CHAPTER 48

Kanakanavu

Elizabeth Zeitoun

48.1 Introduction

The present chapter deals with the major phonological and morphosyntactic characteristics of Kanakanavu, the language of an indigenous group of the same name. It was officially recognized as the 16th indigenous language of Taiwan on 26 June, 2014, together with Saaroa, to which it is close geographically.

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48.1.1 *Geographical Setting, Population, and Language Use*

The Kanakanavu people live in southern Taiwan in the Manga and Takanua villages of Namasia District, Kaohsiung City (formerly Sanmin Township, Kaohsiung County). The Kanakanavu have a population of about 400, as of 2021, according to the census conducted by the Council of Indigenous Peoples (2021a). The villages in which they live are now inhabited by a large Bunun population, who moved southward from the center of the island in the mid-19th century and in the 1930s (Tsuchida 1995, Li 2001, Lin 2007).

According to Tsuchida (1976, p. 26), in the early 1970s, there were still 150 Kanakanavu speakers, but today the language is spoken by fewer than 10 fluent speakers. The population is fluent in Bunun and in Mandarin Chinese, and fluent speakers of Kanakanavu have very few opportunities to speak their language in their daily life. This has had some repercussions for the grammar of this language. Comparing data that were gathered in the 1970s with those collected in more recent years, it becomes obvious that the grammar of older speakers has eroded in the meantime, and there is an obvious gap between speakers who are 80 years old or older and those who are in their 60s or 70s.

48.1.2 *Internal and External Relationships*

Prior to its recognition as a separate ethnic group, Kanakanavu was subsumed under Tsouic, which includes Tsou (also known as Northern Tsou) and Saaroa (also referred to, along with Kanakanavu, as Southern Tsou). Dyen (1965, p. 56) was the first to claim that "their relation is that of closely related languages", rather than dialects of Tsou, as assumed by Ogawa & Asai (1935, p. 3). These languages form a subgroup, which Dyen called "Tsouic". Ferrell (1969) conventionalized the term "Tsouic", as he used it to refer to one of the three main groups into which he classified the Formosan languages: Atayalic (Atayal and Seediq), Tsouic (Tsou, Kanakanavu, and Saaroa), and Paiwanic (all the remaining Formosan languages). Following his predecessors, Tsuchida (1976) went a step further in positing that Tsouic and Rukai form an independent Rukai-Tsouic group on the basis of a lexical comparison between Tsou, Kanakanavu, Saaroa, and the geographically contiguous Rukai dialects belonging to the "Three-Lower Villages" (Maga, Mantauran, and Tona). On the basis of a lexical comparison between Tsou and Budai Rukai (spoken in Pingtung County), Ho (1983) rejected such a subgrouping and claimed that Rukai is more closely related to Paiwan. Other hypotheses have been advanced since then.

Blust (1999) treats Tsouic as one of the ten primary branches descending from Proto-Austronesian (PAN). On the basis of syntactic evidence, H. Chang (2006) concludes that Tsou does not subgroup with Saaroa and Kanakanavu.

Ross (2009, 2012) further suggests that the Tsouic group does not exist, and that PAN divides into four primary subgroups—Puyuma, Tsou, Rukai, and Nuclear Austronesian —with Nuclear Austronesian including the rest of the Austronesian languages, Kanakanavu and Saaroa too. This hypothesis is rejected by Blust & Chen (2017), while Sagart (2014) argues that the Tsouic languages exclusively share at least one sporadic change (viz. the metathesis of PAN *pataS 'tattoo, write' as PT *tapaSə, reflected as Kanakanavu *tapásə*, Saaroa *taa-tapa-a*, Tsou *ta-tpos-a* 'pattern, design') and one irregular sound change (i.e., the split of PAN *C into PT *t and *C; cf. PAN *Caqi 'excrement' > PT *tá$ʔ_3$i, reflected as Kanakanavu *táaʔi*, Saaroa *tiiʔi*, Tsou *tʔee* 'excrement'). Taking Ross's (2009) subgrouping hypothesis as a starting point, Zeitoun & Teng (2016) show that Kanakanavu and Saaroa are morphosyntactically more diverse than has previously been reported, and that they might not actually form a subgroup.

48.1.3 *Documentation*

The first linguistic study of Kanakanavu was that of Ogawa & Asai (1935, pp. 721–739), who provided a short description of Kanakanavu and some texts translated into Japanese. From the 1960s until the 1980s, most studies on Kanakanavu had to do with its phonology and morphology (see M. Sung [a.k.a Yan] 1966, 1969, Yan 1980, Li 1972, Tsuchida 1976, Mei 1982). Morphosyntactic studies started later, in the late 1990s and the opening decade of the 21st century (see Wu 2006 on serial verb constructions; S. Chang 2014 on quantifiers; Deng 2014 on interrogative clauses, Liu 2014 on tense, aspect, and modality; Cheng & Sung 2015 on modality; and Yang 2015 on constructions encoding the notions of "benefaction" and "adversity"). Tsuchida's (1976) phonological and morphosyntactic study of Kanakanavu deserves special mention, because it has served as the foundation for more detailed grammatical studies, e.g., Ho (1997), Wild (2018), L. Sung (2018), and Zeitoun & Teng (forthcoming). Tsuchida published a collection of Kanakanavu texts (Tsuchida 2003) that were recorded and transcribed in 1969 and provide rich morphosyntactic data that are currently difficult to elicit. In his (2008) paper, he reviews the sound changes that he noticed 30 years after his initial fieldwork on the language; such phonological issues are discussed in even more depth by Chen (2016), who focuses on the interaction between minimal word constraint, monophthongization, and stress, and Cheng (2019), who examines the interface between prosody and syntax.

48.2 Phonology

48.2.1 *Phoneme Inventory and Orthographic System*

Kanakanavu has 12 consonants and 6 vowels, as shown in Tables 48.1 and 48.2. The orthographic symbols are in italics and placed on the left, while the IPA symbols are on the right.

TABLE 48.1 Kanakanavu consonantal inventory and orthography

		Bilabial	Labiodental	Alveolar	Velar	Glottal
Stop	VL	*p* /p/		*t* /t/	*k* /k/	*'* /ʔ/
	VD					
Fricative	VL			*s* /s/		
	VD		*v* /v/			
Affricate				*c* /ts/		
Nasal		*m* /m/		*n* /n/	*ng* /ŋ/	
Trill				*r* /r/		
Flap				*l* /ɾ/		

The three voiceless stops are unaspirated. The voiceless alveolar affricate *c* /ts/ is palatalized before *i* /i/, cf. [ʧ] or [tɕ], e.g., *atsipi* [aʧípi] 'foot', *katsia* [kaʧía] 'bag'; the voiceless fricative *s* /s/ is pronounced [ʃ] or [ɕ] before *i* /i/, e.g., *sikamʉ* [ɕikámʉ] 'mat', *namasia* [namáʃja] ~ [namáɕja] 'Namasia district' and [ʂ] before *e* /e/, e.g., *sesi* [ʂé:ʃi] 'jaw'. The pronunciation of *v* /v/ has changed over time: it used to be pronounced as a voiced bilabial fricative [β], which is not heard anymore. The flap *l* /ɾ/ can also be heard as a lateral [l], and although these are two distinct phonemes, as shown in the following minimal pair contrast, cf. *lalʉ* /ɾáɾʉ/ [ɾa:ɾʉ] '(flying) squirrel' vs. *rarʉ* /rarʉ/ [rá:rʉ] 'typhoon', semi-speakers and young language learners do not make the distinction between them. This phonological mingling is reflected in the writing system, where only *r* is kept.

There are no glides in Kanakanavu: [j] and [w] are the allophones of the high vowels i /i/ and u /u/, respectively, in prevocalic position, e.g., *mica'ania* [mitsaʔánja] '(this past) noon', *sukuama* [sukwáma] 'sickness', tamtituin [tamtitwín] 'his / her/ their puppy' (< *tamtitu* /tamtítu/ 'puppy'). Gliding does not usually take place on high stressed vowels: Compare *takanua* [takanúa] (and not *[takanwá]) 'place name, former Mingsheng village', *taniarʉ* [taníʌrʉ] 'sun' (and not *[tanjʌrʉ]).

There are three loan phonemes, *b*, *h*, *t*^{h} /b h t^{h}/, e.g., *kabang* [kabáng] 'bag' (< Japanese), *hana* [há:na] 'flower' (< Japanese), *saihu* [saíhu] 'know' (< Taiwanese Southern Min), *tomu* [t^{h}ó:mu] 'chief' (< Mandarin Chinese).

TABLE 48.2 Kanakanavu vocalic inventory and orthography

	Front	Central	Back
High	*i* [i]	*ʉ* [ʉ]	*u* [u]
Mid	*e* [e]		*o* [o]
Low		*a* [a]	

The six vowels *i*, *u*, *ʉ*, *a*, *e*, *o* /i u ʉ a e o/ display a high number of allophones (Tsuchida 1976, p. 28, 2003, p. 7). The vowel *i* /i/ can be pronounced as either [i] or [e] when it precedes or follows [ʔ], e.g., *tupi'i* [tupíʔi], but *mani'i* [manéʔi] 'thin'. The back vowel *u* /u/ is pronounced as [o] before or after [ʔ] (e.g., *ma'unuŋ* [maʔonúŋ] 'fight') and when it precedes or follows /a/ (e.g., *maavovuarʉ* [maavovoarʉ] 'part with each other'). Tsuchida (1976, p. 29) mentions that a mid central unrounded vowel /ʉ/ "varies freely with length of the nasal consonant" when preceded and/or followed by a nasal (N). The nasal occurs as a short N when followed by the vowel *ʉ*, e.g., *'alamʉ* [ʔarámʉ] 'meat'. It becomes a geminate nasal (N:) when *ʉ* is deleted in final position, e.g., *'alam* [ʔarám:] 'meat'. N is also lengthened in medial position, cf. N:N and N:C, when *ʉ*, for instance, is deleted, *tammi* /tamʉmi/ [taḿ:mi] 'sweet potato'. When preceded by /n/ and followed by /s/, the sequence /nʉ/ may also be realized as the nasalization of the preceding vowel, e.g., *tanʉsavurʉ* /[tã:saβúrʉ]. The low central unrounded vowel *a*, as in *pari* [pá:ɾi] 'gall', exhibits five allophones. It is pronounced as (i) [ɛ] when it is stressed and followed by /i/, e.g., *saronai* [saronéi] 'man, male', (ii) [e] when a glottal stop intervenes between /a/ and /i/, *ma'inacʉ* [meʔinátsʉ] 'straight', (iii) [o] when it is stressed and preceded by /u/, e.g., *kuacapa* [kuótsapa] 'utensils' and when a glottal occurs between /a/ and /u/, e.g., *pa'ucipi* [poʔotʃípi] 'cook (AV.IPFV)', (iv) [ɔ] when preceded by /u/ and followed by a final /m/ or /n/, e.g., *vuan(ʉ)* [vuɔ́n(ʉ)] 'moon', and (v) [ʌ] when immediately followed by /ʉ/, e.g., *kaʉna* [kʌ́ʉna] 'food'. It has been shown in the foregoing discussion that two vowels, *e* /e/ and *o* /o/, are the respective allophones of /i/, on the one hand, and /a/ and /u/, on the other. They are also found in loanwords, as in *cukue* [tsukúe] 'table' (< Japanese) and *hookia* [hɔ́ɔkia] 'rich' (< Taiwanese Southern Min). Yet *e* /e/ and *o* /o/ are phonemes on their own

and contrast with *i* /i/ and *u* /u/, respectively, as shown in the following minimal pairs: *tumaten* /tumaten/ [tumatɛ́ːn] 'throw away (AV.IPFV)' vs. /tumatin/ [tumatíːn] 'hang (AV.IPFV)'; *imo* /imo/ [íːmo] 'Drink! (UV.IMP)' vs. imu /imu/ [íːmu] 'so that'. They have arisen through the monophthongization of the high vowels /i, u/ with a contiguous /a/. This sound change is still incomplete. In some words, only *ia* [ia], *ai* [ai], *ua* [ua], and *au* [au] are heard, as in *camai* [tsamái] 'side dish', *miana* [miána] 'in the past', *na'arua* [naʔárua] 'Saaroa', and *muruavuran* [muruɔvúran] 'sweat (AV)'. In others, *ia* [ia] or *ai* [ai], *ua* [ua] or *au* [au] alternate with *e* [e] and *o* [o], *'ᵾnai* [ʔᵾnai] ~ [ʔᵾnéː] 'small', *saruanai* [saruanái] ~ [saronái] 'man, male'. An intermediate stage is the phonetic diphthongization of *ai*,[1] *au*, and *ua* as [ɛi], [ɔu], and [uɔ], respectively, e.g., *vunai* [vunái] ~ [vunɛ́i] 'snake', *ngiau* [ŋiáu] ~ [ŋiɔ́u] 'cat', and *pulaulupu* [puruarúpu] ~ [puruɔrúpu] 'blow'.

As mentioned in Tsuchida (1976, p. 33), many words end in an echo vowel, which corresponds to the last vowel of a consonant-final stem. The echo vowel is *i* if the last vowel is *i*, *u* if it is *u*, and *ᵾ* if it is *ᵾ* or *a*, e.g., *kumirimi* [kumirimi] 'seek (AV.DEP)' < PAN *kirim, *tsanumu* [tsanúmu] 'water' < PAN *daNum, *tᵾvᵾsᵾ* [tᵾvúsᵾ] 'sugarcane' < PAN *Cebus, *tsaanᵾ* [tsaanᵾ] 'road' < PAN *zalan. This phonological rule does not apply to bases where monophthongization of the vocalic sequences *ai*/*ia* and *au*/*ua* has taken place, e.g., *matiken* [matikɛːn] ~ *matikeni* [matikeni] 'caught on thorns' (< *m-ati-káini*; Tsuchida 1976, p. 231), and not **[matikéne]. The echo vowel is deleted when a clitic is attached to the base, for instance *nakᵾvᵾ* 'clothes' ~ *nakᵾv-aku* 'my clothes'. Deletion does not occur in the case of a monophthongized vowel in the final position of the word, even if cliticized. Thus, a word like *tapenange* 'bird' (< *tapianangai*) remains as such after cliticization, as in *tapenange=maku* 'my bird', and not **tapenanga-aku*.

48.2.2 *Phonotactics and Distribution*

The distribution of consonants is shown in Table 48.3. Except for *m*, *n*, *ng*, *p*, and *s*, consonants only appear in onset position. Nasals can appear in coda position, as a result of the deletion of the final (echo) vowel. Only a few consonant clusters are allowed, and they occur only in word-medial position, e.g., *kuncu* 'body hair', *manman* 'chili', *tassa* 'two', and *mustatun* 'jump (AV)'. Consonant clusters are generally the result of the deletion of an intermediate vowel that originally broke up the consonant segments. For some clusters produced in fast speech, the intermediate vowel is easily retrievable, e.g., *masᵾpatᵾ* ~ *maspatᵾ* 'forty'. For other clusters, the vowel is no longer retrievable, e.g., *susumampe* 'thanks'.

1 The diphthong *ia* [iɛ] is not attested.

TABLE 48.3 Distribution of consonants in Kanakanavu

	#C_	Gloss	_C_	Gloss	_C#	Gloss
p	*pituka*	bracelet	*usʉpatʉ*	four	–	–
t	*timana*	hear	*umetarʉ*	wait (AV.IPFV)	–	–
k	*kʉkʉ*	calf of leg	*vanʉkavuka*	trousers	–	–
'	*'atímua*	flea	*mangtʉ'ai*	short	–	–
v	*vʉcʉkʉ*	belly	*vungavung*	flower	–	–
s	*sikamʉ*	mat	*mapusan*	twenty	–	–
c	*cumai*	bear	*mecu'u*	point to (AV.IPFV)	–	–
m	*manipi*	thin	*numan*	knife	*canum*	water
n	*nura*	tomorrow	*tapenange*	bird	*matupun*	throw
ng	*ngisingisi*	beard	*vʉrúngana*	midnight	*makung*	cold
r	*rumai*	grease	*méoru*	pound (AV.IPFV)	–	–
l	*lavuku*	sand	*sikúlapʉ*	mosquito	–	–

All vowels occur in word-initial, medial, and final position.

TABLE 48.4 Distribution of vowels in Kanakanavu

	#V_	Gloss	_V_	Gloss	_V#	Gloss
i	*iciici*	tail	*cina*	mother	*pui'i*	return
u	*u'ungu*	horn	*cuma*	father	*manu*	child
ʉ	*ʉrʉna*	snow	*cumacʉ'ʉra*	see (AV.IPFV)	*malʉ'ʉ*	love
a	*aakaan*	evilness	*tanam*	try	*miʉra*	yesterday
e	*esaraio*	put in one's pocket	*nésua*	over there	*masange*	tired
o	*onu*	vapor, steam	*vo'in*	eye	*pana'o*	shoot (UV.IMP)

48.2.3 *Syllable Structure, Stress, and Intonation*

Kanakanavu exhibits a typologically rare word count, in that a prosodic word must be trimoraic (see Tsuchida 1976, p. 31). On the one hand, if a word is polysyllabic and contains three or more syllables, the minimum syllable structure can be represented by the formula (C)V, e.g., *uia* [úia] '(cooking) pot', *acipi* [atʃípi] 'foot', *vantuku* [vántuku] 'money', *iciici* [itʃíitʃi] 'tail'. On the other hand, a disyllabic word cannot contain just two monomoraic syllables *CV.CV. It is composed of two syllables of unequal weight, whereby one is light or

monomoraic, that is, V, CV or CVC syllable, and the other is heavy or bimoraic, that is, CV:, CVV (with the syllable having undergone either diphthongization CV_DV or gliding CV_GV), or CVN:, e.g., *manu* [má:nu] 'child', *kurai* [kuréi] 'worm', *nguain* [ŋwáin] 'he/she/they', *'akia* [ʔakía] ~ [ʔakjá] 'not exist', *tangtang* [táŋ-taŋ] 'ripe (pumpkin)', *makung* [makúŋ] 'cold'. The distribution of syllable types is tabulated in Table 48.5.

TABLE 48.5 Distribution of syllable types

Light syllables				Heavy syllables			
	Initial	Medial	Final		Initial	Medial	Final
V	✓	✓	✓	CV [(C)V:]	✓	✗	✗
CV	✓	✓	✓	CVV [CV_DV]	✗	✓	✓
CVC (if other than N)	✓	✓	✗	CVV [CV_GV]	✓	✓	✓
CVN	✓	✓	✓	CVN	✓	✓	✓

On the one hand, there is no restriction as to which syllable is bimoraic, i.e., a bimoraic syllable can appear in the first or the second syllable. On the other hand, there is a discrepancy as to which syllable gets lengthened when a disyllabic word has the shape CV.CV. Whatever vowel occurs, it is always the first syllable that gets lengthened. This can be schematically represented as CV:.CV, viz. C*a*:.CV, e.g., *manu* [má:nu] 'child'; C*i*:.CV, e.g., *ngiri* [ngí:ri] 'hemp fibre'; C*u*:.CV, e.g., *pu'a* [pú:ʔa] 'buy'; C*ʉ*:.CV, e.g., *vʉra* [vʉ́:ra] 'rice'; C*e*:.CV, e.g., *cenga* [tsé:ŋa] 'earrings'; C*o*:.CV, e.g., *soni* [só:ni] 'now'. A lengthened vowel cannot occur in the second syllable, as in *CV.CV:, except in loanwords, e.g., *canaa* [tsanáa] '(wet rice) field' (< Southern Min) (Chen 2016, p. 55ff.). Likewise, two lengthened vowels never occur simultaneously in the two syllables, hence the sequence *CV:.CV: is also forbidden. Vowel length is thus not phonemic in Kanakanavu. Rather, it results from the minimal word constraint in disyllabic content words.

Stress generally falls on the penultimate syllable and is not phonemic either, though this is not totally regular because of the sound changes that this language has undergone (Chen 2016). For instance, in words with a nasal coda, stress falls on the syllable that precedes the syllable with the deleted vowel, e.g., *támmi* [tammi] 'sweet potato' < *tamúmi* (Tsuchida 1976, p. 29). In a word with a final nasal coda, stress remains on the syllable on which it originally fell, that is the earlier penultimate syllable, e.g., *'alam* [ʔaɾám] 'meat' < *'aɾamʉ* [ʔaɾámʉ]

(Tsuchida 1976, p. 168). There are two types of irregular stress patterns: (i) certain words exhibit two stress patterns depending on the speech flow of the informant due sometimes to emphasis, e.g., *akia* [akía] ~ [akjá] 'there is not / there was not'; (ii) words with a CV1CV1CV1 or CV1CV2CV1 syllable shape exhibit antepenultimate stress, e.g., *angirisi* [aŋírisi] 'pork, grease', *'uma'uma* [ʔomóʔoma] 'field'.

Polysyllabic words with regular stress on the penultimate syllable do not undergo stress shift, e.g., *makanangulu* [makanaŋúru] 'swim (AV)' vs. *apapakanangul-un* [apapakanangúrun] 'make swim'. For polysyllabic words with stress on a penultimate or antepenultimate syllable of the type CVN, stress usually shifts to the penultimate syllable after affixation. Compare *ku-vangvang* [kuváŋvaŋ] 'eat all' with *ku-vangvang-o*! [kuvaŋváŋo] 'Eat (it) all! (UV.IMP)'. Disyllabic words with a lengthened and stressed vowel on the first syllable undergo stress shift, e.g., *cina* [ʧíːna] 'mother' vs. *cina=maku* [ʧínámaku] 'my mother'.[2]

There are two main intonation patterns. Clauses without the topic marker *ia* have a falling pitch on the last syllable of the utterance (1a), with no distinction between any clause type (declarative, interrogative or imperative, and affirmative or negative). Clauses that introduce a topic phrase punctuated by *ia* exhibit a rising intonation followed by a falling pitch (1b).

(1) a. *kuvuruvura'-a k⟨um⟩aun!*
quick-IMP.AV ⟨AV.DEP⟩eat
'Hurry to eat!'

b. *cau isa ia ma'anman apakaun ikua camai.*
person that TOP STAT:like CAUS:eat 1SG.OBL side.dish
'That person likes to give me side dishes to eat.'

48.2.4 *Phonological Rules and Morphophonemic Alternations*

Phonological rules include vowel lengthening, haplology, metathesis, fortition, and assimilation.

When monophthongization of *ai* takes place before *n*, the resulting vowel *e* is lengthened within a word or across a morpheme boundary if the final *i* is deleted, e.g., *t⟨um⟩a~teen* [tumatɛɛn] 'throw away (AV.IPFV)' (< *t⟨um⟩a~taini*; Tsuchida 2003, p. 16), *cinen* [ʧinɛːn] 'his/her/their mother' (< *cina-ini* [ʧinaini];

2 In the rest of this chapter, stress will not be indicated unless otherwise necessary.

Tsuchida 2003, p. 21). The vowel *i* (if not preceded by any other vowel) also gets lengthened. Compare, for instance, *matikini* [matikini] vs. *matikin* [matiki:n] 'obstruct' with *civuini* [ʧivuini] ~ *civuin* [ʧivuin] (and not *[ʧivui:n]) 'guts'.

Vowel deletion is regularly found, e.g., *nerisinat-aku* (< *ni-ari-sinat(ʉ)-aku*) [PFV:PAT.NMLZ-by.hand-paper-1SG.GEN.PSR] 'my writing', *s⟨in⟩⟨m⟩ʉpuru* 'counted (AV.PFV)' instead of **s⟨in⟩⟨um⟩ʉpuru*, and in the verb 'borrow', the infix ⟨*in*⟩ is reduced to ⟨*i*⟩, as in *s⟨i⟩⟨m⟩uluve* 'borrowed (AV.PFV)', rather than **s⟨in⟩⟨m⟩uluve*.

Haplology is found in the verb *timana* 'hear', cf. *t⟨in⟩⟨m⟩ana* 'heard (AV.PFV)' instead of the expected form **t⟨in⟩⟨(u)m⟩imana*.

The word *cuma* [cu:ma] 'father' undergoes metathesis when followed by a genitive pronoun marking possession, e.g., *cuamin* [tsuɔmin] ~ [tsuomin] 'his/her/their father' (< *cuma-in(i)*). This is the only case of metathesis observed in the data, and it might be used to avoid confusion between the expected form **cumen* [tsumɛ:n] 'his/her/their father' and the unrelated word *cucumen* [tsutsumɛ:n] 'other'.

The vowels *i* and *u* may change into the flap *ɾ* and the voiced fricative *v*, respectively, when the base is suffixed with *-a*, e.g., *paa-camal-a* ~ *paa-camai-a* 'Eat the side dish! (IMP.AV)', *kin-va~val-a* 'siblings' ~ *kin-va~vai-a* (< *vai* 'sibling', *kin-...(-a)* 'be in relation with'), *ta-kuvav-a* ~ *ta-kuvau-a* 'place of storage (LOC.NMLZ)'.

Regressive and progressive vowel assimilation results from affixation or cliticization, as shown in (2b–c), as opposed to (2a):

(2) a. The voice affix ⟨*um*⟩ 'AV' and its allomorphs (no assimilation process):

⟨*um*⟩, e.g.,	*t⟨um⟩ukutuku*	'wash clothes by beating them (AV)'
um-, e.g.,	*um-upucu*	'wrap (AV)'
mu-, e.g.,	*mu-pana'ʉ*	'shoot (AV)'

a'. The voice affix *-ʉn* 'UV' and its allomorphs:

-ʉn, e.g.,	*kaʉn-ʉn*	'eat (UV)'
	itar-ʉn	'wait (UV)'
-un, e.g.,	*a'un-un*	'carry (UV)'
-in, e.g.,	*ariv-in*	'hold (UV)'

b. A prefix containing one or two vowel(s) *u*, partially or totally assimilated when attached to a root containing the (non-contiguous) vowel *ʉ*. (Note that different pronunciations were recorded and are faithfully reported here.)

matu- 'light (fire)' *matu-apuru* 'light a fire (AV)'
matʉ-ʉvʉ 'light a fire as a signal (AV)'

putu- 'open'	*putu-'ʉnʉvʉ* ~ *putʉ-'ʉnʉvʉ* ~ *pʉtʉ-'ʉnʉvʉ*	'to open a door'

c. The clitic *=pa* 'still' and its allomorphs:
=pa, e.g., *'esi=pa=maku*... 'I am still ...'
=pe, e.g., *kuu=pe=ke* 'he/she/they has/have not yet ...'
=pi, e.g., *'una=pi=kita*... 'We still have ...'
=pu, e.g., *tavala'ʉ=pu=ku*... 'I still know ...'

c'. The clitic *=cu* 'already (COS)' and its allomorphs:
=cu, e.g., *ni-makan=cu=ku* 'I once ...'
=cʉ, e.g., *ni-matisa'ʉ=cʉ=ku* 'I have already caught ...'
=ci, e.g., *ni-arupacʉ'ʉra=ci=kita* 'We have already met ...'

48.2.5 *Sound Changes in Progress*

There are several sound changes in progress in Kanakanavu, many of which are reported in Tsuchida (2008), but some are also based on my own fieldwork observations. The following changes are readily observable:

- the assimilation of *a* to an adjacent *ʉ* followed by the deletion of that vowel if a word contains more than three syllables. For instance, the phrase *kaʉn-ʉn=ke* [eat-UV=3.GEN.NSA] 'He ate ...' is often pronounced [*kʉn-ʉn=ke*], with the deletion of *a*. In comparison, *kaʉn-ʉn* [kʌʉnʉn] ~ [kʉʉnʉn], which only contains three syllables, is never pronounced as *[*kʉn-ʉn*], as it would violate the minimal word constraint.
- the loss of lengthened vowels in intervocalic position, e.g., *tanasa* [tanása] 'house' < *taanáasa* (Tsuchida 1976, p. 28), *tungingi* [tuŋíŋi] ~ *tunging* [tuŋíːŋ] 'rat' < *tuungíingi* (Tsuchida 2008, p. 138).
- the deletion of the glottal stop in middle position with lowering of the two high vowels and/or haplology, e.g., *mu'una* [moʔona] > *moona* [moona] > *mona* [moːna] 'dwell, be at', *ma'icun* [meʔitsun] ~ [meʔetsun] > *meecun* [meetsun] 'heavy' and assimilation of *u* to *ʉ*, e.g., *cumʉ'ʉra* [tsumʉʔʉra] > *c⟨um⟩ʉʉra* [tsumʉʉra]~ *c⟨ʉm⟩ʉʉra* [tsʉmʉʉra] 'see'.
- the change from *s* /s/ to *h* /h/ in some lexical and grammatical words, e.g., *tanasa* [tanasa] ~ *tanaha* [tanaha] 'house', *sua* [sua] ~ *hua* [hua] 'NOM'.
- the variation between *u* and *o*; cf. *kuu* [kuu] ~ [koo] 'NEG', *tavuu* [tavuu] ~ *tavoo* [tavoo] 'vegetable'.
- the deletion of the first syllable in grammatical and lexical words, e.g., *saviki* [saviki] ~ *viki* [viːki] 'betel nut', along with resyllabification if necessary, e.g., *ka'an* [kaʔan] ~ [ʔaan] 'NEG'.

48.2.6 *Diachronic Phonology*

Kanakanavu reflexes of PAN and Proto-Tsou are listed and exemplified in Li (1972) and Tsuchida (1976), and our reconstructions are based on these two major sources. Kanakanavu has preserved the following PAN phonemes: *p, *t, *k, *S, *m, *n, *ŋ, *R, and *l. *b is reflected as [β] or [v]. PAN *z and *d have merged with *C as c. *q, *N, and *-y- have become the glottal stop ', the dental nasal *n*, and the flap *l*, respectively. PAN *s, *j, and *w were lost. The four vowels *i, *u, *a, and *e are reflected unchanged.

(3)

	PAN		Kanakanavu			Gloss
a.	*p	*Sapuy	*p*	*apulu*	[apuɾu]	'fire'
b.	*t	*pitu	*t*	*pitu*	[pi:tu]	'seven'
c.	*k	*kuCu	*k*	*kucu*	[ku:tsu]	'louse'
d.	*b	*batu	*v*	*vatu*	[va:tu]	'stone'
e.	*S	*bekeS	*s*	*vʉkʉsʉ*	[vʉkʉsʉ]	'hair'
f.	*C	*Cumai	*c*	*cumai*	[tsumai]	'bear'
g.	*z	*quzaN	*c*	*'utsan(ʉ)*	[ʔucan(ʉ)]	'rain'
h.	*d	*duma	*c*	*cucumaini*	[tsutsumaini]	'other'
				~ cucumen	~[tsutsumɛ:n]	
i.	*m	*mima	*m*	*mima*	[mi:ma]	'drink (AV)'
j.	*n	*zalan	*n*	*can(ʉ)*	[tsa:n(ʉ)]	'road'
k.	*ŋ	*ŋalai	*ŋ*	*ngaai*	[ŋaai]	'saliva'
l.	*R	*beRas	*r*	*vʉra*	[vʉ:ra]	'husked rice'
m.	*l	*lima	*l*	*lima*	[ɾi:ma]	'five'
n.	*q	*panaq	*'*	*mupana'ʉ*	[mupanaʔʉ]	'shoot (AV)'
o.	*N	*ma-puNi	*n*	*ta-puni-a*	[tapunia]	'white'
p.	*-y-	*ayam	*l*	*alam(ʉ)*	[aɾam(ʉ)]	'meat' (< 'bird' in PAN)
q.	*s	*saleŋ	*Ø*	*alʉŋ(ʉ)*	[aɾʉŋ(ʉ)]	'pine tree'
r.	*j	*pija	*Ø*	*u-pia-ini*	[upiaini]	'how much'
				~ upien	~ [upiɛ:n]	
s.	*w	*ka-wiRi	*Ø*	*iri*	[i:ri]	'left (side)'
t.	*i	*ina	*i*	*cina*	[tɕi:na]	'mother'
u.	*u	*daNum	*u*	*canum(u)*	[tsanum(u)]	'water'
v.	*a	*Caŋis	*a*	*tumangi*	[tumaŋi]	'cry (AV)'
w.	*e	*kaen	*ʉ*	*kumaʉn*	[kumaʉn]	'eat (AV)'

48.3 Morphology

Kanakanavu is a synthetic-agglutinative language, and its morphemes are usually distinguishable, e.g., *kavavantuku* 'earn money' (< *ka-* 'make', *vantuku*

'money', with the first syllable reduplicated), *pocanum* '(to) water, sprinkle' (< *po-* 'CAUS.MVT', *canum(u)* 'water'), *kovangvang* 'eat all' (< *ko-* 'eat', |*vangvang*| 'all'). However, in some instances, the separation of morphemes in complex stems has become more difficult because of subsequent sound changes.

48.3.1 *Morphological Units*

In Kanakanavu, morphological units include free and bound morphemes, which differ first and foremost on the phonological level. As previously mentioned, a free lexical word needs to be trimoraic (see § 48.2.3), even if it contains only two syllables, e.g., *aka* [a:ka] 'bad', *namu* [na:mu] 'grandchild'. Grammatical (or function) words, in contrast, do not need to contain three moras (e.g., *kuu* [kuu] 'NEG', *tia* [tia] 'IPFV', *sua* [swa] 'NOM', *ia* [ja] 'TOP'). However, this must have been the case in the past, as seen in Tsuchida's (1976, 2003) transcriptions. Grammatical words may also attach to content words to form prosodic words. Thus, different pronunciations can be observed, e.g., *manu isi* [má:nu í:si] vs. *manu=isi* [manúisi] 'that child' (< *manu* [ma:nu] 'child', *isi* [i:si] 'that'). On the one hand, content words can undergo affixation or reduplication or may also be part of a compound. Grammatical words, on the other hand, are not subject to any of these morphological processes, e.g., *nakai* 'but' (and never **nakai-in* [but-3.GEN.PSR] 'but he/she/they ...'), although they can be cliticized, e.g., *te=ke* [IPFV=3.GEN.NSA] 'he/she/they is/are/will ...'. Bound morphemes refer to (lexical) bound roots, clitics, and affixes. Importantly, while nouns constitute free morphemes, many verbs are bound morphemes. For instance, a verb like |*tuvung*| 'hide (oneself)' cannot occur by itself and needs to be affixed, e.g., *api-tuvung* 'make ... hide', *mi-tuvung* 'hide oneself (AV)' etc. Compare this with the stative verb *kuracu* 'angry', as in *ka'an=ku kuracu* [NEG=1SG.NOM angry] 'I am not angry', which constitutes a free lexical word.

It is difficult to distinguish clitics and affixes in Kanakanavu, for instance, because both clitics and affixes exhibit allomorphs (see § 48.2.4). However, one major distinction involves disyllabic words. A disyllabic word like *manu* 'child' can only take a genitive clitic (indicating the possessor), such as *=maku* '1SG.GEN.PSR', *=musu* '2SG.GEN.PSR' (cf. *manú=**maku*** [child=1SG.GEN.PSR] 'my child'), but never a suffix, such as *-aku* '1SG.GEN.PSR', *-su* '2SG.GEN.PSR', as shown by the ungrammaticality of **manu-**aku*** [child-1SG.GEN.PSR] 'my child'. On the one hand, trisyllabic words like *acipi* 'leg' are not subject to this constraint, and can take both; cf. *acip-**aku*** and *acipi=**maku*** 'my leg'. Disyllabic words, on the other hand, can take the suffix *-in(i)* '3.GEN.PSR', as in *manu-**in*** [manúin] 'his/her/their child'. The affixation of *-in(i)* results in different morphophonemic alternations, e.g., metathesis, as in ***cuomin*** 'his/her/their father' (< *cumá-in(i)*), and monophthongization, e.g., *cinen* [ciné:n] 'his/her/their mother' (< *cina-in(i)*), as outlined in § 48.2.4.

48.3.2 *Morphological Processes*

Important morphological processes in Kanakanavu include affixation, reduplication, and compounding. Affixation seems to be far more productive than reduplication and compounding. Tsuchida (1985) compiled a list of 170 affixes, many of which are not found in L. Sung (2018). Affixation applies to different types of bases, in particular nouns, verbs, and numerals. At most, three affixes can occur on a base, though sound changes may render these affixed forms opaque, as shown in the following examples. For instance, the prefix *si-a-* 'INST.NMLZ-IPFV' is pronounced [sie-] (or even [se-]) in *siepucanum* 'water pipe', lit. 'instrument to make water move' (< *si-a-pu-canum*; *si-* 'INST.NMLZ', *a-* 'IPFV', *pu-* 'CAUS.MVT', *water-* 'water'); *mu-a-* 'go (AV.IPFV)' is pronounced with a long vowel; cf. *mo:-*, when it marks the imperfective, as in *mo:kusa* 'go' (< *m-u-a-kusa*, *m-* 'AV', *u-* 'go', *a-*'IPFV', |*kusa*| 'go'); the first part of the circumfix *ta-...-a* 'LOC.NMLZ' followed by *u-* 'stand' monophthongizes as *to-*; cf. *tocanuma* 'place where there is water' (< *ta-...-a* 'LOC.NMLZ', *u-* 'stand', *canum*(*u*) 'water'). Affixes include prefixes, infixes, suffixes, circumfixes, and serial affixes. Prefixes outnumber the rest of affixes and can be further divided into lexical and grammatical affixes. There are only two productive infixes, ⟨*um*⟩ 'AV' and ⟨*in*⟩ 'PFV' (note that ⟨*in*⟩ also has a portmanteau function as 'UV'). The order in which they occur is different from what is usually found in other Formosan languages, with the perfective preceding the 'AV' marker, as ⟨*in*⟩⟨*um*⟩; cf. *c*⟨*in*⟩⟨*m*⟩*apa* 'roast (AV.PFV)'. Kanakanavu has three fossilized affixes, whose meanings are difficult to determine: ⟨*ar*⟩, as in *k*⟨*ar*⟩*askasa* 'fish basket'; ⟨*al*⟩, as in *v*⟨*al*⟩*ang*(*i*)*vangi* 'fish sp.'; and ⟨*an*⟩, as in *s*⟨*an*⟩*apisapi* 'driftwood' (see Li & Tsuchida 2009).

There are three major types of reduplication, (i) full reduplication, in which two syllables minus the coda are copied, cf. CVCV-, (ii) partial reduplication, which subsumes CVC-reduplication and CV-reduplication, and (iii) C*a*-reduplication. Both verbs and nouns can be reduplicated through CVCV-, CVC-, and CV-reduplication, which encode a continuous or iterative meaning on verbs and plurality on nouns, e.g., *ku-vutu~vutukulu* 'keep on eating fish' (< *ku-vutukulu* 'eat fish'), *ma~manu* 'children' (< *manu* 'child'), *nannaku* 'women' (< *nanaku* 'woman'), *ra-tam~tammi-a* 'a place full of sweet potatoes' (< *tammi* 'sweet potato', *-a* 'LOC.NMLZ'). C*a*-reduplication only applies to numerals and dynamic verbs and carries two different functions. On numerals for 'three' and above, as well as on related interrogative words (e.g., 'how many'?), it derives human cardinal numbers (e.g., *iikamu ia* ***pa~peen*** *ma~manu=mu?* [2PL.TOP TOP RED~how.many RED~child=2PL.GEN.PSR] 'How many children do you have?'). With dynamic AV-verbs marked by ⟨*um*⟩, it encodes the imperfective aspect (see § 48.5.5), e.g., *k*⟨*um*⟩*a~kaun* 'eat (AV)', *k*⟨*um*⟩*a~karákara* 'scratch (AV)'.

Kanakanavu exhibits compounds that can be divided into three types. The first type consist of compounds of two nouns, in which the second noun modifies the first noun, e.g., *man(u)=nanaku* 'daughter' (< *manu* 'child', *nanaku* 'woman'), *cau=kakangusa* 'God' (< *cau* 'person', *kakangusa* 'sky'), *tanasa=apulu* 'train' (< *tanasa* 'house', *apulu* 'fire'); when the first noun is disyllabic, it is attached to the second noun without any vowel lengthening; if the noun is polysyllabic, the two nouns are pronounced independently with distinct stress. The second type are compounds made up of a numeral followed by a nominalized noun, e.g., *cani=pining-a* 'family' (< *cani* 'one', *pipiningi* 'outside (the house), patio'). The third type of compounds are composed of a noun followed by an AV-marked verb, which serves as a modifier, e.g., *manu=marisinatu* 'student' (< *manu* 'child', *marisinatu* 'study, write (AV)'), *cuu=nalupu* 'fishing line' (< *cuu* 'string', *nalupu* '(to) fish'), *cau=mu'uma* 'farmer' (< *cau* 'person', *mu'uma* '(to) weed'). As shown in the above-mentioned examples, compounds are usually newly coined expressions.

48.4 Word Classes

Kanakanavu has 14 word classes: nouns; verbs; auxiliary verbs; pronouns; (a very impoverished system of) case markers; prepositions; negators; adverbs; a topic marker; exclamations; interjections; and phrasal, clausal, and interclausal connectors.

Nouns can be divided into three main categories: common nouns, personal nouns (which include kinship terms), and locative (e.g., *tarisinata* 'school', *'aravang* 'inside', *tanganoa* 'place name') and temporal nouns (e.g., *miura* 'yesterday', *tavina'a* 'millet season'). Common nouns include [-human] and [+human] nouns. They are distinguished in terms of the cardinal numbers that modify them when counting. Non-human nouns take a cardinal number always preceded by *u-*, as in ***u-can(i)*** *tutui* 'one (domesticated) pig', ***u-rucin*** *tacau* 'two dogs', ***u-tulu*** *tammi* 'three sweet potatoes'. Above 'two', human nouns take a cardinal number that exhibits C*a*-reduplication, as in ***ta-tulu*** *saronai* 'three men' and ***sa~supatu*** *nannaku* 'four women' (see § 48.3.2). The numerals 'one' and 'two' use suppletive forms, cf. *tacin* 'one' and *tassa* 'two', when they co-occur with human nouns, as in ***tacin*** *saronai* 'one man', ***tassa*** *nannaku* 'two women'.

One major distinction between common and personal nouns in contrast to locative and temporal nouns is that the former two may take the nominative case marker *sua*, whereas the last two never do.

(4) a. *ni-macai=cu sua/Ø cinen/tacau-in(i).*
PFV-die=COS NOM mother:3.GEN.PSR/dog-3.GEN.PSR
'His/Her/Their mother/dog has died.'

b. *ma-cici Ø/*sua taniara=soni.*
STAT-hot Ø/*NOM day=now
'Today, it is hot.'

c. *Ø/*sua tiskara 'avang ia paira pasatumur-un vutukulu...*
Ø/*NOM inside boat TOP often CAUS:many-UV fish
'There are always a lot of fish in the boat ...'

Verbs are divided into dynamic verbs, marked by ⟨*um*⟩ (e.g., *s⟨um⟩a~suluve* 'borrow'), and stative verbs, marked by *ma-* or zero (e.g., *ma-manʉng* 'good, right, correct', *aka* 'bad'). Kanakanavu exhibits two auxiliary verbs (see § 48.4.1); the first might encode the imperfective in that the clause can be given a habitual or a future (/projective) meaning based on the co-occurrence of other sentential elements; this auxiliary verb is now found with two different forms: the first is *te*, which is always followed by a pronoun (5a) or cliticized by aspectual markers, e.g., *=pa* 'still' (5b), *=cu* 'already (COS)' (5c), and *tia*, which is never followed by a pronoun or any aspectual markers (5d); the second, *'esi*, expresses the progressive (5e).

(5) a. ***te=ku*** *apitʉvʉng kamua.*
IPFV=1SG.NOM CAUS:hide 2PL.OBL
'I will hide you.'

b. ***te=cu=ku*** *poi'i mukusa tanasa.*
IPFV=COS=1SG.NOM IPFV:come.back AV:DEP:go house
'I am on my way back home.'

c. ***te=pi=kita*** *maakarikari.*
IPFV=still=1PL.INCL.NOM AV:discuss
'We still have to discuss (it)/Let's discuss (it) again!'

d. *kan manasʉ* ***tia*** *ko-tammi si 'akia vura.*
EVI perhaps IPFV eat-sweet.potato because not.exist rice
'Perhaps, (they) eat sweet potatoes because there is no rice.'

e. *manu ia 'esi mi-tuvung.*
child TOP PROG AV-hide
'The child is hiding.'

Many adverbial concepts are expressed through verbs, e.g., *pirati'ing* 'give a little' (< *pira-* 'give', *ti'ing* 'a little, little, small'), *karati'ing* 'drink a little' (< *kara-* 'drink', *ti'ing* 'a little, little, small'), *masititi'ing* 'speak (or sing) in a low voice' (< *masi-* 'speak', *ti'ing* 'a little, little, small'), *karati'ing* 'drink a little' (< *kara-* 'drink', *ti'ing* 'a little, little, small'), *pimukumukun* 'to sing together with someone else' (< *pi-* 'sing', |*mukumukun*| 'together'); or nouns, e.g., *soni* 'today', *nusoni* 'later, in a while', *misoni* 'just, a while ago'. There are some adverbs, however, which are invariable and usually occur before the main (lexical) verb, e.g., *'apanapa* 'sometimes', *canpe* 'just', *paira* 'often', *manasu* 'perhaps'. Finally, compared with other Formosan languages, Kanakanavu features few inter-clausal elements (see § 48.5.8).

48.5 Syntax

Kanakanavu appears to have a rather simpler syntax than most other Formosan languages. It has an impoverished voice system and features very few inter-clausal elements. Its complexity resides in the arrangement of the clause, the order of nominal and pronominal arguments, and its recourse to nominalization to express notions that are encoded through voice markers in other Formosan languages. Here, we focus on these specific features.

48.5.1 *Basic Clause Structure*

Kanakanavu is basically a predicate-initial language. It exhibits two basic clause structures: the first starts with the main lexical verb—usually marked as perfective—and the second is headed by an auxiliary verb that encodes imperfectivity, either *'esi* 'PROG' or *te/tia* 'IPFV'. The cliticization of a pronoun (whatever its case and regardless of whether the voice of the clause is AV or UV) is not obligatory after *'esi* 'PROG'. On the contrary, *te* is always followed by a first- or second-person pronoun in verbal clauses, whereas *tia* is never followed by a pronoun and usually precedes the main (lexical) verb in verbal and syntactically nominalized clauses. Schematically, these two types of clause structures can be represented as in (6) (see also examples in (5) above).

(6) a. *ni-/⟨in⟩*V_{AV}(=$PRO_{A(1/2.NOM)}$) NP (/PRO)
b. *ni-/⟨in⟩*V_{UV}=$PRO_{A(1/2/3.GEN.NSA)}$ NP

c. AUX(=$PRO_{A(1/2.NOM)}$) V_{AV} NP (/PRO)
d. AUX=$PRO_{A(1/2.GEN.NSA)}$ V_{UV} NP (/PRO)
e. AUX V_{UV}=$PRO_{A(3.GEN.NSA)}$ NP (/PRO)
(where AUX = *'esi* 'PROG', *te* 'IPFV')

f. AUX V_{AV}=$PRO_{A(1/2/3.GEN.NSA)}$ NP (/PRO) (where AUX =*tia* 'IPFV')

When both arguments of the verbs are nouns, the actor always immediately follows the verb, both in AV and in UV clauses, as shown in (7a–b) and (7c–d). What changes is actually the position of the subject, which occurs in medial position in AV clauses (VSO) and in final position in UV clauses (VOS).

(7) a. *'esi=cu pu'a makasin **cina=maku**$_A$ natʉng.*
PROG=COS buy now mother=1SG.GEN.PSR vegetable
'Mother is now buying vegetables.'

b.* *'esi=cu pu'a makasin natʉng **cina=maku**$_A$.*
PROG=COS buy now vegetable mother=1SG.GEN.PSR

c. *ni-kaʉn **ngiau**$_A$ sua tapenange.*
PFV.UV-eat cat NOM bird
'As for the cat, it ate the bird.'

d.* *ni-kaʉn sua tapenange **ngiau**$_A$.*
PFV.UV-eat NOM bird cat

When the verb is ditransitive and has a pronominal subject, the direct object occurs closer to the verb in AV clauses, as in (8a); the subject appears in final position in UV clauses (8c).

(8) a. *te=ku s⟨um⟩a~suluve **vantuku** na mu'u.*
IPFV=1SG.NOM ⟨AV⟩RED~borrow money LOC Mu'u
'I will borrow money from Mu'u.'

b.* *te=ku s⟨um⟩a~suluve na mu'u **vantuku**.*
IPFV=1SG.NOM ⟨AV⟩RED~borrow LOC Mu'u money

c. *vu-ʉn=maku **manu=maku** vantuku.*
give-UV=1SG.GEN.NSA child=1SG.GEN.PSR money
'I give my child money.'

d.* *vu-un=maku* *vantuku* ***manu=maku.***
give-UV=1SG.GEN.NSA money child=1SG.GEN.PSR

When one of the participants (actor or undergoer) is encoded as a pronoun other than the third-person actor, the pronoun always precedes the noun (9a). A third-person actor is usually covert, though it can be overtly expressed by *nguain* (9b), of which the distribution is similar to that of a noun. An oblique third-person pronoun (viz. *'inia*) exhibits the same distribution as the first- and second-person oblique pronouns (9c–d).

(9) a. *ni-pa-pa-kaun* ***ikua*** *camai.*
PFV-CAUS-DYN-eat 1SG.OBL side.dish
'He/She/They gave me a side dish to eat.'

b. *'esi=maku* *itar-un* ***nguain.***
PROG=1SG.GEN.NSA wait-UV 3.NOM
'I am waiting for him/her/them.'

c. *te=kara=kasu* *i⟨a⟩vatu* ***ikua*** *s⟨um⟩uluvai*
IPFV=QST=2SG.NOM ⟨IPFV⟩come 1SG.OBL ⟨AV.DEP⟩borrow
sinatu?
book
'Will you come to my place to borrow a book?'

d. *te=ku* *kipapa* ***'inia*** *mu'uma* *nura.*
IPFV=1SG.NOM follow 3.OBL AV.DEP.weed tomorrow
'I will follow him/her/them to weed (the field) tomorrow.'

When both the actor and the undergoer are encoded by pronominal forms, only one of the participants can be encoded by a (second-position) clitic pronoun. In AV clauses, it is encoded as a nominative clitic; the undergoer is a free oblique pronoun, as illustrated in (9c–d). In UV clauses, the occurrence of the clitic pronoun on the verb or the auxiliary is regulated by the person hierarchy (see Table 48.5). If the (subject) undergoer refers to a third-person participant, it occurs as a nominative free pronoun, and the non-subject actor is encoded through a genitive clitic, as in (9b). If a third-person participant is the actor, it is manifested through the (phrasal) clitic *=ke*, and the theme is marked as an oblique pronoun, as in (10a). When the undergoer is a first- or second-person participant, it encodes as a nominative clitic that occurs either on the verb on the auxiliary, but the non-subject actor cannot be overtly marked, as shown in (10b).

(10) a. *(sua) tamtitu ia tia manasʉ vʉ-ʉn=ke*
(NOM) puppy TOP IPFV perhaps give-UV=3.GEN.NSA
kimia.
1PL.EXCL.OBL
'As for the puppy, he/she/they may give it to us.'

b. *'esi=kasu(*=maku) itar-ʉn.*
PROG=2SG.NOM(*=1SG.GEN.NSA) wait-UV
'I am waiting for you.'

TABLE 48.6 Kanakanavu person hierarchy

	Actor > Undergoer		Actor > Undergoer		Actor > Undergoer	
	1st / 2nd Clitic	3rd Free	1st / 2nd Clitic	1st / 2nd Clitic	3rd Ø / Free	1st / 2nd Clitic
AV	NOM	OBL	NOM	OBL	(NOM)	OBL
UV	GEN.NSA	NOM	—	NOM	GEN.NSA	(NOM)

Kanakanavu is ergatively aligned: the nominative subject is the actor in AV clauses and the patient in UV clauses, as shown in the preceding examples.

Another word order—which has become frequent, perhaps through language contact with Mandarin Chinese—is topicalization, as in (8a). In general, it is the subject noun phrase (NP) that gets topicalized, that is, the actor in AV clauses and the undergoer in UV clauses.[3] However, in UV clauses, the non-subject agent can also be found in topic position when it is definite (cross-reference is expressed through the addition of '*i*') (11).

(11) [*manu isi*]$_i$ *ia ni-patupun=ke*$_i$ *tamtitu isi urupaca*
child this TOP PFV.UV-throw=3.GEN.NSA puppy this use
vatu.
stone
'As for the child, he used a stone to throw at this puppy.'

3 An example is given in (i):
(i) *cau isa ia ni-vua=maku nononomani macancani.*
person that TOP PFV.UV-give=1SG.GEN.NSA thing each
'As for that person, I gave him each of these things.'

48.5.2 *Clause Types*

Kanakanavu features nominal and verbal clauses. In nominal clauses, the predicate is a noun (12a). Verbal clauses usually have a verb as their predicate (12b).

(12) a. ***kanakanavu***=*kita* *kavangvang.*
Kanakanavu=1PL.INCL.NOM all
'We are all Kanakanavu.'

b. ***ni-ivatu***=*kasu* *mikinmana?*[4]
PFV-come[AV]=2SG.NOM REAL:when
'When did you come?'

Kanakanavu exhibits two predicative negators, *kuu* 'do/did not', and *ka'an* 'do/did not; is/was not'. While either of these negators can negate a verb (13a–b), only *ka'an* can negate a nominal predicate (13c). If the clause contains a clitic pronoun, it is attracted to the negator in initial position.

(13) a. *kuu macaasu talisi isi.*
NEG long rope this
'This rope is not long.'

b. *ka'an saihu.*
NEG know[AV]
'He/She does not know.'

c. *ka'an/*kuu talisi isi.*
NEG rope this
'This is not a rope.'

Nominal clauses include equational clauses and nominalized interrogative clauses headed by *neen* 'who, what', e.g., *neen=kasu?* [who=2SG.NOM] 'Who are you?', *neen sua ni-kaun=ke?* [what NOM PFV.UV-eat=3.GEN.NSA] 'What did he/she/they eat?'.

Verbal clauses subsume declarative, causative, imperative, and existential / possessive / locative clauses. Besides the two negators *kuu* and *ka'an* introduced above, there are two other negators, *'akuni* (14a) and *nomani'i* 'NEG.IMP' (14b), which express a prohibition. Note that *'akuni* is marked by verbs in the non-

4 The interrogative word *mikinmana* is also pronounced *makanmana* 'when'.

indicative form, cf. M- in AV clauses, as in (14a); *nomani'i* is followed by verbs in the indicative form, cf. C*a*-M- in AV clauses, as in (14b).

(14) a. *'akuni c⟨um⟩ʉ'ʉra ikua!*
NEG.IMP ⟨AV.DEP⟩see 1SG.OBL
'Don't look at me!'

b. *nomani'i k⟨um⟩a~kaun tammi!*
NEG.IMP ⟨AV⟩RED~eat 1SG.OBL
'Don't eat sweet potatoes!'

The negative existential/possessive morpheme *'akia* 'not exist' is actually a verb, e.g., *'akia vantuk-aku* (or *'akia vantuku=maku*) [not.exist money-1SG.GEN.PSR/ money=1SG.GEN.PSR] 'I have no money.'

48.5.3 *Structure of the Noun Phrase*

An NP consists of a bare noun (e.g., *nanakʉ* 'woman'), a noun followed by a demonstrative (e.g., *nanakʉ isi* 'this woman'), or a noun preceded by a case marker (e.g., *sua ngiau* '(a) cat').

The case-marking system in Kanakanavu is no longer productive, and only two markers remain: the nominative-case marker *sua* marks subjects and is not obligatory; the locative-case marker *na* obligatorily precedes locative phrases. A noun may be modified by another noun or by a verb. The modifier usually follows the head, e.g., *vantuku manu=maku* [money child=1SG.GEN.PSR] 'my child's money', *calapung masinang* [hat red] 'red hat'.

Adnominal demonstratives distinguish distance and visibility, cf. *isi* 'this', *isa* 'that (±vis)', *isua* 'that (-vis)'. Locative demonstratives include *sian, nesi* 'here', *suan, nesa* 'there (±vis)', and *sana* 'there (-vis)'. The morpheme *'inia* can refer both to a third-person participant oblique and to a location 'there', cf. *s⟨i⟩⟨m⟩uluve=ku vantuku* ***'inia*** [⟨PFV⟩⟨AV⟩borrow=1SG.NOM money 3.OBL] 'I borrowed money from him/her/them', *ni-macina=cu=ku* ***'inia*** [PFV-AV:wash. one's.face=COS=1SG.NOM 3.OBL] 'I washed my face there.'

48.5.4 *Pronominal System*

Personal pronouns in Kanakanavu exhibit a three-case distinction (nominative, oblique, and genitive) and are further divided into five sets, as shown in Table 48.6. The first set is free, and the other four are clitics (with different degrees of boundedness), except for *-aku* 'my (1SG.GEN.PSR)', *-su* 'your (2SG.GEN.PSR)', *-ta* 'our (1PL.INCL.GEN.PSR)', *-ini* 'his/her/their (3.GEN.PSR)', which are suffixes. Kanakanavu displays the commonly found inclusive/exclu-

sive distinction in the first-person plural (cf. *=kita* '1PL.INCL.NOM' vs. *=kimi* '1PL.EXCL.NOM'), but shows no gender, visibility, or number distinction in the third person. Nominative pronouns, which mark the subject, are marked by an initial *k-*, and oblique pronouns, which encode the direct or indirect object, by *-a*. Compare, for instance, *=ku* '1SG.NOM' and *ikua* '1SG.OBL'.

TABLE 48.7 Kanakanavu personal pronouns

	Topic	Nominative	Oblique	Genitive	
				NSA	PSR
1SG	*iiku*	*=ku*	*ikua*	*=maku*	*-aku, =maku*
2SG	*iikasu*	*=kasu*	*kasua*	*=musu*	*-su, =musu*
1PL.INCL	*iikita*	*=kita*	*kitana*	*=mita*	*-ta, =mita*
1PL.EXCL	*iikimi, iikia*	*=kimi*	*kimia*	*=mia*	*=mia*
2PL	*iikamu*	*=kamu*	*kamua*	*=mu*	*=mu, =nmu*
3SG/PL	*nguain*	—	*'inia*	*=ke*	*-in(i)*

The genitive set can be divided into two subsets, a set of non-subject-actor pronouns (NSA) and a set of possessor pronouns (PSR). The distinction between these two sets of pronouns is especially clear with *=ke* '3.GEN.NSA', which only attaches to UV-marked verbs (15a–b) and *-in(i)* '3.GEN.PSR', which only occurs on nouns (15c–d).

(15) a. *s⟨in⟩a'ʉm=**ke*** *saviki.*
⟨PFV.UV⟩chew=3.GEN.NSA betel.nut
'He/She/They chewed betel nuts.'

b.* *s⟨in⟩a'ʉm-**in(i)*** *saviki.*
⟨PFV.UV⟩chew-3.GEN.PSR betel.nut

c. *t⟨in⟩⟨m⟩angi manu-**in(i)**.*
⟨PFV⟩⟨AV⟩cry child-3.GEN.PSR
'His/Her/Their child cried.'

d.* *t⟨in⟩⟨m⟩angi manu=**ke**.*
⟨PFV⟩⟨AV⟩cry child=3.GEN.NSA

Free pronouns display a variety of syntactic functions but always refer to the nominative argument. They can be used as an answer to a question (e.g., *nésua isia cau? **iiku!*** [what:NOM here person 1SG.TOP] 'Who is here? It's me!') or co-occur with a negator to deny an identity (e.g., *ka'an **iiku!*** [NEG 1SG.TOP] 'It's not me!'). They can also function as predicates in cleft sentences, but in this case are never co-referenced by a pronominal clitic in the relative clause (16a). Topics, in contrast, occur in clause-initial position and need to be co-referred on the predicate with a nominative pronoun (16b). However, they never occur after an auxiliary verb, nor can they move to final position.

(16) a. ***iiku*** *sua ni-m-aritipitipi(*=**ku**) 'inia mica'ania miʉra.*
1SG.TOP NOM PFV-AV-slap(*=1SG.NOM) 3.OBL REAL.noon yesterday
'I am the one that beat him yesterday at noon.'

b. *iiku ia c⟨in⟩⟨m⟩ʉ'ʉra*(=ku) vunai.*
1SG.TOP TOP ⟨PFV⟩⟨AV⟩see*(=1SG.NOM) snake
'As for me, I saw a snake.'

Oblique and genitive NSA pronouns occur in complementary distribution with verbs marked by *-e*. An oblique pronoun is used when a verb is in a dependent form (17a); in a negative clause introduced by *kuu*, it is the genitive non-subject-actor pronoun that attaches to the pronoun (17b).

(17) a. *vo-e **ikua** kakicu=musu!*
give-UV.IMP 2SG.OBL net.bag=2SG.GEN.PSR
'Give me your net bag!' (based on Tsuchida 1976, p. 33)

b. *kuu=**maku** apui'-e cau isa.*
NEG=1SG.GEN.NSA CAUS:come.back-UV.DEP person that
'I did not let that person come back.'

48.5.5 *Verbal Morphology*

Kanakanavu features a binary dichotomy between actor voice (AV), as in (18a) and (18c), and undergoer voice (UV), as in (18b) and (18d), with no further distinction under UV (Teng & Zeitoun 2016).

(18) a. ***ni-m-avici**=cu=ku 'alam.*
PFV-AV-bring=COS=1SG.NOM meat
'I already brought meat.'

b. ***nevici=maku*** *'alam.*
PFV.UV:bring=1SG.GEN.NSA meat
'I brought the meat.'

c. ***tanam-an*** *paracani!*
try-AV.DEP.DIRCT sing
'Try to sing!'

d. ***kaun-on*** *sua camai isi!*
try-UV.DEP.DIRCT NOM side.dish this
'Try to eat this side dish!'

The identification of voice, as opposed to nominalization, lies in the occurrence of the third-person genitive pronouns *=ke* '3.GEN.NSA' and *-ini* '3.GEN.PSR' (19a–b).

(19) a. *cina ia ka-lu'-un=**ke**/*-**in*** *(sua)*
mother TOP STAT-love-UV=3.GEN.NSA/*-3.GEN.PSR (NOM)
manu-in.
child-3.GEN.PSR
'As for the mother, she loves her child.'

b. *karu isi ia si-pu'ucipi-**in**/*=**ke*** *'uru.*
wood this TOP INST.NMLZ-cook-3.GEN.PSR/*=3.GEN.NSA rice
'As for the wood, he/she/they used it to cook rice.'

The voice system interacts closely with mood and aspect, with a distinction between indicative and non-indicative mood, with the indicative mood used to make an assertion or ask a question, and the non-indicative mood used to make a command, a request, a wish, or a suggestion. Among the four negators mentioned in § 48.5.2, (13)–(14), *ka'an* and *nomani'i* are followed by verbs in the indicative form (viz. C*a*-M- in AV clauses and *-un* in UV clauses), whereas *kuu* and *'akuni* are followed by verbs in the non-indicative form (viz. M- in AV clauses and *-e* in UV clauses, as in (16c)). Kanakanavu distinguishes between perfective (encoded through ⟨*in*⟩ in both AV and UV clauses) and imperfective (marked by C*a*-reduplication or ⟨*a*⟩ in AV clauses but unmarked in UV clauses). The occurrence of the auxiliaries, *tia/te* 'IPFV' and *'esi* 'PROG', allows the distinction between different aspects/moods, cf. habitual and/or irrealis [imperfective], as in (5), (7a), (9b), and progressive, as in (8a), (10c).

TABLE 48.8 Kanakanavu voice system

			AV	UV
INDICATIVE	AFF	PFV	*ni*-M-stem (15a) ⟨*in*⟩M-stem	*ni*-stem (18b) ⟨*in*⟩stem (14a)
		IPFV	C*a*-M-stem (8a)	stem-*ин* (17a)
	NEG	PRED *ka'an*		
		IMP *nomani'i*		
NON-INDICATIVE	AFF	IMP	M-*a*	M-*o* (20d)
		DIRCT	M-stem-*a* (18c)	-on[5] (18d)
		DEP	M-stem (12a–b)	stem-*e* (16c)
	NEG	PRED *kuu*		
		IMP *'akuni*		

FROM ZEITOUN & TENG 2016, P. 171

48.5.6 *Transcategorial Operations*

Argument nominals, which are derived through nominalization, include agentive, patientive, instrumental, locative, and temporal nominals. Agentive nominalization is marked by *na-*, e.g., *na-makangulu* 'swimmer' (< *makangulu* 'swim (AV)'), *na-k⟨ин⟩аин* 'greedy, gluttunous' (< *k⟨um⟩a~каин* 'eat (AV)'). Patientive nominalization makes a distinction between perfective and imperfective, e.g., *ni-каин-a* '(which was) eaten', *каин-a* 'food' (< *k⟨um⟩a~каин* 'eat (AV)'). Instrumental nominalization is indicated by *si-/se-/si-a-*, e.g., *si-tukucu* 'a lock' (< *t⟨um⟩a~tukucu* 'lock (AV)'), *si-pacina* 'soap' (< *macina* 'wash one's face (AV)'). Locative nominalization is usually encoded by *ta-...-a*, e.g., *ta-si'icир-a* 'bedroom' (< *si'icири* 'to sleep'), *ta-pacina-a* 'bathing room' (< *macina* 'to wash one's face (AV)'). Temporal nominals are marked by *kana-...-a*, e.g., *kana-'ucan-a* 'rainy season' (< *'⟨um⟩a~'ucan* 'to rain (AV)'), *kana-macici-a* 'summer' (< *macici* 'hot').

48.5.7 *Valency-Adjusting Operations*

Causative verbs are prefixed by *pa-* or *a-pa-*, which attaches to dynamic bare verbs, e.g., *ni-pa-pa-каин* 'fed (CAUS.PFV)' ~ *a-pa-каин* 'fed (CAUS.AV)' (< *k⟨um⟩a~каин* 'eat (AV.IPFV)'), *ni-pa-pacina* 'made ... wash one's face' (CAUS.PFV)' ~ *apacina-o* 'Make ... wash one's face'! (CAUS.UV)' (< *macina* 'wash one's face

5 To my knowledge, the morpheme *-on* 'DIRCT.UV' was first reported by Sung (2018, p. 74).

(AV)'). In stative verbs, the PAN bimorphemic prefix *pa-ka- has been partially replaced. In some stems, *pa-ka-* is still found, as in (20b); in others, it has been replaced by *pa-(a)ra-* (20d), whereby *(a)ra-* is tentatively analyzed as an inchoative prefix.

(20) a. *te=kasu ma-nava.*
IPFV=2SG.NOM STAT-drunk
'You will be drunk.'

b. ***pa-ka**-nav-un=maku 'avia.*
CAUS-STAT-drunk-UV=1SG.GEN.NSA Avia
'I made Avia drunk.'

c. *tatia tanasa (isua).*
big house (that)
'(That) house is big.'

d. ***pa-(a)ra**-tati-o tanasa=mita!*
CAUS-INCH-big-IMP.UV house=1PL.INCL.GEN.PSR
'Make our house bigger!'

48.5.8 *Complex Sentences*

In a serial verb construction, when two verbs follow each other, the second occurs in the dependent AV form, as in (21).

(21) *ni-musa=cu=ku 'inia takanua makapusan.*
PFV-AV:go=COS=1SG.NOM 3.OBL Takanua AV:twice
'I went to Takanua twice.'

Compared to other Formosan languages, Kanakanavu exhibits only a few (intra)clausal connectors. It has two coordinators, *mata*, which also functions as a comitative marker (22a), and *sa* 'or', which indicates a disjunction (22b), and two clausal conjunctions, *si* 'because' (22c) and *nakai* 'but' (22d), and one interclausal connector, which can be treated as a subordinator, *nu* 'when (IRR), if' (22e).

(22) a. *'esi ma'unung pi'i **mata** 'avia.*
PROG AV:fight Pi'i CONJ Avia
'Pi'i and Avia are fighting (each other).'

b. *te=kasu mo:ca nu-kumnana? nura=kara* ***sa***
IPFV=2SG.NOM AV:IPFV:go IRR-when tomorrow=QST DISJ
nu-taniaru=can(i)=kara?
IRR-sun, day=one=QST
'When will you leave? Tomorrow or the day after tomorrow?'

c. *'akuni mukusa 'inia* ***si*** *'apitaru!*
NEG.IMP AV.DEP:go there because dangerous
'Don't go because it is dangerous!'

d. *ni-aracakan=cu=ku* ***nakai*** *kuu mu-pana'u vavulu.*
PFV-hunt[AV]=COS=1SG.NOM but NEG AV.DEP-hunt wild.pig
'I went hunting but did not catch any wild pigs.'

e. ***nu*** *'una=ku-in vantuku ia (te=ku)*
if exist=1SG.NOM-3.GEN.PSR money TOP (IPFV=1SG.NOM)
pu'a pa'ici.
buy[AV] wine
'If I have money, I will buy wine.'

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