

Adverbial Clauses in Formosan Languages

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27.1 Introduction

The present chapter provides an overview of adverbial clauses in Formosan languages, including temporal, hypothetical/conditional (§ 27.2.1), counterfactual (§ 27.2.2), concessive (§ 27.2.3), causal (§ 27.2.3), and result (§ 27.2.4) clauses.

Thompson, Longacre & Hwang (2007, p. 238) define adverbial clauses as clauses that modify a verb phrase or sentence through the following means: (1) a subordinating morpheme, which may or may not have lexical content, that occurs clause-initially; (2) a special verb form (e.g., the verb might be in the infinitive), and (3) word order variations. In tackling this topic, we are confronted with two different problems. The first is empirical: with the exception of Zeitoun (1997) and Lee (2016), there are very few cross-linguistic studies dedicated to adverbial clauses in Formosan languages.¹ The second is analytical: we usually assume that the types of adverbial clauses mentioned above are subor-

dinate clauses, but we need to bear in mind that this might not be the case in all Formosan languages and that there is a continuum between “subordinate” and “juxtaposed” clauses. This issue is addressed in § 27.2.5.

27.2 Temporal, Hypothetical/Conditional, and Counterfactual Clauses

Temporal clauses refer to the sequence in which events are ordered with respect to one another. They include three main types of temporal relations: anteriority (*before*-clauses), simultaneity/concomitance (*when*-clauses), and posteriority (*after*-clauses). Hypothetical/conditional clauses (*if*-clauses) refer to events that may occur if the condition stated in the subordinate clause is fulfilled, and counterfactual clauses designate events that might have happened but did not. Though cross-linguistic variation has been observed, in terms of morphosyntactic characteristics, temporal clauses expressing anteriority (§ 27.2.1) and posteriority (§ 27.2.2) are quite different from those conveying simultaneity/concomitance (§ 27.2.3), which are, to some extent, related to hypothetical and conditional clauses (§ 27.2.4). A summary is given in § 27.2.5.

27.2.1 Temporal Clauses Expressing Anteriority

The notion of “temporal anteriority” refers to an event (depicted in the adverbial clause) that is “anterior to” or “before” another event expressed in the main clause. There are at least four types of morphosyntactic devices that establish a relation of anteriority: (i) occurrence of a phrase or a nominal that has a locative origin, (ii) use of a noun or a prefix that has a temporal meaning, (iii) presence of a negator, and (iv) verbal marking. Few languages make no distinction at all between *before*- and *when*-clauses. In what follows, these different devices are examined in turn.

One interesting distinction that can be established concerns the meaning attributed to the phrase or nominal found in clauses marking anteriority and the relation between space and time. Sqliq Atayal has grammaticalized a relational noun that means ‘below, under’. In Central Amis, Nanwang Puyuma, Truku Seediq, and Isbukun Bunun, however, this phrase originally meant ‘in front’ or ‘ahead’.

In Sqliq Atayal (Jianshi variety), *zik na* ‘before’ heads a finite adverbial clause. Though the morpheme *zik* ‘below, under’ (cf. Sqliq Atayal *zik (na) tekan*

1 More data are now available in Chinese, thanks to the publication of the Formosan Language Series by the Council of Indigenous Peoples in 2018.

‘under the table’ in the Wulai variety) is followed by the genitive marker *na*,² it is difficult to treat this clause as nominalized (as in (1) below), since the pronoun is in its nominative, rather than genitive case. The subordinating status of this clause is indicated by the occurrence of the topic marker *ga* ‘TOP’, as shown in (1). The mood of the verb in the subordinate clause—indicated by a different voice affix, cf. *m-* ‘AV(.REAL)’ in (1a) and *p-* ‘IRR(.AV)’ in (1b)—depends on whether the event expressed is generic/habitual, as in (1a), or will take place, as in (1b). The subordinate clause usually precedes the main clause.

(1) Sqliq Atayal (Jianshi variety) (Huang & Hayung 2018)

a. *zik na m-aniq=saku’ ga m-ima’=saku’ qba’ krryax.*
 before GEN AV-eat=1SG.NOM TOP AV-wash=1SG.NOM hand often
 ‘Before I eat, I regularly wash my hands.’ (p. 211)

b. *zik na p-aniq=saku’ ga m-ima’=saku’ qba’*
 before GEN IRR.AV-eat=1SG.NOM TOP AV-wash=2SG.NOM hand
 ‘Before I eat, I wash my hands.’ (implied: as of this very moment, I am already washing hands) (p. 212)

In Central Amis, Kavalan, and Nanwang Puyuma, a phrase that literally translates as ‘in front’, introduces a nominalized sentence, as shown in (2a–c). In Amis, *i ayaw* ‘before’ is followed by a genitive-case marker *nu*; the verb, prefixed by *ka-*, does not carry any overt voice affix (2a). In Kavalan, *ngayaw* ‘before’ is followed by the genitive-case marker *na*, as in (2b). In Puyuma, the verb is nominalized and preceded by a possessor pronoun (2c). In these three languages, the subordinate clause usually precedes the main clause.

(2) a. Central Amis (Wu 1995)

i ayaw nu ka-kahuk isu, sausi-en=hu kuya
 LOC before GEN KA-eat.lunch 2SG.GEN read-IMP.UVP=COS that
cudad!
 book
 ‘Before you eat lunch, read that book!’ (p. 116)

2 The data vary cross-dialectally. In the Wulai variety of Sqliq Atayal, the verb is not only in its bare form but also followed by a nominative pronoun. Consider the following example:

(i) Sqliq Atayal (Wulai variety)
zik na wah=ku’ sqani m<in>aniq mami’ la’.
 before GEN come[AV]=1SG.NOM here AV<PFV>eat rice COS
 ‘Before I came here, I had already eaten.’

- b. Kavalan (Jiang 2006, p. 101)

ngayaw na ni-qa-suRaw=ku tu ni-Rasa=ku
 before GEN PFV-QA-stumble=1SG.GEN OBL PFV-buy=1SG.GEN
tu sudad zau.
 OBL book this
 'Before I stumbled, I bought this book.'

- c. Nanwang Puyuma (Zeitoun 1997, p. 139)

pakanguayan draku ba-burek-an i,
 before 1SG.OBL.PSR RED~return-NMLZ TOP
pya=ku=la m-aip kandru kana tilir.
 finish=1SG.NOM=PFV AV-read OBL.that OBL.DEF book
 'Before I left, I read that book.'

Truku Seediq and Isbukun Bunun also exhibit a phrase that seems to have a locative origin. Truku Seediq *berah*³ *na* means 'in front, before', and Isbukun Bunun *tanangaus* can be translated as '(in) front, ahead (of time), before'. In both languages, the *before*-phrase occurs at the end (rather than at the beginning) of the adverbial clause, which is headed by a subordinator, e.g., *nasi* 'if' in Truku Seediq, as in (3a), and *mais* 'when/if' in Isbukun Bunun, as in (3b). In these two languages, the verb is in its finite form (e.g., the occurrence of the nominative pronoun =*ku* in Truku Seediq and the AV marking of the verb in Bunun). The subordinate clause precedes the main clause in Truku Seediq, whereas in Isbukun Bunun, it usually follows the main clause, although it can also be topicalized to the front.

- (3) a. Truku Seediq (Lee & Hsu 2018, p. 161)

nasi=ku saw me~mowsa berah na perengag=ku qnawal.
 if=1SG.NOM seem RED~AV:go before GEN say=1SG.NOM iron.wire
 'Before I come, I will phone you.'

- b. Isbukun Bunun (Li 2018, p. 521)

'asa tu sikuda-an a vanas mais
 want LNK close-UVL NOM window when/if
na=min-suma balivus tu tan-a-ngaus!
 IRR=AV.become-come.out typhoon LNK toward-LOC-ahead
 'Be sure to close the window before the typhoon comes!'

3 The term *berah* in Truku Seediq actually means 'chest'.

Table 27.1 provides a summary of the morphemes introduced in the foregoing discussion.

TABLE 27.1 Use of locative morphemes to convey the meaning ‘before’

	Locative phrase		Temporal phrase	
	Form	Meaning	Form	Meaning
Squliq Atayal	<i>zik</i>	‘below’	<i>zik na</i>	‘before’
Central Amis	<i>i ayaw</i>	‘in front’	<i>i ayaw nu</i>	
Kavalan	<i>ayaw</i>		<i>ayaw na</i>	
Ng Puyuma	<i>pakanguayan</i>		<i>pakanguayan</i>	
Truku Seediq	<i>berah</i>		<i>nasi...berah na</i>	
Isb Bunun	<i>tanangaus</i>		<i>mais...tanangaus</i>	

In Tsou, the temporal nominal *auyusi*,⁴ which literally means ‘first, early, before’, heads a finite adverbial clause (introduced by *ne* ‘when (REAL)’)⁵ expressing anteriority. This subordinate clause can occur before or after the main clause, as shown in (4a) and (4b), respectively.

- (4) Tsou (Chang & Pan 2018, p. 124)
- a. *mo nan'o tma'congo 'o amo, ne auyusi ne*
AV.REAL.REM very ill NOM father OBL before when.REAL
te=c'u homeyaya.
IRR=COS millet.harvest.festival
‘Father (fell) very ill before the millet harvest festival was held.’

4 The distribution of *auyusi* ‘first, early, before’ in (i) shows its nominal status. It is always preceded by an oblique-case marker, whose form (*ta, to, no, ne*) depends on the temporal interval expressed by the noun or clause that follows (see Chang & Pan 2018, p. 125).

(i) Tsou (Chang & Pan 2018, p. 124)

moh=ta la maleo ne auyusi.
AV.REAL=3SG.NOM HAB love.cheating OBL before
‘He used to deceive people in the past.’

- b. *ne auyusi ne te=c'u homeyaya,*
 OBL before when.REAL IRR=COS millet.harvest.festival
mo nan'o tma'congo 'o amo.
 AV.REAL.REM very ill NOM father
 'Before the millet harvest festival was held, father (fell) very ill.'

Hsieh (2018, pp. 144–146) mentions for Kavalan the prefix *qu-* 'before', which attaches to the base (root form) of a verb in the subordinate clause, itself usually preceding the main clause, as shown in (5). The origin of this prefix is unknown, and it is not reported in Li & Tsuchida's (2006, pp. 14–24) list of Kavalan prefixes. It could be related to the temporal adjunct *qumnipa* 'before, in the past, in the olden times' or the temporal interrogative *qumni* 'when'.

- (5) Kavalan (Hsieh 2018, p. 145)
qu-qawi=iku pun=ti=iku tayta tu sudad
 before-leave=1SG.NOM finish=COS=1SG.NOM <AV>see OBL book
'nay.
 that
 'Before I left, I had already read that book.'

Thompson, Longacre & Hwang (2007, p. 247) point out that "'before' clauses are conceptually negative from the point of view of the event in the main clause." A negator '(do/did) not', usually followed by an aspectual clitic meaning 'still, yet', occurs in the adverbial *before*-clause in many Formosan languages, including Amis, Kanakanavu, Nanwang Puyuma, Rukai, Saaroa, Saisiyat, Paran Seediq, Thao, and Tsou. Examples for three languages, Kanakanavu, Thao, and Mantauran Rukai, are given in (6a–c). The subordinate clause in Kanakanavu and Thao is a finite clause, whereas in Mantauran Rukai, it is a nominalized clause.

- (6) a. Kanakanavu (Sung 2018, p. 147)
mia ku=pa=kasu koca'ani ia cu'uru-o=pa
 at.that.time NEG=still=2SG.NOM eat:lunch TOP see-UV.IMP=still
sinatu isua!
 book that
 'Before you eat lunch, first read that book!'

- b. Thao (Jean 2018, p. 192)

ni=wan yaku tu m<in>ara sa binanau'az i-tanaraus
 NEG=still 1SG.NOM LIG AV<PFV>take CN woman LOC-outside
yaku malhkakriw.
 1SG.NOM AV:RED:work
 'Before I married, I was working away from home.'

- c. Mantauran Rukai (Zeitoun 2007, p. 442)

a-ki-'acakelae-na=li, om-iki=lrao
 CLS.NMLZ-NEG-marry-still=1SG.GEN DYN.FIN-be.at=1SG.NOM
taipake 'adhidhapa.
 Taipei work
 'Before I got married, I was working in Taipei.'

Note that in Thao and Saisiyat, temporal anteriority may not be overtly marked by any specific marker; when that is the case, the event referred to in the main clause is marked as anterior, and an irrealis clitic or prefix occurs on the verb in the adverbial clause, as shown in (7a–b). This type of construction is completely different from those examined in (1)–(6), whereby anteriority is marked in the subordinate clause. Very often, there is no particular marking in Paiwan, which makes use of the same markers found in *when*-clauses, as in (7c) (compare with example (15) below).

- (7) a. Thao (Jean 2018, p. 191)

a=m-usha=yza yaku ukaktun-i-k=iza⁵ sa patashan
 IRR=AV-go=COS 1SG.NOM finish-UVP-1SG.GEN=COS CN book
m-riqaz.
 AV-see
 'Before I left, I had already read (that) book.'
 Lit. 'I will leave, and I have already finished reading (the) book.'

- b. Saisiyat (Zeitoun et al. 2015, p. 251)

'a-pas-kayzaeh ka taew'an, minsha'la' ki-'oer ka
 IRR-make-good ACC house first dig-support ACC
pa-'iri'-an ka kae-'oer.
 CAUS-stand-LOC.NMLZ ACC NMLZ-support

5 The morpheme =*iza* 'already (COS)' has three phonologically conditioned allomorphs: =*iza*, which occurs after a consonant, =*za*, which occurs after *i* or *y*, and =*yza* elsewhere.

‘Before (one) builds a house, one (must) first dig the foundation to erect the supporting pillars.’
Lit. ‘(One) will build a house, (one) digs the foundation to erect the supporting pillars first.’

- c. Laiyi Paiwan (Chang 2018, p. 133)
ta mangetjez=a'en, vai'=anga timadju.
when.REAL AV.COME=1SG.NOM go=COS 3SG.NEUT
‘Before I came, he had already gone.’

The different strategies and morphemes found across the Formosan languages are summarized in Table 27.2.⁶

TABLE 27.2 Strategies and morphemes expressing temporal anteriority in Formosan languages

	Marker		Negator ‘not yet’
	Locative / Temporal	Temporal only	
Central Amis	<i>i ayaw</i> ‘before’		<i>ca'=ho</i> ‘not yet’
Squliq Atayal	<i>zik na</i> ‘before’		
Isbukun Bunun	<i>tanangaus</i> ‘before’		
Kanakanavu			<i>ku=pa</i> ‘not yet’
Kavalan	<i>ngayaw</i> ‘before’	<i>qu-</i> ‘before’	
Puyuma	<i>pakanguayan</i> ‘before’		
Paiwan			
Mt Rukai			<i>ki-...-na</i> ‘not yet’

6 As opposed to indicating that a morpheme is not found or a strategy is not available in a particular language, blanks in this table (and those that follow) indicate a gap that might be filled by further research on each language.

TABLE 27.2 Strategies and morphemes (*cont.*)

		Marker	Negator
		Locative / Temporal	'not yet'
Saaroa			<i>ku=na</i> 'not yet'
Saisiyat			<i>i'ini</i> 'not yet'
Seediq	Paran		<i>ini...na(na)</i> 'not yet'
	Truku	<i>berah na</i> 'before'	
Thao			<i>ni=wan</i> 'not yet'
Tsou		<i>auyusi</i> 'first, early, before'	<i>o'amocu</i> 'not yet'

27.2.2 Temporal Clauses Expressing Posteriority

The notion of ‘temporal posteriority’ refers to an event (depicted in the adverbial clause) that happens ‘posterior to’ or ‘after’ another event expressed in the main clause. There are at least four types of morpho-syntactic devices that can establish a relation of posteriority: (i) occurrence of a phrase or nominal that has a locative origin, (ii) use of a noun or prefix that has a temporal meaning, (iii) occurrence of a verb or prefix meaning ‘finish’, and (iv) verbal marking. Some languages do not make any distinction at all between ‘after’- and ‘when’-clauses. In what follows, these different devices are examined.

The same distinction that was noted in § 27.2.1 regarding the occurrence of a locative phrase for ‘before’-clauses is, to some extent, also found for ‘after’-clauses. In Squliq Atayal and Seediq (Paran and Truku), the relator noun ‘above’ has been grammaticalized as ‘after’. In Central Amis, the notion of posteriority is expressed by a locative phrase meaning ‘behind’ and by a noun meaning literally either ‘back’, as in Kavalan, or ‘behind’, as in Nanwang Puyuma. One difference is that Nanwang Puyuma *i lrikudran* ‘behind, after’ does not seem to introduce an adverbial clause, but rather functions as a temporal adjunct

(Teng 2008, p. 266). Isbukun Bunun, like Paiwan, does not make any distinction between ‘after’-clauses and ‘when’-clauses (Li 2018, pp. 521–522).

In Squliq Atayal, *babaw na* and *babaw nya* ‘after’ head a finite adverbial clause, as in (8); *babaw na* refers to the event reported in the adverbial clause as having happened, as in (8a); *babaw nya*, on the other, indicates that the events in the subordinate and in the main clauses have not yet taken place, as in (8b). In Paran and Truku Seediq, the locative phrase is a cognate form, cf. Paran Seediq *bobo (na)*, as in (9a) and Truku Seediq *babaw na (siida)*, as in (9b). There are two differences between Paran Seediq and Truku Seediq, though. First, in Paran Seediq, *bobo (na)* introduces the adverbial clause, as is also the case in Squliq Atayal. In Truku Seediq, *babaw na (siida)* occurs at the end of the subordinate clause, which is headed by *nasi* ‘if’.

(8) Squliq Atayal (Jianshi variety) (Huang & Hayung 2018)

- a. *babaw na m<n>wah qu Ciwa lga wal=maku’*
 after GEN AV<PFV>come NOM Ciwas COS:TOP <PFV>=1SG.GEN
bzih-an pila’ la.
 give.back-UVL money COS
 ‘After Ciwas came, I gave her back the money.’ (p. 213)

- b. *babaw nya’ kt-an=mu Sayun ga biq-un=mu*
 after 3SG.GEN see-UVL=1SG.GEN Sayun TOP give-UVF=1SG.GEN
pila’
 money
 ‘After I see Sayun, I will give her money.’ (p. 214)

(9) a. Paran Seediq (Sung 2018, p. 158)

- bobo na dehuk=miyan hiya de,*
 after GEN reach=1PL.EXCL.NOM there PART
asi=miyan prading meepah di.
 at.once=1PL.EXCL.NOM start AV:work part
 ‘After we arrive there, we (will) start to work at once.’

b. Truku Seediq (Lee & Hsu 2018, p. 162)

- nasi=ku saw m-usa seejiq-un babaw na siida do*
 if=1SG.NOM seem AV-go person-UVF after GEN that.time LNK
o aji=ku meha qepah.
 TOP NEG=1SG.NOM IRR.AV.go <AV>work
 ‘After I get married, I will not work.’

In Central Amis, a phrase which translates as ‘behind’ introduces a nominalized sentence, as shown in (10a). Like *i ayaw* ‘before’, *i rikor* ‘behind, after’ is followed by the genitive case marker *nu* and the verb, prefixed by *ka-*, does not carry any overt voice affix. In Kavalan, the noun *turuz* ‘back, after’ is followed by a genitive case marker which introduces a nominalized clause, as in (10b).

- (10) a. Central Amis (Wu 2018, p. 127)

o ci-cawhiay kina 'alo i rikor no
 CN have-sea.bass this.NOM stream PREP after GEN
ka-lilisi-an.
 KA-flood-LOC.NMLZ
 ‘After the flood, there are sea bass in this stream.’

- b. Kavalan (Jiang 2006, p. 101)

tuRuz na ni-Rasa=ku tu sudad zau tu
 after GEN PFV-buy=1SG.GEN OBL book this TU
ni-qa-suRaw=ku.
 PFV-QA-stumble=1SG.GEN
 ‘After I bought this book, I stumbled.’ (Lit. ‘I stumbled after my buying of the book.’)

Pan (2010, p. 100) and Chang & Pan (2018, p. 126ff.) mention two temporal nominals, *ataveisi* and *ta'esi* ‘after’ as marking posteriority. The first literally means ‘last, finally, after’ and the second is also used as a spatial marker and is glossed as ‘distant (but visible) place, there’.

- (11) Tsou (Chang & Pan 2018, p. 126)

to ataveisi ne moso mɤchɤ, mi=cu
 OBL after when.REAL AV.REAL.REM AV:rain AV.REAL.IMM=COS
kuzo 'o ceonɤ.
 bad NOM road
 ‘After it kept raining, the road deteriorated.’

Table 27.3 provides a summary of the morphemes introduced in the foregoing discussion.

TABLE 27.3 Use of locative morphemes to convey the meaning ‘after’

Locative phrase			Temporal phrase	
Form			Form	Meaning
Squliq Atayal			<i>babaw na</i>	‘after’
			<i>babaw nya</i>	
Seediq	Truku	<i>babaw</i>	<i>babaw na</i>	
	Paran	<i>bobo</i>	<i>bobo (na)</i>	
Central Amis			<i>i rikor nu</i>	
Kavalan			<i>tuRuz na</i>	
Tsou			<i>ta’esi</i>	
			<i>ataveisi</i>	
Nanwang Puyuma			<i>i lrikudran</i>	‘afterward’

In many Formosan languages, including Amis, Kavalan, Puyuma, Rukai, Saaroa, and Tsou, *after*-clauses contain an element translating as ‘finish’. In most languages, this element functions as a verb that is the first member of a serial verb construction (SVC), as shown in (12a). Saaroa and Tsou are peculiar in that while the verb ‘finish’ represents the base, a verbal prefix signifying the action, e.g., Saaroa *pu-* ‘read’, Tsou *o-* ‘eat’, attaches to it, as in Saaroa *pu-lupungu* ‘finish reading’ and Tsou *o-epungu* ‘finish eating’, as in (12b). Besides the occurrence of the verb *o-lrepenge*, which occurs in a nominalized clause, as the first verb of an SVC (see Zeitoun 2007, p. 440), Mantauran Rukai also exhibits a verbal prefix *paka-/maka-*, which expresses an achievement/accomplishment and is best glossed as ‘finish’, as in (12c).

(12) a. Puyuma (Zeitoun 1997, p. 142)

piya=ku mekan i m-u-patraran=ku.
finish=1SG.NOM AV:eat TOP AV-go-outside=1SG.NOM
‘After I finished eating, I went outside.’

b. Tsou (Chang & Pan 2018, p. 127)

ne mi=cu o-epungu mo
when.REAL AV.REAL.IMM=COS eat-finish AV.REAL.REM
eatuapzu ’o amo.
chop.brushwood[AV] NOM father
‘When (he) had finished eating, father (went to) chop brushwood.’

- c. Mantauran Rukai (Zeitoun 2007, p. 442)

paka-tamako-nga=li, amo-dhaace=lrao.

DYN.NFIN:finish-smoke-COS=1SG.GEN IRR-DYN.NFIN:leave=1SG.NOM

'After I have finished smoking, I will leave.'

In some languages, such as Thao (13a) and Tsou (13b), there is no overt marking expressing posteriority. Posteriority is encoded through the sequentiality of the events depicted in the two clauses (which are not in a relation of subordination but rather of juxtaposition), sometimes with the occurrence of the perfective prefix <in> along with a clitic meaning 'already' on the verb of the adverbial clause, as in (13a–b). Kavalan deserves special mention. Hsieh (2018, p. 146) notes that to express anteriority, the verb occurring in the first clause must be preceded by an experiential prefix, as in (13c).

- (13) a. Thao (Jean 2018, p. 191)

tilha k<m><in>an=iza yaku, m-usha=yza

yesterday <AV><PFV>eat=COS 1SG.NOM AV-go=COS

'Yesterday, after I had eaten, I left.'

- b. Tsou (Zeitoun 1997, p. 143)

moh=cu bonu moh=cu moyafu.

AV.REAL.REM=COS AV:eat AV.REAL.REM=COS AV:leave

'After he/she ate, he/she went out.'

- c. Kavalan (Hsieh 2018, p. 145)

u=mawtu=ti aizipna qawka=iku wi.

EXP=AV:come=COS 3SG.NOM just=1SG.NOM leave

'After he came, I left.' (Lit. 'He came, I just left.')

The different strategies and morphemes used to indicate temporal posteriority found across Formosan languages are summarized in Table 27.4.

TABLE 27.4 Strategies and morphemes expressing temporal posteriority in Formosan languages

		Marker		'finish'	Verb marking	Same marking as <i>when</i> clauses
		Locative / Temporal	Temporal only			
Central Amis		<i>i rikor</i> 'after'		<i>mahrek</i>		
Squliq Atayal		<i>babaw na</i> 'after'				✓
Isbukun Bunun						✓
Kanakanavu						
Kavalan		<i>tuRuz na</i> 'after'		<i>pun</i>	<i>u</i> = 'EXP'	
Ng Puyuma		<i>i lrikudran</i> 'after'		<i>piya</i>		✓
Puljetji Paiwan						✓
Mt Rukai				<i>lrepenge</i> <i>paka-/maka-</i> PREF- <i>lupungu</i>	= <i>nga</i> 'COS' = <i>cu</i> 'COS' (<i><in></i>) = <i>ila</i> '(<i><PFV></i>)COS'	
Saaroa						
Saisiyat						
Seediq	Paran	<i>bobo na</i> 'after'				
	Truku	<i>babaw na</i> (<i>siida</i>) 'after (when)'				
Thao					(<i><in></i>) = <i>iza</i> '(<i><PFV></i>)COS'	
Tsou		<i>ta'esi</i> 'there'	<i>ataveisi</i> 'last, after'	PREF- <i>epungu</i>	= <i>cu</i> 'COS'	

27.2.3 Temporal Clauses Expressing Simultaneity/Concomitance

Two events may occur simultaneously or overlap for a certain period of time. Temporal clauses denoting simultaneity or concomitance can be divided into factual and nonfactual clauses. Factual clauses refer to a past (realis) event, and nonfactual clauses manifest a future (irrealis) event, as illustrated in (14) and (15).⁷ Different languages have different ways of categorizing generic and habitual events. In some, they are treated as factual, and in others as nonfactual, as in (16a) and (17a).

(14) Isbukun Bunun (Zeitoun 1997, p. 133)

- a. *tudip masa sadu=ik saitia hai,*
 at.that.time when.REAL see[AV]=1SG.NOM 3SG.OBL TOP
p<in>alinutu=ik.
 <PFV>tell=1SG.NOM
 'At that time, when I saw him, I told him.'

- b. *mais sadu saikin saitia hai, na=palinutu-an=ku.*
 when.IRR see[AV] 1SG.NOM 3SG.OBL TOP IRR=tell-UVL=1SG.OBL
 'When I see him, I will tell him.'

(15) Puljetji Paiwan (Huang 2012)

- a. *ta kasi-pucunug anema (a) su=kan?*
 when.REAL back.from-Pucunug what (LNK) 2SG.GEN=eat[UVP]
 'When you went back from Pucunug, what did you eat?' (p. 56)
- b. *nu tjajju-maza=(a)ken, ini=ka (a) ma-pacun*
 when.IRR move.to-here=1SG.NOM NEG=LNK (LNK) can-see
timadju.
 3SG.NEUT
 'When I move here, I cannot see him.' (p. 135)

It is interesting to note that in many Formosan languages (e.g., Kanakanavu, Paiwan, Rukai, Saaroa, Seediq, Puyuma, Thao, and Tsou), there is an overlap in the use of the subordinator introducing temporal clauses referring to a generic, habitual, or future event, and the one found in hypothetical/conditional clauses (see also Thompson, Longacre & Hwang 2007, p. 257 for a similar

⁷ Such a division corresponds to the mood dichotomy exhibited by most Formosan languages.

observation). The distinction between these two types of clauses often lies in the temporal/aspectual marking of the verb in the main clause, as shown in (16) and (17).

(16) Labuan Rukai (Zeitoun 1997, p. 134)

- a. *nu maka-twatuman=aku ka*
 when.IRR DYN.REAL:finish-work=1SG.NOM TOP
wakan=aku ku aga.
 ACT:REAL:eat=1SG.NOM OBL rice
 ‘When I finish working, I (usually) eat.’
- b. *nu maka-twatuman=aku ka ay-kan=aku*
 when.IRR DYN.REAL:finish-work=1SG.NOM TOP IRR-eat=1SG.NOM
ku aga.
 OBL rice
 ‘When/If I finish working, I will eat.’

(17) Saaroa (Pan 2018, p. 150)

- a. *maci m-asinu a Amalhɯ=na palhu-a-salhi.*
 when/if AV-bathe NOM Amalhɯ=DEF sing-IRR-song
 ‘When Amalhɯ bathes, he sings.’
- b. *maci m-ikaaci=cu ia, m-u-a-sa mamaini=na m-alhukua*
 if AV-reach=COS TOP AV-go-IRR-road child=DEF AV-reach
valhitaa.
 outside
 ‘If the rain stops, the child(ren) will go outside.’

In some languages (e.g., Paiwan, Rukai, Truku Seediq, and Tsou), the same temporal morpheme is used in past/future temporal adjuncts and in past/future *when*-clauses. In Tsou, *ne* appears on the temporal adjunct meaning ‘yesterday’ (cf. *nehucma* ‘yesterday’, as in (18a)); it occurs as a (free ?) morpheme preceding the temporal *when*-clause, as in (18b).

(18) Tsou (based on Zeitoun 1997, p. 136)

- a. *moh=ta bonɯ to cnɯmɯ nehucma.*
 AV.REAL.REM=3SG.NOM eat[AV] OBL banana yesterday
 ‘He/She ate a banana yesterday.’

- b. *moh=ta=n'a* *bonu to cnumu ne*
 AV.REAL.REM=3SG.NOM=still eat[AV] OBL banana when.REAL
mo='u esmi.
 AV.REAL.REM=1SG.NOM come.in[AV]
 'He/She was still eating a banana when I came in.'

(19) Tsou (based on Zeitoun 1997, p. 136)

- a. *la='u aacni bonu to cnumu ho*
 HAB=1SG.NOM always eat[AV] OBL banana when.IRR
la=ta aiti.
 HAB=3SG.GEN see.UVL
 'I am always eating a banana when he/she sees me.'

- b. *tena=ta bonu to cnumu hohucma.*
 IRR=3SG.NOM eat[AV] OBL banana tomorrow
 'He/She will eat a banana tomorrow.'

There are at least three types of morphosyntactic devices for establishing a relation of simultaneity/concomitance: (i) occurrence of a subordinator, as shown in (14)–(18); (ii) reduplication of the verb occurring in the adverbial clause (i.e., verbal marking), as in (20a); and (iii) juxtaposition of two clauses that are interpreted as temporally concomitant, as in (20b).

(20) Central Amis (Wu 1995)

- a. *ma~mi-nanum kaku, mi-tahidan kisu.*
 RED~AV-drink 1SG.NOM AV-call 2SG.NOM
 'When I was about to drink, you called.' (p. 123)
- b. *mi-nukay kaku, ma-lafi ci Aki.*
 AV-return 1SG.NOM AV-eat.dinner PN Aki
 'When I returned home, Aki was eating dinner.' (p. 125)

The different strategies and morphemes used to denote simultaneity/concomitance across Formosan languages are summarized in Table 27.5.

TABLE 27.5 Strategies and morphemes expressing simultaneity/concomitance in Formosan languages

		Marker meaning ‘when’			Verb marking	Same marking for ‘when’ (IRR)/ ‘if’ (PRED)
		Realis	Habitual	Irrealis		
Amis		<i>yo</i> ‘when’	<i>ano</i> ‘when/if’		RED	<i>ano</i> ‘when/if’
Atayal		<i>trang</i> ‘when’		<i>mha ni</i> ‘when/if’		<i>mha ni</i> ‘when/if’
Bunun		<i>masa</i> ‘when’	<i>mais</i> ‘when/if’			<i>mais</i> ‘when/if’
Kanakanavu		–				<i>nu</i> ‘if’
Kavalan		–		<i>si</i> ‘when/if’		<i>si, azu</i> ‘when/if’
Puyuma		<i>an, ane, kan</i> ‘when’				<i>an, ane, kan</i> ‘when’
Puljetji Paiwan		<i>ta</i> ‘when’	<i>nu</i> ‘when/if’			<i>nu</i> ‘when’/if
Rukai		<i>a-</i> ‘when’	<i>lo</i> ‘when/if’			<i>lo</i> ‘when/if’
Saaroa		<i>rumalhau</i> ‘when’	<i>maci</i> ‘when/if’			<i>maci</i> ‘when’/if
Saisiyat		–	<i>sho:</i> ‘when/if’			<i>sho:</i> ‘when’/if
Seediq	Paran	<i>de, dige</i>				<i>de, di na</i> ‘if’
	Truku	<i>siida</i> (o) <i>de o</i> ‘when’		<i>nasi</i> ‘when/if’		<i>nasi</i> ‘when/if’
Thao		–	<i>ya</i> ‘when/if’			<i>ya</i> ‘when/if’
Tsou		<i>ne</i> ‘when’	<i>ho</i> ‘when/if’			<i>ho</i> (ci/te) ‘when/if’

27.2.4 *Hypothetical/Conditional and Counterfactual Clauses*

There are two types of nonfactual clauses: hypothetical/conditional and counterfactual. Thompson, Longacre & Hwang (2007, p. 257ff.) refer to these two types of clauses as “predictive” or “real” conditionals and “imaginative” or “unreal” conditionals. There are two things to note. First, hypothetical/conditional clauses are usually unmarked, i.e., they usually refer to an event that may occur, and the verb in the main clause is marked as irrealis. Second, as shown in § 27.2.3 (see examples (16) and (17), for instance), the same subordinator may introduce temporal future *when*-clauses and hypothetical/conditional clauses.

Variation is found cross-linguistically. In Labuan Rukai and Saaroa, the morpheme that occurs in conditional clauses is morphologically related to that found in counterfactual clauses. In Labuan Rukai, for instance, *nu* ‘future-when/predictive if’ is found in conditional clauses, as shown in (21a), and *na* ‘counterfactual if’ in counterfactual clauses, as in (21b). Note also the mood concord in the main clause. In (21a), the verb is prefixed by the irrealis (predictive) *ay-* and in (21b) by the prefix *nay-*.

(21) Labuan Rukai (Zeitoun 1997, p. 149)

a. *nu* *ikai ku paisu=li* *ay-langadh=aku ku*
 when.IRR/if exist OBL money=1SG.GEN IRR-buy=1SG.NOM OBL
daane.
 house
 ‘When I have money, I will buy a house.’

b. *na* *ikai ku paisu=li* *kunadruma ka*
 if.CNTFCT exist OBL money=1SG.GEN before TOP
nay-langay-nga=naku ku daane.
 CNTFCT-buy-COS=1SG.NOM OBL house
 ‘If I had had money before, I would have bought a house.’

In other languages (Amis, Suliq Atayal, Isbukun Bunun, Tsou, and Nanwang Puyuma), the markers occurring in hypothetical/conditional and counterfactual clauses are the same. What differs is the marking of the verb (or the auxiliary, if any) in the main clause. In Isbukun Bunun, for example, *mais* ‘future-when/predictive if’ is followed by an unmarked verb in conditional clauses and a verb marked by *’ana=* ‘CNTFCT’ in counterfactual clauses, with *na=*, marking the irrealis (predictive) in (22a), and *’ana=*, denoting counterfactuality in (22b), cliticized on the verbs in the main clause. In Tsou, it is the auxiliary verb occurring in the main clause that differs; cf. *nte* in (23a) and *nto* in (23b).

(22) Isbukun Bunun

- a. *mais sadu=ik saitia hai*,
 when.IRR/if see[AV]=1SG.NOM 3SG.OBL TOP
na=palinutu-an=ku.
 IRR=tell-UVL=1SG.NOM
 'If I see him, I will tell him.' (Zeitoun 1997, p. 149)

- b. *mais 'ana=ni=ik min-pantu hai*,
 when.IRR/if CNTFCT=NEG=1SG.NOM AV.become-student TOP
'ana=ka-su~sui=ik.
 CNTFCT=do-RED~money=1SG.NOM
 'If I were not a student, I would have been making money for a long time.' (Li 2018, p. 523)

(23) Tsou (Zeitoun 1997, p. 150)

- a. *honci=u eaa peisu nte=u mihia emoo*.
 if=1SG.NOM have money IRR.HYP=1SG.NOM buy[AV] house
 'If I have money, I will buy a house.'
- b. *honci=u eaa peisu nto=u mihia emoo*.
 if=1SG.NOM have money CNTFCT=1SG.NOM buy[AV] house
 'If I had had money, I would have bought a house.'

In some languages, hypothetical/conditional and counterfactual clauses are introduced by completely different markers. This is the case in Saisiyat, for instance, whereby conditionals are headed by *sho*: and counterfactuals by *naw*, as shown in (24a) and (24b), respectively.

(24) Saisiyat (Zeitoun et al. 2015, p. 68)

- a. *sho: hayza: ka haehila:, yako ta-panabih=ila 'isho'on*.
 if have ACC sun/time 1SG.NOM HORT-tell=COS 2SG.ACC
 'If I have time, I will tell you.'
- b. *naw kahia' m-wai' sho'o, 'am=shaehoero(:)=ila hisia*.
 if yesterday AV-come 2SG.NOM IRR=see[AV]=COS 3SG.ACC
 'If you had come yesterday, you would have seen him.'

The marking of hypothetical/conditional and counterfactual clauses across Formosan languages is summarized in Table 27.6.

TABLE 27.6 Marking of hypothetical/conditional and counterfactual clauses in Formosan languages

		Hypothetical/conditional clauses ‘if (HYP/COND)’	Counterfactual clauses ‘if (CNTFCT)’
Central Amis		<i>ano</i> ‘when/if’	<i>ano...</i> , (=ay) ‘if’
Squliq Atayal		<i>mha ni</i> ‘if’	<i>mha ni...</i> , ‘ <i>aki</i> ’ ‘if’
Isbukun Bunun		<i>mais</i> ‘when/if’	<i>mais</i> ‘ <i>ana=...</i> , ‘ <i>ana=</i> ’ ‘if’
Kanakanavu		<i>nu</i> ‘when/if’	<i>nu</i> ‘when/if’
Kavalan		<i>si/azu</i> ‘when/if’	<i>si/azu</i> , ... + long ago ‘if’
Ng Puyuma		<i>an/kan</i> ‘when/if’	<i>an/kan</i> , ... RED/⟨a⟩ ‘if’
Paiwan		<i>nu</i> ‘when/if’	<i>nu</i> ‘when/if’
Labuan Rukai		<i>no...</i> , <i>ay-</i> ‘if ..., will ...’	<i>na...</i> , <i>nay-</i> ‘if ..., would ...’
Saaroa		<i>maci</i> , <i>macu</i> ‘when/if’	<i>lha-macu</i> ‘if’
Saisiyat		<i>sho:</i> ‘when/if’	<i>naw</i> ‘if’
Seediq	Paran	<i>netun</i> , <i>nasi</i> ‘when/if’	<i>netun</i> , <i>nasi</i> ‘when/if’
	Truku	<i>nasi</i> ‘when/if’	<i>nasi</i> ‘when/if’
Thao		<i>ya</i> ‘when/if’	<i>ya</i> ‘when/if’
Tsou		<i>honci...</i> , <i>nte</i> ‘if’	<i>honci...</i> , <i>nto</i> ‘if’

27.2.5 Summary

In the above subsections, the morphological marking, syntactic features, and semantic characteristics of temporal, hypothetical/conditional, and counterfactual clauses have been discussed briefly. A schematic overview of the distribution of the relevant morphemes is given in Table 27.7.

TABLE 27.7 Schematic cross-linguistic overview of temporal, hypothetical/conditional, and counterfactual clauses in Formosan languages

	Temporal										Condi- tional	Counterfactual
	Anterior					Posterior			Simultaneous			
	Loc / Temp only	'not yet'	Verb marking	Same marking as 'when'	Loc / Temp only	Temp only	'fin- ish'	Verb marking	REAL	HAB		
Central Amis	✓	✓			✓		✓		✓		✓	✓(+ V _p =ay)
Squliq Atayal	✓				✓				✓		✓	✓(+ 'aki _p)
Isbukun Bunun	✓								✓		✓	✓('ana=V _{q/p})
Kanakanavu		✓										✓
Kavalan	✓	✓			✓		✓	✓				✓
Mt Rukai		✓					✓	✓	✓		✓	✓
Paiwan				✓					✓			✓
Ng Puyuma	✓	✓			✓		✓			✓		✓(+ CARED / <a> V _p)
Saaroa		✓							✓		✓	✓
Saisiyat		✓	✓					✓			✓	✓
Seediq		✓			✓							✓
Paran					✓							✓
Truku	✓				✓				✓			✓
Thao		✓	✓					✓				✓
Tsou		✓			✓	✓	✓	✓	✓		✓(+ diff. AUX)	✓

27.3 Concessive Clauses

Thompson, Longacre & Hwang (2007, p. 262) define concessive as “a general term for a clause which makes a concession, against which the proposition in the main clause is contrasted” and mention two types of concessive clauses. They label the first as “definite” concessive clauses, introduced by a concessive subordinator like ‘although’. The second type of concessive clause is referred to as “indefinite” concessive clauses and expresses a meaning of ‘no matter what’ or ‘whatever’. The data available on Formosan languages mostly point toward definite concessive clauses, with a morpheme meaning ‘although, even if’ heading the adverbial (finite) clause, which usually occurs before the main clause; cf. Sqliq Atayal and Truku Seediq *ana*, Saisiyat *’ana*, as in (25a), and Paran Seediq *ani naq*, Paiwan *kumali*, Tsou *upena*, Kanakanavu *’apaco’e*, and Saaroa *maniki*, as in (25b). Note that in Central Amis, the same morpheme is found in conditional/counterfactual and concessive clauses (Wu 1995, p. 134).

(25) Saisiyat (Zeitoun et al. 2015, p. 294)

a. *sia ana tili'lih-in, 'oka'='i-k be'e:*
 3SG.NOM CNC bully-UVF NEG=LNK-STAT angry
 'Even if he/she is bullied, he/she is (never) angry.'

Saaroa (Pan 2018, p. 156)

b. *maniki m-aurukucu ka lhi-ta'ia=isa ia,*
 CNC STAT-slow NOM PFV:PAT.NMLZ-do=3.GEN TOP
m-avacangu ka lhi-ta'ia=isa.
 STAT-good NOM PFV:PAT.NMLZ-do=3.GEN
 'Though he/she works slowly, it is well-done.'
 (Lit. 'Though the work he/she does is slow, it is good.')

(26) Isbukun (Li 2018, p. 525)

- a. *'ana=tupa tu ni=as haiap palinanutu, haitu 'asa tu*
 IRR=tell LNK NEG=2SG.NOM know talk[AV] but want LNK
p-is-haiap-an tu naia tu ma-kua (i)su
 CAUS-IS-know-UVL LNK 3PL.DIST.NOM LNK STAT-how 2SG.GEN
'iliskin-an.
 think-OBJ.NMLZ
 'Even though you do not know (how to) talk about (it), (you) must let
 them know what your thoughts are (about it).'

Mantauran Rukai (Zeitoun 2007, p. 450)

- b. *ni-pato'o-a=li*
 CNC.NMLZ-DYN.NFIN:tell-CNC.NMLZ=1SG.GEN
ma-ha'aoc=ine, o-sialrala-ka=i ka
 STAT.SUBJ-scold=3SG.OBL DYN.FIN-hear-NEG=3SG.GEN NEG
lalake=li 'aolai.
 child=1SG.GEN male
 'Even if I scold him, my son does not listen.'

In the two Formosan languages for which indefinite concessive clauses have been reported, Saisiyat and Isbukun Bunun, there is no morphosyntactic distinction between the two types of concessives.⁸

(27) Isbukun (Li 2018, p. 96)

- a. *'ana=tupa tu tupa saia hai latuza saikin.*
 IRR=tell LNK tell 3SG.DIST.NOM TOP believe[AV] 1SG.NOM
 'Whatever he/she says, I believe (his/her words).'

Saisiyat (Zeitoun et al. 2015, p. 382)

- b. *sho'o 'ana' tortoroe'-en ma' kama='oki:-hoero:.*
 2SG.NOM CNC teach-UVF still HAB=NEG:LNK-succeed.in
 'Whatever you are taught, you never remember anything.'

In Kavalan, the two clauses are juxtaposed without the occurrence of any conjunction or subordinator, as shown in (28).

8 Sung (2018a, p. 162) mentions that Tkdaya Seediq *ani* may be glossed as 'no matter', but no illustrative example is given to support this statement.

- (28) Kavalan (Hsieh 2018, p. 155)
me-taRaw aizipna matiw=pama taqsi.
AV-be.ill 3SG.NOM AV.go=still study
‘Though he/she is ill, he/she still goes to school.’

The morphemes used across Formosan languages in concessive clauses are given in Table 27.8.

TABLE 27.8 Morphemes found in concessive clauses across Formosan languages

		‘even if’
Central Amis		<i>anu</i>
Squliq Atayal		<i>ana</i>
Seediq	Paran	<i>ani naq</i>
	Truku	<i>ana</i>
Saisiyat		<i>‘ana’</i>
Isbukun Bunun		<i>‘ana=tupa tu</i>
Kanakanavu		<i>‘apaco’e</i>
Kavalan		Ø
Paiwan		<i>kumali</i>
MtRukai		<i>ni-...-a</i>
Saaroa		<i>maniki</i>
Thao		Ø
Tsou		<i>upena</i>

27.4 Causal Clauses

Causal clauses, usually introduced by a conjunction, express the cause or reason mentioned in the main clause. In Saaroa, Kanakanavu, and Amis, it seems that causal clauses occur predominantly after the main clause, as shown in (29a–b).

(29) Amis (Wu 2018, p. 125)

- a. *mi-cofel* *kako* *to* *hawan nawhan* *ma-talaw*
 AV-put.in.scabbard 1SG.NOM CN knife because STAT-afraid
kako *to* *ni-ka-tafal-an* *no* *wawa~wawa*.
 1SG.NOM CN PFV-KA-chop-UVL GEN RED~child
 'I put the knife in the scabbard because I am afraid the children will cut (themselves).'

Saaroa (Pan 2018, p. 158)

- b. *m-utututu a* *mamaini=na ka* *m-asarumu*.
 AV-shiver NOM child=DEF because STAT-cold
 'That child shivers because he is cold.'

In Isbukun Bunun, Thao, Paiwan, Seediq (Paran and Truku), and Atayal, the causal clauses may precede or follow the main clause.

(30) Thao (Blust 2003)

- a. *maqa* *yaku* *m<in>i-qilha* *ladadu, minu min-ishqala*.
 because 1SG.NOM <PFV>AV-rice.wine a.few EXCL INCH-drunk
 'Because I had a little to drink I got drunk.' (p. 424)
- b. *yaku* *m-ara kawi maqa* *fatu i* *sa saran...*
 1SG.NOM AV-take wood because stone LOC CN road
 'I am going to get a stick because there is a stone in the road ...'
 (p. 425)

In Mantauran Rukai, the morpheme that translates as 'because' and heads the causal adverbial clause displays two distributions (Zeitoun 2007, p. 457). When the adverbial clause precedes the main clause, *alaka-* 'because' is followed by a genitive pronoun referring to the subject of the sentence and by a verb in subjunctive form, as in (31a). When it occurs after the main clause, *alaka-* 'because' is followed by a 'dummy' third-person pronoun and by a verb in its finite form (to which is attached a nominative bound pronoun referring to the subject of the sentence), as in (31b). In (31a), the two clauses are in a relation of cosubordination, that is, while seemingly similar to coordinate clauses, the first clause is subordinate to the second, as shown by the subjunctive verb form; in (31b), the two clauses are in a relation of co-ranking or juxtaposition.

(31) Mantauran Rukai (Zeitoun 2007)

- a. *alaka=li m-oa cengel=ine*
 because=1SG.GEN DYN.SUBJ-go DYN.SUBJ:see=3SG.GEN
asavasavare=li, (mani) valrovalroe=trao.
 boyfriend=1SG.GEN (then) DYN.NFIN:dress.well=1SG.NOM
 'Because I am going to see my boyfriend, I dress well.' (p. 457)

- b. *'okolodh=iname alaka=i*
 afraid=1PL.EXCL.OBL because=3SG.GEN
o-lriho'o-ka=nai ka 'aomo vaha.
 DYN.FIN-know-NEG=1PL.EXCL.GEN NEG Japanese language
 'We were afraid because we did not understand the Japanese language.'
 (p. 458)

Nanwang Puyuma and Kavalan (32) do not have any specific conjunction for expressing a cause: the two clauses are juxtaposed.

(32) Kavalan (Hsieh 2018, p. 155)

- muzan=ti tanan=ti=imi.*
 av:rain=COS go.back.home=COS=1PL.EXCL.NOM
 'Because it was raining, we went back home.'

Saisiyat expresses causality through a change in voice. The verb is marked as realis UVC, and the adverbial causal clause usually occurs after the noun phrase that is the subject of the verb of the second clause, *rima* 'go' in (33a) and *'osha* 'go' in (33b).

(33) Saisiyat

- a. *korkoring shi-pak~pa-ka-'ngel ti-kinhama' ma-'ngel*
 child UVC-RED~CAUS-STAT-slow cook-breakfast STAT-slow
rima' ray kakishkaatan.
 go[AV] LOC school
 'Because (he/she) keeps preparing breakfast slowly, the child is (al-ways) late to school.' (Zeitoun et al. 2015, p. 204)
- b. *ma'an shi-k-'aeyae'h, 'isaa' 'okay 'osha' ray kakishkaatan.*
 1SG.GEN UVC- STAT-ill then NEG:LIG go[AV] LOC school
 'Because I was sick, I did not go to school.'

The morphemes found in causal clauses across Formosan languages, with the position of the adverbial clauses (S_q) as opposed to the main clauses (S_p), are given in Table 27.9.

TABLE 27.9 Morphemes found in causal clauses across Formosan languages

'because'		
Amis		S_p [<i>nawhan/nawhani</i> S_q]
Kanakanavu		S_p [<i>si</i>] S_q
Saaroa		S_p [<i>ka</i>] S_q
Seediq	Paran	[<i>ado</i> (<i>ka</i>)] S_q [(<i>kika</i>)] S_p
		S_p [<i>ado</i>] S_q
	Truku	<i>yaasa</i>
MtRukai		[<i>alaka</i> =Pro _{GEN} V _{SUBJ}] S_q (<i>mani</i>) [V] S_p
		[V...] S_p [<i>alaka</i> =Pro _{GEN} (dummy) V _{FIN} =Pro _{NOM}] S_q
Squliq Atayal		[<i>bha hmswa'</i>] S_q (may occur before or after S_p)
Isbukun Bunun		' <i>aupa</i> (may occur before or after S_p)
Paiwan (Sandimen)		<i>la</i>
Thao		<i>maqa</i> (may occur before or after S_p)
Tsou		<i>ci</i>
Nanwang Puyuma		∅
Kavalan		∅
Saisiyat		(UVC)

27.5 Result Clauses

Result clauses are usually introduced by a conjunction and occur after the main clause to express the result of an event/fact stated in the first clause. There are a few things to note. Most of the Formosan languages exhibit a specific conjunction in these clauses (see Table 27.10). However, there does not seem to be any such morpheme in Puyuma, Kavalan, and Saisiyat, while in Isbukun Bunun, there is no distinction in form between the morpheme '*aupa* 'because, so' expressing causality and result. In Thao, while *maqa* means 'because', *a=maqa*, in which *maqa* is cliticized by *a=* 'IRR', can be glossed as 'so', as in (34).

(34) Thao (Blust 2003, p. 451)
ita thuini m-u-buhat ia-karishkish a=maqa
IPL.INCL.NEUT now AV-go-field do-hard.working IRR=so.that
a=muhiaw mu-kaktun.
IRR=AV:soon AV-finish
‘Let’s hurry up our work so we can finish sooner.’

Mantauran Rukai also has a marker with dual functions. The morpheme *la-*, followed by a genitive pronoun, translates as ‘so that’ and introduces result clauses when it occurs after the main clause, as in (35). It translates as ‘if’ and introduces a counterfactual clause when it appears before the main clause (see Zeitoun 2007, p. 459).

(35) Mantauran Rukai (Zeitoun 2007, p. 459)
’edhe’edhek-a ’asika’olo la=ko ’i-paiso!
DYN.SUBJ:diligently-IMP work so.that=2SG.GEN get-money
‘Work diligently and you will earn money!’

The morphemes used in result clauses across Formosan languages are given in Table 27.10.

TABLE 27.10 Morphemes found in result clauses across Formosan languages

		‘so’
Amis		<i>sa, saka</i>
Saaroa		<i>kuhlaisai</i>
Seediq	Paran	<i>kiya ka, kika</i>
	Truku	<i>kika</i>
MtRukai		[V...]S _p [la V _{NFIN} =Pro _{GEN}]S _q <i>’atoloro</i>
Squliq Atayal		<i>nanu yasa (qu)</i>
Isbukun Bunun		<i>’aupa</i>
Paiwan (Sandimen)		<i>mana=sika</i>
Thao		<i>a=maqa</i>
Tsou		<i>ko’ko</i>
Kanakanavu		<i>imu, masi</i>
Nanwang Puyuma		Ø
Kavalan		Ø
Saisiyat		Ø

27.6 Toward a Typology of Clause Linkage in Formosan Languages

In the foregoing sections, we have focused on the morphological marking; syntactic features; and semantic characteristics of temporal, hypothetical/conditional, counterfactual, concessive, causal, and result clauses. This section is an attempt to propose some research directions concerning clause linkage in Formosan languages, with a review of Lehmann's (1988) typology and a brief overview based on the foregoing sections (§ 27.4.1) and a discussion of the subordinating morphemes (§ 27.4.2).

27.6.1 *Lehmann's (1988) Typology of Clause Linkage with a Short Overview of Formosan Languages*

Lehmann (1988) proposes six syntactic and semantic parameters for distinguishing between main and subordinate clauses.

The first parameter concerns the “hierarchical downgrading of the subordinate clause”, that is, the degree of affectedness of the adverbial clause. Lehman (1988, pp. 185–189) shows that if a clause is not affected in its relation to another clause, then these two clauses cannot be viewed in a relation of subordination and should be treated as two independent clauses, in a relation of juxtaposition. The second parameter involves the “syntactic level of the subordinate clause”, i.e., its degree of syntactic tightness with respect to the main clause: a clause is downgraded if it is tightly integrated with the main verb, as its object for instance. The third parameter has to do with the “desententialization of the subordinate clause”, i.e., the degree to which a clause is expanded or reduced. When reduced, a clause may lose its major sentential properties, acquire nominal properties, and become a constituent of the main clause. The fourth parameter concerns the “grammaticalization of the main verb”, defined as another factor of desententialization, whereby the main verb is grammaticalized, and the subordinate verb becoming the main verb. The fifth parameter is defined as the “interlacing of the two clauses”, i.e., the non specification of common elements (e.g., pronominal co-reference and NP deletion). The last parameter relates to the “explicitness of [clause] linking”, i.e., the occurrence/non occurrence of a subordinating morpheme.

The data given in the previous sections show that there is a dichotomy between subordinate clauses with different degrees of subordination and juxtaposed clauses.

Juxtaposition is found in languages such as Kavalan; Thao; and to some extent, Puyuma, Saaroa, Saisiyat, Seediq, and Tsou. We exclude from juxtaposed sentences topicalized clauses that establish a relation of subordination. An illustration of juxtaposition is given in (36).

- (36) Kavalan (Hsieh 2018, p. 153)

Raya uzan, qaw~qawman matiw sa lazing Raybaut aizipna.
 heavy rain RED~still AV.go LOC seaside fish 3SG.NOM
 'Though it was raining hard, he still went to the seaside to fish.'

Among subordinate clauses, we found two types of clauses: finite subordinate clauses, as in (37a), and nominalized clauses, as in (37b).

- (37) a. Paran Seediq (Sung 2021, p. 158)

bobo na dehuk=miyan hiya de,
 before GEN arrive=1PL.EXCL.NOM there PART
asi=miyan prading meepah di.
 at.once=1PL.EXCL.NOM start AV:work PART
 'After we reached there, we started to work at once.'

- b. Mantauran Rukai (Zeitoun 2007, p. 449)

lo ma-esenge=ni kipingi=li,
 if STAT.SUBJ-soaked=3SG.GEN clothes=1SG.GEN
amo-pa-ka-'angenge=lrao.
 CNTRFCT-CAUS-STAT.NFIN-dry=1SG.NOM
 'If my clothes are soaked, I will dry them.'

Among cosubordinate clauses,⁹ we found also two types of clauses. In Saisiyat (38a), cause is expressed through a verb marked as realis UVC. In Mantauran Rukai (38b), a causal clause (introduced by *alaka-* 'the reason why, because' and occurring before the main clause) contains a verb marked as subjunctive to which a genitive pronoun is attached.

- (38) a. Saisiyat (Zeitoun et al. 2015, p. 254)

korkoring shi-kash-latar hangih=ila.
 child UVC-step.on-outside cry=COS
 'Because the child was taken out, he is crying.'

- b. Mantauran Rukai (Zeitoun 2007, p. 457)

mani ia tamatama 'ina'i, 'alaka=nai¹⁰
 then DYN.NFIN:SO middle-aged.man this because=1PL.EXCL.GEN

9 Cosubordination is defined as "a kind of dependent coordination, in which units of equivalent size are joined together in a coordinate-like relation but share some grammatical category" (Van Valin 2005, p. 187).

10 When (a) *laka-* 'because' occurs in sentence-initial position, as in (38b) (first occurrence),

ma-a-rilai, laka o-pi'a=mi'=iname
 STAT.SUBJ-all-slim because DYN.FIN-do=2SG.NOM=1PL.EXCL.OBL
po'ivo 'otra'a icivi..."
 DYN.SUBJ:mix snake DYN.SUBJ:bake.in.stones
 Lit. 'The middle-aged man said, "(The reason why) we are all getting
 slim (is) because you have done that to us"'

There is a distinction among the Formosan languages with respect to the position of the subordinating morpheme. It usually heads the subordinate clauses, but we have shown that for certain types of clauses, such as *before*-clauses, the subordinating morpheme may occur at the end of the subordinate clause, as shown in (3a–b).

The "interlacing of the two clauses", that is, the non-specification of common elements between the subordinate and the main clause (e.g., pronominal co-reference and NP deletion) has not been reported or examined carefully, so only one example is given here as an illustration. In Atayal, if the referent is manifested by a pronoun, the pronoun can occur in the subordinate and the main clause, as in (39a), or just in the subordinate clause (39b), but it cannot occur only in the main clause, as shown by the ungrammaticality of (39c).

(39) Sqliq Atayal (Wulai variety)

- a. *zik na wah=ku' sqani m<in>aniq=ku' mami' la.*
 before GEN come=1SG.NOM here AV<PFV>eat=1SG.NOM rice COS
 'Before I came, I had already eaten.'
- b. *zik na wah=ku' sqani, m<in>aniq-Ø mami' la.*
 before GEN come=1SG.NOM here AV<PFV>eat-Ø rice COS
 'Before I came, I had already eaten.'
- c. **zik na wah=Ø sqani m<in>aniq=ku' mami' la.*
 before GEN come=Ø here AV<PFV>eat=1SG.NOM rice COS

it is always followed by a genitive pronoun that refers to the subject of the sentence. When it occurs in mid-sentence (second occurrence in (38b)), it may be followed by a "dummy" third-person pronoun and a verb in its finite form, followed by a nominative bound pronoun, if any, referring to the subject of the sentence—the two sentences are thus coordinated rather than subordinated one to the other (Zeitoun 2007, p. 457). The reason(s) why genitive pronouns occur on the conjunction rather than the main verb needs to be further elucidated.

Table 27.11 tabulates the degrees of clause linkage in Formosan languages. By degrees, what is meant is that some adverbial clauses are subordinate (SUB), while others are cosubordinate (COSUB) or juxtaposed (JUXT) to the main clause. Subordinate and cosubordinate clauses might be nominalized (NMLZ) or contain a verb in its finite form (FIN), unless it exhibits a special verb form.

TABLE 27.11 Degrees of clause linkage in Formosan languages

		TEMP			COND	CNTFCT	CNC	CAUSE	RESULT
		'before'	'after'	'when'					
Central Amis		SUB-NMLZ		SUB-FIN JUXT	SUB-FIN				
Squliq Atayal		SUB-FIN							
Is Bunun		SUB-FIN							
Kanakanavu		JUXT			SUB-NMLZ		SUB-FIN		
Kavalan		SUB-NMLZ		SUB-FIN			JUXT		
		SUB	—						
Paiwan		—	—	SUB-FIN					
Ng Puyuma		SUB-NMLZ	SUB-FIN	SUB-FIN				JUXT	
Rukai	Mt	SUB-NMLZ						COSUB JUXT	SUB-NMLZ
Saaroa		JUXT		SUB-FIN					
Saisiyat		JUXT		SUB-FIN			COSUB (UVC.REAL)	—	
Seediq	Paran	JUXT	SUB-FIN						
	Truku	SUB-FIN							
Thao		JUXT		JUXT SUB-FIN			JUXT	SUB-FIN	
Tsou		JUXT		SUB-FIN					

27.6.2 Sources of the Subordinating Morpheme

The sources of the subordinating morphemes should be carefully examined. As shown in § 27.2.1 and § 27.2.2, there is a relation between space and time in Atayal, Amis, Puyuma, and Seediq, whereby the notions of anteriority and posteriority are expressed by a locative phrase or nominal; cf. *zik* (*na*) ‘below’/*zik*

na ‘before’ and *babaw* (*na*) ‘above’/*babaw na* ‘after’ in Atayal vs. *i ayaw* ‘in front, before’ and *i rikor* ‘behind, after’ in Amis.

Finally, for reasons that deserve further explanation, Isbukun Bunun and Sqliq Atayal have grammaticalized the verb of saying as a subordinating morpheme; cf. Isbukun Bunun *’ana=tupa tu* ‘even if’ and Sqliq Atayal *mha ni* ‘if’.

27.7 Conclusion

This chapter has provided an overview of the major morphosyntactic characteristics of adverbial clauses (including temporal, hypothetical/conditional, counterfactual, concessive, causal, and result) in Formosan languages, which exhibit some variation, even cross-dialectally. This is an area that has not been well investigated in the past, and there is still much to be done regarding the typology of clause linkage in these languages.

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