Positional and Grammatical Variations of Time Words in Takivatan Bunun

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Takivatan Bunun, an Austronesian language spoken in Taiwan, has a dedicated class of words expressing time, place, and manner. These words can occur in various positions in the clause, each of which is associated with a distinct grammatical behavior. In this article, I discuss positional and associated grammatical variation of the four roots that most commonly express temporal location in the Takivatan corpus: *dip* 'then', *qabas* 'in former times', *laupa* 'now', and *haip* 'today'. I conclude that the positional variability of Takivatan time words is grammatically meaningful and not the result of random variation. Finally, I suggest that it can be best explained in terms of functional motivations and historical factors that are common to various Austronesian languages in Taiwan.

Key words: Austronesian languages of Taiwan, Bunun language, temporal deixis, functional linguistics, linguistic typology

1. Introduction

Bunun is an endangered Austronesian language of Taiwan with five distinct dialects: Isbukun, Takbanuað, Takivatan, Takituduh, and Takibakha (Li 1988). This article investigates the positional variability and associated variations in grammatical behavior of time words in Takivatan Bunun. It does this by analyzing the frequency and distribution of these words in a text corpus representing real-world use.

Klein (1994:2) remarks that, although almost all languages in the world have a class of words that expresses fundamental temporal notions, these words are often woefully ignored by linguists, unlike grammatical marking of tense and aspect, which is cross-linguistically less common. Often, it is argued that these words are grammatically inert and therefore not interesting to linguists (see e.g. Haspelmath 1997:7). This is not the case in Takivatan Bunun, where temporal words can occur in different positions in a clause. In each of these positions they exhibit distinct grammatical behaviors.

This is not the first study of the unusual behavior of adverbial expressions in the Austronesian languages of Taiwan. Starosta (1988) was probably one of the first to point out that it is not unusual for these languages to encode adverbial concepts as

auxiliary verbs. Holmer (2002, 2010) discusses this phenomenon for Seediq. Similar phenomena have been observed in Squliq Atayal (Hsiao 2004), Paiwan (Wu 2006), and Takituduh Bunun (Su 2008), to mention but a few. Chang (2009) gives an overview of various types of adverbial expressions in Tsou and convincingly argues that they function as verbs. Pan (2010) argues that certain types of temporal expressions in Tsou are verb-like while others function as nouns. This article can be seen as a continuation of this work: I shall here discuss a coherent class of temporal expressions in Takivatan Bunun that can exhibit both verb-like and noun-like behavior, depending on their position in the clause.

1.1 Four time words

The present study compares the four time words, and their derivational variant forms, that most commonly occur in the Takivatan corpus. They are ordered in Table 1 according to their absolute frequency of occurrence.

Table 1: Corpus frequency of time words

Base form	Variant form	Freq.
dip 'then'	*tudip* 'then, at that time'	170
	dip 'then'	101
qabas 'earlier'	*qabas* 'in former times'	94
laupa 'now'	*laupaku* 'now'	58
	laupadau 'now'	26
	(other forms)	19
haip 'today'	*haip* 'now, today'	22

Most commonly occurring by a considerable margin are the forms *tudip* 'then' and *dip* 'then'. Both create an anaphoric reference to a past moment in time, i.e. they indicate that their host clause occurs in a past time period that is identified in the preceding discourse context or can be deduced by the discourse participants from the commonly shared extralinguistic context. There is no clear semantic or functional difference between the basic usages of these two time words. However, the positional distribution, and therefore the grammatical properties of *tudip* and *dip* are markedly different (see Table 1). Furthermore, only *dip* has grammaticalized into a discourse marker (see §2.8) and is occasionally used with a spatial meaning, as in the form *mun-dip* 'ALL-there > go over there'.

The time word *qabas* 'in the old days, in former times' typically refers to a period in the remote past. Interestingly, there are occasional attestations where it refers to the

remote future, as in (1), and therefore seems to function as a general expression of temporal remoteness ('in that far-away time').

(1) *sauqabasqabas*
     sau-qabas-qabas
     TERMIN-STEM-in.future.times
     'until eternity, forever'

Grammatically, it is the most versatile among the time words in this study and has been attested in all positions but one (it cannot function as a discourse marker).

The time word *laupaku* 'now, at the moment' is a morphologically complex form consisting of the root *laupa* 'now' and the suffix *-ku*, which has only been attested in this single form and of which the historical origin remains unclear. Amongst the three variants of *laupa*, *laupaku* exhibits the greatest degree of positional variation, and is also the only form that has never been attested with any verbal morphology. Another common form is *laupadau* 'now'. It consists of *laupa* and the mirative suffix *-dau*, which marks the emotional involvement of the speaker, for instance surprise or happiness ('now!?').[1] The remaining tokens of *laupa* in the corpus are either bare roots or instances of the form *laupaŋ* 'a moment ago', the latter being a contraction of *laupa* and the progressive suffix *-aŋ*.

Haip 'today' has the lowest corpus frequency of the five forms in Table 1 by a margin. It is the only time word that has repeatedly been attested as a nominal modifier.

It is important to note that there are no obvious differences in the core temporal semantics between variants of the same temporal root. Both *tudip* and *dip* mean 'then, at that time' and *laupa*, *laupaku*, and *laupadau* all mean 'now, at this moment'. The only exception is *laupaŋ* 'a moment ago', which has developed a meaning clearly distinct from that of its root.

Words belonging to the class of time words typically occurs in various positions in a clause. This is illustrated in (2)-(6) for the time word *qabas* 'in former times'. In (2), *qabas* occurs in clause-initial position. In (3), it is connected to the verb with a linker *-a*. In (4), it precedes the verb, but without a linker. In (5), it follows the verb. And finally, in (6), *qabas* occurs in clause-final position.

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[1] Depending on its environment, the form *-dau* is bound more or less strongly to its host. It could possibly be analyzed as a clitic. De Busser (2009:165-178) explains why the distinction between affixes and clitics is not particularly useful in Takivatan Bunun.

(2) *qabasai masamuki maupata*

qabas-i *ma-samu-ki* *maupa-ta*

in.former.times-PRT STAT-taboo-DEF.SIT.PROX thus-DEF.REF.DIST

'In the old days it was forbidden to do it like that.' (TVN-008-002:168)

(3) *a maupata sia madadaiŋʔað qabasa, siatu, sinava tu ...*

a *maupa-ta* *sia* *madadaiŋʔað* *qabas-a*

INTER thus-DEF.REF.DIST ANAPH elder in.former.times-LNK

siatu *sin-nava* *tu*

HESIT RES.OBJ-teach COMPL

'Thus, the elders taught us in the old days that [...]' (TVN-012-001:101)

(4) *bununa mainhan ʔata qabas paun tu Banuað*

bunun-a *mainhan* *ʔata* *qabas* *paun* *tu* *Banuað*

people-LNK come.from 1I.F in.former.times be.called COMPL B.

'As for the Bunun, we came in what in former times was called Banuaz.' (TVN-012-002:4)

(5) *paun qabas tu Taŋkinuð*

paun *qabas* *tu* *Tankinuð*

be.called in.former.times COMPL T.

'In former times it was called Tankinuð.' (TVN-012-002:29)

(6) *maqa haiða du madadaiŋʔað qabasa*

maq-a *haiða* *du* *madadaiŋʔað* *qabas-a*

DEFIN-LNK have MIR elder in.former.times-SUBORD

'In the old days, there were some elders, [...]' (TVN-012-001:14)

Typically, each of these positions are associated with specific grammatical behaviors: depending on their positions, time words are either more verb-like, more noun-like, or invariant. It is the goal of this article to give an overview of this positional variation, describe how certain grammatical behaviors are associated with these variations (and how this is different from other languages, such as English), and offer some hypotheses as to why time words in Takivatan behave in this way.

The remainder of this introductory section discusses the research methodology at the basis of this article (§1.2), some grammatical properties of Takivatan Bunun that are relevant to the discussion at hand (§1.3), and the different grammatical mechanisms that the language employs to express time (§1.4). Section 2 gives an overview of the distinct positions in which the four time words in this study have been attested. Based on this data, §3 concludes that there are pronounced differences in the distribution of individual time words, but that across time words, a relatively fixed correlation exists between

position in a clause and grammatical function. This behavior sets temporal expressions in Takivatan apart from those in other languages and has consequences for typological research into time adverbials. Section 4 discusses a number of hypotheses that could explain the observed positional and grammatical variability in Takivatan Bunun.

1.2 Methodology

The data used in this study are all from the Takivatan dialect of Bunun, which is spoken by less than 1,700 people, mainly in two settlements in Hualien County (see De Busser 2009:71). The 17,499-word corpus consists of transcriptions of audio recordings of narrative text, supplemented with a collection of elicited sentences. All data were gathered during two fieldwork trips comprising thirteen months in Mayuan village, Hualien County, and in Taipei city between 2005 and 2009. The main consultants were Uli Ululuŋku (female, 65 y), Vau Taisnunan (male, 75 y), Tulbus Manququ (male, 75 y), and Pasuq Taisnunan (male, 42 y). The data gathering methodology is explained in detail in De Busser (2009:106-110).

The textual data were entered and semi-automatically processed in Fieldworks Language Explorer (FLEx). Relevant time words were then extracted from the database with regular expression searches. The results were manually categorized according to their position in the clause and morphological characteristics (see §2). Tokens in incomplete or ambiguous constructions were discarded in the analysis; for high-frequency items (*tudip* and *dip* 'then'), only tokens from a subset of the corpus were analyzed in order to avoid too large a numerical imbalance in the respective samples that were used for comparison (hence the different total frequencies in Tables 1 and 2).

The analysis in this article looks mainly at two grammatical surface parameters that are easy to ascertain in a corpus without having to resort to subjective interpretation:

- **Position**: The position in the clause, in combination with certain prosodic cues such as pauses.

- **Grammatical behavior**: The occurrence of tokens in particular grammatical positions, as evidenced by morphological and syntactic indicators.

These parameters are relevant to phrases rather than individual words, but since time words almost exclusively occur as the syntactic (but not the semantic) head of phrases, this is rarely a problem. Based on overt indicators, grammatical behaviors can be classified into three general types.

▪ **Verb-like behavior**: Time words behave in a verb-like manner if they function as the semantic head of a predicate or in auxiliary verb slots preceding the predicate head. Morphological indicators of verb-like behavior are an ability to combine with certain verbal prefixes, TAM affixes, and focus marking (see §1.3). A complementizer *tu* following a clause-initial time word is typically an indicator that the time word functions as an auxiliary verb (see §2.1). Often, auxiliary constructions also attract clause-internal topics, i.e. these typically appear immediately after the auxiliary, rather than after the semantic head (see e.g. (24)-(25)).

▪ **Noun-like behavior**: Time words function as the head of a noun phrase when in certain grammatical slots expressing time, place, or manner they occur in complementary distribution with nouns or prepositional phrases. Nouns in Takivatan typically do not take any verbal morphology, with a number of clearly conditioned exceptions. The locative focus marker *-an* often occurs on nouns, but only when it is used as a nominalizer indicating 'the location of X'.

> (7) *Ɂasaŋ-an*
> village-LO
> 'the place where the village is' (TVN-008-002:105)

Occasionally, TAM marking has been attested on nominal roots without any verbalizing morphemes. This mainly happens to a small set of lexemes referring to human age groups or social functions. In these instances, the nominal root typically functions as the head of a subordinate clause, as in (8), or as a rather atypical post-nominal noun-modifying construction, as in (9).

> (8) *uvaðɁaðaŋ tudip VilansauɁa*
> *uvaðɁað-aŋ*   *tudip*   *Vilansau-a*
> child-PROG   that.time   V.-SUBORD
> 'When Vilansau was still a child, […]' (TVN-012-002:38)

> (9) *Lini PulaɁaŋ*
> *Lini*   *Pula-aŋ*
> L.   P.-PROG
> '... Lini, who was then with Pula …' (TVN-008-002:170)

In both cases, the presence of verbal morphology on time words is an indicator that they are functioning as predicates and are therefore more verb-like.

▪ **Grammatical invariance**: In certain positions, time words are grammatically invariant: they do not allow for any morphological alteration and cannot be modified or otherwise expanded. In some, but not all, of these positions (see §§2.4-2.6) one could argue that they function as adverbs.

In actual usage, these types are not always easy to identify, but they provide us with a number of objective criteria for distinguishing between different grammatical behaviors of time words.

1.3 Grammatical overview of Takivatan

Takivatan Bunun is a predicate-initial language and has a Philippine-style alignment system (De Busser 2011). Its suffixal paradigm distinguishes between agent focus (AF), undergoer focus (UF), and locative focus (LF).[2] Zero-marking indicates that the agent is the clause-internal (i.e. non-extraposed) topic.

(10) *siða malŋaŋausta maduqta*
  siða malŋaŋaus-ta   maduq-ta
  take.AF shaman-DEF.REF.DIST millet-DEF.REF.DIST
  'The shaman took millet.' (Adapted from TVN-012-001:69)

A suffix UF *-un* indicates that the undergoer (usually the patient) is functioning as the topic.

(11) *siðaun asik*
  siða-un asik
  take-UF shrub
  'The shrubs they gathered.' (Adapted from TVN-012-001:24)

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2 Note that the notion of 'focus' in Austronesian languages of Taiwan and the Philippines has little to do with the concept of pragmatic focus as it is used in the analysis of information structure. Rather, it refers to a system combining verbal and sometimes nominal morphology that indicates a special relationship between the predicate and any of a number of (typically three-to-five) syntactic-semantic participant roles in the clause (see French 1987/88 and De Busser 2009:245-246).

The argument that is put 'in focus' is here analyzed as the clause-internal topic (see Nikolaeva 2001:10-11), rather than a subject. I shall consider it "a clause-internal pragmatic category indicating 'what the clause is about' that has to some extent developed a privileged grammatical status, but not one equivalent to what is thought of as 'subject' in Indo-European languages" (De Busser 2011:527). This analysis is compatible to that of Schachter (1976) and Comrie (1988).

The presence of LF -*an* indicates that a locative argument is the topic.

(12) *maqtu pasiðaʔanin ŋabul vanis*
       maqtu pa-siða-an-in   ŋabul   vanis
       can   CAUS.DYN-take-LF-PRV antler   wild.boar
       '(In that place) we can catch deer and wild boar.' (TVN-008-002:47)

Verbal morphology is considerably more complex than nominal morphology. Apart from focus suffixes, there is a sizeable number of verbal prefixes, the most common of which are the dynamic prefix *ma-*, as *ma-ludaq* 'beat' in (22);[3] the homonymous stative prefix *ma-*, as in *ma-naskal* 'happy'; and the causative dynamic prefix *pa-*, as in *pa-siða-an-in* 'be able to catch' in (12).[4] These three prefixes almost exclusively occur on roots in verbal slots, a property that allows us to use them as a diagnostic tool to determine whether certain time words function as verbs or not. This is also the case for TAM affixes, the most common of which are the perfective suffix *-in*, the irrealis prefix *na-*, and the progressive suffix *-aŋ* (see §1.4 for examples).

Arguments in a prototypical Takivatan clause occur in a fixed order, as indicated below.

VERB – AGENT – INSTRUMENT – BENEFICIARY – PATIENT – LOCATION – PLACE/TIME/MANNER

With regard to this article, an important fact about this constituent template is that non-core constituents expressing place, time, manner, and comitativity (henceforth PTM phrases) occur at the very end of a clause. Typically, this clause-final slot can be filled either by prepositional phrases or by a dedicated class of words that is exclusively used for expressing place, time, and manner. Clauses (13) and (14) contain instances of a prepositional phrase of location and companionship, respectively.[5]

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[3] See De Busser (2009:265-281) for a discussion on why, contrary to common practice, the dynamic prefix *ma-* and other verbal prefixes are not analyzed as part of the focus system.

[4] The causative prefix in (12) has an intensifying rather than a straightforward causative interpretation. Such non-valency-increasing uses of causatives are attested cross-linguistically; see Kittilä (2009) for a discussion.

[5] Note that (13) contains two locative phrases. One, *han dʒakaŋta* 'at Djakang', clearly is a peripheral PTM phrase. The syntactic status of *ʔasaŋi Taluku* 'at the Taroko village' is somewhat ambiguous. It functions as a core argument to the locative verb *isan* 'be at' and can never be expressed as a prepositional phrase. On the other hand, locative verbs cannot take LF -*an*. As a result, their locative arguments cannot be raised to the position of clause-internal topic or be topicalized by left-dislocation; this sets them apart from other types of core arguments, including Location arguments occurring with other types of verbs.

(13) *isan ʔasaŋi Taluku han ʤakaŋta*

    i-san   [*ʔasaŋ-i*   *Taluku*] [*han* *ʤakaŋ-ta*]_{PTM}

    LOC-be.at village-PRT Taroko   at   ʤ.-DEF.REF.DIST

    'It was at a Taroko village in Djakang.' (TVN-008-002:20)

(14) *pasihaulin sin nas-Tiaŋ Taiŋpadlaiʔana, ...*

    pasi-haul-in   [*sin*   *nas-Tiaŋ*   *Taiŋpadlaiʔan-a*]_{PTM}

    FOLLOW-below-PRV with DECEASED-T. T.-ENUM

    '[I] went to a place near a river with Tiang Taingpadlai'an, which is now deceased, [and with Big Atul, the now-deceased Big Atul].' (TVN-008-002:68)

In (15), the dedicated manner word *maupa* 'thus' appears in clause-final position.

(15) *haiða inliskinan maupata*

    haiða *in-liskin-an*   [*maupa-ta*]_{PTM}

    have   VIA-believe-LO thus-DEF.REF.DIST

    'I had thoughts like that.' (TVN-008-003:44)

There is no obvious and coherent class of words in Takivatan that consistently and exclusively behaves like adverbs. Many 'adverbial' concepts, which in many languages are often expressed by adverbs or adverbial phrases, are realized in Takivatan either by verbal elements, as in (24), or by a dedicated class of words that is exclusively used for expressing place, time, and manner (PTM) and can occur in verbal as well as nominal slots.

    Speech verbs, verbs of perception and cognition, and certain other types of verbs can take complement clauses introduced by the complementizer *tu*. Below are examples of complement clauses following a speech verb (16) and a verb of cognition (17).

(16) *dipin babaðbaðin tu, na, maquaq kutunin*

    dip-in   *ba-baðbað-in*   *tu*   *na*   *ma-quaq*

    then-PRV REP-have.conversation-PRV COMPL well DYN-how.come

    kutun-in

    tomorrow-PRV

    '... and then they were talking: well, what about tomorrow' (TVN-008-002:107)

(17) *maqansiap tu madaiŋʔaðin laupaku*

    ma-qansiap   *tu*   *madaiŋʔað-in* *laupaku*

    DYN-understand COMPL old-PRV   now

    'I understand that I am old now.' (TVN-008-w001:4)

It is possible for the complement clause to be left unexpressed. In such cases, complement-taking verbs tend to occur with a trailing complementizer at the end of the clause (see (18) immediately below and (36) in §2.2).

(18)   *… na, ispatanʔa tu*
         na   is-pa-tanʔa   tu
         well   TRANSFER-CAUS.DYN-listen   COMPL
         '... and I just explained (that it happened like this)' (TVN-008-001:12)

Auxiliary verb constructions are considered to be complex verb phrases consisting of a combination of a lexical verb and one or more auxiliary verbs. The latter typically exhibit "some degree of (lexical) semantic bleaching" and perform "some more or less definable grammatical function" (Anderson 2006:4-5). Auxiliary verb constructions in Takivatan are of two major types: bare auxiliary constructions, in which auxiliary verb precedes lexical verb and both appear in apposition; and complementation-type constructions, in which the auxiliary is followed by a complementizer *tu* and the lexical head functions as the syntactic head of the auxiliary complement (the difference with genuine complement clauses being that in auxiliary constructions, auxiliary and lexical heads always share core arguments and TAM marking). The contrast between the two constructions can be illustrated with the modal auxiliary *asa* 'must, have to', which can occur in both.

(19)   *… na asa punhanun Kaliŋku ai maupa*
         na   asa   pun-han-un   Kaliŋku   ai   maupa
         CONS   have.to   CAUS.ALL-go.to-UF   GeoName   INTER   thus
                   AUXILIARY   LEXICAL HEAD
         'And therefore you have to send [lit: make her go] her to Kalingku.' (TVN-008-003:32)

(20)   *asa tu pasapal qabaŋ*
         asa   tu   pa-sapal   qabaŋ
         have.to   COMPL   CAUS.DYN-rug   blanket
         AUXILIARY   LEICAL HEAD
         'You have to spread out the blanket.' (TVN-xx2-001:43)

All auxiliary verbs are attested in bare constructions, but only a subset, such as *asa* above, can also occur in constructions with a complementizer *tu*. This behavior is consistent with the observation that diachronically auxiliary constructions tend to develop from free verbs in complement constructions (see Anderson 2006, Kuteva 2001). In both

constructions set out above, the auxiliary and the lexical head share their core arguments, bound pronouns, TAM, and focus marking. Often, but not always, the topic and TAM marking appears in Wackernagel position, on or immediately after the first auxiliary in a construction.

1.4 Expressing time in Takivatan

Linguistic research into the expression of time tends to focus on tense, aspect and — to a lesser extent — lexical aspect or *Aktionsart*. In most languages, however, there is a much richer variety of options to encode the temporal context or structure of an event (Klein 1994:14, 142). In Takivatan, the grammatical and lexical mechanisms that encode the temporal features of an event are the following:

▪ **The semantic properties** of many verbs convey information about 'the particular way in which that verb presupposes and involves the notion of time' (Vendler 1957: 143), and this often has grammatical consequences. In Bunun dialects, there is a basic distinction between verbs encoding stative and dynamic events, which represents a contrast in the internal temporal structure between these two types of events. For instance, the root *halaŋ* 'ill' in (21) encodes a stative event, as is evidenced by the fact that it can combine with a stative prefix *mi-*.

    (21)   *mi-halaŋ*
            STAT.ADV-ill
            'be ill' (TVN-003-xxx)

Other verbal roots, like *ludaq* 'beat' in (22), refer to a dynamic event, as indicated by the dynamic prefix *ma-*.

    (22)   *haiða bunun maludaq inak bidil*
            haiða bunun   ma-ludaq i-nak   bidil
            have   people   DYN-beat POSS-1S.N cheek
            'Some person beat me on the cheek [lit: beats my cheek].' (TVN-xx2-001:142)

▪ **TAM auxiliaries** are a subclass of verbs that directly encode temporal or aspectual information about the clause in which they operate.

    (23)   *kavavaʔa* 'immediately'   *musuʔul* 'immediately'
            kinuð 'afterwards; finally'   *qaðna* 'immediately'

kitŋa 'begin'	*qanaqtuŋ* 'finished'
maŋma 'a moment ago'	*sansu* 'immediately'
muŋa 'soon'	*saŋan* 'a moment ago'
muqna 'continue; next'	*tuŋan* 'finish'

These forms can function as main verbs, but do typically appear in auxiliary verb constructions where they are part of a complex predicate together with at least a lexically full verb that functions as the semantic head of the construction. Their grammatical behavior appears to correspond to what one would expect from auxiliaries (cf. Heine 1993:22-24). They form a small subclass of verbs that are somewhat grammaticalized, which means that their semantics is not fully lexical anymore; they host certain grammatical elements, most notably TAM and bound pronouns, but occasionally also focus marking; their verbal behavior is typically more restricted than that of main verb; and the clause-internal topic tends to be expressed on the auxiliary rather than the predicate head. In (24), *kitŋa* 'begin' modifies the main verb *baðbað* 'tell'. It is prefixed by IRR *na-* and causes the clause-internal topic *sak* 'I' to occur immediate after the auxiliary, rather than after the full verb *baðbað* 'tell'.

(24) *aupa nakitŋa sak laupaku baðbað tu* [...]
      aupa   na-kitŋa   sak   laupaku baðbað tu
      thus   IRR-begin   1S.TOP.AG   now   tell   COMPL
      'And thus I will start now to tell [...]' (TVN-012-001:10)

Example (25) shows a similar construction with the form *qanaqtuŋ* 'finished'. It is followed by a perfective suffix *-in* and the bound first person pronoun *-ʔak*.

(25) *qanaqtuŋinʔak taldanav*
      qanaqtuŋ-in-ʔak   taldanav
      finished-PRV-1S.TOP   wash
      'I did already wash my face.' (TVN-xxx-xx1:164)

▪ **TAM affixes** convey a variety of information about the temporal structure of the event expressed by the predicate.[6] The clause in (26) contains one example of the irrealis prefix *na-* and two of the perfective suffix *-in*. The irrealis prefix here indicates relative futurity (relative to a past reference time). The first instance of PRV *-in* appears to encode a change-of-state reading: it indicates that a certain situation in

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6 The examples here are merely illustrative. See De Busser (2009:209-244) for a detailed overview of the usages of aspectual markers in Takivatan.

which a deer was present (mentioned in preceding discourse), has ceased to exist. The second instance of PRV *-in* encodes a completive reading.

(26) *Ɂukin aipa Ɂita namudanin*
    Ɂuka-in   aipa   Ɂita   na-mu-dan-in
    NEG.have-PRV   DEM.S.DIST.VIS there.DIST   IRR-ALL-go-PRV
    'It [the deer] had gone away.' (TVN-008-002:134)

The progressive suffix *-aŋ* typically indicates an ongoing event. An example is given in (27).

(27) *maðɁavaŋ sak tudip minliskin tu ...*
    maðɁav-aŋ   sak   tudip   min-liskin   tu
    embarrassed-PROG 1S.TOP   that.time INCH-believe COMPL
    'Being still embarrassed, I thought [...]' (TVN-008-002:196)

▪ **Reduplication** encodes various types of lexical aspect. In Takivatan, these include durativity, continuativity, repetition, or habituality.

(28) *maupata tu maqabasa lulusɁanaŋa*
    maupa-ta   tu   ma-qabas-a
    thus-DEF.REF.DIST   COMPL   DYN-in.former.times-LNK
    lu-lusɁan-aŋ-a
    HABIT-celebrate-PROG-LNK
    'This is how people (habitually) performed celebrations in the old days.' (TVN-012-003:27)

(29) *pakakalat asu*
    paka-kalat   asu
    RECIP-bite   dog
    'The dogs are (repeatedly) biting each other.' (TVN-xx2-005:68)

▪ **Place-time-manner (PTM) phrases**: Finally, Takivatan has a grammatical slot that is populated by words or phrases expressing place, time, or manner. (30) and (31) contain examples of a locative phrase *Ɂiti* 'here' and a manner phrase *aupa* 'thus' in the clause-final slot. Instances of time words in the PTM slot occur throughout this article.

(30) *na muqðin tamat tu hutuŋ ʔiti*

na	*muqða-in*	*tamat*	*tu*	*hutuŋ*	*ʔiti*
well	again-PRV	search.for	COMPL	monkey	here

'Again, we looked for monkeys here.' (TVN-008-002:122)

(31) *ni malavi aupa*

ni	*ma-lavi*	*aupa*
NEG	DYN-follow	thus

'And in that way, he did not accompany us.' (TVN-008-002:111)

The remainder of this article will focus on the subset of the class of words that often occur in this slot and are involved in the expression of time.

2. Positional variation

Unlike most noun phrase arguments and verbal elements in Takivatan, which have relatively little positional freedom, time words (and certain words expressing location and manner) can occur in an unusual number of positions in the clause. In each of these positions, they exhibit distinct grammatical behaviors. They sometimes appear to behave like verbs, sometimes like noun-like entities, and sometimes they are morphologically invariant (cf. §1.2). The distributions of individual time words, and of variant forms of the same temporal root, vary considerably, but all roots can at least occur in the clause-initial auxiliary slot and in a dedicated clause-final slot that can only contains expressions of place, time, and manner.[7]

For the purpose of this study, we shall distinguish twelve distinct positions. These were chosen on the basis of their ease of identifiability in the clause. Their distinction is meant to be grammatically meaningful, but they do not necessarily represent a distinct grammatical slot, as will become clear in the remainder of this section. Time words can occur:

1. In the initial verbal slot in the predicate followed by a complementizer *tu*
2. In the initial verbal slot in the predicate without a complementizer
3. After an auxiliary (but before the main verb)
4. In pre-verbal position followed by a general linker *-a*
5. In pre-verbal position without a linker
6. In post-verbal position, i.e. following the main verb
7. In the clause-final Place-Time-Manner (PTM) slot

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[7] Not all variants of each temporal root can occur in both positions; see e.g. *laupa* in Table 2.

8. As a discourse marker
9. As a single main verb
10. In directional or locative derivations
11. As the attribute of a noun phrase
12. As the head of a noun phrase

Sections 2.1-2.12 describe these positions more precisely and gives examples of the grammatical behaviors of time words associated with each of them.

2.1 Predicate-initial position with complementizer *tu*

Time words can occur in the first verbal slot of the clause followed by a complementizer *tu*. The presence of a complementizer, and the fact that a restricted set of verbal morphology is commonly expressed on time words in this position, strongly suggests that they function as auxiliary verbs: Kuteva (2001) assumes that diachronically auxiliary constructions typically develop from complement-type constructions; this implies the existence of intermediary constructions (complementation-like auxiliary constructions). The exact grammatical behavior of time words in this position varies. All four time words have been attested in this position. There is only one attestation of *laupaku* 'now' and none for other variants of the root *laupa* 'now'.

Below are two examples of *tudip* 'then' in initial position followed by COMPL *tu*. In (32), the time word is marked for aspect by the progressive suffix -*aŋ*.

(32) [...] *tudipaŋ tu sia tupaun tu sinkuðakuða*

     tudip-aŋ   *tu*   *sia*   *tupa-un* *tu*   *sin-kuðakuða*

     that.time-PROG COMPL ANAPH call-UF   COMPL RES.OBJ-work

     '... during those days, that was called sinkuðakuða (a life of labor)' (TVN-008-002:234)

In (33), it has no TAM-marking, but its initial position and the subsequent complementizer are a strong indication that it functions as an auxiliary verb.

(33) *tudip ... tu ... mainaʔitaʔin malmananu*

     tudip   *tu*   *maina-ʔita-in*   *mal-ma-nanu*

     that.time COMPL ABL-there.DIST-PRV STATE-STAT-really

     '[...] and in those days I came from that place full of dedication' (TVN-008-002:209)

On the other hand, the form *dip* 'then' is always invariant in this position, i.e. it does not take verbal or any other morphology.

(34) *dip tu taŋadaq libus*
  dip tu tan-ŋadaq libus
  then COMPL DIR-beneath hunting.grounds
  'In those days, it was situated beneath the hunting grounds.' (TVN-008-002:12)

Interestingly, its grammatical behavior in initial position differs markedly when it is not followed by COMPL *tu* (see (36)). In those cases, it often occurs with TAM marking.

A possible explanation for this contrast could be that in absence of the complementizer as a marker of the verbal status of *dip*, other indicators are needed to signal its status as a verbal element.

2.2 Predicate-initial position without a complementizer

Instances of time words in initial position without a complementizer are approximately twice as common as those with a complementizer. All variants of all time words have been attested in this position. Despite the absence of COMPL *tu* as an unambiguous indicator of the verbal nature of these forms, they are best analyzed as auxiliaries, because many of them can take some verbal morphology. In the initial slot without complementizer, *tudip* 'then' is almost always marked for TAM.

(35) *tudipin tupa tu tuŋanina*
  tudip-in tupa tu tuŋan-in-a
  that.time-PRV say COMPL finish-PRV-LNK
  'At that point they proclaimed that it was finished.' (TVN-012-001:75)

Similarly, *dip* 'then' typically has some sort of verbal morphology, most often the perfective marker -*in*.

(36) *dipin babaðbaðin tu*
  dip-in ba-baðbað-in tu
  then-PRV CONT-have.conversation-PRV COMPL
  'Then they were talking (about it).' (TVN-008-002:107)

More than a quarter of all attestations of *qabas* 'in former times' are in the clause-initial auxiliary slot without a complementizer *tu*. In this position, the time word occurs without any verbal morphology, as in (37), or with a verbal prefix DYN *ma*-, as in (38).

(37) *qabas nanu itu tama diqanin sintuqumis*

    qabas   *nanu*   *itu*   *tama*   *diqanin*   *sintuqumis*
    in.former.times really this.here father heaven   bless
    'In former times the Father in Heaven really gave us his blessing.' (TVN-008-002:6)

(38) *maqabasi maupata naip qanupa*

    ma-qabas-i   *maupa-ta*   *naip*   *qanup-a*
    DYN-in.former.times-PRT   thus-DEF.REF.DIST   DEM.S.NVIS   hunt-SUBORD
    'When somebody wanted to go hunting in the past [...]' (TVN-012-001:104)

Occurrences with TAM marking are relatively rare. Forms of *qabas* can be immediately followed by the clause-internal topical argument, but no forms with a bound pronoun have been attested.

    About ten percent of all attestations of *laupaku* occur in the initial auxiliary slot without a complementizer. None have any verbal morphology or bound pronouns, but they can take a definiteness marker as in (39).

(39) *a laupakuka namuqna sakin taqu tu*

    a   *laupaku-ka*   *na-muqna*   *saikin*   *taqu*   *tu*
    INTER   now-DEF.SIT.DIST   IRR-next   1S.TOP.AG   tell   COMPL
    'And now I will tell [...]' (TVN-012-003:1)

Haip is always invariant, unless it occurs in the clause-initial auxiliary slot, where it has been attested with TAM marking.

(40) *haipaŋ qaniʔan ŋausuŋ ʔita makusvaʔi siati daŋiʔanana*

    haip-aŋ   *qaniʔan*   *ŋausuŋ*   *ʔita*
    today-PROG   day   first   there.DIST
    makusva-i   *sia-ti*   *daŋiʔan-an-a*
    cut.grass-PRT   ANAPH-DEF.REF.PROX   put.in-LOCATION-LNK
    'When it is that day, we first go there to cut the grass of that location.' (TVN-012-001:56, 2nd instance)

2.3 After an auxiliary

All variants of all time words have been attested in positions where they follow one or more auxiliaries (i.e. are not predicate-initial) but appear before the head of the predicate. When the time word *tudip* 'then' occurs in this position, its exact status is

variable. Some instances appear to be invariant forms, while others exhibit a verb-like behavior, and therefore could be analyzed as auxiliaries. The first case is exemplified by instances that follow the auxiliary, but precede a complementizer *tu* which can be ascertained to belong to the auxiliary. For instance, it is extremely common that the modal auxiliary *tuða* 'real(ly)' is followed by a trailing complementizer to signal that the implied semantic head of the clause is left unexpressed.

(41) *maupata tu maqabasa lulusʔanaŋa, tutuða tu*
      maupa-ta   *tu*   *ma-qabas-a*
      thus-DEF.REF.DIST   COMPL   DYN-*in.former.times*-LNK
      lu-lusʔan-aŋ-a   **tu-tuða**   **tu**
      HABIT-*celebrate*-PROG-LNK   INTENS-real   COMPL
      'Like that did people celebrate in the old days, it really [was like that].'
      (TVN-012-003:2)

This use of the complementizer is unattested for time words and it is therefore likely that COMPL *tu* in (42) belongs to the modal auxiliary *tuða* rather than to the time word *tudip*.

(42) *tuða tudip tu*
      tuða   **tudip**   *tu*
      real   that.time   COMPL
      'Those days were really like that.' (TVN-008-002:224)

The fact that all occurrences of *tudip* in similar constructions (AUX + *tudip* + (*tu*)) are grammatically invariant corroborate this analysis. Despite the fact that *mastaʔan* 'most, exceedingly' is not necessarily followed by a complementizer, it is therefore not unreasonable to assume that COMPL *tu* in (43) belongs with the superlative auxiliary rather than with the time word and that *tudip* is an invariant form rather than one in a string of auxiliaries.

(43) *amuq tudipi mastaʔan tudip tu manaskali*
      amuq   *tudip-i*   *mastaʔan*   **tudip**   *tu*   *ma-naskal-i*
      though   that.time-PRT   most   that.time   COMPL   STAT-happy-PRT
      'And those were most happy days.' (TVN-008-002:21)

In other instances, *tudip* 'then' in post-auxiliary position is modified by TAM marking, in the example (44) PRV -*in*.

(44) *a maupa muqna tudipin minliskin tu namaquaq pasiʔadas qan sami*

    a   *maupa*   *muqna* *tudip-in*   *min-liskin*   *tu*

    INTER thus   next   that.time-PRV INCH-believe COMPL

    na-maquaq   *pasi-adas*   *qan*   *sam-i*

    IRR-how.come   SEPARATE-carry with 1E.TOP-PRT

    'Thus I again remember how we worked together in those times.' (TVN-008-002:164)

Here, the time word is clearly not grammatically invariant and its analysis as an auxiliary is unproblematic.

    The instances above represent clear-cut cases. In many situations there is no clear proof either for grammatical invariance or for an auxiliary analysis. It is impossible to unambiguously determine whether the second instance of *tudip* in (45) functions as an invariant adverbial phrase (or an adverbial particle) or whether it is an auxiliary that happens to lack any verbal morphology.

(45) *aupa matudipa, nanuin tudip minliskin tu ni mamantuk tu*

    aupa   *ma-tudip-a*

    thus   STAT-that.time-SUBORD

    nanu-in   **tudip**   *min-liskin* *tu*   *ni*   *ma-mantuk*   *tu*

    really-PRV that.time INCH-believe COMPL NEG INTENS-genuine COMPL

    'But in those days, it had really come to a point where I acquired understanding that it wasn't genuinely so.' (TVN-008-002:165)

    The same ambiguity does not exist for other time words in this position. When *laupaku* 'now, at the moment' occurs between an auxiliary and the main verb, as in (46), it is always grammatically invariant and consistently occur after the auxiliary, but before any complementizer (if present).

(46) *muqnaŋ sak laupaku taquki ainak tu lainiqaiban*

    muqna-aŋ sak   *laupaku taqu-ki*   *ainak* *tu*   *la-in-qaiban*

    next-PROG 1S.TOP now   tell-DEF.SIT.PROX 1S.POSS ATTR PST-route

    'Next I will tell about my life.' (TVN-006-001:2)

    Similarly, all occurrences of *haip* 'now, today' in inter-verbal position are grammatically invariant, as in the example (47).

(47) *asa haip malmananu matibahiʔi*

    asa   haip   malmananu   mati-bahi-i

    want   today   put.effort.in   MATI-have.dream-PRT

    'We now have to do our best to have a prophetic dream.' (TVN-008-002:43)

2.4 Pre-verbal position with a linker *-a*

When time words immediately precede the verb and are followed by a linker *-a*, they typically are morphologically invariant. They are not able to attract any affixal morphology (with exception of the linker) and modify the verb, very much like adverbs. *Qabas* 'in the old days' and *tudip* 'then' are the only two time words in the present sample that commonly occur immediately before the verb with a linker *-a*.

(48) *maupata qabasa paun tu titiʔun tu masðaŋi*

    maupa-ta   qabas-a   paun   tu   titi-un   tu

    thus-DEF.REF.DIST   in.former.times-LNK   be.said   COMPL   meat-UF   COMPL

    masðaŋ-i

    same-PRT

    'This was how in the old days the meat was distributed in the same way.' (TVN-012-001:124)

(49) [...] *sia Bunun tudipa pinvai*

    sia   Bunun   tudip-a   pinvai

    ANAPH   Bunun   that.time-LNK   win

    '[Although the Taroko from the six villages were very dedicated,] the Bunun were the most powerful at that time and they won (the competition).' (TVN-008-002:23)

For both time words, this positional type is fairly common: it accounts for around 15% of the occurrences of *qabas* and approximately one tenth of those of *tudip*.

2.5 Pre-verbal position without a linker

Occurrences of time words that immediately precede a verb, but are not followed by a linker *-a* are relatively rare and have only been attested for the forms *qabas* 'in the old days', *laupaku* 'now' and *laupadau* 'now (mirative)'. All forms are grammatically invariant, but given a lack of examples it is impossible to determine whether their grammatical behavior is similar to pre-verbal forms with LNK *-a* or whether they function in fact as auxiliaries in non-initial positions. The scarcity of data makes it difficult to draw any definitive conclusions.

(50) *maisiʔuvaðʔað maqansiap tu inʔituna madadaiŋʔað qabas pininqumaka aupa*

    maisi-ʔuvaðʔað   *ma-qansiap*   *tu*   *in-ʔitun-a*

    ABL-child   DYN-understand   COMPL   VIA-THERE.MED-LNK

    ma-da-daiŋ-ʔað   *qabas*   *p-in-in-quma-ka*   *aupa*

    elder   in.former.times PST-CAUS.INCH-field-DEF.SIT.DIST thus

    'From when I was I child, I understood that the elders went through that place in former times to open up a field in such a way.' (TVN-008-003:121)

(51) *ʔisaq su uvaðʔað laupaku kuðakuða?*

    ʔisaq *su*   *uvaðʔað*   *laupaku* *kuðakuða*

    where 2S.N child   now   work

    'Where are your children working now?' (TVN-xxx-xx1:97)

2.6 Post-verbal position

All variants of the root *laupa* 'at this moment' and *qabas* 'in former times' have been attested in a position where they follow the main verb, or the main verb plus a core argument, but do not occur in clause-final position. These forms are grammatically invariant and appear to modify the preceding verb, and could therefore be analyzed as adverbs.

Approximately one fourth of the instances of *laupaku* 'now' occur in post-verbal position. Almost all attested instances of post-verbal *laupaku* involve the verb *haiða* 'exist', as in example (52).

(52) *haiða laupaku Vaukuna, Tauðuduna, a, Sai vukusiʔa*

    haiða *laupaku* *Vau-kun-a*   *Tauðu-tun-a*   *a*

    exist   now   V.-DEF.SIT.MED-ENUM T.-DEF.REF.MED-ENUM INTER

    Sai *vukusi-a*

    S.   minister-ENUM

    'At that time there was Vau, and Tauzu, and minister Sai.' (TVN-012-002:97)

Example (53) contains a similar example with *qabas*.

(53) *sintupa qabas madadaiŋʔað*

    sin-tupa   **qabas**   *madadaiŋʔað*

    RES.OBJ-say in.former.times elder

    'As the elders explained in the old days.' (TVN-012-001:10)

In (54), *qabas* followed both the main verb *paun* 'be called' and the topical argument *aipun* 'that one'. Interestingly, it precedes the complementizer belonging to the main verb.

(54) *paun aipun qabas tu Dastalanan*

    paun   ***aipun***   ***qabas***   *tu*   *Dastalanan*

    be.called   DEM.S.MED.VIS   in.former.times   COMPL   D.

    'That [place] was in the former times called Dastalanan.' (TVN-012-002:167)

2.7 In the clause-final PTM slot

The clause-final Place-Time-Manner (PTM) slot is the final grammatical slot of a simple clause, with exception of complement clauses and other dependent clauses and predicates. It is typically occupied by peripheral arguments, expressed by noun phrases or prepositional phrases, that express time, manner, place, and accompaniment. All four temporal roots have been attested in this position. Among their variants, only the bare root *laupa* 'now, at this moment' and its derived form *laupaŋ* 'a moment ago' cannot occur in the PTM slot.

All attested forms of *tudip* 'then' and *dip* 'then' are grammatically invariable, as illustrated in (55)-(56).

(55) *haiða mukalumaqa tudip*

    haiða   *mu-ka-lumaq-a*   *tudip*

    have   ALL-MAKE-house-LNK   that.time

    'There were people that went there to build houses at that time.' (TVN-012-001:63)

(56) *haiða, sia, tu ... sinsusuað dip*

    haiða   *sia*   *tu*   *sin-su-suað*   *dip*

    have   ANAPH   COMPL   RES.OBJ-HABIT-sow   then

    'At that time, they had grown them.' (TVN-008-002:122)

The two forms of the root *laupa* that have been attested in clause-final position, *laupaku* 'now' and *laupadau* 'now (mirative)', behave differently from *tudip* and *dip*. They do occur without any grammatical marking in the clause-final slot, as in (57).

(57) *ʔukin saduan laupaku*

    ʔuka-in   *sadu-an*   *laupaku*

    NEG.have-PRV   see-LF   now

    'One cannot see them anymore at this moment.' (TVN-012-002:137)

Both forms also commonly occur with a definiteness marker.[8] In (58), *laupaku* can occur with a proximal situational marker *-ki*.

(58) *maʔiti sia daŋiʔanan laupakuki*
      ma-ʔiti   sia   daŋiʔanan   laupaku-ki
      STAT-here ANAPH   location   now-DEF.SIT.PROX
      'You can stay at this place now.' (TVN-012-002:116)

Example (59) contains an instance of *laupadau* with a distal marker *-ka*.

(59) *maq nak-a ihan lumaqti ʔasaŋti laupadauka*
      maq   nak-a   i-han
      DEFIN   1S.N-LNK   LOC-be.at
      lumaq-ti   ʔasaŋ-ti   laupa-dau-ka
      home-DEF.REF.PROX   village-DEF.REF.PROX   now-MIR-DEF.SIT.DIST
      'My home is in this village now.' (TVN-003-xxx:5)

Qabas 'in former times', which commonly occurs in the PTM slot, often appears as a bare root, as in (60).

(60) *daŋaðan Sipun qabas*
      daŋað-an Sipun   qabas
      help-LF   Japanese in.former.times
      'In those days, the Japanese helped in that place.' (TVN-012-002:46)

However, it has also been attested once with the focus suffix LF *-an*, which here is best analyzed as a locative nominalizer marking a location in time.

(61) *maisnahan nak amin qabasan*
      maisna-han nak   amin   qabas-an
      ABL-go.to   1S.N   all   in.former.times-LO
      'I come from the old days.' (TVN-003-xxx:16)

The general picture offered so far is that time words in this position tend to exhibit a behavior that is more noun-like than verb-like: they appear in a slot which expresses

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8 Note that this is not by itself a proof that time words behave like nouns in this position. Definiteness markers in Takivatan commonly occur on verbs as well as nouns; see De Busser (2009:416-440) for a detailed description.

peripheral arguments; in that slot, they are in complementary distribution with noun phrases and prepositional phrases; they cannot take any verbal morphology; and some of them can occur with definiteness marking.

2.8 Discourse marker

More than half of all occurrences of *dip* 'then' are discourse markers functioning as pause fillers (PAUSE). These forms are invariably followed by an ossified complementizer *tu*, but never by any complement clause. They have no fixed position in the clause and there is clear evidence that the discourse marker *dip tu* is not grammatically integrated in the clause. For instance, in (62) *dip tu* immediately follows *natudipin* 'then', a fact that would not make sense unless the form is interpreted as an extra-clausal pragmatic marker.

(62) *aupa natudipin, dip tu, paun tu madaiŋa kainaskalan*
      aupa   na-tudip-in   dip tu   paun   tu
      thus   IRR-that.time-PRV PAUSE be.said   COMPL
      madaiŋ-a   ka-i-naskal-an
      big-LNK   ASSOC.DYN-PST-beautiful-LF
      'Thus in those days, this was considered to be a very happy event.' (TVN-012-001:59)

In (63), *dip tu* breaks up the complex numeral *mahimaʔun qan vau* 'fifty eight'.

(63) *pa naka haiða mahimaʔun qan, dip tu, vau*
      aupa   nak-a   haiða mahimaʔun qan   dip tu   vau
      thus   1S.N-LDIS have   fifty   with   PAUSE eight
      'Thus I am now 58 years old.' (TVN-012-002:96)

Dip 'then' is the only time word that has been attested as a discourse marker.

2.9 Main verb

Most time words — with the exception of *laupaku* 'now, at the moment' and *haip* 'now, today' — can function as the single main verb of a clause, i.e. as verbs that are both the syntactic and the semantic head of the clause. Often, their verbal status is obvious because they are the only element in the clause that is able to serve as a predicate or that occurs with verbal morphology, most commonly the stative verbal prefix *ma-* or a TAM marker.

In the corpus, *tudip* 'then' most commonly functions as a predicate head (16% of its occurrences). Typically, it is the only verbal form in a subordinate clause and has its status as a verb indicated by verbal morphology, as in (64).

(64) *aupa matudipa, nanuin tudip minliskin tu ni mamantuk tu*
      aupa   **ma-tudip-a**
      thus   STAT-that.time-SUBORD
      nanu-in   tudip   min-liskin   tu   ni   ma-mantuk   tu
      really-PRV that.time INCH-believe COMPL NEG INTENS-genuine COMPL
      'But in those days, it had really come to a point where I acquired under-standing that it wasn't genuinely so.' (TVN-008-002:165)

Other time words occur much less commonly as main verbs. Below is an example of *qabas* 'in former times'.

(65) *maqabasa bununa*
      ma-qabas-a   *bunun-a*
      DYN-in.former.times-LNK   people-SUBORD
      'In the old days there were people, [...]' (lit: 'People were in the old days') (TVN-012-002:64)

2.10 In locative/directional derivations

All time words except for *laupa* 'now' and *haip* 'now, today' have been attested in derivational forms in which they are prefixed by a prefix expressing location or direction. The resulting form functions as a locative/directional verb.

(66) *saulaupadau mastaʔan matunaskali tama diqanin tu*
      sau-laupa-dau   *mastaʔan matu-naskal-i   tama   diqanin   tu*
      TERMIN-now-MIR   most   EMOT-happy-PRT father heaven COMPL
      'Till today, I am very grateful to the Father in Heaven.' (TVN-008-002:163)

(67) *tanam mundip ... mahiva tu duq haiða dapana*
      tanam **mun-dip** *ma-hiva   tu   duq   haiða   dapana*
      try   ALL-there DYN-check COMPL whether have   footprint
      'We will try to go there to check whether there are footprints.' (TVN-008-002:125)

2.11 Attribute of a noun phrase

Rarely, time words function as pre- or post-nominal attributes of a noun phrase. They are always grammatically invariant. This position has been attested for *qabas* 'in former times', *laupaku* 'now', *laupadau* 'now (mirative)' and *haip* 'now, today'. The only time word which regularly occurs as a nominal modifier is *haip*.

(68) *uninaŋ haip tu sanavan*
      uninaŋ   haip   tu   sanavan
      thank.you   today   ATTR   evening
      'Thank you on this evening.' (TVN-012-003:79)

2.12 Head of a noun phrase

Three time words in this study (*tudip* 'then', *qabas* 'in former times' and *laupaku* 'now') have been attested as the head of a noun phrase that does not occur in the clause-final PTM slot. Again, this is rather uncommon. In the following example, *qabas* appears to be an argument of the verb *maqðaŋ* 'to be the same'.

(69) *maqðaŋ qabasi maqðaŋ qabasi*
      maqðaŋ   qabas-i   *maqðaŋ   qabas-i*
      same   in.former.times-PRT same   in.former.times-PRT
      'The same as in the old days, the same as in the old days.' (TVN-008-002:97)

In (70), *san laupaku* 'till now' is a prepositional phrase occurring in the PTM slot. This would mean that *laupaku* 'now' is best analyzed as a noun phrase.

(70) *aupa, maisnaʔita san laupaku*
      aupa   maisna-ʔita   san   laupaku
      thus   ABL-then   at   now
      'Thus, from that time until now.' (TVN-003-xxx:7)

3. Discussion

The previous section demonstrated that time words in Takivatan can occur in a large number of positions in the clause. Based on a partial corpus count, Table 2 gives the distribution of the major variant forms of the four time words in this study across the twelve positions. In the columns, the absolute frequency (#) and relative frequency

in percent (%) is given for each form. Immediate conclusions that can be drawn from the Table and from the data in the preceding section are that time words exhibit considerable positional variation and that they are not all evenly distributed across all possible positions. I shall discuss aspects of this uneven distribution and its consequences in the remainder of this section.

Table 2: Constructional variation of time words

	Tudip		Dip		Qabas		Laupaku		Laupadau		Laupa		Haip	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1. Initial with complementizer *tu*	5	9	16	20	6	8	1	2	0	0	0	0	1	6
2. Initial without complementizer	8	14	6	8	19	26	5	11	2	9	8	67	3	17
3. After an auxiliary	15	27	4	5	5	7	6	13	1	4	2	17	7	39
4. Pre-verbal with linker *-a*	6	11	0	0	11	15	0	0	0	0	0	0	0	0
5. Pre-verbal without linker	0	0	0	0	3	4	2	4	1	4	0	0	0	0
6. Post-verbal	0	0	0	0	6	8	11	24	2	9	1	8	0	0
7. Clause-final PTM slot	9	16	2	3	13	18	12	26	10	43	0	0	3	17
8. Discourse marker	0	0	43	54	0	0	0	0	0	0	0	0	0	0
9. Main verb	9	16	4	5	3	4	0	0	1	4	1	8	0	0
10. Directional/locative derivation	1	2	5	6	4	5	3	7	5	22	0	0	0	0
11. Attribute of a noun phrase	0	0	0	0	2	3	3	7	1	4	0	0	4	22
12. Head of a noun phrase	3	5	0	0	2	3	3	7	0	0	0	0	0	0
TOTAL	56		80		74		46		23		12		18	
NO. OF DIFFERENT SLOTS	8		7		11		9		8		4		5	

Legend:
- ■ Initial with complementizer
- ⊠ Initial without complementizer
- □ After an auxiliary
- ■ Preverbal with linker
- □ Preverbal without linker
- ⊠ Post-verbal
- ■ Clause-final PTM slot
- ◺ Discourse marker
- ⊠ Main verb
- ▨ Directional or locative derivation
- □ Attribute of an NP
- □ Head of an NP
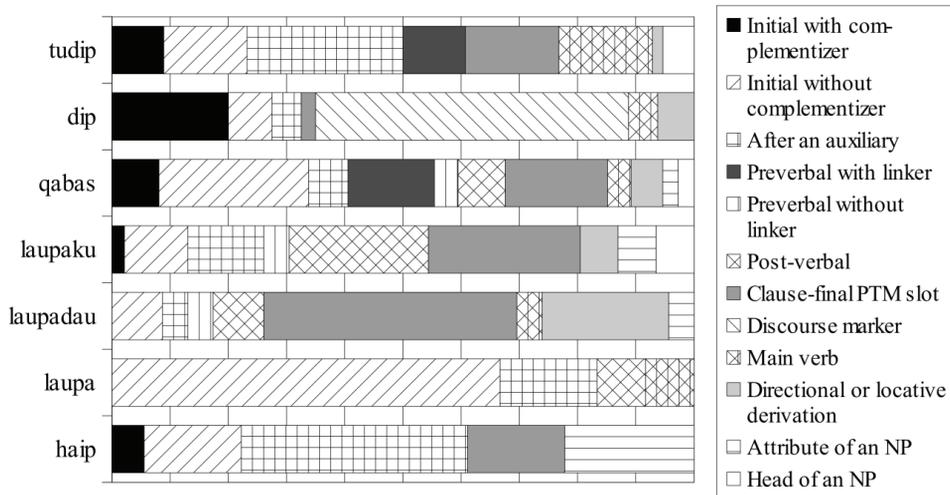
Figure 1: Positional variation per time word (% of total number of occurrences)

3.1 Distributional differences between time words

An important observation is that positional variation is different for each time word and, interestingly, for different derivational variants of the same time word. Not all time words are equally versatile in terms of their positions. This is clear from the last row of Table 2, which indicates in how many different positions each form occurs. *Qabas* 'in former times' has been attested in 11 of 12 potential positions, while *dip* 'then' only occurs in seven and *haip* 'now, today' only in five (in the case of *haip* this might have something to do with its relatively low frequency in the corpus).

More generally, positional distribution varies greatly between individual time words in Table 2. This becomes obvious when its numerical data is visualized as a bar chart (Figure 1). Certain time words occur in positions that are not attested for others. For instance, *tudip* 'then' can occur immediately before the verb, while *laupa* 'now' cannot. There is also variation in the degree of variability. Some time words, like *laupa* have a preference for a small number of positions, while others, like *qabas* 'in the old days', are dispersed across all possible positions.

It is also obvious from the chart that different morphological variants of the same temporal root have radically different distributions. Figure 2 illustrates this for the three main variants of *laupa* 'now', which all have very similar semantic profiles, but exhibit divergent positional and grammatical behaviors.[9] While both *laupaku* 'now' and

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[9] Note that the label *laupa* includes a number of morphological variants, including the invariant form *laupa* 'now' and the complex form *laupaŋ* 'a moment ago'.

laupadau 'now (mirative)' regularly occur in the PTM slot (pos. 7), other forms of *laupa* have never been attested in this position. *Laupaku* is much more evenly distributed across the positional categories and it is the only form that occurs in immediate post-verbal position (pos. 5) with any regularity. On the other hand, instances of *laupa* without -*ku* or -*dau* constitute more than fifty percent of all occurrences of the root in initial position (pos. 2). As an auxiliary, *laupa* never occurs with the complementizer *tu* (pos. 1). *Laupadau* is mainly used in the PTM slot (pos. 7) or in locative/directional derivations (pos. 10).

There is no apparent semantic or functional reason for such positional variation. Both *laupaku* and *laupa* mean 'now, at the present moment', but the former commonly occurs in post-verbal position, and the latter almost never (Fig. 2 pos. 6).
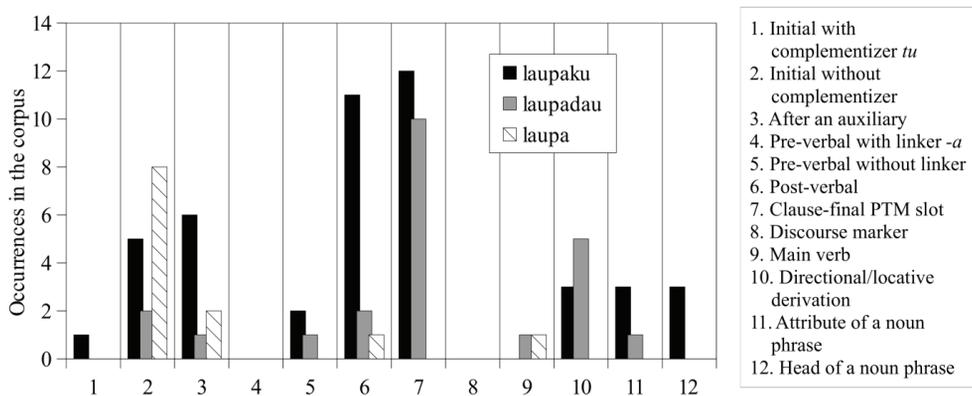
Figure 2: Comparison of positional distribution of *laupaku*, *laupadau* and other forms of *laupa*

3.2 Correlation between position and grammatical behavior

Nevertheless, it is clear that these distributional differences are not due to chance, as there is a strong correlation between certain positions in the clause and distinct grammatical behaviors. For instance, time words in initial position (pos. 1 and 2 in Table 2) all exhibit behaviors that are to a greater or lesser extent compatible with an analysis as auxiliaries, provided that one accepts that auxiliaries are verb-like elements that have a supportive role in a complex predicate, are somewhere on a grammatical cline between full verbs and grammatical markers (Heine 1993, Anderson 2006:4-6). At the onset of §2, I mentioned that the occurrence of time words in complementation-type constructions (pos. 1) is by itself a strong indicator that they operate as verbs in these environments, since, as Kuteva (2001) demonstrates, complementation is a likely source

in the grammaticalization pathway of auxiliary constructions. Examples (71) and (72) indicate that normal complement clauses and time word complementation are morphosyntactically very similar.

(71)   *minliskinaŋ tu maq a lainiqaibania*
       min-liskin-aŋ   *tu*   *maq*   *a*   *lainiqaiban-i-a*
       INCH-believe-PROG COMPL DEFIN INTER life-PRT-SUBORD
       'I still recall how my life happened.' (TVN-008-002:219)

(72)   *tudipaŋ tu sia tupaun tu sinkuðakuða*
       tudip-aŋ   *tu*   *sia*   *tupa-un*   *tu*   *sin-kuðakuða*
       that.time-PROG COMPL ANAPH call-UF   COMPL RES.OBJ-work
       'In those days that was called a life of labor.' (TVN-008-002:234)

When predicate-initial auxiliaries are not followed by a complementizer *tu*, many still exhibit certain verbal behaviors: they can occur with TAM affixes, as in (75); with verbal prefixes, as in (73) and (75); be followed by a bound pronoun, as in (74); or trigger left-movement of the topical argument, as in (73).

(73)   *maqabas madadaiŋʔað paun tu misðaŋ*
       ma-qabas   *madadaiŋʔað* *paun*   *tu*   *misðaŋ*
       DYN-in.former.times elder   be.said COMPL group
       'In the old days the elders [built houses together] in a group.' (TVN-012-001:63)

(74)   *laupaŋʔak taldanavin*
       laupaŋ-ʔak   *taldanav-in*
       a.moment.ago-1S.TOP   wash-PRV
       'I just finished washing.' (TVN-xxx-xx1:166)

(75)   *aupa, maqabasaŋ tu atikisaŋa* [...]
       aupa *ma-qabas-aŋ*   *tu*   *a-tikis-aŋ-a*
       thus DYN-in.former.times-PROG COMPL STAT-small-PROG-SUBORD
       'Thus, when in the old days I was still small, [...]' (TVN-006-001:3)

Table 3 gives an overview of which morphosyntactic behaviors typically associated with verbs are attested with which time words. It shows that, while there is considerable variation, all time words except one (*laupaku* 'now') behave to a greater or lesser extent like verbs in the clause-initial slot.

Table 3: Grammatical behavior of time words in initial position without complementizer (pos. 2)

| | *tudip* | *dip* | *qabas* | *laupaku* | *laupadau* | *laupa* | *haip* |
	'then'	'then'	'former times'	'now'	'now (mir.)'	'now'	'today'
1. Focus marking							
2. TAM marking	✓	✓	✓			✓	✓
3. Verbal prefixes	✓		✓		✓		
4. Bound pronouns						✓	
5. Followed by topic			✓			✓	

This is not as unusual as one might think. Starosta (1988:550) notes that a "prominent feature of Formosan languages is a system of auxiliary verbs which, depending on the language, may carry information on aspect, negation, and/or such 'adverbial' concepts as instrument, manner, or degree." He goes on to give examples for different languages, including time expressions in Saisiyat (p.277). As mentioned, a number of studies have observed similar adverbial auxiliary constructions for other Austronesian languages of Taiwan. Outside Taiwan, Andersen (2007) describes how certain expressions of time and manner function as auxiliaries in Dinka, a Nilotic language of Sudan. They have also been attested in Nootka (Davidson 2002:157-158).

Holmer (2002, 2010) postulates that 'adverbial verbs' like this could develop in verb-initial languages because in such languages the first element in a clause is likely to be reinterpreted as a verb. This does make sense as an explanation for how these forms developed diachronically in Formosan languages, although it is not clear how Dinka, which is not a primarily verb-initial language, fits into this picture.

In clause-final position, time words behave in a more noun-like fashion. They cannot take any of the verbal morphology typically associated with time words in clause-initial slots and occur in a position that may also be occupied by peripheral noun phrases and prepositional phrases ((76) and (77)).

(76) *minaminʔak han Taivan*
      minamin-ʔak   han   Taivan
      be.used.to-1S.TOP in   Taiwan
      'I am used to being in Taiwan.' (TVN-xxx-xx1:154)

(77) *mainaʔasaŋ Bununa hamun matasʔi kaku laupakuka*
      maina-ʔasaŋ   Bunun-a   hamu-un   ma-tasʔi   kaku
      ABL-village   bunun-LNK   take.together-UF   DYN-make   school

> *laupaku-ka*
> now-DEF.SIT.DIST
> 'The Bunun came from the village, and together they built the school there now.' (TVN-012-002:57)

Time words in this slot rarely take verbal morphemes, but certain forms can occur with definiteness markers or nominal markers (see (58), (59) and (61)).

3.3 Typological implications

The data in the previous sections indicate a clear correlation between the position of time words and their grammatical behavior. This observation is by no means trivial and has important typological implications. In a majority of languages, there is a correlation between the position of core arguments in a clause and their syntactic function. However, in approximately 15% of the world's languages constituent order is free (Dryer 2011). Consider, for instance, the famous examples (78)-(80) from Warlpiri (Pama-Nyungan, Australian), which illustrate that Warlpiri noun phrases can occur in any position and any order in a clause.

(78) *ngarrka-ngku   ka   wawirri   panti-rni*
     man-ERG   AUX   kangaroo   spear-NONPAST
     'The man is spearing the kangaroo.' (Warlpiri; Hale 1983:6)

(79) *wawirri   ka   panti-rni   ngarrka-ngku*
     kangaroo AUX spear-NONPAST   man-ERG
     'The man is spearing the kangaroo.' (id.)

(80) *panti-rni   ka   ngarrka-ngku   wawirri*
     spear-NONPAST AUX man-ERG   kangaroo
     'The man is spearing the kangaroo.' (id.)

Whatever the position of the noun phrases in the three examples above, and whatever the motivation for this position, they always function as noun phrases, with the transitive subject in the ergative case, and the object in the (unmarked) absolutive case. In other words, when a language has a free constituent order, position does not influence grammatical behavior.

In a language such as English, this is also the case for non-core time adverbials, and most other adverbial phrases. For example, in (81)-(83), the time word *today* occurs in clause-initial, post-verbal, and clause-final position.

(81) *Today we are printing a special token to complete the voucher we gave you yesterday*. (BNC)

(82) *The Limit can today reveal chart star Felix's REAL name*. (id.)

(83) *The monkeys are on your cars today*. (id.)

In each position, *today* clearly functions as an adverb that is the head of a single-word adverbial phrase. Quirk et al. (1985:490) distinguish seven distinct grammatical positions for adverbial phrases in English, and give a complex time expression, *by then*, as an example.

(84) a. ***By then*** *the book must have been placed on the shelf*.

b. *The book **by then** must have been placed on the shelf*.

c. *The book must **by then** have been placed on the shelf*.

d. *The book must have **by then** been placed on the shelf*.

e. *The book must have been **by then** placed on the shelf*.

f. *The book must have been placed **by then** on the shelf*.

g. *The book must have been placed on the shelf **by then***.

(Quirk et al. 1985:490)

As with single-word time adverbials, by then is analyzed as an adverbial phrase, no matter what its position in the clause. Quirk et al. (1985:491) also notice that among adverbials "single-word adverb phrases are most mobile and finite clauses least." Thus, like Warlpiri noun phrases, the grammatical behavior of English time adverbials is independent of their positional behavior (though position can sometimes be correlated to certain semantic and pragmatic differences). We saw in the preceding sections that this syntactic behavior is distinctly different from that of Takivatan time words, which are instantiated in different grammatical slots and, depending on their position, belong to different word classes.

It is often implicitly assumed in the description of adverbial phrases in other languages that this decoupling of grammatical behavior and position, as it appears in English, is somehow prototypical. The Bunun data presented in this article shows that in different languages, different grammatical mechanisms can be involved in the grammatical realization of time expressions.[10] If we restrict ourselves for the sake of simplicity to single-word time expressions, at least three tentative linguistic patterns can be distinguished (Table 4).

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[10] This is the major reason why, in this article, I have avoided the term 'temporal adverb' or 'adverbial'.

Table 4: Three types of grammatical systems for encoding time expressions

	Position	Grammatical behavior
Bunun	Free	Positionally conditioned
English	Free	Constant
Mandarin	Restricted	Constant

In a first, exemplified by Takivatan Bunun, the position of time words in a clause is relatively free and each position is associated with distinct morphosyntactic behaviors. In other words, positional variability is not the result of a 'roaming' grammatical slot, but of the fact that time words are instantiated in different grammatical slots, each triggering its own distinct morphosyntactic behaviors. So far, this pattern has only been attested for certain Austronesian languages in Taiwan.

In a second type of language, time expressions occur in various positions in a clause, but have a constant morphosyntactic behavior in each of these positions. This indicates that time words, rather than being instantiated in different grammatical slots, are realized in a single grammatical slot, the temporal adverbial slot, which can roam around freely in the clause. English behaves like this, as demonstrated in (81)-(83) and (84).

In a third type of language, single-word temporal expressions have a fixed grammatical behavior, but unlike in the second type, unambiguous positional restrictions are associated with the class of time words or a number of its subclasses. This is the case for a language like Mandarin-Chinese, where most temporal adverbs are morphologically unmarked and can never follow the verb (unless they are used as the head of noun phrase functioning as a core argument). Based on positional variation, two distinct types can be identified. Li & Thompson (1997:320-321) mention time words as a subclass of moveable adverbs, which 'may occur not only after the topic of a sentence but also in sentence-initial position' (p.320). The positional options for one member of this class, 今天 *jintian* 'today', are illustrated in (85)-(86).

(85)　今天我們輸了
　　　jintian　women　shu　le
　　　today　we　　　lose　RES
　　　'Today, we lost.' (Mandarin Chinese; BCMC)

(86)　我們今天要出去做生意
　　　women　jintian　yao　chuqu　zuo　shengyi
　　　we　　today　have.to　go.out　do　business
　　　'Today, we have to go out and do business.' (id.)

A second subclass cannot occur in clause-initial position and only occurs pre-verbally.[11]

(87)   a.   我們經常有太多的理想
       women   jingchang   you   tai   duo   de   lixiang
       we   usually   have   too   many ATTR ideal
       'We usually have too many ideals.' (Mandarin Chinese; BCMC)

       b. *經常我們有太多的理想
       jingchang   women   you   tai   duo   de   lixiang
       usually   we   have   too   many ATTR *ideal*

Note that the positions illustrated above are the only two in which Mandarin temporal adverbs normally occur.

4. Possible reasons for positional variability

The previous sections provide a description of the extent and nature of positional variation of Takivatan time words. We still do not know what the reasons are for this variation. This final section will therefore touch concisely on a number of structural, cognitive-functional, and historical-typological explanations for the variability of the positional, and associated grammatical, behavior in time words.

4.1 Structural and scopal explanations

In language, differentiation of form tends to correlate with differentiation of meaning. In the absence of a clear semantic differentiation between the different positions, it could therefore be assumed that it must be possible to explain differentiation of form (in this case, the position in a clause) as a result of certain properties of the more abstract grammatical or semantic structure of the clause.

Givón (1985:208) remarks that "[o]ne of the most common devices in language for indicating scope relations is by translating them, at the code level, into ordering/proximity relations." This means that we could attempt to explain positional variation of time words in terms of a need to vary their scope (see Klein 1994:159), analogous to a scope analysis of quantifiers (Reinhart 1997, Kuno & Takami 2002, *inter alia*). However,

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[11] Interestingly, this is not mentioned Li & Thompson (1997), but examples are given in Ross & Ma (2006), who curiously assert that all Chinese adverbs solely occur in pre-verbal position, after the topic (p.89), something that is contradicted by corpus examples from the BCMC.

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while the notion of variable scope does make sense for quantifiers, it is much more problematic for time words. Conceptually, common sense dictates that time words always have scope over an entire clause (or sometimes even a sentence), since the temporal setting that they express is typically relevant to the entire event. Consider for instance (88) and (33), repeated here as (89).

(88) *daŋaðʔak tudip*
      daŋað-ʔak   tudip
      help-1S.TOP   that.time
      '[...] so I helped him at that time' (TVN-008-002:225)

(89) *tudip tu mainaʔitaʔin malmananu*
      tudip   tu   maina-ʔita-in   mal-ma-nanu
      that.time   COMPL   ABL-there.DIST-PRV   STATE-STAT-really
      '[...] and at that time I came from that place full of dedication' (TVN-008-002:209)

In the first example, *tudip* 'then' occurs in the clause-final PTM slot; in the second, as a clause-initial auxiliary with a complementizer. Nevertheless, both forms mean exactly the same and no genuine difference in scope can be observed. It does not make sense to say, for instance, that in (88) the time word only has scope over the topical argument and in (89) over the entire clause.

A closely related explanation takes the syntactic proximity of a time word to a verb as an iconic projection of conceptual distance. This would mean that the closer a time word occurs to the main verb, the more tightly integrated its temporal semantics are in the event expressed by that verb. A first problem with this analysis is that, while this might explain the difference between time words occurring close to the verb and those that occur towards the periphery of the clause, it is hard to see how proximity could explain the difference between clause-initial and clause-final time words at an equal distance of the verb. A more fundamental problem is that it is hard to imagine how there can be variation in the degree to which a temporal setting is conceptually integrated in an event. Compare for instance (90), with (53), repeated as (91).

(90) *daŋaðan Sipun qabas*
      daŋað-an   Sipun   qabas
      help-LF   Japanese   in.former.times
      'In the old days, the Japanese helped us over there.' (TVN-012-002:46)

(91) *sintupa qabas madadaiŋʔað*

      sin-tupa   *qabas*   *madadaiŋʔað*

      RES.OBJ-say in.former.times   elder

      'As the elders explained in the old days.' (TVN-012-001:10)

In (90), *qabas* 'in the old days' is in clause final position and is preceded by a core argument; in (91), it occurs immediately after the verb. The meaning of the time word in both examples appears identical and there is no clear evidence for a difference in conceptual distance. Tentatively, we can therefore conclude that there are no straightforward structural motivations for the positional variability of Takivatan time words.

4.2 Conceptual ambiguity

From a cognitive perspective, the notion of time is conceptually ambiguous as "there appears to be nothing tangible in the world which can actually be pointed to and identified as time" (Evans 2004:3). Languages therefore resort to various indirect strategies for encoding time, most famously as spatial metaphors (Boroditsky 2000). It is often unclear whether the temporal setting of an event should be encoded as an event or as a referential entity (Evans 2004:253-254) and such ambiguity could be reflected in the surface structure of the language. This indeed appears to be the case for adverbial concepts in general, including expressions of time and manner. Cross-linguistically, the class of adverbs tends to be "the least homogenous, semantically, morphologically and syntactically" of the major word classes (Givón 2001:87) and "adverbs thus span the continuum between morphology, lexicon and syntax" (Givón 2001:88).

It is reasonable to assume that in Takivatan Bunun, this ambiguity could have led to the type of positional variation that has been observed for time words. This hypothesis could shed light on why time words sometimes exhibit more verb-like behaviors (in clause-initial positions) and sometimes more noun-like behaviors (in clause-final position): Time words are conceptually ambiguous, and are sometimes encoded as events, and sometimes as referents. This fails to explain why clause-initial positions in Takivatan are associated with verb-like behaviors and clause-final positions with noun-like behaviors, but one could argue that such variation is merely the consequence of the grammatical slots in which a time word occurs.

Conceptual ambiguity in itself does not explain why the Takivatan situation is different from that in other languages. Both in Takivatan and English, time adverbials have variable placement in the clause (cf. §3.3), but in the former language this variability is accompanied by grammatical changes, whereas in the latter grammatical behavior remains constant. However, it might provide us with a partial explanation of why variety arose in the first place.

4.3 Information structure

One might also look for a relationship between positional variation and information structure. It is often assumed that there is a relationship between the order of words and constituents on the one hand, and pragmatic salience on the other (see e.g. Firbas 1992: 117-134). From a functional perspective, this would mean that positional variation in the instantiation of time words in a clause is motivated by the variable, context-dependent communicative needs of speech participants. In other words, positional and grammatical variation in time words reflects differences in communicative intent and pragmatic salience.

Lambrecht (1996:75) observes that discourse referents "are syntactically expressed in argument (including adjunct) categories. […] Predicates by definition do not denote discourse referents but attributes of, or relations between, arguments." Only discourse referents are normally eligible for topic-hood, whereas relations tend to be more central to the realization of pragmatic focus structure (see Lambrecht 1996:221-235). This would imply that in an explanation of positional variation among Takivatan time words, grammatical behavior is as important as the actual positions associated with this behavior. When a time word occurs in the clause-initial auxiliary position, it is functioning as a part of the verbal predicate and is therefore encoded as a relationship. In the clause-final PTM slot, time words function as peripheral noun-like arguments and therefore have referential status. This difference influences their discursive status, since referential time words are more relevant to the focus structure of the clause, whereas event time words are a part of the pragmatic background or setting. Invariable forms in pre- or post-verbal position are modifying the verb and neither encode referents nor relationships.

The hypothesis that information structure is one of the factors that helps to determine the position of time words in a clause is appealing because similar explanations has been put forward for other languages. For instance, Quirk et al. (1985:290-291) say about English adverbs that the "selection of one position rather than another is influenced by several factors, but chief among them is the information structure of the sentence."

The applicability of this hypothesis to Takivatan time-words, the exact mechanisms that underlie it, and to what extent it is able to differentiate between the different syntactic options offered by different languages will need to be determined experimentally. An in-depth analysis of the exact effect of positional variation of Takivatan time words on information structure goes beyond the present discussion. What is clear is that such an analysis will need to go beyond binary distinctions such as the ones proposed by Lambrecht (1996) (topic vs. focus) or Halliday & Matthiessen (2004:64-87) (Theme vs. Rheme), as these bipartitions cannot possibly differentiate between the multiple positions, and grammatical options, of time words in Takivatan

Bunun. The concept of Communicative Dynamism (Firbas 1987, 1992), which allows elements in a clause to be ranked according to their contribution to the communicative goal of the message conveyed by the clause in discourse, might provide a starting point for a possible solution, since it allows elements in a clause to have different degrees of communicative salience. In such a framework, differences in the position and grammatical behavior of time words are explained in terms of the extent of their contribution to the communicative goal of their host clause.

4.4 Austronesian word class ambiguity

It has been observed that in certain Austronesian languages the word class of all or certain lexical roots and stems depends on the syntactic environment in which they occur (see e.g. Himmelmann 2007, Donohue 2008, Sasse 2009). Whatever the exact nature of this phenomenon, one would expect that an increased fluidity in word class assignment leads to larger positional variability, as words that can be realized as multiple word classes also have the potential to occur in multiple grammatical slots in the clause. From a cognitive perspective, this is more likely to happen to those concepts that do not typically function as the semantic head of core arguments or main predicates, such as words involving the expression of time, since they are not conceptually anchored to a particular pragmatico-grammatical position. To take an extreme example, in most languages, it is easier for the lexeme 'today' to belong to multiple word classes and occur in multiple grammatical slots than it is for the existential verb 'to be'.

In languages with relatively rigid word class distinctions, this cross-linguistic tendency towards conceptual ambiguity leads more easily to positional variation (as is the case with English; see §3.3). However, in certain Austronesian languages, where many word roots have an inherent grammatical ambiguity, the same conceptual ambiguity has a greater potential to trigger grammatical as well as positional variation. The observed variable behavior of Takivatan time words could therefore be simply the result of the historical development of word class distinctions in Austronesian languages, reinforced by the inherent cross-linguistic tendency of temporal expressions towards conceptual ambiguity.

Support for this hypothesis can be found in other Austronesian languages of Taiwan, such as Saisiyat and Rukai, where time words exhibit a similar positional variability as in Takivatan Bunun, with varying degrees of associated grammatical variation. Examples (92)-(94) from the Maga dialect of Rukai show the time word *la* 'then' in pre-verbal (92), post-verbal (93), clause-initial (94), and clause-final position (94).

(92) *i-ku   θab-θabrə-ɖa   ka **la** slara   ɖia   maa*
    TOP-NOM RED-young man-3S.GEN TOP then DYN.NFIN:chase 3S.OBL FP
    'Her boyfriends went after her.' (Maga Rukai; FLA 05.002.a)

(93) *i-ku   ruvee-ɖa   ka*
    TOP-when.past DYN.SUBJ:flood-3S.GEN TOP
    *si-tɨ-tɨ-tɨɨ   **la** ia   na   acile*
    DYN.FIN-RED-RED-fill   then DYN.NFIN:so NOM water
    'Everywhere was full of water.' (id.; FLA 04.001.b)

(94) ***la** ikee   na   ɖusa na val-valkɨ **la** ku   gi-ɖa*
    then there.is NOM two ?   RED-child then when DYN.SUBJ:leave-3S.GEN
    'There were two kids who were still little when they left.' (id.; FLA 03.002.a)

In the examples above, time words are grammatically invariable in each position, similar to English. Paiwan, however, shows evidence for positionally conditioned grammatical variation. In (95), *tutsu* 'now' occurs in clause-final position (or verb-medially, if one analyses the entire construction as a complex verb phrase) and is invariant. In (96), the same time word occurs in clause-initial position with a TAM marker.

(95) *sa a   tiaʔən   tutsu,*
    then LNK TOP-1S.NOM   now
    picu-aŋa   a   puʟuq a   tsaviʎ sa avan a   picu
    seven-already LNK ten   LNK year   then that.is LNK seven
    'I am now 77 years old.' (Paiwan, ts-dialect; FLA 01.001.b)

(96) *tutsu-aŋa   pacə-tutsu-aŋa   azua*
    now-already   genuine-now-already NOM:that:LNK
    'Today, we are still at that place.' (id.; FLA 01.026.g)

This alternation is remarkably similar to what we find in Takivatan Bunun. Unfortunately, detailed information on the behavior of temporal expressions, in the form of corpus data or linguistic descriptions, is presently hard to come by. Hopefully future research will fill this gap.

5. Conclusion

In this article, I have given a detailed overview of variations in the position of the four most common Takivatan time words and their variant forms. From the data, a

number of conclusions were drawn in §3. First of all, not only is the position of time words highly variable, there are also considerable differences between the positional distributions of individual time words and between different variants of the same time word. Second, this positional variability is correlated to differences in grammatical behavior and these correlations are relatively consistent across time words. Third, the correlation between positional and grammatical variability means that Takivatan time words behave differently from time expressions in English, where temporal adverbials are subject to free variation and their positional freedom has therefore little effect on their grammatical status.

In the light of these findings, linguistic typologists will have to revise how they think about time expressions, and possibly adverbial expressions in general, from a cross-linguistic perspective. It is not uncommon for grammars and grammatical theories to consider expressions of time (and place and manner) as syntactically inert peripheral constituents at the periphery of the clause. In Takivatan Bunun, time words are nothing like this, as they not only have the potential to take morphosyntactic marking but can even participate in structuring the predicate. The fundamental difference between the behavior of Takivatan and English time words also raises the question as to whether it is possible to define a valid syntactic category of time adverbials, or whether such classification should be restricted to a functional or cognitive level, leaving its exact syntactic instantiation to the devices of individual languages. Answers to these questions could be a fruitful subject for future studies.

In §4, I try to come to a tentative understanding of why time words behave as they do in Takivatan Bunun. I demonstrated that purely structural explanations, in which positional variability is motivated by grammatical or semantic mechanisms alone, have to be dismissed, as well as hypotheses that solely rely on the inherent conceptual instability of time words. More likely, positional and grammatical variability is caused by a combination of factors. These are likely to include: the inherent conceptual ambiguity of time words, which creates leeway to interpret them both as entities and events; the need to encode temporal expressions at variable levels of topical importance, which created a pressure to differentiate the instantiation of time words; and the fluid word class boundaries that Takivatan Bunun inherited from its Austronesian ancestor, which created a grammatical mechanism to easily accomplish this. How exactly these factors interact and whether they are exhaustive is a topic for further research.

Abbreviations

1E	first person exclusive plural	LOC	stationary locative
1S	first person singular	MED	medial
3S	third person singular	N	neutral argument
ABL	ablative	NEG	negative
ADV	adversative	NFIN	non-finite
AF	actor focus	NOM	nominative
AG	agent	NONPAST	non-past
ALL	allative	NVIS	non-visual
ANAPH	anaphoric pronoun	OBL	oblique
ASSOC	associative	PAUSE	pause filler
ATTR	attributive marker	POSS	possessive
AUX	auxiliary	PROG	progressive
CAUS	causative	PROX	proximal
COMPL	complementizer	PRT	particle
CONT	continuative	PRV	perfective
DEF	definiteness marker	PST	past
DEFIN	definitional	RECIP	reciprocal
DEM	demonstrative	RED	reduplication
DIR	directional	REF	referential
DIST	distal	REP	repetitive
DYN	dynamic event	RES	resultative
MIR	mirative particle	RES.OBJ	resultative object
EMOT	derivation prefix marking an emotional event	S	singular
		SIT	situational
ENUM	enumerative	STAT	stative event
ERG	ergative	STAT.NEG	negative stative event
FIN	finite	STATE	derivation prefix marking a state
FP	focus particle	STEM	stem reduplication
GEN	genitive	SUBJ	subjunctive
HABIT	habitual	SUBORD	subordinator
INCH	inchoative	TERMIN	terminative
INTENS	intensive	TOP	topical argument
INTER	interjection	TRANSFER	transfer event
IRR	irrealis	UF	undergoer focus
LF	locative focus	VIA	viative (movement along)
LNK	linker	VIS	visual

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丹社群布農語時間指示詞的位置
與語法屬性變化

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　　丹社群布農語具有獨特用於指示時間、地點與方式之詞類。這些詞按其出現於句子中不同的位置，而有不同的語法屬性。本文探討四個用於表達時間指示之詞根及其變體、位置與語法功能，包含 *dip*「那時」、*qabas*「早前」、*laupa*「現在」、*haip*「今天」。根據所蒐集的語料，我主張丹社群布農語時間指示詞在句中出現的位置與其語法屬性具有相當的關連性，並非是隨機變化的結果。最後，我認爲本文所討論時間指示詞之不同功能的產生乃源自於多數台灣南島語所共有的功能動機以及歷史因素。

關鍵詞：台灣南島語，布農語，時間指示，功能語言學，語言類型學