

## The Scope of Preverbal Operators in Thai\*

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### Abstract

This paper explores and explains the relationship between the ordering properties and the semantic categories of Thai preverbal operators.

### บทคัดย่อ

บทความนี้สำรวจและอธิบายถึงความสัมพันธ์ระหว่างคุณสมบัติในการจัดลำดับประเภทของความหมายของ operators หน้ากริยาในภาษาไทย

### 1. Introduction

Operators, as categories that are proposed in Role and Reference Grammar (Foley & Van Valin 1984, Van Valin & LaPolla 1997), indicate grammatical categories such as tense, aspect and modality. They can be distinguished from the constituent structure of a sentence: clause, predicate, and arguments.

In Thai, the elements that indicate these grammatical categories occur preverbally and postverbally. In some previous studies they are called pre-verbal or post-verbal auxiliaries (Panupong 1962, 1970), preverbs (Kullavanijaya 1968; Scovel 1970) and modals (Sriphen 1982). Even though these studies do not agree on the number of elements to be included in the category, they all recognize their ordering complexity. Sentence (1) below shows a possible combination of 7 elements that have often been analyzed as preverbs.

- (1)    k<sup>h</sup>aw<sup>5</sup>    kɔ<sup>3</sup>    k<sup>h</sup>oŋ<sup>1</sup>    p<sup>h</sup>ŋ<sup>3</sup>    kəət<sup>2</sup>    tɕa?<sup>2</sup>    tɔŋ<sup>3</sup>  
      3sg    PV    PV    PV    PV    PV    PV

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yaak<sup>2</sup> klap<sup>2</sup> baan<sup>3</sup>

PV return home

'He then probably just happened to necessarily want to go home.'

However, few studies have analyzed their grammatical or semantic category (Scovel 1970; Boonyapatipark 1983; Sookgasem 1990). Moreover, the relationship between the order of these elements and their semantic categories has never been investigated.

According to Role and Reference Grammar (henceforth RRG), the order of operators is governed by a universal scope assignment (Van Valin & LaPolla 1997). This study, therefore, aims at exploring and explaining the relationship between the ordering properties and the semantic categories of Thai preverbal operators.

## 2. Previous studies on Thai preverbs

This section reviews three major works on preverbs in Thai—Panupong (1962, 1970), Kullavanijaya (1968), and Sriphen (1982).

Panupong (1962, 1970) includes two types of auxiliaries—post-verbal and pre-verbal—in her description of Thai sentences. There are 19 pre-verbal auxiliaries, which can be further divided into two types—pre-negator auxiliaries and post-negator auxiliaries. Combinations of two or three preverbal auxiliaries yielding 53 possible patterns are shown (Panupong 1970: 130). However, restrictions on their cooccurrence are not stated, and their grammatical meaning is not analyzed.

Basing her work on Transformational-Generative Grammar, Kullavanijaya (1968) identifies elements that immediately follow the subject and immediately precede the main verb as preverbs. In her study, there are 24 preverbs divided into six groups according to their distribution and cooccurrence properties. The study proposes a detailed analysis of syntactic restrictions on the co-occurrence of these preverbs, but the scope of her study does not allow for an analysis of their semantic properties.

In her investigation of the category of "verb" in Thai, Sriphen (1982) differentiates elements that also occur in a predicate phrase but have different syntactic behaviors, i.e. modals. Some of the criteria are co-occurrence with a negative word, nominalization, and the ability to occur independently in a sentence. She divides preverbal modals into two subclasses according to their

ordering properties. The grammatical meaning of each subclass has also been noted but not analyzed. Subclass one modals involve time and aspect while subclass two the speaker's attitude about the effectiveness of the situation (Sriphen 1982: 63).

We can see that all these studies use only syntactic criteria for the identification of preverbs with some disagreement on what items should be included in the category. However, their grammatical meaning is not analyzed. In the past, only two Thai grammar textbooks talked about the meaning of these items. Upakitsilpasaan (1937) included tense, mood and voice as functions of verb-modifiers and Bandhmedha (1982) included time and attitude.

Table 1 shows the list of preverbs collected from the studies reviewed above.

1) k <sup>h</sup> on <sup>1</sup>	'might'	14) tɕuan <sup>1</sup>	'almost'
2) ʔaat <sup>2</sup>	'may'	15) kiap <sup>2</sup>	'almost'
3) tɔŋ <sup>3</sup>	'must'	16) k <sup>h</sup> on <sup>3</sup> k <sup>h</sup> aaŋ <sup>3</sup>	'rather'
4) naa <sup>3</sup>	'should'	17) seen <sup>5</sup>	'quite'
5) yom <sup>3</sup>	'apt to'	18) rəm <sup>3</sup> tɕa <sup>2</sup>	'start to'
6) tɕa <sup>2</sup>	'will'	19) kəət <sup>2</sup>	'happen to'
7) p <sup>h</sup> əŋ <sup>3</sup>	'just'	20) khoy <sup>3</sup>	'gradually'
8) mak <sup>4</sup>	'usually'	21) may <sup>3</sup> khoy <sup>3</sup>	'scarcely'
9) yaŋ <sup>1</sup>	'still'	22) kam <sup>1</sup> laŋ <sup>1</sup>	PROG
10) k <sup>h</sup> əy <sup>1</sup>	'used to'	23) daay <sup>3</sup>	'manage to'
11) t <sup>h</sup> aa <sup>3</sup> tɕa <sup>2</sup>	'look as if'	24) yaak <sup>2</sup>	'want'
12) hen <sup>5</sup> tɕa <sup>2</sup>	'seem'	25) may <sup>3</sup> ʔaat <sup>2</sup>	'dare not'
13) duu <sup>1</sup> mian <sup>5</sup>	'seem as if'	26) koo <sup>3</sup>	'also'

Table 1 Thai preverbs as analyzed previously<sup>1</sup>

### 3. Identifying a preverbal operator

As we have seen earlier, using either syntactic or semantic criteria to identify preverbs in Thai is not adequate since Thai, on the one hand, has a complex structure of serial verb constructions (Thepkanjana 1986, Sereechoensatit 1984). Using various kinds of tests, Sriphen (1982) has shown that such verbs as *yaak*<sup>2</sup> 'want' and *rəm*<sup>3</sup> 'begin' should be treated as true verbs. On the other hand, such elements as *kiap*<sup>2</sup> 'almost' and *k<sup>h</sup>on<sup>3</sup>k<sup>h</sup>əŋ<sup>3</sup>* 'rather' do not

indicate grammatical meaning, but instead mark a kind of approximation, which falls into the category of affect (Rangkupan 2001). Thus, this study uses both syntactic and semantic properties to define preverbal operators.

### 3.1 Syntactic properties

There are two major syntactic properties: 1) preceding the main verb and following the subject and 2) not being able to occur as a verb in a single verb construction. To illustrate:

- (2) a. Somjay **k<sup>h</sup>ɲo<sup>1</sup>** kin<sup>1</sup> k<sup>h</sup>aaw<sup>3</sup> yuu<sup>2</sup>  
 Somjay might eat rice CONT  
 'Somjay might be eating now.'
- b. \*Somjay khon<sup>1</sup> k<sup>h</sup>aaw<sup>3</sup> yuu<sup>2</sup>  
 Somjay might rice CONT
- (3) a. Somjit rəm<sup>3</sup> waat<sup>3</sup> ruup<sup>3</sup> t<sup>h</sup>ii<sup>3</sup>soɔŋ<sup>5</sup>  
 Somjit begin draw picture the second  
 'Somjit begins drawing the second picture.'
- b. Somjit rəm<sup>3</sup> ruup<sup>3</sup> t<sup>h</sup>ii<sup>3</sup>soɔŋ<sup>5</sup>  
 Somjit begin picture the second  
 'Somjit begins the second picture.'

In sentence (2a) there is a preverb *k<sup>h</sup>ɲo<sup>1</sup>* preceding the verb *kin<sup>1</sup>* 'eat'. It cannot occur independently as a main verb as shown in (2b). Thus, we reach the preliminary conclusion that the preverb *k<sup>h</sup>ɲo<sup>1</sup>* is a preverbal operator. In (3a) the verb *rəm<sup>3</sup>* 'begin' precedes the verb *waat<sup>3</sup>* 'draw'. Sentence (3b) shows that *rəm<sup>3</sup>* 'begin' can occur alone in a sentence. Therefore, it is considered a verb, not a preverbal operator. This type of verb can occur in a series with other verbs, which are so called serial verbs. Another verb from Table 1 that is considered a serial verb is *yaak<sup>2</sup>* 'want'.

However, there are some problematic cases. Consider the preverbs in the following sentences:

- (4) a. Sommaay **t<sup>h</sup>aa<sup>3</sup>thaan<sup>1</sup>** hen<sup>5</sup>duay<sup>3</sup> kap<sup>2</sup> raw<sup>1</sup>  
 Sommaay gesture agree with us

'Sommaai seems to agree with us.'

- b. \*Sommaay      t<sup>h</sup>aa<sup>3</sup>thaay<sup>1</sup>      kap<sup>2</sup>      raw<sup>1</sup>  
Sommaay      gesture      with      us

Comparing sentence (4a) and (4b), we find that *tʰaa³thaay¹* behaves in a similar way to *kʰoŋ¹* 'might' in that they must always occur before a verb to make a grammatical sentence.

However, they are different in that *kʰoŋ¹* is a grammaticized auxiliary while *tʰaa³tʰaaŋ¹* is a particle since the latter can occur in two positions—between the subject and the verb, before the subject, or at the end of the sentence. To illustrate:

- (5) a. Somjay      k<sup>h</sup>oŋ<sup>1</sup>      kin<sup>1</sup>      k<sup>h</sup>aaw<sup>3</sup>      yuu<sup>2</sup>  
 Somjay      might eat      rice      CONT  
 ‘Somjay might be eating now.’

- b. \*k<sup>h</sup>oŋ<sup>1</sup>      Somjay      kin<sup>1</sup> k<sup>h</sup>aaw<sup>3</sup>      yuu<sup>2</sup>  
                          Somjay      eat      rice      CONT

- |            |                  |                                 |                  |                                |
|------------|------------------|---------------------------------|------------------|--------------------------------|
| c. *Somjay | kin <sup>1</sup> | k <sup>h</sup> aaw <sup>3</sup> | yuu <sup>2</sup> | k <sup>h</sup> oŋ <sup>1</sup> |
| Somjay     | eat              | rice                            | CONT             | might                          |

- (6) a. Sommaay t<sup>h</sup>aa<sup>3</sup>t<sup>h</sup>aaŋ<sup>1</sup> hen<sup>5</sup>duay<sup>3</sup> kap<sup>2</sup> raw<sup>1</sup>.  
 Sommaay gesture agree with us  
 'Sommaay seems to agree with us.'

- b. **t<sup>h</sup>aa<sup>3</sup>t<sup>h</sup>aaŋ<sup>1</sup>**    **Sommaay** hen<sup>5</sup>duay<sup>3</sup>    kap<sup>2</sup> raw<sup>1</sup>  
gesture                  Sommaay agree                  with us  
'Sommaay seems to agree with us.'

- c. Sommaay hen<sup>5</sup>duay<sup>3</sup> kap<sup>2</sup> raw<sup>1</sup> naʔ<sup>4</sup> t<sup>h</sup>aa<sup>3</sup>t<sup>h</sup>aaŋ<sup>1</sup>  
 Sommaay agree with us FP gesture  
 ‘Sommaay seems to agree with us.’

We can see that *kʰoŋʰ* 'might' has a fixed position as shown in (5) while *tʰaa³tʰaaŋʰ* 'gesture' can occur in many positions in a sentence as in (6). Thus, such

elements as  $aa^3t^h aa\eta^1$  are considered not preverbal operators, but sentential particles, and as such, are excluded from this investigation.

### 3.2 Semantic properties

Besides syntactic properties, the category of preverbal operator should be limited to only the typical grammatical category. Van Valin & LaPolla (1997) include eight grammatical categories—negation, aspect, directionals, modality, status, tense, evidentials and illocutionary force<sup>2</sup>. Thus, elements marking affect such as  $t^h\epsilon\epsilon p^3$  ‘almost’,  $t\epsilon\epsilon an^1$  ‘almost’,  $kiap^2$  ‘almost’,  $k^h\omega n^3 k^h aa\eta^3$  ‘rather’ and  $s\epsilon\epsilon n^5$  ‘quite’ are excluded since they mark an approximation or intensification of the predicate (Rangkupan 2001). In addition, there are some elements that occur between the subject and the main verb but function as conjunctions or discourse markers such as  $k\omega\omega^3$  ‘also’ and  $t\epsilon\epsilon i\eta^1$  ‘thus’, so they are not taken as operators. Note that negation is also excluded from this particular paper since its complexity requires such a thorough and careful analysis that it deserves a separate study.

We have found that Thai preverbal operators indicate four types of grammatical meaning—tense, aspect, modality and status. Semantically, **tense** expresses the location of a situation in time, such as being before or after another time point and overlapping some other time period (Comrie 1999: 363). In Thai a sentence without tense marking can still be grammatical. Consider sentence (7). It is possible to be interpreted as an event occurring in the past as in (a), in the future as in (b), or overlapping the present time as in (c), depending on the context.

- (7) Somwang       $klap^2$        $baan^3$        $wan^{1?}\eta^1 k^h aa\eta^1$   
 Somwang      return      home      Tuesday  
 a. ‘Somwang went back home on Tuesday.’  
 b. ‘Somwang will go back home on Tuesday.’  
 c. ‘Somwang goes back home on Tuesdays.’

Modifying a sentence with tense markers, as in (8-10), specifies the time reference for each sentence.

- (8) Somwang       $t\epsilon\epsilon a\eta^2$        $klap^2$        $baan^3$        $wan^{1?}\eta^1 k^h aa\eta^1$   
 Somwang      FUT      return      home      Tuesday  
 a. ‘Somwang will go back home on Tuesday.’  
 b. \*‘Somwang went back home on Tuesday.’

- (9) Somwang       $mak^4$        $klap^2$        $baan^3$        $wan^{1?}\eta^1 k^h aa\eta^1$

Somwang      FREQ      return      home      Tuesday  
'Somwang often goes back home on Tuesdays.'

- (10) Somwang      p<sup>h</sup>əŋ<sup>3</sup>      kləp<sup>2</sup>      baan<sup>3</sup>      wan<sup>1</sup>ʔəŋ<sup>1</sup>k<sup>h</sup>aan<sup>1</sup>  
Somwang      RPST      return      home      Tuesday  
'Somwang just went back home on Tuesday.'

The following examples show the usage of tense markers as found in the actual corpus.

- (11) k<sup>h</sup>waam<sup>1</sup>ŋaw<sup>5</sup>      mak<sup>4</sup>      maa<sup>1</sup>      p<sup>h</sup>rɔm<sup>4</sup>kap<sup>2</sup>      k<sup>h</sup>waam<sup>1</sup>p<sup>h</sup>it<sup>2</sup>wan<sup>5</sup>  
loneliness      often      come      with      disappointment  
'Loneliness often comes with disappointment.'
- (12) lew<sup>4</sup>      p<sup>h</sup>ruŋ<sup>3</sup>nii<sup>4</sup>      k<sup>h</sup>aa<sup>3</sup>      tɕaŋ<sup>2</sup>      bɔk<sup>2</sup>      kap<sup>2</sup>      k<sup>h</sup>aw<sup>5</sup>      hay<sup>3</sup>  
and      tomorrow      1sg      will      tell      with      3sg      for  
'And tomorrow I will tell him [about it] for you.'

Aspect indicates the internal temporal structure of an event, including such categories as progressive, perfective and imperfective (Van Valin & LaPolla 1997: 40). Two aspectual preverbs that are listed in quite a few studies are *kam<sup>1</sup>lay<sup>1</sup>* PROG, and *yan<sup>1</sup>* 'IMPRF' (Boonyapatipark 1983; Sookgasem 1990). The following data exemplify the use of aspect operators.

- (13) kha<sup>1</sup>naŋ<sup>2</sup>nii<sup>4</sup>      thua<sup>3</sup>look<sup>1</sup>      kam<sup>1</sup>lay<sup>1</sup>      pha<sup>1</sup>tɕhən<sup>1</sup>  
now      the world      PROG      face  
kap<sup>2</sup>rook<sup>3</sup>k<sup>h</sup>ay<sup>3</sup>wat<sup>2</sup>mɔ<sup>1</sup>ra<sup>1</sup>na<sup>4</sup>  
with SARS  
'Right now the whole world is faced with SARS.'

- (14) tɕiŋ<sup>1</sup>tɕiŋ<sup>1</sup>      toon<sup>1</sup>nii<sup>4</sup>      yan<sup>1</sup>      t<sup>h</sup>am<sup>1</sup>      may<sup>3</sup>      daay<sup>3</sup>  
in fact      now      still      do      NEG      ABLE  
tem<sup>1</sup>k<sup>h</sup>waam<sup>1</sup>saa<sup>5</sup>maat<sup>3</sup>      ləy<sup>1</sup>      k<sup>h</sup>rap<sup>4</sup>  
one's best      at all      FP  
'In fact, now [I] still haven't performed my best.'

In RRG **modality** refers to the category often known as root or deontic modality, which expresses such notions as obligation, permission and ability while **status** includes epistemic modality and realis/irrealis (Van Valin & LaPolla

1997: 41). As discussed in Steele (1975), these two categories are closely related so they will be analyzed in comparison.

Two major differences between these two categories are question forming and negating. In Thai we have also found that preverbal modals can be distinguished by these two features. To illustrate:

- (15) \*Somporn      khon<sup>1</sup>    kin<sup>1</sup>      khaaw<sup>3</sup>      yuu<sup>2</sup>    ri<sup>5</sup>  
          Somporn      might    eat        rice        CONT Q
- (16) \*Somporn      ?aat<sup>2</sup>    kin<sup>1</sup>      khaaw<sup>3</sup>      yuu<sup>2</sup>    ri<sup>5</sup>  
          Somporn      may      eat        rice        CONT Q
- (17) Somjet      tɔŋ<sup>3</sup>      klap<sup>2</sup>    baan<sup>3</sup>      ri<sup>5</sup>  
          Somjet      must    return    home      Q  
          ‘Must Somjet go back home?’
- (18) \*Sompong    may<sup>3</sup>      khon<sup>1</sup>    klap<sup>2</sup>      baan<sup>3</sup>  
          Sompong    NEG      might    return     home
- (19) \*Sompong    may<sup>3</sup>      att<sup>2</sup>    klap<sup>2</sup>      baan<sup>3</sup>  
          Sompong    NEG      may    return     home  
          \*‘It is not possible that Sompong went back home.’<sup>3</sup>
- (20) Somjet      may<sup>3</sup>      toang<sup>3</sup>      klap<sup>2</sup>    baan<sup>3</sup>  
          Somjet      NEG      must      return    home  
          ‘Somjet need not go home.’

Examples (15-17) illustrate the interrogative sentences. When operators of epistemic modality are used, as in (15-16), the sentences are ungrammatical. But operators of deontic modality, as in (17), can occur in an interrogative sentence. Similarly, epistemic modals cannot be negated, as shown in (18-19), while deontic modals can, as in (20).

Examples of the usage of some preverbal operators from the actual corpus are given below. Sentences (21-22) exhibit epistemic marking, or status in terms of RRG, and sentence (23) deontic modality.

- (21) k<sup>h</sup>a<sup>1</sup>na<sup>4</sup>kam<sup>1</sup>ma<sup>1</sup>kaan<sup>1</sup>      ?aat<sup>2</sup>      tat<sup>2</sup>sin<sup>5</sup> lam<sup>1</sup>ɲiang<sup>1</sup>  
          committee                      may      judge      bias  
          k<sup>h</sup>aw<sup>3</sup>k<sup>h</sup>aan<sup>3</sup>      p<sup>h</sup>uu<sup>3</sup>bə<sup>1</sup>ri<sup>1</sup>p<sup>h</sup>ook<sup>3</sup>



take side consumer

'The committee may make a biased judgment for the sake of the consumer.'

- (22) ?aa<sup>1</sup>yu?<sup>1</sup> k<sup>h</sup>oŋ<sup>1</sup> raaw<sup>1</sup> sak<sup>2</sup> saam<sup>5</sup>sip<sup>2</sup>  
 age might about about thirty  
 may<sup>3</sup> kən<sup>4</sup>kwaa<sup>2</sup> nan<sup>4</sup>  
 not more than that  
 'He must be about thirty, not more than that.'

- (23) dek<sup>2</sup> klum<sup>2</sup> nii<sup>4</sup> pen<sup>1</sup> dek<sup>2</sup>wat<sup>4</sup>  
 child group this be temple-boy  
 tɕiŋ<sup>1</sup> tɔŋ<sup>3</sup> t<sup>h</sup>am<sup>1</sup>naa<sup>3</sup>t<sup>h</sup>ii<sup>3</sup> rap<sup>4</sup>tɕ<sup>h</sup>ai<sup>4</sup> p<sup>h</sup>ra?<sup>4</sup>  
 so must function serve monk  
 'This group of children are temple boys so they must be responsible for serving the monks.'

In sum, this study proposes using both syntactic and semantic criteria to identify preverbal elements. Table 2 shows the list of preverbal operators that will be included in this study. It should be noted that the list is not exhaustive and requires a more thorough study.

<u>Tense</u>		<u>Aspect</u>	
tɕa? <sup>2</sup>	FUT	kam <sup>1</sup> laŋ <sup>1</sup>	PROG
p <sup>h</sup> əŋ <sup>3</sup>	PAST	ya <sup>1</sup>	IMPRF
mak <sup>4</sup>	PRES		
<u>Modality</u>		<u>Status</u>	
tɕŋ <sup>3</sup>	'must'	k <sup>h</sup> oŋ <sup>1</sup>	'might'
		?aat <sup>2</sup>	'may'

Table 2 Thai preverbal operators and their function

#### 4. The scope of operators

As shown in many previous studies (Panupong 1962, Kullavanijaya 1968, Sriphen 1982), Thai exhibits quite a complicated system for ordering preverbal

operators. This section presents patterns of grammatical and ungrammatical ordering of those preverbal operators in order to establish the relationship between their ordering restrictions and their semantic categories.

Many past studies have discussed the relationship between grammatical categories and their order in a sentence (Foley and Van Valin 1984; Hengeveld 1990; Nuyts 2001; Vet 1998). Among them, RRG has proposed an explicit claim that "the ordering of the morphemes expressing operators with respect to the verb indicates their relative scopes" (Van Valin 1990: 31). The universal scope assignment of operators, found in many languages, e.g. Kewa, Hixkaryana, Turkish and English, is as follows:

**Illocutionary force  $\supset$  evidentials  $\supset$  tense/status  $\supset$   
modality/directionals  $\supset$  negation  $\supset$   
directionals/negation  $\supset$  aspect**

According to this principle, illocutionary force has the widest scope while aspect stays closest to the predicate. There are some categories whose order seems to vary the most across languages, i.e. tense and status, modality and directionals and directionals and negation.

Moreover, the scope is claimed to correspond to the constituent structure of the clause. Thus, nuclear operators, which occur the closest to the predicate, modify an action in the state of affairs, core operators both the action and the participant, and clausal operators, which are in the outermost layer, the whole situation and the speaker of the sentence.

It is found that the ordering of preverbal operators in Thai is restricted as shown in Table 3 illustrating a comparison between grammatical and ungrammatical ordering patterns.

### Grammatical ordering

k <sup>h</sup> oŋ <sup>1</sup>	yaŋ <sup>1</sup>	Status $\supset$ Aspect
?aat <sup>2</sup>	p <sup>h</sup> əŋ <sup>3</sup>	Status $\supset$ Tense
təŋ <sup>3</sup>	yaŋ <sup>1</sup>	Modality $\supset$ Aspect
?aat <sup>2</sup>	tɕa? <sup>2</sup>	Status $\supset$ Tense $\supset$ Aspect
k <sup>h</sup> oŋ <sup>1</sup>	təŋ <sup>3</sup>	Status $\supset$ Modality $\supset$ Aspect
tɕa? <sup>2</sup>	təŋ <sup>3</sup>	Tense $\supset$ Modality $\supset$ Aspect

### Ungrammatical ordering

* tɔŋ <sup>3</sup>	k <sup>h</sup> oŋ <sup>1</sup>	*Modality ⊃ Status
* tɔŋ <sup>3</sup>	tɕaŋ <sup>2</sup>	*Modality ⊃ Tense
* p <sup>h</sup> əŋ <sup>3</sup>	k <sup>h</sup> oŋ <sup>1</sup>	*Tense ⊃ Status
* kam <sup>1</sup> laŋ <sup>1</sup>	tɔŋ <sup>3</sup>	*Aspect ⊃ Modality
* kam <sup>1</sup> laŋ <sup>1</sup>	p <sup>h</sup> əŋ <sup>3</sup>	*Aspect ⊃ Tense

Sentences (24 – 26) below show examples of operators used in series as found in the actual corpus of data.

- (24) k<sup>h</sup>aw<sup>5</sup> ʔaat<sup>2</sup> kam<sup>1</sup>laŋ<sup>1</sup> k<sup>h</sup>uy<sup>1</sup> kan<sup>1</sup>  
 3sg may PROG talk each other  
 duay<sup>3</sup> riaŋ<sup>3</sup> rot<sup>1</sup>yon<sup>1</sup>  
 with topic car  
 ‘They may be talking about cars.’

- (25) man<sup>1</sup> ʔaat<sup>2</sup> dii<sup>3</sup> yaa<sup>1</sup> tɕon<sup>1</sup> k<sup>h</sup>un<sup>1</sup>  
 it may drug-resistant such that 2sg  
 ʔaat<sup>2</sup> tɔŋ<sup>3</sup> phəm<sup>3</sup> pa<sup>1</sup>ri<sup>1</sup>maan<sup>1</sup> maak<sup>3</sup> k<sup>h</sup>in<sup>3</sup>  
 may must increase quantity more up  
 ‘There may be resistance to the drug such that you may need to increase the dosage.’

- (26) soŋ<sup>5</sup>say<sup>1</sup> p<sup>h</sup>ii<sup>3</sup> waa<sup>3</sup> k<sup>h</sup>aw<sup>5</sup> k<sup>h</sup>oŋ<sup>1</sup> yaŋ<sup>1</sup>  
 wonder 1sg think they might IMPERF  
 loŋ<sup>5</sup>rak<sup>4</sup> kan<sup>1</sup> yuu<sup>2</sup> laŋ<sup>3</sup> maŋ<sup>4</sup>  
 love each other PROG FP FP  
 ‘I guess they are probably still in love with each other, maybe.’

- (27) kham<sup>1</sup>thaam<sup>5</sup> tɕaŋ<sup>2</sup> tɕaŋ<sup>2</sup> lik<sup>4</sup> maak<sup>3</sup> tɕon<sup>1</sup>  
 question will dig deep very such that  
 k<sup>h</sup>un<sup>1</sup> ʔaat<sup>2</sup> tɕaŋ<sup>2</sup> tɔŋ<sup>3</sup> p<sup>h</sup>aa<sup>1</sup> phan<sup>1</sup>ra<sup>1</sup>yaa<sup>1</sup> maa<sup>1</sup> duay<sup>3</sup>  
 2sg may will must bring wife come as well  
 ‘The question will go so deep that you may have to bring your wife.’

Thus, the scope assignment for Thai preverbal operators is as follows:

**status  $\supset$  tense  $\supset$  modality  $\supset$  aspect**

Table 3 shows the ordering of preverbal operators with respect to the subject and the predicate in Thai sentences.

Subject	Operator				Predicate
	Status	Tense	Modality	Aspect	
Somjit	k <sup>h</sup> oŋ <sup>1</sup> 'might'	tɕaŋ <sup>2</sup> FUT	tɔŋ <sup>3</sup> 'must'	kam <sup>1</sup> laŋ <sup>1</sup> PROG	t <sup>h</sup> am <sup>1</sup> ŋann <sup>1</sup> 'work'
	ʔaat <sup>2</sup> 'may'	p <sup>h</sup> əŋ <sup>3</sup> PAST		yaŋ <sup>1</sup> IMPRF	
		mak <sup>4</sup> PRES			

**Table 3 Semantic classification of Thai preverbal operators**

## 5. Concluding remarks

Preverbal operators in Thai exhibit many interesting problems. Many previous studies have attempted to investigate their syntactic properties. However, their semantic properties are missing from those studies. Their accounts are important not only to the comprehensive study of Thai grammar but also to the typological study. This paper has shown that categories of preverbal operators in Thai need to be determined both by their semantic and syntactic properties.

The multiple marking of Thai operators and their complex order have been noted previously but their structural properties are not related to their semantic category. It is found that the ordering system of Thai preverbal operators follows the universal scope of operator assignment as predicted in RRG.

However, there remain a lot of problems for further study. First, using only syntactic and semantic properties as criteria for categorizing operators may not be enough since there are some operators that need to be accounted for in the lexical domain. For example, a tense marker indicating near future is made up of *kam<sup>1</sup>laŋ<sup>1</sup>*, a progressive marker, and *tɕaŋ<sup>2</sup>*, a future marker. Thus, a comprehensive study is needed to investigate the whole system of these operators, and their lexical properties need to be considered.

Second, some preverbs still have some verbal behaviors although they cannot occur alone as a predicate. For example, *k<sup>h</sup>uan<sup>1</sup>* can precede a predicate to indicate modality, but can also occur before a complementizer *t<sup>h</sup>i<sup>3</sup>*, followed by the future marker *tɕaŋ<sup>2</sup>*, and the complementizer can be omitted to get *k<sup>h</sup>uan<sup>1</sup> tɕaŋ<sup>2</sup>*. All of these expressions express weak obligation. At first glance, the order of the two preverbs seems to contradict the universal scope but one needs to take

into account the lexical and syntactic properties of these forms in other environments as well.

Finally, determining the grammatical category of operators itself is complicated since there seems to be an interaction among operators themselves and between operators and adverbials that also qualify the sentence other than describing components of an event. Also, pragmatic factors play an important role in the interpretation of the qualification of the utterance in terms of time, attitude and knowledge stance. Therefore, in order to get a more complete picture of the system of operators in Thai we need to take into account the lexical, syntactic, semantic and pragmatic properties.

### Notes

<sup>1</sup>The English translation given in Table 1 is taken from the previous studies that are cited above.

<sup>2</sup>When *ʔaat*<sup>2</sup> is preceded by the negative word *may*<sup>3</sup>, the combination means 'cannot' which is a deontic reading.

<sup>3</sup>Some grammatical functions are not traditionally listed as grammatical categories, i.e. negation, directionals, and evidentials. Moreover, modality, status and illocutionary force are traditionally called mood.

### List of Abbreviations

ABLE	Aility	NEG	Negation
CMPL	Complementizer	NOM	Nominalizer
CONT	Continuous marker	POSS	Possessive marker
DM	Discourse marker	PP	Polite particle
FP	Final particle	PV	Preverbs
FREQ	Frequentative	PROG	Progressive marker
FUT	Future	REL	Relative marker
IRR	Irrealis marker	RPST	Recent past
MOD	Modifier	TM	Topic marker

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