

Adverbials in Paiwan

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This study explores the syntax of adverbial expressions in Paiwan, a Formosan language spoken in Southern Taiwan. It is observed that In Paiwan adverbial modifiers are grammatically heterogeneous, ranging from morphology to syntactic construction. Mostly adverbials surface as verbs and syntactically involve complex predication (V1-a-V2) and clausal conjunction (V1-&-V2). Others occur as a closed set of auxiliaries, clitics/affixes, or syntactic adjuncts. The syntactic linearization of adverbials in Paiwan to a great extent conforms to the universal hierarchy of adverbs proposed by Cinque (1999). However, rather than as specifiers of functional heads or as functional heads by themselves, adverbial modifiers in Paiwan largely function as (semi-) lexical heads leading verbal or clausal complements. As have been evidenced by Chang's (2005) adverbial binding scale in Kavalan, similar result holds for adverbial modification in Paiwan. There exhibits an isomorphic relation between semantics and syntax of adverbial modification. The strong semantic bond between the modifiers and the modifiees will lead to high structural affinity of both.

1. Introduction

“Adverbials are the least homogeneous semantically, morphologically and syntactically” (Givón 2001:87). Adverbial meanings are expressible by means of several different sets of grammatical units in one language. As in English, an epistemic adverbial concept can be coded as a modal auxiliary *may*, it can be coded as a lexical word *probably*, or an adjective *likely*. Cross-linguistically, adverbs are the least universal category. The same adverbial meaning may be coded as bound grammatical morpheme in one language, an independent word in another, or a whole syntactic construction in another (i.e. Serial verb construction) (Givón 2001, Schachter 1985).

As for Formosan languages, Starosta (1988) firstly proposed ‘Adverbials as main verbs’ hypothesis, which claims that words translating as adverbs are grammatically main verbs in most Formosan languages. The following studies of adverbials in Formosan languages to a large extent support his claim. Huang's (1997) study reveals that cross Formosan languages manner expressions are largely manifested by SVCs in which adverbials are grammatically main verbs and the lexical verbs surfaces as ‘AF-only’ complements. Li's (2003) study shows that in Thao words having to do with concepts of scope, manner, quantity, intensity and time are often expressed by verbs

morpho-syntactically. In Amis (Liu 2003), manner expressions have two grammatical behaviors. On one hand, manner adverbial expressions involve ‘control adjunct construction’ in which the adverbials are grammatically main verbs and the lexical verbs are control adjunct headed by an optional linker *a*, as in (1). AF-only restriction on the lexical verbs is attested in this construction.

(1) Amis (Liu 2003)

- a. na mi-naqun tu ci aki (a) (*na) mi-pidpid (*tu) tu lupas
 Past AV-careful Prf Nom aki A AV-pick Acc peach
 ‘Aki was careful while picking peaches.’
- b. na ma-naqun tu ni aki (a) (*na) mi-pidpid (*tu) ku lupas
 Past PV-careful Prf Gen Aki A AV-pick Nom peach

On the other hand, manner expressions grammatically involve subordination. The markers *Sa—sa/-sa* function as specific markers for manner adverbials, while the AF-only restriction on the lexical (modified) verbs are still observed, as in (2).

(2) Aims (Liu 2003)

- a. sa-harakat-sa ci aki (a) k<um>aqen tu hemaj
 SA-fast-SA Nom aki A eat<AV> Acc meal
 ‘Aki is eating his meal quickly.’
- b. palifud-sa ci aki (a) mi-palu’ ci kacaw-an
 violent-SA Nom aki A AV-hit Acc kacaw-Acc
 ‘Aki hit Kacaw violently.’

Chang’s (2005a) study in Kavalan proposes new observations on adverbials and draws some theoretical implications. His study shows that: (a) most adverbials are lexical (main) verbs which may assign theta roles, as in (3a) and take another lexical verbs as complements; (b) Not all complements in SVCs (Serial verb constructions) respect AF-only restriction—AF frequency expression may bypass it, as in (3b); (c) Syntactically adverbials and the lexical verbs combine as complex predicates which jointly license a non-subcategorized subjects, as in (3c); (d) there is an isomorphic correspondence between the semantics and the syntax of adverbial modification in Kavalan—the syntactic distributions and behaviors of adverbial expressions parallel to their semantic modifying scopes (i.e. epistemic>frequency>manner).

(3) Kavalan (Chang 2005a:5-8)

- a. paqasiR tu qRitun

fast (AF) OBL car

‘He drives fast.’

b. pataz supas-ti-iku/supas-an-ku-ti tu/ya qRitun

often (AF) buff<AF>-ASP-1S.NOM/buff-PF-1S.GEN-ASP OBL/NOM car

‘I buff/buffed a/my car often.’

c. paqanas-an-ku tayta ya sulal

slow (AF)-PF-1S.GEN see<AF> NOM book

‘I read the book slowly.’

Although the relevant studies of adverbial syntax in some Formosan languages have been reported, the result from one language may not be necessarily identical to that from another. This paper aims to investigate various adverbial expressions in Paiwan, a Formosan language spoken in Sothern Taiwan, and analyses their morpho-syntactic behaviors. The study includes the following research questions:

- (a) What grammatical category (ies) should various adverbials in Paiwan belong to—verbs, adverbs or some other categories?
- (b) If adverbials are verbs, are they lexical or functional? If they are verbs, how are adverbial modifications syntactically represented in Paiwan? What syntactic construction do adverbials and the lexical verbs involve?
- (c) Is AF-only restriction to lexical verbs attested in all adverbial expressions in Paiwan? If not, in what categories can it be attested and in what categories can it be not?
- (d) Is there any rule or principle that governs the occurrences or linearization of various adverbials in sentences in Paiwan?

This paper is organized as follows. Section 2 introduces theoretical background and framework. Section 3 analyzes the semantics and syntax of adverbial expressions in Pawian. Section 4 discusses the relationship between isomorphism and adverbial modification. Section 5 arrives at conclusion.

2. Theoretical Framework

2.1 Formal Analysis

2.1.1 Syntactic properties of typical adverbs

In traditional generative grammar, adverbs deemed as adjuncts which are characterized by different syntactic behaviors from arguments and complements (i.e. argument-adjunct asymmetry, CED effect). Typical adverbs share some syntactic properties. As indicated by Travis (1988), typical adverbs are transportable and optional in sentences, as in (4).

- (4) English (Jackendoff 1972:49)
- a. (Clearly) John dropped his cup of coffee.
 - b. John (cleverly) dropped his cup of coffee.
 - c. John dropped his cup of coffee (clearly).

In addition, adverbs cannot take complements, as in (5).

- (5) English
- a. I am proud of my children.
 - b. *proudly of my children.

Finally, adverbs do not assign theta-roles by themselves. They cannot co-occur with arguments without the support of lexical verbs.

2.1.2 Universal hierarchy of adverbs

In Cinque's (1999) functional specifier approach, adverbs are no longer peripheral or accessory entities but integral parts of clause structure. All adverbs are licensed by being in the SPEC of a particular functional heads or they may surface as functional heads by themselves. The theory forces a one-to-one relation between position and interpretation and stipulates rigid ordering of adverbs. Along this line, the ordering of adverbs is treated as the result of UG (universal grammar) order of functional heads plus feature specifying of adverbs linking to each head. For example, Modal heads license *probably*, *maybe*, and other modal adverbs, Aspect heads license *already* or *frequently*, and so on. Figure 1 illustrates the universal hierarchy of adverbial functional projection, which consists of adverbial specifiers and their corresponding functional categories (heads).

Fig.1 Universal hierarchy of adverbs

[frankly **Mood** (speech act) [fortunately **Mood** (evaluative) [probably **Mod** (epistemic) [necessarily **Mod** (necessity/deontic) [often (frequentative) **ASP** [intentionally **Mod** [quickly (manner) **ASP** [already **ASP** [always **ASP** [completely/almost/again **ASP**...

2.2 Scope-based Approach (Ernst 2002)

Ernst (2002) proposes scope-based approach to deal with adverb licensing issues. He claims that the most important determinant of adjunct licensing is an adjunct's scope requirement rather than syntactic feature licensing as in Cinque (1999). He argues against Cinque mainly due to the following puzzles that feature-based theory cannot account for: *a.* multiple positions for predicational/functional adverbs, *b.* ordering restrictions among adverbs, *c.* different degrees of permutability among

different adjunct classes, *d.* differences in iterability among different adjunct classes, etc. Scope-based theory easily predicts the range of positions for various adverbials. For example, as in Figure 2, manner adverbs require a SpecEvent, which is available in VP or PredP but not above this. Epistemic and evaluative adverbs normally may not occur to the right of an aspectual head. The same result holds for speech-act adverbs which place to the right of any auxiliary for they are forced to take an event or proposition.

Fig. 2 Multiple Positions for Adverbs (Ernst 2002:114)

a. manner:	DP	Infl	Aux	~	V	~XP	
b. subject-oriented/ exocomparative:	~ DP	~ Infl	~ Aux	~	V	XP	
c. epistemic/evaluative	~ DP	~ Infl	~ Aux	?	V	XP	
d. speech-act	~ Comp	~ DP	~ Infl	~ Aux	V	XP	
	[CP	[IP	[AuxP	[PredP	[VP]]]]	

3. The Semantics and Syntax of adverbials in Paiwan

3.1 Semantic classification of adverbials in Paiwan

According to semantic contents, Ernst (2002) mainly divided adverbials into two types: predicational and functional adverbials. Predicational adverbials are semantically gradable. They exhibit ambiguity between clausal and manner reading, and rigid orders among themselves and with respect to negation. Functional adverbials are semantically non-gradable. “Functional adjuncts largely involve focus-presupposition structure or quantification of some sort, either over events or with respect to completion, intensity or closeness to some defined point” (Ernst 2002:120). Based on Ernst’s classification, adverbials in Paiwan can be categorized as follows.

3.1.1 Predicational Adverbials in Paiwan

Evaluative: *Puimang* ‘fortunately/luckily’, *Intit* ‘unfortunately’

Speech-act/ (emphatic): *nu-ka-kemuta* ‘frankly/in a word’, *pa’ulid* ‘truly/honestly’, *manu* ‘actually’

Modal (epistemic): *madu-* ‘probably’, *saka-* ‘interrogative mood’, *pa’ulid* ‘should/supposedly’

Modal (deontic): *sikuta* ‘unnecessarily’, *tjara-* ‘necessarily’, *makaya/nangua’/maca’u* ‘allowably, acceptably, okay (can)’, *nakuya* ‘unallowably, restrictedly, no way’

Evidential: *pulingalingaw/paljalruay* ‘clearly’

Subject-oriented: *pa'ateleng* 'rudely', *r-em-anaw* 'intentionally'

Exocomparative: *mamaw* 'the same', *(mana-)sika* 'accordingly'

Manner: *tjalaw* 'slowly', *g-em-alu* 'slowly'

3.1.2 Functional adverbials in Paiwan

Negative: *ini-ka* 'not'

Focusing: *V-anga'uta* 'also'

Measure: *k-em-ala-V-an* 'completely', *V-aravac* 'very'

Iterative: *umal* 'again'

Frequency: *nu-palemek* 'sometimes', *setjara-* 'often', *-sakamaya* 'always'

kin(e)-tjelu-l 'three time'

Aspectual: *V-anan* 'still', *V-anga* 'already', *-angata* 'almost'

B-class: *amin* 'only', *se-pa-galu* 'a little bit'

Degree-of-precision: *ljengeljeng* 'precisely'

3.2 The syntax of adverbials in Paiwan

In this section, we will examine and analyze the morpho-syntactic behaviors of various adverbials. As will be revealed in the following subsections, adverbials in Paiwan vary in their grammatical behaviors.

3.2.1 Adverbials as verbs

Most adverbial modifiers in Paiwan behaves as lexical verbs and exhibits significant verbal properties, such as the facts that they can undergo imperativization, they are inflected for focus (voice) markers to assign theta-roles, they are eligible for complement-taking.

3.2.1.1 Verbal properties of adverbials

Most manner adverbials, some cardinal frequency/deontic/emphatic expressions and some functional adverbials can be affixed directly with imperative morphemes *-u* (*-i*) (or associated with inchoative marker *-ka*, as in (6b)).

(6) Paiwan

a. *galu-u*

slow-IMP (exclusive)

'Move slowly!'

(Manner)

b. *ka-tjalav-i*

INCHO-fast-IMP (Inclusive)

- ‘(We) Move faster!’ (Manner)
- c. pa’ulid-u
truly-IMP
‘Tell the truth!’ (Emphatic)
- d. pa-kaya-u
Cau-be.able.to-IMP
‘You must be able to do it!’ (deontic)
- e. ‘umal-u
again-IMP
‘Do it again!’ (Iterative)
- f. kin-tjelu-l-u
time-three-time-IMP
‘Please do it three times.’ (Frequency)

Similar imperativization process can be found in typical activity or state verbs in Paiwan. Compare:

(7) Paiwan

- a. kan-u
eat-IMP
‘Eat it!’ (Activity verb)
- b. ka-perav-u
INCHO-happy-IMP
‘Be happy!’ (Stative verb)

Many manner adverbials and some miscellaneous (predicational/functional) ones can directly take noun phrase as their internal (nominative) arguments, while most of them must surface in NAF form, as in (8-9).

(8) Paiwan

- a. ku-s-in-i-galu a ku-haiya
1S.GEN-BF-PERF-slowly NOM 1S.GEN-car
‘I’ve slowed down my car (while driving).’ (Manner)
- a’. *g-em-alu-aken tua ku-haiya
- b. ku-si-ka-tjalaw a ku-haiya
1S.GEN-BF-fast NOM 1S.GEN
‘I speeded up my car.’ (Manner)
- b’. *tjalaw-aken tua ku-haiya

(9) Paiwan

- a. ku-pa-kaya-in timadju / *AF

1S.GEN-CAUS-can-PF 3S.NOM

‘I can handle him (e.g. I am able to carry him on my back).’ (Deontic)

b. ku-pa’ulid-en timadju / *AF

1S.GEN-surely-PF 3S.NOM

‘I am sure that he is always right.’ (Emphatic)

c. ku-m-in-atjele-sun / *AF

1S.GEN-easily-PF-2S.NOM

‘I make the product cheaper for you.’ (Evaluative)

Some adverbials that take arguments may occur both in AF form and PF form, as in (10a-a’,10b-b’), etc.

(10) Paiwan

a. ranaw ti palang tjay Udong

intentionally<AF> NOM Palang OBL Udong

‘Palang intentionally pisses Udong off.’ (Manner/agent-oriented)

a’. r<in>anaw ni palang ti udong

intentionally<PF> GEN Palang NOM Udong

‘Palang intentionally pissed Udong off.’ (Subject/agent-oriented)

b. p<en>a’ula ti kina tua kinsa

sorri<AF> NOM Mother OBL cooked rice

‘Mother feels pity for the cooked rice (which is thrown away).’ (Evaluative)

b’. pa’ula-in ni kina a kinsa

sorri<PF> GEN Mother NOM cooked rice

‘Mother felt pity for the cooked rice (which is thrown away).’

(Evaluative)

c. na-pulingalingaw-aken tua ku-ngatan

ASP-clearly-1S.NOM OBL 1S.GEN-name

‘I was sure of my name.’ (Evidential)

=c’. ku-p<in>ulingalingaw a ku-ngatan

1S.GEN-clearly<PF> NOM 1S.GEN-mane

d. mamav-aken tjanusun

the same (AF)-1S.NOM 2S.OBL

‘I am same as you.’ (Exocomparative)

Compare the following activity verbs *kan* ‘eat’, which license arguments both in AF and NAF constructions, as in (11):

(11) Paiwan

a. kan-aken tua ci’aw

eat<AF>-1S.NOM OBL fish

‘I eat fish.’

a'. ku-kan-en a ci'aw

1S.GEN-eat-PF NOM fish

‘I ate the fish.’

The aforementioned ‘adverbial verbs’ may syntactically involve non-finite/finite complementation when they modified the secondary lexical verbs, as in (12).

(12) Paiwan

a. na-galu-aken a kim tua hung
PERF-slowly<AF>-1S.NOM LNK search<AF> OBL book
‘I searched a book slowly.’

b. ma-kaya a v<en>ecilj-sun tua acilay
AF-can LNK lift up<AF>2S.NOM OBL stone
‘You can lift up a stone.’

The syntactic relation between adverbial verbs and the lexical verbs in (12) are complementation instead of subordination, coordination and adjunction for two reasons. First, they display rigid ordering—adverbials must precede the modified verbs. Second, the linker *a* in Pawian does not involve subordination, coordination and adjunction (Tang 1999). More detail about complementation types will be illustrated in the up-coming section.

3.2.1.2 Adverbial Modification and Complex Predication

In Paiwan adverbial modifiers which surface as verbs typically involve two types of complex predicate construction. These adverbial modifiers usually serve as matrix (first) verbs, taking the modified lexical verbs or clauses as their complements. AF/NAF manner/cardinal frequency/subject-oriented/functional and NAF modal/emphatic expressions involve CP I construction: [V1 (AF/NAF adverbials) a V2 (AF lexical verbs)], and take lexical verbs which are subject to AF-only restriction as their complements, as in (13-15).

(13) Paiwan

a. [na-galu-aken a kim] tua hung
PERF-slowly<AF>-1S.NOM LNK search<AF> OBL book
‘I searched a book slowly.’ (AF manner adverbial)

a'. *galu a na-kim-aken tua hung
slowly<AF> LNK PERF-search<AF>1S.NOM OBL book

‘I have started to eat the meal.’

AF Modal (deontic)/emphatic adverbials pattern with lexical verbs which bypass AF-only restriction. Adverbial modifiers and the modified occur in CP II constructions: [V1 (AF adverbials) (a) V2 (AF/NAF lexical verbs)]. As in (17b-c) and (18b-c), the complement verbs headed by the linker *a* are inflected for PF and aspect and therefore appear as ‘finite’. The occurrence of the linker *a* in (17b-c, 18b-c) is optional.

(17) Paiwan

pa’ulid ‘really’

a. pa’ulid-aken a pa-sa-teku tua acilay
true (AF)-1S.NOM LNK CAUS-go.to (AF)-bottom OBL stone
‘I really put down a stone.’

b. pa’ulid (a) na-pa-sa-teku-aken tua acilay
true (AF) LNK ASP-CAUS-go.to-bottom-1S.NOM OBL stone
‘I really put down a stone.’

c. pa’ulid (a) uru-ku-pa-sa-teku-en a acilay
true LNK IRR-1S.GEN-CAUS-go.to-bottom-PF NOM stone
‘I will really put down the stone.’

(18) Paiwan

makaya ‘allowably, acceptably, okay (can)’

a. ma-kaya-sun a v-en-ecilj tua acilay
AF-okay-2S.NOM LNK lift up-AF OBL stone
‘You can lift up a stone.’

b. ma-kaya (a) v<en>ecilj-sun tua acilay
AF-can LNK lift up<AF>2S.NOM OBL stone
‘You can lift up a stone.’

c. ma-kaya (a) su-vecilj-en a acilay
AF-can LNK 2S.GEN-lift up-PF NOM stone
‘You can lift up the stone.’

Following Chang (2005a), the study adopts complex predicate approach to the non-subcategorized subject puzzle as in (13b, 14b, 15a-b). Similar phenomenon can be found in Kavalan (Chang 2005a). As in (13b), *hung* ‘the book’ is supposed to be an argument selected by the lexical verb *kemin* ‘search’ instead of the adverbial verb *ginalu* ‘slowly’, but it occurs as nominative and agree with the adverbial. That is because V1 (adverbials) and V2 (lexical verbs) combine as a grammatical unit (CP I) which co-licenses a non-subcategorized subject. Only the matrix adverbial verbs are

able to bear pronominal and aspect/modality markings. CP II involves complex predication because it entertains clitic climbing, as in (19a-b) and the shift of pronominal/NAF markings, as in (19c-d) without affecting the propositional meaning of sentence (cf. Chang 2005a).

(19) Paiwan

- a. pa'ulid (a/tu) ku-pa-sa-teku-en a acilay
 true LNK 1S.GEN-CAUS-go.to-bottom-PF NOM stone
 'I really put down the stone.'
- b. ku-pa'ulid-en a/*tu pa-sa-teku
 1S.GEN-true-PF LNK CAUS-go.to(AF)-bottom
 a acilay
 NOM stone
 'I really put down the stone.'
- c. pa'ulid (a/tu) pa-sa-teku-aken tua acilay
 true (AF) LNK CAUS-go.to-bottom-1S.NOM OBL stone
 'I really put down a stone.'
- d. pa'ulid-aken a/*tu pa-sa-teku tua acilay
 true (AF)-1S.NOM LNK CAUS-go.to (AF)-bottom OBL stone
 'I really put down a stone.'

The emphatic adverbial *pa'ulid* may pattern with another finite complementation: *tu*-complement other than CP II (*a*-complementation), as in (19a, 19c) (see also Tang 1999). However, only CP II (*a*-complementation) will bypass clitic climbing and the shift of pronominal/NAF markings as in (19b, 19d). Adverbials and lexical verbs form complex predicates only by intervening the linker *a* but not *tu*. The shift alternation in CP II supports the complex predicate analysis. One might posit that in (19a, 19c), the use of *a* involves the expression of sentential subject. The assumption could be wrong. The extraction of elements from sentential subject is prohibited due to the violation of CED effect—sentential subjects are normally islands. However, in Paiwan both the sentences (19c-d) are grammatical. So far the study manifests the fact that in Paiwan not all the verbs embedded in *a*-complement will respect AF-only (nonfinite) restriction (cf. Tang 1999). The choice of finite/non-finite *a*-complements depends on the semantic types of the matrix adverbial verbs.

3.2.1.3 Adverbial Modification and Clausal Conjunction

Not all the adverbial verbs employ complex predication to convey meanings. In Paiwan, evaluative adverbials involve clausal conjunction (or coordination). As in (20),

evaluative adverbials must surface as Sentence 1 which represents an independent proposition; sentence 2 represents the modified proposition. Note the pronoun *-aken* appears twice as in (14a, 14b) and each sentence is equipped with independent focus/aspect (modality) inflection of its own, as in (20a'-a'', 20b'). There is no grammatical restriction imposed on the verb of each sentence.

(20) Paiwan

Puimang 'fortunately/luckily'

a. puimang-aken-aravac (S1), ini-ka-aken a na-ma-pa-sa'edju (S2)
 fortunately (AF)-1S.NOM-very NEG-KA-1S.NOM LNK ASP-MA-CAUS-sick
 'Fortunately, I didn't get hurt.'

Lit: 'I was so lucky and I didn't get hurt.'

a'. ku-puimang-an (S1), ini-ka-aken a na-ma-pa-sa'edju (S2)
 2S.GEN-fortunately-LF NEG-KA-1S.NOM LNK ASP-MA-CAUS-sick
 'Fortunately, I didn't get hurt.'

a''. puimang-anga timadju, ini-ka kan-en nua vatu a ci'aw nimadju
 fortunately-COS 3S.NOM NEG-KA eat-PF GEN dog NOM fish 3S.GEN
 'Fortunately, his fish is not eaten by dogs.'

Intit 'unfortunately'

b. intit-aken (S1), ma-pa-sa'edju-aken (S2)
 unfortunately-1S.NOM MA-CAUS-sick-1S.NOM
 'Unfortunately, I get hurt.'

b'. ku-intit-an (S1), ma-pa-sa'edju-aken (S2)
 2S.GEN-unfortunately-LF MA-CAUS-sick-1S.NOM
 'Unfortunately, I get hurt.'

samalji 'surprisingly'

c. na-samalji timadju (S1), aku ini-ka na-vaik
 ASP-surprisingly<AF> 3S.NOM AKU NEG-KA ASP-go

a sa-gaku (timadju) (S2).
 LNK go.to<AF>-school
 'Surprisingly, he did not go to school.'

pa'ula-an 'pity/sorribly'

d. pa'ula-an-anga-aken (S1), ini-ka-aken a na-kan
 pity-AN-COS-1S.NOM NEG-KA-1S.NOM LNK ASP-eat<AF>

tu sa ci'aw (S2)
 OBL that fish
 'I felt pity for not eating that fish.'

As shown in (21a), Permutation between S1 and S2 is allowed. Evaluative expressions syntactically can not involve complex predication; otherwise, the sentence will be ungrammatical as in (21b)

(21) Paiwan

- a. ini-ka-aken a na-kan tu sa ci'aw (S2)
 NEG-KA-1S.NOM LNK ASP-eat<AF> OBL that fish
 pa'ula-an-anga(-aken) (S1),
 'I felt pity for not eating that fish.'
- b. *intit-aken a ma-pa-sa'edju
 unfortunately (AF)-1S.NOM LNK MA-CAUS-sick
 'Unfortunately, I get hurt.'

3.2.2 Adverbials as Auxiliary

The Negative Adverbial *ini-ka* 'not' and the deontic adverbial *sikuta* 'unnecessarily' seem to occur in CP II (V1(AF) (a) V2 (AF/NAF)), while they've better been analyzed as Auxiliary verbs instead of lexical verbs (Chang 2005b). First, they only attract pronominal and aspectual clitics—they are functional heads, as in (22a-a', 22b-b', 22c-c'). Second, they are not affixed with the genitive bound pronoun in NAF form, as in (23a', 23b'). Genitive bound pronouns in Paiwan and many other Formosan languages are only attached to lexical verbs (Chang 1999, 2005b, Huang 1999). Third, they cannot assign theta-roles.

(22) Paiwan

- ini-ka* 'not'
- a. ini-ka (a) k-em-an-**anan-aken** tua ci'aw
 NEG-KA LNK eat-AF-ASP-1S.NOM OBL fish
 'I have not eaten fish yet.'
- a'. ini-**anan-ka-aken** a k-em-an tua ci'aw
 NEG-ASP-KA-1S.NOM LNK eat-AF OBL fish
 'I have not eaten fish yet.'
- b. ini-ka (a) su-v<in>ece'us-**aken**
 NEG-KA LNK 2S.GEN-hit<PERF.PF>-1S.NOM
 'You didn't hit me.'

=b'. ini-ka-*aken* a su-v<in>ece'us
 NEG-KA-1S.NOM LNK 2S.GEN-hit<PERF.PF>
 'You didn't hit me.'

sikuta 'unnecessarily'

c. sikuta (a) vaik-*aken* a ma-sengseng
 unnecessarily LNK leave (AF)-1S.NOM LNK AF-work
 'I don't need to work.'

c'. sikuta-*aken* a vaik a ma-sengseng
 unnecessarily-1S.NOM LNK leave (AF) LNK AF-work
 'I don't need to work.'

(23) Paiwan

a. ini-ka (a) ku-k-in-an a ci'aw
 NEG-KA LNK 1S.GEN-eat-PERF.PF NOM fish
 'I didn't eat fish.'

a'. *ku-ini-ka-in a keman a ci'aw

b. sikuta (a) su-vecilj-en a acilay
 unnecessarily LNK 2S.GEN-lift up-PF NOM stone
 'You don't have to lift up the stone.'

b'. *su-sikuta-en a v<en>ecilj a acilay

Compare the deontic adverbial verb *makaya*, which can be used in NAF construction:

(24) Paiwan

makaya 'allowably, acceptably, okay (can)'

a. ma-kaya (a) v<en>ecilj-sun tua acilay
 AF-can LNK lift up<AF>2S.NOM OBL stone
 'You can lift up a stone.'

b. ma-kaya-sun a v-en-ecilj tua acilay
 AF-can-2S.NOM LNK lift up-AF OBL stone
 'You can lift up a stone.'

c. ma-kaya (a) su-vecilj-en a acilay
 AF-can LNK 1S.GEN-lift up-PF NOM stone
 'You can lift up the stone.'

d. [su-pa-kaya-in a v<en>ecilj/*vecilj-en] a acilay
 2S.GEN-CAUS-can-PF LNK lift up<AF>/ lift up-PF NOM stone
 'You can lift up the stone.'

3.2.3 Adverbials as Clitics/Verbal affixes

In addition to verbs and auxiliary, some adverbial modifiers may occur as clitics or affixes. By definition (Zwicky and K. Pullum 1983), clitics are less selective to their hosts, syntactically functioning above the word level (i.e. on the phrase or clause level); affixes are highly sensitive to their hosts, morphologically processing on the word level.

3.2.3.1 Clitics attached to V/VP (NP)

Focusing/Aspectual/proportional frequency adverbials may surface as enclitics attached to verbs or verb phrases. They are attached to action/state verbs, such as the focusing adverbial *-anga'uta*, as in (25a-b). They can be attached to both AF and NAF verbs as *-anga* 'already' and *-sakamaya* 'always' in (26a-b) and (27a-b) respectively. Some aspectual enclitics may cross categorical boundary—they may be attached to NP, as in (25c, 26c)

(25) Paiwan

-anga'uta 'also'

a. *vaik-anga'uta-aken*

go (AF)-also-1S.NOM

'I went, too.'

b. *ma-ca'u-anga'uta-aken*

AF-smart-also-1S.NOM

'I am smart, too.'

c. *timadju-anga'uta*

3S.NOM-also

'It's him again.'

(26) Paiwan

-anga 'already'

a. *vaik-anga-aken*

go (AF)-already-1S.NOM

'Good bye/I have already gone away.'

b. *ku-si-vaik-anga ti palang*

1S.GEN-BF-go-already NOM Palang

'I have already taken Palang away.'

c. *timadju-anga*

3S.NOM-already

'It is his turn. /He has passed away.'

(27) Paiwan

-sakamaya ‘always’

- a. pa-galu-aken-sakamaya a ma-sengseng tua kava
CAU-slowly (AF)-1S.NOM-always LNK AF-work OBL clothes
‘I always make the clothes carefully.’
- b. ku-p<in>a-galu-sakamaya a ma-sengseng a kava
1S.GEN-CAU<PERF.PF>-slowly-always LNK AF-work NOM clothes
‘I always made the clothes carefully.’

The proportional frequency adverbial *sitjara-* occurs as a proclitic on V/VP. *sitjara-* always precede AF/NAF manner adverbials, as in (28a-b). It may shift to the position in front of the negative auxiliary, as in (28c-c’). It cannot function as a syntactic head since it never attracts pronominal clitics, as in (28d.)

(28) Paiwan

Sitjara- ‘often’

- a. sitjara-pa-galu-aken a ma-sengseng tua kava
often-CAU-slowly (AF)-1S.NOM LNK AF-work OBL clothes
‘I often make the clothes carefully.’
- b. sitjara-ku-p<in>a-galu a ma-sengseng a kava
often-1S.GEN-CAU<PERF.PF>-slowly LNK AF-work NOM clothes
‘I often made the clothes carefully.’
- c. ini-ka-aken a sitjara-na-vaik a ‘alju
NEG-KA-1S.NOM LNK often-ASP-go (AF) LNK hunt<AF>
‘I seldom went hunting before.’
- c’. sitjara-ini-ka-aken a na-vaik a ‘alju
often-NEG-KA-1S.NOM LNK ASP-go (AF) LNK hunt<AF>
‘I did not go hunting often.’
- d. *sitjara-aken ini-ka na-vaik a ‘alju
often-1S.NOM NEG-KA ASP-go (AF) LNK hunt<AF>

3.2.3.2 Proclitics attached to Clauses (IP/CP)

Epistemic and most emphatic expressions appear as proclitics on clausal level. At first glance, these adverbials behave like verbs because they occur restrictedly in sentence-initial position, as in (29). In fact, they are not verbs because they cannot attract clitics and cannot be inflected for focus, as in (29e-f). They don’t involve complex predicate construction, as in (29a-a’, 29b-b’). These adverbials bear the widest scope—they may attach to fully-inflected (AF/NAF/ASP/MOD) sentences as in

(29a-c) and they may also attach to interrogative clauses as in (29d).

(29) Paiwan

- a. madu- (*a) [na-pa-veli-anga timadju tua vatu]
 possibly- LNK PERF-CAUS-buy (AF)-COS 3S.NOM OBL dog
 ‘Possibly, he has sold a dog.’
- a’. madu- (*a) [(nu-tiaw) uru-ku-si-pa-veli a vatu]
 possibly- LNK tomorrow IRR-1S.GEN-BF-CAUS-buy NOM dog
 ‘Possibly, I will sell the dog (tomorrow).’
- b. manu- (*a) [uru-s-em-a-pailang-e-sun]
 actually- LNK IRR-go.to-AF-plain-E-2S.NOM
 ‘You are actually heading for the plain.’
- b’. manu- (*a) [su-‘uwang-en-anga (a k-em-an) a kinsa]
 actually- LNK 2S.GEN-all-PF-COS LNK eat-AF NOM meal
 ‘Actually, you have already eaten up all the meal.’
- c. madu- [ini-ka-sun a setjara-tjalaw a m-ekel]
 possibly- Neg-KA-2S.NOM LNK often-fast LNK AF-run
 ‘Possibly, you do not often run fast.’
- d. madu- [tima a su-kina-tjengelay-an]?
 possibly- who Nom 2S.GEN-NML-love-NML
 ‘Who are you likely to love?’
- e. *madu-aken
 Possibly-1S.NOM
- f. *ku-mada-en
 1S.GEN-Possibly-PF

3.2.3.3 Verbal affixes: *kala-V-an*

There is an aspectual adverbial which behave differently from adverbial clitics. *Kala—an* should be analyzed as a verbal circumfix because it is only sensitive to AF stative verbs, as in (30). Note that the construction as in (30a-b) allows double AF markers to appear.

(30) Paiwan

- a. *kala*-ma-salu-*an*-angata-aken tjanusun
 completely<AF>-AF-believe-AN-almost-1S.NOM 2S.OBL
 ‘I totally believe you.’
- b. *kala*-ma-ca’u-*an*-angata-aken
 completely<AF>-AF-smart/learn-AN-almost-1S.NOM
 ‘I have completely learned.’

c. * *ku-k<in>ala*-masalu-*an*-angata-sun

d. * kala-kan-an

completely<AF>-eat-LF

‘completely eat’

3.2.4 Adverbials as adjuncts

Some time-related expressions and speech-act expressions are syntactically expressed by means of adjunction. In structure, both involve affixation of future/past temporal markers *nu-/ka-*, as in (31a-c) (Wu 2004). They are optional and transportable in sentences; cannot take complement and assign theta-roles. Some may behave as nouns because they occur in nominal position as in (32).

(31) Paiwan

a. (**ka-tiaw**) na-mangtjez (**ka-tiaw**) timadju (**ka-tiaw**)

yesterday Asp-come. back (AF) 3S.Nom

‘He came back yesterday.’

b. (**nu-tiaw**) uru-s-em-a-kaku (**nu-tiaw**) timadju (**nu-tiaw**)

tomorrow will-go to-AF-school 3S.Nom

‘He will go to school tomorrow.’

c. (**nu-ka-k-uta*-aken**) ika-uru-vaik-aken (**nu-ka-k-uta*-aken**)

NU-KA-how<AF>-*1S.NOM NEG-IRR-go (AF)-1S.NOM

‘Frankly speaking, I will not go.’

(32) Paiwan

a. kasi-(**ka**)-**tiaw** a patje-**nu-tiaw**

be.from<AF>-yesterday LNK be.to (AF)-tomorrow

‘from yesterday to tomorrow’

b. kasi-**pana** a tjalu-**gaku**

be.from<AF>-river LNK be.to (AF)-school

‘from the river to school’

3.3 Summary

Adverbials in Paiwan are grammatically heterogeneous. Adverbial modifications in Paiwan are syntactically expressed in terms of complementation, cliticization, conjunction and adjunction. Adverbials which surface as verbs are structurally manifested by complex predication or clausal conjunction. Most manner/cardinal frequency adverbials and parts of functional adverbials are semi-lexical verbs. They are eligible for theta-role assignment only in NAF construction. Some manner/evaluative adverbials behave as fully lexical verbs because of the fact that they

are capable of theta-role assignment both in AF and NAF forms. As for complex predication, AF-only restriction does not work on certain deontic/emphatic expressions which surfaces as AF verbs. There is a closed class of auxiliary verbs—they involve complex predication while it cannot be used in NAF construction and cannot license arguments. There is another closed set of epistemic/deontic/emphatic/aspectual adverbials which surfaces as clitics/affixes and some time-related/speech-act adverbials which may function as adjuncts. The grammatical behaviors of various adverbial modifiers in Paiwan are summarized in Table 1.

Table 1. Adverbials and their grammatical behaviors in Paiwan

Adverbials	Verbs	AUX	Prolitics	enclitics /affixes	Adjunct (Noun)
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	Evaluative (AF/NAF)	Manner/ Subject- oriented (AF/NAF)	deontic/ emphatic (NAF)	Miscellaneous (functional adverbials) (AF/NAF)	deontic/ emphatic (AF)	Negative/ deontic	deontic/ epistemic Emphatic/ /frequency	Aspectu -al	Time- Related /speech- act
Behaviors									
Focus inflection	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Pronominal Clitics attraction	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Pronominal prefixes affixation	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Imperative inflection	NO	Yes	Yes	Yes	Yes/No	No	No	No	No
Restricted to preverbal position	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Directly taking NP	Yes/No	Yes/No	Yes	Yes/No	No	No	No	No	No
AF restriction on lexical verbs	NO	Yes	Yes	Yes	No	No	No	No	No
'No ASP/MOD/ PRO marking' Restriction on lexical verbs	NO	Yes	Yes	Yes	No	No	No	No	No
Involving CP I	NO	Yes	Yes	Yes	No	No	No	No	No
Involving CP II	NO	No	No	No	Yes	Yes	No	No	No
Involving sentential conjunction	Yes	No	No	No	No	No	No	No	No

4 Adverbial Modification and Isomorphism

4.1 Hierarchy of Adverbial Modification in Paiwan

The syntactic distribution and linearization of adverbial modification in Paiwan to a larger degree conform to Universal hierarchy of adverbs proposed by Cinque (1999) and the scopal hierarchy of adverbial licensing proposed by Ernst (2002). Consider the following sentences.

(33) Paiwan

a. [ranaw-aken a galu a kan] tua ci'aw
intentionally<AF>1S.NOM LNK slowly<AF> LNK eat<AF> OBL fish
'I intentionally eat a fish slowly.'

a'. *galu-aken a ranaw a kan tua ci'aw

b. [ku-ranav-en a g-em-alu a k-em-an] a ci'aw
1S.GEN-intentionally-PF LNK slowly-AF LNK eat-AF NOM fish
'I intentionally eat the fish slowly.'

b'. *ku-g<in>alu a ranaw a kan a ci'aw

According to Ernst (2002), both manner and subject-oriented adverbials are event-taking adverbials. Manner adverbials are event-internal ones which take narrow scope of complement (i.e. process or stage (V)). Subject-oriented adverbials are event-external ones which may take wider scope (the whole event (VP)). In the sense, subject-oriented appears more far away from lexical verbs than manner adverbials. In Paiwan, subject-oriented adverbials must obligatorily precede manner adverbials when they co-occur with lexical verbs, as in (33). Along this line of thought, when manner/subject-oriented adverbials interact with higher-scope taking adverbials such as proportional frequency/epistemic/evaluative adverbials, the possible ordering in Paiwan sentences would be: [evaluative] & (>) [epistemic>proportional frequency>subject-oriented>manner>lexical verbs], as in (34a, 34b, 34c). The switch of positions will lead to an ungrammatical result, as in (34a', 34b', 34c'). Figure 3 demonstrates the linear distribution and modifying hierarchy of various adverbials in Paiwan.

(34) Paiwan

a. madu- [sitjara-galu timadju a m-ekel]
possibly often-slowly<AF> 3S.Nom LNK AF-run
'Possibly, he often runs slowly.'

a'. *sitjara-madu- galu timadju a m-ekel

b. madu sitjara- ranaw a tjalaw a m-ekel timadju
possibly often-intentionally LNK fast (AF) LNK AF-run 3S.NOM
'Possibly, he often intentionally runs very fast.'

b'. *sitjara-madu tjalaw a ranaw a m-ekel

c. pa'ula-an-anga-aken, ini-ka-amen a sitjara-maperaw a ivu

pity-AN-COS-1S.NOM NEG-KA-1S.NOMLNK often-happily (AF) LNK talk
 ‘It is a pity for me that we cannot often talk happily.’
 c’. * sitjara-pa’ula-an-anga-aken ini-ka-amen a maperaw a ivu

Fig. 3 Hierarchy of adverbials in Paiwan

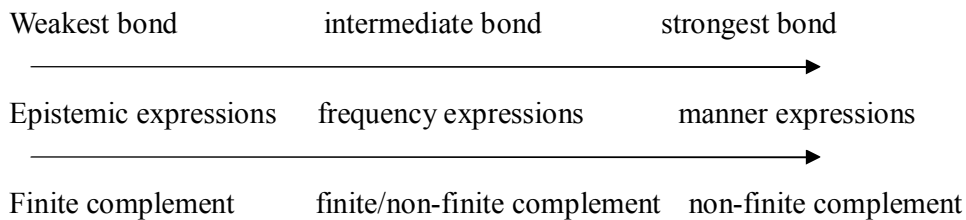
[Evaluative] (Proposition) & Epistemic/emphatic/deontic-[NEG [Proportional
 Frequency-[NEG [deontic [subject (agent)-oriented [Cardinal
 frequency/Iterative/Manner **[LEXICAL VERB]**]- (Focusing/Aspectual)]
 (Proposition)

Although the syntactic linearization of adverbials in Paiwan mostly is in line with Cinque’s generalization, there are two salient differences: first, evaluative adverbials must surface as an independent proposition though they take the widest scope. Second, adverbial modifiers in Paiwan largely function as (semi-) lexical heads (a rather open class than others) which license core arguments and take lexical verbs or clausal as their complements, rather than as specifiers of functional heads or as functional heads by themselves (see also Chang (2005)).

4.2 Isomorphism in Adverbial Modification

Based on Givón’s (1994, 2001) framework of complement-binding theory and proximity principle, Chang’s (2005a) study in Kavalan reveals that there is an isomorphic relationship between adverbial modification and its corresponding syntactic structure. In Kavalan, manner expressions conceptually most approximate the lexical verbs and they have the strongest impact on the lexical verbs. Manner adverbials take non-finite lexical verbs as their complements and both exhibit the highest degree of structural integration. Conceptually epistemic adverbials are distant from the lexical verbs; they take fully-inflected (finite) complements and display the lowest degree of integration with lexical verbs. Frequency adverbials stand in between—they take either finite or non-finite complements. Figure 4 represents the binding scale on modification integration in Kavalan.

Fig. 4 The binding scale on modification integration in Kavalan (Chang 2005a:28)



Similar paradigms seem also to be found in adverbial modification of Paiwan.

According to Table 1, a structural spectrum from complex predication to procliticization is observed, as shown in Figure 5.

Fig. 5 Structural continuum from complex predication to procliticization

CP I	V1 (AF/NAF manner/NAF deontic/emphatic, etc.)	a	V2 (AF)
CP II	V1 (AF deontic/emphatic)	(a)	V2 (AF/NAF)
CP II	Aux (Neg/deontic)	(a)	V (AF/NAF)
Procliticization	proclitics-(epistemic/emphatic, etc.)	*a	[VP/IP/CP]

As demonstrated above, in CP I the adverbial verbs must pattern with non-finite lexical verbs. Both verbs in CP I exhibit strongest co-licensing effect on the non-subcategorized subject and therefore highest structural affinity. In CP II adverbial verbs may bypass nonfinite restriction on the lexical verbs. The structural affinity is weaker and co-licensing effect diminishes with the omission of the linker *a*. Later on, the verbal properties decrease as adverbials surface as auxiliaries, and therefore co-licensing effect disappears. Finally, when the adverbials appear as proclitics, the structural bond in between becomes the weakest. This structural continuum can be exemplified by the on-going grammaticalization process from auxiliary to proclitics, as *ini-ka/ika* ‘not’ in (35). The negative auxiliary *inika* gradually turns into proclitics on sentences and is shortened as *ika*.

(35) Paiwan

- a. ini-anan-ka-aken a kan
 NEG-ASP-KA-1S.NOM LNK eat<AF>
 ‘I have not eaten yet.’
- =b. ini-ka-aken a kan-anan
- =c. ini-ka (a) kan-anan-aken
- =d. *ika-* [kan-anan-aken/ku-kan-en]
 NEG- eat<AF>-ASP-1S.NOM/1S.GEN-eat-PF

If we take into consideration the aforementioned notions advocated by Cinque (1999) and Ernst (2002), together with adverbial binding scale in Kavalan proposed by Chang (2005a), we would find it not difficult to account for the structural continuum in Figure 5. Manner/subject-oriented/cardinal frequency adverbials are conceptually close to the lexical verbs and both form as CP I with high structural affinity. Deontic/emphatic adverbial verbs conceptually less approximate the lexical verbs according to the modifying hierarchy, as in Fig. 3. They take finite/nonfinite complements and structural affinity loosens. By analogy, as the modifying distance between adverbials and the modified verbs become longer, both are less likely to be placed together grammatically. It is evident that in Paiwan an isomorphism between the semantics and

(d) The occurrences of various adverbials in Pawian to a great extent are in line with the universal hierarchy of adverbs advocated by Cinque (1999), and the adverbial scopal licensing generalization proposed by Ernst (2002). However, most adverbials surface as (semi-) lexical heads which license arguments and bare complements, rather than as specifiers of functional heads or as functional heads by themselves.

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