

Cause and Result Clauses from the Ramkhamhaeng Inscription to Modern Thai^{*}

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Fifteen cause and resulting linking words in Thai from the Ramkhamhaeng inscription of the Sukhothai period to Modern Thai have been investigated in this paper. Word classes have been assigned to them and their syntactic properties have been analyzed within the lexibase dependency framework and represented in dependency stemmas. The semantic characteristics and historical development of these linking words are then given afterwards.

The study shows that cause and result clauses are linked by various syntactic mechanisms: clause-linking verbs, adverbs, extension and non-extension prepositions, and extension and non-extension nouns. We also find that the cause linking words outnumber the result linking words. It is also shown that probably only four linking words out of fifteen, *ciy*, *kôo*, *phāa* and *phrô?* were not derived from other word classes. The others were either derived from verbs or nouns, for example, *nāy*, a clause-linking verb was derived from the original verb *nāy* 'to connect', or were the result of the combination of a linking word and a dependent verb or a dependent noun; e.g., *hèet day nán* and *phrô? hèet wāa*. There was a trace of phonological reduction in some linking words; for example, *prô?chēnán* from *prô?chēnnán*.

Key words: Ramkhamhaeng, Sukhothai, Modern Thai, linking words, lexibase

1. Introduction

In this paper, we investigate the words used to express the meanings of cause and result obtaining between pairs of clauses in the Ramkhamhaeng inscription, in the Sukhothai, Ayutthaya, and Ratanakosin periods, and in Modern Thai to show that lexibase dependency grammar can be used to analyze complex sentences. We identify fifteen words we consider to have such a linking function, assign a word class to each of them based on its syntactic function, and give a representative syntactically analyzed sentence for it. We also discuss semantic characteristics and historical developments of

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these linking words. The framework used in the syntactic analysis for all stages is lexicase dependency grammar.

We would like here to give a brief description of lexicase dependency grammar for the readers who probably are not familiar with it. Lexicase dependency grammar can be viewed as having three salient characteristics: It is generative (formal and explicit), strictly constrained, and universal: One of the universal constraints it imposes on language is a strictly limited inventory of word classes: no language may contain a word class which is not identical with, or a subclass of, one of the following eight classes: V (verb), N (noun), Adj (adjective), Det (determiner), Adv (adverb), P (preposition or postposition), Cnjc (conjunction), or Sprb (sparrbaum), formerly Sprt (sentence particle), though not every language necessarily utilizes all eight classes. Another important constraint is that lexicase is monostratal. There is no deep structure and no transformation.

Lexicase dependency grammar defines a preposition as a word that forms an exocentric construction with a phrase, where an exocentric construction is defined as one in which the dependent phrase is an obligatory part of the construction. (For more on lexicase dependency grammar, see Savetamalya 1989, 2000, and Starosta 2001).

Some features used in this paper need clarification: [+xtns] of P stands for ‘extension’ indicating that the preposition requires a subordinate verb; [-xtns] indicates that the preposition does not allow a subordinate verb but as a preposition it requires a noun; [+rslt] stands for ‘result’ and [+rsn] stands for ‘reason’.

Data used in the paper were taken from the following sources: for the Sukhothai data, from Inscriptions 1, 2, and 3, and from Traiphum Pra Ruang; for the Ayutthaya data, from ‘kham hay kaan Khun Luang Haa Wat’ (Story told by Khun Luang Haa Wat) and ‘Phra Rattcha Phongsawadarn chabap Luang Prasert’ (Krung Kao Annal, the Luang Prasert Version); for the Ratanakosin period, from the Three Seals and from Announcements in the Reigns of Ramas V and VI. To collect data from these sources, full texts were used for the three inscriptions and the Ayutthaya data; for other sources, a random sampling of texts at every two pages up to every five pages depending on the text length was used.

For Modern Thai data, official letters, excerpts from journals and academic newsletters were used, altogether approximately 30 pages in length. An unpublished thesis on conjunctions in the Sukhothai; Ayutthaya and Ratanakosin Periods was used to support the data selected (Chotitearawang 1981).

Altogether fifteen connecting words are under study: n̄aŋ, cīŋ, kōo, dūay, ph̄a, ph̄a h̄et w̄a, phr̄o?, phr̄o? h̄et, phr̄o? h̄et w̄a, phr̄o? h̄et th̄i, phr̄o? w̄a, phr̄o? ch̄onán, h̄et daŋ nán, h̄et w̄a, and h̄et. It should be noted from the beginning that probably not all cause- and result-clause linking words are included in this study. There

are two reasons for this: first, these words did not occur in our data; and second, according to our observation, they are usually derived from the linking words under study and we have mentioned them where appropriate (see 4.1.1 and 5). We are however certain that we have covered the common linking words mentioned or to be mentioned in any study of cause and result linking words.

We find that cause and result clauses are linked by various syntactic mechanisms, including clause-linking verbs, adverbs, prepositions (extension or non-extension prepositions), and extension and non-extension nouns, used alone or in combination.

2. Grammatical classification of cause and result linking words

In this section, we examine each of the fifteen cause and result linking words to identify the word class of each. A description of its syntactic distribution is then given followed by a structural pattern and the sentential example in the form of a stemma (dependency tree diagram). The slanting or angled line in the stemma describes a dependent endocentric construction, whereas the horizontal line describes an exocentric construction. The regent word in an exocentric construction is attached under a shorter vertical line, and a dependent under a longer one.

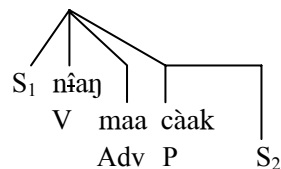
When a linking word is found in more than one period and there is no difference in its syntactic distribution, a sentential example or examples are picked up randomly from the data of any of the periods, for example, *dûay* is found in the Ayutthaya, Ratanakosin, and Modern Thai, but a sentential example given is drawn from Ayutthaya data.

2.1 Verbs

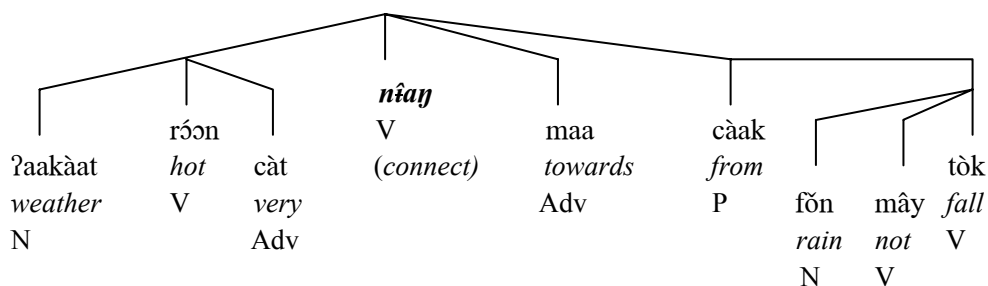
2.1.1 *nâay*

nâay is the main verb of the sentence as a whole, and appears between two dependent sentences. The preceding sentence is the subject surrogate and the second is a situational source of the first; so ‘ S_1 comes from S_2 ’. The hypothesis that *nâay* is a verb is supported by the fact that it is followed by a prepositional phrase introduced by *càak* ‘from’, or by a directional adverb *maa* ‘toward speaker’ followed by *càak*.

(1) Structural pattern:



(2) Sentential example: *TH0200806 (Modern Thai)*



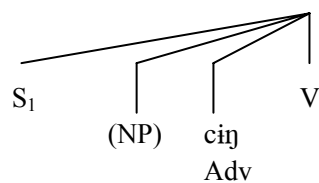
‘The weather is hot due to the cause that it does not rain.’

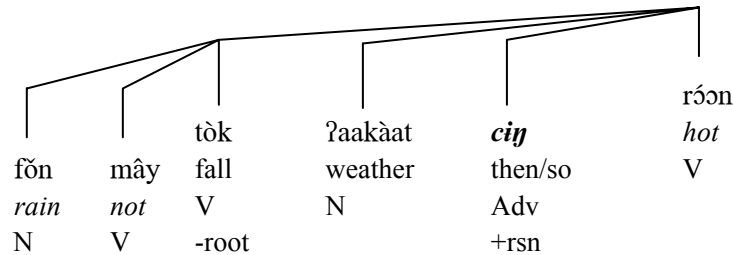
2.2 Adverbs (pre-verbal)

2.2.1 $ci\eta$

The adverb *cij* appears between the Nominative dependent ('grammatical subject') and the root verb of the second clause of a two-clause subordinating construction. If the Nom actant of the second clause is identical with the Nom of the preceding clause, it is commonly omitted. Syntactically, *cij* indicates that the second verb is the head verb of the whole construction, even though unlike a 'complementizer' preposition, it does not occur at the boundary of either clause.

(3) Structural pattern:



(4) Sentential example: TH0200807 (*Modern Thai*)

‘It does not rain, therefore it is hot.’

The construction with an adverb before the verb is somewhat unusual for Modern Thai in that the common position for adverbs in Modern Thai is clause-final, not pre-verbal. The clause-second position in Thai (5 and 6) is otherwise limited to negative and tense-marking adverbs, and in Khmer (7) only to negative adverbs. This suggests a possible earlier areal characteristic. However, we have not further investigated this possibility. In Chinese (8 compared to 9, and 10), however, adverbs and clause-linking adverbs occur in the same post-subject pre-verb position.

(5) Modern Thai (TH0200807)

fõn	<u>mây</u>	tòk	?aakaat	ciŋ	rón
<i>rain</i>	<i>not</i>	<i>fall</i>	<i>weather</i>	<i>then/so</i>	<i>hot</i>
N	Adv	V	N	Adv	V

‘It does not rain, therefore it is hot.’

(6) Modern Thai (Indrarambarya 1994, (14a), reformatted by Starosta)

lék	khəy	khít	wâa	thúkkhon	<u>cà?</u>	khəy	khăw
<i>Lek</i>	<i>ever</i>	<i>think</i>	<i>that</i>	<i>everyone</i>	<i>will</i>	<i>wait</i>	<i>he</i>
N	V	V	P	N	Adv	V	N

‘Lek once thought that everyone would wait for her.’

(7) Khmer negative adverb (KM101003f; Chhany Sak-Humphry, Starosta reformatting)

koat	<u>min</u>	məək	meel	’nakcumnii	tee
<i>he</i>	<i>+ngtv</i>	<i>come</i>	<i>see</i>	<i>patient</i>	<i>+ngtv</i>
N	Adv	-trns	-trns	N	Sprb

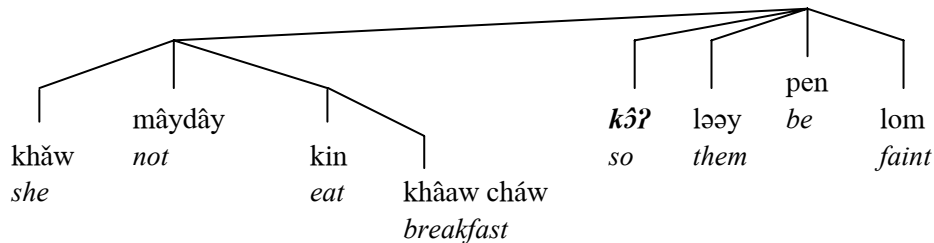
‘He does not come to see the patient.’

- (8) Taiwanese adverb *kóh* (TW2002H192, Starosta reformatting; *h* is [ʔ])
 goa kóh khi patūi khòan, loŋ khóaⁿ bô.
I just go elsewhere seek all seek unsuccessful
 ‘I went elsewhere to look but couldn’t find any.’
- (9) Taiwanese clause-linking adverb *kôh*¹ (TW203541c2, Starosta reformatting)
 ī tì hakhāu kôh chīn gāu thakchheh.
he at school then very clever study
 ‘At school he’s very good at studying.’
- (10) Mandarin clause-linking adverb (TW203541c2, Starosta reformatting)
 tā mǎle wǒ yídùn, wǒ jìu huíjiāle
She scold me a whack I just returned home
 ‘After she scolded me, I just went home.’

2.2.2 *kôʔ*

kôʔ has the same syntactic properties as *ciŋ*, that is, it is a pre-verbal clause-linking adverb. It is similar in shape as well as in syntactic properties to Taiwanese *kóh*.

- (11) Sentential example: (Modern Thai)



‘She has had no breakfast so she fainted.’

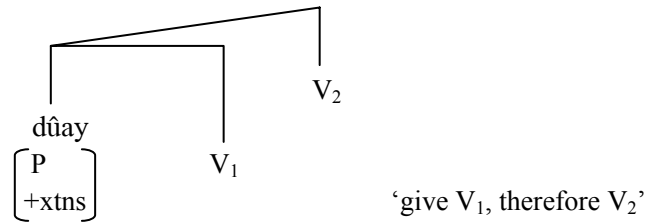
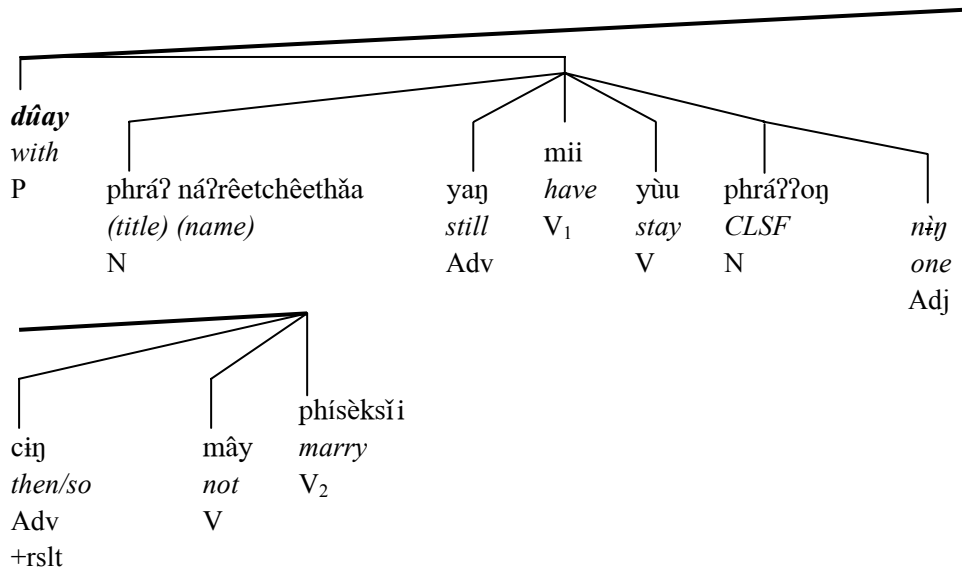
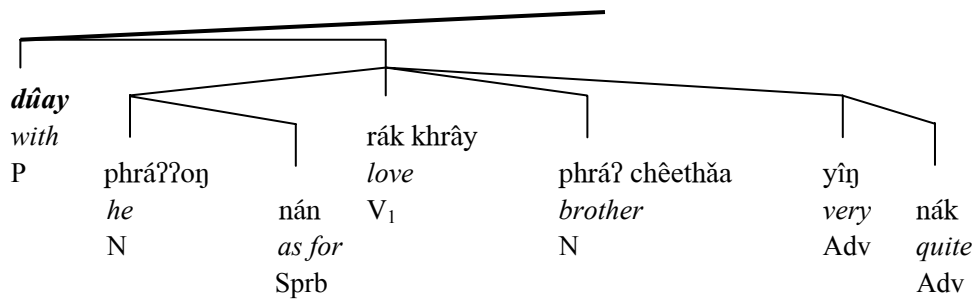
2.3 Prepositions, extension fact

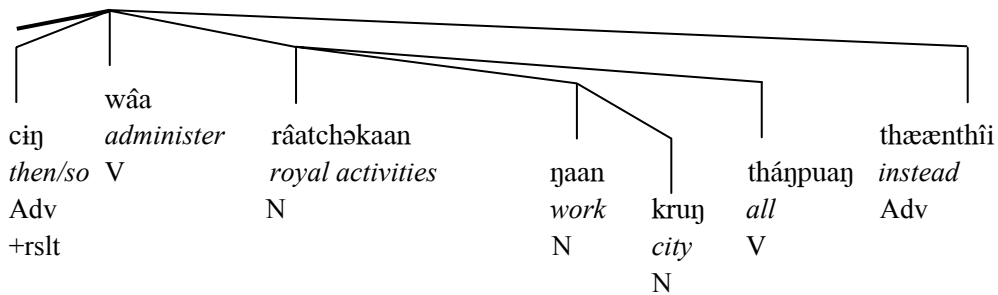
2.3.1 *dûay*

The extension preposition *dûay* marks its dependent V_1 as the head of a subordinate clause depending on the following verb.

¹ The difference in shape between *kóh* and *kôh* is due to tone sandhi.

(12) Structural pattern:

(13) a. Sentential example: TH0202001 (*Ayutthaya*)b. Sentential example: TH0202002 (*Ayutthaya*)

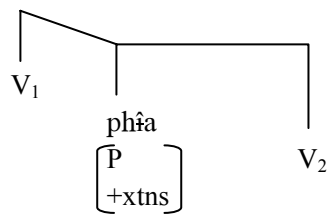


‘Because he loved his brother very much, so he looked after the royal activities instead.’

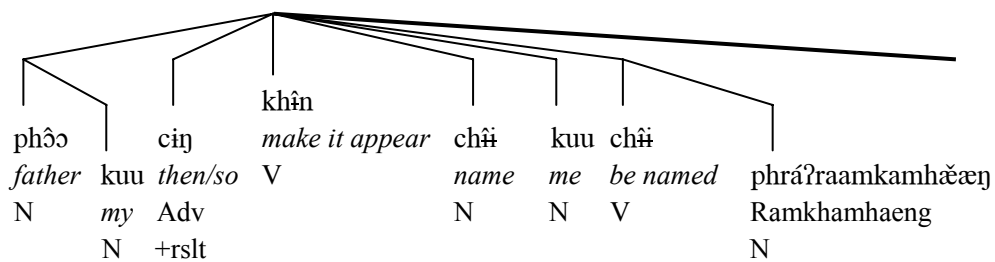
2.3.2 *phîa*

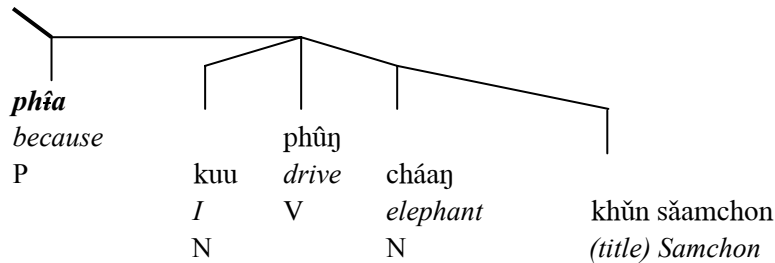
The extension preposition *phîa* in the Sukhothai period marked the subordinate V_2 and its dependents if any as a subordinate clause, a dependent of the regent of *phîa*.

(14) Structural pattern:



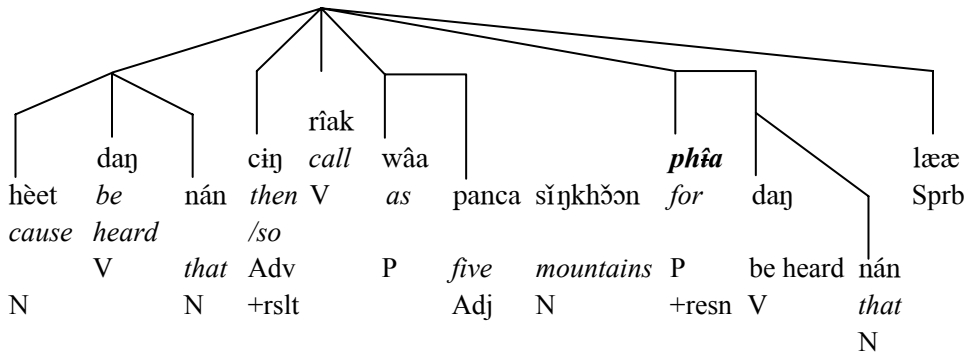
(15) Sentential example: TH02001002 (Sukhothai)





‘My father then gave me my name (Ramkhamhaeng) because I fought with Khun Samchon.’

(16) Sentential example: TH0201702 (Sukhothai)

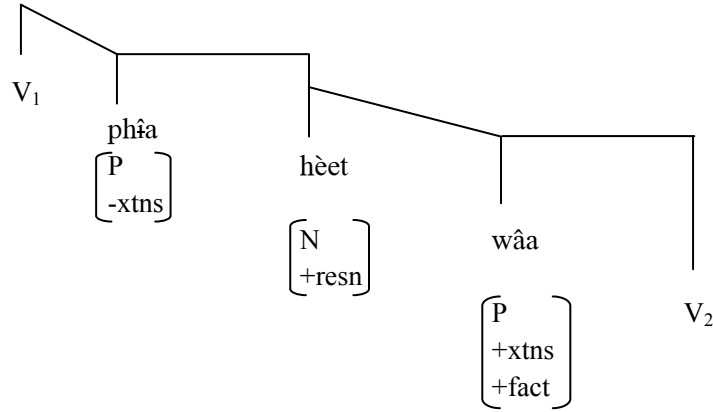


‘[Then arrange hair into five buns] the cause as such (it) is called five mountains.’

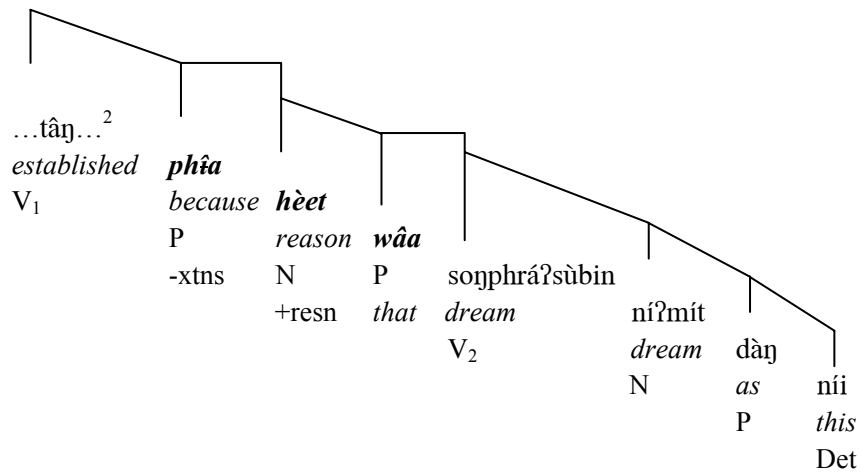
2.3.3 *phîa hèet wâa*

The non-extension preposition *phîa* in the Ayutthaya period derived from the extension *phîa* in the Ramkhamhaeng period. However, it was semantically bleached, and required a ‘complementizer noun’ *hèet* plus *hèet*’s ‘complementizer preposition’ *wâa* to carry meaning formerly carried by the preposition *phîa* alone in the Ramkhamhaeng period.

(17) Structural pattern:



(18) Sentential example: TH0202302 (Ayutthaya)



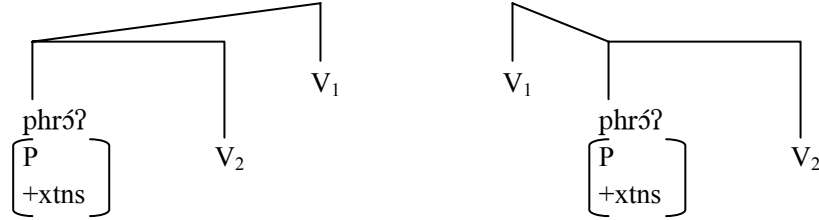
‘[Therefore [he] pronounced Prince Dokduea the crown prince] since he had dreamt so.’

2.3.4 *phrǝ?*

The extension preposition *phrǝ?* in the Sukhothai, Ayutthaya and Ratanakosin periods and Modern Thai marks the subordinate V₂ as the reason for the action encoded for the main verb V₁. Like the *phîa* construction in the Ramkhamhaeng inscription, *phrǝ?* and its clause could either precede or follow the main clause.

² cîŋ tân câwfâa dōk dīa hây pen thii mǎhǎa ?upǝràat
therefore establish Prince Dokduea cause be Acting Crown Prince

(19) Structural patterns:

‘since V₂, therefore V₁’(20) a. Sentential example: TH02022 (*Ayutthaya*)

phrɔʔ phráʔʔoŋ soŋphráʔkròot phráʔsǐisǐn nák ciŋ sàŋ nán
because he (king) be angry (name) quite then/so order that
 P N V N Adv Adv V Det
 +rslt

phít pay nay thaaŋ tham
wrong go inside way Dhamma (good deed)
 V V N N N
 lctn

‘Because he was very angry, he then gave an order which was wrong.’

b. Sentential example: TH0201102 (*Ratanakosin*)

nán mây pen thoót phrɔʔ tâŋcay cà? hây mənút praʔphrít dii
that not be bad because intend will give man behave good
 N V V V P V Adv V N V V
 [‘the lies] are not wrongdoing because they are meant to make men
 behave well.’

c. Sentential example: TH0200802 (*Modern Thai*)

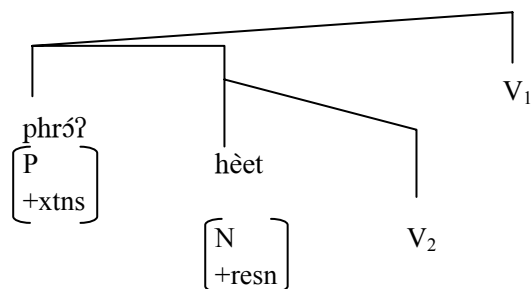
phrɔʔ fǒn mây tòk læy ʔaakàat ciŋ rón càt
because rain not fall at all weather then/so hot very
 P N V V Sprb N Adv V Adv
 ‘Because it does not rain, the weather is extremely warm.’

2.3.5 *phrɔʔ hɛ̀et*

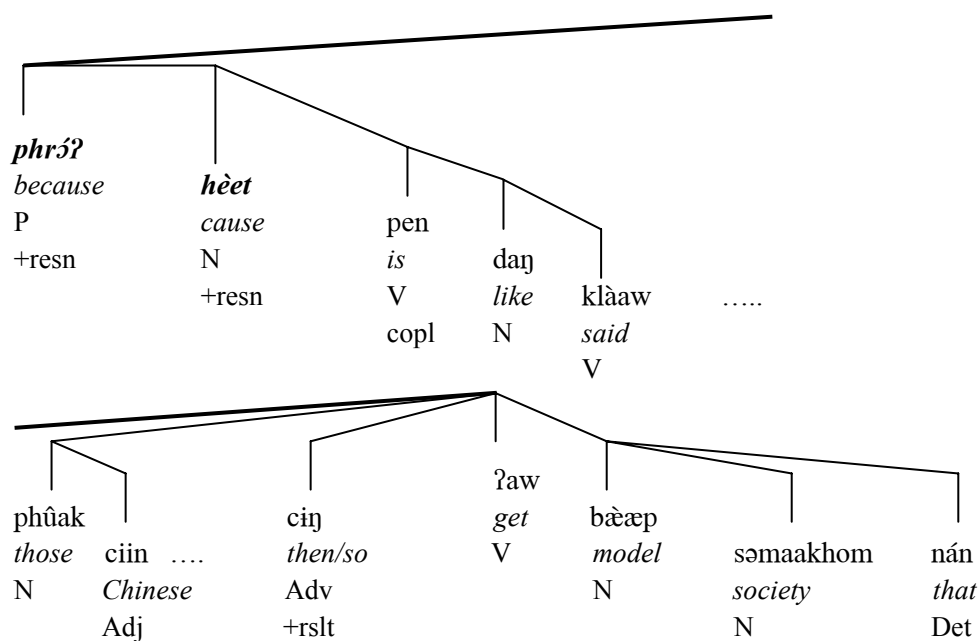
The non-extension preposition *phrɔʔ* in the Sukhothai and Ratanakosin periods and in Modern Thai, like the non-extension *phâa* in the Ayudhaya period, marks a subordinate V₂ as the reason for the action encoded for the main verb V₁. However, as a

non-extension preposition it can't take a V complement directly. The noun *hèet* is thus used to take the dependent V as a direct complement.

(21) Structural pattern:



(22) Sentential example: TH0202902a (Ratanakosin)

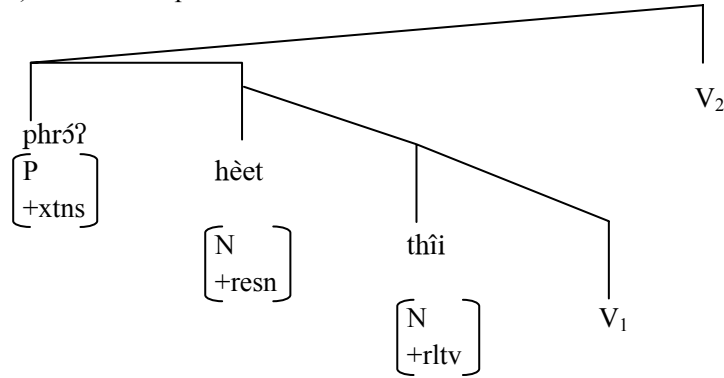


‘Because it was like what was said, [from that time then] the Chinese living in other countries followed the example of such a society [and set up the society in other countries].’

2.3.6 *phrɔʔ hɛet thii*

In Modern Thai, the sentential complement of *hɛet* is mediated by the relative noun *thii* or by the extension preposition *waa* as in 2.3.7 below.

(23) Structural pattern:



‘for the reason that V_1 , therefore V_2 .’

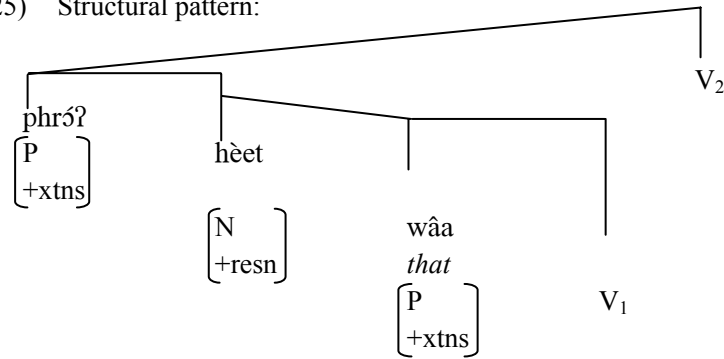
(24) Sentential example: TH0200805 (Modern Thai)

<i>phrɔʔ</i>	<i>hɛet</i>	<i>thii</i>	<i>fɔn</i>	<i>mây</i>	<i>tòk</i>	<i>ʔaakàat</i>	<i>ciŋ</i>	<i>rɔɔn</i>	<i>càt</i>
<i>for</i>	<i>reason</i>	<i>that</i>	<i>rain</i>	<i>not</i>	<i>fall</i>	<i>weather</i>	<i>then/so</i>	<i>hot</i>	<i>very</i>
P	N	N	N	V	V	N	Adv	V	Adv
							+rslt		

‘Because it does not rain, the weather is thus extremely warm/hot.’

2.3.7 *phrɔʔ hɛet waa*

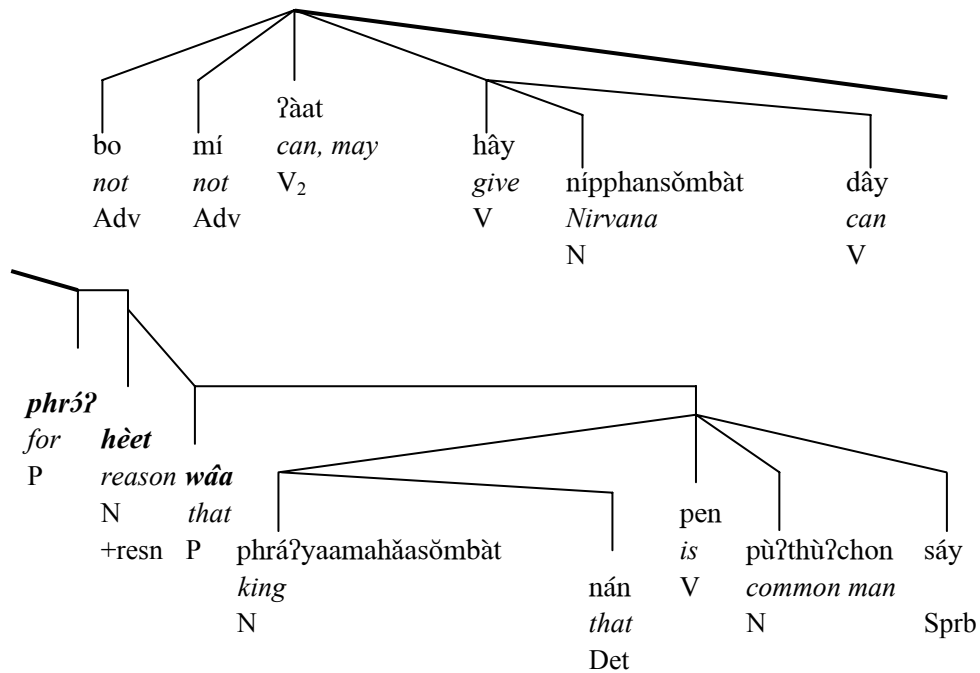
(25) Structural pattern:



‘for the reason that V_1 , therefore V_2 .’

- (26) Sentential example: TH021002 (Modern Thai)
khăw mây maa pràʔchum phrɔʔ hêt wâa lûuk khâw roonphayaabaan
he not come meeting because son admit hospital
N V V N P N V N
‘He did not come to the meeting because his son was admitted hospital.’

- (27) Sentential example: TH021001 (Sukhothai)

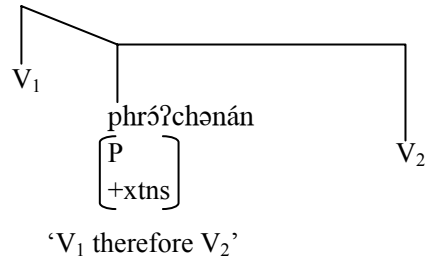


‘[He] cannot be given Nirvana because the King is only a common man. (not Lord Buddha).’

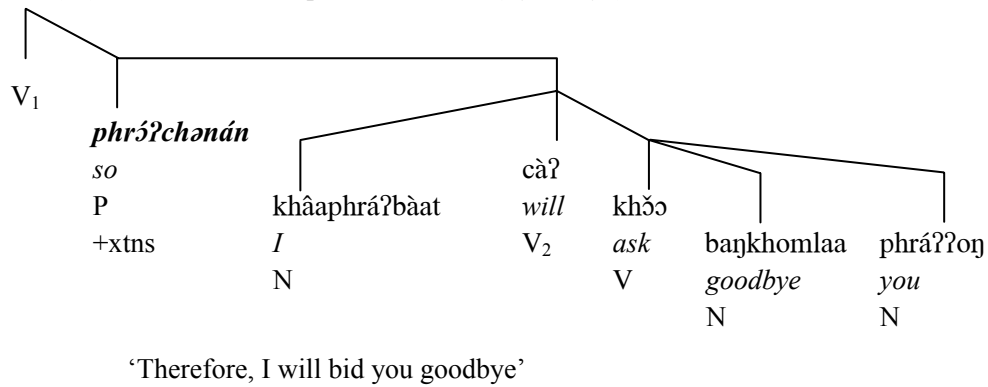
2.3.8 *phrɔʔchənan*

The word *phrɔʔchənan* found first in the Ayutthaya data is analyzed as a single word because the two parts are never separated. It appears only once in our initial Ayutthaya data set. The source for *chənan* is a copula *chên* followed by *nán*. We tentatively analyze it as an extension preposition introducing a subordinate sentence.

(28) Structural pattern:



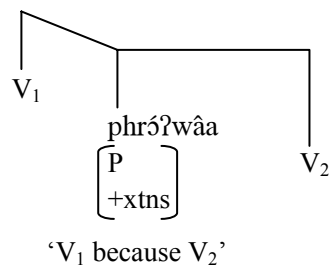
(29) Sentential example: TH0201903 (Ayutthaya)



2.3.9 *phrɔʔwâa*

The extension preposition *phrɔʔwâa* is transparently derived from the extension prepositions *phrɔʔ* and *wâa*. We think it is also a single word, like *phrɔʔchənán*, because the two parts are never separated, and because Thai does not otherwise allow a sequence of two prepositions.

(30) Structural pattern:



- (31) Sentential example: TH0200803b (Modern Thai)

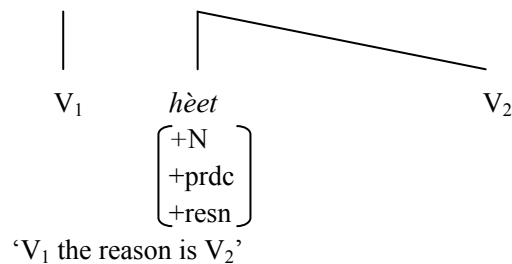
ʔaakàat rón càt phrɔ́ʔwâa fǒn mây tòk ləəy
 weather hot very because rain not fall at all
 N V Adv P N V V Adv?
 ‘The weather is very hot because it has not rained at all.’

2.4 Nouns

2.4.1 *hèet*

The noun *hèet* can be used as the topic of a clause headed by a root verb V_2 , giving the reason for the state or event in the preceding clause headed by a verb root V_1 . This use of *hèet* appeared as early as the Sukhothai period, but the following sentential example is taken from the Ratanakosin period.

- (32) Structural pattern:



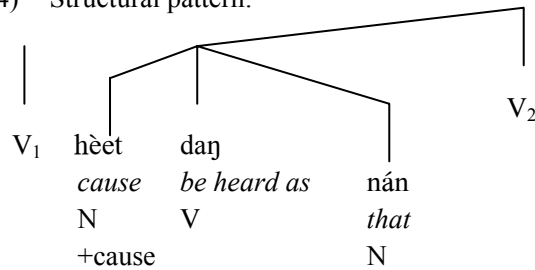
- (33) Sentential example: TH0201702 (Ratanakosin)

thân hây mǎy thəwii khuun *hèet* miʔkhuən càʔ kròt càʔ tii
 he(king) give pay doubly cause not should will be angry will beat
 for
 misdeed
 N V V_1 Adv N V V V V_2 V V

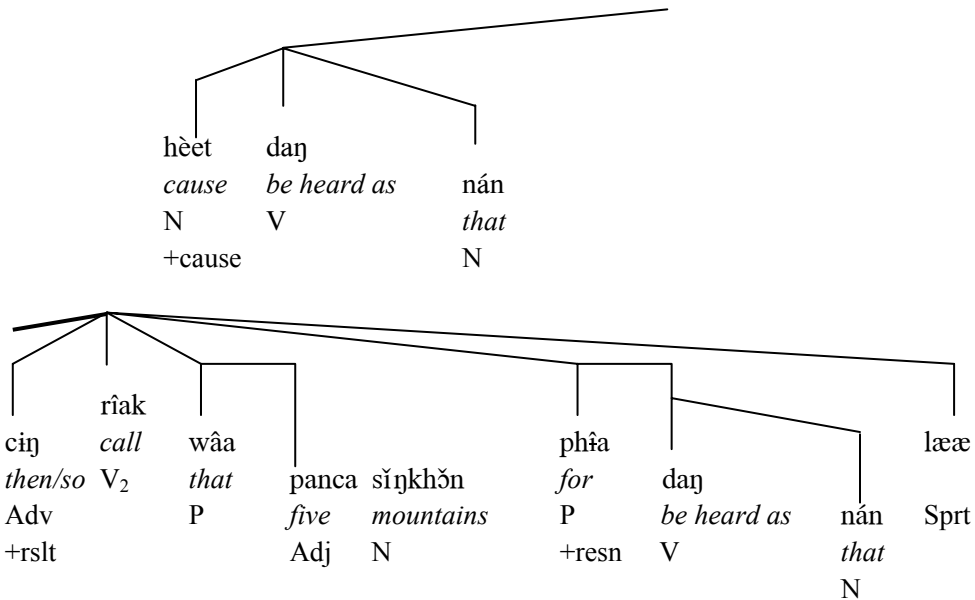
2.4.2 *hèet daŋ nán*

The noun *hèet* can also be used as the topic of its own subordinate clause headed by the verb *daŋ* and followed by the demonstrative determiner *nán*. The reference of the noun *hèet* was the verb V_1 in the preceding root clause. This use of *hèet* appeared as early as the Sukhothai period.

(34) Structural pattern:



(35) Sentential examples: TH0201702 (Sukhothai)

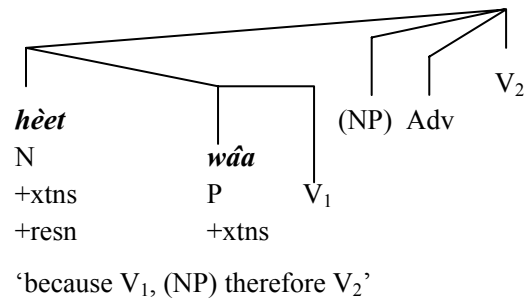


‘The cause as such (it) is called five mountains.’

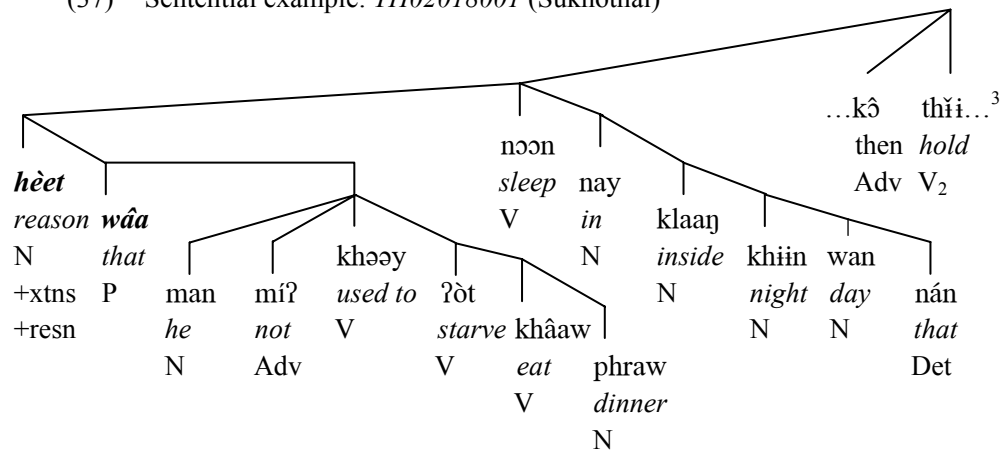
2.4.3 *hêet wâa*

The Sukhothai extension noun *hêet* with a fact complement *wâa* V_1 precedes a V_2 and means ‘because V_1 , therefore V_2 ’. As is normal with preposed subordinate clauses, the second clause contains a pre-verbal clause-sequence adverb, in our example, *kô*?

(36) Structural pattern:



(37) Sentential example: TH02018001 (Sukhothai)



‘Because he was not used to not eating dinner and when he went to bed that night, he fainted.’

3. Tabulation of linking words from the Sukhothai period until Modern Thai

To summarize our analyses in the preceding sections we give the following table which displays the syntactically analyzed cause/reason linking words sorted in terms of period attested, word class and syntactic types. The following abbreviations are used:

³ lom	kôʔ	thîi	ton	man
wind	so	hold	body	his
N	Adv	V ₂	N	N

RKH	Ramkhamhaeng
SKTH	Sukhothai
AYTT	Ayutthaya
RTK	Ratanakosin
MT	Modern Thai

RKH or the Ramkhamhaeng inscription is in fact in the Sukhothai Period. In the table, we separated it from SKTH just because it was the first inscription and the first source of our data. For other Sukhothai inscriptions and Traiphum Pra Ruang we group them together under SKTH.

	RKH	SKTH	AYTT	RTK	MT
n̄aŋ Verb					✓
ciŋ Pre-verbal Adverb	✓	✓	✓	✓	✓
kōo Pre-verbal Adverb		✓	✓	✓	✓
dūay [+xtns] Preposition			✓	✓	✓
phāa [+xtns] Preposition	✓	✓	✓		
phāa hēt wāa [-xtns] Preposition + N + P			✓		
phrō? [+xtns] Preposition		✓	✓	✓	✓
phrō? hēt [-xtns] Preposition + N		✓	✓	✓	
phrō? hēt wāa [-xtns] Preposition + N + P		✓	✓	✓	✓
phrō? hēt thii [-xtns] Preposition + N + N					✓
phrō?wāa [+xtns] Preposition		✓	✓	✓	✓
phrō?chōnān [+xtns] Preposition			✓	✓	✓
hēt + V [+xtns] Noun + V		✓	✓	✓	
hēt [+xtns] Noun + daŋ + nān		✓	✓	✓	
hēt [+xtns] Noun + wāa		✓	✓	✓	

4. Semantic characteristics and historical development

In this section we will examine all linking words discussed in the previous sections in connection with their semantic characteristics and historical development. So that we can identify the semantic characteristics of a linking word as a cause or result marker, we would like to give first the definitions of four semantic features: cause, result, purpose, and reason.

1. *cause*

If x causes y, x is a necessary and sufficient condition for y. If x hadn't happened, y would not have happened, and if x happened, y had to be the result. Cause in this sense does not imply intention, but also does not exclude it.

2. *purpose*

If the purpose of x is y, it means that some animate entity A intentionally performs the action x, and A expects and wishes that performing x will bring about y.

3. *result*

If x causes y (sense 1), then y is the result of x.

4. *reason*

If x is the reason for y, it means either that

- a) x causes y (sense 1) or
- b) y is the purpose of x.

Following the above definitions, cause, purpose, and reason identify the 'cause' or the action that 'brings about' an event or the 'result'. We will group them under 'cause' as opposed to 'result' in the discussion in this section, although at times, we may recognize a sub-class of 'cause' for a certain linking word.

With the above definitions, we identify each of the fifteen linking words in the previous table its semantic characteristic as a cause or a result marker as follows:

Cause markers

n̄aŋ, d̄uay, ph̄a, ph̄a h̄et w̄a,
phr̄ó?, phr̄ó? h̄et, phr̄ó? h̄et w̄a,
phr̄ó? h̄et th̄i, phr̄ó? w̄a, h̄et,
h̄et w̄a, h̄et daŋ nán

Result markers

ciŋ, phr̄ó? chonán, k̄ô?

4.1 Cause linking words

As can be seen from the definition, cause and result are the two sides of the same coin. The cause and result clauses must co-occur. The clause conveying a cause event is marked by any of the following cause clause markers: *phîa*, *phîahèetwâa*, *phrǝ?*, *phrǝ?hèet*, *phrǝ?hèetwâa*, *phrǝ?hèetthîi*, *phrǝ?wâa*, *hèet*, *hèetdaynân*, *hèetwâa*, *nîay*, and *dûay*.

4.1.1 *phîa* and its related markers

It will be seen in this section that the cause linking word *phîa* has developed from a cause linking word to a purpose linking word. Also, it is shown that a combination of a cause linking word, *phrǝ?*, with *hèet* a noun has been used as a mechanism from the Sukhothai period. In the Ayutthaya period, *phîa* combined with *hèet wâa* was also found used as a mechanism. This is a mechanism in a bleaching process in the case of *phîa*, but in the case of *phrǝ?*, it is probably a mechanism to specify the reason linking word *phrǝ?* as the first type of reason (see semantic characteristic subtype 4a); i.e., a reason in the sense of cause. A further study is needed to confirm this statement.

By the related markers of *phîa*, we mean the group of linking words, *phîa*, *phîa hèet wâa*, *phrǝ?*, *phrǝ? hèet*, *phrǝ? hèet wâa*, *phrǝ? hèet thîi*, *hèet*, *hèet wâa*, all of which show the three words involved, *phîa*, *phrǝ?*, and *hèet*.

In the Ramkhamhaeng inscription *phîa* was found marking the cause clause occurring after the result clause as in:

- (38) (*phǝ khǝn raamkhamhææj hǝa khây cay nay cay lææ sǝy*
King Ramkhamhaeng think and put

laaysǝi thay nîi wáy) laaysǝi thay cǝ mii phîa khǝn phǝu
script Thai this keep script Thai so have because King clf
result cause

nán sǝy wáy
that put keep

‘[King Ramkhamhaeng has the idea of establishing the Thai Alphabet.] The alphabet therefore existed, because the king established it.’

The sequence of cause and result clauses must be noted. Logically the sequence should be in the order of cause-result in which case a cause clause needs no marker:

- (39) fǒn mây tòk ʔaakàat ciŋ rón
rain not fall weather therefore hot
 cause result
 ‘It does not rain, the weather is therefore hot.’

A cause marker is, however, allowed:

- (40) phrɔʔ fǒn mây tòk ʔaakàat ciŋ rón
because rain not fall weather therefore hot
 cause result
 ‘Because it does not rain the weather is hot.’

In either case, the result clause must be marked (in the examples *ciŋ* is used). The result clause can precede the cause clause as in example (38) or in (41):

- (41) ʔaakàat rón phrɔʔ fǒn mây tòk
weather hot because rain not fall
 result cause
 ‘The weather is hot because it does not rain.’

However, here there is a difference in the use of a result marker. In Modern Thai and in the Ratanakosin period the result clause preceding a cause clause cannot be marked by any result marker: *ʔaakàat ciŋ rón phrɔʔ fǒn mây tòk (weather-therefore-hot-because-rain-not-fall) (cf. Example (41)). In Sukhothai and Ayutthaya periods, when a cause clause followed a result clause, the result clause could be marked with *ciŋ* and a cause clause was marked by *phîa* (see examples (15) and (16) and also (38)).⁴

In the Ayutthaya data, *phîa* could be accompanied by *hèet* as *phîa hèet wâa* as in:

- (42) ciŋ tân câawfâa dōkdîa hây pen thîi mǝhâaʔùpǝràat
 therefore establish Prince Dokduea cause be Acting crown prince
phîa hèet wâa sǝphráʔsùbin níʔmít daŋ níi
 because dream loud this
 ‘...Therefore [he] pronounced Prince Dokduea the crown prince, since he had dreamt so.’

⁴ Sentences in the bracket in (38) describe two events: the king pondered about the scripts (event1) and invented the scripts (event2).

Since *phĕa* has already the meaning of ‘cause’, the use of *hèet* ‘cause’ is only a repetition. Why was it needed in the above sentence? It is most probable that *phĕa* was losing its meaning as ‘cause’ and was gaining the new meaning of ‘purpose’. In Modern Thai *phĕa* carries the meaning ‘for the purpose of’, for example: *mĕ: tham yaan năk phĕa lăuk câ? dăay rian năysăi* (mother-do-work-heavy-for the purpose-children-will-get-learn-book) ‘The mother works hard so that her children will be able to go to school’. Here *phĕa* does not indicate ‘cause’ any longer. The use of *hèet*, a noun meaning ‘cause’ in *phĕa hèet wăa* may well prove that *phĕa* was beginning to shift its meaning. In other words, during its meaning shifting process, *hèet* was used with *phĕa* to help keep the meaning ‘cause’ of *phĕa*. However, *hèet* used alone (see example (33)) or followed by a complement *wăa* (see example (37)) or in a phrase with *day nán* (see example (35)) did not survive either. They do not appear in our Modern Thai.

In the late Sukhothai period, *phrô?* was introduced with *hèet* as *phrô? hèet* meaning ‘because’. Based on the data, we see that this marker was used until the reign of King Rama V in the Ratanakosin period. In Modern Thai, either *hèet* or *phrô? hèet* has become obsolete. *Phrô? hèet wăa* was also found in late Sukhothai period and has been used until now, although it is found more in formal writing along with *phrô? hèet thii* which first appears in Modern Thai.

It can be concluded that for the cause clause markers, *phrô?* has been used from the Sukhothai period until the present time. It was also found with other words as an extension preposition. In Modern Thai, *phrô?* is commonly used alone or with *wăa*.

4.1.2 *dūay*

In our data, *dūay* was first found in the Ayutthaya period. It should be noted that the cause clause marked with *dūay* must always precede the result clause which always carries the result marker *cij*. In the Ramkhamhaeng inscription, *dūay* occurred but it was used as a marker of a comitative case:

- (43) *kuu tōo cháaŋ dūay khŭn săamchon ...*
I fight elephant with Khun Samchon
 ‘I fought on elephant back with Khun Samchon.’

Or as a manner/instrumental case:

- (44) *... sŭan khwaam kăæ man dūay sŭi*
investigate matter to him with honesty
 ‘[I] investigate the case with justice.’

- (45) ...sàŋsǝn thay thǎŋ lǎay hǎy rúu bun rúu tham ...
teach Thai all cause know merit know goodness
 dūay rúu
with knowledge
 ‘[He] taught all Thais to know good and bad with [his] knowledge.’

It is proposed here that *dūay* as a cause clause marker is derived from *dūay* as a case marker for the manner/instrumental case relation. Semantically, it is natural for the manner/instrumental meaning to be interpreted as a reason. In Modern Thai, *dūay* as a cause clause marker is used only in formal writing.

4.1.3 *nǎay*

nǎay as a marker for a cause clause is, from the data, found only in Modern Thai. It is used followed by a prepositional phrase (see *nǎay* in 2.1).

4.2 Result linking words

From the data, there are three result cause linking words: *ciŋ*, *kǎŋ*, and *phrǎŋchǎnǎn*.

4.2.1 *ciŋ*

Ciŋ appears in all periods. From the data, when *ciŋ* in the Sukhothai-Ayutthaya period marked a result and preceded the cause clause, the latter must be marked with *phǎa* (See example (15), (16), (38)). In our Ratanakosin-Modern Thai data, *ciŋ* may mark either a result clause in the order of a cause and a result (example (46)), or a sequence of events without the cause and result meaning (example (47)).

- (46) fǝn mǎy tòk ʔaakàat *ciŋ* rǝn (Modern Thai)
rain not fall weather therefore hot
 ‘It does not rain, therefore the weather is hot.’
- (47) raw kin khǎaw lǎæw *ciŋ* pay nǝn (Modern Thai)
we eat rice already then go sleep
 ‘We ate then we went to sleep.’

In (47) there is no cause and result meaning conveyed. Note that in this case an adverb /*lǎæw*/ must always occur before *ciŋ*. Although *ciŋ* in the Ratanakosin-Modern

Thai has two functions, it may well be said however that it primarily marks a result. Moreover, unlike *ciŋ* in the Sukhothai-Ayutthaya period, the *ciŋ* clause cannot precede the cause clause.

If we consider the following sentence in which *kô?* is used, we can see that the meaning of a temporal sequence is apparent:

- (48) mña fõn mây tòk ʔaakàat **kô?** rón (Modern Thai)
when rain not fall weather then hot
 ‘When it does not rain, then the weather is hot.’

However, the sentence is not acceptable if *ciŋ* is used instead:

- (49) *mña fõn mây tòk ʔaakàat **ciŋ** rón

Thus, we would like to propose that *ciŋ* primarily marks a result clause and only in a specific situation with *lææw*, may it mark a sequence of events. On the contrary, *kô?* primarily marks a temporal sequence but secondarily a result. In the latter case the preceding clause must be a cause clause which is still acceptable when a cause linking word is put in, for example sentence (11) is acceptable when *phrô?* is put in:

- (11) khǎw mây dâi kin khâwchâw kô? lœy pen lom
she not eat breakfast so then be fainted
 ‘She has had no breakfast so she fainted.’
 (50) phrô? khǎw mây dâi kin khâwchâw kô? lœy pen lom
because she not eat breakfast so then be fainted
 ‘Because, she has had no breakfast, (so) she fainted.’

If it is not acceptable, *kô?* does not mark a result, but only an event in a sequence. In (48), for example, when *phrô?* is put in the sentence, the sentence is not acceptable: **phrô?* (mña) fõn mây tòk ʔaakàat kô? rón.

Because *ciŋ* usually marks the result clause rather than a temporal sequence, the following sentence is not acceptable.

- (51) *wâa khǎw pay lææw **ciŋ** sǎacay
 ‘Scolding him therefore I felt sorry.’

Our proposal that *ciŋ* primarily marks a result clause and secondarily a temporal sequence in the latter two periods needs a further study to confirm and it may raise a

question whether the same phenomenon also occurred in the earlier two periods. We have not yet investigated this question in this paper because it seems beyond our scope.

4.2.2 *kɔ̌ʔ*

Similar to *ciŋ*, *kɔ̌ʔ* has been found from the Sukhothai period until the Modern Thai period. Although *kɔ̌ʔ* can mark a result, it is not as often found in this function compared with *ciŋ*. Instead, *kɔ̌ʔ* primarily marks a temporal sequence of events. As can be seen in (50) if *kɔ̌ʔ* is used instead of *ciŋ*, the sentence is acceptable: *wâa khăw pay lææw kɔ̌ʔ sǎacay* ‘[After] scolding him, then [I] felt sorry’.

4.2.3 *phrɔ̌ʔchənán*

Phrɔ̌ʔchənán was found first in the Ayutthaya period and has been used until now to mark a result event. From its form, it may be hypothesized that *phrɔ̌ʔchənán* is derived from a phrase: *phrɔ̌ʔ chên nán* which literally means ‘[The] cause [is] like that’. The destressing of *chên* makes it become *chə* and turns the construction into a one unit word meaning ‘therefore’, marking a result event.

5. Conclusion

It can be seen that the lexibase dependency grammar, a grammar with no deep structure and no transformation, can be used to analyze a sentence with a subordinating clause such as cause and result sentences studied in this paper. The study shows that several syntactic mechanisms are used in the linking of clauses: clause-linking verbs, extension prepositions as well as non-extension ones, clause-linking adverbs and extension nouns. Several mechanisms illustrate the derivation of a new word from an origin word; for example, a derivation of *n̄aŋ*, a clause-linking verb, from *n̄aŋ*, a verb. In the case of *phrɔ̌ʔ h̄et wâa*, it is shown how *phrɔ̌ʔ*, a non extension preposition requires a noun *h̄et* after it so that it can take a verb complement *wâa*.

It can also be seen from the study that between cause linking words and the result words, the former outnumber the latter. Some of these cause linking words have become obsolete in Modern Thai, such as *h̄et wâa* or *h̄et*. Some have illustrated a phonological reduction such as *phrɔ̌ʔchənán* from *phrɔ̌ʔchēnnán*. Some also showed a shift from a cause marker to a result one; for example, *ph̄a*, a purpose marker that shifted from *ph̄a*, a cause marker. The fact that *ph̄a* has shifted to mark purpose explains the close semantic relation between cause and purpose.

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從蘭坎恆碑文到現代泰語的原因與結果子句

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本文探討泰國「素可泰」王朝「蘭坎恆碑文」到現代泰語的十五個「原因」、「結果」連接標記。我們分析了這些標記的詞類，以「詞格依存語法」理論分析其語法特性與「依存樹狀結構」，並且探討了這些連接標記的語意性質與歷史發展。

本研究顯示原因與結果子句可以用「子句連接動詞」、「副詞」、「帶補語子句的介詞或名詞」與「帶名詞補語的介詞或名詞」等各種句法機制相連接。我們發現「原因」連接標記的數目比「結果」連接標記的數目多，同時也發現在這十五個標記中，只有 *ciy*, *kô*, *phā* 與 *phrô* 不是源自其他詞類。其他十一個標記不是由動詞或名詞衍生（如「子句連接動詞」*nāy* 源自「動詞」*nāy* ‘連接’），就是由連接詞與「依存」動詞或「依存」名詞組成而成（如 *hēt dāy nān* 與 *phrô hēt wā*）。此外，在某些連接標記可以看到音韻弱化的痕跡，如 *prôchānān* 即由 *prôchēnnān* 弱化而來。

關鍵詞：蘭坎恆碑文，素可泰王朝，現代泰語，連接標記，詞格