The Shifting Sands of Time:
Variable grammatical behaviour 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 are interesting because of their considerable positional and grammatical variation. This talk will focus on a number of relatively common time words: *(tu)dip* 'then', *qabas* 'in the old days', *laupa(ku)* 'now', and *haip* 'today'. It gives an overview of the clausal slots in which these words occur and their associated behaviours. I will present a number of explanations for this unusual positional and associated grammatical variation. I will suggest that variation in the position and grammatical behaviour of Takivatan time words is likely connected to a number of functional and historical factors that might be common to many Austronesian languages of Taiwan.

1. Introduction

1.1. Takivatan Bunun

Bunun is an endangered Austronesian language spoken in the Central Mountain Range of Taiwan. As a result of their traditional life style, which was semi-sedentary and put great importance on hunting practices, the Bunun population is spread out across a wide geographical area. Bunun settlements can be found in the counties Kaohsiung, Taidong, Nantou and Hualien. The Bunun language has five distinct dialects: Isbukun, Takbanuað, Takivatan, Takituduh, and Takibakha. This article will concentrate on the Takivatan dialect, which is spoken by less than 1000 people, mainly in two settlements in the county Hualien (De Busser 2009).

Takivatan Bunun is a verb-initial language with a very productive verbal morphology. It has a Philippine-style focus system and distinguishes between an unmarked agent focus, an undergoer focus marked with the suffix *-un*, and a locative focus marked with *-an*. (Note that the notion of 'focus' in Austronesian languages has little to do with the concept of pragmatic focus as it is used in the analysis of information structure.) Zero-marking indicates that the agent is the topic of the clause.

(1)   *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)

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

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

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

(3)   *maqtu pasiða ʔanin 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, many verbs can take verbal prefixes, the most common of which are the dynamic prefix *ma-*, as in (5) *ma-ludaq* 'beat'; the homonymous stative prefix *ma-*, as in (16) *ma-naskal* 'happy'; and the causative dynamic prefix *pa-*, as in (3) above. These three prefixes only occur on roots in verbal slots, a property that allows us to use them as a diagnostic tool to determine whether certain time words are verbs or not. Other prefixes commonly occurring on verbs are TAM affixes, most notably the perfective suffix *-in*, the irrealis prefix *na-*, and the progressive suffix *-aŋ* (see 1.3. for examples).

Arguments in a Takivatan clause normally occur in a fixed order (with some exceptions that will not be discussed here).

VERB - AGENT - INSTRUMENT - BENEFICIARY - PATIENT - LOCATIVE - PLACE/TIME/MANNER

Important about this constituent template is the fact that non-core constituents expressing place, time and manner (henceforth PTM phrases) typically occur in a dedicated clause-final slot. Note that this implies there is a grammatical distinction between core locative arguments and non-core place arguments in Takivatan.

There is no obvious and coherent class of words that behave like adverbs. Concepts that are often thought of as adverbials in other languages – including many temporal expressions – are expressed in Takivatan either by auxiliaries, as in (7) below, or by a dedicated class of words that is exclusively used for expressing place, time and manner (PTM). Takivatan auxiliaries behave like verbs: they can take TAM markers and some of them occur with focus suffixes and bound pronouns.

1.2. Goal and methodology

This article will investigate the positional variability and associated variations in grammatical behaviour of time words in Takivatan. On the basis of a classification and analysis of corpus examples, I will discuss a number of motivating factors that could lie at the basis for this variability. The present study compares the four most common time words in the Takivatan corpus, and its variant forms:

- *tudip* 'then, at that time' and *dip* 'then'
- *qabas* 'in the old days, in earlier times'
- *laupaku* 'now, at the present moment', *laupadau* 'now', *laupa* 'now' and *laupaŋ* 'a moment ago'
- *haip* 'today, now'

The corpus used in this study consists of transcriptions of audio recordings of narrative text that were gathered during two fieldwork sessions in Mayuan village, Hualien County, between 2005 and 2009. The textual data was entered and semi-automatically processed in Fieldworks Language Explorer (FLEx). Regular expression searches were used to extract tokens of relevant time words from the database. Table 1 shows the token absolute and relative token frequency of individual time words.

Form	No. of tokens	Tokens / minute of recorded text
tudip	170	0.91
dip	101	0.54
qabas	94	0.5
laupaku	58	0.31
laupadau	26	0.14
laupa (other forms)	19	0.1
haip	22	0.12

Table 1: Corpus frequency of time words

The results were then categorised by hand according to their position in the clause and certain morphological characteristics. The analysis in this article will mainly look at two grammatical surface parameters that are relatively easy to ascertain in a corpus without having to resort to semantic interpretations:

- **position**: the position in the clause and certain prosodic cues such as pauses
- **grammatical behaviour**: the word class of time words, as evidenced by their grammatical marking, such as verbal prefixes, focus marking, and TAM marking

Tokens in constructions that could not be accurately translated or that were ambiguous were disregarded in the analysis.

1.3. Expressing time in Takivatan

The majority of linguistic research into the expression of time focusses on tense, aspect and – to a lesser extent – lexical aspect or *Aktionsart*. In most languages, however, there is a much richer variety of ways to encode the temporal context or structure of an event (cf. Klein 1994: 14 & 142). In Takivatan, the grammatical and lexical mechanisms that encode the temporal features of an event are the following:

- **Properties of the verb**: The semantics of many verbs conveys information about the temporal structure of the event they describe, and this often has grammatical consequences. For instance, the stative form *halaŋ* 'ill' in (4) normally occurs with a single argument and cannot encode for both an agent and a patient (except in causative constructions; see De Busser 2011).

  (4)   *mi-halaŋ*
        STAT.NEG-ill
        'be ill' (TVN-003-xxx)

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Certain dynamic verbs, on the other hand, typically encode an agent and a patient.

(5) *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)

▪ **Auxiliaries**: A number of auxiliaries convey temporal information about the clause in which they operate. Below is a list of time auxiliaries in Takivatan.

(6) *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 really do function as auxiliary verb forms. In (7), *kitŋa* 'begin' modifies the main verb *baðbað* 'tell.' It is prefixed by IRR *na-* and triggers movement of the topic of the clause *sak* 'I' to immediate post-verbal position, a typical behaviour of Bunun auxiliaries.

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

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

▪ **Aspectual affixes**: The four most common aspectual affixes are given below. The single-word clause in (9) contains examples of the irrealis prefix *na-* and the perfective suffix *-in*. The irrealis prefix 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 (a deer being present) has ceased to exist. The second instance encodes a completive reading.

(9) *ʔukin aipa ʔita namudanin*
     ʔuka-in   aipa   ʔita   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 infix *-in-* often has a resultative meaning in nominalisations, but when it is appears in the predicate, it typically has past tense connotations, as in example (10).

(10) *Tini Tiaŋa haiða sia dusa pinanaq* .
 tini Tiaŋ-a haiða sia dusa p-in-anaq
 alone T.-ʟɴᴋ have ᴀɴᴀᴘʜ two ᴘsᴛ-shoot
 'Tiang by himself already had shoot two.' (TVN-008-002:119)

The progressive suffix *-aŋ* typically indicates an ongoing event. An example is given in (11).

(11) *Maðʔavaŋ sak tudip minliskin tu*
 maðʔav-aŋ sak tudip min-liskin tu
 embarrassed-ᴘʀᴏɢ 1s.ᴛᴏᴘ that.time ɪɴᴄʜ-believe ᴄᴏᴍᴘʟ
 'Being still embarrassed, I thought [...]' (TVN-008-002:196)

▪ **Reduplication**: Certain reduplicative patterns encode various types of lexical aspect. Not uncommonly, such patterns are iconic and express durativity, continuativity, repetition or habituality.

(12) *Maupata tu maqabasa lulusʔanaŋa*
 maupa-ta tu ma-qabas-a CV-*lusʔan-aŋ-a*
 thus-ᴅᴇꜰ.ʀᴇꜰ.ᴅɪsᴛ ᴄᴏᴍᴘʟ ᴅʏɴ-in.former.times-ʟɴᴋ ʜᴀʙɪᴛ-celebrate-ᴘʀᴏɢ-ʟɴᴋ
 'This is how people (habitually) performed celebrations in the old days.' (TVN-012-003:27)

(13) *Pakakalat asu*
 pa-CV-*kalat asu*
 ʀᴇᴄɪᴘ-ʀᴇᴘ-bite dog
 'The dogs are (repeatedly) biting each other.' (TVN-xx2-005:68)

▪ **Place-time-manner (PTM) words**: Finally, Takivatan has a grammatical class of words that express place, time or manner. They sometimes appear to behave like auxiliaries, sometimes like noun-like entities, and sometimes like something in between. Their actual distributions are all different, but most can at least occur in the clause-initial auxiliary slot and in a dedicated clause-final slot that can only contains PTM expressions (PTM words, certain nouns expressing locations, and a small set of prepositional phrases). The remainder of this article will focus solely on time words.

2. Time words

Unlike most other word classes, time words can occur in an unusual number of different grammatical slots. In each of these positions, they exhibit distinct grammatical behaviours. Different time word can vary considerably as to their positional distribution and there is even considerable variation between individual variants of the same time word. What all time words (but not all variant forms of each time word; see e.g. *laupa* in Table 2) have in common is that they can occur at least in a pre-verbal auxiliary slot and in the clause-final PTM slot.

Time words can occupy twelve distinctive positions in the clause.

1. The **clause-final Place-Time-Manner (PTM) slot** is the final grammatical slot of the clause, with exception of complement clauses and other clausal arguments. Time words in this slot generally exhibit a noun-like or prepositional-phrase-like behaviour.

2. In **pre-verbal position with a general linker -*a***, time words are typically invariant, and it could be argued that they modify the following verb.
3. In **pre-verbal position without a linker**, time words tend to be grammatically invariant, i.e. they do not take any verbal or other morphology. Attestations in this position are relatively rare, so no definitive conclusions can be drawn, but it is most likely that time words in this slot are best analysed as pre-verbal time words with a linker -*a*.
4. **Between an auxiliary and main verb**, the exact status of time words is variable. Some instances appear to behave like auxiliaries, others appear to be invariant forms.
5. Certain time words immediately **following the main verb**, or the main verb plus a core argument, but do not occur in not in clause-final position. These forms are always grammatically invariant and cannot be analysed as verbal forms. They could be analysed as nominal arguments (although it is not clear which constituent they would encode) or as invariant adverbial forms.
6. Many time word can function as the **first or only auxiliary without a complementiser *tu***. Despite the absence of a complementiser, these forms are best analysed as auxiliary verbs, because they take verbal morphology
7. Time words can occur as **first or only auxiliary followed by a complementiser *tu***. The presence of a complementiser clearly indicates that they function as auxiliaries. However, their grammatical behaviour varies. For instance, the form *dip* 'then' never takes any verbal morphology in this position, but other time words do.
8. Certain time words can function as the **main verb** of a clause. Their verbal status is most obvious when they are the only word in a clause and take some sort of verbal morphology.
9. All time words except for *laupa* and *haip* have been attested **in directional or locative derivations**. In these positions, they are prefixed by a verbalising directional or locative prefix and the resulting form functions as a directional/locative verb.
10. Only *dip tu* 'and then' can function as a **discourse marker**. These forms have no grammatical function within the clause, but function at a pragmatic level.
11. Certain time words can function as an attribute of a noun phrase. They can occur in pre- or post-nominal position and are always invariant.
12. Three of the time words in this study (*tudip*, *qabas* and *laupaku*) can function as the head of a noun phrase.

Table 2 gives an overview of the distribution of each of these time words across these twelve positions. Note that the corpus counts are indicative only, since they exclude all instances for which the exact position or status could not be unambiguously determined. Note also that the total number of tokens sometimes deviates from the automatic counts in Table 1. Sections 2.1.-2.4. describe the positional variation and illustrate four the most common positions for each time word, with the exception of *tudip*, where examples for all attested positions are given.

2.1. *Tudip* and *dip* 'then'

2.1.1. *Tudip*

By a considerable margin, *tudip* 'then, at that time' is the most commonly occurring time word in the Takivatan corpus. It creates an anaphoric time reference in the past, i.e. it typically indicates that its host clause occurs in a past time period that is identified in the discourse context preceding it. It has been attested in 8 of the 12 positions defined above.

	Tudip		Dip		Qabas		Laupaku		Laupadau		Laupa		Haip	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1. PTM slot	9	*16*	2	3	14	*19*	12	*26*	10	*43*	0	0	3	*17*
2. Pre-verbal with linker -*a*	6	*11*	0	0	11	*15*	0	0	0	0	0	0	0	0
3. Pre-verbal without linker	0	0	0	0	3	4	2	4	1	4	0	0	0	0
4. Between AUX and main verb	15	*27*	4	5	5	7	6	*13*	1	4	2	*17*	7	*39*
5. After the main verb	0	0	0	0	6	*8*	11	*24*	2	*9*	1	*8*	0	0
6. First or only AUX without complementiser *tu*	8	*14*	6	*8*	19	*26*	5	*11*	2	*9*	8	*67*	3	*17*
7. AUX with complementiser *tu*	5	*9*	16	*20*	6	*8*	1	2	0	0	0	0	1	6
8. Main verb	9	*16*	4	5	2	3	0	0	1	4	1	*8*	0	0
9. Directional or locative derivation	1	*2*	5	*6*	4	5	3	7	5	*22*	0	0	0	0
10. Discourse marker	0	0	43	*54*	0	0	0	0	0	0	0	0	0	0
11. Attribute of an NP	0	0	0	0	2	3	3	7	1	4	0	0	4	*22*
12. Head of an NP	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	

Table 2: Constructional variation of time words

Approximately 15% of all instances of *tudip* occur in the clause-final PTM slot. In this position, the attestations of *tudip* are always grammatically invariable.

(14) *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)

When *tudip* immediately precedes the main verb and has a suffix LNK -*a,* it is always grammatically invariant (it does not take any other affixal forms). These instances account for approx. 11% of the corpus examples.

(15) [...] *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)

More than a quarter of the attestations of *tudip* occur after one or more auxiliaries but before the main verb. Instances in this position are best classified relative to two extremes that clearly belong to different grammatical constructions. The first is exemplified by cases in which *tudip* follows the auxiliary, but precedes a complementiser *tu* that belongs to the auxiliary. For instance, the auxiliary *mastaʔan* 'most, exceedingly' in (16) is obligatorily

followed by COMPL *tu*, and it is clear that the time word is inserted between the auxiliary and the complementiser.

(16) *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)

This indicates that in these constructions *tudip* is not functioning as an auxiliary. It could be interpreted either as a noun phrase or an adverbial phrase. Since the form is always invariant in this context, the latter is more probable.

The second extreme consists of cases where *tudip* is modified by TAM marking, in the example below PRV *-in*.

(17) *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)

In this case, the time word is clearly not grammatically invariant and does occur in a grammatical position in which it can unambiguously be analysed as an auxiliary. For examples such as the second instance of *tudip* in (18), it is impossible to unambiguously determine which of the two categories above the form belongs to.

(18) *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*   CV-*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)

In clause-initial position (approx. 14% of instances), *tudip* behaves unambiguously as an auxiliary verb. It almost always has TAM marking and occurs in a position that is typically occupied by auxiliaries.

(19) *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)

Less commonly (in approx. 9% of all instances), it also occurs as an initial auxiliary followed by a complementiser. In the example below, the presence of a progressive suffix *-aŋ* and of the complementiser *tu* is a strong indication that *tudip* functions as an auxiliary verb.

(20) [...] *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
     '[life ...] in those days that was called sinkuðakuða (a life of labour)' (TVN-008-002:234)

Tudip also commonly occurs as the main verb (16% of instances), usually as the only verbal form in a subordinate clause. In these constructions, its status as a verb is often indicated by TAM affixes or, as in (21), by a verbal prefix.

(21) *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*   *CV-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)

It is possible to create directional and locative derivations from the root *tudip*, as in (22).

(22) *paisqatudipina Bunun minhaiða*
     paisqa-tudip-in-a   *Bunun*   *min-haiða*
     CAUS.ABL-that.time-PRV-LNK Bunun INCH-exist
     'And from that time onwards, the Bunun became prosperous.' (TVN-012-001:33)

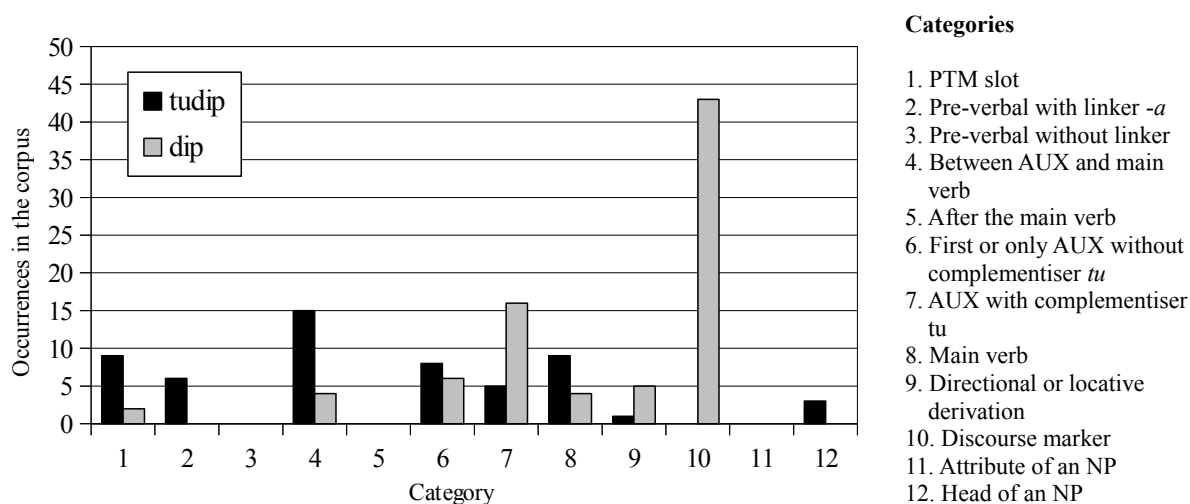Finally, the root *tudip* occasionally occurs in the nominalisation *tudipʔað* 'a person of that period.'

Categories
1. PTM slot
2. Pre-verbal with linker *-a*
3. Pre-verbal without linker
4. Between AUX and main verb
5. After the main verb
6. First or only AUX without complementiser *tu*
7. AUX with complementiser *tu*
8. Main verb
9. Directional or locative derivation
10. Discourse marker
11. Attribute of an NP
12. Head of an NP

Figure 1: Comparison of positional distribution of tudip and dip

2.1.2. Dip

It is likely that *dip* and *tudip* are historically related, although how both forms diverged is unclear. Also semantically, both forms are very similar. Like *tudip*, the form *dip* 'then' creates an anaphoric time reference in the past. At the moment, it is not clear what the exact semantic or functional difference between the two forms is. However, the positional distribution of

tudip and *dip* are markedly different, as Figure 1 illustrates.

Most strikingly, more than half of all occurrences of *dip* function as discourse marker expressing hesitation. In this function, *dip* is usually followed by the complementiser *tu*, but not by any complement clause, and can occur in almost any position in the clause. There is clear evidence that the discourse marker *dip tu* is not grammatically integrated in the clause. For instance, in (23) *dip tu* immediately follows *natudipin* 'then.' It is difficult to explain this from a grammatical, or a semantic, point-of-view, unless one assumes that the form is here used as a hesitation marker that operates outside the grammatical influence of the clause.

(23) *Aupa natudipin, dip tu, paun tu madaiŋa kainaskalan*   .
      aupa   na-tudip-in   dip   tu   paun   tu
      thus   IRR-that.time-PRV then   COMPL   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)

We saw that in pre-verbal position, *tudip* occurs very often between an initial auxiliary and the main verb, and its grammatical status is typically ambiguous. *Dip*, on the other hand, typically occurs in positions where it clearly functions as an auxiliary. Interestingly, its behaviour tends to be different depending on whether it is followed by COMPL *tu*. When it is not followed by a complementiser (approx. 7.5% of all corpus attestations), *dip* typically has some sort of verbal morphology, most often the perfective marker *-in*.

(24) *Dipin babaðbaðin tu*
      dip-in   CV-baðbað-in   tu
      then-PRV   CONT-have.conversation-PRV COMPL
      'then they were talking' (TVN-008-002:107)

On the other hand, when *dip* occurs in the auxiliary slot and is followed by COMPL *tu* (approx. 20% of corpus occurrences), it is always invariant, i.e. it does not take any verbal or nominal morphology, as in the example below.

(25) *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)

A possible explanation for this contrast could be that the absence of the complementiser as a marker of the verbal status of *dip* other indicators need to be used to clearly indicate the time word's grammatical status as an auxiliary.

Dip has been attested in locative and directional derivations, as in (26).

(26) *Idip tu amin.*
      i-dip   tu   amin
      LOC-there   COMPL   all
      'All things are over there.' (TVN-008-vxxx:22)

In contrast to *tudip* and other time words, it is occassionaly used with a spatial meaning, as in the form *mundip* 'go there' (TVN-008-002:125).

2.2. *Qabas* 'in the old days'

The time word *qabas* 'in the old days, in earlier times' refers to a period in the remote past. It is the most versatile of the time words in this study and has been attested in all positions but one (it cannot function as a discourse marker).

In more than a quarter of all attestations, *qabas* functions as a clause-initial auxiliary without a complementiser *tu*. Most often, the time word occurs either without any verbal morphology, as in (27), or with a verbal prefix DYN *ma-*, as in (28).

(27) *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 have us his blessing.' (TVN-008-002:6)

(28) *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)

It can take TAM affixes, but these forms are relatively rare. Forms of *qabas* followed by a free topical argument occur, but no forms with bound pronouns have been attested. Approximately 8 % of all instances of *qabas* function as auxiliaries and are followed by a complementiser *tu*. These forms behave in all other respects like the forms without COMPL *tu*.

Approximately 19% of all attestations of *qabas* occur in the clause-final PTM slot.

(29) *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)

In this position, *qabas* often appears as a bare root, but not necessarily so. Forms with the focus suffix LF *-an*, the progressive suffix *-aŋ* and the verbal prefix DYN *ma-* have been attested.

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*.

(30) *Maupata qabasa paun tu titiʔun tu masðaŋi*
    maupa-ta   *qabas-a*   *paun*   *tu*   *titi-un*   *tu*   *masðaŋ-i*
    thus-DEF.REF.DIST   in.former.times-LNK   be.said   COMPL   meat-UF   COMPL   same-PRT
    'This was how in the old days the meat was distributed in the same way' (TVN-012-001:124)

We saw that *tudip* is always morphologically invariant in this context. This is also the case for

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most occurrences of *qabas*, although occasional morphologically complex forms with the verbal prefix DYN *ma-* have been attested.

Certain invariant forms of *qabas* follow the main verb, but precede any complementiser belonging to the main verb (approx. 8 % of the attestations). These forms either follow or precede core arguments accompanying the main verb, as illustrated in (31)-(32).

(31) *paun aipun qabas tu Dastalanam*
     paun   ***aipun***   ***qabas***   *tu*   *Dastalanam*
     be.called   DEM.S.MED.VIS in.former.times COMPL   D.
     'That [place] was in the former times called Dastalanam' (TVN-012-002:167)

(32) *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)

Being always invariant and not obviously occuring in any nominal or verbal slot, these forms are probably best analysed as adverbials.

2.3. *Laupaku*, *laupadau* and other forms of *laupa* 'now'

The variants of the time word *laupa* 'now' are particularly interesting to the present discussion because they illustrate that three different variants based on the same root, and with very similar semantic profiles, still exhibit distinct positional and grammatical behaviours, as is shown in Figure 2. 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' (from *laupa* + PROG *-aŋ*).

Categories

1. PTM slot
2. Pre-verbal with linker *-a*
3. Pre-verbal without linker
4. Between AUX and main verb
5. After the main verb
6. First or only AUX without complementiser *tu*
7. AUX with complementiser *tu*
8. Main verb
9. Directional or locative derivation
10. Discourse marker
11. Attribute of an NP
12. Head of an NP

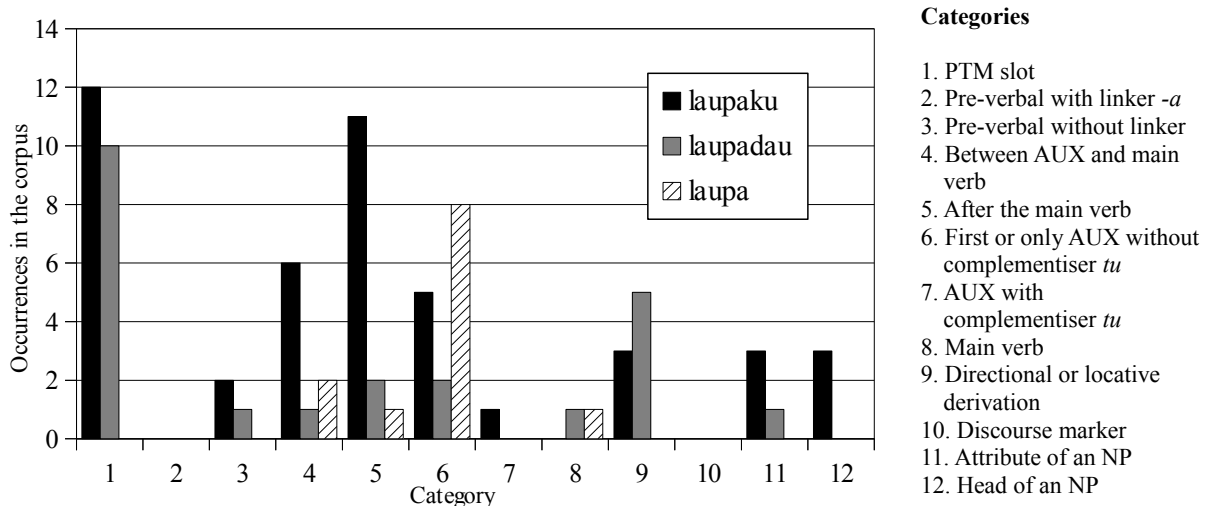*Figure 2: Comparison of positional distribution of laupaku, laupadau and other forms of laupa*

Some differences are immediately apparent. While both *laupaku* and *laupadau* regularly occur in the PTM slot, 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 (category 5) with any regularity. On the

other hand, instances of *laupa* without *-ku* or *-dau* constitute more than fifty percent of all auxiliary occurrences of the root. In this position, *laupa* never occurs with the complementiser *tu*. *Laupadau* is mainly used in the PTM slot or in locative/directional derivations. There is no apparent semantic or functional reason for this positional variation: with the exception of *laupaŋ*, which typically means 'a moment ago', all variants of *laupa* mean 'now; at the present moment'. We will now have a look at each form in detail.

2.3.1. *Laupaku*

The time word *laupaku* 'now' is probably best regarded as a morphologically complex form consisting of the root *laupa* and the suffix *-ku*, which has so far only been attested in this single form and the historical origin of which is 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. On the other hand, it does occur quite commonly the determiners DEF.SIT.PROX *-ki* DEF.SIT.MED *-kun* and DEF.SIT.DIST *-ka* (see De Busser 2009: 416-440 for a discussion of determiners in Takivatan Bunun).

Approximately 25 % of the attestations of *laupaku* are to be found in the clause-final PTM slot.

(33)   *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)

In this position, *laupaku* can occur with determiners, as in (34).

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

Another 25 % of the instances of *laupaku* in the corpus occur immediately after the main verb or after the main verb plus another invariant element modifying the verb.

(35)   *haiða laupaku paun tu sia padantun maʔuvul*
       haiða laupaku paun   tu   sia   padan-tun   ma-ʔuvul
       have   now   be.said COMPL   ANAPH   fine-leaved.reed-DEF.REF.MED STAT-flexible
       'and now there is what is called a flexible kind of reed' (TVN-012-001:44)

These instances are always morphologically invariant; they cannot take any definiteness markers. Just like *qabas* 'in the old days', *laupaku* is best analysed as an adverbial in these contexts.

Laupaku also occurs between an auxiliary and the main verb, as in (36). It is always grammatically invariant in this position. Since it consistently occur after the auxiliary, but before any complementiser (if present), it is best analysed as an adverbial in this position.

(36) *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)

About ten percent of all attestations of *laupaku* (5 tokens) occur in the initial auxiliary slot without a complementiser *tu*.

(37) *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)

They have never been attested with verbal morphology or with bound pronouns.

2.3.2. *Laupadau*

Laupadau most commonly occurs in the PTM slot (approx 43% of all occurrences). It does not take any verbal morphology in this position, but can occur with the three situational definiteness markers (*-ki*, *-kun*, and *-ka*) mentioned in the previous section.

(38) *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-EMO-DEF.SIT.DIST
    ' My home is in this village now' (TVN-003-xxx:5)

Laupadau often occurs in the form *saulaupadau* 'until now, up to this day.' No other locative or directional derivations have been attested so far.

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

2.3.3. *Other forms of laupa*

The remaining forms of *laupa* make up less than 15% of all occurrences and only 12 forms have been recorded. It is therefore difficult to draw any sound conclusions about its positional distribution. What is clear is that more than half of this group consists of the word *laupaŋ* 'a moment ago', which is a contraction of *laupa* 'now' and the progressive suffix *-aŋ*.

Two thirds of all instances occur in the clause-initial auxiliary slot, but are not followed by a complementiser. It is clear from examples like
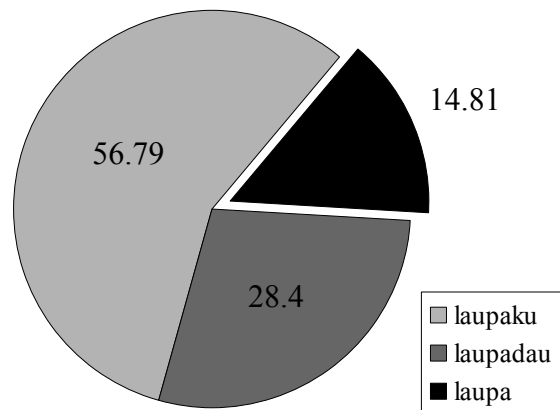

Figure 3: Relative frequency of variants of the root laupa 'now'

56.79
14.81
28.4

laupaku
laupadau
laupa

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(40) that these forms function as auxiliaries, because they trigger left-movement of the topical argument (*aipun* in this particular case).

(40)   *Laupaŋ aipun munkumbu*
      laupa-aŋ   aipun   mun-kumbu
      now-PROG DEM.S.MED.VIS ALL-inside
      'Now she went inside [...]' (TVN-008-003:199)

2.4. *Haip* 'today'

The final time word, *haip* 'today', has the lowest corpus frequency of the five forms under scrutiny in this article. Its low frequency makes it difficult to make any reliable statements about its positional distribution. Most commonly, *haip* occurs between an auxiliary and the main verb of the clause.

(41)   *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)

Unlike other time words, *haip* also regularly occurs as a nominal modifier, as in (42).

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

This might be so because it is more noun-like than other time words. It refers to a well-delineated period in time ('this day') and therefore, one could argue, has more straightforward referential characteristics than time words that refer to a vague time period (e.g. *qabas* 'in the old days').

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

(43)   *haipaŋ qaniʔan ŋausuŋ ʔita makusvaʔi siati daŋiʔanana*
      haip-aŋ   qaniʔan
      today-PROG   day
      ŋausuŋ   ʔita   makusva-i   sia-ti   daŋiʔan-an-a
      first   there.DIST 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)

2.5. Intermediate conclusion

The previous section has demonstrated that time words in Takivatan can occur in an unusually large number of positions in the clause. This positional freedom is not random for three main reasons.

First, although time words can occur in a wide range of positions, it would be hard to call this free variation, as distinct grammatical behaviours tend to be associated with different positions. This is not the case in typical languages with a free constituent order. Consider, for instance, examples (44)-(46) from Warlpiri (Pama-Nyungan, Australian), which illustrate that noun phrases in Warlpiri can occur in any position and any order in a clause.

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

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

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

There is a crucial difference between positional variation of noun phrases in Warlpiri and positional variation of time words in Takivatan. 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 always occurs 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 behaviour.

The grammatical behaviour of Takivatan time words, on the other hand, varies considerably depending on their position in the clause. In initial position, time words often behave like auxiliary verbs: they might occur with a variety of verbal affixes, as in (47), (48), (49); take pronouns, as in (48); trigger left-movement of the topical argument, as in (47); and be followed by a complementiser, as in (49).

(47) *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)

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

(49) *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)

Time words occuring in immediate post-verbal position are always grammatically invariant, as illustrated in (35) and in (50) below.

(50) *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)

In the clause-final PTM slot, time words appear in complementary distribution with prepositional phrases (compare (51) and (52)). Time words in this slot rarely take verbal morphemes, but certain forms regularly occur with definiteness markers.

(51) *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)

(52) *MinaminꞋak han Taivan*
      minamin-Ꞌak   han   Taivan
      be.used.to-1s.TOP in   Taiwan
      'I am used to being in Taiwan' (TVN-xxx-xx1:154)

As such, Takivatan time words do not so much occur in different positions as that they have the potential to be instantiated in a clause as different word classes in distinct grammatical slots with specific positional restrictions associated to them. In other words, the different positions in which time words can occur are not merely surface variations that reflect a single grammatical slot in the underlying structure. Rather, each position represent its own distinct grammatical slot with associated restrictions on word class and on morphological and grammatical behaviour. Obvious exceptions are positions 3 and 4 in Table 2, which are ambiguous between two grammatical slots. Instances of time words in these positions function sometimes as auxiliaries, and sometimes as invariant forms, and we will see that it is not always easy to classify corpus examples as belonging to either one or the other.
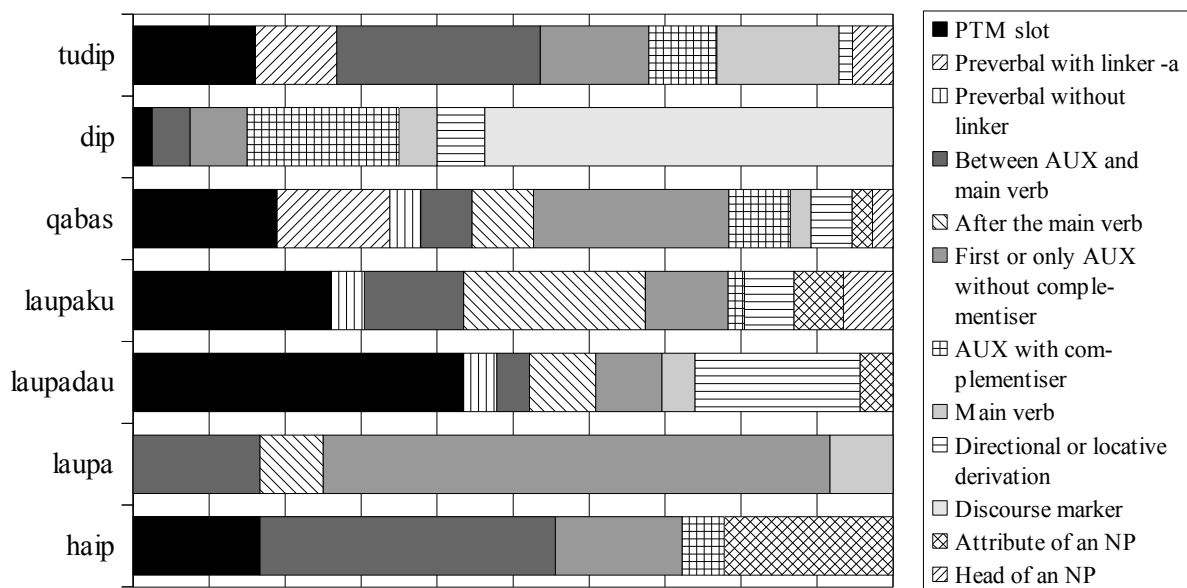

Figure 4: Positional variation per time word (% of total number of occurrences)

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2.5.2. Lexical and sub-lexical restrictions

Positional variation also has clear lexical (and sub-lexical) restrictions. All time words are not evenly distributed across their positional options. On the contrary, positional distribution of individual time words varies greatly and different forms of the same time word can have radically different distributions. This is obvious from Figure 4, which is a visualisation of the numerical data in Table 1 as a bar chart.

Certain time words occur in positions that are not attested for others. For instance, *tudip* 'then' can occur immediately before the verb, *laupa* 'now' cannot. Some time words, like *laupa* have a preference for a small number of positions. Others, like *qabas* 'in the old days,' are dispersed across all possible positions. In addition, it is obvious from the chart that different forms of the same time word can have radically different distributions. This is most markedly the case with the three main variants of *laupa* 'now.' Their positional preferences are so radically different that one could wonder if these forms should be considered to be variants of the same root or different lexemes.

Most of these positions are correlated with specific grammatical behaviours. Time words in initial position tend to behave like auxiliary verbs. Time words in immediate pre-verbal and post-verbal position are often invariant and appear to modify the verb. Time words in clause-final position might be best explained as adverbials.

2.5.3. Interpersonal variation

Something that is not immediately clear from data presented so far is that there is considerable inter-speaker variation in the use of time words. The sample used in this study is mainly based on a total of 3 hours 7 minutes of recorded narrative text from three informants (Uli, F, 18m; Vau, M, 1h40m; Tulbus, M, 1h09m). Figure 5 plots their individual use of different time words, expressed as the average number of occurrences of each time word per minute of recorded text.
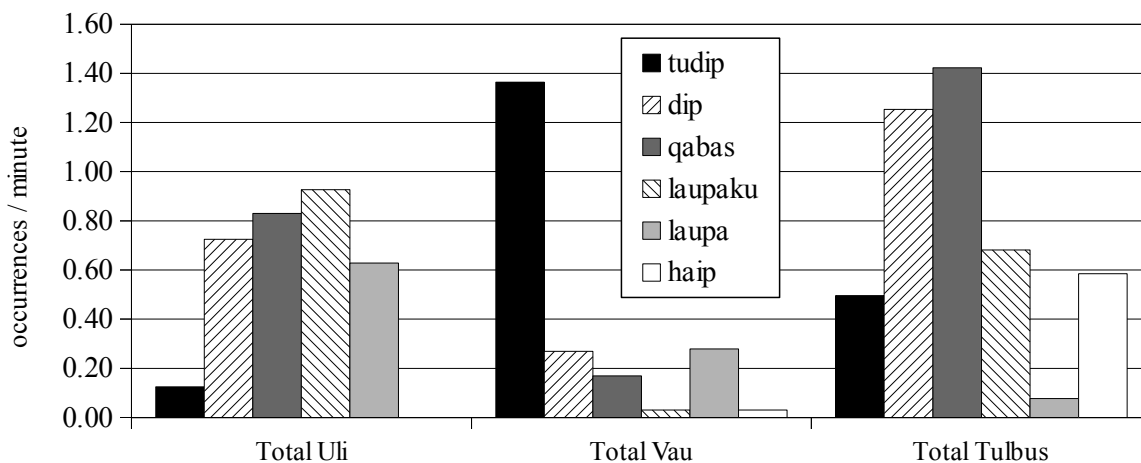

Figure 5: Breakdown per speaker of the normalised frequency of occurrence of time words (measured in occurrences per minute of recorded text)

It is clear that the selection of particular time words is strongly influenced by individual preferences. For instance, Vau uses *tudip* 'then' almost three times as much as Tulbus does. Additional research is necessary to determine whether this skewed distribution has an influence on positional variation. There are some signs which indicate that this effect is

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minimal and that individual speakers do not select for particular positions across a range of time words. For instance, *dip* 'then' and *qabas* 'in the old days' have a similar frequency of occurrence in the narratives of all three speakers, but still have a radically different positional distribution (see Figure 4). Conversely, the positional distribution of *tudip* 'then' and *qabas* follows a rather similar pattern (see Fig. 4), but their frequency of occurrence is highly skewed towards certain speakers. Both observations suggest that while the frequency of occurrence of individual time words is not constant among speakers, the actual distribution of these time words across possible positions is fairly stable.

3. Possible reasons for positional variability

The previous sections are a careful description of the extent and nature of positional variation of Takivatan time words. We still do not know what the reasons are for (a) the wide range of variability and (b) the preference of individual time words to occur in certain constructions? These two questions will be discussed in this section. The following subsections will concisely touch on a number of structural, cognitive-functional, and historical-typological explanations for the variability of the positional, and associated grammatical, behaviour of time words.

3.1. Structural 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 grammatical or semantic structure of the clause.

Givón (1983: 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 functional need to vary their scope (see Klein 1994: 159), analogous to a scope analysis of quantifiers (Reinhart 1997, Kuno & Takami 2002 *inter alia*). However, while the notion of variable scope does make sense for quantifiers, it is much more problematic for time words. Conceptually, the standard assumption would be 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 for the entire event. Consider for instance (53) and (54).

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

(54) *tudip tu mainaʔitaʔin malmananu*
      tudip   tu   maina-ʔita-in   mal-ma-nanu
      that.time   COMPL   ABL-then-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 complementiser. Nevertheless, both forms mean exactly the same and no genuine difference in scope can be observed. For instance, it does not make sense to say that in (53) *only* has scope over the topical argument and in (54) over the entire clause, or vice versa.

A closely related explanation could take 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 it might be able to 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 second 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 (51) with (55) below.

(55)   *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 (51), *qabas* 'in the old days' is in clause final position and is preceded by a core argument; in (55), 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.

We can therefore tentatively conclude that there are no obvious structural explanations for the positional variability of Takivatan time words.

3.2.   Cognitive-functional explanations

From a cognitive perspective, one could argue that the notion of time – or more specifically of temporal setting – has an inherent ambiguity in most languages with regards to its ontological status. It is often unclear whether the temporal setting of an event should be encoded as an event or as a referential entity. One would expect that such ambiguity is reflected in the surface structure of the language and 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 has the potential to explain why time words sometimes exhibit more verb-like behaviours (in clause-initial positions) and sometimes more noun-like behaviours (in clause-final position). It fails at explaining why is clause-initial positions are associated with verb-like behaviour and clause-final positions with noun-like behaviours, but one could argue that this is merely the consequence of the grammatical slot in which the time words occur.

There is no real evidence for the main hypothesis, namely that time is an inherently ambiguous concept in human cognition. Since this claim is made about human cognition in general, sufficient evidence could only be gathered by conducting a cross-linguistic study. More importantly, positing ambiguity as a potential source of variability of time words, be it in Takivatan or in language in general, does not explain why the Takivatan situation is different from that in other languages. For instance, time adverbials in English also have a variable placement, as illustrated in (56)-(58).

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

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

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

In these examples *today* occurs in final, medial, and initial position. However, in each position the time word clearly functions as the head of an adverbial phrase, modifying either the verb, the verb phrase, or the clause. As we explained in 2.5.1, this is very different from Takivatan time words, which are instantiated in different grammatical slots and, depending on their position, have to be analysed as belonging to different word classes.

A functional explanation would look for a relationship between positional variation and information structure. It is often assumed that there is some sort of relation 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, one could therefore argue that positional variation in the realisations of time words is motivated by the variable communicative needs of Takivatan speakers. In other words, positional variation in time words reflects differences in communicative intent or pragmatic salience.

How this could work *exactly* is not clear at this moment, but it is possible to formulate an initial hypothesis. Lambrecht 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' (Lambrecht 1996: 75). Only discourse referents are normally eligible for topic-hood, whereas relations tend to be more central to the realisation of pragmatic focus structure (see Lambrecht 1996: 221-235). This implies that for an explanation of positional variation among Takivatan time words, their grammatical behaviour is equally important as the positions that are associated with this behaviour. 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. 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 particularly appealing because it has been postulated 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." However, its applicability to the Takivatan case, and its exact workings, will need to be determined experimentally. An in-depth analysis of the exact effect of positional variation of time words on information structure is beyond the present discussion. What is clear is that an adequate description will need to go beyond binary distinctions such as the ones proposed by Lambrecht 1996 (topic vs. focus structure).

3.3. Historical-typological explanations

An alternative (or complementary) interpretation would be that positional variability is not the result of a communicative need, but rather the consequence of communicative or grammatical

ambiguity. Different sources for such ambiguity could be identified; only two will be touched on here.

First, it is possible that there is something about the semantic and grammatical structure of time words that makes them inherently ambiguous (or, in some languages, historically unstable). Cross-linguistically, one would then expect a tendency for time expressions to exhibit a more variable behaviour than most other word classes in a language. In some languages, even those with a relatively strict word order, this could manifest itself in positional variability. A language like English appears to support this assumption. For instance, Quirk et al. (1985: 490) distinguish seven distinct grammatical positions for adverbials in English, and give a time expression as an example:

(59)   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)

Again, this does not explain why Takivatan is different from those languages (remember that its time words are realised as different word classes depending on their position), but it might provide us with an explanation of why variety arose in the first place. The problem with this explanation is that in many languages, the behaviour of adverbials (expressing time and other categories) is not variable at all. For instance, in Qiang (a Tibeto-Burman language) time words typically occur in clause-initial position (LaPolla 2003: 215), and this pattern appears to be not uncommon among Tibeto-Burman languages.

Finally, word class ambiguity is concept that is especially relevant to a long-standing discussion in Austronesian linguistics. It has been observed that in many Austronesian languages the word class of many lexical roots and stems depends on the syntactic environment in which they occur (see Himmelmann 2006, *inter alia*). It is to be expected that an increased fluidity in word class assignment leads to larger positional variability, as words that can be realised as multiple word classes can also occur in an increased number of grammatical slots. One could assume that this is especially the case for word classes that do not typically function as the semantic head of core arguments or main predicates.

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. Examples (60)-(62) are from the Maga of Rukai. They show the time word *la* 'then' in preverbal (60), postverbal (61), clause-initial (62), and clause-final position (62).

(60)   *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; FLC 05.002.a)

(61)   *i-ku*   *ruvee-ḍa*   *ka*
      TOP-when.past   DYN.SUBJ:flood-3S.GEN   TOP
      si-ti-ti-tii   **la**   *ia*   *na*   *acile*
      DYN.FIN-RED-RED-fill   then   DYN.NFIN:so   NOM   water
      'Everywhere was full of water.' (FLC 04.001.b)

(62)   **la**   *ikee*   *na*   *ḍusa* *na* *val-valkɨ*   **la**   *ku*   *gi-ḍa*
      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.' (Maga Rukai; FLC 03.002.a)

4. 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. First, time words exhibit an large degree of positional variability that is correlated to differences in grammatical behaviour (unlike a language like English, where positional freedom of adverbials has little effect on their grammatical status). Second, there are considerable differences between the positional distributions of individual time words and between different variants of the same time word. Third, while there is considerable interpersonal variation in the frequency of use of individual time words, this does not appear to bias individual speakers in favour of or against certain positional options.

In section 3, I tried to come to a tentative understanding of why this unusual positional variability occurs. I demonstrated that purely structural explanations, in which positional variability is motivated by grammatical or semantic mechanisms alone, have to be dismissed, as does the hypothesis that positional variation in time words is the result of an inherent cognitive instability in the perception of time words. More likely, positional variability is caused by the ever-changing communicative needs of Takivatan speakers. In this view, different clausal positions of time words, and their associated grammatical behaviours, can be explained in terms of the status of the temporal expression in the information structure of the clause. From a typological perspective, the positional and grammatical variability of Takivatan time words could partly be a consequence of the fact that they occur in a language where word class boundaries are rather fluid. Note that the information structure hypothesis and the fluid word class hypothesis are not necessarily mutually exclusive and it is very likely that variations in the positions of time words need to be explained by means of a combination of factors. What exactly these factors are and how they work is the topic for further research.

Abbreviations

1E	first person exclusive plural	ATTR	attributive marker	DYN	dynamic event
1S	first person singular	AUX	auxiliary	EMO	emotive particle
3S	third person singular	CAUS	causative		
ABL	ablative	COMPL	complementiser	EMOT	derivation prefix marking an emotional event
AF	actor focus	CONT	continuative		
AG	agent	DEF	definiteness marker	ERG	ergative
ALL	allative	DEFIN	definitional	FIN	finite
ANAPH	anaphoric pronoun	DEM	demonstrative	FP	focus particle
ASSOC	associative	DIR	directional	GEN	genitive
		DIST	distal	HABIT	habitual

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INCH	inchoative	NVIS	non-visual	S	singular
INTENS	intensive	OBL	oblique	SIT	situational
INTER	interjection	POSS	possessive	STAT	stative event
IRR	irrealis	PROG	progressive	STAT.NEG	negative stative event
LF	locative focus	PROX	proximal	STATE	derivation prefix marking a state
LNK	linker	PRT	particle	SUBJ	subjunctive
LOC	stationary locative	PRV	perfective	SUBORD	subordinator
MED	medial	PST	past	TERMIN	terminative
N	neutral argument	RECIP	reciprocal	TOP	topical argument
NEG	negative	RED	reduplication	UF	undergoer focus
NFIN	non-finite	REF	referential	VIS	visual
NOM	nominative	REP	repetitive		
NONPAST	non-past	RES.OBJ	resultative object		

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