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ACADEMIA SINICA

The aim of this paper is twofold. We first provide a reassessment of the voice systems of Kanakanavu and Saaroa, two Austronesian languages spoken in southern Taiwan), and in particular show that their voice forms that were previously identified as patient focus (patient voice or undergoer voice: patient), locative focus (locative voice or undergoer voice: locative), and beneficiary/instrument focus are actually nominalized forms. Our findings allow us to reconsider the position of Kanakanavu and Saaroa among the Formosan languages. We take as a point of departure Ross's (2009) subgrouping hypothesis whereby Proto-Austronesian (PAN) includes four primary offshoots: Tsou, Rukai, Puyuma, and all other Austronesian languages. This later subgroup, dubbed Nuclear Austronesian, is identified on the basis of the "nominalization-to-verb" innovation, whereby the PAN affixes *-en, *<in>, *-an, *Sa-/*Si-, which were only used in forming nominalizations, were expanded to encode verbal usage in Proto-Nuclear Austronesian. Under this hypothesis, Kanakanavu and Saaroa are both viewed as being Nuclear Austronesian languages. We try to map our findings along with Ross's (2009) reconstruction, and in so doing we are led to place Kanakanavu and Saaroa higher up in Ross's (2009) subgrouping tree and to propose a new hypothesis for the higher phylogeny of the Austronesian languages.

1. INTRODUCTION.[1] The present paper reassesses the position of Kanakanavu and Saaroa, commonly viewed as part of the "Tsouic" subgroup within the Austronesian language family, by reexamining their verbal and nominal morphology. This paper revolves around two main parts. In the first, we concentrate on synchronic data and provide a reassessment of voice and nominalization in Kanakanavu and Saaroa.[2] We show

1. The present paper provides partial results of a three-year (2013–2015) thematic project entitled "The internal relationships of 'Tsouic' revisited," headed by Elizabeth Zeitoun, coheaded by Stacy F. Teng and Hsiu-chuan Liao, and sponsored by Academia Sinica (Grant number: AS-102-TP-C05). We are grateful to our language consultants on Kanakanavu and Saaroa for patiently sharing the knowledge of their languages with us. Elizabeth Zeitoun presented a preliminary version of this paper at the 14th International Symposium on Chinese Languages and Linguistics (Zeitoun and Teng 2014). We are grateful to the audience as well as an anonymous reviewer for their constructive comments. We also thank Isabelle Bril, Raleigh Ferrell, and Malcolm Ross for comments on earlier drafts of this paper, and Chih-hsien Lin for drawing the map. None is responsible for any remaining errors and omissions. Last, but not least, we acknowledge the help provided by members of the Association of Kanakanavu Cultural and Industrial Development.

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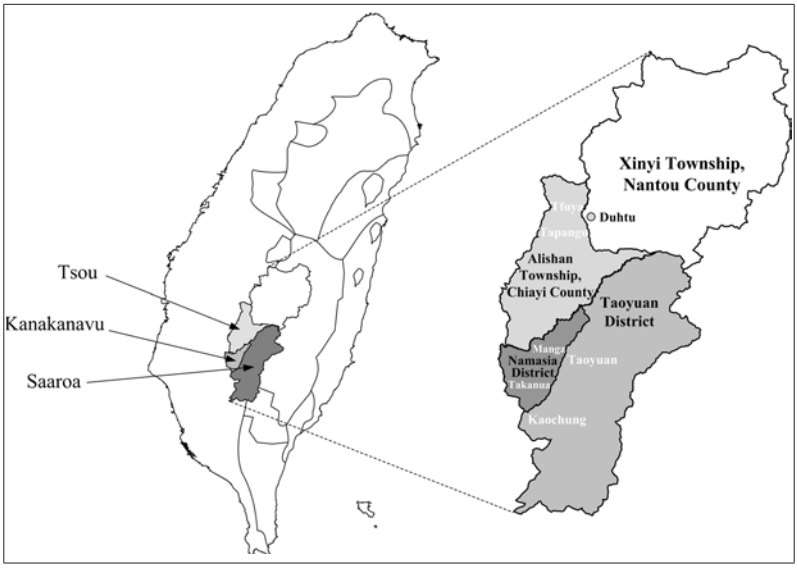
that, against what was previously assumed, voice forms that were identified as LF or UVL *ni-…-a(n)*/<*in*>*…-a(n)*, *…-a(n)* and B/IF *si-* are actually nominalized forms in Kanakanavu (2.1). In Saaroa, forms that were previously identified as LF or LV (UVL) *lhi-…-a(na)*, *lhi-…-ani* /*a…-a(na)* and *a-…-ani* are also nominalized forms (2.2). In the second part, we discuss these findings from a diachronic perspective. We provide a brief overview of the reconstructions proposed for voice markers and their impact on subgrouping, and pay particular attention to Starosta's (1995) and Ross's (2009) subgrouping hypotheses, based primarily on the "nominalization-to-verb" innovation (section 3). We further compare our findings to Ross's (2009) reconstruction of verbal morphology and show that the Kanakanavu and Saaroa data in 2.1 and 2.2 challenge his subgrouping hypothesis (section 3). Conclusions are given in section 4.

In what follows, we first introduce the geographical distribution of Kanakanavu, Saaroa, and Tsou (1.1). We then provide a definition of "Tsouic" in 1.2 and give a brief linguistic assessment of the Tsouic subgrouping hypotheses in 1.3.

1.1 GEOGRAPHICAL DISTRIBUTION. Tsou, Kanakanavu, and Saaroa are Austronesian languages spoken in Taiwan (see map 1). Tsou is spoken by around 4,000 people living in Mt. Ali, in the southwest of Taiwan. It consists of three extant dialects: Tapangu /tapaŋu/, Tfuya /tfuya/, and Duhtu /ɗuhtu/. The Tapangu and Tfuya dialects are spoken in some scattered villages in Mt. Ali Township, Chia-yi County. The Duhtu dialect is spoken in only one village, located in Hsin-yi Township (Nantou County) in Central Taiwan, but is now on the verge of extinction, because the village where it is spoken has gradually become a Bunun habitat (Tsuchida 1976, 1995). These three dialects exhibit only a few lexical and phonological variations, no significant grammatical divergences having ever been reported (see Tung et al. 1964; P. Li 1972; Tsuchida 1995). There are fewer than 250 people identifying themselves as belonging to the Saaroa ethnic group, and around the same number identify themselves as Kanakanavu. Both groups live in southern Taiwan, in the northeastern corner of Kaohsiung City (formerly Kaohsiung County): the Saaroa reside principally in Taoyuan and Kaochung villages, Taoyuan District, Kaohsiung City (formerly Taoyuan Township, Kaohsiung County); the Kanakanavu live in Manga and Takanua villages, Namasia District, Kaohsiung City (formerly

2. For the sake of convenience, we adopt a Romanized orthography rather than IPA symbols as in earlier studies, whereby *'* stands for the glottal stop ʔ/, *ng* for the velar nasal /ŋ/, *c* for the affricate /ts/, *lh* for the lateral fricative /ɬ/, and *ɯ* for schwa /ə/. As is conventional, sentences and proper nouns do not begin with capital letters in Formosan languages. With the exception of the following, abbreviations follow those given in the Leipzig Glossing Rules: ACT, active voice; AF, actor focus; AV, actor voice; B/IF, beneficiary/instrument focus; Ca-, Ca-reduplication; CIRNMLZ, circumstantial nominalization; COS, change of state; DEP, dependent; EVID, evidential; GF, goal focus; I/BF, instrument/beneficiary focus; IV, instrument voice; LF, locative focus; LIG, ligature; LOCNMLZ, locative nominalization; MOD, modality; NAF, nonactor focus; NSA, nonsubject actor; NEUT, neutral; PASS, passive voice; PATNMLZ, patient nominalization; PF, patient focus; PTC, particle; RED, reduplication; SF, special focus; UV, undergoer voice; UVC, undergoer voice: circumstantial; UVL, undergoer voice: locative; UVP, undergoer voice: patient. We have made three modifications to Tsuchida's original examples: (i) we have got rid of most of the equal signs (representing clitics), (ii) we have made consistent the number of morphemes and their corresponding glosses, and (iii) we have standardized glossing conventions but have otherwise tried to keep his glosses. We do the same when referring to examples taken from other authors.

MAP 1. GEOGRAPHICAL DISTRIBUTION OF TSOU, KANAKANAVU, AND SAAROA



Sanmin Township, Kaohsiung County). Kanakanavu and Saaroa are two of the most endangered Austronesian languages of Taiwan. Right now, each is spoken by fewer than ten fluent speakers.

1.2 "TSOUIC": AN ATTEMPT AT A DEFINITION. Tsou, Kanakanavu, and Saaroa form small communalects among the Formosan languages, both in terms of population figures and geographical distribution of the languages. However, they differ from other Formosan languages in their overall linguistic and cultural complexity. Ferrell (1969:36) notes that "many features shared by the three Tsouic groups set them apart from all other Taiwan groups." To our knowledge, the term "Tsouic" was first used by Dyen (1965)[3] and rendered conventional by Ferrell (1969), though it seems that Tsou, Kanakanavu, and Saaroa had already been recognized as a linguistic group by Ogawa and Asai (1935).[4] Though it has been demonstrated on the phonological and lexical levels that Tsou, Kanakanavu, and Saaroa form a subgroup, linguistic variations between these three languages have been known for years. Ferrell (1969:68) notes that "although the Saaroa are culturally Tsouic, their vocabulary resemblances to Siraya and Rukai are so numerous that one may wonder whether Saaroa is indeed a Tsouic language with exten-

3. In his (1965) article, Dyen argues that "the Tsouic group (Tsou, Saaroa, Kanabu) of Formosa … like the Atayalic groups, appears (by hand calculation) to show low critical percentages with the other Formosan languages and so can be expected to show no higher percentages with other Austronesian languages" (1965:56).
4. Dyen (1963:263) argues that Kanakanavu and Saaroa should not be regarded as dialects of Tsou, as asserted by Ogawa and Asai (1935:3ff). Rather, "it appears more likely that their relation is that of closely related languages than of dialects of the same language." He also suggests(1963:266) that "whether they form a group or not, the … comparisons [he gives] suggest a connection between the three languages."

sive influences from neighboring Paiwanic languages, or whether it may in fact be a Paiwanic language with heavy Tsouic overlay."[5]

It was also acknowledged very early that structural complexities observed in Tsou are not found in Kanakanavu or in Saaroa (Ferrell 1972). To date, however, there are no in-depth linguistic studies that would allow us to reassess the validity of the Tsouic group. Such studies were already seen as necessary by Ferrell back in 1969: "It is obvious that these questions [related to the relationships between Tsou, Kanakanavu, and Saaroa], as well as the problem of interrelationships with the Paiwanic languages, cannot be decided until structure and phonological studies in depth are completed" (Ferrell 1969:68). The history of the speakers of Tsou, Kanakanavu, and Saaroa also remains mysterious. P. Li (1995:6) notes that it is impossible to retrace their migration and history. What can be ascertained is that their respective territories and population have been drastically reduced in the past three hundred years for two reasons: (i) emigration and incursion from other ethnic groups, most notably the Bunun from the east, the Chinese from the west, and the Taivoan from the south; and (ii) epidemic diseases from the plains that devastated the population. According to P. Li (1995), the homeland of the Tsouic people must have been somewhere in Mt. Ali, since the geographical distribution of Tsou, Kanakanavu, and Saaroa is located around three rivers in the west, south, and east of Mt. Ali.

1.3 LINGUISTIC ASSESSMENT. The position of the Tsouic group among the Formosan languages remains moot, and we only provide here the main subgrouping hypotheses. Some scholars have changed their minds over the years (for example, Ho 1983 vs. Ho 1998), and such discrepancies will not be further mentioned here, as such an overview would go far beyond the topic of this paper. Ferrell (1969) classifies the Formosan languages into three main groups: Atayalic (Atayal and Seediq), Tsouic (Tsou, Kanakanavu and Saaroa), and Paiwanic (all the remaining Formosan languages) (see footnote 4). Ferrell's (1969) study consists of a brief introduction to the cultural and linguistic traits of the Formosan languages with a list of classified vocabulary. As shown above, he assumes, based on Dyen (1965), that Tsou, Kanakanavu, and Saaroa form a distinctive subgroup called "Tsouic," but is fully aware of the linguistic problems that such a hypothesis implies. P. Li (1972) includes a list of two hundred basic words (based on the Swadesh wordlist) with the reconstruction of each lexeme in Proto-Tsouic (PT). This list is taken as a basis for his reconstruction of PT phonemes. Based on common phonological innovations and the degree of lexical cognation, he posits that Saaroa and Kanakanavu are genetically closer to each other than they are to Tsou.[6] Tsuchida (1976) also assumes that Tsou, Kanakanavu, and Saaroa form a distinct subgroup called Tsouic, the latter two languages being more closely related to each other. He goes a step further in arguing that Tsouic is more closely related to Rukai: they form an independent Rukai-Tsouic group. Ho (1983) and P. Li (1990) reject such a subgroup and posit that Rukai is

5. Ferrell (1969) proposed that Paiwanic be split into two groups, Paiwanic I (Rukai, Pazeh, Saisiyat, Thao, Puyuma, and Paiwan) and Paiwanic II (Bunun, Siraya, Amis, Kavalan, and Yami). Ferrell (pers. comm., May 2014) subsequently realized that his catch-all "Paiwanic" category, which included all Formosan languages except Atayalic and Tsouic, was not a valid subgroup.
6. Based on such subgrouping hypotheses, Kanakanavu and Saaroa came to be known as "Southern Tsou," as opposed to "Northern Tsou."

more closely related to Paiwan. Such divergent conclusions are partly due to the different comparative data used by these scholars. Tsuchida's (1976) analysis is based on a lexical comparison between Tsou, Kanakanavu, Saaroa, and the geographically contiguous Rukai dialects belonging to the "Three-Lower Villages" (Maga, Mantauran, and Tona), whereas Ho's (1983) conclusions are founded on a lexical comparison between Tsou and Budai, a Rukai dialect geographically closer to Paiwan.

Other hypotheses have, since then, been advanced, where Tsouic is treated as either a primary branch (Blust 1999) or a secondary offshoot (Starosta 1995/2009) of Proto-Austronesian (PAN). Chang (2006) reassessed the Tsouic subgroup hypothesis and concluded, based on syntactic evidence, that Tsou does not subgroup with Saaroa and Kanakanavu, since many syntactic features are not found in Saaroa and Kanakanavu. Ross (2009) also suggests that the "Tsouic" group does not exist and hypothesizes, based on a reassessment of the reconstruction of PAN verbal morphology, that Proto-Austronesian divides into four primary subgroups: Puyuma, Tsou, Rukai, and Nuclear Austronesian (the rest of the Austronesian languages, including Kanakanavu and Saaroa). In a later paper, Ross (2012) comments in detail on the innovations that were taken by Tsuchida (1976) as being evidence for Tsouic, and concludes that most of them are not viable—they may have occurred independently in different members of the subgroup or may have been borrowed—and, thus, cannot be taken as evidence for a Tsouic subgroup. Sagart (2014), in response to Ross (2012), argues, on the other hand, for a Tsouic subgroup based on phonological and lexical evidence.

The foregoing discussion shows that:

(i) no exclusively shared phonological innovation has been convincingly found among the three languages that would characterize "Tsouic" as a subgroup;
(ii) phonological innovations shared exclusively by Kanakanavu and Saaroa show that they are more closely related;
(iii) despite the fact that there are few shared innovations between Kanakanavu and Tsou on the one hand and Saaroa and Tsou on the other, we cannot yet exclude the possibility that these three languages might be related; and
(iv) there must have been extensive borrowing within the Tsouic group, and between Southern Tsouic and adjacent languages. This is an issue that will not be further pursued in the present study.

At this point, we are not yet ready to deal with Proto-Tsouic phonology. On the other hand, recent studies by Starosta (1995) and Ross (1995, 2002, 2009) have shown that it might be interesting to take into account the verbal morphology of Formosan languages to better understand higher level subgrouping. The purpose of this paper is, thus, to propose another perspective to revisit the "Tsouic" subgroup: that is, to investigate Kanakanavu and Saaroa verbal morphology, which we tackle in the next section.

2. FOCUS (OR VOICE) IN KANAKANAVU AND SAAROA. This section is divided into three subsections. In the first, we deal with Kanakanavu, in the second with Saaroa, and in the third we propose a summary that outlines the variations between these two languages. Before revisiting the notion of voice in these two languages, we first proceed with a brief summary of previous studies. Since Tsuchida (1976) represents the

most authoritative study to date in terms of reliability of the data and relevance of the analysis, we thus focus on his analysis, while pointing out discrepancies that appear between his and other studies in order to avoid unnecessary repetitions. We follow Ross (2009) in presenting the data in a unified manner so that they can be easily compared despite the various analyses that have been proposed.

2.1 FOCUS (OR VOICE) IN KANAKANAVU

2.1.1 Previous studies on voice in Kanakanavu. There are a number of studies of the Kanakanavu focus/voice system (Ogawa and Asai 1935; Tsuchida 1976; Mei 1982; Ho 1997; Wu 2006; Chang 2006; Ross 2009; and Liu 2014). Those by Ogawa and Asai, Chang, and Liu will not be summarized here. The first is a very sketchy description; Ho's (1997) analysis does not differ much from Tsuchida (1976) and Mei (1982). Chang (2006) provides a reassessment of Mei (1982) based on Wu (2006); and Liu's (2014) investigation focuses on Kanakanavu tense, aspect, and mood.

Tsuchida (1976) analyzes Kanakanavu as displaying four foci—actor focus (AF), goal focus (GF), locative focus (LF), and special focus (SF)—the last of which is only observed in narratives (1976:51).[7] GF, LF, and SF are collectively referred to as NAF (nonactor focus). Tsuchida (1976:43) states that these foci interact closely with four aspects—neutral, imperfective, imperative, and perfective—with "a future aspect marker marked in a few verbs." His analysis is tabulated in table 1 and further illustrated in the examples that follow, based on data and explanations he provides.

(1) KANAKANAVU

a. AF: the subject is the actor of the action

ni-miapacaí=ku sua tutúi na ta-u-canúm-a**.**
PFV-kill.AV=I OBL pig LOC place-draw-water-place

'I **killed** a pig at the place to draw water.' (Tsuchida 1976:47)

TABLE 1. KANAKANAVU FOCUS AND ASPECT†

	AF	NAF		
		GF/LF		SF
Perfective	ni-M-STEM M<in>STEM	ni-STEM(-a) <in> STEM(-a)	ni-STEM-a(nu)‡ <in>STEM-a(nu)	—
Neutral	M-STEM	STEM(-a)		STEM-ai
Imperfective	RED-M-STEM a-M-STEM	STEM-unu		—
Future	—	—	a-STEM-unu	
Negative	M-STEM	—		
Imperative	M-STEM-a	STEM-au STEM-i		

† Based on Tsuchida (1976:44). Following Ross (2009), "M-stem" refers to any kind of AV marking.

‡ Tsuchida (1976:49) mentions that GF and LF are formally distinguished only in the perfective aspect. LF is marked by *-a*, which has three allomorphs: *-an* followed by *-ini* 'his/her/their' (e.g., *ni-p-aka-'ulu-án-ini* 'was arrived at by him first'); *-anu* followed by *=cu* 'already' (e.g., *ni-p-aka-'ulu-anú=cu* 'was arrived at already first'); and *-a* elsewhere (e.g., *ni-p-aka-'ulú-a* 'was arrived at first').

7. We do not include any detailed discussion of allomorphs of each of these morphemes, unless necessary (see Tsuchida 1976 for details).

b. GF: the subject is the object (goal) directly affected by the action
ni-piapacái=máku sua tutúi na ta-u-canúm-a.
PFV-kill.GF=by.me OBL pig LOC place-draw-water-place
'The pig **was killed** by me at the place to draw water.'
(Tsuchida 1976:48)

c. LF: the subject is a location
ni-piapacal-an-áku sua tutúi sua ta-u-canúm-a.
PFV-kill-LF-by.me OBL pig NOM place-draw-water-place
'The place of drawing water is were I **killed** a pig.'
(Tsuchida 1976:49)

d. SF: the agent of the action, when a pronoun, is marked as OBL
piapacál-ai[8] 'inía sua tutúi na ta-u-canúm-a.
kill-SF him NOM pig LOC place-draw-water-place
'The pig **was killed** *by him* at the place to draw water.'
(Tsuchida 1976:50)

Tsuchida (1976:54) notes that the perfective aspect expresses a completed action (2a). The "neutral aspect" expresses no specific time. It occurs as an attribute to a verb, a subordinate clause beginning with *mia* 'when (past)', *nuu* or *nu* 'if, when (future)', after the negator *kuu*= 'never', and in narrations (2b). The imperfective aspect expresses an incomplete action, whether "it is momentary or durative, past, present or future" (1976:52), as in (2c).

(2) KANAKANAVU
a. Perfective aspect
ni-múca =káni '<um>ánupu.
PFV-go.AF =is.said <AF.NEUT>hunt.with.dogs
'He has gone hunting [and has not come back yet].'
(Tsuchida 1976:54)

b. Neutral aspect
mucaán~~u~~=kaní=cu **um-ávici** sua talísi.
go.AF.NEUT=is.said=already AF.NEUT-carry OBL rope
'They went carrying the rope with them.' (Tsuchida 1976:51)

c. Imperfective aspect
muáca=kani '<um>ánupu.
go.AF.IPFV=is.said <AF.NEUT>hunt.with.dogs
'He went hunting/he goes hunting/he is going hunting.'
(Tsuchida 1976:52)

The "imperative aspect" expresses a command and is marked by *-a* (AF) and *-au* (GF) (3a,b). If followed by *=pa* 'still' or *'ai* 'uncertainty', it expresses a mild request (3b). In cooccurrence with the pronoun *=kita* '1PL.INCL.NOM', it expresses the hortative (3c), while in cooccurrence with the first person pronoun *=kia*, it expresses a strong desire (3d).

8. Tsuchida (1976:51) mentions two allomorphs: *-i* and *-ai*. The former occurs when the base ends in *a*, as in *cu'ura-i* 'see (SF, NEUT)', and the latter elsewhere.

(3) KANAKANAVU

a. k<um>áun-a!
<AF>eat-IMP
'Eat!'

b. **kaun-áu**=pa!
eat-PF.IMP=still
'Eat it more/Please eat it!'

c. **k<um>aun-á**=ci=kíta!
<AF>eat-IMP=already=1PL.INCL.NOM
'Let's eat now!'

d. **mucáan-a**=ci=kía kuucu máamia um-ánguru.
go.AF-IMP=already=I wish just AF.NEUT-escape
'I'll just run away [at all costs].' (Tsuchida 1976:53)

The future is marked in a few verbs with the prefix *a-*, but only in LF; for example, ***a-u-****kusá-unu* 'will come (LF.FUT)' (Tsuchida 1976:55).

Mei (1982) mostly follows Tsuchida's analysis. He departs from it in the following respects: NAF is said to include object focus (OF1 *-un* and OF2 *-ai*) and time/location focus (T/LF); that is, according to Mei (1982), there is no I/BF (labeled B/IF by Wu). Wu (2006) recognizes four foci—AF, PF, LF, and B/IF—as shown in table 2. He is actually the first to (wrongly) identify *se-* (< PAN **si-*) as a focus marker, as shown in table 2. His analysis has been partially followed in later studies (Chang 2006; Liu 2014; Cheng and Sung 2015).

Ross (2009), basing himself on Himmelmann's (2005) analysis of Tagalog, considers that Kanakanavu exhibits three voices—AV, UVP, and UVL—the last two being globally referred to as UV.[9] He reinterprets Tsuchida's neutral form as realis and posits new categories (narrative, dependent, and durative). He treats Tsuchida's SF *-ai* as narrative UVP. What is crucial for us here is the fact that Ross (2009) does not identify any UVC verbal form; rather, *si-*STEM is analyzed as a nominalized form. Ross's analysis is exemplified in table 3.

We have shown in the previous sections that there is no consensus regarding focus/voice forms and their functions. Discrepancies have to do with the viability of SF and B/IF and the recognition of *si-* as a nominalizing formative rather than a focus (/voice) affix. These previous analyses of Kanakanavu are summarized schematically in table 4, in which functional divisions and not forms are indicated.

TABLE 2. KANAKANAVU FOCUS SYSTEM ACCORDING TO WU (2006:112)†

	AF	PF	LF	B/IF
Neutral	UM‡	-ai	-a(n)	se-
Perfective	(um-/mu-/<um>)	ni-		
Imperfective	m-	(p-)-un		

† Based on Tsuchida (1976), Mei (1982).
‡ Wu's UM equates with Ross's M-, that is, any kind of AV marking.

9. While "focus" and "voice" reflect distinct theoretical and typological assumptions, they represent divergences in labeling rather than analysis. However, some morphemes are interpreted differently and these are some of the discrepancies we note among these different studies.

TABLE 3. KANAKANAVU FOCUS SYSTEM ACCORDING TO ROSS (2009:318)

	Actor voice	Undergoer voice		
		Patient subject	Location subject	Circumstance subject
Realis	M-STEM	STEM-~~un~~	STEM-~~un~~	—
Future			a-STEM-~~un~~	—
Imperfective	M-Ca-STEM			—
Perfective	<in>M-STEM	<in>STEM	<in>STEM-an~~u~~	—
Nominal	—	<in>STEM	ta-STEM-an~~u~~	si-STEM
Narrative		STEM-ai	—	
Imperative	M-STEM-a	STEM-au/-i	STEM-au/-i	—
Dependent		STEM	—	—
Durative	M-CV-STEM	—	—	—

TABLE 4. A COMPARISON OF PREVIOUS STUDIES† OF KANAKANAVU FOCUS (OR VOICE) SYSTEM

Focus				
Tsuchida (1976)	Actor focus	Nonactor focus		
	AF	PF	LF	SF
Mei (1982)	AF	OF	T/LF	—
		OF1 OF2		
Wu (2006)	AF	PF	LF	B/IF
Voice				
Ross (2009)	AV	UV		
	AV	UVP	UVL	—

† Tsuchida (1976), Mei (1982), Wu (2006), and Ross (2009).

2.1.2 A reassessment of voice in Kanakanavu. Our own understanding of the voice system of Kanakanavu differs from previous studies in that we posit that Kanakanavu features a binary dichotomy, AV-UV, with no further distinction under UV (Teng and Zeitoun 2016). In other words, and as will be shown below, voice forms like *ni-…-a(n)*/ *<in>…-a(n)*, *…-a(n)* that were earlier identified as LF or UVL and *si-* identified as B/IF are actually nominalizing formatives. The voice system interacts closely with mood and aspect. We follow Ross (1995) in positing a distinction between indicative and nonindicative mood, where the indicative mood is used to make an assertion or ask a question, and the nonindicative mood is used to make a command, a request, a wish, or a suggestion. Kanakanavu has various negators followed by verbs that are either in the indicative or nonindicative mood. There are four negators: *ka'an* and *kuu* 'do/did not' negate a predicate, while *no:mani'i*[10] and *'akuni* encode a prohibition. Both *ka'an* and *no:mani'i* are followed by verbs in the indicative form. They are marked by Ca-M- in AV clauses and *-~~u~~n* in UV clauses; *kuu* and *'akuni* are marked by M- in AV clauses and *-e* in UV clauses. Kanakanavu distinguishes between perfective (encoded through *<in>* in both AV and UV clauses) and imperfective (marked by Ca-reduplication in AV clauses and unmarked in UV clauses). Note that the occurrence of two auxiliaries, *tia/te:*= 'IPFV' and *'e:si* 'PROG', allows the distinction between different aspects/moods (habitual and/or irrealis [imperfec-

10. The negator *no:mani'i* itself means "Don't!/No!", and can actually occur alone.

tive] vs. progressive).[11] In the nonindicative column in table 5, we have three distinct markings: the first encodes the imperative, marked by M-...-*a*; the second encodes directive, marked by M-…-*an*; and the third is dependent, marked by M-. We make a distinction between "imperative" and "directive": in the latter, the sentence is always initiated by the verb "try". Dependent forms refer to verbs occurring in second (or third) position in serial verb constructions. This is the same form that is found after the negators *kuu* and *'akuni*. Our analysis is depicted schematically in table 5 and further illustrated with the verb 'see' in table 6—see Zeitoun, Teng, and Chen (n.d.) for a detailed discussion. Illustrative examples are given in (4).

(4) KANAKANAVU
a. Indicative (Affirmative): Perfective AV
c<in><m>u'ura=ku ma:nu misoni.
<PFV><AV>see=1SG.NOM child just
'I just saw a child/children.'

TABLE 5. A BIRD'S EYE VIEW OF KANAKANAVU VOICE, MOOD, AND ASPECT†

			AV	UV
Indicative	Affirmative	Perfective	ni-M-STEM / <in>M-STEM	ni-STEM / <in>STEM
		Imperfective	Ca-M-STEM	STEM-un
	Negative	Predicative *ka'an*		
		Imperative *no:mani'i*		
Nonindicative	Affirmative	Imperative	M-STEM-a	STEM-o
		Directive	M-STEM-an	—
		Dependent	M-STEM	STEM-e
	Negative	Predicative *kuu*		
		Imperative *'akuni*		

† From Zeitoun, Teng, and Chen (n.d.).

TABLE 6. EXEMPLIFICATIONS OF KANAKANAVU VOICE, MOOD, AND ASPECT WITH THE VERB *cu'ura* 'SEE'

			AV	UV
Indicative	Affirmative	Perfective	c<in><m>u'ura	c<in>u'ura
		Imperfective	c<um>a-cu'ura	cu'ur-un
	Negative	Predicative *ka'an*		
		Imperative *no:mani'i*		
Nonindicative	Affirmative	Imperative	c<um>u'ur-a	cu'ur-o
		Directive	c<um>u'ur-an	—
		Dependent	c<um>u'ura	cu'ur-e
	Negative	Predicative *kuu*		
		Imperative *'akuni*		

11. If the verb that follows *'e:si* undergoes serial reduplication (Ca- + RED), it then carries a continuous meaning, as shown in (i):
(i) KANAKANAVU
ma:nu i:si=ia 'e:si **t<um>a-tangi-tangi** si 'akia cine:n.
child this=TOP exist <AV>CaRED-RED-cry CONJ not.exist mother.3.GEN.PSR
'As for the child, he does not stop crying because he has no mother.'

b. Indicative (Affirmative): Perfective UV
c<in>ʉ'ʉra=maku ca:u i:sa taraparuparu.
<PFV.UV>see=1SG.GEN.NSA person that vomit
'I saw that person vomiting.'

c. Indicative (Affirmative): Imperfective AV
"ne:n=kasu **c<um>a-cʉ'ʉra**?" maka:si=kan na'u.
what=2SG.NOM <AV>CaRED-see like.this=EVID Na'u
'"What are you looking at?" they asked Na'u.' (Text M-05-034)

d. Indicative (Affirmative): Imperfective UV
'a! **cʉ'ʉr-ʉn** vune: i:si mis-e.
EXCL see-UV snake this say-UV.DEP
'Ah! He saw the snake.' (Text M-020-052)

e. Indicative (Negative): Predicative negation AV
ka'an=ku **c<um>a-cʉ'ʉra** ma:nu i:sa.
NEG=1SG.NOM <AV>CaRED-see child that
'I did not see that child.'

f. Indicative (Negative): Predicative negation UV
ka'an=kasu tia **cʉ'ʉr-ʉn**.
NEG=2SG.NOM IPFV see-UV
'(I) did not see you.'

g. Indicative (Negative): Imperative AV
no:mani'i **c<um>a-cʉ'ʉra**!
NEG.IMP <AV>CaRED-see
'Don't look!'

h. Indicative (Negative): Imperative UV
no:mani'i **cʉ'ʉr-ʉn**!
NEG.IMP see-UV
'Don't look!'

i. Nonindicative: Imperative AV
te:=maku pakas~~ʉ~~-ʉn nguain: **"c<um>ʉ'ʉr-a** (i:kasu)!" mis-e.
IPFV=1SG.GEN.NSA ask-UV 3SG <AV>see-IMP 2SG.NOM say-UV.DEP
'I will ask him: "(You) look!"'

j. Nonindicative: Imperative UV
cʉ'ʉr-o=ku!
see-IMP.UV=1SG.NOM
'Look at me!'

k. Nonindicative: Directive AV
tanam-an c<um>~~ʉ~~'ʉra 'inia!
try-AV.DIR <AV.DEP>see there
'Try to have a look there!'

l. Nonindicative: Dependent AV
nai c**ʉ**’**ʉr-e**! no=te:n mi:vu=ia ni-mokosa=ku (’i)nia
Eh see-IMP.UV if=IPFV.3.GEN <AV>pee=TOP PFV-AV.go=1SG.NOM there
c<um>ʉ’ʉra.
<AV>see
‘Look! When she (wanted to) pee, I went there to see.’

m. Nonindicative: Dependent UV
ni-mosa=ku cak**ʉ**ran, c<in><m>**ʉ**’**ʉ**ra=ku vavulu,
PFV-AV.go= 1SG.NOM river <PFV>< AV>see=1SG.NOM wild boar
ni-ropaca=maku numan, **pepacal-e** ikua,
PFV.UV-use=1SG.GEN.NSA knife kill-UV.DEP 1SG.OBL
a’un-e ikua makasi tanasa.
carry=UV.DEP 1SG.OBL to house
‘I went to the river, saw a pig, used my knife to kill it, and then took it back home.’

n. Nonindicative (Negative): Predicative AV
kuu=pa=ku **c<um>u’ura** ca:u i:sa.
NEG=still=1SG.NOM <AV>see person that
‘I have not seen that person yet.’

o. Nonindicative (Negative): Predicative UV
kuu=pa=maku **cu’ur-e** ca:u i:sa.
NEG=still=1SG.GEN.NSA see-UV person that
‘I have not seen that person yet.’

p. Nonindicative (Negative): Imperative AV
’akuni **c<um>u’ura** ikua!
NEG.IMP <AV>see 1SG.OBL
‘Don’t look at me!’

q. Nonindicative (Negative): Imperative UV
’akuni **cu’ur-e** sinat**ʉ** i:sa si ka’an=kasu taavala’**ʉ**!
NEG.IMP see=UV book that CONJ NEG=2SG.NOM know
‘Don’t read this book! You will not understand.’

We only provide patterns of nominalization relevant to our study,[12] and distinguish in table 7 agent, patient, location,[13] and instrument nominalization. Examples of patient, location, and instrument nominalization, as opposed to UV, are crucial to the discussion in this paper and are given below for illustration.

(5) KANAKANAVU
a. Patient nominalization (*-a*(*n*))
ne:n sua **tia** oran-an=*su*?
who NOM IPFV help-PATNMLZ=2SG.GEN.PSR
‘Whom will you help?’ (based on Teng 2013:8)

12. We do not make any attempt to distinguish between lexical and syntactic nominalization in Kanakanavu and Saaroa. This issue is discussed elsewhere (Zeitoun and Teng n.d.).
13. There is partial syncretism between patient and locative nominalization.

TABLE 7. A BIRD'S EYE VIEW OF NOMINALIZATION IN KANAKANAVU†

Type of nominalization		Formative	Example	Base
Agent		ni-M-/<in>M	ni-mi-ima '(who) drank'	mi-ima 'drink (AV)'
		M-	t<um>a-tangi '(who) cries'	t<um>a-tangi 'cry (AV)'
Patient	PFV	ni-…-a(n) <in>...-a(n)	ni-kaun-a 'food'	k<um>aun 'eat (AV)'
	IPFV	…-a(n)	kaun-a 'food'	
Location	PFV	ni-…-an	ni-pe-pacal-an 'place of killing'	me:pacai 'kill (AV)'
	IPFV	ta-…-an	ta-sima'-a 'running field, touristic area'	s<um>ima'u 'play (AV)'
Instrument		si-‡	si-tukucu 'lock'	t<um>ukucu 'lock (AV)'
		se-	se-kisikisi 'tweezers'	k<um>isikisi 'scrape (AV)'
		sie-	sie-rikucu 'comb'	marikucu 'comb (AV)'
		si-...-a	si-'unuv-a 'door'	putu-'unuvu 'close (door)'

† Based on Zeitoun, Teng, and Chen (n.d.).
‡ There are two formatives for instrument nominalization, *si-* and *si-…-a*, which occur in complementary distribution. On the other hand, *si-, se-*, and s*ie-* are allomorphs.

b. Locative nominalization (*ni-…-a*(*n*))
c<in>aru'u=ke **(sua)** ni-pac-a-in.
<PFV.UV>sprinkle=3.GEN.NSA NOM PFV-pass-LOCNMLZ-3.GEN.PSR
'She sprinkled salt where she passed.'

c. Instrument nominalization (*si-*)
(sua) si-pu'a-in vu:ra=ia vantuku manu=maku.
NOM INSNMLZ-buy-3.GEN.PSR rice=TOP money child=1SG.GEN.PSR
'As for the rice he/she/they bought, (he/she/they) used my child's money.'

c′. Instrument nominalization (*se-*)
tia se-vua=maku kasua vi:ki=ia sa'o'o.
IPFV INSNMLZ-give=1SG.GEN.NSA 2SG.OBL betelnut=TOP delicious
'The betelnuts I will give you are delicious.'

As shown in Teng and Zeitoun (2016), at least three syntactic tests show that what was earlier identified as focus (LF and I/BF) should actually be analyzed as nominalization (patient nominalization and instrument nominalization). These three tests have to do with the distribution of genitive pronouns and that of the nominative case marker *sua*. We distinguish two sets of genitive pronouns, which are homophonous except in the third person. The first encodes nonsubject actors (glossed as 'NSA') and the second possessors ('PSR'). In UV clauses, if an auxiliary (for example, *te:*= 'IPFV'[14] or *'e:si* 'PROG') is present, 1st and 2nd person NSA pronouns need to move up and be cliticized onto the auxiliary. With *-a*(*n*)[15] and *si-* marked verb stems, which are actually nominalized forms, genitive pronouns encoding the possessor cannot move onto the auxiliary and need to stay in situ. Third person genitive pronouns, on the other hand, exhibit complementary distribution: *-ini* '3SG/PL.GEN.PSR' occurs only on noun phrases and nominalized forms, and *=ke* '3SG/PL.GEN.NSA' occurs only on UV-marked verbs. Last, but not least, *sua* can

14. As mentioned above, depending on the context, the auxiliary verb *te:* refers either to a habitual or to an irrealis event.
15. Such a test is not applicable with a verb stem marked by *ni-…-a*(*n*), since the perfective marker *ni-* prevents the occurrence of an auxiliary that encodes imperfectivity.

occur before nominalized verb forms (in subject position) but never before UV-marked verbs. These tests are summarized in table 8.

2.2 FOCUS (OR VOICE) IN SAAROA

2.2.1 Previous studies on focus (or voice) in Saaroa. There are several studies on the Saaroa focus (or voice) system (see Ogawa and Asai 1935; Tsuchida 1976; P. Li 1997; Chang 2006; Ross 2009; C. Li 2009, 2010; and Pan 2012). As above, we will only summarize below those that are most relevant to our own research, omitting the analyses of Ogawa and Asai, P. Li, and Chang. Chang (2006) cites P. Li (1997), but the latter provides a rather restricted picture of focus in Saaroa, when compared with Tsuchida (1976).

Tsuchida (1976) analyzes the Saaroa focus system as identical to that of Kanakanavu. It features four foci—actor focus (AF), goal focus (GF), locative focus (LF), and special focus (SF)—the last of which differs from GF in that the agent of the action is expressed by an NP preceded by the oblique marker *ka*; in GF clauses, the agent is expressed by an NP marked by *na* 'OBL'. GF, LF, and SF are grouped under NAF (nonactor focus). His analysis is summarized in table 9 and further illustrated in (6).

(6) SAAROA

a. **m-u-luvi** =cu =isana =ami rumalha~~u~~
AF.NEUT-go-by.means.of =already =it:OBL =is.said then
muucapi na 'ulutii. AF
drop.AF.NEUT LOC underground.world
'They went down by means of [a ladder of horns tied together], then came down to the underground world.' (Tsuchida 1976:74)

TABLE 8. DISTRIBUTION OF PRONOUNS AND THE CASE MARKER *sua* IN KANAKANAVU WITH VOICE-MARKED AND NOMINALIZED VERB FORMS†

	Genitive pronouns		Nominative case marker
	1st/2nd person	3rd person	sua
UV-marked verbs	AUX=$PRO_{GEN.NSA}$ V_{UV}	AUX V_{UV}=$PRO_{GEN.NSA}$	*sua V_{UV}=$PRO_{GEN.NSA}$
Patient / Instrument nominalization	AUX V_{NMLZ}=$PRO_{GEN.PSR}$	AUX V_{NMLZ}-$PRO_{GEN.PSR}$	sua V_{NMLZ}=$PRO_{GEN.PSR}$

† From Teng and Zeitoun (2016).

TABLE 9. SAAROA FOCUS AND ASPECT ACCORDING TO TSUCHIDA (1976:70–71)

		AF	NAF		
			GF	LF	SF
Perfective		lhi-M-STEM	lhi-STEM(-a)	lhi-STEM-a(na)	—
Neutral		M-STEM	STEM(-a)	—	saa-STEM(-a)
Imperfective		RED-M-STEM / a-STEM	RED-STEM(-a)	RED-STEM-a(na)	—
Future		—	a-STEM(-a)	a-STEM-a(na)	
Negative	Neutral	STEM	—		
	Imperfective	RED-STEM / a-STEM	—		
Imperative		M-STEM-a	STEM-u	STEM-i STEM-ani	

b. um-ala na kiu'u miaan~~u~~ na **lhi-kali** 'areme
AF.NEUT-take OBL tree pound.AF.NEUT OBL PFV-dig.GF pangolin
p~~utu~~-'~~utu~~-'~~utu~~nga. GF
hit-RED-hard.AF.NEUT
'[The monkey] took a piece of wood to pound hard the thing dug by the pangolin.' (Tsuchida 1976:75)

c. ming~~utulhu~~=ami ka lhi-tali ka 'uungu
be.cut.off:AF.NEUT=is.said NOM PFV-tie.together.GF OBL horn
lhi-u-luvu-ana =isa. LF
PFV-go-by.means.of-LF =by-her
'The ladder, on which she was climbing, broke.' (Tsuchida 1976:75)

d. t<um>anguura=ami ka racu'u. matakakua na alhaina=isa.
<AF.NEUT>grow=is.said NOM bamboo wind.toward.AF.IPFV LOC woman=her
saaluvu-a =ami muucapi na alhaina=isa. SF
go.by.means.of-SF.NEUT =is.said drop.AF.NEUT LOC woman=her
'The bamboo grew up. It grew up meanderingly toward her mother. She came down on it to her mother.'[16] (Tsuchida 1976:75)

Ross (2009) basically follows Tsuchida's (1976) analysis (see table 10). He posits four voices—AV, UVP, UVL, and UVC—the last three being referred to as undergoer voices (UV). Future is reanalyzed as irrealis. Ross (2009) recognizes an irrealis form *a-* for Actor voice, not mentioned by Tsuchida (1976:79). Tsuchida (1976:78) makes a distinction between neutral and imperfective in negative constructions. This distinction is not made by Ross (2009), perhaps because the example given by Tsuchida (1976:78) is not especially convincing in terms of aspectual distinctions. Furthermore, two affixes, *-a*[*na*] and *-ani*, are viewed as carrying over UVC (rather than LF, as in Tsuchida 1976), irrealis and imperative functions, respectively.

C. Li's (2009, 2010) investigation of voice in Saaroa is brief, but important in at least two respects. First, he posits only three voices—actor voice (AV), patient voice (PV), and locative voice (LV)—and argues against the existence of instrumental/beneficiary voice. In doing so, he reanalyzes, following Ogawa and Asai (1935:703) and Radetzky (2009),[17] the *sa*(*a*)- prefix as a third person genitive pronoun, cooccurring with the UVP

TABLE 10. SAAROA VOICE SYSTEM BASED ON ROSS (2009:318)

	Actor voice	Undergoer voice		
		Patient subject	Location subject	Circumstance subject
Realis	M-STEM	STEM-a	STEM-a[na]	sa(a)-STEM[-a]
Imperfective	M-Ca-STEM	Ca-STEM-a	Ca-STEM-a[na]	—
Perfective	lhi-M-STEM	lhi-STEM-a	lhi-STEM-a[na]	—
Irrealis	a-STEM†	a-STEM-[a]	a-STEM	STEM-a[na]
Imperative	M-STEM-a	STEM-u	STEM-i	STEM-ani‡
Negative	STEM	—	—	—

† There must have been a typo here, as the M-form is expected, hence it should be *a*-M-STEM rather than *a*-STEM.
‡ Rare.

16. This rather awkward-sounding translation is what appears in Tsuchida (1976).
17. Radetzky (2009:1) mentions that "*sa*(*a*)- is a device for overtly mentioning two (or more) 3rd person participants in a clause."

marker -*a*. He shows that (i) *sa*(*a*)- cannot cooccur with a first or second person nonsubject actor (genitive) pronoun (7a,b),[18] (ii) the selected argument as subject is never an instrument or a beneficiary but rather a patient (8a,b), and (iii) a transported theme (selected subject) is grammatically marked on the verb by a PV form, not an I/BV form as in other Formosan languages (9a,b).

(7) SAAROA

a. sa-anu-a ka mamaini ka vutukulhu.[19]
3.GEN-eat-PV OBL child NOM fish
'The fish was eaten by the child.'
(P. Li 1997:281, cited in C. Li 2009:176; 2010:50)

b. *sa-anu-a **a** **ilhaku** a vutukulhu.
3.GEN-eat-PV GEN 1SG NOM fish
Intended: 'The fish was eaten by me.' (C. Li 2010:50)

(8) SAAROA

a. *saa-cavu-a a pi'i=a vutukulhu **a** **ralhungu**.
3.GEN-wrap-PV GEN Pi'i=DEF fish NOM leaf
Intended: 'Pi'i wrapped the fish in a leaf.'

b. saa-cavu-a a pi'i=na **a** **vutukulhu**.
3.GEN-wrap-PV GEN Pi'i=DEF NOM fish
'Pi'i wrapped the fish.' (C. Li 2009:177, 2010:51)

(9) a. PAIWAN
ku-si-vai tjanusun a paisu.
1SG.GEN-IV-give 2SG.OBL NOM money
'I gave you money.'

b. SAAROA
ngasa lhi-vura=u pi'i=na?
what PFV.PV-give=2SG.GEN Pi'i=PART
'What did you give to Pi'i?' (C. Li 2009:178; 2010:52)

Pan (2012:204ff) generally follows Tsuchida (1976) and Ross (2009), though his analysis seems to be most influenced by C. Li (2009, 2010). Like C. Li, Pan (2012) considers that Saaroa exhibits Actor voice (AV), Patient voice (PV), and Locative voice (LV), and refutes the existence of Instrument/Beneficiary voice. He goes a step further in reanalyzing the *sa*(*a*)- suffix as an agreement marker, but without providing any strong evidence (Pan 2012:212ff, 232–34). His discussion on voice (Pan 2012:204–10) is extremely short for a grammar of this nature—only seven pages—and his analysis of mood/aspect is a bit confusing. For one thing, he provides different glosses for the same form, so that *lhi-*, for example, is analyzed both as a "perfective" and an "experiential" marker. For another, the interaction between voice, mood, and aspect is not discussed. Nonetheless, as Pan (2012) provides more data and paradigmatic examples than C. Li

18. We have avoided changing C. Li's (2009, 2010) glosses except for *sa*(*a*)-, glossed as 3.GEN everywhere.
19. Our own informant rejects these examples with *ka* 'OBL' and *a* 'NOM' and prefers simply: *sa-anu-a mamaini vutukulhu* 'The fish was eaten by the child.' We have refrained from changing these examples, however.

(2009, 2010), we have, for the sake of comparison, summarized relevant data in a tabular form (table 11) while avoiding a complete reinterpretation of Pan's examples.

We note a couple of differences between Pan (2012) and Tsuchida (1976)/Ross (2009). For one thing, Pan focuses on two forms for AV imperatives, a polite imperative, encoded by M-(C)a-…*=kia* (where *=kia* is glossed as 'polite request'), as in (10a), and a strong imperative marked by M-…*-a=mau* (where *=mau* is glossed as 'strong request'), as in (10b).[20]

(10) SAAROA

a. *m*-aa-*maa*-maini-*a*=**kia** m-ima mapaci!
AV-drink-RED-small-IMP.AV=polite request AV-drink wine
'Please drink a little wine!'(Pan 2012:331)

b. *m*-aa-maini-*a*=**mau** m-ima mapaci!
AV-drink-small-IMP.AV=strong request AV-drink wine
'Drink a little wine!' (Pan 2012:336)

Another difference is that Pan (2012) suggests (without mentioning it explicitly) that there is an aspectual/mood distinction encoded through different reduplication patterns. Basically, the progressive, continuous, iterative, and habitual aspects are rendered by partial (CV-, CV:-)/disyllabic ([C]V[C]V-) reduplication or triplication (C_1V_1-C_1V_1-) coupled with (C)a- (Pan 2012:196–200). This is illustrated in (11a–d). When the stem does not undergo partial/disyllabic reduplication or triplication, (C)a- is usually associated with an adverb of frequency (11e). (C)a- alone encodes the irrealis mood (11f).

(11) SAAROA

a. *t*<um>*a*-ta-tapau=aku.
<AV>CaRED-RED-draw=1SG.NOM
'I am drawing.' (Pan 2012:259)

TABLE 11. SAAROA VOICE SYSTEM BASED ON PAN (2012)

		Actor Voice	Patient Voice	Locative Voice
Realis	(Neutral)†	M-STEM	STEM(-a)	STEM-a(na)
	Perfective/Experiential	lhi-M-STEM	lhi-STEM(-a)‡	lhi-STEM-a(na)
	Progressive/Continuous/ Iterative/Habitual	M-(C)a-RED-STEM#	—	—
Irrealis		M-(C)a-STEM	a-STEM-a	a-STEM-i
Imperative	Polite	M-(C)a-STEM(=kia)	—	—
	Strong	M-STEM-a(=mau)	STEM-u	STEM-i/STEM-ani
Negation	Predicative	STEM	—	—
	Imperative	a-STEM	—	—

† Pan (2012) does not mention the "neutral" category, but it seems simpler to put in such a category for comparison sake.
‡ If the stem is only prefixed by *lhi-* 'PERF', Pan (2012) considers that the PV marker is Ø.
# (C)a- refers to the morphemes *a-* and <*a*> as well as Ca-/Caa-reduplication.

20. This distinction seems to be encoded primarily through clitics, and it is not certain at this stage how much verbal morphology (M-[C]a- also marking the irrealis vs. M-…*-a* also marking "plain" imperatives) plays a role. This raises the problem of what should be recognized as grammaticalized and what should not.

b. tu*a*puupuru a mamaini alhaina kani'i=na. (< tu-a-puu-puru)
sit NOM child woman this=DEF
'This girl keeps on sitting.' (Pan 2012:198)

c. puri*a*ngusungusu a tautau=na maaci malusap~~u~~.
(< puri-a-ngusu-ngusu)
snore NOM Tautau=DEF when AV:sleep
'Tautau snores when sleeping.' (Pan 2012:200)

d. taku*a*lililiungu a mamaini=na tamu-isa. (< taku-a-li-li-liungu)
patrol/work NOM child=DEF grandparent-3.GEN.PSR
'The children are visiting their grandparents.' (Pan 2012:197)

e. *kar~~u~~k~~u~~lh~~u~~* a mamaini *l*<um>*a*-l~~u~~vung~~u~~ valhituku.
often NOM child <AV>CaRED-conceal money
'The children often conceal money.' (Pan 2012:191)

f. um-*a*-u=amu papa'a.
AV-IRR-eat=1PL.EXCL.NOM meat
'We will eat meat.' (Pan 2012: 225)

We have shown in the previous sections that there is no consensus regarding focus/voice forms and their functions. These previous analyses of the Saaroa focus (or voice) system are summarized schematically—with functional divisions indicated, not forms—in table 12.

2.2.2 A reassessment of voice in Saaroa. In Saaroa, two voices, AV (Actor Voice) and UV (Undergoer Voice), can be distinguished morphologically and syntactically. UV further includes UVP and UVC. With UVP-marked verbs, marked by *-a*, the subject is a patient. With UVC-marked verbs, marked by *-ani*, the subject is a transported theme or a beneficiary (but never an instrument). Consider (12a–d).

(12) SAAROA

a. t<um>a-tin~~uunu~~ a ~~u~~l~~u~~k~~u~~ vanukanuka cu-ruvana. AV
<AV>CaRED-weave/embroider Eleke pants IRR-evening
'Eleke will weave/embroider pants this evening.' (Pan 2012:69)

b. tin~~uu~~n-a=cu =ailhaku a tikuru ki-ruvana. UVP (subject as patient)
weave/embroider-UVP=COS =1SG. GEN.NSA clothes REAL-evening
'I wove/embroidered the clothes last evening.'

TABLE 12. A COMPARISON OF PREVIOUS STUDIES OF THE SAAROA FOCUS (OR VOICE) SYSTEM

Focus				
Tsuchida (1976)	Actor focus	Nonactor focus		
	AF	PF	LF	SF
Voice				
Ross (2009)	AV	UV		
	AV	UVP	UVL	UVC
C. Li (2009, 2010) Pan (2012)	AV	PV	LV	—

c. tinuun-ani=cu =ailhalhamu a tikuru=isa
weave/embroider-UVC=COS =1PL.EXCL.GEN.NSA clothes=3.GEN.PSR
uluku. UVC (subject treated as a transported theme)
Eleke
'We wove/embroidered something on Eleke's clothes.'

d. tinuun-ani =ailhaku a uluku=na tikuru.
weave/embroider-UVC =1SG.GEN.NSA Eleke=DEF clothes
UVC (subject treated as a beneficiary)
'I wove/embroidered clothes for Eleke.'

The voice system of Saaroa is depicted schematically in table 13 and further illustrated with the verb 'weave, embroider' in table 14. As mentioned above, in our view, Saaroa exhibits two voices, actor voice (AV) and undergoer voice (UV), which further consists of UVP and UVC. There is a distinction between the indicative and nonindicative mood. The indicative further divides into realis/irrealis. Nonindicative mood subsumes imperative, dependent, and negation. Saaroa is also subject to partial negative polarity: while negated AV perfective verbs are marked by *lhi*-M-, AV imperfectives are bare forms, and irrealis verbs are prefixed by *a*-.

While we agree that *sa(a)*= should be treated as a 3rd person pronoun (marking nonsubject actor) rather than a voice marker, our understanding of the Saaroa voice, mood, and aspect system differs from previous analyses in a number of respects. One major distinction is that we recognize only *-a* and *-ani* as UVP and UVC suffixes, respectively. We

TABLE 13. A REASSESSMENT OF THE SAAROA VOICE, MOOD, AND ASPECT SYSTEM†

			Actor voice	Undergoer voice	
			AV	UVP	UVC
Indicative	Realis	Perfective	lhi-M-STEM	STEM-a(na)	STEM-ani
		Imperfective	M-(C)a-RED-STEM		
	Irrealis		M-(C)a-STEM	—	—
Non-indicative	Imperative		M-STEM-a	STEM-u	STEM-ani
	Dependent		M-STEM	(STEM-i)	
	Negation	Imperfective	STEM	—	—
		Irrealis	a-STEM	—	—

† Based on Teng and Zeitoun (n.d.).

TABLE 14. EXEMPLIFICATION OF THE SAAROA VOICE, MOOD, AND ASPECT SYSTEM WITH THE VERB *tinuunu* 'WEAVE/EMBROIDER'

			Actor voice	Undergoer voice	
			AV	UVP	UVC
Indicative	Realis	Perfective	lhi-t<um>tinuunu	tinuun-a	tinuun-ani
		Imperfective	t<um>a-tii-tinuunu		
	Irrealis		t<um>a-tinuunu	—	—
Non-indicative	Imperative		t<um>inuun-a	tiniini-u	tinuun-ani
	Dependent		t<um>inuunu	t<uminuun-i	
	Negation	Imperfective	tinuunu	—	—
		Irrealis	a-tinuunu	—	—

consider *lhi-…-a(na)* / *a-…-a(na)* and *lhi-…-ani* / *a-…-ani* to be nominalized forms ('PFV.PATNMLZ' / 'IRR.PATNMLZ' and 'PFV.CIRNMLZ' / 'IRR.CIRNMLZ', respectively).

(13) SAAROA

a. saa=**tinuun-a**=cu ki-ruvana tikuru.
3.GEN.NSA=embroider-UVP=COS REAL-evening clothes
'S/he wove/embroidered clothes last night.'

b. saa=**vur-a**=cu a ulʉku a sulhatu.
3.GEN.NSA=give-UVP=COS Eleke book
'S/he gave the book to Eleke.'

Though there seems to be no distinction between perfective and imperfective in UV clauses, we make such a distinction for AV-marked verbs, as earlier mentioned in Tsuchida (1976). We follow C. Li (2010) and Pan (2012) in positing a distinction between imperfective and irrealis in terms of morphological marking: M(C)a-RED-STEM (that is, serial reduplication) marks the imperfective (14a), and M-(C)a-STEM (that is, Ca-reduplication) encodes the irrealis (14b). Our analysis differs from Pan (2012) in assuming that the different aspects that were recognized earlier (including progressive, habitual, continuous, and repetitive) should all be subsumed under "imperfective," as there is no morphological distinction between these (15a,b); that is, the form M-(C)a-RED-STEM can either encode a progressive or a habitual event.

(14) SAAROA

a. **k<um>a-kii-kita** mamaini a kana'a sulhatu.
<AV>CaRED-RED-see child that book
'The child is reading that book.'

b. **k<um>a-kita** mamaini (maataata) a sulhatu.
<AV>CaRED-see child tomorrow book
'The child will read a book (tomorrow).'

(15) SAAROA

a. **t<um>a-tii-tinuunu** a ulʉku tikuru.
<AV>CaRED-RED-weave/embroider Eleke clothes
'Eleke is weaving/embroidering clothes.'

b. mailhasu a ulʉku=na **t<um>a-tii-tinuunu** tikuru.
specialized Eleke=DEF <AV>CaRED-RED-weave/embroider clothes
'Eleke weaves/embroiders clothes (as a seamstress).'

In addition, it is not necessary to distinguish between "polite" and "strong" imperative forms. In this respect, we follow Tsuchida's (1976) analysis. Imperative forms include the following suffixes: AV *-a*, UVP *-u*, and UVC *-ani*.

(16) SAAROA

a. t<um>inuun-a tikuru=na!
<AV>weave/embroider-IMP.AV clothes=DEF
'Weave/embroider these clothes!'

b. tiniin-u a tikuru=na!
weave/embroider-IMP.UVP clothes=DEF
'Weave/embroider the(se) clothes!'

c. tinuun-ani a kana'a=na tikuru!
weave/embroider-IMP.UVC that=DEF clothes
'Weave/embroider the clothes for him!'

We posit "dependent" forms: AV M- and UV *-i*. Verbs marked with such forms occur in different contexts: when an AV verb occurs in second (or noninitial) position in a serial verb construction (17a,b), or when a UV verb is found in a narrative.

(17) SAAROA
a. *marumuku* a mamaini a kana'a=na k<um>ita 'alhingu.
STAT:like child LIG that=DEF <AV>see TV
'That child likes to watch TV.' (Pan 2012:65)

b. *um-ala* ina=ku na tikuru t<um>inuunu.
AV-take mother=1SG.GEN.PSR clothes <AV>weave/embroider
'Mother takes clothes to weave/embroider.'

Tsuchida (1976:78) makes a distinction between neutral and imperfective in negative constructions. There is, indeed, a distinction between zero-marked and *a*-marked verbs. However, *a*-marked verbs, when preceded by the negator *kuu*, express modality/irrealis rather than imperfectivity.

(18) SAAROA
a. **ku**=aku Ø-tinuunu tikuru (ki-ruvana).
NEG=1SG.NOM Ø-weave/embroider clothes REAL-evening
'I did not weave/embroider clothes last evening.'

a′. ***ku**=aku a-tinuunu tikuru (ki-ruvana).
NEG=1SG.NOM IRR-weave/embroider clothes REAL-evening
'I did not weave/embroider clothes last evening.'

b. **ku**=aku a-tinuunu tikuru (cu-ruvana).
NEG=1SG.NOM IRR-weave clothes IRR-evening
'I do not want to/I will not weave/embroider clothes tonight.'

b′. ***ku**=aku Ø-tinuunu tikuru (cu-ruvana).
NEG=1SG.NOM Ø-weave clothes IRR- evening
'I do not want to/I will not weave/embroider clothes tonight.'

Regarding nominalization, we provide only the formatives found in argument nominalization (patient, location, instrument, circumstantial, and temporal nominalization), and concentrate in particular on patient, location, and circumstantial nominalization (all displaying aspectual/mood distinctions, perfective, habitual, and irrealis), since these types of nominalization need to be distinguished from UV voice in Saaroa. See table 15.

Examples of patient, locative, and circumstantial nominalization are given below for illustration. What is interesting to note is that two distinctions are made (that correspond more or less to what is found in UV clauses): (i) realis/perfective, realis/habitual, and irrealis are encoded by *lhi-*, *a-*RED or *ta-,* and *a-*, respectively; and (ii) the theme may be plain (patient nominalization) or refer to a transported theme (circumstantial nominalization), the first being rendered by *-a*(*na*) (patient/locative nominalization) and the second by *-ani* (circumstantial nominalization). Examples illustrating the perfective of patient, locative, and circumstantial nominalization are given in (19a–c), and those exemplifying the irrealis in (19d–f).

TABLE 15. A BIRD'S EYE VIEW OF ARGUMENT NOMINALIZATION IN SAAROA†

Type of nominalization		Formative	Example	Base
Patient	Realis/Perfective	lhi-...(-a)	lhi-kulici '(what was) peeled'	k<um>a-kulici 'peel (AV)'
	Realis/Habitual	a-RED-...-a	a-kuli-kulic-a '(what is) usually/often peeled'	
	Irrealis	a-...-a	a-kulic-a '(what will be) peeled'	
Location	Realis/Perfective	lhi...-ana	lhi-kali-ana '(place that) was dug'	k<um>a-kali 'dig (AV)'
	Realis/Habitual	a-RED-...-ana	a-kali-kali-ana '(place that) is usually/often dug'	
	Irrealis	ta-...-ana	ta-kali-ana '(place that will be) dug'	
Circumstantial	Realis/Perfective	lhi-...-ani	lhi-cavu-ani '(what was) wrapped for'	c<um>a-cavu 'wrap (AV)'
	Realis/Habitual	a-RED-...-ani	a-cavu-cavu-ani '(what is) usually/often wrapped for'	
	Irrealis	a-...-ani	a-cavu-ani '(what) will be wrapped for'	
Instrument		si-...-a	si-pangulhuv-a 'door'	mangulhuvu 'close (door) (AV)'
		si-a-...	si-a-capa 'instrument that serves to roast'	c<um>a-capa 'roast (AV)'

† After Teng and Zeitoun (2016).

(19) SAAROA

a. Patient nominalization: Realis/perfective (*lhi-...-a*)
lhi-tinuun-a=cu=ku a ki-ruvana vanukanuka.
PFV-weave/embroider-PATNMLZ=COS-1SG.GEN.PSR REAL-night trousers
'Yesterday, I wove/embroidered trousers.'

b. Locative nominalization: Realis/perfective (*lhi-…-ana*)
lhi-ala-ana=c=isa ama=ku a sikamu=isa.
PFV-take-LOCNMLZ=COS=3.GEN.PSR father=1SG.GEN.PSR mat=3.GEN.PSR
'He took my father's mat.'

c. Circumstantial nominalization: Realis/perfective (*lhi-…-ani*)
lhi-tinuun-ani=cu=ku a tavalhilha=na kani'i=na.
PFV-weave/embroider-CIRNMLZ=COS=1SG.GEN.PSR NOM flower=DEF this=DEF
'I already wove/embroidered a flower here.'

d. Patient nominalization: Irrealis (*a-…-a*)
a-kita-a=isa-i kani'i sulhatu?
IRR-see-PATNMLZ=3.GEN.PSR=Q this book
'Will s/he read this book?'

e. Location nominalization: Irrealis (*a-…-ana*)
a-ala-ana=isa uluku a sikamu=isa ama=ku.
IRR-take-LOCNMLZ=3GEN.PSR Eleke NOM mat=3.GEN.PSR father=1SG.GEN
'Eleke will take my father's mat.'

f. Circumstantial nominalization: Irrealis (*a-…-ani*)
tavalhilha=na **a-tinuun-ani**=ku kani'i=na.
flower=DEF IRR-weave/embroider-CIRNMLZ=1SG.GEN.PSR this=DEF
'This flower, it will be woven/embroidered here.'

Our claim that only *-a* and *-ani* function as UVP/UVC suffixes and that *lhi-…-a*(*na*), *lhi-…-ani*, *a-…-a*(*na*), and *a-…-ani* as nominalized forms, is demonstrated in Teng and Zeitoun (2016) and is based on the occurrence of genitive pronouns encoding nonsubject actors (NSA) and those encoding a possessor (PSR). We summarize our demonstration very briefly here, and tabulate it in table 16. There are at least two things to note:

(i) There is a dichotomy between first person genitive pronouns (singular and plural), on the one hand, and second and third genitive person pronouns on the other. When first person genitive (NSA) pronouns occur in a UV clause, they appear as enclitics; second and third person genitive (NSA) pronouns, on the other hand, attach as proclitics onto the UV-marked verb.

(ii) When the form is nominalized, there is no distinction between first, second, and third person genitive (PSR) pronouns, and they all appear as enclitics.

Our analysis allows us to make some predictions: (i) *saa*= '3.GEN.NSA' is a proclitic pronoun that encodes a nonsubject actor; (ii) *si-…-a* cannot possibly be regarded as functioning as a UVC marker since its distribution with a genitive enclitic (PSR) proves that it is a nominalized form, as shown in (20).

(20) SAAROA
ki-a-lha-lhamu=aku kana **sitakuamiamia**=lhamu
tell/talk-IRR-RED-tell/talk=1SG.NOM fiLL INSNMLZ:RED:work=1PL.EXCL.GEN.PSR
kiariari akuisa kana mia~~ulusu~~=mana lhaamaama=lhamu.
past when fiLL together.AV=still old.person-1PL.EXCL.GEN.PSR
'I am going to talk about our life in the past when we were still together with our old people.' (Pan 2012:367)

TABLE 16. DISTRIBUTION OF SAAROA PRONOUNS

Noun and nominalized verb forms		1st person pronouns	2nd person pronouns	3rd person pronouns
		Possessor enclitics		
Affirmative	AV	Nominative enclitics		Independent nominative pronouns
	UV	Genitive enclitics	Genitive proclitics	
Negative	AV	Nominative enclitics moving to the negator		Independent nominative pronouns
	UV	—		

2.3 SUMMARY. We have provided a reassessment of voice in Kanakanavu (2.1.2) and in Saaroa (2.2.2). We have shown that, in Kanakanavu, the voice system is binary and distinguishes only AV vs. UV. In Saaroa, UV further consists of UVP and UVC.

Zeitoun et al. (1996) show that, in most Formosan languages, there is a basic mood distinction between realis and irrealis, and that mood closely interacts with voice. It is now clear, based on Ross's (2009) work, that this distinction is found only in the indicative mood, and that most Formosan languages can be treated, following Bhat's (1999) classification, as mood-prominent languages, aspectual distinctions being grammatical-

ized in varying ways in these languages. Interestingly, Kanakanavu does not make a distinction between realis and irrealis, but rather between perfective and imperfective. The notions of "imperfective" in Kanakanavu and Saaroa do not match totally. In Kanakanavu, imperfective subsumes both habitual and progressive aspects as well as irrealis. In Saaroa, imperfective encodes only habitual and progressive aspects. Another major distinction between Kanakanavu and Saaroa is that the former makes use of auxiliary verbs to express habituality/progressivity or irrealis, while Saaroa displays two types of reduplication to express similar meanings: imperfective is encoded by serial reduplication (Ca-reduplication and partial reduplication); irrealis is encoded only through Ca-reduplication. As far as nominalization is concerned, there is partial syncretism between patient and locative nominalization in Kanakanavu and between locative and manner nominalization in Saaroa. Saaroa has circumstantial nominalization, which equates more or less to UVC in the verbal voice system, while Kanakanavu does not exhibit this type of nominalization. We schematize these different aspects in table 17.

Table 18 allows a more detailed comparison between the Kanakanavu and Saaroa voice, mood, and aspect systems according to the reassessment we provided in previous sections.

3. PAN VOICE AND NOMINALIZATION AFFIXES AND SUBGROUPING HYPOTHESES. In his reconstruction of PAN voice, mood, and tense, Wolff (1973) recognizes four morphological categories of voice, two modes (dependent and independent), and three tenses (nonpast, past, and future or general action). Without going into details, he reconstructs the following voice morphemes: (1) active marked by *<um>, (2) direct passive marked by *-en in the nonpast, and by *-in- in the past, (3) local passive marked by *-an, and (4) instrumental passive marked by *Si-

TABLE 17. A SCHEMATIC COMPARISON OF KANAKANAVU AND SAAROA VOICE AND NOMINALIZATION SYSTEMS

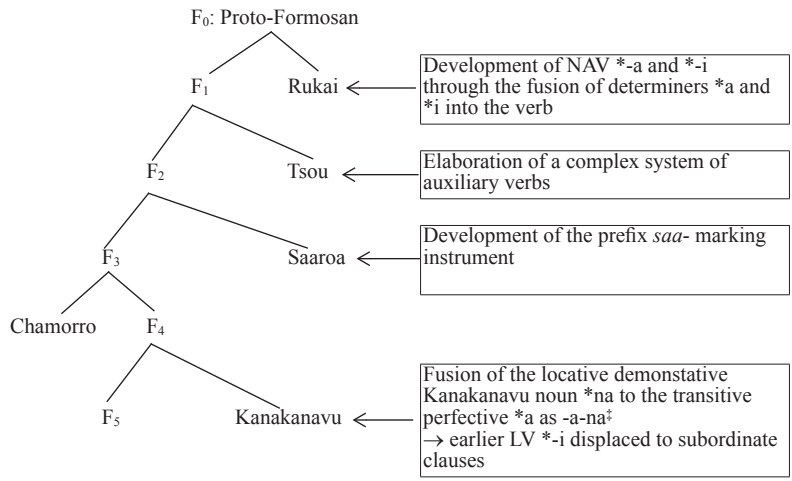
				Kanakanavu	**Saaroa**
Voice	AV	Realis	Perfective	ni-M-STEM/ M<in>STEM	lhi-M-STEM
			Imperfective	M-Ca-STEM	M-CaRED-STEM
		Irrealis			M-Ca-STEM
	UV	Realis	Perfective	<in>STEM	STEM-a
			Imperfective	STEM-un	
		Irrealis		STEM-un	—
Nominalization	Patient	Realis	Perfective	<in>STEM-a(n)	lhi-STEM-a
			Imperfective	STEM-a(n)	a-RED-STEM-a
		Irrealis			a-STEM-a
	Location	Realis	Perfective	ni-STEM/ <in>STEM-an	lhi-STEM-ana
			Imperfective	ta-STEM-an	a-RED-STEM-ana
		Irrealis		—	a-STEM-ana
	Circumstantial	Realis	Perfective	—	lhi-STEM-ani
			Imperfective	—	a-RED-STEM-ani
		Irrealis		—	a-STEM-ani
	Instrument			si-STEM	si-STEM

TABLE 18. A COMPARISON OF KANAKANAVU AND SAAROA VOICE, MOOD, AND ASPECT SYSTEMS

Mood, aspect \ Voice			AV		UV		
			Kanakanavu	Saaroa	Kanakanavu	Saaroa	
						UVP	UVC
Indicative	Realis	Perfective	M-<in>STEM	lhi-M-STEM	<in>STEM-a	STEM-a	STEM-ani
		Imperfective	M-Ca-STEM	M-CaRED-STEM	STEM-un		
	Irrealis			M-Ca-STEM			
Nonindicative	Imperative		M-STEM-a	M-STEM-a	STEM-o	STEM-u	STEM-ani
	Directive		M-STEM-an	—	—	—	
	Dependent		M-STEM	M-STEM	STEM-e	STEM-i	

(as noted in Blust [2002:69], Wolff writes this as *i-). Starosta, Pawley, and Reid (1981/2009) attempt to show that Western Austronesian focus constructions actually evolved as a result of the reinterpretation of nominalized equational constructions by analogy with functionally equivalent verbal constructions, that is, *-en, *ni-/-in-, *-ana, *iSi-, and possibly *mu-/-um- were all noun-deriving affixes in PAN. Their verbal focus usages in the Formosan and Philippine languages thus represent a secondary development. This "noun-to-verb" hypothesis was further argued by Ross (2002, 2009) and Kaufman (2009) and has some impact on recent subgrouping hypotheses. In what follows, we briefly summarize Starosta's (1995/2009) and Ross's (2009) respective subgrouping hypotheses, since they have a relevance to our own investigation and findings on Kanakanavu and Saaroa. The major distinction between these two hypotheses is that Starosta (1995/2009) positions Tsou, Saaroa, and Kanakanavu at different levels (that is, they do not form a subgroup). Ross (2009), on the other hand, recognizes the validity of the Saaroa-Kanakanavu subgroup exclusive of Tsou.

FIGURE 1. A GRAMMAR-BASED SUBGROUPING†



† Based on Starosta (2009:773[1995])
‡ We suspect here a confusion between Kanakanavu (*-an*(*u*)) and Saaroa (*-ana*).

Starosta's (1995/2009) binary tree branch subgrouping shown in figure 1 is based on his top-down morphosyntactic reconstructions. He proposes that Tsou constitutes the second offshoot, Saaroa the third, and Kanakanavu the fifth from a "Proto-Formosan" linguistic group that is ancestral to all the Austronesian languages. Starosta's analysis is complex and requires understanding of both the verbal morphology of PAN as well as that of daughter languages—in this particular case, Tsou, Saaroa, and Kanakanavu. Major points are briefly summarized below.

Starosta ([1995]2009:779) argues that Proto-Formosan was an ergative language that had developed auxiliary verbs and bound pronouns. It had two complementizers (*ka and *a), two determiners (*i and *a) that were distinguished in terms of definiteness, nominalizers (*-an, *ta-…-an 'place of…', *-ana 'inhabitant of'), and a number of verbal affixes (including AV *m- [realis], inchoative *ka-, causative *pa-, stative *m-, and perhaps perfective *ni-/*<in>), and a Ca-reduplicative process that marked imperfective verbs. Starosta (1995/2009) argues that an important development that took place in Rukai was the development of the NAV suffixes *-a and *-i through the fusion of the determiners *a and *i onto the verb. He argues that Tsou resembled Rukai in many ways, except that it further elaborated a complex system of auxiliary verbs so that the earlier verbal marking was displaced. This had two consequences: many morphosyntactic features present in Rukai were lost in Tsou, among others the perfective marking (through *ni-/*<in>) and the realis/irrealis distinction, and *m-forms were reanalyzed as marking intransitivity. In Saaroa, the primary innovation was the development of the prefix *saa-* marking instrument. The origin of this prefix is said to be unclear.[21]

In Kanakanavu, the main innovation was the fusion of the locative demonstrative noun *na to the transitive perfective *-a, yielding the form *-a-na* (whereby the final *a* was reanalyzed as an echo vowel). As a consequence, the earlier suffix *-i that was found in earlier nodes (Tsou and Saaroa) to mark LV was displaced in subordinate clauses. Through analogy, *-en (innovated in F_3—Chamorro) replaced the earlier PV *-a, which was also relegated to subordinate clauses. Another innovation was the lexicalization of the intransitive realis prefix *m- with a loss of its realis function. We have redrawn the higher phylogeny proposed by Starosta (1995/2009) by adding the changes outlined in figure 1. We provide examples in figure 2 as an illustration of figure 1 for the sake of clarity.

Based on a reconstruction of PAN verbal morphology, Ross (2009, 2012)[22] argues that Tsou constitutes one of the four offshoots of PAN (along with Puyuma, Rukai, and Proto-Nuclear Austronesian, henceforth PNAN), because they show no evidence of the "noun-to-verb" change. As this process may have taken place in Kanakanavu and Saaroa, they are included as part of the Nuclear Austronesian grouping. His subgrouping hypothesis is depicted in figure 3. We map reconstructed affixes in figure 4 to illustrate figure 3 for the sake of clarity.

21. Later, Starosta (2009:790[1996]) proposed that *saa-* derives from temporal clauses of the type found in Rukai, which are introduced by *sa* 'when' (P. Li 1973:224), "with the optional *-a* suffix just the old transitive suffix that can be reconstructed all the way to the F_0 level."

22. These two papers build on previous research by Malcolm Ross (see Ross 1995, 2002). Starosta (1996/2009) reassesses Ross's (1995) reconstruction of PAN verbal morphology and suggests that these morphemes should be reconstructed at a lower level, after the Rukai dialects and Tsou split off from Saaroa and the rest of the Formosan languages.

FIGURE 2. STAROSTA'S (2009[1995]) GRAMMAR-BASED SUBGROUPING: AN EXEMPLIFICATION

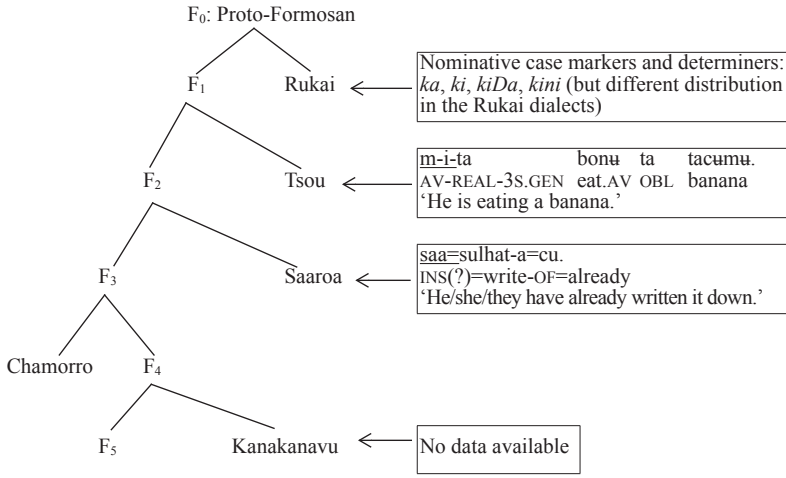
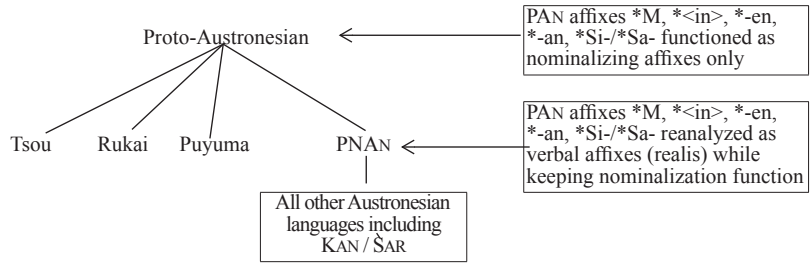


FIGURE 3. ROSS'S (2009) SUBGROUPING HYPOTHESIS



The main split between PAN and PNAN consists in the extension of PAN nominalizing affixes as PNAN verbal affixes while preserving their nominalizing functions. They are labeled "second-generation affixes." Subject selection is the same both in nominalized and in voice-marked verbs; that is, the semantic role of the selected argument (for example, actor, patient, location, circumstance) is morphologically encoded on the nominalized/voice-marked verb through an affix. Table 19 is based on the two tables in Ross (2009) but simplified for the sake of clarity. N refers to the nominalizing function of PAN affixes *M, *-en, *-an, *Sa-/*Si-; N/V refers to their change to verbal affixes (while retaining their nominalization function) in PNAN. Below we report the factors that led Ross (2009) to treat Tsou separately from Kanakanavu/Saaroa.

Ross notes that, unlike Puyuma, Tsou reflects only the PAN dependent [verb] forms and lacks reflexes of both verbal forms and nominalizing affixes (in both cases: *<in>, *-en, *-an, and *Si-). That is, "not only does Tsou lack second-generation verbal forms: it also appears to lack nominal reflexes of second-generation affixes" (2009:311). This is depicted in table 20.

FIGURE 4. ROSS'S (2009) SUBGROUPING HYPOTHESIS

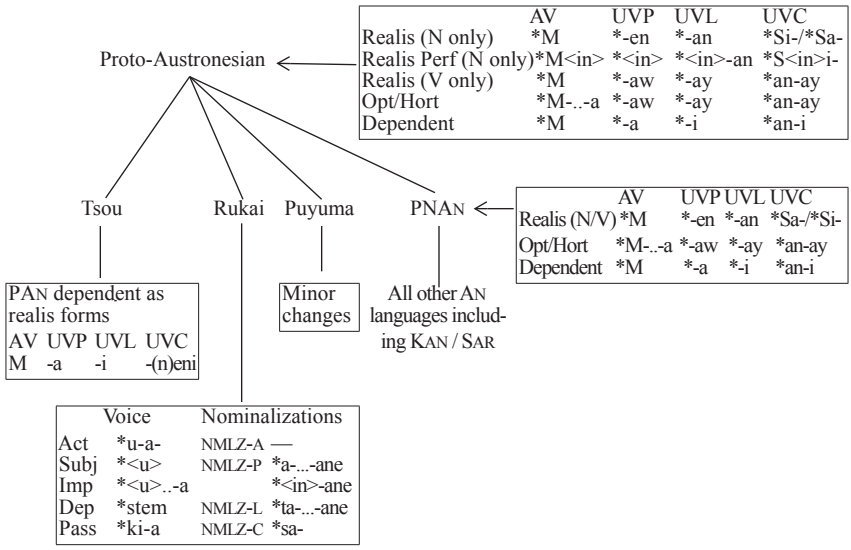


TABLE 19. ROSS'S FIRST AND SECOND GENERATION AFFIXES†

		Actor voice	Undergoer voice		
			Patient subject	Location subject	Circumstance subject
PAn	Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
	Realis (V only)	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
	Opt / Hort	*M-stem-a			
PNAn	Realis (N/V)	*M-stem	*stem-en	*stem-an	*Sa-/*Si-stem
	Opt / Hort	*M-stem-a	*stem-aw	*stem-ay	*an-ay + stem

† Ross (2009:296–306).

TABLE 20. TSOU†

		Actor voice	Undergoer voice		
			Patient subject	Location subject	Circumstance subject
PAn	Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
	Realis (V only)	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
	Opt / Hort	*M-stem-a			
	Dependent	*M-stem	*stem-a	*stem-i	*an-i + stem
Tsou		M-stem	stem-a	stem-i	stem-[n]eni

† Ross (2009:306, 318).

Ross further shows that both Kanakanavu and Saaroa have at least one reflex (KAN *-ai*, SAR *-a*) that is found at the PAn and PNAn levels (2009:312–13). He concludes that the suffix *-ai* occurs in circumstances that are not clear but always in narrative, and that there is no other evidence showing that Kanakanavu subgroups with Tsou at the highest level of the phylogeny (2009:313), since Kanakanavu exhibits stem *-~~unu~~*, a reflex of *-en 'UVP realis' (table 21).

TABLE 21. KANAKANAVU†

		Actor voice	Undergoer voice		
			Patient subject	Location subject	Circumstance subject
PAN	Realis (V only)	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
	Opt / Hort	*M-stem-a			
PNAN	Realis (N/V)	*M-stem	*stem-en	*stem-an	*Sa-/*Si-stem
Kanakanavu	Realis	M-stem	stem-~~unu~~	stem-~~unu~~	—
	Narrative	—	stem-ai	—	—

† Ross (2009:306, 313, 318).

TABLE 22. SAAROA†

		Actor voice	Undergoer voice		
			Patient subject	Location subject	Circumstance subject
PAN	Realis (V only)	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
	Opt / Hort	*M-stem-a			
PNAN	Realis (N/V)	*M-stem	*stem-en	*stem-an	*Sa-/*Si-stem
Saaroa	Realis	M-stem	stem-a	stem-a[na]	sa(a)-stem[-a]

† Ross (2009:306, 318).

Regarding the suffix *-a*, Ross proposes two alternative hypotheses: (i) it is a reflex of PAN UVP dependent form *-a; (ii) it is an irregular reflex of PNAN *-en. The first hypothesis would entail that Saaroa split off from PAN, the second that it split off from PNAN. He assumes that the second hypothesis is the more probable (table 22) for two reasons: (i) the suffix *-a* can cooccur with *lhi-* (< PAN *<in>); PAN *-en, on the other hand, never cooccurs with PAN *<in>; (ii) if *-a* were a reflex of PAN, it would have undergone a massive extension (from a dependent form to a form marking realis, imperfective, perfective, and irrealis), which is highly improbable.

Having summarized Ross's (2009) main arguments regarding the position of Tsou, Kanakanavu, and Saaroa among the Formosan languages, we reproduce as table 23 Ross's (2009) full-fledged reconstruction of Proto-Austronesian and Proto-Nuclear Austronesian verbal morphology.

We have tried to compare Kanakanavu and Saaroa verbal morphology to Ross's (2009) PAN and PNAN reconstructions. While mapping our findings onto his reconstruction, we have tried to reassess his conclusions. We are fully aware of the boldness of such a strategy, which might fail for different reasons. Ross's analysis has changed over the years. He no longer reconstructs the realis imperfective for UV-marked verbs (Malcolm Ross, pers. comm.). We are not sure either how Ross is able to reconstruct the category "realis perfective" for argument nominals, since none of these forms is found on the synchronic level in Rukai, Puyuma, or Tsou.

4. IMPLICATIONS FOR SUBGROUPING. We have worked through Ross's (2009) reconstructions and have tabulated the verbal forms found in Kanakanavu and Saaroa by cross-referencing the synchronic reflexes with the protoforms. By doing so, we obtain the following lists of retentions and innovations in both Kanakanavu (21) and

TABLE 23. RECONSTRUCTION OF PROTO-AUSTRONESIAN AND PROTO-NUCLEAR AUSTRONESIAN VERBAL MORPHOLOGY†

	Actor voice	Undergoer voice		
		Patient subject	Location subject	Circumstance subject
PROTO-AUSTRONESIAN				
Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
Realis perfective (N only)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
Irrealis (N only)	*Ca-stem	*Ca-stem-en	*Ca-stem-an	(*Sa-/)*Si-Ca-stem
Realis	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
Optative/hortative	*M-stem-a			
Realis imperfective	*M-Ca-stem	*Ca-stem-aw	*Ca-stem-ay	*an-ay + Ca- stem
Imperative	*stem	*stem-u	*stem-i	*an-i +stem
Dependent	*M-stem	*stem-a		
Irrealis	*Ca-stem	(*Ca-stem-a)	*Ca-stem-i	*an-i + Ca-stem
PROTO-NUCLEAR AUSTRONESIAN				
Realis (V/N)	*M-stem	*stem-en	*stem-an	*Sa-/Si-stem
Realis perfective (V/N)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
Realis imperfective	*M-Ca-stem	*Ca-stem-en	*Ca-stem-an*	*Sa-/Si-Ca-stem
Irrealis (V/N)	*Ca-stem			Ca-stem
Optative/hortative	*M-stem-a	*stem-aw	*stem-ay	*an-ay + stem
Imperative	*stem	*stem-u	*stem-i	*an-i +stem
Dependent		*stem-a		

† Ross (2009:296, 306).

Saaroa (22). They are further mapped onto tables that compare the forms at the PAN and PNAN levels both in Kanakanavu (table 24) and Saaroa (table 25).

(21) KANAKANAVU

A. Retentions (from PAN[23]): shaded in table 24

a. The affixes *ni-…-a*(*n*)/*-a*(*n*) and *si-* are nominalized formatives, as they were in PAN. However, we observe a syncretism between patient nominalization and locative nominalization. Kanakanavu seems not to have reanalyzed the nominalizing formatives *-an* and *si-* as verbal affixes. This might be the reason why the reflex of PNAN *<in> is not found in its verbal use in cooccurrence with *-an* and *si-*.

b. The reflex of *<in> is found in nominal constructions as in PAN, but only in cooccurrence with the suffix *-an*. We have not found any occurrence of *<in> occurring alone in its nominalizing function.[24]

23. The voice system is binary, distinguishing only AV and UV. The AV form M- is a reflex of both PAN and PNAN *M- (which functions as a first and second generation affix) and will not be further discussed here.

24. The nonoccurrence of *ni-*/*<in>* as patient nominalization is demonstrated by the fact that *=ke* '3.GEN.NSA' rather than *-ini* '3.GEN.PSR' occurs in a syntactically nominalized clause. Compare (ii) and (iii):

(ii) KANAKANAVU
sua ni-itar~~u~~**=ke**=ia kuu ivatu.
NOM PFV-wait=3.GEN.NSA=TOP NEG come
'The one s/he waited for did not come.'

(iii) KANAKANAVU
*sua ni-itar~~u~~**-ini**=ia kuu ivatu.
NOM PFV-wait-3.GEN.PSR=TOP NEG come

TABLE 24. KANAKANAVU AS PARTIALLY REFLECTING PAN AND PNAN VERBAL MORPHOLOGY†

	Actor voice	Undergoer voice		
		Patient subject	Location subject	Circumstance subject
PAN Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
KAN Realis (N only)	M-stem	stem-a(n)		si-(a-)stem/si-stem-a
PAN Realis perfective (N only)	*M-<in>stem	*<in>stem‡	*<in>stem-an	*<in>Si-stem
KAN Realis perfective (N only)	ni-M-stem M-<in>stem	<in>-stem-an		—
PAN Imperfective	*M-Ca-stem	*Ca-stem-aw	*Ca-stem-ay	(*Sa-/)*Si-Ca-stem
KAN Imperfective (V only)	M-Ca-stem		—	—
PAN Realis	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
Optative/hortative	*M-stem-a			
KAN Imperative	M-stem-a	stem-o	—	—
PNAN Realis (V/N)	*M-stem	*stem-en	*stem-an	*Sa-/Si-stem
KAN Realis (V)	M-stem	stem-un	—	—
PNAN Realis perfective (N/V)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
KAN Realis perfective (V)	ni-M-stem M-<in>stem	<in>stem	—	—

† Based on Ross (2009:296, 306).

‡ The nonoccurrence of PAN *<in> as a patient nominalizing formative raises the question of the viability of treating it on the same level as other second generation affixes such as *Si-/*Sa-. The next question has to do with the fact that nobody has ever attempted to actually reconstruct formatives for lexical vs. syntactic nominalization at the PAN level.

c. The AV imperfective form M-C*a*-stem is a reflex of PAN *M-Ca-stem.

B. Innovations (from PAN): within double lines in table 24

a. Imperfective (encoded through the reduplication of the verb) is not found in UV-marked verbs, but it may be the case that there were no such marked verbs in PAN (in which case this feature would be a retention rather than an innovation).

b. PAN optative/hortative *M-…-a was reanalyzed as AV imperative.

c. PAN realis and optative/hortative *-aw was reanalyzed as UV imperative. The morpheme *-au* is now mostly pronounced *-o* so has undergone further phonological change.

d. The UV form *-~~u~~n(~~u~~)* is a reflex of PNAN *-en.

Things are a little bit more complicated in Saaroa. The voice system distinguishes between AV, UVP, and UVC, UVP and UVC being collectively referred to as UV.

(22) SAAROA

A. Retentions (from PAN): shaded in table 25

a. Saaroa displays the reflexes of the nominalization prefixes *-an and *si-. The formative *lhi-…-a*(*na*) is a nominalized form as in PAN (reflexes of PAN *<in> and *-an).

b. PAN UVP and UVC imperative suffixes *-u and *an-i (but not *-i) were preserved in Saaroa.

c. PAN AV *M- and UVL *-i remain dependent forms in Saaroa.

TABLE 25. SAAROA AS PARTIALLY REFLECTING PAN AND PNAN VERBAL MORPHOLOGY†

	Actor voice	Undergoer voice		
		Patient subject	Location subject	Circumstance subject
PAN Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
SAR Realis (N only)	—	stem-a(na)		si-a-stem/si-stem-a
PAN Realis perfective (N only)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
SAR Realis perfective (N only)	—	lhi-stem-a	lhi-stem-ana	
PAN Imperfective	*M-Ca-stem			(*Sa-/)*Si-Ca-stem
SAR Realis Imperfective (V only)	M-CaRED-stem	—	—	—
SAR Irrealis (V only)	M-Ca-stem		—	—
PAN Optative/hortative	*M-stem-a	*stem-aw	*stem-ay	*an-ay + stem
PAN Imperative	*M-stem	*stem-u	*stem-i	*an-i + stem
SAR Imperative	M-stem-a	stem-u	—	stem-ani
PAN Dependent	*M-stem	*stem-a	*stem-i	*an-i + stem
SAR Dependent	M-stem		stem-i	
SAR Indicative	—	stem-a	stem-ani	
PNAN Realis (V/N)	*M-stem	*stem-en	*stem-an	*Sa-/Si-stem
SAR Realis (V)	M-stem	—	—	—
PNAN Realis perfective (V/N)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
SAR Realis perfective (V)	lhi-M-stem	—	—	—

† Based on Ross (2009:296, 306).

B. Innovations (from PAN): within double lines in table 25

a. The AV imperfective form M-Ca-stem seems to be a reflex of PAN *M-Ca-stem but it encodes the irrealis in Saaroa (not progressive or habitual).

b. PAN AV optative/hortative form *M-…-a was reanalyzed as AV imperative in Saaroa. The optative UVP, UVL, and UVC suffixes *-u, *-i, and *an-i seem not to have been preserved.

c. PAN UV dependent forms *-a and *an-i were reanalyzed as indicative forms.

d. The suffix *-a*(*na*) also encodes UVP indicative realis. The suffix *-a*(*na*) encodes only UVP rather than UVL; there is no reflex of PNAN *-en.

e. The use of PNAn *<in> is only partially reflected in Saaroa.

Under the "nominalization-to-verb" hypothesis proposed by Ross (2009) and based on his tentative PAN/PNAN reconstructions, we can conclude that Kanakanavu has only partially reanalyzed second generation suffixes; that is, the reflex of *-en was reanalyzed as a verbal marker in Kanakanavu (encoding UV), and the reflex of *<in> can function as a perfective and a UV voice marker/nominalizing formative in Kanakanavu. In Saaroa, the reflex of *<in> cooccurs with AV-marked verbs and in nominal constructions. In both languages, reflexes of *-an and *Si- are still (and only) used as nominalizers and were never reinterpreted as verbal affixes. We map the findings proposed in tables 24 and 25 onto Ross's (2009) PAN and PNAN verbal morphology in table 26.

Our mapping leads us to place Kanakanavu and Saaroa higher in the subgrouping tree proposed by Ross (2009). We propose a new hypothesis for the higher phylogeny of the Austronesian languages, as shown in figure 5. We reach, for different reasons, the same conclusions as Starosta ([1995]2009:773), and posit that Saaroa and Kanakanavu appear at different levels, between Proto-Austronesian and Proto-Nuclear Austronesian. This

TABLE 26. COMPARISON BETWEEN KANAKANAVU/SAAROA AND PAN/PNAN VERBAL MORPHOLOGY†

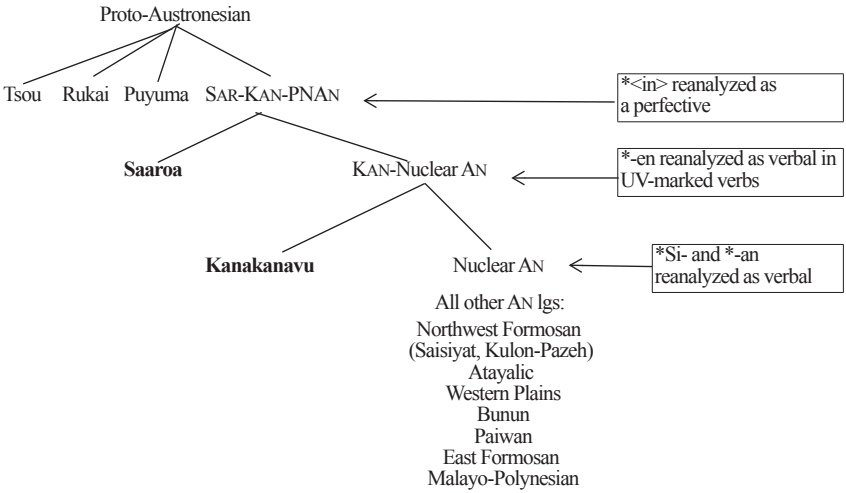
		Actor voice	Undergoer voice		
			Patient subject	Location subject	Circumstance subject
PROTO-AUSTRONESIAN					
PAN	Realis (N only)	*M-stem	(*stem-en)	(*stem-an)	(*Sa-/)*Si-stem
KAN		M-stem	stem-a(nu)		si-stem
SAR		—	stem-a(na)		si-stem
PAN	Realis perfective (N only)	*M-<in>stem	*<in>stem	(*<in>stem-an)	*<in>Si-stem
KAN		ni-M-stem M-<in>stem	ni-stem-an/<in>stem-an		—
SAR		—	lhi-stem-a(na)		—
PAN	Irrealis (N only)	*Ca-stem	*Ca-stem-en	*Ca-stem-an	(*Sa-/)*Si-Ca-stem
KAN		—	—	—	si-(a-)stem/si-stem-a
SAR		—	—	—	si-a-stem/si-stem-a
PAN	Realis	*M-stem	*stem-aw	*stem-ay	*an-ay + stem
KAN		—	—	—	—
SAR		—	—	—	—
PAN	Opt/hort	*M-stem-a	*stem-aw	*stem-ay	*an-ay + stem
KAN	→Imperative	M-stem-a	stem-o	—	—
SAR		M-stem-a	—	—	—
PAN	Realis imperfective	*M-Ca-stem	*Ca-stem-aw	*Ca-stem-ay	* an-ay + Ca- stem
KAN	(Hab/Prog/Irrealis)	M-Ca-stem	—	—	—
SAR	(Hab/Prog)	M-CaRED-stem	—	—	—
PAN	Imperative	*stem	*stem-u	*stem-i	*an-i +stem
KAN		—	—	—	—
SAR		—	stem-u	—	stem-ani
PAN	Dependent	*M-stem	*stem-a	*stem-i	*an-i + stem
KAN		M-stem	stem-e		—
SAR		M-stem	stem-a	stem-i	
Tsou‡		M-stem	stem-a	stem-i	stem-eni
PAN	Irrealis	*Ca-stem	*Ca-stem-a	*Ca-stem-i	*an-i +Ca-stem
KAN		M-Ca-stem	—	—	—
SAR		M-Ca-stem	—	—	—
PROTO-NUCLEAR AUSTRONESIAN					
PNAN	Realis (V/N)	*M-stem	*stem-en	*stem-an	*Sa-/Si-stem
KAN	(N#/V)	M-stem	stem-un	—	—
SAR	(V only)	M-stem	—	—	—
PNAN	Realis perfective (V/N)	*M-<in>stem	*<in>stem	*<in>stem-an	*<in>Si-stem
KAN	(V only)	M<in>stem ni-M-stem	<in>stem ni-stem	—	—
SAR	(V only)	lhi-M-stem	—	—	—
PNAN	Realis imperfective	*M-Ca-stem	*Ca-stem-en	*Ca-stem-an	*Sa-/Si-Ca-stem
KAN		—	—	—	—
SAR		—	—	—	—
PNAN	Irrealis (V/N)	*Ca-stem	*Ca-stem-en	*Ca-stem-an	Ca-stem
KAN		—	—	—	—
SAR		-	—	—	—
PNAN	Opt/hort	*M-stem-a	*stem-aw	*stem-ay	*an-ay + stem
KAN		—	—	—	—
SAR		—	—	—	—

TABLE 26. COMPARISON BETWEEN KANAKANAVU/SAAROA AND PAN/PNAN VERBAL MORPHOLOGY† (CONTINUED)

PNAN	Imperative	*stem	*stem-u	*stem-i	*an-i +stem
KAN		—	—	—	—
SAR		—	—	—	—
PNAN	Dependent	*stem	*stem-a	*stem-i	*an-i +stem
KAN		—	—	—	—
SAR		—	—	—	—

† Based on Ross (2009:296, 306).
‡ We add Tsou for the relevance of comparison though we cannot raise any further hypothesis.
# Only one occurrence of *-un* as patient nominalization was found, thanks to Wei-chen Huang: *cuvung-un* 'confluence of two rivers' (Tsuchida 1976:215).

FIGURE 5. ROSS'S (2009) SUBGROUPING HYPOTHESIS REVISITED



subgrouping hypothesis is not without problems. Importantly, based on phonological and lexical evidence proposed by Tsuchida (1976), it is more plausible (and certainly more in phase with previous studies) to treat Kanakanavu and Saaroa as part of the same subgroup. However, this paper has shown that these two languages are morphosyntactically more diverse than previously reported.

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