed (the) cow(s).'

The same prefix may function both as a verbal prefix and as a verbalizer, as shown in (22).

(22) Saisiyat

*yako rima' **li-raromaeh, li-obaz** 'akoy=a=tomal=ila.*
1SG.NOM go carry-bamboo carry-exceed many=LNK=very=COS
'I went to carry bamboo, (but) I carried an excessive weight.'

A few lexical prefixes have been reconstructed to PAN (cf. *ki- 'get, obtain' (Zeitoun & Teng 2009, Teng 2020), *Si-/*si- 'wear, carry, have' (Teng 2014), *ku- 'eat') and are discussed in Ross & Zeitoun (this handbook, Chapter 32). It is noteworthy that among these, *ku- is derived from the verb *kaen 'eat'. Other lexical prefixes are also derived from verbs, such as Saisiyat *kin-* 'to chop', as in *kin-haehoey* 'chop wood' (cf. *kinmaeh* 'to chop'), Thao *malh-* (~ *palh-*) 'to say', as in *malh-ririw* 'say something wrong' (cf. *malhinuma* (~ *palhinuma*) 'speak') (Paul J. Li, pers. com.), Bunun *tu-* 'to say', as in *tu-mantuk* 'admit (lit. 'say true')' (cf. *tupa'* 'say') (L. Li 2018). Adelaar (2004) mentions three "orientation prefixes" in Siraya: the comitative *a-*, e.g., ***a**-para* (xxv:4) 'to take along, be together with' (cf. *para* 'together'); location-oriented *i-*, e.g., *m-**i**-mala* (xxvi:69) 'to be outside' (cf. *mala* 'outside'); and motion *u-*, e.g., *m-**u**-rbo* (ix:28) 'go inside' (*rbo* 'inside'). Two of these, *i-* and *u-*, are found in other Formosan languages, as shown in Table 17.14.

TABLE 17.14 Orientation prefixes in some Formosan languages

Language	Orientation affix					
	i- 'at'	Example	Gloss	*u-* 'to'	Example	Gloss
Saisiyat	✗	–	–	✓	*'oe-rarakish*	'go up'
Puyuma	✗	–	–	✓	***u**-isatr*	'go up'
Kanakanavu	✗	–	–	✓	***m-u**-a-cala*	'climb up'
Saaroa	✗	–	–	✓	***m-u**-a-salha'*	'go, leave'
Paiwan	✓	*i-maza*	'be here'	✗	–	–
Isb Bunun	✓	*'i-sia*	'be at'	✓	***u**-da~dan*	'go'
Mt Rukai	✓	*i-valrio*	'rest'	✓	***u**-valrio*	'go back'
Thao	✓	*i-sahây*	'be there'	✓	***u**-taun*	'go home'

17.7 Conclusion

The present chapter has attempted to present a brief overview of verbal morphology in Formosan languages, but voice, its discursive functions, and verb classes need to be examined in detail in each language. More research is also needed regarding verbalization and lexical prefixes so that additional reconstructions can be accomplished at the level of Proto-Austronesian.

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