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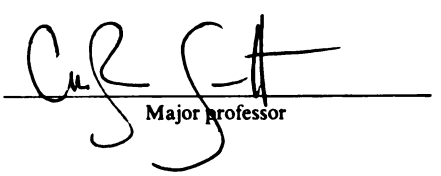

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SYNTACTIC AND SEMANTIC PROPERTIES OF ASPECTUAL MARKERS IN THAI

By

Boonjeera Chiravate

A DISSERTATION

Submitted to
Michigan State University
In partial fulfillment of the requirements
For the degree of

DOCTOR OF PHILOSOPHY

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ABSTRACT

SYNTACTIC AND SEMANTIC PROPERTIES

OF ASPECTUAL MARKERS IN THAI

By

Boonjeera Chiravate

In this dissertation I examine the behavior of the aspectual markers *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$ by using the Generative Lexicon idea that multiple related senses are to be derived from a single underspecified representation as a guideline. *Yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$ not only serve as aspectual markers but also have other functions: *yuu*$_2$ is the locative copula, *pay*$_1$ and *maa*$_1$ can be used as "go" and "come," respectively and *lææw*$_4$ can be used as a temporal conjunction. I argue that rather than cases in which multiple lexical entries accidentally share the same form, these are cases in which the multiple meanings can be predicted and, therefore, must be derived and not listed. Semantically, I propose that *yuu*$_2$ denotes a state with an Exclusion Feature. *Pay* and *maa*$_1$ add the value of an antideictic center and a deictic center, respectively, to the direction of the core meaning of the VP it attaches to. And *lææw*$_4$ denotes the abutment function.

Syntactically, I argue that *yuu*$_2$, *pay*$_1$ and *maa*$_1$, can be treated as being underspecified for transitivity. Either they project a full VP that is part of the eventuality being created or they are adjoined to a VP. The examination of these elements also reveals two types of the Progressive and two types of the Perfect. Due to the core properties of *yuu*$_2$, the Progressive expressed by *yuu*$_2$ is a state, not a process. And due to the core properties of

maa$_1$ and *lææw*$_4$, the Perfect expressed by *maa*$_1$ and *lææw*$_4$ is the universal Perfect and the existential Perfect, respectively.

To my mother

ACKNOWLEDGEMENTS

I would like to express my gratitude to my advisor, Dr. Cristina Schmitt who was a constant source of ideas and comments. I am grateful to her for many helpful discussions which helped me think about things more clearly. Without her expertise, patience, encouragement and unfailing confidence in me, this dissertation would not have been accomplished. I am also grateful to Dr. Alan Munn, Dr. Alan Beretta, and Dr. Yen-Hwei Lin for their willingness to serve as my committee. I am grateful to them for reading my dissertation and giving me insightful comments, which makes my dissertation better than it would otherwise have been.

I am indebted to the Royal Thai Government. My education in USA would not have been possible without their funding throughout my studies. I am grateful to all the faculty in the Department of Linguistics at MSU, who have ingrained in me knowledge of various areas of Linguistics. Also I am grateful to the department for giving me the opportunity to be a TA for Dr. Cristina Schmitt. I have learned considerably both from my studies and from being a TA.

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LIST OF ABBREVIATIONS

ACC	Accusative
Agr	Agreement
Asp	Aspect
AspP	Aspectual Phrase
AST-T	Assertion Time
Aux	Auxiliary Verb
B	Boolean
BP	Boolean Phrase
CL	Classifier
EV-T	Event Time
EXP	Experiential Perfect
FP	Functional Phrase
IMP	Imperfective
ImpP	Imperfective Phrase
Loc	Locative
ModP	Modal Phrase
Op	Operator
PERF	Perfect
PP	Preposition Phrase
PRF	Perfective
PROC	Process
PROG	Progressive
ProgP	Progressive Phrase
SC	Small Clause
QP	Question Particle

DATA TRANSCRIPTION GUIDE

1. Consonants

	Bilabial	Labio-dental	Alveolar	Palatal	Velar	Glottal
Stops						
Vd.	b		d			
Vl.Unasp	p		t	c	k	ʔ
Vl. Asp	ph		th	ch	kh	
Fricative		f	s			h
Latera			l			
Trill			r			
Nasal	m		n		ŋ	
Glide	w			y		

2. Vowels

	Front	Central	Back
High	i ii	ɨ ɨɨ	u uu
Mid	e ee	ə əə	o oo
Low	æ ææ	a aa	ɔ ɔɔ

Six diphthongs: /ia, iia, ɨa, ɨɨa, ua, uua/

3. Tones

Tones are represented as subscripted number after each syllable.

1	2	3	4	5
mid	low	falling	high	rising

CHAPTER 1

INTRODUCTION

1. Goals

Thai is an isolating language with no agreement morphology, no case and no tense morphology but rich in aspect markers. In the Thai language there are various words that serve as aspect markers, but which also have other functions or meanings. In most cases, their senses or functions are related. In this dissertation, I will use the Generative Lexicon (Pustejovsky, 1995) idea that related senses are to be derived from a single representation as a guideline to examine syntactic and semantic properties of four so-called aspect markers in Thai: *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$.

Empirically this dissertation has two goals:

1. To describe a set of aspect markers in Thai, more specifically, *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$.
2. To describe and explain the related senses of each of these elements, and to provide a unified semantic and syntactic property that can account for their different uses.

Theoretically, my goals are as follows:

1. To use Thai aspect markers as a testing ground for the basic intuitions put forth in the Generative Lexicon.

2. To argue that the macro-categories of the so-called Progressive and Perfect are too vague to describe cross-linguistic variation.

The results will have consequences for the syntax and semantics of Thai and will serve to provide support for the Generative Lexicon's approach.

In what follows, I will introduce the reader to the empirical puzzles exhibited by each of these aspectual markers (section (2)). Then, in section (3), I will introduce the main intuition of the Generative Lexicon. As in this dissertation I will make use of the notion of subeventual structure and event headedness, I provide an introduction to subeventual structure and event headedness in section (4). Subsequently, in section (5), I provide a small introduction to aspect. I summarize the basic analysis of the progressive and the perfect since these terms will be used throughout this dissertation. Finally, section (6) outlines the organization of this dissertation.

2. The puzzles

Yuu$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$, among others, are words which seem to carry multiple related senses. Besides being aspectual markers, they have other functions which range from serving as copular verbs, verbs, adverbial modifiers, or conjunctions. Below are examples of the multiple uses of each of these words.

Consider *yuu*$_2$. *Yuu*$_2$ has multiple functions. *Yuu*$_2$ can function as a copular verb for location as in (1a). *Yuu*$_2$ can also function as a marker for the progressive, habitual, and temporal states as in (1b), (1c), and (1d), respectively.

(1) a *cɔɔn$_1$ **yuu$_2$** thii$_3$ hoŋ$_3$ sa$_2$mud$_2$*
John yuu$_2$ at library
"John is at the library."

b *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$sɨ$_5$ **yuu$_2$***
John read book yuu$_2$
"John is reading."

c *cɔɔn$_1$ suub$_2$ bu$_2$ri i$_2$ **yuu$_2$** song pee*
John smoke cigarette yuu$_2$ two years
"John smoked for two years."

d *cɔɔn$_1$ ʔuuan$_3$ **yuu$_2$***
John fat yuu$_2$
"John is, at this time, fat."

Pay$_1$ also has multiple functions. *Pay$_1$* may function as a verb for "go," as in (2a). And *pay$_1$* can function as a marker for continuative and a marker for excessive degree as in (2b) and (2c), respectively.

(2) a *cɔɔn$_1$ **pay$_1$** tha$_1$ naa$_1$ kaan$_1$*
John pay$_1$ bank
"John went to the bank."

b *thɨŋ$_5$ tho$_1$ra$_1$sab$_2$ daŋ$_1$ cɔɔn$_1$ kɔɔ$_3$*[1] *ʔaan$_2$ nuŋ$_5$sɨ$_5$ **pay$_1$***
although telephone ring John read book pay$_1$
"Although the telephone rang, John continued reading."

c *cɔɔn$_1$ ʔuuan$_3$ **pay$_1$***
John fat pay$_1$
"John is too fat."

Maa$_1$ also has more than one function. *Maa$_1$* can function as a verb for "come" as in (3a), and *maa$_1$* can also function as a marker for the universal Perfect, as in (3b).

(3) a *cɔɔn$_1$ **maa$_1$** tha$_1$ naa$_1$ kaan$_1$*
John maa$_1$ bank
"John came to the bank."

[1] *thɨŋ$_5$...kɔɔ$_3$* ... is translated as "although...,..."

b *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$ sɨɨ$_5$* ***maa$_1$*** *pen$_1$ wee$_1$ laa$_1$ soŋ$_5$ chuua$_3$ moŋ$_1$*
John read book maa$_1$ be time two hours
"John has been reading for two hours."

Finally, *lææw$_4$* has more than one function. *Lææw$_4$* can function as a conjunction, as in (4a). And *lææw$_4$* can function as a marker for the inchoative as in (4b) and (4c), and as a marker for the perfective and Perfect as in (4c).

(4) a *cɔɔn$_1$ kin$_1$ ʔæp$_4$ pəən$_3$* ***lææw$_4$*** *ʔaan$_2$ naŋ$_5$ sɨɨ$_5$*
John eat apple *lææw$_4$* read book
"John ate the apples and then read a book."

b *cɔɔn$_1$ wiŋ$_3$* ***lææw$_4$***
John run *lææw$_4$*
"John has started running."

c *cɔɔn$_1$kin$_1$ ʔæp$_4$ pəən$_3$* ***lææw$_4$***
John eat apple *lææw$_4$*
"John has started eating the apples."
"John ate/has eaten the apples."

The question is whether each of these sets are cases of homonymy in which multiple lexical entries coincidentally share the same form, or whether these are cases in which multiple meanings can be predicted and therefore the core meaning can correspond to a single lexical entry.

In this dissertation, I will argue that, rather than cases of homonymy, these are cases in which multiple meanings are somehow associated and can be treated as a single lexical entry. The argument comes not only from the fact that we can predict the different interpretations, but also from the fact that other languages have words that display similar behaviors.

First, with respect to *yuu*$_2$, the phenomenon in which an element for locative meaning and an element for progressive meaning shares the same form is found in many non-related languages, including Chinese, Dutch, and Spanish.

Second, with respect to *pay*$_1$ and *maa*$_1$, the phenomenon in which an element for "go" and an element for "come" serve as an aspectual marker, is not cross-linguistically uncommon, as it is also found in other languages, including French.

So it seems that rather than cases of homonymy, in which multiple lexical entries accidentally share the same form, it is more likely that these are cases in which multiple meanings are somehow associated and could be treated as a single lexical entry. Now what has to be explained is why it is possible for the lexical items *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$ to have multiple functions.

In this dissertation in which I scrutinize the elements *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$, I will provide an explanation for why it is possible for these elements to have the multiple functions they have. Each study should be considered as an independent case study. And because the Generative Lexicon does not develop a complete formalism to deal with grammatical aspect, I am mainly going to pursue its main ideas and complement it with other proposals for grammatical aspect.

Now, let's briefly introduce the main important pieces and points made by the Generative Lexicon.

3. The Generative Lexicon

In the past twenty years, the role of the lexicon has been a main concern in linguistic research, and a number of researchers have tried to address this issue. One of the questions is how the lexicon contributes to syntactic structures, or in another direction, how the structures contribute to word interpretations? There seems to be differing views to this question as illustrated in two theories of lexicons: the Sense Enumerative Lexicon and the Generative Lexicon.

The Sense Enumerative Lexicon (SEL) (as Pustejovsky 1996 calls it) is an earlier approach to what the lexicon is. Within SEL, the lexicon is viewed as a static set of word senses or a list of all possible word senses. Each is specified for what structure it has to be in for a particular sense to be expressed. So, different word senses are generally associated with distinct lexical items.

The Generative Lexicon (GL) takes an alternative approach. The basic idea is that the word sense is determined by the interaction between the word and the structure that carries it, in the sense that words in a structure can "see" other words and, therefore, can "combine." So essentially, the interaction of various words or word parts may occur. The lexicon, therefore, is viewed as a set of basic lexical representations which is dynamic, in the sense that it can be used to generate many possible word senses, via operations of coercion and co-composition.[2]

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[2] Coercion is "where a lexical item or phrase is coerced to a semantic interpretation by a governing item in the phrase, without change of its syntactic type." (p.61)
Co-composition is "where multiple elements within a phrase behave as functors, generating new non-lexicalized senses for the words in composition." (p.61)

As discussed in Pustejovsky (1995), SEL seems to be inadequate for the purpose of linguistic theory since it does not fully describe our lexical competence. Concerning the inadequacy of SEL, phenomenon in aspectuality seems relevant in two respects.

First, the same aspect marker may have different senses depending on the type of VP it is modifying. For example, *lææw*$_4$ in Thai may provide the interpretation of the Perfect, perfective, or inchoative (Visonyanggoon 2000) depending on the predicate it combines with. In SEL, however, these three senses would have to correspond to at least three lexical entries, in spite of the fact that they are predictable.

Second, it is very common for the same element to act as an aspect marker and something else. For example, across languages, (i.e., Thai, Chinese, etc.) an element which contributes to the progressive meaning is also used in locative expressions. In SEL, however, the two meanings could only be related by means of meaning postulates which are offline descriptions of the relation between words.

SEL, therefore, fails to account for cross-linguistic partial regularities and has no explanatory adequacy. In other words, it does not satisfactorily explain why *lææw*$_4$ has three senses, nor why the locative and the progressive senses seem to be marked in many languages by the same element.

Under the theory of GL, however, extended meanings are derived from the interaction of core meaning and structure. Thus, multiple related meanings, rather than corresponding to different lexical entries, should correspond to a single lexical item. In other words, there should be a unified representation for multiple related meanings, and multiple related meanings should be predictable from the interaction with other words in particular structures. In order to do that Pustejovsky divides lexical representations into

four different levels: an argument structure, an event structure, a qualia structure and a lexical inheritance structure.

"The argument structure is specification of number and type of logical arguments, and how they are realized syntactically. The event structure is definition of the event type of a lexical item and phrase. Sorts include STATE, PROCESS, and TRANSITION, and events may have subeventual structure. The qualia structure is modes of explanation, composed of FORMAL, CONSTITUTIVE, TELIC, and AGENTIVE roles. And the lexical inheritance structure is identification of how a lexical structure is related to other structure in the type lattice, and its contribution to the global organization of a lexicon." (p.61) All these levels are independent but related.

In this dissertation I will mainly make use of the notion of subeventual structures and event headedness (Pustejovsky 1995). An introduction to subeventual structures and event headedness will now be provided.

4. Introduction to subeventual structure and event headedness

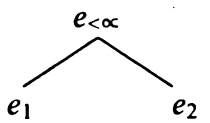
Pustejovsky (1995), proposes that events can be subclassified into at least three sorts: PROCESSES, STATES, and TRANSITIONS, and these three sorts of events can be combined in different ways, resulting in different more complex eventual structures.

Pustejovsky assumes a tuple $<, E, \preceq, <, \circ, \subseteq, *, >$, where E is the set of events (e), $\preceq$ is a partial order of part-of, $<$ is a strict partial order, $\circ$ is overlap, $\subseteq$ is inclusion, and $*$ designates the "head" of an event. An event complex has at most two subevents (e_1 and e_2). The relation between the two subevents can be defined in terms of the relation of

"exhaustive ordered part of," "exhausative overlap part of, " and "exhausative ordered overlap."

"Exhaustive ordered part of" is the subeventual structure denoted by verbs for causatives and inchoatives (i.e., *break*). The subeventual structure is represented in (5) and its definition is shown in (6), where e_1 stands for a process and e_2 for a result state.

(5)



(p.69)

(6) a $[_{e3}\ e_1 <\propto e_2] =_{def} <\propto (\{e_1, e_2\}, e_3)$

b $\forall\ e_1, e_2, e_3\ [<\propto (\{e_1, e_2\}, e_3) \leftrightarrow e_1 \preceq e_3 \wedge e_2 \preceq e_3 \wedge e_1 < e_2 \wedge$

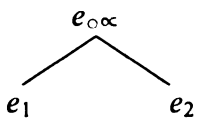
$\forall e\ [\ e \preceq e_3 \rightarrow e = e_1 \vee e = e_2\ ]]$

(p.69)

This definition states that the event e_3 is a complex event structure constituted of two subevents, e_1 and e_2, where e_1 and e_2 are temporally ordered such that the first precedes the second, each is a logical part of e_3, and there is no other event that is part of e_3. (p.69).

"Exhaustive overlap part of" is the subeventual structure denoted by verbs such as *accompany*. The event denoted by the verb *accompany* involves two subevents occurring simultaneously. Therefore, the subeventual structure can be represented as (7) and its definition is shown in (8).

(7)



(p.71)

(8) a $[_{e3}\, e_1 \circ\propto e_2] =_{def} \circ\propto (\{e_1, e_2\}, e_3)$

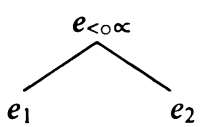
b $\forall e_1, e_2, e_3\, [\circ\propto (\{e_1, e_2\}, e_3) \leftrightarrow e_1 \preceq e_3 \wedge e_2 \preceq e_3 \wedge e_1 \subseteq e_2 \wedge \subseteq$

$e_1 \wedge \exists e\, [\, e \subseteq e_1 \wedge e \subseteq e_2 \wedge e = e_3] \wedge \forall\, e\, [e \preceq e_3 \rightarrow e = e_1 \vee e = e_2\,]]$

(p.70)

Finally, "exhaustive ordered overlap" is a subeventual structure denoted by verbs such as *walk*. As for the event denoted by *walk*, the two motion processes are structured in an overlapping relation; that is, the efficient motion of the legs bring about the final motion of the body. The subeventual structure, therefore, can be represented as (9) and its definition is shown in (10), where *init* is a function over events, returning the initial part of the event, and *end* is a function returning the final part of the event.

(9)



(p.71)

(10) a $[_{e3}\, e_1 <\circ_{\propto} e_2] =_{def} <\circ_{\propto} (\{e_1, e_2\}, e_3)$

b $\forall e_1, e_2, e_3\, [<\circ_{\propto} (\{e_1, e_2\}, e_3) \leftrightarrow e_1 \preceq e_3 \wedge e_2 \preceq e_3 \wedge e_1 \circ e_2 \wedge$

init $(e_1) <$ *init* $(e_2) \wedge$ end $(e_1) =$ *end* $(e_2) \wedge \forall\, e\, [e \preceq e_3 \rightarrow e = e_1 \vee e = e_2\,]]$

(p.70)

So, the relation $<\circ_{\propto}$ defines an event containing two subevents, e_1 and e_2, where e_1 starts before e_2.

Talmy (1975, 1976) and others note that the information conveyed by a verb can be much richer than the temporal ordering relation (i.e., $<\propto$, $\circ\propto$, and $<\circ_{\propto}$) of the subevents.

For two combined subevents, relative prominence of the subevents of a larger event is also information conveyed by a verb. To capture the relative prominence of the subevents of a larger event *event headedness* then, is proposed (Pustejovsky 1998). Informally, the head, notated by $*$, is the most prominent subevent in the event structure of a predicate, which contributes to the "focus" of the interpretation.

Assuming a binary event structure and the three temporal ordering relations, there are twelve possible head configurations as listed in (11).

(11) a $[_e\sigma\ e_1* <_{\propto}\ e_2]$
b $[_e\sigma\ e_1 <_{\propto}\ e_2*]$
c $[_e\sigma\ e_1* <_{\propto}\ e_2*]$
d $[_e\sigma\ e_1 <_{\propto}\ e_2]$

e $[_e\sigma\ e_1* \circ_{\propto}\ e_2]$
f $[_e\sigma\ e_1 \circ_{\propto}\ e_2*]$
g $[_e\sigma\ e_1* \circ_{\propto}\ e_2*]$
h $[_e\sigma\ e_1 \circ_{\propto}\ e_2]$

i $[_e\sigma\ e_1* <\circ_{\propto}\ e_2]$
j $[_e\sigma\ e_1 <\circ_{\propto}\ e_2*]$
k $[_e\sigma\ e_1* <\circ_{\propto}\ e_2*]$
l $[_e\sigma\ e_1 <\circ_{\propto}\ e_2]$

Each configuration in (11) represents a different kind of verb. For example, (11a) represents accomplishment verbs where the initial event is headed, focusing on the action bringing about a state. (11b) represents achievement verbs, for which the persistence of the final state is the focus of interpretation.[3]

The configurations in (11d), (11h), and (11l) represent lexical expressions which are unspecified with respect to headedness, i.e. headless. When a lexical expression is unspecified with respect to headedness, ambiguity arises. (11d), therefore, represents *causative/inchoative* predicates such as *break* and *sink*. (11h) represents *argument inversion* predicates, such as *rent*. And (11l) represents *raising/control* predicates, such as *begin* and *stop*.

Talmy discusses that positing headedness as part of an event structure accounts for facts concerning adverbial modification. It seems that adverbial phrases not only

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[3] Pustejovsky (1995) provides an example of each type as follows.

a	$[_e\sigma\ e_1* <_\propto e_2]$	-	build
b	$[_e\sigma\ e_1 <_\propto e_2*]$	-	arrive
c	$[_e\sigma\ e_1* <_\propto e_2*]$	-	give
d	$[_e\sigma\ e_1 <_\propto e_2]$	-	UNDERSPECIFIED
e	$[_e\sigma\ e_1* \circ_\propto e_2]$	-	buy
f	$[_e\sigma\ e_1 \circ_\propto e_2*]$	-	sell
g	$[_e\sigma\ e_1* \circ_\propto e_2*]$	-	marry
h	$[_e\sigma\ e_1 \circ_\propto e_2]$	-	UNDERSPECIFIED
i	$[_e\sigma\ e_1* <\circ_\propto e_2]$	-	walk
j	$[_e\sigma\ e_1 <\circ_\propto e_2*]$	-	walk home
k	$[_e\sigma\ e_1* <\circ_\propto e_2*]$	-	??
l	$[_e\sigma\ e_1 <\circ_\propto e_2]$	-	UNDERSPECIFIED

The detailed discussion for each type is not crucial here.

modify the entire event, but they can also take scope over the individual subevents. For example, the durative adverbial in (12) modifies the designated head of the event rather than the entire event structure.

(12) a John ran home for an hour.

b My terminal died for two days.

c Mary left town for two weeks.

(p.74)

Generally, durative adverbials, such as *for*-phrases can modify processes and states, but not accomplishments or achievements. However, in (12), the *for*-phrase can naturally occur with accomplishment (i.e., *run home*) and achievement (i.e., *die* and *leave*). Moreover, the interpretation of (12a) to (12c) is that "John spent an hour at home," "The terminal was dead for two days," and "Mary was out of town for a period of two weeks," respectively. This suggests that the *for*-adverbials modify the duration of the final state, not the entire event. This is naturally accounted for under the assumption that in examples in (12a) to (12c) e_2 is the designated head of the event. Since e_2 is the state, *for*-adverbial can occur in (12) and, consequently, such interpretation is expressed.

Therefore, positing headedness as part of an event structure accounts for facts concerning adverbial modification. In chapter 2 and 3 I will make use of a modified notion of headedness when discussing the syntax of yuu_2 and pay_1/maa_1.

Now, since the topic of aspect is the main concern of this dissertation, we need a little introduction to aspect.

5. Introduction to aspect

Aspect concerns temporality in language. Aspect may be conveyed by the inherent temporal feature of the verb (and its complements), or by a grammatical morpheme associated to the verb. The former may be referred to as situation aspect and the latter as viewpoint aspect (Smith 1997).

5.1 Situation aspect

With respect to situation aspect, I assume Vendler's (1967) quadripartition of situations: state, activity, accomplishment, and achievement. The distinctions among the four types of situations have to do with the properties of culmination, instantaneity, and dynamism.

Basically, accomplishments and achievements are situations which have culmination points, while activities and states are situations which have no culmination points.

Achievements differ from accomplishments, activities, and states in terms of instantaneity. While achievements are instantaneous, accomplishments, states, and activities are not.

States differ from accomplishments, achievements, and activities in terms of dynamicity. While states are non-dynamic, accomplishments, achievements and activities are.

The situations described by the predicates *love Bill, run, draw a circle,* and *win a race*, are considered to be state, activity, accomplishment, and achievement, respectively.

5.2 Viewpoint aspect

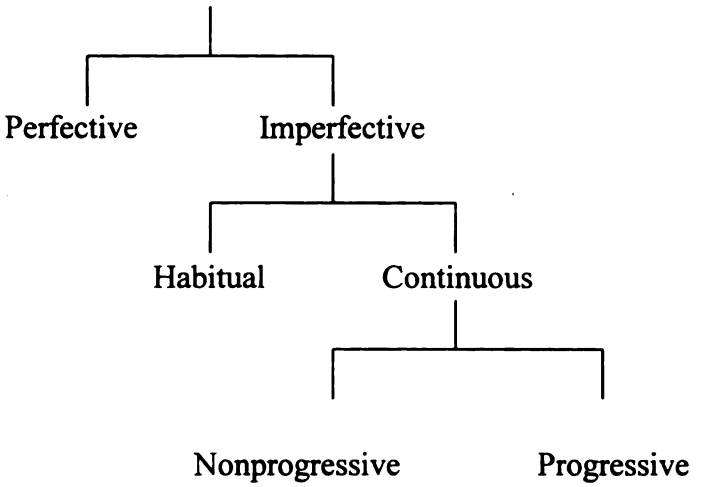
With respect to viewpoint aspect or aspect encoded by grammatical morpheme, I assume Comrie 's (1976) proposal that viewpoint aspect falls into two main types; perfective and imperfective. Perfective aspect is when a situation is viewed as a single whole, while imperfective aspect is when the internal structure of a situation can be viewed.

As perfective refers to a situation as a single whole, it denotes the termination or completion of a situation. In English, the simple form such as "John ate the apple" may encode perfective as the event of John's eating is not divided into phases and it denotes that the event of John's eating is terminated or completed.

On the other hand, imperfective does not denote the termination or completion of a situation. In English, the progressive form such as "I am eating the apple" encodes imperfective as the event of John' eating is divided into phases and the speaker is describing the event at some point after the beginning of the event and before the end of the event.

Comrie, proposes the classification of aspectual oppositions as follows in (13).

(13)



(Comrie 1976, p.25)

As seen in (13), perfective and imperfective are two main types of aspect. Imperfective includes habitual, and continuous. And continuous includes non-progressive and progressive.

Comrie notes that the Perfect, although rather different from the other viewpoint aspects, may also be treated as a viewpoint aspect. According to him, the Perfect is different from other viewpoint aspects since it tells us nothing directly about the situation in itself, but indicate the continuing relevance of a past situation. For example, while the non-Perfect sentence *I lost my pen* has no implication that the pen is still lost, the Perfect sentence *I have lost my pen* does.

In Thai verbs are not inflected for tense nor aspect. A bare verb phrase may have either a present tense interpretation or a past tense interpretation, depending on contexts. Aspects are expressed by particles including *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$, as seen in (1) to (4).

As in this dissertation we will have to deal with the Progressive when discussing *yuu*$_2$ and the Perfect when discussing *maa*$_1$, and *lææw*$_4$, in the following two sections I provide a summary of the basic analysis of the Progressive and the Perfect.

5.2.1 The Progressive

In a progressive sentence like *Mary is building a house*, the function of the progressive aspect *be –ing* is to present an internal perspective, meaning that the event of Mary's building a house is perceived as an event in progress. However, what has to be explained is what it means for Mary's building a house to be in progress. (Landman 1992)

There are several proposals for the meaning of the progressive. Starting with an early proposal given by Scott and Montague, a summary of subsequent analyses by Bennett and Partee (1972), and Dowty (1979), Parsons (1989), and Landman (1992) will be provided.

5.2.1.1 Scott and Montague

Scott and Montague propose that "a simple sentence in the progressive is true at a given time *t* if and only if the corresponding nonprogressive sentence is true at every moment throughout some open interval about *t*. Thus 'John is walking' is true at time *t* in case there is an open interval of times surrounding *t* such that 'John walks' is true at each moment in the interval." (Montague 1974, p. 125)

This analysis is known to be insufficient, as it leads to what has been called "imperfective paradox." (Dowty 1979, p.133) "The imperfective paradox" is the observation that, although for verb phrases expressing activities, like *push a cart*, the inference from the past progressive to the simple past is valid; for verb phrases expressing accomplishments, like *draw a circle*, it is not. So, while *Mary was pushing a cart* entails *Mary pushed a cart*, *Mary was building a house* does not entail *Mary built a house*.

In the same way that *Mary was building a house* does not entail *Mary built a house*, *Mary is leaving* does not entail *Mary has left*. In Scott and Montague's analysis, however, *Mary is leaving* should entail *Mary has left*.[4] According to them, if *Mary is leaving* is true at *t* then there is an open interval of times surrounding *t* and thus containing points of time prior to *t* – such that *Mary leaves* is true at every point in the interval. And, as *Mary leaves* is true at some time or times before *t*, *Mary has left* is true at *t*. So, within Scott and Montague's analysis if Mary is leaving then Mary has left. Obviously, this is not correct and their analysis needs to be modified.

5.2.1.2 Bennett and Partee (1972)

Hoping to provide a possible solution for imperfective paradox, Bennett and Partee (1972) propose an analysis in which sentences, rather than being viewed as being true at instants of time, are viewed as being true with respect to intervals of time. They propose that "a simple progressive sentence is true at an interval of time *I*, if and only if *I*

[4] Although they do not try to account for achievements, by their reasoning, we should conclude that "Mary is leaving" entails "Mary has left."

is a moment of time, and there is an interval I' which contains I such that the nonprogressive form of the sentence is true at I'." (Bennett and Partee, 1972, p.13) According to them, therefore, *John is building a house* is true at an interval (i.e., today's evening) iff that interval is a subinterval of a larger, later ending interval (i.e., an interval starting last year and terminating next year) where *John build a house* is true.

Although, in their analysis, the progressive sentence does not require for its truth at I that there be any totally past interval at which the nonprogressive sentence is true, their analysis still does not avoid the imperfective paradox. Within their analysis, if John is now building a house, then it will be true at some time in the future that *John has built a house*. For, if *John is building a house* is true at today's evening, then, according to their analysis, there is an interval surrounding today's evening at which the sentence John builds a house is true. But then there will be some moment later than every instant in that interval, and at that moment, the sentence *John has built a house* will be true. Again, this is not correct because John may never finish building a house.

Although Bennett and Partee's (1972) analysis is still problematic, the intuition that forms the basis of their analysis seems to play an important role in later analyses of the progressive. Assuming Bennett and Partee's idea that John's building of a house is in progress at a certain period iff it will continue beyond this period and eventually be fully realized, Dowty (1979) proposes an alternative analysis for the progressive.

5.2.1.3 Dowty (1979)

Dowty (1979) proposes that an event in progress for a certain period does mean that it will continue beyond that period; however, the continuation is not necessarily in the actual world, but in some other worlds closely related to the actual world; or using his term, the *inertia worlds*.

An inertial world is a possible world that is exactly like the actual world up to the time in question, and in which the future course of events after this time develops in ways most compatible with the past course of events. (Dowty 1979, p. 148)

Thus, inertia worlds for our world are like our world up to some moment in time but where, after that moment, nothing unexpected happens. Unexpected things may only happen in the real world. .

Dowty's analysis of the progressive is as follows: *Mary is building a house* is true in a world *w* at an interval *i* iff in every inertia world υ for *w* at *i* this interval is a subinterval of a larger interval where *Mary build a house* is true.

Thus, *Mary is building a house* is true, if this event will continue beyond that interval and be fully realized eventually in the inertial world. So Dowty's analysis of the progressive allows for the possibility that an event in progress may be interrupted and not being fully realized in the real world, yielding a possible account for the imperfective paradox.

Dealing with the imperfective paradox, Dowty discusses that the difference between activities and accomplishments is relevant. While an accomplishment has an activity part and a result part, an activity does not have a result part. He then proposes an

activity postulate which states that, "If A is an activity and A is true at interval *i*, then A is true at every reasonably large subinterval of *i*."

Then, the fact that the entailment holds for activities (i.e., Mary was pushing a cart entails Mary pushed a cart) can be explained as follows. Suppose *Mary was pushing a cart* is true in *w* now. Then, according to the semantics of the progressive, *Mary push a cart* is true in every inertial world υ for *w* and *i* at some *j* surrounding *i*. Then by the activity postulate, *Mary push a cart* is true in every inertial world υ for w and *i* at *i*, as *i* is a subinterval of *j*. Then by the definition of inertia worlds, the inertia world for *w* at *i* is identical to *w* up to *i*. This means that if *Mary push a cart* is true in an inertia world for *w* at *i*, it is true in *w* at *i*. Thus *Mary push a cart* is true in *w* at *i*. Then *Mary pushed a cart* is true in *w* now.

The fact that the entailment does not hold for accomplishments (i.e., Mary was drawing a circle does not entail Mary drew a circle) can be explained as follows. The activity postulate applies to the activity part (i.e., Mary drew) but the result part (i.e., the circle coming into existence), is only required to take place in the inertia worlds at the interval which is typically later than the interval at which the progressive is evaluated. Since the inertial world may differ from the actual world after the interval of the evaluation, there is no requirement that a circle has to come into existence in the actual world. And so *Mary was drawing a circle* does not entail *Mary drew a circle*.

However, as pointed out in Vlach (1981), there are difficulties with Dowty's analysis. Vlach points out that Dowty's analysis encounters problems when considering cases such as *Mary was crossing the street when the truck hit her.* According to Dowty, the progressive is true if in the inertial worlds – worlds in which everything takes its

normal course – Mary manages to cross. However, the problem is that this sentence is appropriate to report a situation in which the truck is seconds away from Mary. If everything takes its normal course, the truck will hit Mary and Mary will not manage to cross. Thus, the progressive is true, although in the inertial worlds, Mary does not manage to cross.

In summary, grasping the definition of the progressive requires an explanation of the imperfective paradox phenomenon. Earlier analyses on the progressive including Scott and Montague (1974), Bennette and Partee (1972), and Dowty (1979); however, do not seem to be successful in explaining such phenomenon. However, two competing theories of the progressive that further develop the previous theories and are worth consideration are proposed in Parsons (1989) and Landman (1992).

5.2.1.4 Parsons (1989)

Parsons (1989) proposes a completely different approach to the meaning of the progressive. Parsons's basis for his approach to the progressive are the following two assumptions. First, assuming Davidson's (1967), a sentence such as "Caesar died" says something like (14).

(14) For some event e,

e is a dying, *and*

the object of e is Caesar, *and*

e culminates before now

(Parsons 1994, p.6)

Second, assuming Ramsey (1927), a sentence such as "Caesar died" is really an existential proposition, asserting the existence of an event of a certain sort, and can be represented as (15).

(15) ∃e

Based on these assumptions, "Caesar died" can then be represented in terms of the logical form (16).

(16) (∃e) [Dying (e) & Objects (e, Caesar) & Culminate (e, before now)

(Parsons 1994, p.6)

With respect to the progressive, Parsons's proposal is concerned with how the meaning of a sentence using the progressive is related to the meaning of the corresponding non-progressive. His idea is that an event *e* can either culminate at time *t* or hold at time *t*. Culmination is represented as Cul (*e*, *t*) and Hold is represented as Hold (*e*, *t*), respectively.

For a simple non-progressive sentence, its logical form contains Hold if the verb is a stative verb, and its logical form contains Cul if the verb is an event verb, as in (17) and (18), respectively.

(17) a Mary knows Fred.

b (∃*e*) [Seeing (*e*) & Subject (*e*, Mary) & Object (*e*, Fred) & Hold (*e*, now)]

(18) a Mary built a bookcase.

b (∃*t*) (*t* < now & (∃*e*) [Building (*e*) & Subject (*e*, Mary) & Object (*e*, the bookcase) & Cul (*e*,*t*)])

(Parsons 1994, p. 221)

The rule for dealing with the progressive form of the verb is as follows:

(19) "If 'A' is an event verb then 'be A-ing' is to be treated semantically as a state verb; otherwise, 'be A-ing' is to be treated the same as 'A.'"

(Parsons 1994, p.222)

Thus, changing an eventive verb to a progressive form requires that it be treated as a state verb. More precisely, changing the verb to a progressive form means that the sentence in question will require for its truth that the event in question holds, not that it culminates.

Consequently, the non-progressive sentence *Agatha crossed the street*, and the progressive sentence *Agatha was crossing the steet* can be represented as (20) and (21) respectively.

(20) a Agatha crossed the street

b $(\exists t)$ [$t <$ now & $(\exists e)$ [crossing (e) & Subject (e, Agatha) & Objects (e, the street) & Cul (e,t)]].

(Parsons 1994, p.222)

What (20b) expresses is that there exists a time which is before now, and there exists an event (i.e., a crossing event) such that the subject of the event was Agatha, and the object of the event was the street and the culmination of the event (i.e., the end point) was at time t.

(21) a Agatha was crossing the street

b $(\exists t)$ [$t <$ now & $(\exists e)$ [crossing (e) & Subject (e, Agatha) & Object (e, the street) & Hold (e,t)]]

(Parsons 1994, p.222)

What (21b) expresses is that there exists a time which is before now, and there exists an event (i.e., a crossing event) such that the subject of the event was Agatha, and the object of the event was the street and the event holds (i.e., was on going) at time *t*.

As the sentence in the progressive form requires for its truth that the event holds, and not that it culminates, Parsons correctly predicts that the progressive accomplishment, like *Mary was drawing a circle*, does not entail a simple past accomplishment, like *Mary drew a circle*, and thus his proposal accounts for the imperfective paradox.

However, as discussed in Zucchi (1999), within Parsons'analysis, there are some difficulties with respect to creation verbs (i.e. build a house, draw a circle, etc). According to Parsons's analysis, for (22a), if (22b) is true (22c) is true.

(22) a Mary is building a house

b $\exists e\, \exists I\, \exists t\, [I = now \wedge t \in I \wedge building\ (e) \wedge Agent\ (e, Mary) \wedge \exists x[house\ (x) \wedge Theme\ (e, x) \wedge Hold\ (e, t)]$

c $\exists x(house(x))$

(Zucchi 1999, p. 186)

Thus by Parson's analysis, if Mary is building a house, there is a house. The problem arises in the case in which Mary only built the foundation, then she is building a house, but there is no house yet. Parsons's response to this problem is that people do refer to unfinished houses as houses, so if the house-building process is interrupted, the house exists but it is an unfinished house. The consequence of Parson's response is that a version of the imperfective paradox is brought back. This can be illustrated by the following.

(23) a Mary was building a house when she died

b Mary built Villa Maria

c Villa Maria is a house

d Mary built a house

(Zucchi 1999, p.187)

According to Parsons, the object of a building event that makes (23a) true is a house. Suppose the object of the building event, which may not be much of a house, is called Villa Maria. Then (23b) is true. However, (23c) is also true. Thus the conclusion is that (23d) is true. This, therefore, amounts to bringing back the imperfective paradox as if Mary was building a house, she built one.

In dealing with the problem posed by Parsons' theory, Zucchi discusses that creation verbs should be assumed to be intensional. Zucchi notes that the idea of treating verbs of creation as intensional is not new, as it has been discussed in Bennett (1977). Bennett argues that the fact that *John is building a house* does not imply the existence of *a house* should be explained by analyzing *build* as an intensional verb. In particular, the verb phrase *build a house* should be analyzed as *build something to be a house*. So *John is building a house* does not imply that there is, or will be *a house*. Similarly, *draw, paint, compose, write*, and *make* should also be analyzed as intensional verbs.

So, by treating creation verbs as intensional, Parsons' theory may avoid the problem of imperfective paradox and serve as one of the theories of the progressive.

5.2.1.5 Landman (1992)

Landman (1992), on the other hand, proposes a different approach for the progressive which, besides accounting for the imperfective paradox, arguably accounts for cases involving modality and interruptions as illustrated in (24) and (25) respectively.

(24) God was creating a unicorn, when He changed his mind

(Landman 1992, p.8)

(25) Mary was crossing the street when the truck hit her

(Landman 1992, p.10)

Besides the imperfective paradox, (i.e., the observation that while *Mary was pushing a cart* entails *Mary pushed a cart*, and *Mary was drawing a circle* does not entail *Mary drew a circle*), Landman's analysis claims to account for the fact that sentence (24) is true without there being an actual unicorn, complete or incomplete, that God was creating, and that sentence (25) is true even if there are several trucks waiting in line to hit her.

Landman's analysis, referred to as "the continuation branch," is based on assumptions about event stages and normality. With respect to event and stages, Landman assumes that "an event is a stage of another event if the second can be regarded as a more developed version of the first. That is, if we can point at it and say "It's the same event in a further stage of development." Thus, not every part of *e* at an interval is a stage of *e*; to be a stage, a part has to be big enough and share enough with *e* so that we can call it a less developed version of *e*." (p.23)

So, following this assumption, when an event stops in a world, there is a bigger event of which it is part in that world, but there is no bigger event in the world of which it is a stage. This can be stated as (26).

(26) Let *e* be an event that goes on at *i* in *w*. Let *f* be an event that goes on at *j* in *w*, where *i* is a subinterval of *j*.

f is a *continuation* of *e* iff *e* is a stage of *f*.

Let *j* be a non-final interval.

f stops at *j* in *w* iff no event of which *f* is a stage goes on beyond *i* in *w* (i.e., at a later ending interval).

(Landman 1992, p.24)

Landman's analysis of the progressive also relies on the notion of normality. Landman discusses that what makes *Mary was crossing the street* true in a situation where there are several trucks waiting in line to hit her, and *Mary was wiping out the Roman army* false in a situation where there are thousands of soldiers waiting to kill her, has to do with "reasonable chance."

Landman discusses that although in both cases, due to the trucks and the soldiers, Mary does not have a chance of crossing the street nor a chance of wiping out the Roman army, the difference between them is that if the trucks and the soldiers were zapped away, in the former case, Mary's internal capability to cross the street is reasonable while in the latter case, Mary's internal capability to wipe out the Roman army is not reasonable.

Assuming that for *Mary was crossing the street*, a stage of *c* is going on in υ, we can say that υ is a reasonable option for *c* in *w*, as based on what is internal to *c* in *w* it is

reasonable that *c* will continue in *w* as far as it does in *υ*. On the other hand, assuming that for *Mary was wiping out the Roman army*, a stage of *r* is going on in *z*, we can say that *z* is not a reasonable option for *r* in *w*, as based on what is internal to *r* in *w*, it is not reasonable that *r* will continue in *w* as far as it does in *z*.

Consequently, Landman assumes that a model assigns to event *e* in *w* a set of worlds, *R(e, w)*, the set of reasonable options for *e* in *w*, where *R(e, w)* is understood as follows:

(27) $\upsilon \varepsilon R(e, w)$ iff there is a reasonable chance on the basis of what is internal to *e* in *w* that *e* continues in *w* as far as it does in *υ*.

(Landman 1992, p.25)

On the basis of theses assumptions, Landman's idea for the progressive, is that we follow the actual continuation of our event *e* in our world *w* until it stops. Then we perform a though experiment: on the basis of what is internal to *e*, how would *e* have continued if it hadn't stopped? If it is reasonable that *e* will continue and later be completed, the progressive is true. If it is not reasonable that *e* will continue nor later be completed, the progressive is false.

As Landman puts it: "You follow *e* in our world: if its continuation stops, you follow it in the closest world where it doesn't stop, if that world is a reasonable option for *e* in *w*; if the continuation stops in that world, you go to the closest world again, if it's reasonable, and you continue until either in some world it doesn't stop (and then you stay in that world) or, in the more normal case, you reach a point where going to the closest world is no longer reasonable and you stop there." (p.27) Landman, subsequently, provides the semantics of the progressive as the following.

(28) $[\text{Prog}\ (e, P)]_{w,g} = 1$ iff $\exists f \exists \upsilon : \langle f, \upsilon \rangle \varepsilon \text{CON}\ (g\ (e), w)$ and $[P]_{v,g}\ (f) = 1$

where CON ($g(e)$, w) is the continuation branch of $g(e)$ in w.

(Landman 1992, p.27)

Thus the progressive is a relation between an event e and an event type P. PROG(e, P) is true in w relative to g if in some world on the continuation branch of $g(e)$ in w, some event realizes the event type P.

Now within Landman's analysis, the imperfective paradox, the case of modality and the case of interruption can all be explained by the following. Consider (29).

(29) a Mary was pushing a cart.

b Mary pushed a cart

c Mary was drawing a circle

d Mary drew a circle

(Landman 1992, p.2)

(29c) does not entail (29d) as for (29c) to be true in w, the world in which some stage of an event realizing the event type *Mary draw a circle* on the continuation branch does not have to be an actual world w. However, (29a) entails (29b) because if the stage realized on the continuation branch is a process stage, it shares the process characteristic with the event, which means that it itself is an event that realizes the event type *Mary push a cart*. So this means that it makes *Mary pushed a cart* true.

Concerning modality, following Landman's analysis, the progressive creates an intensional context. A sentence containing a creation verb like (24), therefore, can be explained by the following. (24) is repeated here as (30).

(30) God was creating a unicorn, when He changed his mind.

In this sentence, we follow the creation in our world *w* up to the moment where God changes his mind. Then, we go to the closest world where God doesn't change his mind. A unicorn gets created in that world or some later worlds. So the sentence is true without entailing that there is a unicorn the God was creating in the real world.[5]

For interruptions, as in the discussion about normality, Landman accounts for the fact that (31) is true even if there are several trucks waiting in line to hit Mary.

(31) Mary was crossing the street, the truck hit her.

We follow the crossing in our world *w* up to the moment the truck hit Mary. Then we go to the closest world where the crossing is not interrupted and she manages to cross. Solely on the basis of her internal capability, it is reasonable that, in the real world Mary manages to cross as she does in this world. So the sentence is true.

Being able to account for the imperfective paradox, as well as the other cases, Landman's analysis of the progressive, therefore, can serve as another alternative theory of the progressive.

In conclusion, these theories, more or less, account for the meaning of the progressive. However, we still need to account for the individual differences of progressive markers. In chapter 2, I will address the differences between progressive markers in Thai and English.

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[5] Zucchi (1999) discusses that with respect to extensional verbs phrases like *cross the street,* in Landman's theory will have to be supplemented with appropriate principles concerning the stages of events in the denotation of extensional verbs. In particular, for *cross*, we need a principle that tells us that if an event *e* is occurring in *w* that has a possible *e'* of crossing the street on its continuation branch, then there is *a street* in *w* that is the theme of *e'*.

5.2.2 The Perfect

The most well-know property of the perfect is what has been called continuing relevance. Comrie (1976) proposes that there are specific manifestations of this property, in other words, types of Perfect. According to Comrie, there are four types of perfect: i) perfect of result, ii) the experiential perfect, iii) the perfect of persistent situation, and iv) the perfect of recent past. Based on Comrie's proposal, each type of Perfect can be summarized as follows.

The perfect of result indicates that a present state is the result of some past situation. For example, the difference between "John arrived" and "John has arrived" is that the latter indicates persistence of the result of John's arrival, i.e., that he is still here, while the former does not indicate persistence. So, in answer to the question "Is John here yet?," an appropriate answer is "Yes, he has arrived," not "Yes, he arrived." (p.56)

The experiential perfect indicates that a given situation has held at least once during some time in the past leading up to the present. For example, while "Bill has gone to America" is the perfect of result, "Bill has been to America" is the experiential perfect. The former implies that Bill is now in America while the latter says that on at least one occasion Bill did in fact go to America. (p.59)

The perfect of persistent situation describes a situation that started in the past but continues into the present. Examples given in Comrie are sentences like "We have lived here for ten years, I have shopped here for ten years, I have been waiting for hours." The situation referred to, therefore, is both past and present. (p.60)

The perfect of recent past is used where the present relevance of the past situation referred to is very recent, for example, "I have recently learned that the match is to be postponed, Bill has just (this minute) arrived." It is noted that the present relevance does not imply recentness; however, recentness may be a sufficient condition for present relevance. (p.60)

Comrie also notes that in some languages, there may be different forms for different types of perfect, and in some languages a form for perfect may have only some of these meanings.

With respect to the treatment of the perfect, McCoard (1978) proposes that the perfect serves to locate some event within an interval stretching back in time from a given reference time; for a present tense sentence, the reference time is the time of utterance.

This treatment of the perfect as serving to locate some event within an interval stretching back in time from a given reference time is referred to as the Extended-Now theory for the perfect (XN, for short).

Based on the XN theory, there are several proposals for the meaning of the perfect. Here I summarize proposals made by Richards (1982), and Mittwoch (1988).

5.2.2.1 Richard (1982)

Richard's (1982) analysis for a Perfect sentence like ( ) is that ( ) means there has been a twenty-minute period in the relevant XN interval during which Sam was in Boston.

(32) Sam has been in Boston for 20 minutes.

(Richard 1982, p.142)

Sentence (32) can also be used, more naturally in fact, to imply that the twenty minute-period extends up to the moment of utterance, with the further implication that Sam is still in Boston. In that case, the twenty minute-period is in fact co-extensive with the XN interval implied by the Perfect.

So, more formally, sentence (32) has two reading referred to as the existential reading and the universal reading as illustrated in (32i) and (32ii), respectively.

(32) Sam has been in Boston for 20 minutes.

i) There was somewhere in the past, a twenty minute period, during which Sam was in Boston.

ii) Sam is in Boston now and this state of affairs has already been going on for twenty minutes.

To account for the ambiguity, Richard assumes Dowty's (1979) view that the ambiguity of sentences like (32) is due to the relative scope of the perfect operator *have* and the durational adverbial *for 20 minutes*. Upon the first reading *have* has wider scope than the adverbial; upon the second reading, it is within the scope of the adverbial, as represented by (33a) and (33b), respectively.

(33) a *Pres* (*w, i*) [*Have* [*For 20 minutes* (Sam be in Boston)]]

(Richard 1982, p. 140)

b *Pres* (*w, i*) [*For 20 minutes* [*Have* (Sam be in Boston)]]

(Richard 1982, p. 143)

In support of this view, Richard, following Dowty, refers to a sentence in which the adverb is preposed:

(34) For 20 minutes Sam has been in Boston

(Richard 1982, p.142)

Sentence (34) can only have the second interpretation (i.e., the universal reading), in which *for 20 minutes* extends up to the present.

Assuming Richard (1982), the truth conditions for durational *for* adverbials and for the perfect are as follows:

(35) *For 20 minutes* (A) is true in *M* relative to (*w, i'*) iff *i'* is an interval of a 20 minute duration and for every subinterval and for every subinterval *j* of *i'* A is true in *M* relative to (*w, j*).

(Richard 1982, p.138)

(36) *Have* (A) is true in *M* relative to (*w, i*) iff there is a subinterval *j* of *i* such that A is true in *M* relative to (*w, j*).

(Richard 1982, p. 117)

5.2.2.2 Mittwoch (1988)

Mittwoch (1988) argues that the existential and the universal Perfect should receive separate treatments-- the common ground between them being that both are evaluated with reference to an XN interval.

According to Mittwoch (1988), the XN theory of the perfect makes crucial use of the notion of reference time: it serves to locate an event within an interval stretching back

from a reference time provided by the moment of utterance, a temporal adverbial or a contextually given event.

Mittwoch proposes revised truth conditions for the existential perfect and the universal perfect as shown in (37) and (38), respectively, where the superscript E stands for "existential" and U for "universal"

(37) Have^{E} (A) is true in M relative to (*w, i*) iff *i* is the final moment of an interval *j* and for some subinterval *k* of *j* A is true in *M* relative to (*w, k*), where A is interpreted as an event.

(Mittwoch 1988, p.218)

(38) Have^{U} (A) is true in M relative to (*w, i*) iff *i* is the final moment of an interval *j* such that A is true in M relative to (*w, j*), where A is interpreted as a state.

(Mittwoch 1988, p.218)

The analyses of the Perfect based on Extended Now theory, more or less, render a plausible account for the meaning of the perfect. However, we still need to account for the individual differences of perfect markers. In chapter 3 and 4 I will address the differences between progressive markers in Thai and English.

6. Organization

In this dissertation, I will provide an analysis of *yuu*$_2$, *pay*$_1$/*maa*$_1$, and *lææw*$_4$, using aforementioned concepts and assumptions. *Yuu*$_2$ acts as a progressive, and *maa*$_1$, and *lææw*$_4$, as a Perfect. Each of these Thai aspectual markers will be analyzed independently in consecutive chapters, each of which begins with a description of these

items given by Thai linguists and grammarians. I will then attempt to provide an account that allows me to unify the different senses into a simple representation, since their senses and functions are predictable from the syntax and semantics of the elements they combine with. And finally I will deal with the syntax of each of these elements.

Chapter 2 deals with *yuu*$_2$. *Yuu*$_2$, not only is a progressive marker, but it also is the copular verb for locative constructions. In developing my analysis of *yuu*$_2$, I will start with the progressive use and then move to the copular use. For the semantics of *yuu*$_2$, I will argue that progressive *yuu*$_2$ and copular *yuu*$_2$ uniformly denote a state with an exclusion feature (Iatridou, 2000). Syntactically, by making use of a modified notion of headedness (Pustejovsky, 1995), I will argue that when *yuu*$_2$ acts as a head that is part of the extended projection of the clause, it takes a locative complement, and when it does not act as a head, it is used as an adjunct to the verb. In both cases, it is a verbal element with the same core meaning. The differences are derived from the elements it combines with.

Chapter 3 considers the behavior of *pay*$_1$ and *maa*$_1$. *Pay*$_1$ and *maa*$_1$, in addition to expressing "go" and "come," respectively, have other functions. *Pay*$_1$ may function as a particle expressing continuation of an action and a particle expressing excessive degree. *Maa*$_1$ may also function as a particle for expressing persistence of a situation. In order to provide a unified semantics of *pay*$_1$/*maa*$_1$, I will adopt Jackendoff's (1996) proposal of viewing an event as projecting a cross-section onto bound axes. I then will argue that *pay*$_1$ adds the value of an antideictic center to an axis. And *maa*$_1$ adds the value of a deictic center to an axis. Again for the syntax of *pay*$_1$/*maa*$_1$, I will argue that *pay*$_1$/*maa*$_1$ acts as a head that is part of the extended projection of the clause when it takes a locative

complement, and when it does not act as a head, it is used as an adjunct to the verb. Again in both cases it will have the same core meaning.

Chapter 4 concerns the analysis of *lææw*$_4$. *Lææw*$_4$ may function as a marker for inchoative and the completion of an action, and as a conjunction indicating a sequence of events. I will argue that when functioning as an aspectual marker or as a conjunction, *lææw*$_4$ uniformly denotes an abutment function (Kamp and Reyle, 1993). Subsequently I will show that as *lææw*$_4$ functions as an aspectual marker and as a conjunction, it occupies the same position in the syntax, in particular, a VP right-adjunct. When *lææw*$_4$ functions as an aspectual marker, it is intransitive (i.e., taking no complement). When *lææw*$_4$ functions as a conjunction, it is transitive (i.e., taking a complement).

Chapter 5 concludes the dissertation with a summary of what the studies of *yuu*$_2$, *pay*$_1$/*maa*$_1$, and *lææw*$_4$ have revealed with respect to the goals I initially established, repeated here as follows.

1. To describe a set of aspect markers in Thai, more specifically, *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$.
2. To describe and explain the related senses of each of these elements, and to provide a unified semantic and syntactic property that can account for their different uses.
3. To use Thai aspect markers as a testing ground for the basic intuitions put forth in the Generative Lexicon.
4. To test specific proposals made for the sometimes not carefully used labels of Progressive and Perfect.

CHAPTER 2

A UNIFIED ANALYSIS OF *yuu*$_2$

1. Introduction

In this chapter I provide an analysis of *yuu*$_2$. *Yuu*$_2$ may behave like a copular verb for locatives as well as an aspectual marker which is claimed to denote the progressive, as illustrated in (1a) and (1b) respectively.

(1) a *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *hoŋ*$_3$ *sa*$_2$*mud*$_2$
John yuu$_2$ at library
"John is at the library."

b *cɔɔn*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̌*$_5$ *yuu*$_2$
John read book yuu$_2$
"John is reading."

Crucially, the phenomenon in which a word expressing locative meaning and a word expressing progressive meaning share the same form is found in many non-related languages, (i.e., Chinese, Dutch, Spanish, etc.). Therefore, rather than a case of homonimy, in which two lexical entries accidentally share the same form, it is more likely to be the case that the two meanings are somehow associated and could be treated as a single element. The task set forth here is to explain how these two senses of *yuu*$_2$ are connected.

This chapter is organized as follows. In section (2), I summarize earlier studies on Thai grammar. It will be apparent that the multiple meanings of *yuu*$_2$ have been noted in a number of earlier studies of Thai grammar; however, the studies do not capture the

properties of *yuu*$_2$ as in none of the studies, its multiple meanings are connected. In section (3), I summarize one analysis that attempts to connect the progressive and the locative, namely Demirdache and Uribe-Etxebarria (2000). Although this analysis provides a general idea of why an item which conveys locative meaning may also express progressive aspect, it fails to make detailed distinctions necessary to account for cross-linguistic variation. I then, discuss the inadequacy of earlier analyses.

In section (4), I will develop my analysis of *yuu*$_2$, starting with the progressive use and then moving to the copular use. In examining the progressive use, it is going to be important to compare it not only with a well-studied language like English, but also with another progressive in Thai. Upon completing the examination of the progressive use and the copular use, the connection between the two uses will be drawn, in other words, the seemingly multiple meanings of *yuu*$_2$ will be unified. Subsequently, I will examine the syntax of *yuu*$_2$. As well as the unified core meaning of *yuu*$_2$, there is a unified syntactic property of *yuu*$_2$. By making use of a modified notion of headedness, I argue that progressive *yuu*$_2$ and copular *yuu*$_2$ denote a state with an exclusion feature. Being underspecified for headedness I will argue that when *yuu*$_2$ acts as a head that is part of the extended projection of the clause, it takes a locative complement. When it does not act as a head, it is used as an adjunct to the verb. In both cases, it is a verbal element.

Finally in section (5) the conclusion of the chapter will be drawn. As well as providing empirical support for the theory of the Generative Lexicon, the analysis developed here may provide a basis for further research on locative/progressive expressions among languages.

2. Earlier studies on Thai grammar

The multiple meanings of *yuu*$_2$ have been noted in a number of earlier studies of Thai grammar. However, although useful, the studies do not capture the properties of *yuu*$_2$ as in none of the studies, its multiple meanings are connected. *Yuu*$_2$ has been glossed in different ways. In this section I will use each author's own glosses.

2.1 Uppakitsinlapasan (1964)

Uppakitsinlapasan (1964), in discussing auxiliary verbs, proposes that there are certain verbs which may function both as a main verb and as an auxiliary verb. Such verbs include *thuuk*$_2$ and *toŋ*$_3$, as illustrated in (2) and (3), respectively.

(2) a *khɔɔ*$_3$ *nii*$_4$ ***thuuk***$_2$
one this correct
"This one was correct."

b *khaw*$_4$ ***thuuk***$_2$ *tii*$_1$
he ACC hit
"He was hit"

(3) a *khoŋ*$_4$ *nii*$_4$ ***toŋ***$_3$ *taa*$_1$ *chan*$_5$
thing this attract eye I
"This thing attracted my eyes."

b *khaw*$_5$ ***toŋ***$_3$ *nɔɔn*$_1$
he must go-to-bed
"He must go to bed."

Thuuk$_2$ may function as a main verb for " be correct," as in (2a) and as an auxiliary verb indicating that the main verb assigns the theta role theme to NP in subject position, as in (2b). *Toŋ*$_3$ may function as a main verb for "attract," as in (3a), and as an auxiliary verb

indicating that the subject is obligated to do the action denoted by the main verb as in (3b).

According to him, *yuu*$_2$, similar to *thuuk*$_2$ and *toŋ*$_3$, is also a verb which may function both as a main verb and as an auxiliary verb, as illustrated in (4).

(4) a *khaw*$_5$ ***yuu***$_2$ *nay*$_1$ *hɔɔŋ*$_3$
He yuu$_2$ in room
"He is in the room."

b *khaw*$_4$ *kin*$_1$ *khaaw*$_3$ ***yuu***$_2$
He eat rice yuu$_2$
"He is eating rice."

In (4a), *yuu*$_2$ functions as a main verb for "be located," and in (4b), *yuu*$_2$ functions as an auxiliary verb indicating that the situation denoted by the main verb is in progress. So he considers *yuu*$_2$ to be one of the verbs which may function both as a main verb and as an auxiliary verb. Although this may describe the behavior of *yuu*$_2$, it does not explain why a certain verb may have two functions, namely, the verb for "be located" may also function as an auxiliary verb for the progressive.

2.2 Thepkanjana (1986)

The multiple roles of *yuu*$_2$ are also noted in Thepkanjana (1986). In her study of serial verb constructions in Thai, Thepkanjana describes that certain verbs, when not serialized (i.e., occurring as a main verb) and when serialized (i.e., occurring after another verb), play different roles. For example, *khin*$_3$ and *loŋ*$_1$, when not serialized, denote "ascend" and "descend," respectively.

(5) a *ban$_1$luun$_1$* ***khɨn$_3$*** *yaŋ$_2$chaa$_4$chaa$_4$*
balloon ascend slowly
"A balloon is slowly going up."

b *ban$_1$luun$_1$* ***loŋ$_1$*** *yaŋ$_2$chaa$_4$chaa$_4$*
balloon descend slowly
"A balloon is slowly coming down."

However, when *khɨn$_3$* is serialized after a creation verb and *loŋ$_1$* after a destruction verb, *khɨn$_3$* and *loŋ$_1$* indicate that the action denoted by the main verb is perfective.

(6) a *khaw$_5$ saŋ$_3$ ban$_3$* ***khɨn$_3$***
he build house PRF
"He built a house."

b *ban$_3$ phaŋ$_1$* ***loŋ$_1$***
house collapse PRF
"The house collapsed."

And when serialized after a directed motion verb, *khɨn$_3$* and *loŋ$_1$* denote direction "up" and "down," respectively.

(7) a *khaw$_5$ wiŋ$_3$* ***khɨn$_3$*** *ban$_1$day$_1$*
he run up stair
"He ran up stairs."

b *khaw$_5$ wiŋ$_3$* ***loŋ$_1$*** *ban$_1$day$_1$*
he run down stair
"He ran down stairs."

In her terms, while *khɨn$_3$* and *loŋ$_1$* in (5) are main verbs, *khɨn$_3$* and *loŋ$_1$* in (6) are "aspectual verbs,"[6] and *khɨn$_3$* and *loŋ$_1$* in (7) are "coverbs."[7]

[6] An aspectual verb is defined as "a lexical verb which when serialized, gives aspectual value to the action denoted by the main verbs." (p.131)
[7] A coverb is defined as "a preposition which has a synchronic corresponding verb which is homophonous with and semantically closely related to it." (p.191)

In her analysis, *yuu*$_2$, similar to *khɨn*$_3$ and *loŋ*$_1$, plays the role of a main verb, as well as playing the roles of an aspectual verb and a coverb depending on the environment, as illustrated in (8).

(8) a *cɔɔn*$_1$ ***yuu***$_2$ *thi*$_3$ *roŋ*$_1$*rian*$_1$
John be-located at school
"John is at school."

b *cɔɔn*$_1$ *ʔaan*$_2$ *naŋ*$_5$*gsɨɨ*$_5$ ***yuu***$_2$
John read book PROG
"John is reading."

c *cɔɔnl ʔaan*$_2$ *naŋ*$_5$*gsɨɨ*$_5$ ***yuu***$_2$ *nay*$_1$ *hoŋ*$_5$
John read book at in room
"John is reading in his room"

In (8a), *yuu*$_2$ plays the role of a main verb denoting "be located." In (8b), *yuu*$_2$ plays the role of an aspectual verb denoting the progressive. And in (8c), *yuu*$_2$ plays the role of a coverb denoting "at." Again, although this analysis may describe the behavior of *yuu*$_2$, it does not explain why a certain meaning is present in a certain environment.

2.3 Meepoe (1996)

By focusing on the aspectual meanings of *yuu*$_2$, Meepoe (1996), in her study of imperfectivity in Thai, proposes that *yuu*$_2$ may denote multiple aspects (i.e., progressive and habitual) as it is undergoing a process of grammaticalization. Based on the theory of grammaticalization by Bybee (Bybee et al 1994), Meepoe proposes that *yuu*$_2$ participates in the process of grammaticization, as in (9).

(9) locative → progressive → continuous → imperfective → present

(p.9)

Meepoe claims that the meaning distribution of *yuu*$_2$ follows along this imperfective pathway, developing from a locative verb into a progressive marker, and extending its temporal aspectual meaning to the imperfective.

However, what seems to be missed by Meepoe (1996) is an explanation for why the shift from locative meaning to temporal meaning is possible in the first place. And also, why the same element can appear in different positions in this pathway.

2.4 Summary of earlier studies on Thai grammar

We have seen that although the multiple senses of *yuu*$_2$ have been noted in earlier studies on Thai grammar, studies in which the multiple senses of *yuu*$_2$ are connected do not seem to exist.

In addition, the claim that *yuu*$_2$ expresses the progressive aspect, and a sentence in which *yuu*$_2$ as an aspectual marker can be translated as a progressive sentence in English (Uppakitsinlapasarn 1964, Thepkanjana 1968), does not seem to be completely correct. The distribution and interpretation of *yuu*$_2$ differ from the progressive morphology (i.e., *be – ing*) in English in several ways.

First, while the progressive morphology in English is considered to be inappropriate when co-occurring with a *for*-adverb, *yuu*$_2$ is appropriate when co-occurring with such adverbs and it describes that the eventuality is habitual. This can be illustrated in (10) and (11).

(10) a John smoked for two years.

b *John was smoking for two years.

(11) a *$cɔɔn_1$ $suub_2$ bu_2rii_2 $song\ pee$
John smoke cigarette two years
"John smoked for two years."

b $cɔɔn_1$ $suub_2$ $bu_2ri\ i_2$ $\mathbf{yuu_2}$ $song\ pee$
John smoke cigarette yuu_2 two years
"John smoked for two years."

Second, while the progressive morphology in English is considered to be inappropriate when co-occurring with certain stative verbs, (i.e., fat), yuu_2 is appropriate when co-occurring with such stative verbs and it describes that the state is temporal. This can be illustrated by (12) and (13).

(12) a John is fat.

b *John is being fat.

(13) a $cɔɔn_1$ $ʔuuan_3$
John fat
"John is fat."

b $cɔɔn_1$ $ʔuuan_3$ $\mathbf{yuu_2}$
John fat yuu_2
"John is at the mode of being fat."

Third, while the progressive morphology in English, given an appropriate context, can co-occur with an achievement verb, yuu_2 never co-occurs with an achievement verb, as illustrated in (14) and (15).

(14) a Mary arrived at 8 o'clock.

b Mary was arriving at the station when she heard that trains to Jerusalem had been cancelled because of the state of the line.

(Rothstein 2000, p.1)

(15) a *Mææ$_{1}$rii$_{3}$ maa$_{1}$thɨŋ$_{5}$ tɔɔn$_{1}$ pææd$_{2}$ mooŋ$_{1}$*
Mary arrive when eight o'clock
"Mary arrived at eight o'clock."

b * *Mææ$_{1}$rii$_{3}$ maa$_{1}$thɨŋ$_{5}$ sa$_{1}$thaa$_{5}$nii$_{1}$ **yuu$_{2}$** tɔɔn$_{1}$ thəə$_{1}$ day$_{3}$yin$_{1}$ waa$_{3}$*
Mary arrive station yuu$_{2}$ when she hear that

rot$_{4}$fay$_{1}$ pay$_{1}$ yee$_{1}$ruu$_{1}$saa$_{1}$lem$_{1}$ thuuk$_{2}$ yok$_{4}$lək$_{3}$
train go Jerusalem be cancel

"Mary was arriving at the station when she heard that trains to Jerusalem had been cancelled."[8]

So, the claim that *yuu$_{2}$* is a particle for the progressive whose meaning does not differ from the progressive morphology (i.e., *be -ing*) in English, is not completely correct.

In sum, the earlier studies do not capture fully the properties of *yuu$_{2}$*. Not only does the label progressive fail to make a distinction between English *be -ing* and Thai *yuu$_{2}$*, but also none of the studies connect the aspectual role and the locative role of *yuu$_{2}$*. In the following section, I summarize a major analysis concerning the connection between the progressive and the locative.

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[8] Expressing that "Mary was arriving at the station when she heard that trains to Jerusalem had been cancelled," another aspectual marker, in particular, *kam$_{1}$laŋ$_{1}$*, will be used, as in (i).

(i) *Mææ$_{1}$rii$_{3}$ kam$_{1}$laŋ$_{1}$ maa$_{1}$thɨŋ$_{5}$ sa$_{1}$thaa$_{5}$nii$_{1}$ tɔɔn$_{1}$ thəə$_{1}$ day$_{3}$yin$_{1}$ waa$_{3}$ rot$_{4}$fay$_{1}$ pay$_{1}$*
Mary kam$_{1}$laŋ$_{1}$ arrive station when she hear that train go

yee$_{1}$ruu$_{1}$saa$_{1}$lem$_{1}$ thuuk$_{2}$ yok$_{4}$lək$_{3}$
Jerusalem be cancel

The aspectual marker *kam$_{1}$laŋ$_{1}$* will be investigated in section (4.1.1).

3. The progressive and the locative

An account for the connection between the progressive and the locative has been proposed by Demirdache and Uribe-Etxebarria (2000). Demirdache and Uribe-Etxebarria (2000) point out that the phenomenon in which the progressive meaning is contributed by a word for the locative meaning, is found in Dutch, Spanish, etc.

In Dutch, the progressive is formed by a locative preposition *aan* "at" combining with an infinitive verb, as illustrated in (16).

(16) *Ik ben het huis* ***aan*** *het bouwen*
I am the house at the build
"I am (at the) building (of) the house."

(Demirdache and Uribe-Etxebarria 2000, p. 178)

In Spanish, there are two copular verbs: *ser* and *estar*. Generally *ser* is used either in equational sentences or with individual-level predicates whereas *estar* is used with either locative or stage-level predicates. As expected, the copular used to form progressive is *estar*, as illustrated in (17).

(17) a *Oihana* ***esta*** *en Oba*
Oihana is at/in Oba

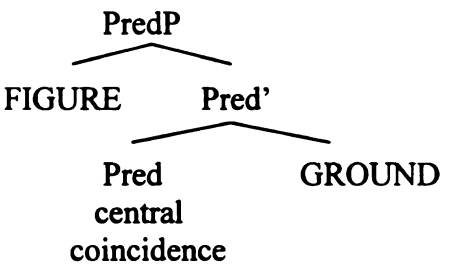
b *Oihana* ***esta*** *estudiando*
Oihana is studying

(Demirdache and Uribe-Etxebarria 2000, p. 179)

Since the phenomenon in which progressive meaning is contributed by a word for locative meaning is cross-linguistically common, rather than the case of homonymy in which two lexical entries accidentally share the same form, the two meanings must somehow be associated and could be treated as a single element.

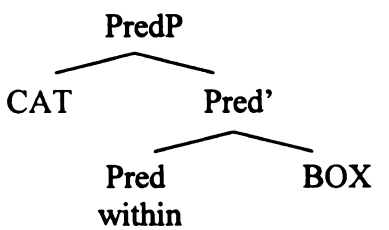
In connecting the two meanings, Demirdache and Uribe-Etxebarria (2000) propose that a word for locative/progressive has the core meaning of "central coincidence." The idea is that a word for locative/ progressive takes two arguments and describes a relation between the two arguments. The two arguments are a "figure" and a "ground" and the relation between the two arguments is central coincidence. This is illustrated in (18).

(18)



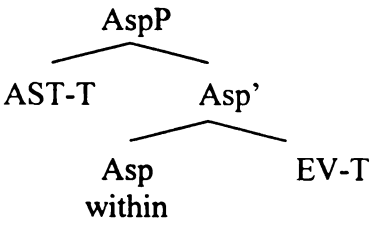
A figure and a ground can either be an entity and a place or an assertion time and an event time. In cases where figure is an entity (i.e., a cat) and ground is a place (i.e., a box), central coincidence describes that an entity is within a place, so locative meaning is expressed. This is illustrated in (19).

(19)



Similarly, in cases where the figure is an assertion-time and the ground is an event-time, it describes that assertion time is within event time, so progressive meaning is expressed, as illustrated in (20).

(20)



Event time can be regarded as an event denoted by a VP, whereas assertion time can be regarded as an interval of an event picked to be asserted. For example, in (21) an interval before the initial bound of an event is picked to be asserted, so assertion time is before an event time. In (22) an interval after the final bound of an event is picked to be asserted, so assertion-time is after an event-time. (////// stands for an interval picked to be asserted. I and F stand for the initial and the final bound of an event)

(21) a /////[I F]

b I am going to write a letter.

(22) a [I F] /////

b I have written a letter.

An item whose core meaning is central coincidence, however, denotes that an assertion time is within an event time, so the interval picked to be asserted is within the initial and the final bound of an event. Therefore, the progressive meaning is expressed. This is illustrated in (23).

(23) a [I ///// F]

b I am writing a letter.

So the general idea of why an item conveying locative meaning may also express progressive aspect is provided in Demirdache and Uribe-Etxebarria (2000).

Although this idea of why an item conveying locative meaning may also express progressive aspect is provided, it seems to be too general since it is unable to make fine-grained distinctions necessary to account for cross-linguistic variation.

Cross-linguistically, the aspectual value denoted by an element for the locative does not seem to be identical. For instance, *zai* in Chinese may at first sight look like *yuu*$_2$ in Thai, as it appears both with locatives as well as a progressive marker and thus fits in the "central coincidence" description.

(24) a *Lisi **zai** bangongshi li*
Lisi zai office inside
"Lisi is in the office"

(Yang 1985, p. 123)

b *Ta **zai** tiaowu*
he zai dance
"He is dancing."

(Yang 1985, p. 126)

However, upon closer look, the aspectual values denoted by *yuu*$_2$ in Thai and *zai* in Chinese do not seem to be identical. One of the evidences is that, given an eventuality description "put on leather shoes," *yuu*$_2$ provides two readings whereas *zai* provides only one reading. This is illustrated in (25).

(25) a *khaw$_5$ say$_2$ roŋ$_1$thaw$_5$ naŋ$_5$ yuu$_2$*
He put on shoes leather yuu$_2$
"He is putting on his leather shoes"
"He has his leather shoes on."

b *ta zai chuan pi xie*
He zai put on leather shoes
"He is putting on his leather shoes."
*"He has his leather shoes on."

(Li &Thompson, p. 221)

Say$_2$ roŋ$_1$thaw$_5$ naŋ$_5$ "put on leather shoes" in Thai and *chuan pi xie* "put on leather shoes" in Chinese can refer to both an action of putting leather shoes on and a state of having leather shoes on. However, in Thai co-occurrence with *yuu$_2$* still conveys the two interpretations, while in Chinese co-occurrence with *zai* can convey only the first interpretation. So, it seems that *yuu$_2$* in Thai and *zai* in Chinese modify differently an eventuality; more precisely, *yuu$_2$* and *zai* denote different types of the progressive.

As an item denoting locative/aspectual meaning behaves differently cross-linguistically, a more detailed analysis of *yuu$_2$* in Thai, as compared to its counterparts in other languages, is called for.

4. The analysis of *yuu$_2$*

In this section, I propose an analysis of *yuu$_2$* that accounts for its semantic properties and its syntactic properties. I will start by comparing *yuu$_2$* with another progressive marker in Thai, *kam$_1$laŋ*, and to the progressive marker in English *be –ing*. It will become apparent that while *kam$_1$laŋ* and the English progressive share various features in common, *yuu$_2$* behaves differently.

Then, I will examine the role of *yuu$_2$* as a copular for locative constructions. It will become clear that both uses of *yuu$_2$* share the property of being stative. I will make then a proposal for treating *yuu$_2$* as a state and I will provide evidence for such treatment.

I then show that if besides denoting a state we assume that *yuu$_2$* has what Iatridou (2000) assumes to be an Exclusion Feature, we can account for the implication of *yuu$_2$* as

denoting a state that in a previous or ulterior time was different. Basically *yuu*$_2$ will force that topic time[9] exclude all other times.

4.1 Semantics of *yuu*$_2$

In order to provide the semantics of *yuu*$_2$, it is crucial to take into consideration the meaning of another so-called progressive marker, *kam*$_1$*laŋ*$_1$. A sentence in which *kam*$_1$*laŋ*$_1$ is an aspectual marker, as well as a sentence in which *yuu*$_2$ is an aspectual marker, can be (and has been) translated as a progressive sentence, as illustrated in (26) and (27), respectively.

(26) *cɔɔn*$_1$ *ʔ* ***kam*$_1$*laŋ*$_1$** *aan*$_2$ *naŋ*$_5$*sɨ́*$_5$
John *kam*$_1$*laŋ*$_1$ read book
"John is reading."

(27) *cɔɔn*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sɨ́* $_5$ ***yuu*$_2$**
John read book yuu$_2$
"John is reading."

Based on the earlier grammar descriptions, it is hard to establish precisely the difference between the aspect denoted by *kam*$_1$*laŋ*$_1$ and the aspect denoted by *yuu*$_2$. Also as *kam*$_1$*laŋ*$_1$ and *yuu*$_2$ can co-occur, as in (28), some linguists (Sookgasem 1990, Warotamasikkhadit 1996, etc.) analyze *kam*$_1$*laŋ*$_1$ and *yuu*$_2$ as a unit for progressive

[9] Assuming Klein (1994), topic time is the time span to which the speaker's claim on this occasion is confined (p.4). Topic time (TT) is to be distinguished from situation time (Tsit). To illustrate, in a sentence *The door was open*, we can distinguish between finite time (FIN) and infinite time (INF). INF is a description of a possible situation; in this particular utterance, INF simply consists of the subject *the door* and the (non-finite) predicate *be open*. FIN, on the other hand, is the time for which, on some occasion, a claim is made. In this case, if the sentence *The door was open* is the answer to the question *What did you see when you checked the cellar?*, the FIN is the time at which the speaker of the sentence *The door was open* checked the cellar. According to Klein, Tsit is the time which corresponds to INF, and TT is the time which corresponds to FIN.

meaning. According to them, there is no distinction between the aspect denoted by *kam$_1$laŋ$_1$* and the aspect denoted by *yuu$_2$*.

(28) *cɔɔn$_1$ ʔ **kam$_1$laŋ$_1$** aan$_2$ nuŋ$_5$sɨ̌$_5$ **yuu$_2$***
John *kam$_1$laŋ$_1$* read book yuu$_2$
"John is reading."

Sookgasem (1990) and Warotamasikkhadit (1996) consider *kam$_1$laŋ$_1$ ... yuu$_2$* to be "a discontinuous temporal verb" and "a discontinuous auxiliary," respectively.

I will argue that there is a distinction between the aspect denoted by *kam$_1$laŋ$_1$* and the aspect denoted by *yuu$_2$*. The distinction between *kam$_1$laŋ$_1$* and *yuu$_2$* will render the meaning of *yuu$_2$* apparent. Once the aspectual meaning of *yuu$_2$* is explicit, the fact that *yuu$_2$* plays a role when the locative is to be expressed, can naturally be connected. And finally, the unified core meaning of *yuu$_2$* can be stated.

4.1.1 Investigating distinction between *kam$_1$laŋ$_1$ VS yuu$_2$*

4.1.1.1 Earlier studies on *kam$_1$laŋ$_1$* and *yuu$_2$*

Both *kam$_1$laŋ$_1$* and *yuu$_2$* have been claimed to be associated with the meaning of the progressive. Whether there is a distinction between *kam$_1$laŋ$_1$* and *yuu$_2$* and what the distinction between them is, however, has not been made clear in earlier studies of Thai grammar.

Haas (1964), argues that *kam$_1$laŋ$_1$* is a progressive adverb auxiliary indicating action going on or state prevailing at a given time whereas *yuu$_2$* indicates the state of

doing something. Kampang (1976) provides a different description. He describes *kam$_1$laŋ$_1$* as indicating that the event is in progress, whereas *yuu$_2$* indicates that the event has not yet been terminated. Burusphat (1991), on the other hand, says that both *kam$_1$laŋ$_1$* and *yuu$_2$* are continuous markers. According to him, while *kam$_1$laŋ$_1$* indicates the process of doing something, or being in some state, *yuu$_2$* indicates the continuation of the event for a certain length of time.

Meepoe (1996) investigates the aspectual functions and the meanings of the aspectual markers *kam$_1$laŋ$_1$* and *yuu$_2$* when used by native speakers in natural spoken discourse and concludes that *kam$_1$laŋ$_1$* and *yuu$_2$* have distinct, though similar and overlapped aspectual meanings and functions on a discourse level. While *kam$_1$laŋ$_1$* is more limited to its progressive meaning, *yuu$_2$* is more general in its use, as it is used for imperfective meaning. Similarly, Visonyanggoon (2000), in her discussion of Thai aspectuality, considers *kam$_1$laŋ$_1$* to be a progressive marker and *yuu$_2$*, an imperfective marker.

From the summary above, it is clear that the distinction between the aspect denoted by *kam$_1$laŋ$_1$* and the aspect denoted by *yuu$_2$* has not been made clear nor formalized, in any of the earlier studies on Thai grammar.

4.1.1.2 Preliminary data for the distinction between *kam$_1$laŋ$_1$* and *yuu$_2$*

There are cases which would be hard to explain if we assumed that *kam$_1$laŋ$_1$* and *yuu$_2$* denote the same meaning. There are cases in which only *kam$_1$laŋ$_1$* would be appropriate, as illustrated in (29).

(29) a *Nam$_2$ kam$_1$laŋ$_1$ ron$_4$*
water *kam$_1$laŋ$_1$* hot
"Water is getting hot."

b *#Nam$_2$ ron$_4$ yuu$_2$*[10]
Water hot yuu$_2$
"Water is getting hot."

So, for expressing "Water is getting hot," by which the process is viewed, only *kam$_1$laŋ$_1$* is an appropriate aspectual marker. There are also cases in which only *yuu$_2$* would be appropriate, as illustrated in (30).

(30) a *Pra$_2$tuu$_1$ pəəd$_2$ yuu$_2$*
Door open yuu$_2$
"The door is at the mode of being open"

b *#Pra$_1$tuu$_1$ kam$_1$laŋ$_1$ pəəd$_1$*[11]
Door *kam$_1$laŋ$_1$* open
"The door is at the mode of being open."

So, for conveying "The door is open," by which the state is viewed as holding, only *yuu$_2$* is an appropriate aspectual marker.

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[10] # stands for the fact that this sentence is not ungrammatical but it does not correspond to the translation. The correct translation for (29b) would be "The water is at the state of hot."

[11] Similar to (29b) # says that the sentence is not ungrammatical but it does not correspond to the translation. The correct translation for (30b) would be "The door is getting more and more open."

If we assume that *kam$_1$laŋ$_1$* and *yuu$_2$* denote the same meaning, cases where only *kam$_1$laŋ$_1$* is appropriate or cases where only *yuu$_2$* is appropriate would never be predicted. As has clearly been demonstrated above, there are such cases, suggesting that there is distinction between them.

4.1.1.3 Interaction of *yuu$_2$* / *kam$_1$laŋ$_1$* with expressions of duration

In investigating the distinction between *kam$_1$laŋ$_1$* and *yuu$_2$*, the behavior of expressions of duration, in particular, *for*-adverbials is relevant. An expression of duration " for x time" can naturally occur with states and activities, as in (31).

(31) a John was sick for two years.

b John ran for five minutes.

"For x time," however, cannot occur with accomplishments or achievements as in (32a) and (32b), respectively, unless an iterative reading or a habitual reading is forced, as in (32c) and (32d), respectively.

(32) a *John ate an apple for an hour.

b *John arrived for twenty minutes.

c John played the sonata for about eight hours.

(de Swart 1998, p. 359)

d For months, the train arrived late.

(de Swart 1998, p.359)

Similarly, in Thai, an adverb such as "for x time" can naturally occur with states and activities, as in (33a) and (33b), respectively.

(33) a *coɔn$_1$ puuay$_2$ pen$_1$ wee$_1$laa$_1$ sɔŋ$_5$ pii$_1$*
John sick be time two years
"John was sick for two years."

b *coɔn$_1$ wiŋ$_3$pen$_1$ wee$_1$laa$_1$ haa$_3$ naa$_1$thii$_1$*
John run be time five minute
"John ran for five minutes."

An adverb such as "for x time," however, cannot occur with accomplishments or achievements as in (34a) and (34b), respectively, unless an iterative reading or a habitual reading is forced, as in (34c) and (34d), respectively.

(34) a * *coɔn$_1$ kin$_1$ ʔææ$_4$pən$_3$ nɨŋ$_2$ pon$_5$ pen$_1$ wee$_1$laa$_1$ haa$_3$ naa$_1$thii$_1$*
John eat apple one CL be time five minute
"*John ate an apple for five minute.

b * *coɔn$_1$ maa$_1$ thɨŋ$_5$ pen$_1$ wee$_1$laa$_1$ haa$_3$ naa$_1$thii$_1$*
John arrive be time five minute
"*John arrived for five minutes."

c *coɔn$_1$ khɔ$_4$ pra$_1$tuu$_1$ pen$_1$ wee$_1$laa$_1$ haa$_3$ naa$_1$thii$_1$*
John knock door be time five minutes
"John knocked the door for five minutes."

d *pen$_1$ wee$_1$laa$_1$ laay$_5$ dɨan$_1$ thii$_3$ rot$_4$rooŋ$_1$rian$_1$ maa$_1$ thɨŋ$_5$ chaa4*
be time several month that school bus arrive late
"For several months, the school bus arrived late."

States, activities, iterative accomplishments and habitual achievements are considered to be situations which have no culmination point, or homogeneous situations[12]. "For x time," therefore, seems to be an aspectual operator which takes as an input a homogeneous situation and outputs something within temporal boundaries.

[12] Assuming Verkuyl (1993, p.198), an interval is considered homogeneous if its structure does not deviate from the structure of its arbitrary chosen subintervals, that is if it has the subinterval property. On the basis

Going back to *yuu$_2$* and *kam$_1$laŋ$_1$*, crucially, "for x time" can naturally occur with *yuu$_2$* but not with *kam$_1$laŋ$_1$*. This is illustrated in (35a) and (35b) respectively.

(35) a *coɔn$_1$ suub$_2$ bu$_1$rii$_2$ yuu$_2$ pen$_1$ wee$_1$laa$_1$ sɔŋ$_5$ pii$_1$*
John smoke cigarette yuu$_2$ be time two year
"John smoked for two years."

b * *coɔn$_1$ kam$_1$laŋ$_1$ suub$_2$ bu$_1$rii$_2$ pen$_1$ wee$_1$laa$_1$ soŋ$_5$ pii$_1$*
John kam$_1$laŋ$_1$ smoke cigarette be time two year
"John smoked for two years."

This suggests that (35a) "John smoke cigarette *yuu$_2$*," is a homogeneous situation whereas (35b) "John *kam$_1$laŋ$_1$* smoke cigarette," is not. In particular, while *yuu$_2$* provides the reading that the event of John smoking a cigarette repeatedly occurs or is habitual, *kam$_1$laŋ$_1$* does not. So it seems that *yuu$_2$* is an aspectual operator that outputs a homogeneous situation, whereas *kam$_1$laŋ$_1$* is not.[13]

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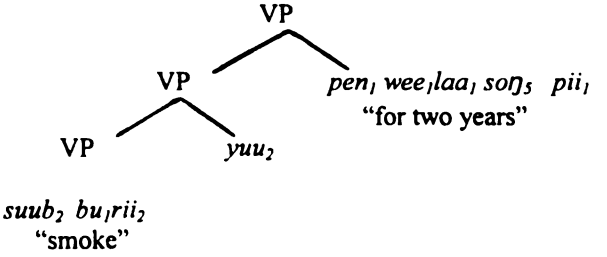
of this concept, situations like *walk in the park* are considered homogeneous because *Mary walk in the park*, being true at an interval i is also true at any subinterval of i. On the other hand, situations like *walk to Rome* are non-homogeneous because *Mary walked to Rome* being true at i cannot be true at any proper interval of i.

[13] I assume that the durational adverbial (*for*-adverbial) takes scope over *kam$_1$laŋ$_1$* and *yuu$_2$*. (35a) and (35b), therefore, can be represented as (ia) and (ib), respectively.

(i) a



4.1.1.4 Interaction of *yuu$_2$/kam$_1$lan$_1$* with expressions of gradual transition

Facts concerning expressions of gradual transition are also relevant in investigating the distinction between *kam$_1$lan$_1$* and *yuu$_2$*. An expression of gradual transition like "more and more," although able to co-occur with a stative predicate (i.e., believe), sounds more appropriate if the predicate is in progressive form, as in (36).

(36) a ?Sue believes in God more and more

b Sue is believing in God more and more

(Binnick 1991, p. 282)

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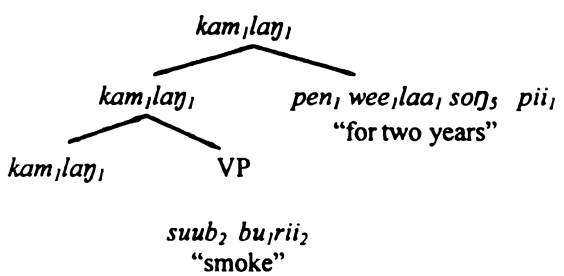
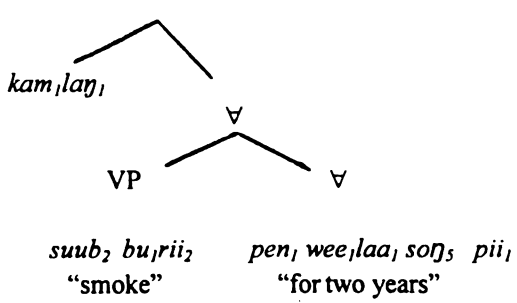
b



Note that another possibility for explaining the ungrammaticality of (35b) is that the structure of (35b) is as in (ii).

(ii)



Then, the sentence could be considered ungrammatical, if *for*-adverbial is not an event-predicate but a universal quantifier over subintervals of measured intervals. (Moltmann, 1991). The predicate *suub$_2$ bu$_1$rii$_2$ pen$_1$ wee$_1$laa$_1$ son$_5$ pii$_1$* "smoke for two years," therefore, is not a predicate of events. The aspect marker, *kam$_1$lan$_1$*, however, applies to predicates of events. (35b) is therefore, a case of wrong semantic type to the input of the aspect marker. However, we still would have to say that the *for*-adverbial is above *yuu$_2$*, otherwise the same ungrammaticality would result.

The difference seems to be that the non-progressive form indicates a state where stability is assumed, whereas, the progressive form indicates a process where development is the focus. While the non-progressive form is relatively incompatible with "more and more" the progressive form is compatible, suggesting that "more and more," rather than stable eventuality or state, requires eventuality in progress or process.

Crucially, while an expression for "more and more" can naturally occur with *kam$_1$laŋ$_1$*, it cannot co-occur with *yuu$_2$*. This is illustrated in (37).

(37) a * *coɔn$_1$ choob$_3$ Mææ$_1$rii$_3$ yuu$_2$ mak$_3$ khin$_3$ rii$_3$ rii$_3$*
John like Mary yuu$_2$ more and more
"John is liking Mary more and more."

b *coɔn$_1$ kam$_1$laŋ$_1$ choob$_3$ Mææ$_1$rii$_3$ mak$_3$ khin$_3$ rii$_3$ rii$_3$*
John *kam$_1$laŋ$_1$* like Mary more and more
"John is liking Mary more and more."

This demonstrates that while *yuu$_2$* describes "John likes Mary" as a state where liking stays unchanged, *kam$_1$laŋ$_1$* describes "John likes Mary" as a process where "liking" develops. In other words, *yuu$_2$* outputs a state where there is no transition, while *kam$_1$laŋ$_1$* outputs a process where there is a possibility of incremental changes and, therefore, gradual transition.

4.1.1.5 The interactions of *yuu$_2$*/*kam$_1$laŋ$_1$* with achievement verbs

Distinctions between *kam$_1$laŋ$_1$* and *yuu$_2$* can be also found when examining their selection restrictions. Assuming Vendler's (1967) analysis, as we have seen, verbs can be classified into four categories: activity verbs, (i.e., run, sleep, etc.), state verbs (i.e., like,

know, etc.), accomplishment verbs (i.e., eat an apple, build a house, etc.), and achievement verbs (i.e., win the marathon, reach the summit, etc.). Basically, accomplishments and achievements have culmination points while activities and states lack culmination points.

Rothestein (2000) suggests that an achievement differs from an accomplishment in the sense that, while an accomplishment is an event which leads up to a change of state, an achievement is a change of state without a preliminary event. Rothstein's proposal is based on Dowty's (1979) proposal as he represents accomplishments and achievements as (38a) and (38b), respectively. (ϕ stands for the meaning of the VP plus variable subject.)

(38) a Accomplishments: [DO (ϕ) [CAUSE [BECOME (ψ)]]]

b Achievements: BECOME (ψ)

In accomplishments, there are submeaning components DO, CAUSE and BECOME, but in achievements there is only BECOME. As BECOME is basically a transition, only a transition is described by achievement verbs.

What is crucial is that while *kam$_1$laŋ$_1$* can co-occur with both accomplishment verbs and achievement verbs, *yuu$_2$* can co-occur only with accomplishment verbs, as illustrated in (39) and (40), respectively.

(39) a *cɔɔn$_1$ kam$_1$laŋ$_1$ saaŋ$_3$ baan$_3$*
John kam$_1$laŋ$_1$ build house
"John is building a house."

b *cɔɔn$_1$ kam$_1$laŋ$_1$ maa$_1$thɨŋ$_5$*
John kam$_1$laŋ$_1$ arrive
"John is arriving."

(40) a *cɔɔn$_1$ saaŋ$_3$ baan$_3$ yuu$_2$*
John build house yuu$_2$
"John is building a house."

b * *cɔɔn$_1$ maa$_1$thɨŋ$_5$ yuu$_2$*
John arrive yuu$_2$
"John is arriving."

Consistently, this suggests that *kam$_1$laŋ$_1$* is compatible with transition, but *yuu$_2$* is not.

4.1.1.6 The interaction of *yuu$_2$/kam$_1$laŋ$_1$* with eventive/stative verbs

Finally, the distinction between *kam$_1$laŋ$_1$* and *yuu$_2$* is also exhibited when occurring with a predicate which may refer to both an event and a state such as *say$_2$ taaŋ$_2$huu$_5$* "put on earrings." The predicate *say$_2$ taaŋ$_2$ huu$_5$ yuu$_2$* "put on earrings" may refer to both an action of putting earrings on earlobes as well as a state of having earrings on earlobes.

When *say$_2$ taaŋ$_2$huu$_5$ yuu$_2$*"put on earrings" occurs with *yuu$_2$* and with *kam$_1$laŋ$_1$*, different restrictions can be found. When it occurs with *yuu$_2$*, both the readings of being in the state of putting earrings on earlobes and the state of having earrings on earlobes, are possible, although the latter is a preferred reading. However, when it occurs with *kam$_1$laŋ$_1$*, only the reading of an action of putting earrings on earlobes is possible. This is illustrated in (41).

(41) a *Mææ$_1$rii$_3$ say$_2$ taaŋ$_2$huu$_5$ yuu$_2$*
Mary wear earrings yuu$_2$
i) "Mary is putting earrings on her earlobes."
ii) "Mary has earrings on her earlobes."

b *Mææ$_1$rii$_3$ kam$_1$laŋ$_1$ say$_2$ taaŋ$_2$huu$_5$*

Mary *kam$_1$laŋ$_1$* wear earrings

i) "Mary is putting earrings on her earlobes."

*ii) "Mary has earrings on her earlobes."

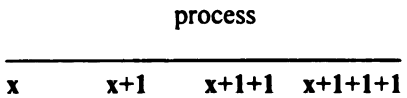
As the reading of result state is available with *yuu$_2$* but not with *kam$_1$laŋ$_1$*, this confirms that *yuu$_2$* describes an eventuality as a state, while *kam$_1$laŋ$_1$* describes an eventualtiy as a process.

4.1.1.7 Generalization for the distinction between *kam$_1$laŋ$_1$* and *yuu$_2$*

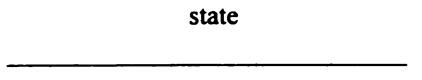
It is apparent that *yuu$_2$* and *kam$_1$laŋ$_1$* convey different viewpoints that the speaker has on an eventuality or that *yuu$_2$* and *kam$_1$laŋ$_1$* denote different aspects. The interactions of *yuu$_2$/ kam$_1$laŋ$_1$* with duration adverbs "for 2 years," gradual transition adverb "more and more," achievement verbs and eventive/stative predicates like "wear earrings," reveal that while, *kam$_1$laŋ$_1$* describes an eventuality as a process, *yuu$_2$* describes an eventuality as a state.

At this point, the aspects denoted by *kam$_1$laŋ$_1$*, and by *yuu$_2$*, can, therefore, be schematically represented as in (42) and (43) respectively.

(42)



(43)



In (42) and (43), the line stands for the flow of time with time progressing from left to right and x stands for eventuality. While in (42), **x**s differ in degree, in (43), **x**s are all identical. In other words, while in (42) all scanned phases are not the same, in (43) all scanned phases are equivalent, hence describing a state. [14]

4.1.1.8 Accounting for the distribution of *kam$_1$laŋ$_1$* and *yuu$_2$*

Assuming the proposed distinction between *yuu$_2$* and *kam$_1$laŋ$_1$*, the puzzles in (29) and (30), repeated here as (44) and (45), can now be accounted for.

(44) a *Nam$_4$* ***kam$_1$laŋ$_1$*** *ron$_4$*
water kam$_1$laŋ$_1$ hot
"Water is getting hot."

b # *Nam$_4$ ron$_4$* ***yuu$_2$***
Water hot yuu$_2$
"Water is getting hot."

(45) a *Pra$_1$tuu$_1$ pəəd$_2$* ***yuu$_2$***
Door open yuu$_2$
"The door is open"

b # *Pra$_1$tuu$_1$* ***kam$_1$laŋ$_1$*** *pəəd$_2$*
Door kam$_1$laŋ$_1$ open
"The door is open."

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[14] It is worth noting that the distinction between *yuu$_2$* and *kam$_1$laŋ$_1$* is not peculiar to just verbal aspect as it is not totally different from distinction in nominal domain. To illustrate, in the nominal domain, "salt" and "furniture", for example, although both are considered to be homogeneous nouns, they seem to differ in that while each grain of salt is identical, each piece of furniture is not necessarily identical. Similarly, in the verbal domain, although both the state denoted by *yuu$_2$* and the process denoted by *kam$_1$laŋ$_1$* are considered to be a homogeneous eventuality, they differ in that each interval of a state has to be identical, while each interval of a process is not identical.

For "Water is getting hot," the speaker's viewpoint is on the process, in particular, the gradual change from water not being hot to water being hot. As *kam$_1$laŋ$_1$* denotes process in which changes in degree occur, *kam$_1$laŋ$_1$* is to be used in this case. And as the speaker's viewpoint is not on the state where the degree of the water being hot remain stable, *yuu$_2$* which denotes state in which no changes occur, cannot be used.

On the other hand, for "The door is open," the speaker's viewpoint is on the result state after the change from the door not being open to the door being open has occurred. Therefore, *yuu$_2$*, expressing state, is to be used in this case. And as the speaker's point of view is not on the change from the door not being open to the door being open, *kam$_1$laŋ$_1$*, denoting process, cannot be used.

As predicted, if the opposite were to be described, the appropriate use of *yuu$_2$* and *kam$_1$laŋ$_1$* would be the opposite. That is, if the speaker were to describe that the water remained hot, *yuu$_2$* would be an appropriate aspectual maker. And if the speaker were to describe the door being more and more open, *kam$_1$laŋ$_1$* would be an appropriate aspectual marker.

4.1.1.9 Is the progressive in English more like *kam$_1$laŋ$_1$* or *yuu$_2$*?

Deciding whether the progressive in English is more like *kam$_1$laŋ$_1$* or *yuu$_2$* amounts to determining whether it expresses a process or a state. Descles and Guentcheva's (1993) proposal on the notion of process is relevant here.

Descles and Guentcheva draw distinctions among three aspectual meanings: "descriptive state" (or simple state), process in progress and state of activity. The description is that a "descriptive state," such as *John is happy*, denotes an intrinsically stative situation; there is no underlying process. For a state of activity like *The army is on the move*; however, there is an underlying process, although the speaker does not encode the dynamic character of the situation. And, when the aspectual meaning is a process in progress, as in *The army is moving on*, the speaker encodes the dynamic character of the denoted situation.

Descles and Guentcheva, then, propose that a process in progress is a non-static notion. The progressive forms never express simple states. Some occurrences of the progressives may be considered states of activity; however, most of the progressive occurrences are instances of processes in progress.

Assuming Descles and Guentcheva's analysis, it seems that the progressive in English requires that there is an underlying process, although the output is stative. More precisely, the progressive in English, describes either a state inside the process, or a transition between the initial situation S before the process and the inside of the process, as in *He is going to Paris*, for example.[15]

As the progressive in English must be associated with a process, it seems to be more like *kam₁laŋ₁* rather than *yuu₂*. This, however, is not unexpected as we have seen that the distribution of the progressive in English is similar to *kam₁laŋ₁* but different from *yuu₂* in several respects. First, the progressive in English does not co-occur with the duration adverbs (i.e., *for*-adverb). Second, the progressive in English co-occurs with

[15] Cases like *He is staying here in Mary's house*, and *He is loving it here* seem to be problematic for Descles and Guentcheva's (1993) proposal for the progressive in English.

adverbs of gradual transition (i.e., more and more). And third, the progressive in English may apply to achievements (assuming Rothstein 2000).

Therefore, adopting Descles and Guentcheva's (1993) analysis as a basis, the progressive in English seems to be more like *kam$_1$laŋ$_1$* than *yuu$_2$*.

4.1.2 Investigating the copular use of *yuu$_2$*

Having investigated the aspectual use of *yuu$_2$*, I will now investigate its copular use in this section. It should be noted that the progressive marker appears at the right edge of the VP while the copula verb *yuu$_2$* appears in the normal verbal position, after the subject.

I will argue that *yuu$_2$*, when it is used as a copular verb (i.e. taking a PP complement), rather than denoting a locative marker as it has been claimed in the earlier studies, just describes a state in the same way that it does when it behaves as an aspectual marker.

Remember that it has been claimed that *yuu$_2$*, is a locative element. Uppakitsinlapasarn (1964) claimed that *yuu$_2$* is a verb for "be located." Thepkanjana (1986) claimed that *yuu$_2$* may behave like a coverb (i.e., a preposition which has a synchronic corresponding verb which is homophonous with and semantically closely related to it (p.59)).

However, consider (46). *Yuu$_2$* takes a locative PP as its complement. Without a preposition the sentence is ungrammatical.

(46) a *Naŋ$_5$sii$_5$ yuu$_2$ bon$_1$ to$_4$*
book yuu$_2$ on table
"The book is on the table."

b **Naŋ$_5$sii$_5$ yuu$_2$ to$_4$*
book yuu$_2$ table
"The book on the table"

As a preposition is required, it is relevant to take a look at the role of prepositions. Maienborn (1998) proposes that locative prepositions denote a two-place relation LOC between *a located entity* and *a landmark or relatum y* stating that x is located in a neighborhood region of y. Each locative preposition differs in terms of determining a particular neighborhood region y. For instance, the locative preposition *in* picks out the inner region of y, while the locative preposition *at* picks out the external region of y.

According to Maienborn, the lexical entry for a locative preposition follows the general schema given in (47) with *f* p standing for a function from objects to spatial region.

(47) Locative Preposition P: $\lambda y\ \lambda \underline{x}$ [LOC (x, *f* p (y))] (with x,y of type e)

(p.2)

For instance, the spatial function IN maps objects onto their inner regions, and the spatial function EXT maps objects onto their external region, etc., as represented in (48a) and (48b), respectively.

(48) a in $\lambda y\ \lambda \underline{x}$ [LOC (x, IN (y))]

b at $\lambda y\ \lambda \underline{x}$ [LOC (x, EXT (y))]

(p.2)

Assuming the property of being located in a certain spatial region is denoted by a locative PP, the role of *yuu$_2$* in sentences such as (46a), therefore, is not locating an entity

in a certain spatial region. It is possible, then, to hypothesize that the role of *yuu*$_2$ in sentences such as (46a), is nothing more than stating that a state holds.

The role of *yuu*$_2$ when taking a locative PP is, therefore, no different from its role when being interpreted as a progressive marker, except that as we will see it behaves as a main verb.

4.1.3 Examining the state described by *yuu*$_2$

Having investigated the distinction between *kam*$_1$*laŋ*$_1$ and *yuu*$_2$, it is clear that *yuu*$_2$ describes a state, not a process. Having investigated *yuu*$_2$ when it behaves like a copular verb (i.e., taking a complement), the role of *yuu*$_2$ also seems to be describing a state. In this section, I will examine the state described based on the interaction of *yuu*$_2$ with stage-level and individual-level predicates and the interaction of *yuu*$_2$ with PPs for permanent and non-permanent location.

4.1.3.1 *yuu*$_2$ with stage-level and individual-level predicates

Carlson (1977) distinguishes two types of predicates: stage-level predicates and individual-level predicates. Stage-level predicates refer to temporal states such as "being depressed" and "sitting on the floor." Individual-level predicate refer to permanent states, such as "being American" and "having brown eyes."

There are some restrictions concerning the co-occurrence of *yuu*$_2$ with stage-level predicates and with individual-level predicates. This can be illustrated by the following.

(49) a *cɔɔn$_1$ puuay$_2$*
John sick
"John is sick."

b *cɔɔn$_1$ krood$_2$ Mææ$_1$rii$_3$*
John angry Mary
"John is angry at Mary."

(50) a *cɔɔn$_1$ pen$_1$ ʔa$_1$me$_1$ri$_1$kan$_1$*
John be American
"John is an American."

b *Mææ$_1$rii$_3$ mii$_1$ taa$_1$ sii$_5$ nam$_4$ tan$_1$*
Mary have eyes color brown
"Mary has brown eyes."

The predicates in (49) are considered to be stage-level predicates and the predicates in (50) are considered to be individual-level predicates.

Yuu$_2$ can co-occur with stage-level predicates and as such it describes that a state holds at a particular interval of time, as illustrated in (51).

(51) a *cɔɔn$_1$ puuay$_2$ yuu$_2$*
John sick yuu$_2$
"John is sick. Before he was not sick and/or later he will not be sick."

b *cɔɔn$_1$ krood$_2$ Mææ$_1$rii$_3$ yuu$_2$*
John angry Mary yuu$_2$
"John is angry at Mary. Before he was not angry at her and/or later will not be angry at her."

As *yuu$_2$* describes that, at a particular interval of time, the states (i.e., John being sick and John being angry at Mary) hold, an implication of temporariness becomes available. In (51a), with *yuu$_2$*, there is an implication that sometime before John was not sick and/or later he will not be sick. In (51b), with *yuu$_2$*, there is an implication that before John was not angry at Mary and/or later he will not be angry at Mary.

Similarly, when individual-level predicates occur with *yuu*$_2$, [predicate + *yuu*$_2$] also describes that a state holds at an interval of time. This is illustrated in (52).

(52) a *Mææ*$_1$*rii*$_3$ *pen*$_1$ *ʔa*$_1$*me*$_1$*ri*$_1$*kan*$_1$ *yuu*$_2$
Mary be American yuu$_2$

i) "Mary is American. Later, this situation may be different (i.e., She probably will marry a Thai man and becomes Thai.)"

ii) "Mary is American. Before, this situation might have been different. (i.e., She might have been born Thai but she married an American man and became American.)"

b *Mææ*$_1$*rii*$_3$ *mii*$_1$ *taa*$_1$ *sii*$_5$ *nam*$_4$ *tan*$_1$ *yuu*$_2$
Mary have eyes color brown yuu$_2$

i) "Mary has brown eyes. Later, this situation may be different (i.e., She will probably be wearing blue contact lenses and then she will have blue eyes.)"

ii) "Mary has brown eyes. Before, this situation might have been different. (i.e., She might have been born with blue eyes but she is wearing brown contact lenses so her eyes are brown.)

As *yuu*$_2$ describes that, at an interval of time, the state (i.e., Mary being American and Mary having brown eyes) holds, an implication of non-inherent or non-permanent states becomes available. In (52a), the implication is either that later Mary will not be American or that before Mary was not American, as in the first and the second readings, respectively. In (52b), the implication is either that later Mary will not have brown eyes or that before Mary didn't have brown eyes, as in the first and the second readings, respectively.

It is important to make clear that the interpretation of temporariness (i.e., non-inherent/non-permanent states) is not in the assertion of *yuu*$_2$. More precisely, *yuu*$_2$

asserts that property x holds at time t, and it is silent about whether the state x holds at other times. This is supported by the following.

(53) a *Mææ$_{1}$rii$_{3}$ pen$_{1}$ ʔa$_{1}$me$_{1}$ri$_{1}$kan$_{1}$ **yuu$_{2}$***
Mary be American yuu$_{2}$

"Mary is American. Before, this situation might have been different. (i.e., She might have been born Thai but she married an American man and became American.)"

b *Mææ$_{1}$rii$_{3}$ pen$_{1}$ ʔa$_{1}$me$_{1}$ri$_{1}$kan$_{1}$ **yuu$_{2}$** kwaam$_{1}$jiŋ$_{1}$ thəə$_{1}$ pen$_{1}$ ʔa$_{1}$me$_{1}$ri$_{1}$kan$_{1}$*
Mary be American yuu$_{2}$ in fact she be American

taŋ$_{3}$tææ$_{2}$ kəəd$_{2}$
since born

"Mary is American. In fact, she has been American ever since she was born."

In (53a), the interpretation received is that before Mary was not American. However, in (53b) when *kwaam$_{1}$jiŋ$_{1}$ thəə$_{1}$ pen$_{1}$ ʔa$_{1}$me$_{1}$ri$_{1}$kan$_{1}$ ta$_{2}$lɔɔt$_{2}$* "In fact she is American since she was born," is added, no contradiction arises. As no contradiction arises, *yuu$_{2}$*, in asserting that the state of Mary being American holds at this period of time, asserts nothing about Mary's nationality at the other periods of time.[16]

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[16] Two related points arise here: i) the temporariness (i.e., that the state of affairs at other times is different from the state of affairs at the asserted time) conveyed is more like a case conversational implicature, not a conventional implicature (or presupposition), and ii) the temporariness is in the implication is consistent with Grice's Cooperative Principles. (1967)

First, with respect to implicatures, while conversational implicatures can be cancelled without contradiction conventional implicatures cannot. (Green 1996). This can be illustrated in the example below.

(i) a Some of my friends like fudge.
b Some of my friends like fudge. In fact all of my friends like fudge.
(ii) a He is an English man; he is therefore brave.
b He is an English man; he is therefore brave. But English men are not brave.

In (ia), the implicature is that 'Some of my friends don't like fudge,' and in (iia) the implicature is that 'English men are brave.' As there is no contradiction in (ib), the implicature is cancelable, hence, conversational implicature. And as there is contradiction in (iib), the implicature is not cancelable, hence, a conventional implicature. For the case of *yuu$_{2}$*, as seen in (53b), the temporariness can be cancelled out

It then can be assumed that *yuu*$_2$ asserts that property x holds at time t and it is silent about whether the state x holds at other times.

4.1.3.2 *yuu*$_2$ with *for*-adverbials

Supporting the hypothesis that *yuu*$_2$ asserts that property x holds at time t and that it is silent about whether the state x holds at other times, can be supported by the behavior of *yuu*$_2$ when co-occurring with *for x time* adverbials. This can be illustrated by the following.

(54) a *coɔn*$_1$ *suub*$_2$ *bu*$_1$*rii*$_2$ ***yuu***$_2$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sɔŋ*$_5$ *pii*$_1$
John smoke cigarette yuu$_2$ be time two year
"John smoked for two years."

b *coɔn*$_1$ *suub*$_2$ *bu*$_1$*rii*$_2$ ***yuu***$_2$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sɔŋ*$_5$ *pii*$_1$ *kwaam*$_1$*jiŋ tɔɔn*$_1$ *nii*$_4$
John smoke cigarette yuu$_2$ be time two year in fact nowadays

khaw$_5$ *kɔɔ*$_3$ *suub*$_2$
he also smokes

"John smoked for two years. In fact, nowadays he still smokes"

In (54a), the implication is that before and after the two-year period, John did not / will not smoke. However, as seen in (54b), when *kwaam*$_1$*jiŋ tɔɔn*$_1$ *nii*$_4$ *kɔɔ*$_3$ *suub*$_2$ "In fact nowadays he still smokes" is added, no contradiction arises. This, therefore, supports

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without a contradiction, so the temporariness is a conversational implicature, not a conventional implicature.

Second, consistent with Grice's Cooperative Principles (1967), when the speaker chooses to predicate *x* of an interval, other than the other intervals, the speaker does not think that the other intervals are *x* intervals, although the speaker has not *asserted* that the other intervals are ~*x* intervals. For this reason, that the property *x* holds at the asserted interval, not at the other intervals, is in the implication.

that *yuu*$_2$ asserts that property x holds at time t and it is silent about whether the state x holds at other times.

4.1.3.3 *yuu*$_2$ with stative verbs

Again, evidence that *yuu*$_2$ asserts that the property x holds at time t without asserting anything about property x at other times, is a case where *yuu*$_2$ co-occurs with a stative verb, illustrated by the following.

(55) a *ʔaa*$_1$*kaat*$_2$ *ron*$_4$ ***yuu***$_2$
Weather hot yuu$_2$
"The weather is hot. Before or later this situation was/will be different."

b *ʔaa*$_1$*kaat*$_2$ *ron*$_4$ ***yuu***$_2$ *kwaam*$_1$*jiŋ*$_1$ *knɔɔn*$_2$ *nii*$_4$ *kɔɔ*$_3$ *ron*$_4$
Weather hot yuu$_2$ in fact before this also hot
"The weather is hot. In fact, before it was also hot."

c *ʔaa*$_1$*kaat*$_2$ *ron*$_4$ ***yuu***$_2$ *lææ*$_4$ *laaŋ*$_5$*jaak*$_2$ *nii*$_4$ *kɔɔ*$_3$ *khoŋ*$_1$ *ron*$_4$
Weather hot yuu$_2$ and after this also probably hot
"The weather is hot and later it will probably be hot."

In (55a), the interpretation received is that at the prior and following periods of time, and the weather was not /will not be hot. However, in (55b) when *kwaam*$_1$*jiŋ*$_1$ *knɔɔn*$_2$ *nii*$_4$ *kɔɔ*$_3$ *ron*$_4$ "in fact before this period of time it is also hot" is added, no contradiction arises. Similarly, in (55c), when *lææ*$_4$ *laaŋ*$_5$*jaak*$_2$ *nii*$_4$ *kɔɔ*$_3$ *khoŋ*$_1$ *ron*$_4$ "and probably after this period of time it is also hot" is added, there is also no contradiction.

As there is no contradiction in (55b) and (55c), *yuu*$_2$, in asserting that the weather is hot at this period of time, asserts nothing about the weather condition at the other period of time. This confirms that the property x holds at time t, and it is silent about

whether the state x holds at other times. So, the state x might hold or might not hold at other times.

4.1.3.4 *yuu*$_2$ with locative PP

If we assume that *yuu*$_2$ asserts that the property x holds at time t, and it is silent about whether the state x holds at other times, facts concerning the compatatibility of *yuu*$_2$ with PP for permanent/non-permanent location can also be accounted for.

Yuu$_2$ is compatible with both a PP denoting permanent location and a PP denoting non-permanent location, as illustrated in (56a) and (56b), respectively.

(56) a *cɔɔn*$_1$ *yuu*$_2$ *nay*$_1$ *hoŋ*$_3$*sa*$_2$*mud*$_2$
John yuu$_2$ in library
"John is in the library."

b *Pra*$_2$*theet*$_3$ *ʔi*$_2$*taa*$_1$*lii*$_3$ *yuu*$_2$ *nay*$_1$ *yu*$_3$*roop*$_2$
country Italy yuu$_2$ in Europe
"Italy is in Europe."

In (56a), *yuu*$_2$ asserts that the state of John being in the library holds at an interval of time t and it is silent about whether or not at other intervals of time, the state of John being in the library holds. Similarly in (56b), *yuu*$_2$ asserts that the state of Italy being in Europe holds at an interval of time t, and it is silent about whether or not at other intervals of time the state of Italy being in Europe holds.

So, under the assumption that *yuu*$_2$ asserts that the property x holds at time t, and it is silent about whether the property x holds at other times, it is not unexpected that *yuu*$_2$ is compatible with both locative PP denoting permanent location and non-permanent location; it is, actually, predicted.

4.1.3.5 Summary

By investigating the roles of *yuu*$_2$, it seems that *yuu*$_2$ describes an eventuality as a state holding at time t, more formally represented as (57) where e stands for eventuality and t for time.

(57) $< e, t >$ = state

And by describing that the property x holds at time t, *yuu*$_2$ describes nothing about that property at other times. The property at other times could either be the same as or different from the property at time t. In other words, *yuu*$_2$ excludes everything that is not in the interval of the state asserted.

Consequently, *yuu*$_2$ can co-occur with both a stage-level predicate and an individual-level predicate. In both cases, as *yuu*$_2$ describes that property x holds at time t, the implication is that the property x does not hold at other times, hence the interpretation of temporariness.

Moreover, by describing that the property x holds at time t without describing the property at other times, *yuu*$_2$ can co-occur with both a PP for non-permanent location and a PP for permanent location.

4.1.4 The unified meaning of *yuu*$_2$

It is clear that it is the role of describing that a state x holds at time t that unifies the multiple roles of *yuu*$_2$. By describing that state x holds at time t, *yuu*$_2$ does not

describe that at other times, the state is ~x. *Yuu*$_2$ asserts nothing about the state at other times. The state at other times could be x or ~x .

That *yuu*$_2$ says nothing about the state of affairs at other times, (although the interpretation that the state of affairs at other times is different from the asserted time is available), or that *yuu*$_2$ excludes anything that is not in the asserted time, seems to suggests that something like the Exclusion Feature proposed by Iatridou (2000) is part of the semantics of *yuu*$_2$.

Iatridou (2000), proposes the Exclusion Feature to account for counterfactuality. For example, sentences like (58) are considered to be counterfactual constructions.

(58) a I wish I had a car.

b If he were smart, he would be rich.

(p.231-232)

What is conveyed in sentences (58a) and (58b) is (59a) and (59b) respectively.

(59) a "I don't have a car now."

b "He is not smart" and "he is not rich."

(p.231-232)

Iatridou, in assuming Anderson (1951), Stalnaker (1975), Karttunen and Peter (1979), and Palmer (1986), argues that the conterfactuality of conditionals is conversationally implicated and not asserted, nor presupposed. Two types of arguments are taken to support this position.

First, counterfactuality can be cancelled without producing a contradiction. This is illustrated in (60).

(60) If the patient had the measles, he would have exactly the symptoms he has now. We conclude, therefore, that the patient has the measles.

(p.232)

The second argument for the conterfactuality of conditionals not being in an assertion, is that the falsity of *p* can be asserted without producing redundancy. This can be illustrated by (61).

(61) If the butler had done it, we would have found blood on the kitchen knife. The knife was clean; therefore, the butler did not do it.

(p.232)

Iatridou, then, sides with the view that counterfactuality of conditionals is a conversational implicature and she investigates how the meaning of counterfactuality is derived as an implicature.

In investigating how the meaning of counterfactuality is derived as an implicature, data from Modern Greek is relevant. According to her neither (62) nor (63), are counterfactuals (CF), as they both can be used as imperatives (i.e., instructions to a patient's caretaker)[17].

(62) *An pari afto to siropi θa ɣiini kala*
if take/NPST/PRF this syrup FUT become/NPST/PRF well
"If he takes this syrup, he will get better."

[17] The following abbreviations are used:

FUT	for	future
NPST	for	non-past tense
PRF	for	perfective
PST	for	past-tense
IMP	for	imperfective

(63) *An eperne* *afto to siropi* *θa* *γinotan* *kala*
if take/PST/IMP this syrup FUT become/PST/IMP well
"If he took this syrup, he would get better."

(p.234)

The difference between (62) and (63) is that (62) is considered to be future neutral valid (FNV) and (63) is considered to be future less valid (FLV). Assuming that both (62) and (63) can be schematically represented as if *p*, *q*, FLV has an implicature that the actual world is more likely to become a ~*p* world than *p* world, while FNV does not have such an implicature.

As (63) can be used as an instruction as well as (62), the occurrence of the past tense morpheme in (63) does not receive a temporal past interpretation. Iatridou then, discusses that when a morpheme does not appear to be receiving its expected interpretation, one of the approaches is that it always has the same meaning, but the domain it operates on varies according to the environment.

Subsequently, she proposes that what we call the "past tense morpheme" denotes Exclusion Feature (ExclF) of the form (64).

(64) T(*x*) excludes C(*x*).

(p. 246)

T(x) stands for "Topic (x)" (i.e., "the x that we are talking about"). C (x) stands for "the x that for all we know is the x of the speaker."

To illustrate, in the conversation that follows, the condition of ExclF is observed.

(65) A: What do you think about Peter and Ian?

B: Well, I like Ian.

(p. 247)

B's response excludes his/her feelings about Peter. Although it can have the implicature that B does not like Peter, B has asserted no dislike for Peter. A contradiction, therefore, does not arise, if adding that he/she likes Peter too, or does not know how he/she feels about Peter.

According to Iatridou, the domains over which ExclF operates includes times and worlds, or the ExclF may range over times or worlds.

When it ranges over times, it says that the topic time excludes the utterance time.[18] The discourse in (66) can, therefore, be explained by the following.

(66) a John was in the classroom.

b In fact, he still is.

(p. 248)

By (66a), the speaker asserts that, at the topic time, John was in the class room, but the speaker asserts nothing about where John is at the utterance time, although the implicature is that John is not in the classroom at the utterance time. Since John's not being in the classroom at the utterance time is implicated, not asserted, canceling it by adding (66b) does not cause contradiction.

As well as over times, the ExclF may range over worlds. When it ranges over worlds, it says that the topic world excludes the actual world. The case of FLV as in (63), repeated here as (67), therefore, can be explained by the following.

[18] Iatridou assumes Klein's (1994) proposal of situation (or event) time, topic time, and utterance time. The basic idea is that tenses express relation between the topic time and the utterance time, not between the utterance time and the situation (or event) time (the interval through which the predicate holds). The past tense expresses a temporal relation of precedence between the topic time and the utterance time.

(67) *An eperne* *afto to siropi* *θa* *γinotan* *kala*
if take/PST/IMP this syrup FUT become/PST/IMP well
"If he took this syrup, he would get better."

(p.234)

By (67), the speaker chooses to predicate *p* of worlds other than the actual one, because he or she does not think that the actual world is a *p* world. But the speaker has not *asserted* that the actual world is ~*p*. That the actual world is ~*p* world is implicated, not asserted. So, that the actual world is ~*p* is predicted to be cancelable. That is, the actual world may be a *p* world as well as a ~*p* world.

Finally, the case of counterfactuality in (58), repeated here as (68), can be accounted for by the following.

(68) a I wish I had a car.

b If he were smart, he would be rich.

(p.231-232)

Cases of (68a) and (68b) are considered to be instances where ExclF ranges over worlds. That is, as the speaker predicates *p* of worlds other than the actual one, the speaker does not think that the actual world is a *p* world; however, the speaker has not *asserted* that the actual world is ~*p*. So, the information made available by (68a) and (68b) is, "I don't have a car now," and, "He is not smart," and "he is not rich," respectively; however, it is implicated, not asserted.

Going back to the case of *yuu*$_2$, it is plausible that the Exclusion Feature may be something more general in natural language, and it could be that the interval of time asserted excludes other intervals of time. Then, the exclusion for *yuu*$_2$ is as in (69).

(69) T (t): the time interval we are talking about (topic time)

C (t): the time that for all we know is the time of the event (event time)

Plugging these values into the schema in (69), results in:

(70) The asserted time interval excludes other time intervals.

However, it has been shown that *yuu*$_2$ describes an eventuality as a state holding at time t, as in (71), where e stands for eventuality and t for time.

(71) < e, t > = state

What *yuu*$_2$ denotes, therefore, is that the state holds at the topic time. How long or short the topic time is will depend on other adverbial elements and on the context.

4.1.5 Summary for the semantics of *yuu*$_2$

To summarize, first, we have seen that there are differences between *yuu*$_2$ and English *be –ing*. In various respects, distribution and interpretation of English *be –ing* more similar to another progressive in Thai, *kam*$_1$*laŋ*$_1$, than to *yuu*$_2$.

Second, we have seen that the main properties of *yuu*$_2$ involve a state and an exclusion feature. More precisely, *yuu*$_2$ denotes a state and it has an exclusion feature which marks that the topic time excludes all other times.

Third, we have seen that the net effect of these properties allows us to explain facts concerning the distribution and interpretation of *yuu*$_2$. The fact that *yuu*$_2$ can generally be used as a copular verb for locative construction can be explained. That is, as *yuu*$_2$ asserts that the property x holds at time t, *yuu*$_2$ asserts nothing about that property at

other times; *yuu*$_2$ is compatible with both a PP for non-permanent location and a PP for permanent location.

Also, the fact that when modifying an event, the implication of *yuu*$_2$ is that the state in a previous or subsequent time is different, can be explained. That is, as the speaker chooses to predicate x of an interval other than other intervals, the speaker does not think that other intervals are x intervals, although the speaker has not *asserted* that the other intervals are ~x intervals.

In conclusion, it is clear that there is a unified meaning of *yuu*$_2$. In the following section, it will be demonstrated that, as well as a unified core meaning of *yuu*$_2$, there is a unified syntax of *yuu*$_2$. I would like to argue that the different uses (i.e. progressive and locative) of the copular can be predicted from the syntax context in which it occurs, without the need to create lexical entries.

4.2 Syntax of *yuu*$_2$

In this section, I investigate the syntax of *yuu*$_2$. First, an examination of *yuu*$_2$ as a locative copular, and *yuu*$_2$, which expresses the progressive will be presented. Then, based on Pustejovsky's (1995) notion of subeventual structure and event headedness, I argue that there is a partially unified syntax of *yuu*$_2$ that can predict its different interpretations.

4.2.1 *Yuu$_2$* when taking a locative PP as its complement

4.2.1.1 Argument for *yuu$_2$* as a verb

The first task will be determining into which syntactic category, (i.e., verb, preposition, etc.) *yuu$_2$* fits. Remember that *yuu$_2$* has been categorized in various ways. For example, Uppakitsinlapasan (1964) suggests that *yuu$_2$* is a main verb as well as an auxiliary. Thepkanjana (1986) analyzes *yuu$_2$* as a main verb, an aspectual verb (i.e." a lexical verb which when serialized, gives aspectual value to the action denoted by the main verbs" (p. 131)), and a coverb (i.e., "a preposition which has a synchronic corresponding verb which is homophonous with and semantically closely related to it," (p.191)). Meepoe (1996) considers *yuu$_2$* to be a locative verb as well as an aspectual marker.

I will argue that *yuu$_2$* is a verbal element. First, consider (72).

(72) a *Naŋ$_5$sɨ$_5$ bon$_1$ to$_4$*
book on table
"The book on the table"

b *Naŋ$_5$sɨ$_5$ yuu$_2$ bon$_1$ to$_4$*
book yuu$_2$ on table
"The book is on the table."

In (72), when a noun phrase is followed by a locative PP, it is still a noun phrase, however, when a noun phrase is followed by *yuu$_2$* and then a locative PP, a sentence is formed. Subsequently, (73a) is grammatical, as a noun phrase is at the subject position of the sentence. However, (73b) is not.

(73) a *Naŋ$_5$sɨ$_5$ bon$_1$ to$_4$ naa$_3$son$_5$cay$_1$*
Book on table interesting
"The book on the table is interesting."

b * *Naŋ$_5$sɨ$_5$ yuu$_2$ bon$_1$ to$_4$ naa$_3$son$_5$cay$_1$*
Book yuu$_2$ on table interesting
"The book which is on the table is interesting."

When *thii$_3$* "that," which is considered to be a complementizer is inserted, (73b) becomes grammatical, however (73a) is not, as illustrated in (74).

(74) a **Naŋ$_5$sɨ$_5$ thii$_3$ bon$_1$ to$_4$ naa$_3$son$_5$cay$_1$*
Book that on table interesting
"The book on the table is interesting."

b *Naŋ$_5$sɨ$_5$ thii$_3$ yuu$_2$ bon$_1$ to$_4$ naa$_3$son$_5$cay$_1$*
Book that yuu$_2$ on table interesting
"The book which is on the table is interesting."

This shows that *yuu$_2$* is a verb. Moreover, I argue that *yuu$_2$* is subcategorized as a transitive verb and selects for a locative PP as its complement. Consider (75)

(75) a * *Naŋ$_5$sɨ$_5$ yuu$_2$*
book yuu$_2$
"book is"

b *Naŋ$_5$sɨ$_5$ yuu$_2$ bon$_1$ to$_4$*
book yuu$_2$ on table
"The book is on the table."

In (75a), *yuu$_2$* occurs without a complement (i.e., PP) and the sentence is ungrammatical. In (75b), the PP is present and the sentence is grammatical. This clearly suggests that *yuu$_2$* is a verbal element that takes a locative PP as its complement.[19]

[19] An explanation for why *yuu$_2$* takes only a locative PP as its complement might have to do with the fact that adjectives are verbal and there is a copular verb for nominals. *Yuu$_2$* selects for a subevent that is stative.

4.2.1.2 Serial verb construction as bivalent VPs

In order to investigate the syntax of *yuu*$_2$, facts concerning serial verb constructions seem relevant here. I will provide basic facts about serial verb constructions in Thai and then summarize Dechaine's (1993) proposal for the structures of serial verb construction.

Thai is considered to be one of the serializing languages. In particular, Thai has monoclausal constructions which consist of a sequence of concatenated verbs, without any marking of dependency relations. In the literature, these constructions are referred to as "Serial Verb Constructions" (c.f. Bendix, 1972; Boadi, 1968; and Sebba, 1987). This can be illustrated in (76).

(76) a *cɔɔn*$_1$ *sɨɨ*$_4$ *wææn*$_5$ *hay*$_3$ *mææ*$_1$*rii*$_3$
John buy ring give Mary
"John bought Mary a ring."

b *cɔɔn*$_1$ *chuuay*$_3$ *mææ*$_1$*rii*$_3$ *sɨɨ*$_4$ *rot*$_4$
John help Mary buy car
"John helped Mary to buy a car."[20]

In each of the sentences in (76), the two VPs share the same subject (i.e., John), so each sentence is considered to be monoclausal. Also, in each of the sentences, the two sequential verbs are not marked in a dependency relation. So, they are considered to be sentences of serial verb constructions.

[20] It is worth noting here that although in English *John helped Mary buy a car* is not considered to be a serial verb construction, the string *help someone buy something* is considered to be a serial verb construction. (Dechaine 1993, Thepkanjana 1986, Wilawan 1993, Muansuwan 2002)

Dechaine (1993) similarly defines a serial verb construction as a succession of verbs and their complements (if any) in a single clause with one subject and one tense or aspect value.

Assuming Awoyale's analysis (1987, 1988), Dechaine argues that serial constructions are adjoined verb-projections, differing in whether the first or the second verb is the "core" (or head) verb of the whole.

Notating Awoyale's V'as VP, Yoruba sentences such as (77) have the structure in (79), and sentences such as (78) have the structure in (80).

(77) a *Jimo o ra ewu bun mi*
Jimo Agr buy garment present 1sg
"Jimo bought me (a) garment."

b *Jimo o ran mi ni obi*
Jimo Agr send 1sg have kola
"Jimo sent me for kolanuts."

c *Jimo o mu apoti fun mi*
Jimo Agr take box give 1sg
"Jimo gave me (a) box."

d *Jimo o mu apoti de ile*
Jimo Agr take box arrive home
"Jimo brought home (a) box."

(p.802)

(78) a *Jimo o ba mi ra moto*
Jimo Agr help 1sg buy vehicle
"Jimo helped me buy a car."

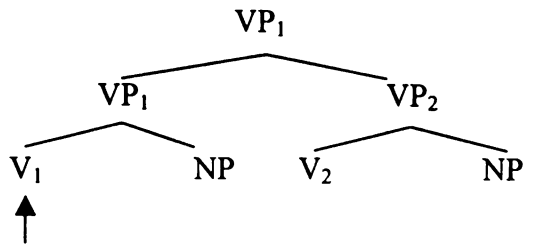
b *Jimo o fi omo re ran ise*
Jimo Agr use son 3sgGen send job
"Jimo sent a message via his son."

c *Won fi suuru yanju oro naa*
3pl use patience sort word Def
"They patiently sort out the affair."

d *Jimo o ba mi de ile*
Jimo Agr accompany 1sg arrive house
"Jimo came home along with me."

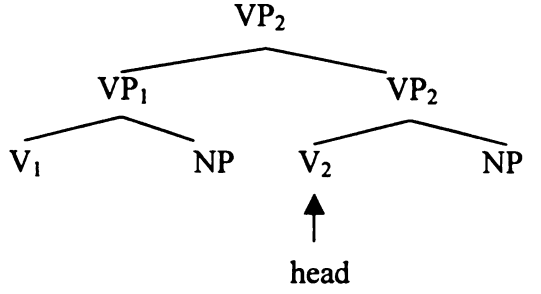
(p.803)

(79)



(p.803)

(80)



(p.803)

In (79) and (80), each verb bears a lexical index, but only one index percolates to the higher VP. In (79), V_1 is the head, the whole projection (VP_1) bears the index of V_1, and VP_2 is adjoined. In (80), V_2 is the head, the whole projection (VP_2) bears the index of V_2 and VP_1 is adjoined. As (79) is the structure for sentences in (77), in the sentences in (77), VP1 is considered to be the core VP. And since (80) is the structure for sentences in (78), in the sentences in (78), VP2 is considered to be the core VP.

The bivalent VP structure allows a given serial string to be structurally ambiguous: headed by either V_1 or V_2. Awoyale cites examples where the same surface string is associated with two distinct interpretations.

(81) a *Jimo o je isu tan*
Jimo Agr eat yam be.finished
i) "Jimo ate up all the yam."
ii) "Jimo finished eating the yam."

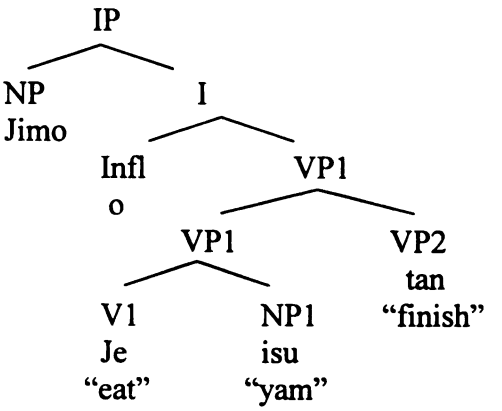
b *Jimo o sare lo*
Jimo Agr ran go
i) "Jimo ran away"
ii) "Jimo went in a hurry."

c *Jimo o we lo*
Jimo Agr bath/swim go
i) "Jimo swam away."
ii) "Jimo bathed before going."

(p.803)

For sentence (81), for example, *tan* "be.finished" can either be construed with *isu* "yam," or with *Jimo*. Within his analysis, if *tan* "be.finished" is construed with *isu* "yam," V1 is considered to be the core VP and V2 the right-adjunct. And if *tan* "be.finished" is construed with *Jimo*, V2 is considered to be the VP and V1 the left-adjunct. This can be illustrated in (82a) and (82b) respectively.

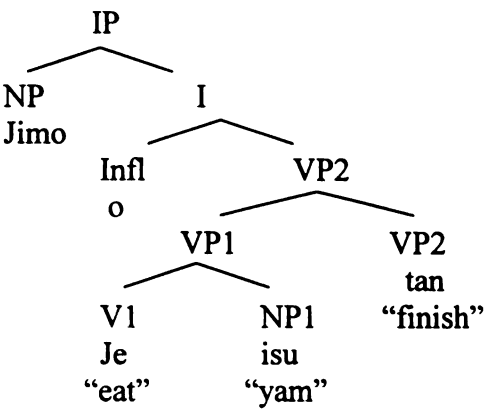
(82) a



=Jimo ate up all the yam.

(p.804)

b



= Jimo finished eating the yam.

(p.804)

4.2.1.3 Thai serial verb constructions and the structure of bivalent VPs

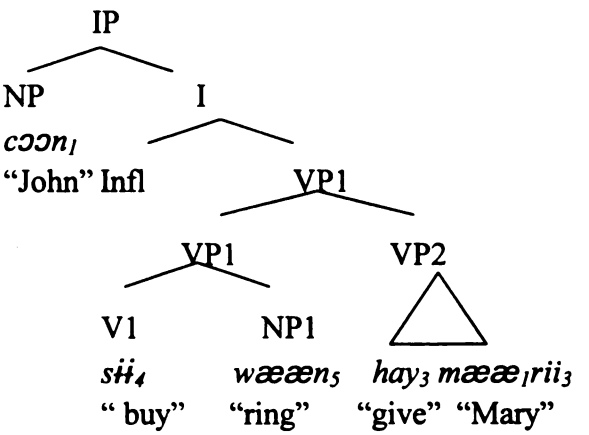
As seen in (76), a succession of verbs and their complements (if any) in a single clause with one subject is also found in Thai. (76) is repeated here as (83).

(83) a *cɔɔn$_1$ sɨɨ$_4$ wææn$_5$ hay$_3$ mææ$_1$rii$_3$*
John buy ring give Mary
"John bought Mary a ring."

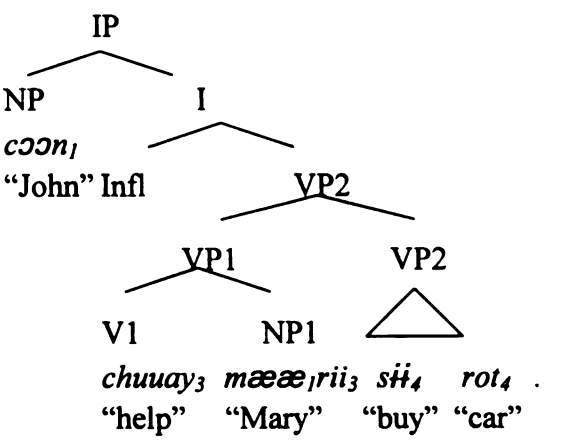
b *cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sɨɨ$_4$ rot$_4$*
John help Mary buy car
"John helped Mary to buy a car."

According to Awoyale and Dechaine, serial strings like ***buy something give someone*** are cases where V1 is the head, and serial strings like ***help someone buy something*** are cases where V2 is the head. So sentences such as (83a) can be represented as (84a) where V1 is the head, and sentences such as (83b) can be represented as (84b) where V2 is the head.

(84) a



b

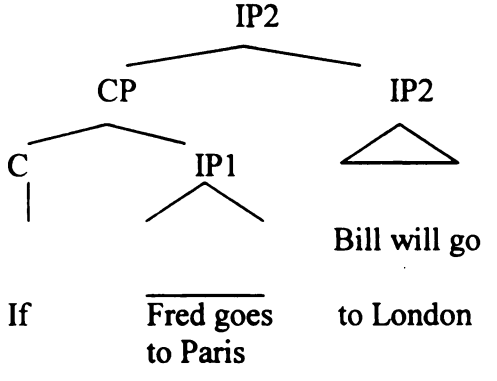


In order to show that a succession of verbs and their complements (if any) in a single clause with one subject found in Thai can also be treated as bivalent VPs, facts concerning extractions are relevant.

The Constraint on Extraction Domains (CED) prohibits extraction out of adjuncts. (Huang 1982). Assuming that a conditional sentence such as (85a) corresponds to the structure in which the if-clause (CP) is an adjunct adjoined to IP2, as in (85b), the prediction is that extraction out of the CP will cause ungrammaticality while extraction out of IP2 will be fine. This is illustrated in (86).

(85) a If Fred goes to Paris, Bill will go to London.

b



(86) a *This is the place$_i$ that if Fred goes to t_i, Bill will go to London.

b This is the place$_i$ that if Fred goes to Paris, Bill will go to t_i.

In (86a), the extraction of "the place" out of the first clause, the adjunct clause, results in ungrammaticality, but in (86b), the extraction of "the place" out of the second clause is grammatical.

Crucially, for sentences such as (83a) and (83b), both extraction out of VP1 and extraction out of VP2 are fine. This can be illustrated in (87) and (88).

(87) a *Nii$_3$ khǐi$_1$ **wææn$_{5i}$** thii$_3$ cɔɔn$_1$ sǐi$_4$ **t$_i$** hay$_3$ mææ$_1$rii$_3$*
this be **ring$_i$** that John buy **t$_i$** give Mary
"This was the ring that John bought for Mary."

b *Nii$_3$ khǐi$_1$ **khon$_{1i}$** thii$_3$ cɔɔn$_1$ sǐi$_4$ wææn$_5$ hay$_3$ **t$_i$***
this be **person$_i$** that John buy ring give **t$_i$**
"This was the lady whom John bought a ring for."

(88) a *Nii$_3$ khǐi$_1$ **khon$_{1i}$** thii$_3$ cɔɔn$_1$ chuuay$_3$ **t$_i$** sǐi$_4$ rot$_4$*
This is **person$_i$** that John help **t$_i$** buy car
"This was the lady whom John helped with buying a car."

b *Nii$_3$ khǐi$_1$ **rot$_{4i}$** thii$_3$ cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sǐi$_4$ **t$_i$***
This is **car$_i$** that John help Mary buy **t$_i$**
"This was the car that John helped Mary with buying."

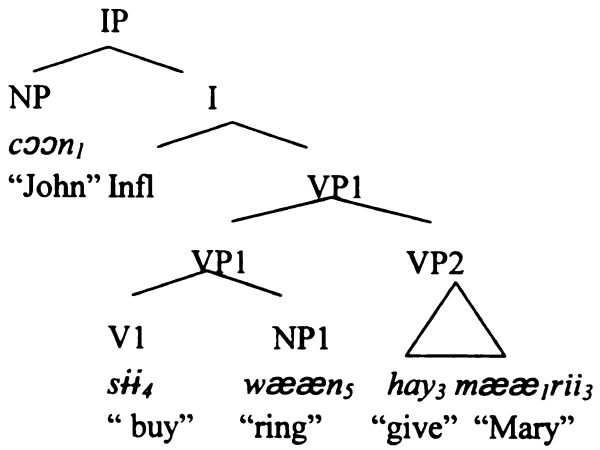
In (87a), *wææn$_5$* " ring" extracts out of VP1 and in (87b) *khon$_1$*"person" extracts out of VP2. Similarly, in (88a), *khon$_1$* "person" extracts out of VP2 and in (88b), *rot$_4$* "car" extracts out of VP1.

The fact that these sentences are grammatical suggests a serial verb construction sentence may correspond to both a structure in which VP1 is a phrase to which VP2 adjoins and a structure in which VP2 is a phrase to which VP1 adjoins.

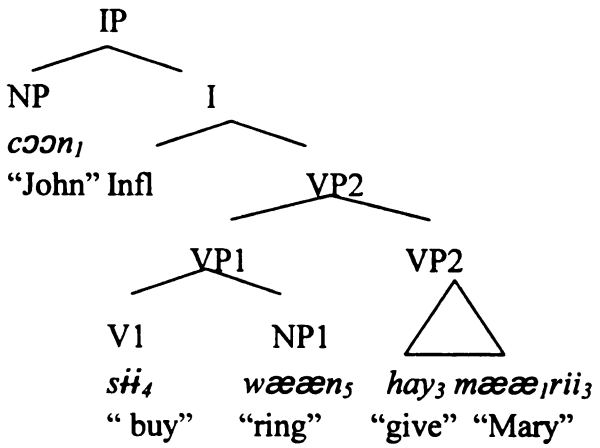
More precisely, it can be assumed that (89b) and (89c) are two alternate structures of (89a), and similarly, (90b) and (90c) are two alternate structures of (90a). And when uttering the sentence, which of the two structures is referred to, is contextually determined.

(89) a *cɔɔn$_1$ sǐi$_4$ wææn$_5$ hay$_3$ mææ$_1$rii$_3$*
John buy ring give Mary
"John bought Mary a ring."

b

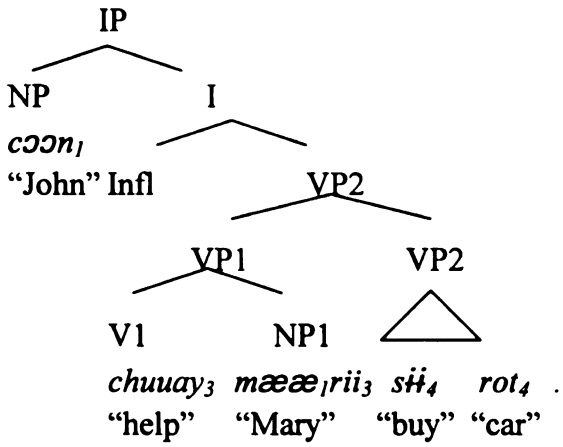


c

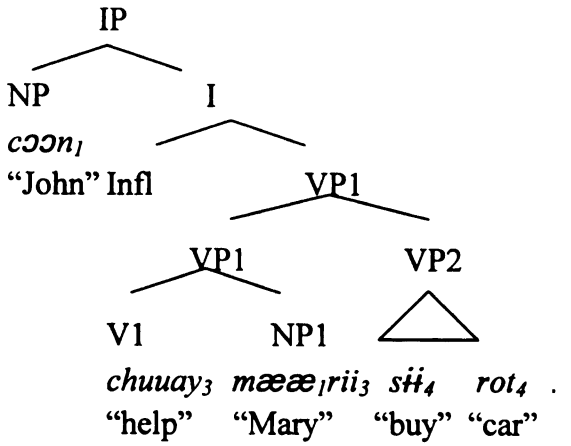


(90) a *cɔɔn1 chuuay3 mææ1rii3 sɨɨ4 rot4*
John help Mary buy car
"John helped Mary to buy a car."

b



b



In summary, at first, the CED facts argue that a succession of verbs and their complements (if any) in a single clause with one subject and one tense or aspect value, or a serial verb construction, has to be treated as adjoined VPs. If this is correct, we can assume that the structure of bivalent VPs is instantiated in Thai, and that which verb is the head of the VP will depend on the intended reading.

4.2.1.4 Uninstalling the bivalent VPs structure

Although the extraction facts, at first glance, support that the structure in which either VP1 or VP2 can be the head VP to which another VP right or left adjoins, is instantiated in Thai, in this section I will show that this is not correct. When taking a closer look at the extraction facts, it becomes clear that assuming the two alternate structures is not the right way to account for these assumptions.

In this section, I take a closer look at the extraction facts. I will argue that, rather than two alternate structures, the structure of sentences containing serial verbs is the structure in which VP1 is the head and VP2 is an adjunct.

Taking argument extraction as a basis for the claim that the structure for sentences containing serial verbs could be either the structure in which VP1 is the head to which VP2 right-adjoins, or the structure in which VP2 is the head to which VP1 left-adjoins, does not seem to be adequate.

Consider again, sentences in (91) and the extractions in (92) and (93).

(91) a *cɔɔn$_1$ sɨɨ$_4$ wæəæn$_5$ hay$_3$ mæəæ$_1$rii$_3$*
John buy ring give Mary
"John bought a ring for Mary."

b *cɔɔn$_1$ chuuay$_3$ mæəæ$_1$rii$_3$ sɨɨ$_4$ rot$_4$*
John help Mary buy car
"John helped Mary buy a car."

(92) a *Nii$_3$ khɨɨ$_1$ **wæəæn$_{5i}$** thii$_3$ cɔɔn$_1$ sɨɨ$_4$ **t$_i$** hay$_3$ mæəæ$_1$rii$_3$*
this be **ring$_i$** that John buy **t$_i$** give Mary
"This was the ring that John bought for Mary."

b *Nii$_3$ khɨɨ$_1$ **khon$_{1i}$** thii$_3$ cɔɔn$_1$ sɨɨ$_4$ wæəæn$_5$ hay$_3$ **t$_i$***
this be **person$_i$** that John buy ring give **t$_i$**
"This was the lady whom John bought a ring for."

(93) a *Nii$_3$ khɨɨ$_1$ **khon$_{1i}$** thii$_3$ cɔɔn$_1$ chuuay$_3$ **t$_i$** sɨɨ$_4$ rot$_4$*
This is **person$_i$** that John help **t$_i$** buy car
"This was the lady whom John helped with buying a car."

b *Nii$_3$ khɨɨ$_1$ **rot$_{4i}$** thii$_3$ cɔɔn$_1$ chuuay$_3$ mæəæ$_1$rii$_3$ sɨɨ$_4$ **t$_i$***
This is **car$_i$** that John help Mary buy **t$_i$**
"This was the car that John helped Mary with buying."

In (91a), *wæəæn$_5$* "ring" is a complement of *sɨɨ$_4$* "buy," and *mæəæ$_1$rii$_3$* "Mary" a complement of *hay$_3$* "give." In (91b) *mæəæ$_1$rii$_3$* "Mary" is a complement of *chuuay$_3$* "help," and *rot$_4$* "car" a complement of *sɨɨ$_4$* " buy." So the extractions in (92) and (93) are considered to be extraction of arguments.

Now, consider sentences in (94) and (95) when adverbial modifiers are present.

(94) a *cɔɔn$_1$ sɨɨ$_4$ wææn$_5$ dooy $_1$ ŋəəŋ$_1$phɔɔn$_2$ hay$_3$ mææ$_1$rii$_3$*
John buy ring by monthly payment give Mary
"John bought a ring for Mary by monthly payment.

b *cɔɔn$_1$ sɨɨ$_4$ wææn$_5$ hay$_3$ mææ$_1$rii$_3$ dooy$_1$ waaŋ$_1$way$_4$ bon$_1$ to$_4$ khooŋ$_5$*
John buy ring give Mary by put on desk of

thəə$_1$
her

"John bought a ring and gave it to Mary by putting it on her desk."

(95) a *cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ dooy$_1$ phaa$_1$ thəə$_1$pay$_1$ dii$_1$ləə$_3$ sɨɨ$_4$ rot$_4$*
John help Mary by take her go dealer buy car
"John helped Mary to buy a car by taking her to the dealer."

b *cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sɨɨ$_4$ rot$_4$ dooy$_1$ ŋəəŋ$_1$phɔɔn$_2$*
John help Mary buy car by monthly payment
"John helped Mary to buy a car and she paid by monthly payment."

In (94), *dooy$_1$ ŋəəŋ$_1$phɔɔn$_2$* "by monthly payment" is considered to be a modification of *sɨɨ$_4$ wææn$_5$* "buy ring" and *dooy$_1$ waaŋ$_1$way$_4$ bon$_1$ to$_4$ khooŋ$_5$ thəə$_1$* "put on her desk" a modification of *hay$_3$ mææ$_1$rii$_3$* "give to Mary." In (95), *dooy$_1$ phaa$_1$ thəə$_1$pay$_1$ dii$_1$ləə$_3$* "by take her go dealer" is considered to be a modification of *chuuay$_3$ mææ$_1$rii$_3$* "help Mary" and *dooy$_1$ ŋəəŋ$_1$phɔɔn$_2$* "by monthly payment," a modification of *sɨɨ$_4$ rot$_4$* "buy car." So for the serial verbs, both VP1 and VP2 can be modified.

What is crucial is that extraction of a modifier out of VP1 is allowed but extraction out of VP2 is not. To illustrate, in Thai, forming interrogative sentences with *yaaŋ$_2$ray$_1$* "how" for (94) and (95), the position of *yaaŋ$_2$ray$_1$* "how" occurs at the end of

the sentences (i.e., at the position after VP2), as illustrated in (96) and (97), respectively.[21]

(96) *cɔɔn$_1$ sɨɨ$_4$ wæænn$_5$ hay$_3$ mææ$_1$rii$_3$ **yaaŋ$_2$ray$_1$***
Johh buy ring give Mary **how**
"How did John buy a ring for Mary?"

(97) *cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sɨɨ$_4$ rot$_4$ **yaaŋ$_2$ray$_1$***
John help Mary buy car **how**
"How did John help Mary buy a car?"

However, in answering the question (96) and (97), the following restrictions are observed.

(98) Q: a *cɔɔn$_1$ sɨɨ$_4$ wæænn$_5$ hay$_3$ mææ$_1$rii$_3$ **yaaŋ$_2$ray$_1$***
*Johh buy ring give Mary **how***
"How did John buy a ring for Mary?"

A: b *dooy$_1$ khɔɔ$_5$hay$_3$ phuu$_3$yiŋ$_5$ thii raan$_4$ lɨɨak$_3$*
By ask lady at store choose
"By having a lady at a jewelry store choose one."

A: *c *dooy$_1$ waaŋ$_1$way$_4$ bon$_1$ to$_4$ khooŋ$_5$ thəə$_1$*
By put on desk of her
"By putting it on her desk."

(99) Q: a *cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sɨɨ$_4$ rot$_4$ **yaaŋ$_2$ray$_1$***
John help Mary buy car **how**
"How did John help Mary buy a car?"

A: b *dooy$_1$ phaa$_1$ thəə$_1$pay$_1$ dii$_1$ləə$_3$*
By take her go dealer
"By taking her to the dealer."

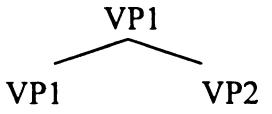
A: *c *dooy$_1$ ŋəəŋ$_1$phɔɔn$_2$*
by monthly payment
"By monthly payment."

[21] Thai is one of the wh-in-situ languages.

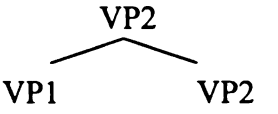
In (98), while (98b) can be an answer to the question, (98c) cannot. As (98b) is considered to be an adjunct of *sɨɨ$_4$ wææn$_5$* "buy ring" which is VP1 and (98c) an adjunct of *hay$_3$ mææ$_1$rii$_3$* "give Mary" which is VP2, this suggests that *yaaŋ$_2$ray$_1$* "how" can only extract out of VP1, not VP2. Similarly in (99), while (99b) can be an answer to the question, (99c) cannot. As (99b) is considered to be an adjunct of *chuuay$_3$ mææ$_1$rii$_3$* "help Mary" which is VP1 and (99c) an adjunct of *sɨɨ$_4$ rot$_4$* "buy car" which is VP2, this, again, suggests that while extraction out of VP1 is allowed extraction out of VP2 is not.

As extraction out of VP1 is grammatical, but extraction out of VP2 causes ungrammaticality, I argue that rather than the two alternate structures in (100a) and (100b), the structure of sentences containing serial verbs, is one in which VP1 is the head VP to which VP2 adjoins, as in (101a).

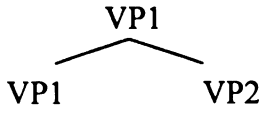
(100) a



b



(101) a



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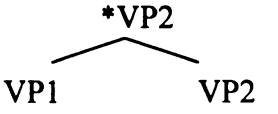


Assuming that the structure of sentences containing serial verbs is one in which VP1 is the head VP to which VP2 adjoins, as in (101a), the extractions in (92a) and (93a) are not a problem as they are cases of extraction out of the main VP. However, the argument extractions in (92b) and (93b) need to be explained. I argue that the extractions in (92b) and (93b) can be explained in terms of an empty operator.

With respect to an empty operator, Chomsky (1977) proposes that sentences like (102), known as *tough* movement, contain an empty operator.

(102) Mary$_i$ is tough to please t_i

In (102), there is a gap corresponding to an argument position. It might appear that (102) is derived by movement of the DP Mary, given that (103) is also grammatical.

(103) It is tough to please Mary

But such movement analysis cannot be correct because *tough* assigns a θ-role to its subject, as can be seen in (104).

(104) a Mary is tough

b To please Mary is tough

If there is movement from the object position of *please* to the subject of *tough*, the chain that is formed has two θ-roles, in violation of the θ-Criterion.[22]

(105) Mary$_i$ is tough to please t_i

θ_1 ——————— θ_2

It is, therefore, proposed that movement in sentences like (102) involve empty operators, as schematically represented in (106).

(106) Mary is tough [$_{CP}$ Op$_i$ [$_{IP}$ to please t_i]]

Supporting an empty operator analysis the grammaticality and ungrammaticality in (107), which would otherwise be mysterious, can be explained.

(107) a John bought this book to read t_i

b *John bought this book to show who would read t_i

[22] θ-Criterion (Culicover 1997, p.100):
A chain has at most one θ-position; a θ-position is visible in its maximal chain.

The grammaticality of (107a) and the ungrammaticality of (107b) can be accounted for if we assume that there is an empty operator at [Spec, CP], as illustrated in (108) and (109) respectively.

(108) John bought this book [$_{CP}$ Op [$_{IP}$ PRO to [$_{VP}$ read e

(109) *John bought this book [$_{CP}$ Op [$_{IP}$ PRO [$_{VP}$ to show [$_{CP}$ who [$_{IP}$ would [$_{VP}$ read e

In (109), in order for e to move to Op which is at the higher [Spec, CP], it has to move past the lower [Spec, CP]. The lower [Spec, CP], however, is filled by the *wh*-element *who*. This lower CP, is therefore, an island between the e and the Op. Consequently, the sentence is ungrammatical. In (108), however, there is no island in between e and Op. So the movement is not blocked and the sentence is grammatical.

I argue that the movement in (92b) and (93b) can also be accounted for by an empty operator. (92b) and (93b) are repeated here as (110a) and (110b).

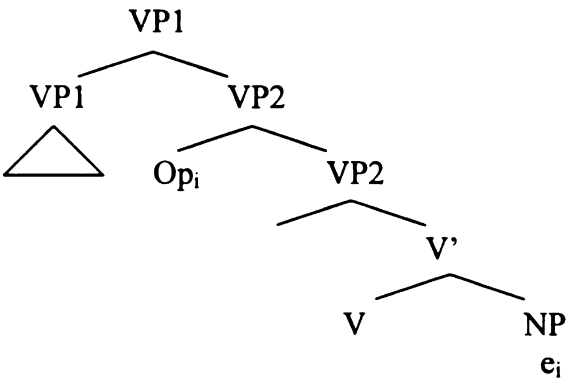
(110) a *Nii$_3$ khǐi$_1$ **khon**$_{1i}$ thii$_3$ cɔɔn$_1$ sǐi$_4$ wææn$_5$ hay$_3$ t$_i$*
this be **person**$_i$ that John buy ring give t$_i$
"This was the lady to whom John bought a ring for."

b *Nii$_3$ khǐi$_1$ **rot**$_{4i}$ thii$_3$ cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ sǐi$_4$ t$_i$*
This is **car**$_i$ that John help Mary buy t$_i$
"This was the car that John helped Mary with buying."

Although at first glance (110a) and (110b) are considered to be cases of extraction out of VP2 which is contextually considered to be the main VP, the movement in (110a) and (110b) can alternatively be explained by an empty operator.

Arguably, in (110a) and (110b), there is an empty operator at some projection, possibly a VP adjunct, which is co-indexed with the gap, as schematically illustrated in (111).[23, 24]

(111)



Evidence that the structure is as in (111), can be found when an island is added between the trace position and the operator position. This is illustrated in (112).

(112) a *Nii$_3$ khɨɨ$_1$ **khon$_{1i}$** thii$_3$ cɔɔn$_1$ sɨɨ$_4$ wæææn$_5$ ʔuuad$_2$ kray$_1$ hay$_3$ e$_i$*
This be person that John buy ring show who give **e$_i$**
"This was the lady that John bought a ring to show who would give to."

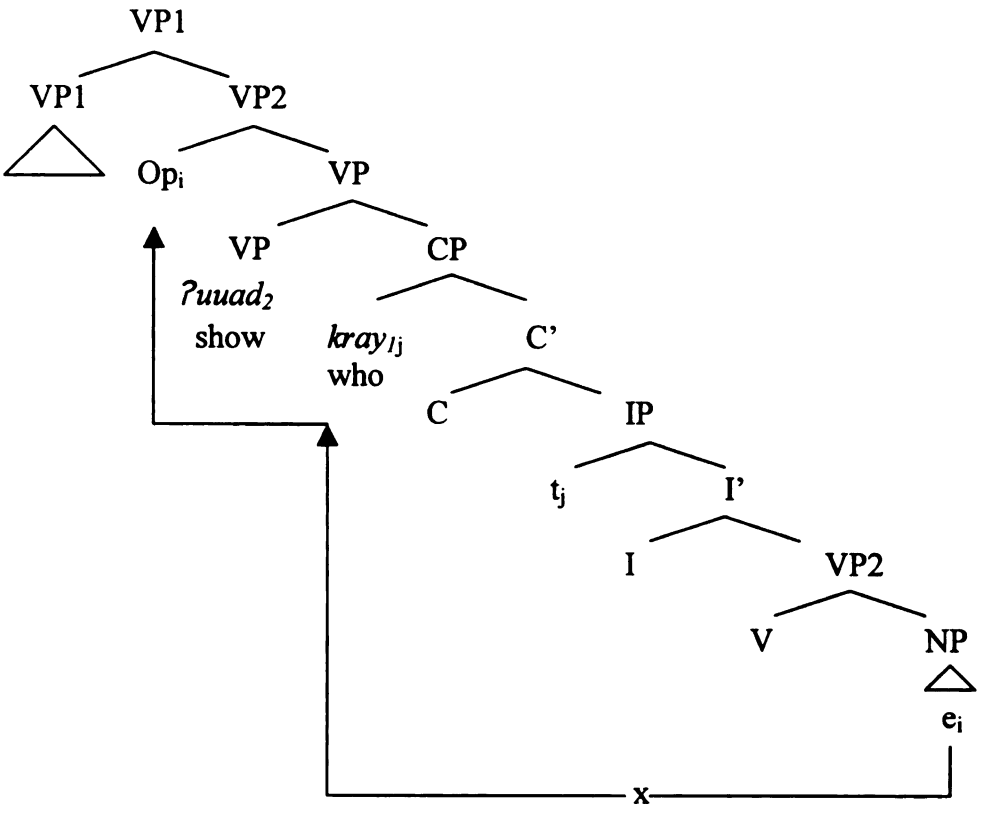
b *Nii$_3$ khɨɨ$_1$ **rot$_{4i}$** thii$_3$ cɔɔn$_1$ chuuay$_3$ mææ$_1$rii$_3$ ʔuuad$_2$ kray$_1$ sɨɨ$_4$ e$_i$*
This is **car$_i$** that John help Mary show who buy **e$_i$**
"This was the car that John help Mary to show who would buy."

In (112a) and (112b), there is a *wh*-island in between the Op and the e, as illustrated in (113).

[23] As the structure above VP1 is not crucial for the discussion here, I will focus only on the structure below VP1.

[24] Assuming that there is an empty operator at the projection adjoined to VP2 is consistent with Barriers framework (Chomsky, 1986). Adjunction to VP is proposed in Barrier to be an operation for operator movement.

(113)



In (113), as the [Spec, CP] is occupied by the *wh*-element *who*, *e* cannot stop at this position before moving to Op. So the movement from e to Op is blocked. Consequently, the sentences are ungrammatical.

So, assuming that the structure of sentences containing serial verbs is the one in which VP1 is a head and VP2 is an adjunct, both the argument extractions and the adjunct extraction can be explained.

In conclusion, I have argued that although, at first glance, the extraction facts support an assumption that the structure in which either VP1 or VP2 can be the head VP to which another VP right or left adjoins, is instantiated in Thai, when taking a closer look, this clearly is not the case. Upon closer scrutiny of the extraction facts, it becomes

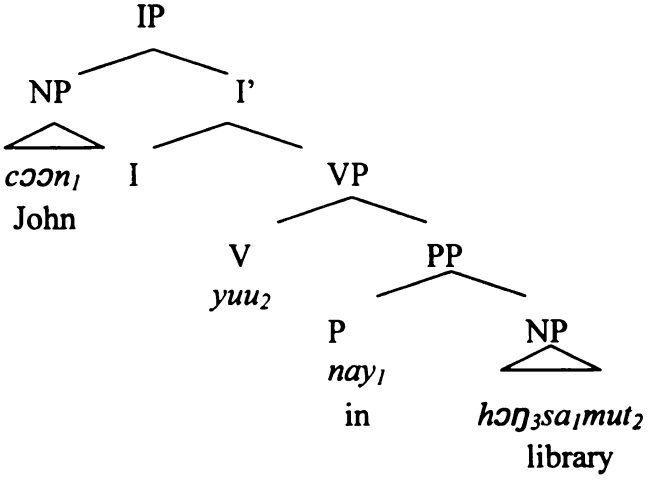
clear that the structure of sentences containing serial verbs is the structure in which VP1 is the head and VP2 is an adjunct.

4.2.1.5 The position of *yuu*$_2$ when taking a locative PP as a complement

As seen in (114), *yuu*$_2$ may occur as a single verb in which case it is presumably the head of VP and takes a locative PP as its complement. The structure of (114a), is therefore, as shown in (114b).

(114) a *cɔɔn*$_1$ ***yuu***$_2$ *nay*$_1$ *hɔŋ*$_3$*sa*$_1$*mut*$_2$
John yuu in library
"John is in the library."

b



Yuu$_2$ can also occur as one of the verbs in a sequence. *Yuu*$_2$ can either be in VP1 or VP2 as in (115a) and (115b), respectively.

(115) a *cɔɔn*$_1$ ***yuu***$_2$ *nay*$_1$ *hɔŋ*$_3$*sa*$_1$*mut*$_2$ *ʔaan*$_2$ *naŋ*$_5$*sɨɨ*$_5$
John **yuu**$_2$ in library read book
"John is in the library for studying."

b *Mææ*$_1$*rii*$_3$ *lop*$_2$ *Bil*$_1$ ***yuu***$_2$ *nay*$_1$ *raan*$_5$ *kaa*$_1$*fææ*$_1$
Mary hide Bill **yuu**$_2$ in coffee shop
"Mary hid Bill by staying in a coffee shop."

In cases where *yuu*$_2$ occurs as one of the verbs in sequence, observations concerning an extraction are the same as the other cases of verbs in sequence.

Concerning extractions, extraction of adjuncts out of the VP1 is allowed but extraction out of the VP2 is not. This can be illustrated by the following.

First, as expected, both VP1 and VP2 can be modified as illustrated below.

(116) a *cɔɔn*$_1$ *yuu*$_2$ *nay*$_1$ *suuan*$_5$*sa*$_5$*tha*$_1$*ra*$_1$*na*$_5$ ***dooy*$_1$ *naŋ*$_3$ *bon*$_1$ *maa*$_4$** *aan*$_2$ *naŋ*$_5$*sɨɨ*$_5$
John yuu$_2$ in park **by sitting on bench** read book
"John is in the park (by) sitting on the bench and reads a book."

b *cɔɔn*$_1$ *yuu*$_2$ *nay*$_1$ *suuan*$_5$*sa*$_5$*tha*$_1$*ra*$_1$*na*$_5$ *aan*$_2$ *naŋ*$_5$*sɨɨ*$_5$
John *yuu*$_2$ in park read book

***yaaŋ*$_2$ *taŋ*$_3$ *ʔok*$_2$ *taŋ*$_3$ *chay*$_1$**
seriously

John is in the park and seriously reading a book."

(117) a *cɔɔn*$_1$ *aan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ ***yaaŋ*$_2$ *taŋ*$_3$ *ʔok*$_2$ *taŋ*$_3$ *chay*$_1$** *yuu*$_2$ *nay*$_1$
John read book **seriously** yuu$_2$ in

suuan$_5$*sa*$_5$*tha*$_1$*ra*$_1$*na*$_5$
park

"John seriously reads a book in the park."

b *cɔɔn*$_1$ *aan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ *yuu*$_2$ *nay*$_1$ *suuan*$_5$*sa*$_5$*tha*$_1$*ra*$_1$*na*$_5$ ***dooy*$_1$ *naŋ*$_3$ *bon*$_1$ *maa*$_4$**
John read book yuu$_2$ in park **by sit on bench**
"John reads a book in the park by sitting on a bench."

However, extraction of adjuncts out of VP1 is allowed while extraction of adjuncts out of VP2 is not. This can be illustrated by the following.

(118) Q: a *cɔɔn*$_1$ *yuu*$_2$ *nay*$_1$ *suuan*$_5$*sa*$_5$*tha*$_1$*ra*$_1$*na*$_5$ *aan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ ***yaaŋ*$_2$*ray*$_1$**
John yuu$_2$ in park read book **how**
"In what manner is John in the park for reading?"

A: b *dooy$_1$ naŋ$_3$ bon$_1$ maa$_4$*
by sit on bench
"By sitting on a bench."

A: *c *yaaŋ$_2$ taŋ$_3$ ʔok$_2$ taŋ$_3$ chay$_1$*
Seriously
"Seriously"

(119) Q: a *cɔɔn$_1$ aan$_2$ naŋ$_5$sɨ$_5$ yuu$_2$ nay$_1$ suuan$_5$sa$_5$tha$_1$ra$_1$na$_5$* ***yaaŋ$_2$ray$_1$***
John read book yuu$_2$ in park **how**
"How good/bad did John do his reading in the park?"

A: b *yaaŋ$_2$ taŋ$_3$ ʔok$_2$ taŋ$_3$ chay$_1$*
Seriously
"Seriously"

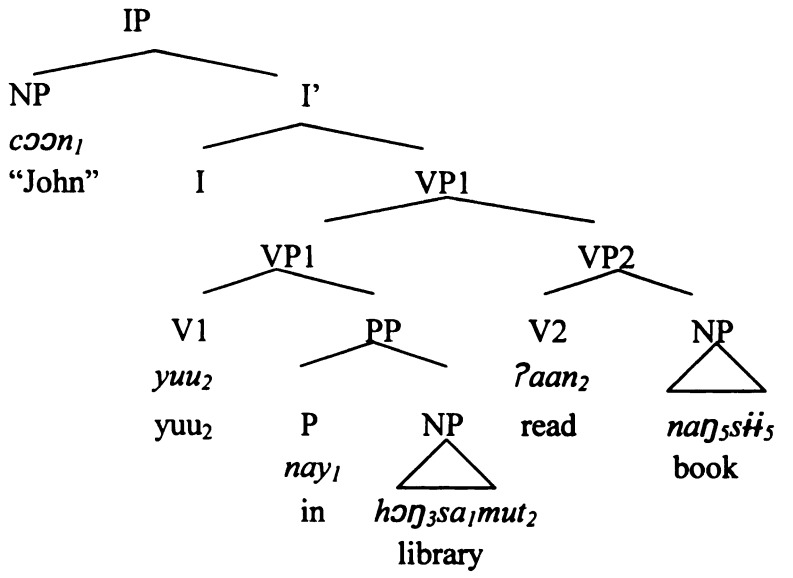
A: *c *dooy$_1$ naŋ$_3$ bon$_1$ maa$_4$*
by sit on bench
"By sitting on a bench."

In (118), while (118b) can be an answer to the question, (118c) cannot. As (118b) is considered to be an adjunct of *yuu$_2$ nay$_1$ suuan$_5$sa$_5$tha$_1$ra$_1$na$_5$* "yuu$_2$ in park" which is VP1, and (118c) an adjunct of *aan$_2$ naŋ$_5$sɨ$_5$* "read book" which is VP2, this suggests that *yaaŋ$_2$ray$_1$* "how" can only extract out of VP1, not VP2. Similarly in (119), while (119b) can be an answer to the question, (119c) cannot. As (119b) is considered to be an adjunct of *aan$_2$ naŋ$_5$sɨ$_5$* "read book" which is VP1 and (119c) is an adjunct of *yuu$_2$ nay$_1$ suuan$_5$sa$_5$tha$_1$ra$_1$na$_5$* "yuu$_2$ in park" which is VP2, this, again, suggests that while extraction out of VP1 is allowed, extraction out of VP2 is not.

Based on these considerations, the structure of sentences (115a) and (115b) is that of VP1 being the head to which VP2 adjoins, as represented in (120) and (121) respectively, consistent with the other serial verbs constructions.

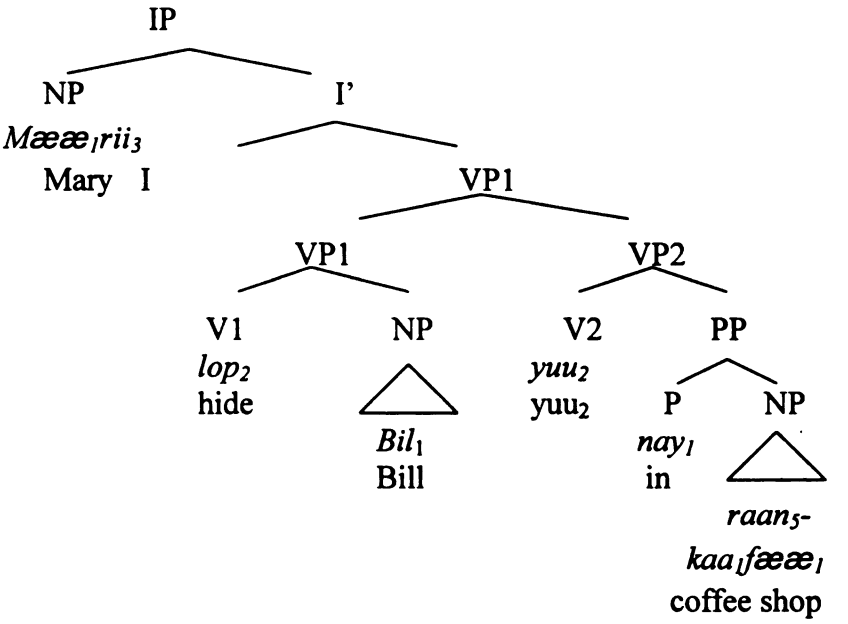
(120) a *cɔɔn$_1$ yuu$_2$ nay$_1$ hɔŋ$_3$sa$_1$mut$_2$ ʔaan$_2$ naŋ$_5$sɨ̌$_5$*
John yuu$_2$ in library read book
"John is in the library for studying."

b



(121) a *Mææ$_1$rii$_3$ lop$_2$ Bil$_1$ yuu$_2$ nay$_1$ raan$_5$ kaa$_1$fææ$_1$*
Mary hide Bill yuu$_2$ in coffee shop
"Mary hid Bill by staying in a coffee shop."

b



So with respect to the position of *yuu*$_2$ which takes a locative PP as its complement, in addition to occurring as a single verb in a sentence in which case *yuu*$_2$ is the head of VP, *yuu*$_2$ can occur as one of the verbs in sequence. When *yuu*$_2$ occurs as VP1, it is a head of the main VP and when *yuu*$_2$ occurs as VP2, it is a head of an adjoining VP. So *yuu*$_2$, which takes a locative PP as its complement, may either be the head of the main VP or the head of a VP adjunct.

4.2.2 *Yuu*$_2$ when taking no complement

4.2.2.1 Visonyanggoon's (2000) proposal for the position of auxiliaries in Thai

The position of *yuu*$_2$, when expressing aspect, has been discussed in Visonyanggoon (2000). Visonyanggoon, in her studies of parallelism between noun phrases and clauses in Thai, claims that Thai auxiliaries which include modals and aspect markers may have different syntax. The evidence comes from their behavior as predicators.

In Thai some modals occur pre-verbally and some modals occur post-verbally. Similarly, some aspect markers occur pre-verbally and some aspect markers occur post-verbally. According to Visonyanggoon, while post-verbal modals are base-generated pre-verbally, post-verbal aspects are not.

Based on Noss (1964), Visonyanggoon discusses that a single word which can stand alone in the response to a yes-no question to represent the whole predicate, referred

to as predicator, is an element with verbal properties that takes the widest scope. This can be illustrated by the following example.

(122) a Q: *khaw$_5$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ may$_5$*
he read book QP
"Does he read?"

b A: *ʔaan$_2$*
read
"Yes, he read(s).

(123) Q: *khaw$_5$ yaak$_2$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ may$_5$*
he want read book QP
"Does he want to read?"

A: a *yaak$_2$*
want

b **ʔaan*
read

"Yes, he wants to read.

(124) Q: *khaw$_5$ ruu$_4$sɨk$_2$ yaak$_2$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ may$_5$*
he feel want read book QP
"Does he feel like reading?"

A: a *ruu$_4$sɨk$_2$*
feel

b ** yaak$_2$*
want

c **ʔaan$_2$*
read

"Yes, he feels like reading.

(p.118)

In (122), *ʔaan*$_2$ "read" is considered to be a predicator. However, in (123), the predicator is *yaak*$_2$ "want," as it has scope over the VP *ʔaan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ "read the book." In (124), *ruu*$_4$*sɨk*$_2$ "feel" is a predicator as it has scope over the VP *yaak*$_2$ *ʔaan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ "want to read the book."

Visonyanggoon, assuming Martins's analysis (1994), argues that an element with verbal properties that takes the widest scope can be a minimal response to a yes/no question because it is an element which can legitimately move to the head of Sigma phrase (ΣP).

ΣP is proposed to be the locus of Affirmation/Negation and is located in a C projection. The Σ head has the strong V-feature and so an element with verbal properties has to move to Σ to check off its features. The element with the verbal properties which may move to Σ, however, has to be the highest element, as "Attract Closest" (Chomsky 1995: 296, Pesetsky 1998) has to be obeyed.[25] The highest element with v-feature, however, is an element with verbal properties that takes the widest scope. The fact that in (123), repeated here as (125), *yaak*$_2$ "want" is a minimal response but *ʔaan*$_2$ "read" is not, then, can be accounted for.

[25] Attract Closest (Chomsky 1995: 296, Pesetsky 1998):
α can raise to target K only if there is no legitimate operation Move β targeting , where β is closer to K.

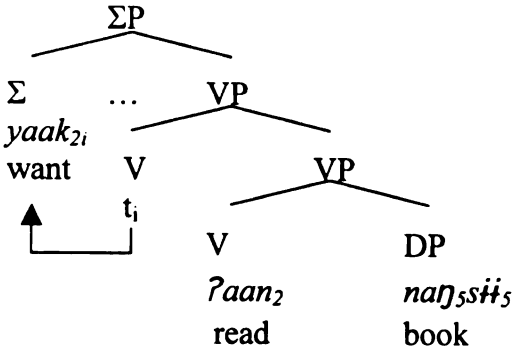
(125) Q: *khaw$_5$ yaak$_2$ ʔaan$_2$ naŋ$_5$sɨ̌$_5$ may$_5$*
he want read book QP
"Does he want to read?"

A: a *yaak$_2$*
want

b **ʔaan*
read

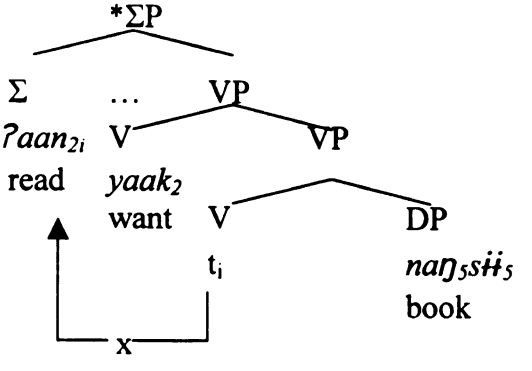
"Yes, he wants to read.

(126)



(p.121)

(127)



(p.122)

The legitimate response to the question in (125) is *yaak*$_2$ "want" because it is closer to the Σ head than the word *ʔaan*$_2$ "read," as in (126). If *ʔaan*$_2$ were to raise to the Σ head as in (127), "Attract Closest" would be violated and ungrammaticality would arise.[26]

On the basis of the predicator test, Visonyanggoon, then, proposed an analysis for that post-verbal modals, in particular *day*$_3$ "can, may," *pen*$_1$ "can," and *way*$_5$ "can" as in (128) to (130), respectively.[27]

(128) *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sii*$_5$ ***day***$_3$
he read book can/may
"He can/may read."

(129) *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sii*$_5$ ***pen***$_1$
he read book can
"He can read"

(130) *khaw*$_5$ *yok*$_4$ *naŋ*$_5$*sii*$_5$ ***way***$_5$
He lift book can
"He can lift the books"

She proposed that *day*$_3$ "can, may," *pen*$_1$ "can," and *way*$_5$ "can," although occur after VP, are not VP right-adjunct. All three words, although post-verbal, are able to be predicators, as illustrated in (131) to (134).

(131) Q: *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sii*$_5$ ***day***$_3$ *may*$_4$
he read book may QP
"May he read?"

A: a *day*$_3$
may
"Yes, he may read."

[26] Note that the Σ head is not necessarily immediately above VP.
[27] It is noted that *day*$_3$ expresses either ability or permission. *Pen*$_1$ and *way*$_5$ express ability. The difference between the three modals of ability is that *day*$_3$ conveys general ability, *pen*$_1$ denotes mental or intellectual ability and *way*$_5$ expresses physical ability (Visonyanggoon, 2000).

b *ʔaan$_2$
read

(p.141)

(132) Q: *khaw$_5$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ **day$_3$** may$_4$*
he read book can QP
"Can he read?"

A: a *day$_3$*
can
"Yes, he can read."

b *ʔaan$_2$
read

(p.141)

(133) Q: *khaw$_5$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ **pen$_1$** may$_4$*
he read book can QP
"Can he read?"

A: a *pen$_1$*
can
"Yes, he can read."

b *ʔaan$_2$
read

(p.141)

(134) Q: *khaw$_5$ yok$_4$ naŋ$_5$sɨɨ$_5$ **way$_5$** may$_4$*
he lift book can QP
"Can he lift the books?"

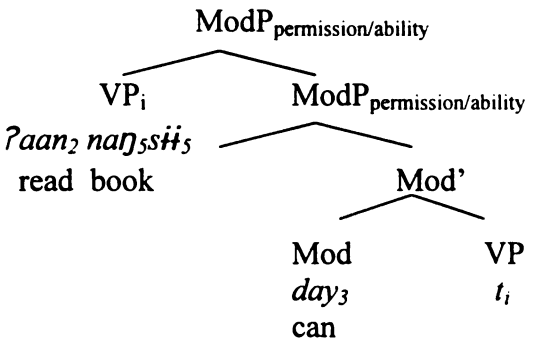
A: a *way$_5$*
can
"Yes, he can lift the books."

b *yok$_4$
lift

(p.142)

These clearly show that post-verbal modals *day*$_3$ "can, may," *pen*$_1$ "can," and *way*$_5$ "can" are heads situated above VP. And in order to derive the surface word order, the VP raises to some position higher than the modal, as demonstrated in (135).

(135)



(p.142)

For the Thai post-verbal aspect markers, however, Visonyanggoon proposes that they differ from post-verbal modals. Post-verbal aspect markers are not heads situated above VP. Post-verbal aspect markers are *lææw*$_4$ and *yuu*$_2$ as in (136) and (137) respectively.

(136) *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̌*$_5$ *lææw*$_4$
he read book already
"He has read."/"He has started reading."[28]

(137) *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̌*$_5$ *yuu*$_2$
he read book IMP[29]
"He is/was reading."

Supporting that *lææw*$_4$ and *yuu*$_2$ are not heads situated above VP is the fact that neither *lææw*$_4$ nor *yuu*$_2$ are able to be predicators, as illustrated in (138) and (139) respectively.[30]

[28] The two readings will be discussed in detail in chapter 4.
[29] In Visonyanggoon (2000) the gloss for *yuu*$_2$ is imperfective.

(138) Q: *khaw$_5$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ lææw$_4$ yan$_1$*
he read book already yet
"Has he read yet?"

A: a **ʔaan$_2$*
read

b **lææw$_4$*
already

c *ʔaan$_2$ lææw$_4$*
read already

(p.220)

(139) Q: *khaw$_5$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ yuu$_2$ may$_4$*
he read book IMP QP
"Is he reading?"

A: a **yuu$_2$*
IMP

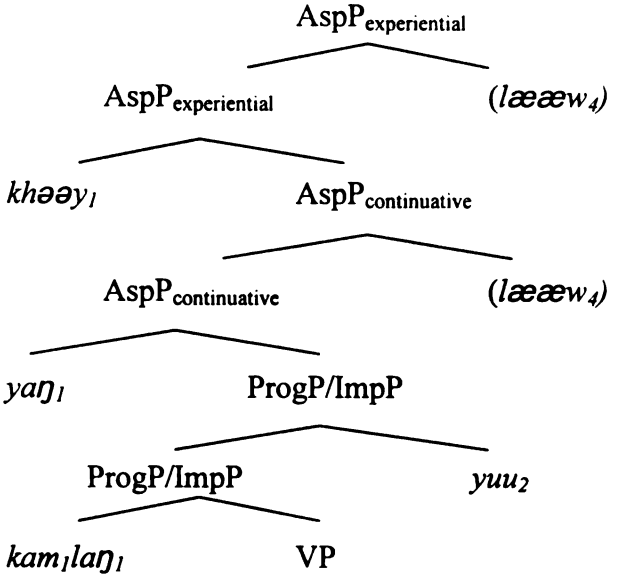
b *ʔaan$_2$*
read

(p.211)

Visonyanggoon, then, proposes that *lææw$_4$* and *yuu$_2$* are right-adjuncts. While *lææw$_4$* is claimed to right-adjoin to several phrases from $AspP_{experiential}$, to XP above ProgP/ImpP, *yuu$_2$* is claimed to right-adjoin to ProgP/ImpP, as illustrated in (140).[31]

[30] Visonyanggoon (2000) does not seem to have an account for why *ʔaan$_2$* "read" alone is not an acceptable answer for (138) but it is an acceptable answer for (139). However, what is more important here is that neither *lææw$_4$*, nor *yuu$_2$* are acceptable answers for the question in (138) and (139), respectively.
[31] Visonyanggoon (2000) assumes Cinque (1999)'s proposal that each adverb occupies a different projection.

( )



(p.222)

4.2.2.2 ProgP/ImpP

According to Visonyanggoon (2000), *yuu*$_2$ is claimed to adjoin to a phrase whose head is *kam*$_1$*laŋ*$_1$. Her proposal for *kam*$_1$*laŋ*$_1$ is based on the predicator test, as illustrated in (141).

(141) Q: *khaw*$_5$ *kam*$_1$*laŋ*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sii*$_5$ *rii*$_5$
he PROG[32] read book QP
"Is he reading?"

A: a **kam*$_1$*laŋ*$_1$
PROG

b **ʔaan*$_2$
"read"

[32] In Visonyanggoon (2000) the gloss for *kam*$_1$*laŋ*$_1$ is progressive

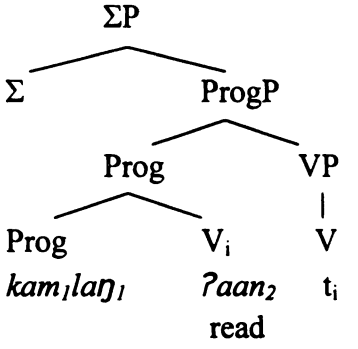
c *kam₁laŋ₁* *ʔaan₂*
PROG read

"Yes, he is."

(p.197)

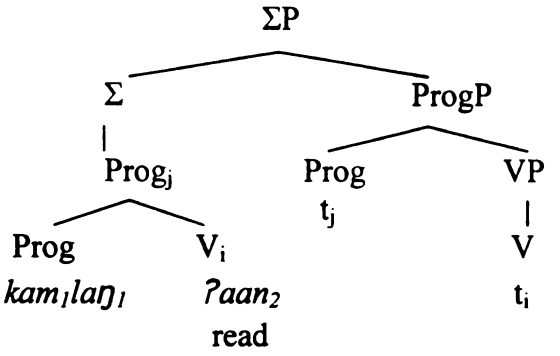
From (141), it is clear that the required predicator is a verb together with *kam₁laŋ₁*. To account for this, her idea is that *kam₁laŋ₁* is derived from the noun which means "strength" or "power" (Ekniyom 1979, Meepoe 1996), so it could be taken as nominal or, at least, not purely verbal.[33] However, a head with V-features has to move to Σ to function as the minimal response. It is, then, possible that *kam₁laŋ₁* is the head without V-feature and the verb under *kam₁laŋ₁* adjoins to *kam₁laŋ₁* on its way to Σ, as illustrated in (142).

(142) a



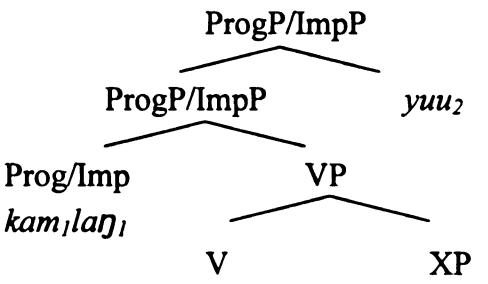
[33] Visonyanggoon notes that this is pointed out by Cristina Schmitt. One example suggested by Asuncion Martinez, is the French progressive "en train de" which is a PP.

b



Subsequently, Visonyanggoon proposes that as the combination of *kam$_1$laŋ$_1$* and *yuu$_2$* simply conveys the meaning of the progressive, not the continuative, *kam$_1$laŋ$_1$* is in ProgP/ImpP to which the imperfective *yuu$_2$* right-adjoins. The structural representation is, therefore, as in (143).

(143)



4.2.2.3 *Yuu$_2$* as a VP-right adjunct

Visonyanggoon's proposal for treating *kam$_1$laŋ$_1$* as a head of Prog/ImpP seems plausible. However, her proposal that *yuu$_2$* right-adjoins to Prog/ImpP seems to be problematic.

When *kam$_1$laŋ$_1$* and *yuu$_2$* co-occur, the interpretation received is the process, not state. This can be illustrated by the following example.

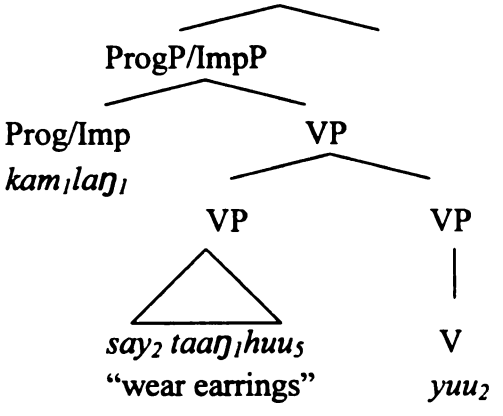
(144) a *Mææ$_1$rii$_3$* ***kam$_1$laŋ$_1$*** *say$_2$ taaŋ$_1$huu$_5$*
Mary kam$_1$laŋ$_1$ wear earrings
"Mary was putting earrings on."

b *Mææ$_1$rii$_3$ say$_2$ taaŋ$_1$huu$_5$* ***yuu$_2$***
Mary wear earrings yuu$_2$
"Mary was putting earrings on."
"Mary has earrings on her earlobes."

c *Mææ$_1$rii$_3$* ***kam$_1$laŋ$_1$*** *say$_2$ taaŋ$_1$huu$_5$* ***yuu$_2$***
Mary kam$_1$laŋ$_1$ wear earrings yuu$_2$
"Mary was putting earrings on."

In (144a), *say$_2$ taaŋ$_1$huu$_5$* "wear earrings" co-occurs with *kam$_1$laŋ$_1$* and the process of wearing earrings is described. In (144b), *say$_2$ taaŋ$_1$huu$_5$* "wear earrings" co-occurs with *yuu$_2$* and the state both in the sense of progressive and in the sense of result state is described. Crucially, in (144c) where *say$_2$ taaŋ$_1$huu$_5$* "wear earrings" co-occurs with *kam$_1$laŋ$_1$* and *yuu$_2$*, only the process of wearing earrings is described. This clearly suggests that *kam$_1$laŋ$_1$* takes scope over *yuu$_2$*, or that *yuu$_2$* has to adjoin to a phrase lower than *kam$_1$laŋ$_1$*, possibly a VP. The structure of sentences where *kam$_1$laŋ$_1$* and *yuu$_2$* co-occur as in (144c), therefore, should be represented as (145).

(145)



Yuu$_2$, therefore, rather than adjoining to ProgP/ImpP whose head is *kam*$_1$*laŋ*$_1$, adjoins to a phrase lower than *kam*$_1$*laŋ*$_1$, possibly VP.

4.2.3 *Yuu*$_2$ and predictor facts revisited

With respect to the ability of *yuu*$_2$ to be a predicator, *yuu*$_2$, when behaving like a copular verb can be a predicator, but when behaving like an aspectual marker cannot, as illustrated in (146) and (147) respectively,

(146) Q: *khaw*$_5$ *yuu*$_2$ *thii*$_3$ *hoŋ*$_3$ *sa*$_2$*mud*$_2$ *may*$_4$
he yuu$_2$ at library QP
"Is he at the library?"

A: *yuu*$_2$
yuu$_2$
"Yes, he is"

(147) Q: *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sɨɨ*$_5$ *yuu*$_2$ *may*$_4$
he read book yuu$_2$ QP
"Is he reading?"

A: a **yuu*$_2$
yuu$_2$

b *ʔaan*$_2$
read

"Yes, he is"

I propose that an alternative explanation for why *yuu*$_2$ in (147) cannot be a predicator, while *yuu*$_2$ in (146) can has to do with whether it takes a complement or not. More precisely, I propose that for a verbal element to be a predicator, it needs to have a complement.

Under the assumption that for a verbal element to be a predicator, it needs to have a complement, facts in (146) and (147) can be explained. Both *yuu*$_2$ in (146) and (147) is a verbal element. As *yuu*$_2$ in (146) takes a complement, it can be a predicator. And as *yuu*$_2$ in (147) does not take a complement, it cannot be a predicator.

Evidence that this hypothesis is on the right track comes from *lææw*$_4$ which will be discussed in chapter 4.

4.2.4 Unifying the syntax of *yuu*$_2$

It is clear that *yuu*$_2$ can either be transitively used or intransitively used. When transitively used, it takes a locative PP as its complement. When intransitively used, it right-adjoins to a VP. The position of VP right-adjunction that intransitive *yuu*$_2$ occupies, however, is also a position of transitive *yuu*$_2$ when occurring as VP2. To unify the syntax of *yuu*$_2$, I will make use of Pustejovsky's (1995) notion of subeventual structure and headedness.

Remember that Pustejovsky treats events as being composed of subevents which are subclassified into three sorts: PROCESSES, STATES, and TRANSITIONS, and these three sorts of events can be combined in different ways.

The relation between two combined events (i.e., e_1 and e_2) can be exhaustive order (i.e., $<\propto$), exhaustive overlap (i.e., $\circ\propto$) or exhaustive ordered overlap (i.e., $<\circ_\propto$), as in *break*, *accompany*, and *walk*, respectively.

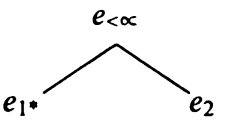
Crucially, verbs such as *break* have both the causative reading and the inchoative reading, as illustrated in (148a) and (148b), respectively.

(148) a John broke a cup.

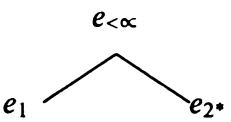
b The cup broke.

To distinguish between the causative reading and the inchoative reading of *break*, Pustejovsky appeals to the notion of headedness. More precisely, he proposes that the causative reading corresponds to the event structure in which e_1 is headed and that the inchoative reading corresponds to the event structure in which e_2 is headed, as illustrated in (149a) and (149b), respectively.

(149) a



b



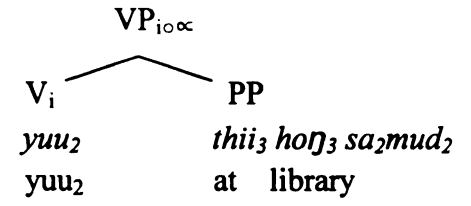
Since either e_1 or e_2 can be the head, he proposes that verbs like *break* are unspecified for headedness.

Now we can go back to see how *yuu*$_2$ would fit in Pustejovsky's proposal for subeventual structure and headedness.

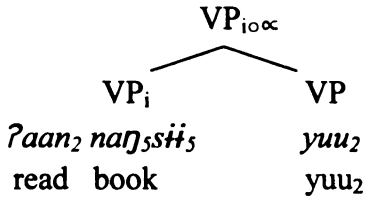
Yuu$_2$ is a subevent that denotes a state. It never takes an external argument of its own. In locative constructions like *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *hoŋ*$_3$ *sa*$_2$*mud* "John yuu$_2$ at library," the subject *cɔɔn*$_1$ "John" is the external argument of *thii*$_3$ *hoŋ*$_3$ *sa*$_2$*mud* "at library." Locatives like *thii*$_3$ *hoŋ*$_3$ *sa*$_2$*mud* "at library" cannot be the main event of a clause. They need to combine with a verbal head.

Yuu$_2$ can combine with a locative. When it combines with a locative it can form a complex event where e_1 denotes a state (*yuu*$_2$), and e_2 denotes a locative subevent which is also a state. The relation between e_1 and e_2 is overlap. In this case *yuu*$_2$ acts as the head of the VP and in main clause as in (150a) will be marked for tense etc,. Now sometimes *yuu*$_2$ can combine with an already complete event structure and, although the relation is again overlap, in this case *yuu*$_2$ is not the head of the main VP. Rather, it is adjoined to it and contributes a stative reading, as in (150b).

(150) a



b



This situation of *yuu*$_2$ does not differ from cases of verbs like *break*. For such cases, the properties of being unspecified for headedness are exhibited in the subeventual structure. If a subevent *e* is headed, it is part the core event description (i.e., the building up of the event). So if e_1 is headed, PROCESS is part of the core event description, and if e_2 is headed RESULT STATE is part of the core event description. For the case of *yuu*$_2$, however, headedness is used with respect to whether it takes a complement or not. If *yuu*$_2$ takes a complement it is the head and it is part of the core event being described. If *yuu*$_2$ is not the head, it does not take a complement and it is an adjunct used intransitively.

In conclusion, by making use of a modified notion of headedness, I am arguing here that *yuu*$_2$ is unspecified for headedness. Being unspecified for headedness, *yuu*$_2$ can be used as the head of a VP projection (in which case it selects for a locative PP complement) and an intransitive adjunct (in which case it acts as an event modifier). However, only in the transitive case, it is part of the building up of the core event.

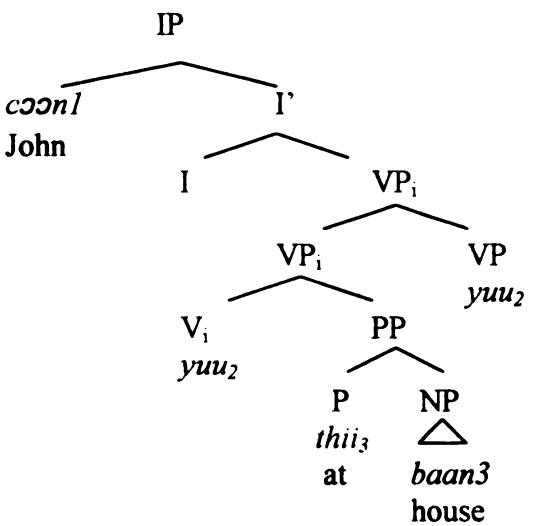
4.2.5 Evidence for the analysis of *yuu*$_2$

By assuming that *yuu*$_2$ is a lexical item that stands for the notion that property x holds an interval of time and it is syntactically not specified for headedness, facts concerning co-occurrence and ambiguity can be explained.

As sentence (151a) is an acceptable sentence, clearly main verb *yuu*$_2$ and adjunct *yuu*$_2$ can co-occur. By the proposed syntax, the co-occurrence of *yuu*$_2$ is not ruled out, as sentence (151a) can be represented as (151b).

(151) a *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *baan*$_3$ *yuu*$_2$
John yuu$_2$ at house yuu$_2$
"John is still at home at this time."

b

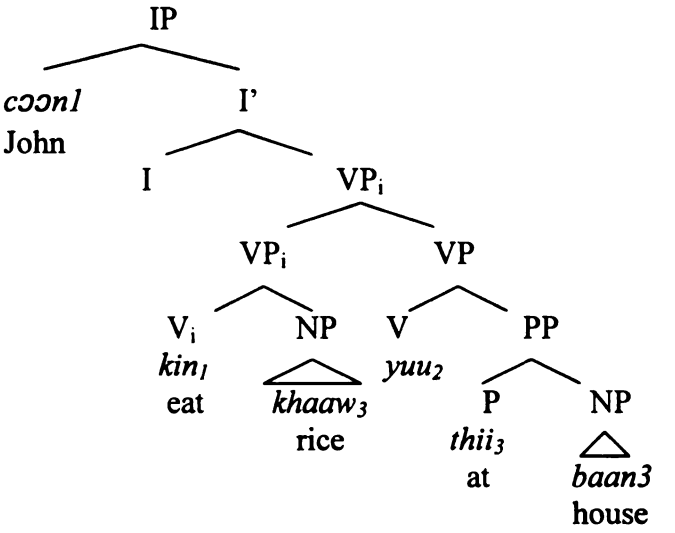


In (151b), *yuu*$_2$ may occupy the head of the VP_i as well as the head of the phrase adjoined to the VP_i. The interpretation however, is that John was/is still at his house at a particular period of time.[34]

Moreover, as *yuu*$_2$ can be both transitively and intransitively used, maybe the differences in meaning of (152) and (153) can be explained.

(152) a *cɔɔn*$_1$ *kin*$_1$ *khaaw*$_3$ *yuu*$_2$ *thii*$_3$ *baan*$_3$
John eat rice yuu$_2$ at home
"John eats rice at home."

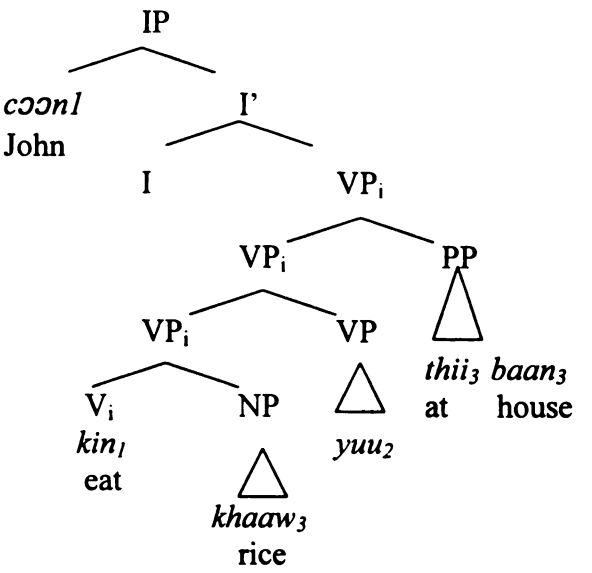
b



(153) a *cɔɔn*$_1$ *kin*$_1$ *khaaw*$_3$ *yuu*$_2$ *thii*$_3$ *baan*$_3$
John eat rice yuu$_2$ at home
"John is eating rice at home."

[34] It seems that when there are two *yuu*$_2$*s*, the Exclusion Feature of the modifying *yuu*$_2$ is taking worlds. The modifying *yuu*$_2$ indicates that the state (i.e., John being at home) is not different from what it could have been, and thus "still" is expressed.

b



In (152) when taking a locative PP as its complement, *yuu*$_2$ describes that the state of John being at home holds at a certain period of time. In (153) when taking no complement, *yuu*$_2$ describes that the state of John eating rice holds at a certain period of time.

4.2.6 Summary for the syntax of *yuu*$_2$

In conclusion, it is clear that *yuu*$_2$ can behave as the main predicate and/or as an adjunct. In the same way that a certain element (i.e., *break, sink, stop, begin*) may be unspecified for headedness with respect to a subeventual structure, *yuu*$_2$ can be considered to be an element which is unspecified for headedness with respect to whether it projects to a full VP or not. In other words, for *yuu*$_2$, its property of being unspecified for headedness is exhibited in terms of whether it is part of what is necessary to build the event description or not. Consequently, *yuu*$_2$ can either be used as a copular verb taking a PP as its complement or the head of a VP adjunct taking no complement.

5. Conclusion of the chapter

Having investigated the semantics of *yuu*$_2$ it is clear that *yuu*$_2$ has only one core meaning. *Yuu*$_2$ denotes a state with an exclusion feature. Denoting a state with an exclusion feature, the interpretation of a non-inherent/non-permanent state may be derived as an implicature. As such interpretation is derived as an implicature, it is not asserted by *yuu*$_2$. Consequently, *yuu*$_2$ is compatible with both permanent and non-permanent states.

Moreover, having investigated the syntax of *yuu*$_2$, *yuu*$_2$ can be considered to be a verbal head which is not specified for headedness. Therefore, it can be the head of the main VP or the head of a VP adjunct. In both cases, however, *yuu*$_2$ is clearly a verbal element.

Moroever, the analysis of *yuu*$_2$ shows that with respect to the progressive, two types of the progressive can be distinguished: the progressive which is a process and the progressive which is a state. While the progressive denoted by *kam*$_1$*laŋ*$_1$ is a process, due to the properties of *yuu*$_2$, the progressive denoted by *yuu*$_2$ is a state.

To conclude, I have shown that rather than postulating multiple lexical entries for multiple related senses of the word, there is a unified representation of *yuu*$_2$. The analysis of *yuu*$_2$, therefore, provides empirical support for the idea that logically related senses do not necessarily correspond to different lexical items.

CHAPTER 3

A unified analysis of *pay$_1$* and *maa$_1$*

1. Introduction

In this Chapter we examine the behavior of *pay$_1$* and *maa$_1$*. *Pay$_1$* is considered to be a verb for "go" and *maa$_1$* is considered to be a verb for "come," as illustrated in (1a) and (1b), respectively.

(1) a *cɔɔn$_1$ **pay$_1$** tha$_1$ naa$_1$ kaan$_1$*
John pay$_1$ bank
"John went to the bank."

b *cɔɔn$_1$ **maa$_1$** tha$_1$ naa$_1$ kaan$_1$*
John maa$_1$ bank
"John came to the bank."

However, in addition to denoting "go" and "come," *pay$_1$* and *maa$_1$* have other functions as well. For example, *pay$_1$* may behave like a particle for the imperfective, and *maa$_1$*, a particle for a version of the Perfect, as illustrated in (2a) and (2b), respectively.

(2) a *su$_2$rii$_1$ ʔaan$_2$ naŋ$_5$sii$_5$ **pay$_1$** con$_1$ cob$_2$*
Suri read book pay$_1$ until end
"Suri kept reading until she finished the book."

(Thepkanjana 1986, p. 156)

b *su$_2$rii$_1$ tad$_2$ phom$_5$ **maa$_1$***
Suri cut hair maa$_1$
"Suri has just got a hair cut."

(Thepkanjana 1986, p.166)

In (2a) *pay$_1$* has been described as denoting the continuation of an action and in (2b) *maa$_1$* has been described as denoting the Perfect aspect.

A phenomenon in which an element for "go" and an element for "come" may also play the roles of aspectual markers is also cross-linguistically common. For example, in French, *venir* and *aller*, as well as expressing "come" and "go" as in (3a) and (3b), can also express the Perfect and the prospective, as in (4a) and (4b).

(3) a *Max **vient** de Paris demain*
Max comes from Paris tomorrow
"Max will come from Paris tomorrow."

(Bouchard 1995, p.121)

b *Max **va** a Quebec (de Montreal)*
Max goes to Quebec City (from Montreal)

(Bouchard 1995, p.149)

(4) a *Max **vient** de partir*
Max comes from leaving
"Max has just left."

(Bouchard 1995, p.139)

b *Elle **va** courir le marathon (demain)*
Elle is-going to run the marathon (tomorrow).

(Bouchard 1995, p.153)

Therefore, rather than a case of homonymy, in which elements accidentally share the same form, it is more likely to be a case in which the multiple senses are somehow associated and could be treated as a single element. What has to be explained, then, is how the multiple senses are connected.

In this chapter, by investigating the semantics and the syntax of *pay$_1$* and *maa$_1$*, I provide an explanation for how the multiple senses are connected; more precisely, why it

is possible for the lexical items *pay$_1$* and *maa$_1$* to have multiple functions without the need to postulate different lexical entries for either *pay$_1$* or *maa$_1$*.

This chapter consists of 7 sections. In section (2), I summarize previous description of *pay$_1$/maa$_1$*. Again, we will see that researchers have noted multiple meanings but very few have attempted to connect them, In section (3), I summarize Demirdache and Uribe-Etxebarria's (2000) proposal for why an element for "come" and an element for "go" may also denote aspect cross-linguistically. Although they provide an idea for why an element of "come" and an element for "go" may also denote certain aspects, we will later see that the behavior of *pay$_1$* and *maa$_1$* in Thai requires a more fine-grained analysis.

As the phenomenon in which an element for "go" and an element for "come" may also play the role of an aspectual marker is found in French, Bouchard (1995) attempts to account for the behavior of French *venir* "come" and *aller* "go." In section (4), I summarize Bouchard's analysis for French *venir* "come" and *aller* "go." Again we will later see that although the behavior of French *venir* and *aller* may be accounted for, the behavior of Thai *pay$_1$* and *maa$_1$* is not able to be accounted for in exactly the same way.

In section (5), illustrating the inadequacy of the earlier analyses, I provide preliminary data concerning the behavior of Thai *pay$_1$* and *maa$_1$*. Subsequently, section (6) is the proposed analysis which consists of two main parts: the basic semantic properties of *pay$_1$ /maa$_1$* and the syntax of *pay$_1$/maa$_1$*.

In dealing with the semantic properties of *pay$_1$/maa$_1$*, I will base my analysis on Jackendoff's (1996) proposal. As I investigate the multiple uses of both *pay$_1$* and *maa$_1$*, it will be demonstrated that *pay$_1$* and *maa$_1$* both have one core meaning.

With respect to the syntax of *pay$_1$ /maa$_1$*, first I will investigate *pay$_1$* and *maa$_1$* as they behave like verbs for "go" and "come," respectively. As in chapter 2, the extraction facts will again be used as a basis for the analysis. Then, I will investigate *pay$_1$* and *maa$_1$* as they behave as event modifiers. The predicator test will again be used as a basis for the investigation. Based on scope facts, I will also determine the position of *pay$_1$ /maa$_1$* when used as event modifier relative to other aspectual markers. Finally, based on the idea of headedness (Pustejovsky 1995, 1998), I will argue that *pay$_1$ /maa$_1$* can be treated as having very similar syntactic properties.

Finally in section (7), I will summarize the most important points of the chapter. This analysis not only provides an empirical support for the Generative Lexicon's idea that, rather than multiplying entries in the lexicon, logically related senses can correspond to a single lexical entry, but it will also contribute to the description of the aspectual system in Thai.

2. Previous descriptions of *pay$_1$* and *maa$_1$*

A number of earlier studies of Thai grammar including Ratchabandittayasathan (1982), Thepkanjana (1986), Wilawan (1994), Mathias (2000), and Muansuwan (2002) have noted that *pay$_1$* and *maa$_1$* have multiple meanings. However, there do not seem to be any studies in which the multiple meanings are formally connected. As we will see, *pay$_1$* and *maa$_1$* have been glossed in different ways. In this section I willl use each author's own glosses.

2.1 Ratchabandittayasathan (1982)

Ratchabandittayasathan (1982), states that *pay$_1$* is a verb denoting moving from a place and its use is opposite to *maa$_1$* "come." When *pay$_1$* occurs after another verb, however, *pay$_1$* denotes that an action continues. *Pay$_1$* may also occur after an adjective in which case, *pay$_1$* strengthens the degree of the state denoted by the adjective. For *maa$_1$*, he states that *maa$_1$* is a verb denoting movement from a place and its use is opposite to *pay$_1$* "go." When *maa$_1$* occurs after another verb, however, *maa$_1$* indicates that an action continues up to the present time. In Ratchabandittayasathan (1982), therefore, the multiple meanings of *pay$_1$* and *maa$_1$* are listed; however, neither the connection among the multiple meanings of *pay$_1$* nor the connection among the multiple meanings of *maa$_1$* is provided.

2.2 Thepkanjana (1986)

Thepkanjana (1986) includes *pay$_1$* and *maa$_1$* in her studies of serial verb constructions in Thai. According to her, *pay$_1$* and *maa$_1$* are verbs whose meanings depend on whether they are serialized and what the other members of the serial verb constructions are.

Pay$_1$ and *maa$_1$*, when not serialized or occurring as a main verb, denote "go" and "come," respectively as illustrated in (5).

(5) a *cɔɔn$_1$* ***pay$_1$*** *paa$_1$riid$_3$*
John go Paris
"John went to Paris."

b *cɔɔn$_1$* ***maa$_1$*** *paa$_1$riid$_3$*
John come Paris
"John came to Paris."

However, when serialized after a verb involving movement (i.e., *dəən$_1$* "walk," *wiŋ$_3$* "run") *pay$_1$* and *maa$_1$* denote directions away from and toward the speaker, respectively, as illustrated in (6).

(6) a *cɔɔn$_1$ dəən$_1$* ***pay$_1$***
John walk pay
"John walked (in a direction away from the speaker.)"

b *cɔɔn$_1$ dəən$_1$* ***maa$_1$***
John walk come'
"John walked (in a direction toward the speaker.)"

It is also noted that since *pay$_1$* denotes direction away from the speaker, it may be serialized after a verb involving destruction and disappearance, such as *hak$_2$* "break," *taay$_1$* "die," *haay$_5$* "disappear," etc. This is illustrated in (7).

(7) *ton$_3$may$_5$ taay$_1$* ***pay$_1$***
tree die go
"The plant is dead."

(Thepkanjana 1986, p.153)

Moreover, *pay$_1$* may be serialized after stative verbs such as *dii$_1$* "good," *sa$_2$ʔaat$_2$* "clean," *khom$_5$* "bitter," etc. In this case *pay$_1$* indicates excess degree, translated as "too," as illustrated in (8).

(8) *nɨɨa$_4$ suk$_2$* ***pay$_1$***
meat cooked go
"The meat is too cooked."

(Thepkanjana1986, p.153)

When *pay*$_1$ and *maa*$_1$ are serialized after a verb not involving movement, according to her, *pay*$_1$ denotes imperfective aspect and *maa*$_1$ Perfect aspect, as illustrated in (9a) and (9b), respectively.

(9) a *su*$_2$*rii*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̀*$_5$ ***pay***$_1$ *con*$_1$ *cob*$_2$
Suri read book go until end
"Suri kept reading until she finished the book."

(Thepkanjan 1986, p.156)

b *su*$_2$*rii*$_1$ *tad*$_2$ *phom*$_5$ ***maa***$_1$
Suri cut hair come
"Suri has just got a hair cut."

(Thepkanjana 1986, p.166)

In her terms, *pay*$_1$ and *maa*$_1$ in (5) are main verbs. *Pay*$_1$ and *maa*$_1$ in (6) are directional verbs. And *pay*$_1$ and *maa*$_1$ in (9) are aspectual verbs.

Thepkanjana notes that the meanings of *pay*$_1$ and *maa*$_1$ when occurring as main verbs and when occurring as aspectual verbs are not unrelated. According to her, *pay*$_1$ inherently indicates that the subject is moving away and forward (from the speaker's center of attention). Consistently, the verb sequence in which *pay*$_1$ is an aspectual verb implies that something is moving forward, or more and more progress is being made. (p.175)

Cases where *pay*$_1$ occurs with destruction and disappearance verbs can be considered the same way. According to her, we usually regard the destruction and the disappearance of something as a change or a departure from normal state (i.e., state in which things exist, work, and proceed normally and properly). We tend to fix our point of reference at a normal state. If anything lacks the properties of being normal, that thing is viewed as departing from the speaker, and so *pay*$_1$ can be used. (p.152-153)

For *pay*$_1$ which occurs after stative verbs, she proposes that excess is another case where there is a lack of the properties of being normal. According to her, a reasonable degree is the speaker's point of reference. Exceeding a reasonable degree is regarded as a departure from the speaker's point of reference, and so *pay*$_1$ is also used in this case.

For *maa*$_1$, she proposes that *maa*$_1$ indicates that the subject is moving toward the speaker and this directional implication still remains when *maa*$_1$ functions as an aspectual verb. That is, *maa*$_1$, as an aspectual verb, indicates that the agent has just done something at a place away from where the speaker is. The time when the sentence is uttered is simultaneous with the time when the result of a prior action carried out by the agent becomes obvious to the speaker. Presumably there is a motion made by the agent from the place where the prior action happened to the place where the speaker is. (p.166-167).

It seems, then, that in Thepkanjana (1986), there is concern about connecting the multiple meanings of *pay*$_1$ and connecting the multiple meanings of *maa*$_1$. However, it is not explicit what the lexical representations for *pay*$_1$ and *maa*$_1$ are.

2.3 Wilawan (1994)

Wilawan (1994), on the other hand, argues that the so-called serial verb constructions in Thai should be analyzed as subordinate constructions. Setting up a separate serial verb construction is thus unnecessary and it is better to consider *pay*$_1$ in (10a), (10b) and (10c) to be different lexical items.

(10) a *cɔɔn$_1$ ʔuuan$_3$* ***pay$_1$***
John fat go
"John is too fat."

(Wilawan 1994, p.100)

b *cow$_3$ yiŋ$_5$ kan$_1$ sææŋ$_5$* ***pay$_1$*** *lææw$_4$*
Princess cry go already
"The princess cried."

(Wilawan 1994, p.108)

c *Nak$_3$ thood$_3$ khon$_1$ nɨŋ nii$_5$* ***pay$_1$*** *mua$_3$wan$_1$*
Prisoner one CL escape go yesterday
"One prisoner sneaked away yesterday."

(Wilawan 1994, p.109)

In her analysis, *pay$_1$* in (10a) is an adverb conveying the meaning that the condition of the patient of the main verb deviates in an undesirable way from the standard assumed by the speaker. *Pay$_1$* in (10b) is an adverb for perfective aspect of the main verb as it identifies the end point of the action up to the point of speech. And *pay$_1$* in (10c) is considered to be an adverb indicating direction away from the speaker.

Similarly, ***maa$_1$*** in (11a) and (11b) are considered to be different lexical items. *Maa$_1$* in (11a) is an adverb identifying perfective aspect. And *maa$_1$* in (11b) is an adverb indicating direction toward the speaker.

(11) a *Dek$_2$ rææk$_3$ khəəd$_3$ khon$_1$ nan$_4$ haay$_5$jay$_1$* ***maa$_1$*** *haa$_3$ naa$_1$thii$_1$ lææw$_4$*
child just born CL that breathe come five minute lææw$_4$
"That infant has breathed for five minutes."

(Wilawan 1994, p.106)

b *Maa$_1$lii$_1$ hɔɔb$_2$ naŋ$_5$sɨɨ$_5$* ***maa$_1$*** *mɨɨa$_3$waan$_1$*
Maalee carry book come yesterday
"Maalee carried books here yesterday."

(Wilawan 1994, p.116)

Wilawan argues that *pay*$_1$ and *maa*$_1$ in (10) and (11) behave differently from *pay*$_1$and *maa*$_1$ which are motion verbs in several respects and so they should be considered to be different lexical items.

For example, *pay*$_1$ and *maa*$_1$ which are motion verbs can be nominalized and topicalized, as illustrated in (12). ((12) is not from Wilawan, 1994)

(12) ***kaan*$_1$*pay*$_1$ / *kaan*$_1$*maa*$_1$** *paa*$_1$*riid*$_3$ *khɨɨ*$_1$ *siŋ* $_2$ *thii*$_3$ *cɔɔn*$_1$ *tham*$_1$
going / coming Paris be thing that John do

ra$_4$*waaŋ*$_2$ *pit*$_2$ *təəm*$_1$
during break

"Going / coming to Paris was what John did during the break."

However, neither *pay*$_1$ in (10) nor *maa*$_1$ in (11) can undergo nominalization and topicalization, as (13) and (14) are unacceptable.

(13) a ***kaan*$_1$*pay*$_1$** *khɨɨ*$_1$ *siŋ*$_2$ *thii*$_3$ *dææɛŋ*$_1$ *ʔuuan*$_3$ *tham*$_1$
going be thing that Dang fat do
*"Going is what Dang is fat to do."

(Exceeding an appropriate degree was how fat Dang was.)

(p.102)

b ***kaan*$_1$*pay*$_1$** *khɨɨ*$_1$ *siŋ*$_2$ *thii*$_3$ *cow*$_3$ *yiŋ*$_5$ *kan*$_1$*sæææŋ*$_5$ *tham*$_1$ *læææw*$_4$
going be thing that princess cry do PRF[35]
*"Going is what the princess cried do."

(Harder and harder was how the princess cried.)

c ***kaan*$_1$*pay*$_1$** *khɨɨ*$_1$ *siŋ*$_2$ *thii*$_3$ *nak*$_3$ *thood*$_3$ *khon*$_1$ *nɨŋ*$_1$ *nii*$_5$ *tham*$_1$
going be thing that prisoner CL one escape do

mɨɨa$_3$*waan*$_1$
yesterday

[35] I am using perfective (PRF) as a gloss for *læææw*$_4$; however, in chapter 4, in which I provide an analysis of *læææw*$_4$, we will see that the gloss PRF does not capture exactly the properties of *læææw*$_4$.

*"Going is what the prisoner escaped to do yesterday."

(Further and further away from here was how the prisoner escaped yesterday.)

(p.179)

(14) a ***kaan$_1$maa$_1$*** *haa$_3$ naa$_1$thii$_1$ khɨɨ$_1$ siŋ$_2$ thii$_3$ dek$_2$ rææk$_3$ khəəd$_3$ khon$_1$*
coming five minutes be thing that child just born CL

nan$_4$ haay$_5$jay$_1$ tham$_1$
that breathe do

*"Coming five minutes is what that infant breathed do."

(For five minutes is how long that that infant has been breathing.)

(p.108)

b ***kaan$_1$maa$_1$*** *baan$_3$ Nit$_4$ mɨɨa$_3$waan$_1$ khɨɨ$_1$ siŋ$_2$ thii$_3$ maa$_1$lii$_1$ hɔɔb$_2$*
coming house Nit yesterday be thing that Malee carry

naŋ$_5$sɨɨ$_5$ tham$_1$
book do

*"Coming to Nit's house is what Malee carried the books do."

(Toward Nid's house is the direction to which Malee carried the book.)

(p.118)

According to her, sentence (13a) to (13c) are unacceptable because *pay$_1$* for excessive degree, *pay$_1$* for perfective aspect, *pay$_1$* for the direction away from the speaker, respectively, cannot be nominalized or topicalized. The same goes for (14a) and (14b) which are unacceptable because *maa$_1$* for perfective aspect and *maa$_1$* for the direction toward the speaker, respectively, cannot be nominalized or topicalized.

Moreover, in royal language,[36] *pay$_1$* and *maa$_1$* which are motion verbs can be replaced by *sa$_2$ ded$_2$ pra$_4$ raat$_3$ cha$_1$ dam$_1$ nɨɨan$_1$* "go"/"come," as illustrated in (15).

(15) *cow$_3$ yiŋ$_5$* ***sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$nɨɨan$_1$*** *lɔn$_1$dɔn$_1$*
princess **go/come** London
"The princess went/came to London."

However, neither *pay$_1$* nor *maa$_1$* which behave like an adverb can be replaced by *sa$_2$ ded$_2$ pra$_4$ raat$_3$ cha$_1$ dam$_1$ nɨɨan$_1$*, as the unacceptability of (16) and (17) illustrate.

(16) a **cow$_3$yiŋ$_5$ suup$_3$pra$_3$ʔoŋ$_1$* ***sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$nɨɨan$_1$***
princess thin **go**
"The princess is too thin."

(p.105)

b **cow$_3$ yiŋ$_5$ kan$_1$sæææŋ$_5$* ***sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$nɨɨan$_1$*** *lææw$_4$*
Princess cry **go** already
"The princess cried."

(p.108)

c **cow$_3$ yiŋ$_5$ soŋ$_1$dam$_1$nɨɨan$_1$* ***sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$nɨɨan$_1$***
princess walk **go**
"The princess walked away."

(p. 111)

(17) a **cow$_3$ yiŋ$_5$ soŋ$_1$kansææeŋ* ***sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$nɨɨan$_1$***
princess cry **come**

haa$_3$ naa$_1$thii$_1$ lææw$_4$
five minutes already

"The princess has cried for five minutes."

[36] Royal language refers to words which are used when talking about or with people in the royal family.

b *cow$_3$yiη_5 so$\eta_1$dam$_1$n$\dot{\text{i}}\dot{\text{i}}an_1$ **sa$_2$ded$_2$pra$_4$raat$_3$cha$_1$dam$_1$n$\dot{\text{i}}\dot{\text{i}}an_1$**
princess walk **come**
"The princess walked here."

Because these words are different in meaning and distribution, Wilawan (1994), concludes that they must be considered to be different lexical items. In other words, she concludes that the lexicon of Thai must includes the entries shown in (18):

(18) ***pay$_1$***1 motion verb (go)

pay$_1$2 adverb for "deviates from what is assumed by the speaker"

pay$_1$3 adverb for perfective aspect

pay$_1$4 adverb for "direction away from the speaker"

maa$_1$1 motion verb (come)

maa$_1$2 adverb for perfective aspect

maa$_1$3 adverb for "direction toward the speaker"

Apparently, Wilawan (1994) does not take into account the fact that the phenomenon in which an element for "go" and an element for "come" may denote aspect is found cross-linguistically. Assuming multiple lexical entries would leave the issue of why in so many languages these verbs tend to have similar behavior unexplained.

2.4 Mathias (2000)

Mathias (2000) in his studies of the aspect system of Thai, on the other hand, shows that most of the Thai aspect markers are also used as full verbs or have developed from verbs. For this reason, it is difficult, if not impossible, to decide whether a

particular word we are dealing with is a verb with its own semantics or a grammatical aspectual morpheme[37].

For *pay*$_1$, Mathias says that *pay*$_1$ is widely used as an "orientation"[38] verb denoting a motion away from the point of reference. *Pay*$_1$ can be considered either transitive or intransitive, as illustrated in (19a) and (19b) respectively.

(19) a *khaw*$_5$ *dɨɨan*$_1$ ***pay***$_1$ *roo*ŋ$_1$*rɨan*$_1$
he walk ORgo school
"He walks to school."

(p.44)

b *khaw*$_5$ *ʔɔɔk*$_2$ ***pay***$_1$ *taŋ*$_3$*tææ*$_2$ *tɨan*$_3$
He exit ORgo since noon
"He left at noon."

(p.44)

However, *pay*$_1$ also has other uses which varies from "away from the present moment into the future" to" away from the speaker or his/her interest," as illustrated in (20a) and (20b) respectively.

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[37] The following abbreviations are used in Mathias (2000):

OR	Orientation verb
CNT	Continuous
DES	Desiderative
COMM	Comment marker
IMP	Imperative
NEG	Negative
3s	3rd person and singular pronoun
PERF	Perfect
TEMP	Temporal Preposition
RED	Reduplication
FIN	Final

[38] Mathias (2000) does not define "orientation."

(20) a *hay$_3$ nak$_3$riian$_1$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$* ***pay$_1$*** *ʔiik$_2$ yii$_3$sip$_2$ naa$_1$thii$_1$*
cause students read book CONT more twenty minute
"The students have to keep reading in their books for another twenty minutes."

(p.45)

b *yaak$_2$ phuut$_3$ ʔa$_1$ray$_1$ kɔɔ$_3$ phuut$_3$* ***pay$_1$*** *thə$_2$*
DES speak what COMM speak ORgo IMP
"If you want to say something, go on speak!"

(p.47)

In (20a) the use of *pay$_1$* is aspectual, more precisely, *pay$_1$* is considered to be an aspectual marker of a continuance into the future. In (20b), however, *pay$_1$* is rather modal, as it implies that the speaker is not going to listen what the addressee is going to say.

Mathias also notes that *pay$_1$* co-occurring with a durative predicate without prominent limits ("stative") denotes "exceedingly, too much." According to Mathias, in this case, *pay$_1$* is combined with ***kəən$_1$*** "go beyond, exceed," and both the full form (i.e., *kəən$_1$ pay$_1$*), and abbreviated from (*pay$_1$*) can be used. This is illustrated in (21).

(21) *raan$_3$ nii$_3$ may$_3$ yaak$_2$ kin$_1$, man$_1$ phææŋ$_1$ (kəən$_1$)* ***pay$_1$***
shop this NEG DES eat 3s expensive (exceed) ORgo
"I don't want to eat in this restaurant, it is too expensive."

(p.46)

For *maa$_1$*, Mathias describes *maa$_1$* as an orientation verb for "come, motion toward center of attention." Similar to *pay$_1$*, *maa$_1$* can be considered either transitive or intransitive, as illustrated in (22a) and (22b) respectively.

(22) a *khaw$_5$ dɨɨan$_1$* ***maa$_1$*** *rooŋ$_1$riian$_1$*
he walk ORcome school
"He walks to school."

b *khaw$_5$ khaw$_3$* ***maa$_1$*** *taŋ$_3$tææ$_2$ tiian$_3$*
He enter ORgo since noon
"He got in at noon."

However, *maa$_1$* is also used to express that a situation extends towards the center of interest, i.e. the present time. It therefore provides Perfect reading. Mathias notes, though, that the spatial dimension, whenever available, is the dominant one. This can be illustrated in (23) and (24).

(23) a *luuk$_3$ tham$_1$ ʔa$_2$ray$_1$* ***maa$_1$*** *sɨɨa$_3$ pɨɨan$_3$ mot$_2$*
child do what PERF shirt dirty all
"What have you done, son? Your shirt is all dirty."

b *phom$_5$ kin$_1$ kwaaw$_3$* ***maa$_1$*** *tɔɔn$_1$ tiaŋ$_3$*
I eat rice PERF TEMP noon
"I had lunch at noon."

(p.79)

(24) a Q: *wan$_1$ nii$_4$ mii$_1$ ʔa$_1$ray$_1$ may$_2$may$_2$* ***maa$_1$*** *hay$_3$ duu$_1$ rɨɨ$_5$ plaw$_2$*
day this have what new:RED ORcome FIN look or NEG
"Have you got anything new to show me today?"

b A: *mii$_1$, tææ$_2$ may$_3$ day$_3$ ʔaw$_1$* ***maa$_1$***
have but NEG get take ORcome
"Yes, I do, but I didn't bring it along."

(p.80)

In (23), *maa$_1$* behaves like a Perfect marker because it expresses that a situation has started at some point in the past and has present relevance, although it does not necessarily have to persist at the present time. However, in (24), *maa$_1$* is considered to be a verb for "come," as it expresses motion toward the center of attention.

Mathias also noted that if the verbal expression lacks prominent limits, the use of *maa$_1$* is restricted. It is, in this case, compatible only with time expressions like

"since..." and "for...time," however, it is not compatible with specific time expressions like "when...."

(25) *khaw$_5$ ruuay$_1$ maa$_1$ taŋ$_3$tææ$_2$ (*tɔɔn$_1$) tham$_1$ ŋaan$_1$ bɔɔ$_1$ri$_1$sat$_2$ nan$_4$*
he rich PERF since (TEMP) do work company that
"He has been rich since he started working for that company."

(p.79)

In (25), as *khaw$_5$ ruuay$_1$* "he rich" lacks prominent limits, *maa$_1$* can co-occur, only if a certain type of time expression is present. According to Mathias the time expression that can license the occurrence of *maa$_1$* in this case, is the time expression like *taŋ$_3$tææ$_2$*... "since...," not the time expressions like *tɔɔn$_1$*... "when..."

In his conclusion Mathias, realizing the need for unifying the multiple related sense, states that for each Thai aspectual morpheme, it has to be kept in mind that it is a case of one morpheme with different uses, not a group of homophonous morphemes. However, in Mathias (2000), the task of unifying the multiple related uses does not seem to be accomplished.

2.5 Muansuwan (2002)

The most recent study in which the behavior of *pay$_1$* and *maa$_1$* is discussed seems to be that of Muansuwan (2002). Muansuwan (2002) in her studies of verb complexes in Thai has a discussion of *pay$_1$* and *maa$_1$*.

Focusing on the aspcectual uses of *pay$_1$* and *maa$_1$* she shows that *pay$_1$* functions both as an imperfective marker and a perfective marker, while *maa$_1$* functions only as a Perfect marker.

According to her, *pay*$_1$ encodes perfective aspect when combined with change of state verbs such as *taay*$_1$ "die," *tææk*$_2$ "break," and *mot*$_2$ "be gone" as in (26a), (26b) and (26c) respectively.[39]

(26) a *khaw*$_5$ *taay*$_1$ ***pay***$_1$
he die PFTV(go)
"He died."

(p.127)

b *khææw*$_3$ *tææk*$_2$ ***pay***$_1$
Glass break PFTV(go)
"The glass broke."

(p.127)

c *nam*$_5$*man*$_1$ *mot*$_2$ ***pay***$_1$
oil be-gone PFTV(go)
"The gas is all gone."

(p.127)

And *pay*$_1$ encodes an imperfective aspect when combined with verbs from state, activity, or accomplishment classes, and followed by a durational adverbial phrase.

(27) a *Wii*$_1$*ra*$_4$ *chɨɨa*$_3$ *rɨɨaŋ*$_3$ *phii*$_5$ ***pay***$_1$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sam*$_3$ *pii*$_1$
Wira believe issue ghost IMPFV(go) be time three year
"Wira believed in ghost for three years."

(p.130)

b *Wii*$_1$*ra*$_4$ *wiŋ*$_3$ ***pay***$_1$ *pen*$_1$ *wee*$_1$*laa*$_1$ *saam*$_5$ *chuua*$_3$*moŋ*$_1$
Wira run IMPFV(go) be time three hour
"Wira ran for three hours.

(p.130)

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[39] The following abbreviations are used in Muansuwan (2002):

PFTV	Perfective
IMPFV	Imperfective
PFCT	Perfect

c *Wii$_1$ra$_4$ teeŋ$_2$ klɔɔn$_1$ **pay$_1$** pen$_1$ wee$_1$laa$_1$ saam$_5$ chuua$_3$moŋ$_1$*
Wira compose poem IMPFV(go) be time three hour
"Wira composed a/the poem/poems for three hours."

(p.130)

She notes that a durational adverbial phrase is necessary in a clause containing *pay$_1$* "go" in order for *pay$_1$* to have an imperfective meaning, except in those cases in which *pay$_1$* is used to mark a backgrounding event, i.e. when *pay$_1$* is used to mark that an event provides the background for another event. According to her, this usage is similar to that of the Imparfait in French and is illustrated below.

(28) *Pi$_2$ti$_2$ ʔaan$_2$ naŋ$_5$sɨɨ$_5$ nay$_1$kha$_1$na$_2$ thii$_3$ Maa$_1$nii$_1$ kɔɔ$_3$ tham$_1$ kaan$_1$baan$_2$ **pay$_1$***
Piti read book in moment that Manee then do homework IMPFV(go)
"Piti was/is reading a/the book while Manee was/is doing her homework."

(p.131)

Furthermore, she shows that *pay$_1$* can also be used in imperative sentences and encode imperfective aspect, as illustrated in (29).

(29) *Su$_2$rii$_1$, tham$_1$ kaan$_1$baan$_2$ **pay$_1$***
Surii, do homework IMPFV(go)
Surii, keep doing your homework."

(p.131)

For *maa$_1$*, she argues that *maa$_1$* encodes Perfect aspect and *maa$_1$* can be combined with any class of verbs. The Perfect morpheme *maa$_1$* is ambiguous between three readings: existential, continuative and resultative as illustrated in (30a), (30b) and (30c) respectively.

(30) a *Pi$_2$ti$_2$ kin$_1$ hɔɔy$_5$thaak$_5$ **maa$_1$** khɔɔn$_1$*
Piti eat snail PFCT(come) before
"Piti has eaten snails before."

(p.134)

b *Pi$_2$ti$_2$ tææŋ$_1$ klɔɔn$_1$* ***maa$_1$***
Piti compose poem PFCT(come)
"Piti has been composing a/the poem."

(p.134)

c *Pi$_2$ti$_2$ tham$_1$ kwaam$_1$sa$_1$ʔaat$_2$ baan$_2$* ***maa$_1$***
Piti do cleanliness house PFCT(come)
"Piti has cleaned the house."

(p.135)

In Muansuwan, again, the multiple aspectual meanings of *pay$_1$* and *maa$_1$* are described. However, neither the connection among the multiple aspectual meanings nor the connection between the aspectual meaning and the fact that *pay$_1$*and *maa$_1$* are also verbs for "go" and "come," respectively is provided.

2.6 Gandour (1978)

Focusing on non-spatial uses of *pay$_1$* and *maa$_1$*, Gandour (1978) analyzes the deictic use of verbs of motion *come* and *go* in Thai. Gandour bases his analysis on Clark's (1974) proposal that the verbs of motion "come" and "go" may be used as idioms to refer to change of state rather than to motion. In such idiomatic uses, the goal of the motion associated with "come" is always the deictic center and the goal of the motion associated with "go" is always the complement of the deictic center. Clark hypothesizes that the deictic center includes some normal state of being.

According to Gandour (1978), Clark's hypothesis is supported by the uses of *pay$_1$* and *maa$_1$*, as when describing departure from a normal state, only *pay$_1$* can be an event modifier, as in (31).

(31) a *khrɨɨŋ$_3$ sia$_5$*
Machine out of order
"The machine went out of order."

b *phom$_5$ pen$_1$lom$_1$*
I faint
"I fainted."

c *khrɨɨŋ$_3$ sia$_5$* ***pay$_1$***
Machine out of order pay$_1$
"The machine went out of order."[40]

d *phom$_5$ pen$_1$lom$_1$* ***pay$_1$***
I faint pay$_1$
"I fainted."[41]

(p.383)

Gandour argues that, in (31a) the deictic center is something like the expected or normal function and in (31b), it is something like a normal state of consciousness. Substituting *maa$_1$* for *pay$_1$* in (31c) and (31d) would result in ungrammaticality.

Gandour, proposes that an abnormal state also includes a state in which the degree of the quality of an object exceeds a normal degree of the quality of the class of the object in question. In Thai, ***kəən$_1$*** can be used to express such a state, as illustrated in (32).

(32) a *tha$_1$non$_5$ kwaŋ$_3$*
road wide
"The road is wide."

b *tha$_1$non$_5$ kwang$_3$* ***kəən$_1$***
road wide exceed
"The road is too wide."

[40] The translation does not seem to be correct. In the same line as *pay$_1$* which co-occur with verbs involving destruction and disappearance I argue that the correct translation is "The machine was getting out of order."
[41] Again, the translation does not seem to be correct. The correct translation is "I was getting faint."

c *tha$_1$non$_5$ khææb$_3$*
road narrow
"The road is too narrow."

d *tha$_1$non$_5$ khææb$_3$* ***kəən$_1$***
road narrow exceed
"The road is too narrow."

Crucially, while *pay$_1$* can co-occur with ***kəən$_1$***, *maa$_1$* cannot, as illustrated in (33).

(33) a *tha$_1$non$_5$ kwang$_3$ kəən$_1$* ***pay$_1$/*maa$_1$***
road wide exceed pay$_1$/*maa$_1$
"The road is too wide"

b *tha$_1$non$_5$ khææb$_3$ kəən$_1$* ***pay$_1$/*maa$_1$***
road narrow exceed pay$_1$/*maa$_1$
"The road is too narrow."

(p.391)

Gandour, then, states that since *pay$_1$* can co-occur with ***kəən$_1$*** but *maa$_1$* cannot, *pay$_1$* "go" associates with an abnormal state and *maa$_1$* "come" with a normal state, supporting Clark's hypothesis.

Gandour's analysis for the use of *pay$_1$*, however, seems to be problematic when closely examining cases such as (33). For such cases, ***kəən$_1$*** is optional. Without ***kəən$_1$***, the meaning of exceeding a certain degree is still conveyed, as illustrated.

(34) a *tha$_1$non$_5$ kwang$_3$* ***pay$_1$***
road wide pay$_1$
"The road is too wide"

b *tha$_1$non$_5$ khææb$_3$* ***pay$_1$***
road narrow pay$_1$
"The road is too narrow."

As seen in the translation, the meaning of exceeding a certain limit remains, so the meaning of exceeding a certain limit has to be in the denotation of *pay$_1$*.

Moreover, for cases where an amount is specified, the amount specified is interpreted differently when it occurs with ***kəən*** $_{1}$ from when it occurs with ***kəən*** $_{1}$ ***pay*** $_{1}$. This is illustrated in (35).

(35) a *to* $_{4}$ *tua* $_{1}$ *nii* $_{4}$ *yaaw* $_{1}$ ***kəən*** $_{1}$ *sib* $_{2}$ *fud* $_{4}$
Table CL this long kəən$_{1}$ ten foot
"The length of this table is more than ten feet."

b *to* $_{4}$ *tua* $_{1}$ *nii* $_{4}$ *yaaw* $_{1}$ ***kəən*** $_{1}$ ***pay*** $_{1}$ *sib* $_{2}$ *fud* $_{4}$
Table CL this long kəən$_{1}$ pay$_{1}$ ten foot
"This table is ten feet longer than what it is supposed to be."

c *to* $_{4}$ *tua* $_{1}$ *nii* $_{4}$ *yaaw* $_{1}$ ***pay*** $_{1}$ *sib* $_{2}$ *fud* $_{4}$
Table CL this long pay$_{1}$ ten foot
"This table is ten feet longer than what it is supposed to be."

As seen in the translations, in (35a), with ***kəən*** $_{1}$ the amount specified is the amount that the quality of the object has surpassed. However, when *pay* $_{1}$ is present, with or without ***kəən*** $_{1}$, the interpretation is that the amount specified is the amount of how much the contextually assumed limit of the quality of the object has surpassed, as seen in the translations in (35b) and (35c), respectively. This, not having been taken into consideration in Gandour's (1978) analysis, calls for an explanation.

Gandour (1978) provides a description for certain non-spatial uses of *pay* $_{1}$ and *maa* $_{1}$. However, how these non-spatial uses are connected to the other non-spatial uses (i.e., *pay* $_{1}$ used for expressing continuation of action, and *maa* $_{1}$ used for expressing the Perfect) and to the spatial uses "go" and "come" is not addressed.

In conclusion, it seems that going through earlier studies on aspect in Thai, most of the studies noted the multiple senses of *pay* $_{1}$ and the multiple senses of *maa* $_{1}$. In some studies (i.e., Ratchabandittayasathan 1982, Wilawan 1994, Muansuwan 2002, and

Gandour 1978) the task of unifying the multiple uses of them is ignored or denied. In some studies, the task of unifying the multiple senses is noted (i.e., Thepkanjana 1986, Mathias 2000). However, there does not seem to be any earlier studies in which the task of unifying the multiple senses is accomplished. More precisely, there do not seem to be any earlier studies in which the question of how the multiple senses are connected is explicitly answered.

In the following section, I summarize a major account on the connection between the aspectual sense and the movement sense.

3. Demirdache and Uribe-Etxebarria (2000)

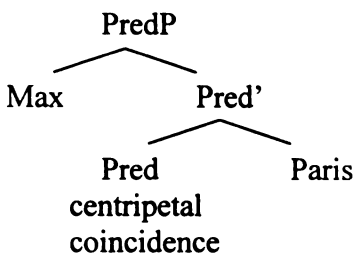
Demirdache and Uribe-Etxebarria (2000) observing that an element for "go" is commonly used for expressing prospective aspect and an element for "come" is commonly used for expressing Perfect aspect, account for this observation by proposing that an element for "go" / "prospective" has the core meaning of "centripetal coincidence" and an element for "come" / "Perfect" has the core meaning of "centrifugal coincidence."

The idea is that motion verbs such as French *aller* "go" and *venir* "come" take two arguments (i.e., figure and ground) and describe a relation between the two arguments. A motion verb for "go" describes that the figure moves toward the ground, and a motion verb for "come" describes that the figure moves from the ground.

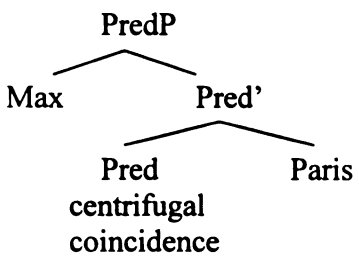
The figure and the ground can be either a pair of an entity and a place or a pair of an assertion time and an event time. In cases where the figure is an entity and the ground

is a place, the interpretation is "go" and "come" as illustrated in (36a) and (36b) respectively.

(36) a



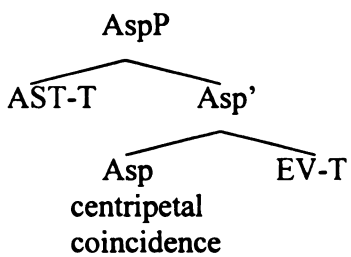
b



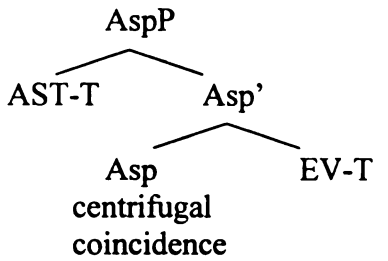
In (36a), the interpretation received is that Max moves toward Paris and in (36b) is that Max moves from Paris.

In cases where the figure is an assertion time and the ground is an event time, the interpretation received is prospective aspect and Perfect aspect, as illustrated in (37a) and (37b) respectively.

(37) a



b



In (37a) what is expressed is that the assertion time moves toward the event time, or that the assertion time ends before/at event time and so the interpretation of prospective aspect is the result. In (37b) what is expressed is that the assertion time moves from the event time or that the assertion time starts after the event time, yielding the interpretation of Perfect.

The major accomplishment in Demirdache and Uribe-Etxebarria (2000), is, therefore, providing a general idea for why an element for "go" and an element for "come" may be used for temporal information.

4. Bouchard (1995)

Bouchard (1995) accounts for the multiple uses of *venir* 'come' and *aller* 'go' in French by proposing that *venir* 'come' and *aller* 'go' each has only one meaning and the multiple uses are derived by the interaction of linguistic factors and extralinguistic factors.

Bouchard (1995) investigates six French verbs: *venir* 'come,' *aller* 'go,' *arriver* 'arrive,' *partir* 'leave,' *entrer* 'enter,' and *sortir* 'go out.' His observation is that although these verbs have been assumed to be verbs of movement, there are a number of the uses of these verbs which do not involve movement.

Focusing on *venir* 'come' and *aller* 'go,' he points out that *venir*, in addition to its movement use as in (38a), has other uses that do not involve movement. For example, *venir* may be used for expressing extension, and time as in (38b) and (38c) respectively.

(38) a *Max **vient** de Paris demain*
Max comes from Paris tomorrow
"Max will come from Paris tomorrow."

(p.121)

b *Cette route **vient** de Montreal*
That road comes from Montreal
"That road comes form Montreal."

(p.138)

c *Max **vient** de partir*
Max comes from leaving
"Max has just left."

(p.139)

Similarly, *aller* "go," in addition to its movement use as in (39a), has other uses which do not involve movement. For examples, *aller* may be used for expressing extension, and time as in (39b) and (39c) respectively.

(39) a *Max **va** a Quebec (de Montreal)*
Max goes to Quecbec City (from Montreal)

(p.149)

b *Cette route **va** de Montreal a Quebec*
That road goes from Montreal to Quebec

(p.152)

c *Elle **va** courir le marathon (demain)*
Elle is-going to run the marathon (tomorrow).

(p.153)

Bouchard proposes that the multiple uses of *venir* and *aller* are derived by interaction of linguistic factors and extralinguistic factors; however, *venir* and *aller* each have only one meaning. More precisely, he proposes that *venir* denotes an orientation toward a deictic center and *aller* denotes an orientation toward a non-deictic center.

Concerning the notion of orientation, Bouchard argues that the orientation relation remains constant across domains; however, it may be nontransparent due to extralinguistic factors.

To illustrate this point, Bouchard shows that in the domain of space (i.e., how we perceive objects in space), the extra-linguistic factors (i.e., whether an object is considered to be instrisically-oriented or nonintrinsically-oriented[42]) must be taken into account. For example, the situation such as (41a) and (41b) can both be described by (40).

(40) Le chien est devant l'arbre

"The dog is in front of the tree."

(41) a

b

[42] Basically an intrinsically-oriented object is an object whose front part, back part and sides can be identified, for example, a man, a car, etc. A nonintricsically-oriented object is an object whose front part, back part and sides cannot be identified, for example, a tree, a lake, etc. This will be discussed in more detail later.

Although the situation in (41a) and (41b) are different as the dog is on the opposite side of the tree, both can be described by (40). Bouchard argues that it is the extralinguistic property of the argument *l'arbre* "the tree" that is responsible for the fact that the same sentence can be used to describe two different situations.

For the extralinguistic properties, Bouchard assumes the following functional properties of objects.

(42) a Human beings and animals are oriented "frontally," by the position of their organs of perception and interaction (eyes, mouth, ears, arms, legs, etc.)

b Furniture, tools, other "physical objects" are oriented functionally by the condition of their normal use (e.g. side with drawers for desk, normal direction of movement for car.)

c The orientation of nonintrinsically-oriented objects, such as trees, columns, and the like, is determined by interaction with other actants[43]. (p. 124)

Since *l'arbre* "the tree" is considered to be a non-intrinsically oriented object, the speaker may regard any side of the tree as the front side. In other words, the side of the tree with which the speaker interacts face-to-face is changeable. So *devant l'arbre* "in front of the tree" can correspond to both figure in (41a) and in (41b).

Therefore, a preposition like *devant* "in front of" makes the same semantic contribution to the computation of any sentence. As it combines with extra-linguistic factors, the same sentence can refer to different situations.

[43] Actants refer to arguments and adjuncts. (p.120)

Bouchard shows that not only does the contribution of prepositions such as *devant* to orientation remain constant across spatial uses, but it also remains constant across conceptual domains.

In the same way that there are extralinguistic factors at play in determining orientation in spatial domain, there are extralinguistic factors at play in determining orientation in each conceptual domain.

The relevant extralinguistic factors in each conceptual domain, however, are different. For example, while the factors in (42) have effects on uses such as (43), they will be irrelevant for uses such as (44).

(43) a Jean est devant / derriere Marie
Jean is in front of / behind Marie

b Jean est devant / derriere l'auto
Jean is in front of / behind the car

c Jean est devant / derriere l'arbre
Jean is in front of / behind the tree

(p.124)

(44) a Jean est devant un probleme de taille
Jean is in front of a problem of size
"Jean is facing a sizeable problem."

b Jean a tout son avenir devant lui
Jean has all his future ahead- of him

c Jean est courageux devant le danger
Jean is brave in the face of danger

d Ne t'inquiete pas, Jean, nous sommes derrriere toi
Don't worry, Jean, we are behind you.

(p.126)

The different situations that a sentence can refer to result from differences in the nature of the elements combined, not from different notions of orientation.

According to Bouchard *venir* "come" denotes an orientation toward a deictic center, and *aller* "go" denotes an orientation toward a non-deictic center. The deictic center is defined as ME-HERE-NOW (essentially the speaker).

Then, based on the idea that extra-linguistic factors are at play in determining the specific interpretation of a sentence, the interpretation of sentences (38a) and (39a), repeated as (45a) and (45b) can then be accounted for by the following.

(45) a *Max* ***vient*** *de Paris demain*
Max comes from Paris tomorrow
"Max will come from Paris tomorrow."

(p.121)

b *Max* ***va*** *a Quebec (de Montreal)*
Max goes to Quebec City (from Montreal)

(p.149)

In (45a) verb *venir* tells us is that Max is oriented toward his being at the deictic center with the tail end of the orientation being in Paris. And in (45b) verb *aller* tells us is that Max is oriented toward his being at the antideictic center which is specified as Quebec City, with the tail end of the orientation being Montreal. However, there are extra-linguistic factors involved. Typically, Max refers to a human being and Paris, Quebec City and Montreal refer to places. Given these typical properties we attribute to the actants, movement is the most likely way for Max to establish the orientation relation with Paris, Quebec City and Montreal. So the interpretation of movement is derived from prototypical, extralinguistic properties of the actants in the sentence. The same goes for (46).

(46) a *Cette route* ***vient*** *de Montreal*
That road comes from Montreal
"That road comes form Montreal."

(p.138)

b *Cette route* ***va*** *de Montreal a Quebec*
That road goes from Montreal to Quebec City

(p.152)

By *venir* "come," *cette route* "this road" is oriented toward its being at the deictic center, with the tail end of the orientation at Montreal. And by *aller* "go," *cette route* "this road" is oriented toward its being at the deictic center which is specified as Quebec City, with the tail end of the orientation being Montreal. The extralinguistic factors involved, however, is that we resort to what we generally know about roads and what is best known about Montreal and Quebec City. In such circumstance, the most likely way for *cette route* to establish the relationship described by the sentence is by extending from Montreal to the deictic center or to the antideictic center Quebec City. So again the extension interpretation is deduced from the prototypical, extralinguistic properties of the actants in the sentence.

Finally, the cases of temporal uses of *venir* and *aller* are similarly explained.

(47) a *Max* ***vient*** *de partir*
Max comes from leaving
"Max has just left."

(p.139)

b *Elle* ***va*** *courir le marathon (demain)*
She is-going-to run the marathon (tomorrow).

(p.153)

To account for the temporal uses of *venir*, Bouchard's idea is that these uses are temporal because on of the actants (i.e., *partir* "leave," in (47a) and *courir le marathon* "run the marathon," in (47b)) are temporal. According to him, whether the interpretation is past or future is determined by the interaction of linguistic and extralinguistic factors.[44]

In conclusion, it seems that the major accomplishment in Bouchard (1995) is that the lexical representation of *aller/venir* is neither spatial nor temporal nor any other particular semantic field. The multiple interpretations of *aller/venir* are generated by the interaction between linguistic factors and extralinguistic factors.

5. Data illustrating the inadequacy of earlier analyses

It seems that the behavior of French *aller* "go" and *venir* "come," is captured in Bouchard (1995), and the general idea for why an element for "go" and an element for "come" may also convey temporal information is provided in Demirdache and Uribe-Etxebarria (2000). However, the distributions and interpretations of *pay*$_1$ "go" and *maa*$_1$ "come" in Thai seems to be problematic for the earlier analyses.

For example, unlike *aller* "go" in French which expresses future, *pay*$_1$ "go" is used to express a certain type of continuation of an action[45], as illustrated in (48).

(48) a *cɔɔn*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̌*$_5$ *lem*$_3$ *nan*$_3$
John read book CL that
"John read that book."

b *cɔɔn*$_1$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̌*$_5$ *lem*$_3$ *nan*$_3$ ***pay***$_1$
John read book CL that pay$_1$
"John continued reading that book."

[44] Detailed discussion of the interaction between linguistic and extralinguistic factors are not crucial to here.
[45] The continuation of action denoted by *pay*$_1$ will be discussed in more detail later.

c *cɔɔn$_1$, tham$_1$ kaan$_1$baan$_2$*
John, do homework
John, do your homework."

d *cɔɔn$_1$, tham$_1$ kaan$_1$baan$_2$ **pay$_1$***
John, do homework pay$_1$
John, carry on doing your homework."

Furthermore, *pay$_1$*"go" may be used to express the exceeding degree of a state, as illustrated in (49)

(49) a *cɔɔn$_1$ ʔauun$_3$*
John fat
"John is fat."

b *cɔɔn$_1$ ʔauun$_3$**pay$_1$***
John fat pay$_1$
"John is too fat."

Neither applying Bouchard's analysis nor Demirdache and Uribe-Etxebarria' proposal seems to be the way in which the behavior of *pay$_1$* can be accounted for. Something else has to be said since *aller* "go" in French cannot provide the interpretation of exceeding degree.

For *maa$_1$*, unlike *venir* "come" which may express both Perfect and future, *maa$_1$* "come" may be used to express only a version of the Perfect. Moreover, *maa$_1$* "come" may express the Perfect only if it co-occurs with adverbials such as *for*-adverbials and *since*-adverbials. Without adverbial modification, spatial movement is denoted, as illustrated by (50a) and (50b) respectively.

(50) a *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$ sɨɨ$_5$ **maa$_1$** pen$_1$ wee$_1$ laa$_1$ soŋ$_5$ chuua$_3$ moŋ$_1$*
John read book maa$_1$ be time two hours
"John has been reading for two hours."

b *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$ sɨɨ$_5$ **maa$_1$***
John read book maa$_1$
"John came in having been reading."

In (50a), *maa*$_1$ behaves like a particle for a version of the Perfect, in particular, the universal Perfect, because it indicates that John is reading now and that this state of affairs has already been going on for two hours. In (50b), however, *maa*$_1$ describes that the event of John reading occurs at a place away from where the sentence is uttered and the result of John reading (i.e., John being able to tell what the book is about) may be present at the time when the sentence is uttered. Again, neither applying Bouchard's analysis nor Demirdache and Uribe-Etxebarria' proposal seems to be the way in which the behavior of *maa*$_1$ can be accounted for. Something else has to be said, since the restrictions on *maa*$_1$ are different from the restrictions on *venir*.

Therefore, Bouchard's (1995) analysis for French *aller* "go," and *venir* "come," and Demirdache and Uribe-Etxebarria's (2000) generalization for the behavior of an element for "go" and an element for "come" do not seem to be adequate to account for the distribution and interpretation of *pay*$_1$ and *maa*$_1$ in Thai. In other words, the behavior of *pay*$_1$ and *maa*$_1$ in Thai calls for more explanation.

6. The analysis of *pay*$_1$ and *maa*$_1$

It should be apparent that the distribution and interpretation of *pay*$_1$ and *maa*$_1$ in Thai has not been well-described in earlier studies of Thai grammar nor can the behavior of *pay*$_1$ and *maa*$_1$be captured in earlier analyses of elements for "come" and element for "go."

In this section I propose an analysis in which the distribution and interpretation of *pay$_1$* and *maa$_1$* can be explained. The analysis consists of two main parts: the semantics of *pay$_1$* and *maa$_1$*, and then the syntax of *pay$_1$* and *maa$_1$*.

6.1 Semantics of *pay$_1$/maa$_1$*

In this section, I investigate the semantics of *pay$_1$* and *maa$_1$*. I will start the investigation with Jackendoff's (1996) proposal for types of situations. Then, I will use his proposal to analyze, the behavior of *pay$_1$* and *maa$_1$*. Finally, I will propose a unified meaning of *pay$_1$* and a unified meaning of *maa$_1$*.

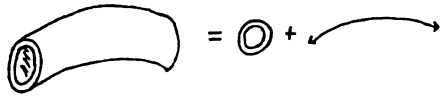
6.1.1 Jackendoff's (1996) proposal on types on situations

Traditionally, we have seen before that the notions that have been used to categorize kinds of situation are things like culmination points, instantaneity, and dynamism. Accomplishments and achievements are considered to be situations which have culmination points while activities and states are considered to be situations which have no culmination points. Achievements differ from accomplishments, activities and states in terms of instantaneity. While achievements are instantaneous, accomplishments, activities, and states are not instantaneous. States differ from accomplishments, achievements, and activities in terms of dynamicity. While states are considered to be non-dynamic, accomplishments, achievements and states are considered to be dynamic.

Jackendoff (1996) argues that the properties of culmination, instantaneity, and dynamism exhibited in events are a matter of projecting a temporal cross-section of an event onto temporal axes and establishing relationships among these axes.[46]

Jackendoff proposes that an event can be viewed in the same way as a generalized cone. Assuming Marr (1982), a generalized cone is a three-dimensional shape that is formed by moving a cross-section along an axis. The cross-section may smoothly vary in size, but its shape remains the same. A tube, for example, is a generalized cone. A cross-section of a tube is an annulus shape (i.e., a ring) and this cross-section is projected onto axes, as illustrated by the decomposition in (51).

(51)



Because the annulus shape remains over the length of the axes, the axes can be assumed to be linked to one another, or, in Jackendoff's terms, the axes are "structure-preserving bound" (sp-bound). Any part of the axes, therefore, has a corresponding cross-section.

Jackendoff discusses that an event can also be viewed in the same way. An event of motion such as *The cart rolled to New York* can also be viewed as projecting a cross-section onto axes.

The cross-section of an event *The cart rolled to New York* consists of BE function which takes thing and space as arguments and time as a modifier. Each has the feature 0d (zero dimensionality)[47], as represented in (52).

---

[46] It should be noted that Jackendoff's system is not always clear.
[47] Zero dimensionality basically refers to a point.

(52) $\left[\begin{matrix} 0d \\ \text{Sit BE ([Thing } X \text{], } \end{matrix} \left[\begin{matrix} 0d \\ \text{Space } l_i \end{matrix} \right] \text{) ; } \left[\begin{matrix} 0d \\ \text{Time } t_i \end{matrix} \right] \right]$

This cross-section is projected onto three axes. The point-situation is projected onto a durative event. The point of space is projected onto a path and the point in time is projected onto a time interval, as represented in (53) where 1d stands for one dimensionality[48].

(53) $\left[\begin{matrix} [1d] & [1d] & [1d] \\ \| & \| & \| \\ 0d & & \\ \text{Sit BE ([Thing } X \text{] , [Space } & 0d \text{]) ; [Time } & 0d \text{] } \end{matrix} \right]$

The three axes are sp-bound, as notated by the superscripting Greek letters to the axes, as demonstrated in (54).

(54) $\left[\begin{matrix} [1d]^{\alpha} & [1d]^{\alpha} & [1d]^{\alpha} \\ \| & \| & \| \\ 0d & & \\ \text{Sit BE ([Thing } X \text{] , [Space } & 0d \text{]) ; [Time } & 0d \text{] } \end{matrix} \right]$

Consequently, for each point t_i on the time axis, there will be a cross-section of the event that represents the theme at some location l_i.

According to Jackendoff, this captures the fact that when the space is bounded, the time interval and the situation are unbounded (i.e., able to be modified by *in x time*) And when the space is unbounded, the time interval and the situation are unbounded (i.e. able to be modified by *for x time*), as in *The cart rolled to New York in/*for two days*, and *The cart rolled along the road in/*for two days*, respectively.

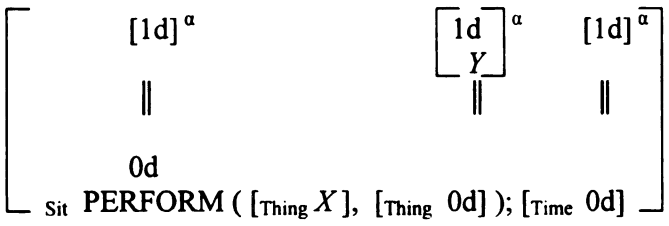
[48] One dimensionality basically refers to a line.

By viewing an event in the same way as a generalized cone, a distinction among kinds of events can be seen in terms of projecting a temporal cross-section onto sp-bound axes.

Jackendoff argues that in events involving performance such as *Bill read the paper* and *Bill sang*, the entities being performed such as *the paper* are object through which the performer realizes the event over time. In other words, at a particular moment in time, the performer is involved with a particular part of the object.

Because a point in an object being performed and a point in time are related, it can be assumed that for events involving performance, a point in an object and a point in time are projected onto axes which are sp-bound. Assuming a function PERFORM (X, Y), where X is the performer and Y is the object being performed, events involving performance can be represented as (55).

(55)

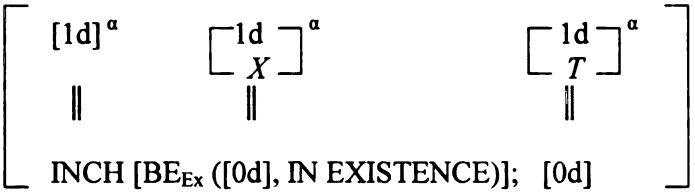


According to Jackendoff, in cases where there is a bounded object (e.g., the paper), the event is telic (i.e., able to be modified by *in x time*) and in cases where there is a non-bounded object (e.g., fiction) or no object is specified, the event is atelic (i.e., able to be modified by *for x time*).

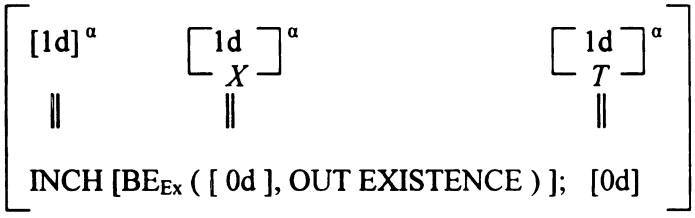
In his discussion about events of creation/consumption, Jackendoff points out that an event of creation/consumption involves three different interpretations. First, in an

event of creation/consumption, at each point in time, the corresponding part of the object comes into existence/goes out of existence. For example, for building a house, at each point in time, a corresponding part of the house comes into existence and for eating an apple, at each point in time, a corresponding part of the apple goes out of existence. For this interpretation, his analysis is that, similar to an event of performance, a point in an object being created/consumed and a point in time are projected onto axes which are sp-bound, as represented in (56).[49]

(56) a *X* comes into existence bit by bit over interval *T*:



b *X* goes out of existence bit by bit over interval *T*:

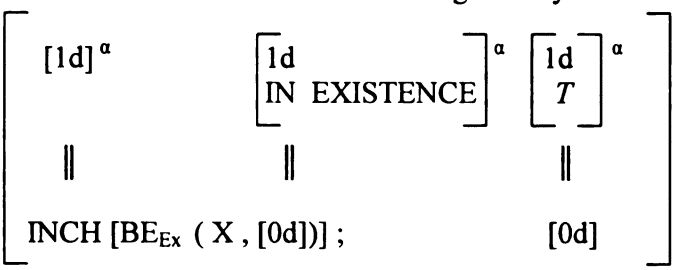


However, in an event of creation/consumption, it is also possible that the object as a whole appears or disappear gradually, for example, the "beaming" in Star Trek or the gradual fading out of the Cheshire cat. For this second interpretation for an event of creation/consumption, the existence is treated like a scalar property: there is a gradual route from existence to non-existence, or vice-versa. This scale is then bound to time,

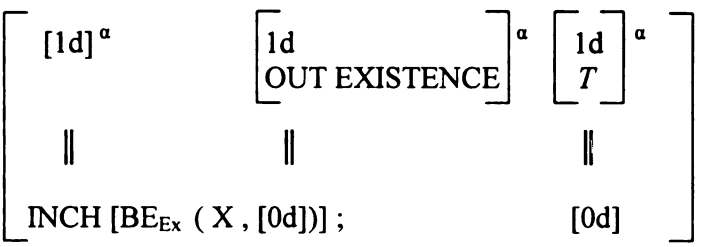
[49] Jackendoff assumes INCH (inchoative) and Ex (existence) to be primitives.

giving us the reading in which the object as a whole appears or disappears gradually, as represented in (57a) and (57b).[50]

(57) a. *X* as a whole comes into existence gradually over interval *T*:



b. *X* as a whole goes out of existence gradually over time *T*:



The third interpretation for an event of creation/consumption is that the object is created or destroyed abruptly. For example, one can have a new idea spring "fully formed" into one's mind or gulp down a handful of popcorn all at once. For this interpretation, Jackendoff's analysis is that the time axis has no points between the initial point and the end point. Jackendoff considers this kind of events to be "a point-event." Events in which the whole object appears or disappears instantaneously can be represented as (58a) and (58b), respectively.

[50] Jackendoff notes that the reading in (56) and the reading in (57) are differentiated only by pragmatics for verbs like *appear* and *disappear* and for causatives such as *create* and *destroy*.

(58) a X comes into existence at *T*:

$$\left[\begin{array}{ll} [0d]^{\alpha} & [0d]^{\alpha} \\ \| & \| \\ \text{INCH [BE}_{\text{Ex}}\text{ (}X\text{, IN EXISTENCE)]} ; & [T] \end{array}\right]$$

b X goes out of existence at *T*:

$$\left[\begin{array}{ll} [0d]^{\alpha} & [0d]^{\alpha} \\ \| & \| \\ \text{INCH [BE}_{\text{Ex}}\text{ (}X\text{, OUT EXISTENCE)]} ; & [T] \end{array}\right]$$

In (58a) and (58b), the period of time is taken as zero-dimensional and the event is regarded as a point-event; the whole object appears or disappears instantaneously.

What can be derived from his discussion is that achievements such as *John won*, express instantaneous change, so an achievement should also be regarded as a point-event.

The ideas of projecting a temporal cross-section and axial binding also render the distinction between events and states apparent. Intuitively, for events continuous change over time is exhibited; however, for states there is no continuous change over time.

For states, the time interval may be a point or an open or closed interval but the states remains unchanged. So for states, there is no dependence between time and the structure of the situation. Jackendoff proposes that states have no axis that is sp-bound to time and can be represented as (59).

(59) Canonical State:

$[_{\text{Sit}}\ F\text{ (X, Y)}; [_{\text{Time}}\text{ T}]]$

In conclusion, by assuming an analogy between generalized cones and events proposed by Jackendoff (1996), two different kinds of situation can be assumed: i) situations in which a point in time is projected onto an axis that is sp-bound with other axes, and ii) situations in which a point in time is not projected onto an axis. The first kind of situation includes accomplishments and activities and the second kind of situation includes achievements and states.

Consequently, accomplishments and activities are situations in which continuous change over time is exhibited, while achievements and states are situation in which continuous change over time is not exhibited.

6.1.2 Investigating *pay$_1$*

Taking Jackendoff's idea that an event can be viewed as projecting a cross-section onto structure-preserving bound axes as a basis, in this section, I investigate *pay$_1$* which is used for expressing "go," for expressing continuation of action, and for expressing "too."

The idea I will pursue is that *pay$_1$* adds a value of NOT HERE[51] to a space axis, a time axis or a property axis. As a result, *pay$_1$* imposes a scalar structure on one of three components: SPACE, TIME, or PROPERTY.

When a scalar structure is imposed on space, a motion event is expressed. When a scalar structure is imposed on time, the continuative is expressed. And when a scalar structure is imposed on property, "too" is expressed.

[51] For NOT HERE, I don't necessarily mean space. It could be time or norm.

6.1.2.1 *pay$_l$* for "go"

I will analyze what has been assumed to be the most salient use of *pay$_l$*, that is, its use as an element describing movement away from the speaker, or "go." I will show that *pay$_l$* adds direction to an event. We will encode that by assuming that *pay$_l$* assigns a value NOT HERE/ NOT THE CONTEXTUALLY DETERMINED PLACE to a space axis.

Bouchard (1995) discusses that the logic of movement involves a starting point, and an ending point, and a path of movement, and a certain temporal-spatial constraints: for instance, if some entity E moves, then there are at least two times, t1 and t2, and two places, p1 and p2, such that at t1 E is at p1 and at t2 E is at p2. (p.120)

"Go" is one of the verbs of movement and for the movement denoted by verb "go," p1 is a deictic center (i.e., HERE) and p2 is an antideictic center (i.e., NOT HERE). Therefore, by sentence (60), John, at t1, is at deictic center and at t2 is at an antideictic center which, in this case, is *the bank.*

(60) *cɔɔn$_l$ pay$_l$ tha$_l$ naa$_l$ kaan$_l$*
John pay$_l$ bank
"John went to the bank."

However, it seems that, for p1, as well as a deictic center, a certain contextually determined place is permitted.

To illustrate, suppose John is in New York, Bill is in London , and Fred is in Tokyo, as depicted in (61).

(61)

Bill	John	Fred
•	•	•
London	New York	Tokyo

Also John, Bill, and Fred know where each other lives. John could appropriately tell Fred over the phone that Bill would go to Tokyo, although for John, the place where Bill is, is not considered to be HERE[52].

As p1 and p2 have to be two different places, it can be derived that in cases where p1 is HERE p2 is NOT HERE, and in cases where p1 is A CONTEXTUALLY DETERMINED PLACE (i.e., London), p2 is NOT THE CONTEXTUALLY DETERMINED PLACE (i.e., not London).

A verb of movement denotes an event of motion. As discussed in section (6.1.1), Jackendoff (1996) proposes that an event of motion (i.e., *The cart rolled to New York*) will minimally be associated with the representation in (62).

(62)
$$\left[\begin{array}{ccc} [1d]^{\alpha} & [1d]^{\alpha} & [1d]^{\alpha} \\ \| & \| & \| \\ 0d & & \end{array}\right.$$
$$\left._{\text{Sit}}\ \text{BE}\ (\ [_{\text{Thing}}\ X\ ]\ ,\ [_{\text{Space}}\ 0d\ ]\ )\ ;\ [_{\text{Time}}\ 0d\ ]\right]$$

In (62) the cross-section of an event of motion consists of a BE function which takes thing and space as arguments and time as a modifier. Each has the feature 0d (zero dimensionality). This cross-section is projected onto three axes. The point-situation is projected onto a durative event. The point of space is projected onto a path and the point in time is projected onto a time interval. The three axes are sp-bound, as notated by the superscripting Greek letters on the axes. Consequently, for each point t_i on the time axis, there will be a cross-section of the event that represents the entity at some location l_i.

[52] It is important to note that while it is appropriate for John to say that Bill would **go** to Tokyo, it is not appropriate for John to say that Bill would **come** to Tokyo.

For the movement denoted by verb "go," entity E moves in a way that at t1 E is at a deictic center or a contextually determined place, and at t2 E is at an antideictic center, or at another contextually determined place. I propose that based on the representation of an event of motion as in (62), for an event of motion denoted by *pay*$_1$ "go," the space axis is assigned the value NOT HERE/NOT THE CONTEXTUALLY DETERMINED PLACE and this axis is bound with other axes.

Now the event described by sentence (60),can be represented as (63), where CDP stands for the contextually determined place.

(63)
$$\left[\begin{array}{lll} [1d]^{\alpha} & \left[\begin{array}{c} 1d \\ \text{NOT HERE/NOT CDP} \end{array}\right]^{\alpha} & [1d]^{\alpha} \\ \| & \| & \| \\ 0d & & \\ {}_{\text{Sit}}\,\text{BE}\,([_{\text{Thing}}\,X], & [_{\text{Space}}\ 0d]); & [_{\text{Time}}\ 0d] \end{array}\right]$$

In (63), the value NOT HERE/NOT CDP is added to the space axis and this axis is bound with other axes (i.e., an axis projected from a point in time, and an axis projected from a point situation), hence the interpretation that there is gradual change of location of an entity to NOT HERE/NOT CDP.

In summary, it seems plausible that *pay*$_1$, which is used to express movement away from the speaker or "go," is parasitic to a space axis and that it marks a value NOT HERE/NOT CDP on the space axis.

6.1.2.2 *pay$_1$* for continuation of action

Expressing continuation of action, there are certain selection restrictions. *Pay$_1$* can naturally co-occur with accomplishments and activities, as illustrated in (64) and (65), respectively.

(64) a *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$sɨ̀$_5$* ***pay$_1$***
John read book pay$_1$
"John continued reading."

b *Mææ$_1$rii$_3$ waad$_3$ ruub$_3$* ***pay$_1$***
Mary draw picture pay$_1$
"Mary continued drawing."

(65) a *cɔɔn$_1$ ten$_2$ram$_1$* ***pay$_1$***
John dance pay$_1$
"John continued dancing."

b *cɔɔn$_1$ rɔɔŋ$_4$pleeŋ$_1$* ***pay$_1$***
John sing pay$_1$
"John continued singing."

However, *pay$_1$* cannot co-occur with achievements nor states, as illustrated in (66) and (67), respectively.

(66) a * *cɔɔn$_1$ cha$_1$na$_4$* ***pay$_1$***
John win pay$_1$
"John continued to win."

b * *cɔɔn$_1$ phob$_4$ kra$_1$paw$_5$sa$_1$thaŋ$_1$* ***pay$_1$***
John find wallet pay$_1$
"John continued to find the wallet."

(67) a * *cɔɔn$_1$ chɨ̀a$_3$ nay$_1$ pra$_4$jaw$_3$* ***pay$_1$***
John believe in God pay$_1$
"John continued to believe in God."

b * *cɔɔn$_1$ chɔɔb$_3$ Mææ$_1$rii$_3$ **pay$_1$***
John like Mary pay$_1$
"John continued to like Mary."

Pay$_1$ may co-occur with verbs involving destruction and disappearance (Thepkanjana 1986) or change of state verbs (Muansuwan 2002), such as *hak$_2$* "break," *taay$_1$* "die," *haay$_5$* "disappear," etc., as illustrated in (68).

(68) a *ton$_3$may$_5$ taay$_1$ **pay$_1$***
tree die go
"The plant is dead."

(Thepkanjana 1986, p.153)

b *khææw$_3$ tææk$_2$ **pay$_1$***
Glass break go
"The glass broke."

(Muansuwan 2002 p.127))

The interpretation conveyed in (68a) and (68b), however, is that the tree goes out of existence over an interval of time, and that the glass goes out of existence over an interval of time, suggesting that the situations in (68a) and (68b), are not different from the situations in (64) and (65).

One piece of evidence supporting this is that when an adverbial such as *khɔɔy$_3$ khɔɔy$_3$* "gradually" is present, *pay$_1$* is required, as illustrated in (69) and (70).[53]

(69) a **ton$_3$may$_5$ khɔɔy$_3$ khɔɔy$_3$ taay$_1$*
tree gradually die
"The plant is **gradually** dead."

b *ton$_3$may$_5$ khɔɔy$_3$ khɔɔy$_3$ taay$_1$ **pay$_1$***
tree gradually die go
"The plant is **gradually** dead."

[53] English also has similar cases. For example, *The crowd went quite* and *The line went dead.*

(70) a **khææw$_3$ khɔɔy$_3$ khɔɔy$_3$ tææk$_2$*
Glass gradually break
"The glass is **gradually** broken."

b *khææw$_3$ khɔɔy$_3$ khɔɔy$_3$ tææk$_2$* ***pay$_1$***
Glass gradually break go
"The glass is **gradually** broken."

These selection restrictions are not unexpected. That is, as *pay$_1$* is parasitic to an axis, it is compatible with events in which there is projection of points onto an sp-bound axes and it is not compatible with events in which there is no projection of points onto sp-bound axes. Accomplishments and activities are events in which there is projection of points onto sp-bound axes but achievements and states are events in which there is no projections of points onto sp-bound axes, so, not surprisingly, *pay$_1$*, expressing continuation, applies to accomplishments and activities, but not to achievements and state.[54]

The role of expressing continuation of action of *pay$_1$* has been described in a number of earlier studies (Uppakitsinlapasarn 1964, Thepkanjana 1986, Mathias 2000, Muansuwan 2002); however, upon taking a closer look at the continuation expressed by *pay$_1$*, the earlier descriptions do not seem to be adequate.

The continuation of action expressed by *pay$_1$* involves a particular sense. *Pay$_1$* does not only indicate that an action continues, but also that the action could have stopped at an earlier point. This can be illustrated by the co-occurrence of *thiŋ$_5$... kɔɔ$_3$* "although" and *pay$_1$*, as in (71) and (72).

[54] Neither an iterative nor habitual reading are available when *pay$_1$* co-occurs with achievements. An explanation might have to do with the relatively low position of *pay$_1$*. Generally, an iterative or habitual reading may be forced by a generic operator which is higher in the structure.

(71) a *thɨŋ$_5$ tho$_1$ra$_1$sab$_2$ daŋ$_1$ cɔɔn$_1$ kɔɔ$_3$ ʔaan$_2$ nuŋ$_5$sɨɨ$_5$ **pay$_1$***
although telephone ring John read book pay$_1$
"Although the telephone rang, John continued reading."

b * *thɨŋ$_5$ tho$_1$ra$_1$sab$_2$ daŋ$_1$ cɔɔn$_1$ kɔɔ$_3$ ʔaan$_2$ nuŋ$_5$sɨɨ$_5$*
although telephone ring John read book
"Although the telephone rang, John continued reading."

(72) a *thɨŋ$_5$ don$_1$trii$_1$ yud$_2$ cɔɔn$_1$ kɔɔ$_3$ ten$_3$ram$_1$ **pay$_1$***
although music stop John dance pay$_1$
"Although the music stopped, John continued dancing."

b * *thɨŋ$_5$ don$_1$trii$_1$ yud$_2$ cɔɔn$_1$ kɔɔ$_3$ ten$_3$ram$_1$*
although music stop John dance
"Although the music stopped, John continued dancing."

In (71), the action of reading could have stopped at the point when telephone rang, however, the action of reading continued. Similarly, in (72), the action of dancing could have stopped at the point when the music ended, however the action of dancing continued. As *pay$_1$* is required in these cases, *pay$_1$* describes that the action continues although it could have stopped.

That *pay$_1$* is used in imperative sentences also supports that *pay$_1$* describes that the action continues, although it could have stopped. This can be illustrated in (73).

(73) a *Su$_2$rii$_1$, tham$_1$ kaan$_1$baan$_3$*
Suri, do homework
"Suri, do your homework."

b *Su$_2$rii$_1$, tham$_1$ kaan$_1$baan$_3$ **pay$_1$***
Suri, do homework pay$_1$
"Suri, carry on your homework."

(Thepkanjana, 1986, Muansuwan 2002)

While (73a) is a command used in general contexts, (73b) is a command specifically used in a context in which, for some reason (i.e., her roommate just turned a TV on), *Su$_2$rii$_1$* could stop doing her homework.

As *pay$_1$* describes that an action continues, although it could have stopped, *pay$_1$* describes that from a certain contextually determined point of time (i.e., a point of time where an event should stop), an event goes on.

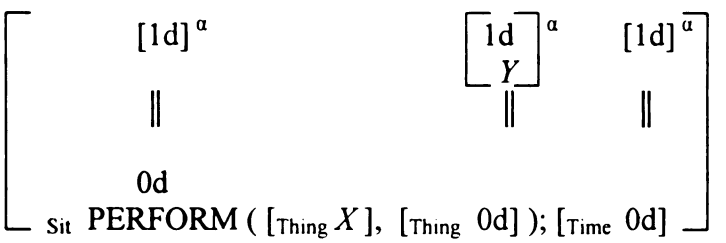
Cases in (71) and (72) which are not cases of imperatives, can be considered to be cases where the point of time where an event should stop does not coinside with NOW, and cases in (73), which are cases of imperatives can be considered to be cases where the point of time where an event should stop coincide with NOW.

Describing that from NOW or from a certain contextually determined point of time (i.e., a point of time where an event should stop), an event goes on, or that an event goes on in the sense of more and more away from NOW or more and more away from a contextually determined point in time (i.e., a point of time where an event should stop), *pay$_1$* only operates on events in which a point in time is projected onto an axis that is sp-bound with other axis.

This, therefore, supports the idea that *pay$_1$* is parasitic to a time axis and it assigns a value of NOT NOW or NOT THE CONTEXTUALLY DETERMINED TIME to the time axis.

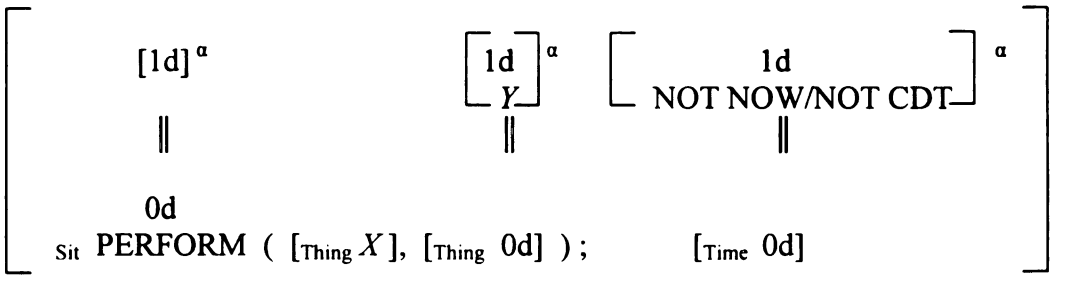
Assuming Jackendoff (1996), events such as reading, dancing, and doing homework are events in which the function PERFORM is encoded and can be represented as (74).

(74)



I propose that when events such as reading, dancing or doing homework have *pay*$_1$ as an event modifier, the representation is as in (75) where CDT stands for the contextually determined point in time.

(75)



In (75), the value of NOT NOW or NOT THE CONTEXTUALLY DETERMINED TIME is introduced, and the axis marked for this value (i.e., an axis projected from a point in time) is bound with the other axes (i.e., an axis projected from a point situation and optionally an axis projected from an object being performed), hence the interpretation that from NOW or THE CONTEXTUALLY DETERMINED TIME (i.e., a point of time where an event should stop) an event goes on. What is crucial is that the event goes on beyond the now/expected.

In summary, it is apparent that *pay*$_1$, which is used to express the continuation of an action adds value of NOT NOW or NOT THE CONTEXTUALLY DETERMINED

TIME to a time axis and this axis is bound with other axes, in particular, an axis projected from a point situation and optionally an axis projected from an object being performed.

6.1.2.3 *pay$_1$* for "too"

States are situations denoted by predicates such as *believe* and *like* as in (76), as well as situations denoted by predicates such as *fat* and *salty,* as in (77).

(76) a *cɔɔn$_1$ chɨɨa$_3$ nay$_1$ pra$_4$jaw$_3$*
John believe in God
"John believes in God."

b *cɔɔn$_1$ chɔɔb$_3$ Mææ$_1$rii$_3$*
John like Mary
"John likes Mary."

(77) a *cɔɔn$_1$ ʔuuan$_3$*
John fat
"John is fat"

b *keeŋ$_1$ kem$_1$*
Soup salty
"The soup is salty."

There is, however, a difference between the states in (76) and the states in (77). Assuming Kennedy (2000), the states in (76) and (77), differ in terms of scalar properties. While the states in (77) wear their scalar properties on their sleeve, so to speak, the states in (76) do not.

Representing the states in (77), the representation of an event of change of properties can be taken as a basis. Jackendoff (1996) discusses that Gruber (1965) considers predicates of change of state as in *The water got hot in two minutes* or *The*

water got hotter for two minutes to express motion in the Identificational domain and their representation is as in (78), where the property is laid out in the projection of the Property constituent and the time interval and the course of the event are sp-bound to it. (p.331)

(78) $\left[\begin{array}{ccc} [1d]^{\alpha} & & [1d]^{\alpha} \quad [1d]^{\alpha} \\ \| & & \| \quad \| \\ {}_{\text{Sit}}\ \text{BE}_{\text{Ident}}\ (\ [_{\text{Thing}}\ X]\ ,\ [_{\text{Property}}\ 0d\ ]\ );\ [_{\text{Time}}\ 0d\ ] & & \end{array}\right]$

However, as in (77), there is no change of state over time (i.e., the time interval may be a point, or an open, or closed interval but the state remains unchanged.), it can be assumed that the representation of states in (77) is as in (79) where property and time are not projected onto sp-bound axes.

(79) $[\ _{\text{Sit}}\ \text{BE}_{\text{Ident}}\ (\ [_{\text{Thing}}\ X]\ ,\ [_{\text{Property}}\ 0d\ ]\ );\ [_{\text{Time}}\ 0d\ ]\ ]$

As the state in (77) differs from the state in (76) in that the scalar properties are exhibited, it is plausible that for property in (77), there is a projection of a point onto a scalar axis, as in (80).

(80) $\left[\begin{array}{c} [1d]^{\alpha} \\ \| \\ {}_{\text{Sit}}\ \text{BE}_{\text{Ident}}\ (\ [_{\text{Thing}}\ X\ ]\ ,\ [_{\text{Property}}\ 0d\ ]\ )\ ;\quad [_{\text{Time}}\ 0d\ ] \end{array}\right]$

So, while in (76) there is no projection of a point onto an axis, in (77) there is a projection of a point onto an axis. As expected, *pay*$_1$, adding a certain value on an axis,

cannot co-occur with the states in (77), but can co-occur with states in (76) as illustrated by (81), and (82).

(81) a * *cɔɔn$_1$ chɨɨa$_3$ nay$_1$ pra$_4$jaw$_3$* ***pay$_1$***
John believe in God pay$_1$
"John believes in God too much."

b * *cɔɔn$_1$ chɔɔb$_3$ Mææ$_1$rii$_3$* ***pay$_1$***
John like Mary pay$_1$
"John likes Mary too much."

(82) a *cɔɔn$_1$ ʔuuan$_3$* ***pay$_1$***
John fat pay$_1$
"John is too tall."

b *keeŋ$_1$ kem$_1$* ***pay$_1$***
soup salty pay$_1$
"The soup is too salty."

In (82), however, *pay$_1$* describes that a situation exceeds a certain point on the scale of being fat and being salty, respectively, and it can be translated as "too."

That *pay$_1$* in (82) describes a situation that exceeds a certain point on the scale indicates that it is not incompatible with the assumption that it adds a certain value on an axis. I propose that in the cases of (82) *pay$_1$* adds the value NOT NORMAL to an axis projected from the property.

Now, sentences (82a) and (82b), can be schematically represented as (83).

(83)
$$\left[\begin{array}{ccc} & \left[\begin{array}{c} 0d \\ \text{NOT NORMAL} \end{array}\right] & \\ & \| & \\ \text{Sit BE}_{\text{Ident}}\,(\,[\text{Thing } X], & [\text{ Property } 0d\,]\,); & [\text{ Time } 0d\,] \end{array}\right]$$

In (83), the value of NOT NORMAL is marked on the property axis which is taken as zero-dimensional. Therefore, NOT NORMAL is the degree of the property. In (82a) and (82b), therefore, the property of being fat and being salty is at the degree of NOT NORMAL.

Under the assumption that *pay*$_1$ adds NOT NORMAL to the property axis, cases which are problematic for Gandour's analysis, as in (35), repeated here as (84a) and (84b), can also be accounted for.

(84) a *to*$_4$ *tua*$_1$ *nii*$_4$ *yaaw*$_1$ ***pay***$_1$ *sib*$_2$ *fud*$_4$
Table CL this long pay$_1$ ten foot
"This table is ten feet longer than what it is supposed to be."

b *to*$_4$ *tua*$_1$ *nii*$_4$ *yaaw*$_1$ ***kəən***$_1$ *sib*$_2$ *fud*$_4$
Table CL this long kəən$_1$ ten foot
"The length of this table is more than ten feet."

In (84a), *pay*$_1$ adds the value NOT NORMAL to the axis of being long. When there is a specified amount, not surprisingly, the specified amount is associated with how much the point considered to be a normal degree of being long has been surpassed. On the other hand, in (84b), without *pay*$_1$, the property of being long is not on the scale in which the value of NOT NORMAL is assigned. The amount specified is, therefore, not going to be associated with the degree of being not normal. Therefore, within the current assumption, the facts which would otherwise be hard to account for can naturally be accounted for.

In summary, it is demonstrated that *pay*$_1$, which is used to express excessive degree, or "too," adds a value of NOT NORMAL to a property axis, hence the interpretation conveyed is that the property is carried on in a way that the degree of NOT NORMAL is reached, or that the degree considered to be normal has been surpassed.

6.1.3 Summary for the behavior of *pay$_1$*

We have seen that *pay$_1$* which is used to express movement away from the speaker or "go" adds a value of NOT HERE /NOT CDP to the space axis. *Pay$_1$*, therefore describes that a point with the value NOT HERE/NOT CDP is where the space axis reaches or that a point with the value HERE/CDP has been surpassed.

By taking a closer look at *pay$_1$* when it is used to express continuation, it is apparent that *pay$_1$* also adds a value of NOT NOW/NOT CDT to a time axis. Consequently, *pay$_1$* describes that NOT NOW or NOT CDT is where the time axis reaches, or that a point with the value of NOW/CDT has been surpassed.

And similarly, from the examination of *pay$_1$* when it is used to express excessive degree, or "too," it is clear that *pay$_1$* adds a value of NOT NORMAL to a property axis. As a result, *pay$_1$* describes that NOT NORMAL is a degree where the property axis reaches, or that a point which is considered to be a normal degree has been surpassed.

The behavior of *pay$_1$*, then, is parasitic to a space axis, a time axis, or a property axis and it assigns a value of NOT HERE/NOT CDP, NOT NOW/NOT CDT, NOT NORMAL to the space axis, the time axis, or the property axis, respectively.

6.1.4 Investigating *maa$_1$*

Again, taking Jackendoff's idea that an event can be viewed as projecting a cross-section onto structure-preserving bound axes as a basis for an investigation, in this

section, I investigate *maa*$_l$. As we will see *maa*$_l$ has the same role as *pay*$_l$. Essentially, the difference is that it goes from NOT HERE/NOT NOW to HERE/NOW.

In section (6.1.4.1) to (6.1.4.4), we will see that *maa*$_l$ is parastic to a space axis, a time axis or a situation axis, and that it adds a value of HERE to a space axis or situation axis, and a value of NOW to a time axis. Assuming this, restrictions on the distribution and interpretation of *maa*$_l$, which would otherwise be hard to be accounted for, can naturally be accounted for.

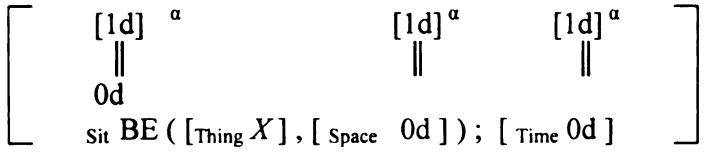
6.1.4.1 *maa*$_l$ for "come"

As the movement use seems to be the most salient use of *maa*$_l$, in this section, I investigate *maa*$_l$ as it is used for expressing movement in a direction toward the speaker, or "come." It will be demonstrated that *maa*$_l$, like *pay*$_l$, adds direction to an axis projected from a point in space and this axis is bound with other axes.

For movement denoted by "come," p1 is an antideictic center (i.e. NOT HERE) and p2 is a deictic center (i.e., HERE). Therefore, by sentence (85), *John*, at t1, is at an antideictic center and at t2, he is at a deictic center which, in this case, is *the bank*.

(85) *cɔɔn*$_l$ *maa*$_l$ *tha*$_l$ *naa*$_l$ *kaan*$_l$
John maa$_l$ bank
"John came to the bank."

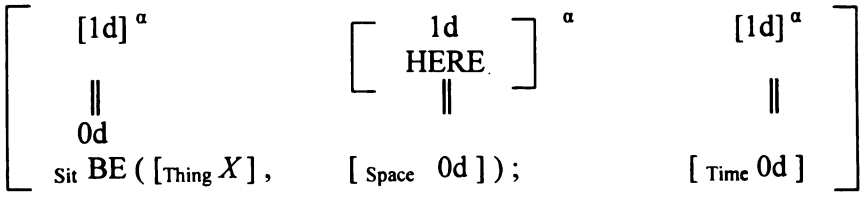
Since (85) is an event of motion, according to Jackendoff (1996), the representation is minimally as in (86).

(86)


In (86) the cross-section of an event of motion consists of a BE function which takes thing and space as arguments and time as a modifier. Each has the feature 0d (zero dimensionality). This cross-section is projected onto three axes. The point-situation is projected onto a durative event. The point of space is projected onto a path and the point in time is projected onto a time interval. The three axes are sp-bound, as notated by the superscripting Greek letters on the axes. Consequently, for each point t_i on the time axis, there will be a cross-section of the event that represents the entity at some location l_i.

For the movement described by the verb "come," entity E has to move in a way that at t1 E is at an antideictic center, and at t2, E is at a deictic center. I propose that based on the representation of an event of motion as in (86) for an event of motion denoted by *maa*$_1$ "come," the space axis is assigned the value HERE, and the axis is bound with other axes.

Therefore, the event described by sentence (85), can be represented as (87).

(87)


In (87), the value HERE is introduced to the space axis and this axis is bound with other axes (i.e., an axis projected from a point in time, and an axis projected from a point

situation) , hence the interpretation that there is gradual change of location of an entity to HERE.

To summarize, it seems plausible that *maa*$_1$ which is used to express movement toward the speaker or "come " is parasitic to the space and it marks a value HERE on the space axis.

6.1.4.2 *maa*$_1$ NOT for the Perfect of result

Remember that in a number of earlier studies, *maa*$_1$, when it occurs after a VP which does not involve movement, has been claimed to describe the Perfect, in particular, the Perfect of result.[55,56]

For example, Thepkanjana (1986) describes that *maa*$_1$, when it occurs after a non-movement verb, indicates the Perfect of result, as illustrated in (9b), repeated here as (88).

(88) *su*$_2$*rii*$_1$ *tad*$_2$ *phom*$_5$ *maa*$_1$
Suri cut hair come
"Suri has just got a hair cut."

(Thepkanjana 1986, p.166)

Mathias (2000) describes that *maa*$_1$ can be used to express Perfect, as illustrated in (23), repeated here (89).

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[55] Maa which occurs after a VP involving movement (i.e. *walk, run, fly, swim*, etc.) describes direction toward the speaker. (Thepkanjana, 1986, Wilawan 1994, Muansuwan 2002)

[56] As the definition of the perfect of result is not provided in Thepkanjan (1983), Mathias (2000) and Muansuwan (2002), I assume here the definition of the perfect of result given by Comrie (1976). Based on Comrie (1976), the perfect of result indicates that a present state is the result of some past situation. For example, the difference between *John arrived* and *John has arrived* is that the latter indicates persistence of the result of John's arrival, i.e. that he is still here while the former does not. So in answer to the question *Is John here yet?*, an appropriate answer is *Yes, he has arrived*, not *Yes, he arrived.* (p.56)

(89) a *luuk$_3$ tham$_1$ ʔa$_2$ray$_1$ maa$_1$ sɨɨa$_3$ pɨɨan$_3$ mot$_2$*
child do what PERF shirt dirty all
"What have you done, son? Your shirt is all dirty."

b *phom$_5$ kin$_1$ kwaaw$_3$ maa$_1$ tɔɔn$_1$ tiaŋ$_3$*
I eat rice PERF TEMP noon
"I had lunch at noon."

(Mathias 2000, p.79)

Also, Muansuwan (2002) describes that *maa$_1$* can be used to encode resultative Perfect as illustrated in (30), repeated here as (90).

(90) *Pi$_2$ti$_2$ tham$_1$ kwaam$_1$sa$_1$ʔaat$_2$ baan$_2$ maa$_1$*
Piti do cleanliness house PFCT(come)
"Piti has cleaned the house."

(Muansuwan 2002, p.135)

In this section, I take a closer look at the role of *maa$_1$* in cases like (88), (89) and (90). Although in these cases *maa$_1$* has been claimed to denote the Perfect, I will argue that rather than the Perfect, the role *maa$_1$* plays is describing movement of an agent from an antideictic center NOT HERE to the deictic center HERE, or "come."

I will first examine the selection restriction of the so-called Perfect denoting *maa$_1$* (i.e., *maa$_1$* which occurs after a VP not involving movement). Then, I will point out that what *maa$_1$* denotes is significantly different from what the English Perfect morphology does. It will be demonstrated that, rather than the Perfect of result, *maa$_1$* expresses movement of an agent from an antideictic center (i.e., a place marked NOT HERE) to a deictic center (i.e., a place marked HERE.) More data illustrating this role of *maa$_1$* will be provided.

With respect to selection restrictions, *maa*$_1$ can co-occur with accomplishment verbs, achievement verbs, and activity verbs, but not with stative verbs, as illustrated in (91) to (94), respectively.[57]

(91) a *cɔɔn*$_1$ *dɨɨm*$_2$ *law*$_3$ ***maa***$_1$
John drink beer maa$_1$
"John came having been drinking."

b *cɔɔn*$_1$ *waad*$_3$ *ruub*$_3$ ***maa***$_1$
Jon draw picture maa$_1$
"John came having been drawing a picture."

(92) a *cɔɔn*$_1$ *cha*$_1$*na*$_4$ ***maa***$_1$
John win maa$_1$
"John came having won."

b *cɔɔn*$_1$ *phob*$_3$ *kra*$_2$*paw*$_5$*sa*$_1$*thaŋ*$_1$ ***maa***$_1$
John find wallet maa$_1$
"John came having found a wallet."

(93) a *cɔɔn*$_1$ *ten*$_3$*ram*$_1$ ***maa***$_1$
John dance maa$_1$
"John came having been dancing."

b *cɔɔn*$_1$ *rɔɔŋ*$_3$*pleŋ*$_1$ ***maa***$_1$
John sing maa$_1$
"John came having been singing."

(94) a * *cɔɔn*$_1$ *chɔɔb*$_3$ *Mææ*$_1$*rii*$_3$ ***maa***$_1$
John like Mary maa$_1$
"John came having liked Mary."

b * *cɔɔn*$_1$ *chɨɨa*$_3$ *nay*$_1$ *pra*$_3$*jaw*$_5$ ***maa***$_1$
John believe in God maa$_1$
"John came having believed in God."

A situation which sentence (91a) may describe is, for example, John coming with the properties of being drunk. A situation which sentence (92a) may describe, is for

[57] *Maa*$_1$ cannot co-occur with a stative verb, unless certain types of adverbials are present. The co-occurrence of *maa*$_1$ with stative verbs and adverbials will be examined in the next section.

example, John coming with the properties of being happy. And a situation which sentence (93a) may describe is, for example, John coming with the properties of being tired.

Although *maa$_1$* in sentences like (91) to (93) has been claimed to denote the Perfect, in particular, the Perfect of result, it can be observed that what *maa$_1$* denotes is significantly different from what the Perfect morphology in English does.

While the Perfect in English requires that an event is complete, *maa$_1$* does not. This can be illustrated in (95) and (96).

(95) a *John has drunk that cup of coffee but he didn't finish it.

b *Mary has knitted a scarf but she didn't finish it.

(96) a *cɔɔn$_1$ dɨɨm$_2$ kaa$_1$fææ$_1$ thuuay$_3$ nan$_3$ **maa$_1$** tææ$_1$ may$_3$ mod$_2$*
John drink coffee CL that maa$_1$ but not finish
"John came with the property of coffee-drinking but he didn't finish the cup of coffee."

b *Mææ$_1$rii$_1$ thak$_2$ phaa$_3$phan$_1$khɔɔ$_1$ phɨɨn$_5$ nan$_3$ **maa$_1$** tææ$_1$ may$_3$ sed$_2$*
Mary knit scarf CL that maa$_1$ but not finish
"Mary came with the property of scarf-knitting but she didn't finish the scarf."

While contradiction arises in (95a) and (95b), there are no contradictions in (96a) and (96b), suggesting that, while the Perfect in English requires that an event be complete, *maa$_1$* does not. In other words, while the English Perfect morphology in (95a) and (95b) denote completion of an event, *maa$_1$* does not. What is the role of *maa$_1$*, then? Consider, again (97).

(97) a *cɔɔn$_1$ dɨɨm$_2$ kaa$_1$fææ$_1$ **maa$_1$***
John drink coffee maa$_1$
"John came with the properties of coffee-drinking."

b *Mææ$_{1}$rii$_{1}$ thak$_{2}$ phaa$_{3}$phan$_{1}$khɔɔ$_{1}$ **maa$_{1}$***
Mary knit scarf maa$_{1}$
"Mary came with the properties of scarf-knitting."

A situation which may be described by (97a) is John coming here with the property of being awake and a situation which may be described by (97b) is Mary coming here with a half-finished or finished scarf in her hand. Crucially, while these situations can be described by sentences in (97), they cannot be described by sentences in (98) where *maa$_{1}$* is not present.

(98) a *cɔɔn$_{1}$ dɨɨm$_{2}$ kaa$_{1}$fææ$_{1}$*
John drink coffee
"John drinks/drank coffee."

b *Mææ$_{1}$rii$_{1}$ thak$_{2}$ phaa$_{3}$phan$_{1}$khɔɔ$_{1}$*
Mary knit scarf
"Mary does/did a scarf-knitting."

What sentence (98a) describes is that John is a coffee-drinker or John drank some coffee. And what (98b) describes is that Mary knits or Mary did some knitting.[58] In (98a) and (98b), the reading in which the agents (i.e., John or Mary) are undergoing a movement is not possible. This clearly suggests that the denotation of *maa$_{1}$* is sentences like (97a) and (97b), is not the Perfect of result but movement of an agent from a place marked NOT HERE to a place marked HERE.

Supporting that movement of an agent from a place which is NOT HERE to a place which is HERE is the denotation of *maa$_{1}$*, it is situational contexts in which *maa$_{1}$* sentences are considered to be unacceptable or acceptable, as illustrated by the following.

[58] Remember that like other languages in which verbs are not inflected for tense, in Thai, a bare verb phrase may have either a present tense interpretation or a past tense interpretation, depending on context. (Koenig and Muansuwan, 2001)

(99) a *cɔɔn$_1$ tad$_3$ phom$_5$* ***maa$_1$***
John cut hair maa$_1$
"John came with the properties of having a hair cut."

b *cɔɔn$_1$ dɨɨm$_2$ law$_3$* ***maa$_1$***
John drink beer maa$_1$
"John came with the properties of drinking beer."

In a situation in which Bill met John at a barbershop where John got a hair cut, Bill's description of John in (99a) would be considered unacceptable. However, if Bill met John with a new hair style in a classroom, Bill could appropriately describe John by (99a). Similarly, for (99b), in a situation in which Bill met John at a bar where John was drinking beer, Bill's description of John in (99b) would be unacceptable. However, if Bill met John who was drunk in a parking lot Bill could appropriately describe John by (99b).

So when co-occurring with accomplishments, activities, and achievements, the denotation of *maa$_1$* is movement from an antideictic center (i.e., a place considered to be NOT HERE) to the deictic center HERE (i.e., a place considered to be HERE).

Representing events like (99), I, therefore, propose that the representation is minimally as in (100).

(100)
$$\left[\begin{array}{ccccc} [0d]^{\alpha} & & \left[\begin{array}{c}0d\\ \text{HERE}\end{array}\right]^{\alpha} & & [0d]^{\alpha} \\ \| & & \| & & \| \\ 0d & & & & \\ {}_{\text{Sit}}\,\text{BE}\,([_{\text{Thing}}\ X],\ [_{\text{Space}}\ 0d]);\ [_{\text{Time}}\ 0d];\ [_{\text{Property}}\ 0d] & & & & \end{array}\right]$$

In (100) the value HERE is introduced to the space. The path, the period of time, and the situation are taken as zero-dimensional. The thing (i.e., an agent) and the property (i.e., having a hair cut, drinking beer, etc.) are not projected onto axes that are sp-bound to the

other axes. (100), thus, captures the interpretation that an agent appears at HERE with a certain property.

6.1.4.3 *maa*$_1$ for the universal Perfect

Remember that the co-occurrence of [VP + *maa*$_1$] with an expression of duration provides a certain reading. For example, Wilawan (1994) notes that in such a case, *maa*$_1$ identifies the end point of the action up to the point of speech, as illustrated in (101).

(101) *Dek*$_2$ *rææk*$_3$ *khəəd*$_3$ *khon*$_1$ *nan*$_4$ *haay*$_5$*jay*$_1$ ***maa***$_1$ *haa*$_3$ *naa*$_1$*thii*$_1$ *lææw*$_4$
child just born CL that breathe come five minute already
"That infant has breathed for five minutes."

(Wilawan 1994, p.106)

In this section, I examine the interaction of *maa*$_1$ with expressions of duration, in particular, *for*-adverbials and *since*-adverbials. I will provide data illustrating that *maa*$_1$ can be used to describe that a situation started in the past and continues into the present, or the universal Perfect.

Accounting for the fact that *maa*$_1$ can be used to express the universal Perfect, I propose that *maa*$_1$ adds direction to an axis. More precisely, *maa*$_1$ adds the value of NOW to a time axis and the axis is bound with some other axis.

I will first, introduce relevant facts about English Perfect sentences with *for*-adverbial and *since*-adverbials, based on Iatridou, Anagnostopoulou, and Izvorski (2001). Then, I will examine the interaction of *maa*$_1$ with *for*-adverbials and *since*-adverbials. We will see that restrictions on the interpretation of *maa*$_1$, which would, otherwise, be

difficult to account for, can naturally be dealt with under the assumption that *maa*$_1$ is parasitic to the time axis and that it adds the value of NOW on the time axis.

Concerning the Perfect in English, Iatridou, Anagnostopoulou, and Izvorski (2001) propose that there are two types of Perfect: existential Perfect and universal Perfect. The existential Perfect includes the experiential Perfect (i.e., I have read *Principia Mathematica* five times.), the Perfect of result (i.e., I have lost my glasses.), and the Perfect of recent past (i.e., He has just graduated from college). The Perfect of persistent situation (i.e., Mary has lived in Boston for three years.) is considered to be the universal Perfect.

According to them, the generalization for the Perfect in English is that the present Perfect morphology in English has in its denotation only the existential Perfect. The universal Perfect is available only with the presence of adverbial modification (i.e. *since* phrase and *for* phrase).

Their idea is that what the universal Perfect denotes is that the predicate holds throughout some interval stretching from a certain point in the past up to the present. Unmodified Perfects (i.e. a Perfect sentence without adverbial modification) in English, however, leave whether the predicate holds at present, silent. This can be illustrated by the following.

(102) a Q: I haven't seen Mary in a while. Where is she?

b A: She has been sick.

(p.197)

The Perfect sentence (102b) can appropriately be continued with *and she still is and so she hasn't been coming to the office*. So (102b) seems like a universal Perfect.

However, (102b) can also be continued with *but she is fine now and she will come to the office soon*. So, in fact, (102b) is simply silent about whether Mary is sick at present.

As it does not require that Mary is sick at the present, it does not denote that the predicate holds throughout some interval stretching from a certain point in the past up to the present. Therefore, they conclude that the unmodified Perfect in English is never a universal Perfect.

Given their analysis, adverbial modification such as *for*-adverbials and *since*-adverbials make the universal reading available; however, it does not get rid of existential reading. A Perfect sentence with adverbial modification such as (103a), therefore has both universal and existential readings.

(103) a I have been sick since 1990.

b 1990 _____ NOW (= time of utterance)

c 1990 _____ NOW (= time of utterance)

(p.191)

Sentence (103a) has both the reading of there is a sickness eventuality that holds throughout the named interval, that is a period extending from 1990 up to now as in (103b), and the reading of within the interval that extends from 1990 till now there is some (at least one) interval in which I was sick, as in (103c); hence universal Perfect and existential Perfect, respectively.

Going back to *maa*$_1$, *for*-adverbials and *since*-adverbials can co-occur with [an accomplishment verb + *maa*$_1$], [an activity verb + *maa*$_1$], and [a stative verb + *maa*$_1$], but not [an achievement verb + *maa*$_1$] as illustrated in (104) to (107), respectively.

(104) a *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$ sɨɨ$_5$ **maa$_1$** pen$_1$ wee$_1$ laa$_1$ soŋ$_5$ chuua$_3$ moŋ$_1$*
John read book maa$_1$ be time two hours
"John has been reading for two hours."

b *cɔɔn$_1$ ʔaan$_2$ naŋ$_5$ sɨɨ$_5$ **maa$_1$** taŋ$_2$tææ$_2$ pææd$_2$ moŋ$_1$*
John read book maa$_1$ since eight o'clock
"John has been reading since eight o'clock ."

(105) a *cɔɔn$_1$ ten$_3$ram$_1$ **maa$_1$** pen$_1$ wee$_1$ laa$_1$ soŋ$_5$ chuua$_3$ moŋ$_1$*
John dance maa$_1$ be time two hours
"John has been dancing for two hours."

b *cɔɔn$_1$ ten$_3$ram$_1$ **maa$_1$** taŋ$_2$tææ$_2$ pææd$_2$ moŋ$_1$*
John dance maa$_1$ since eight o'clock
"John has been dancing since eight o'clock."

(106) a *cɔɔn$_1$ chɨɨ$_3$ nay$_1$ pra$_3$jaw$_5$ **maa$_1$** pen$_1$ wee$_1$laa$_1$ sɔŋ$_5$ pii$_1$*
John believe in God maa$_1$ be time two years
"John believes in God and this state of affairs has already been going on for two years."

b *cɔɔn$_1$ chɨɨ$_3$ nay$_1$ pra$_3$jaw$_5$ **maa$_1$** taŋ$_2$tææ$_2$ khaw$_5$ ʔaa$_1$yu$_4$ sib$_2$haa$_3$*
John believe in God maa$_1$ since he age fifteen
"John believes in God and this state of affairs has begun since he was fifteen."

(107) a **cɔɔn$_1$ cha$_1$na$_4$ **maa$_1$** pen$_1$ wee$_1$ laa$_1$ soŋ$_5$ chuua$_3$ moŋ$_1$*
John win maa$_1$ be time two hours
"John has been winning for two hours."

b **cɔɔn$_1$ cha$_1$na$_4$ **maa$_1$** taŋ$_2$tææ$_2$ pææd$_2$ moŋ$_1$*
John win maa$_1$ since eight o'clock
"John has been winning since eight o'clock."

What is crucial is that by sentences (104) to (107), the reading is that the end point of the interval of time described is equated with the time of utterance or the time when the sentence is uttered. More precisely, in (104) to (107), only the reading of universal Perfect is available.

This becomes clear when we examine the readings of sentences with *for*-adverbials and a *since*-adverbials in (108) where *maa*$_1$ is not present and in (109) where ***m**aa*$_1$ is present.

(108) a *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *lɔn*$_1$*dɔn*$_1$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sɔɔŋ*$_3$ *pii*$_1$
John be at London be time two years

i) "There was, somewhere in the past, a two year period during which John lived in London."

ii) " John is living in London now and this state of affairs has already been going on for two years."

b *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *lɔn*$_1$*dɔn*$_1$ *taŋ*$_3$*tææ*$_2$ *pii*$_1$ *1990*
John be at London since year 1990

i) "Within the interval that extends from 1990 till now there is some (at least one) interval in which John lived in London

ii) "There is an eventuality of John living in London that holds throughout the period extending from 1990 up to now."

(109) a *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *lɔn*$_1$*dɔn*$_1$ ***maa***$_1$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sɔɔŋ*$_3$ *pii*$_1$
John be at London maa$_1$ be time two years

*i) "There was, somewhere in the past, a two year period during which John lived in London."

ii) " John is living in London now and this state of affairs has already been going on for two years."

b *cɔɔn*$_1$ *yuu*$_2$ *thii*$_3$ *lɔn*$_1$*dɔn*$_1$ ***maa***$_1$ *taŋ*$_3$*tææ*$_2$ *pii*$_1$*1990*
John be at London maa$_1$ since year 1990

*i) "Within the interval that extends from 1990 till now there is some (at least one) interval in which John lived in London

ii) "There is an eventuality of John living in London that holds throughout the period extending from 1990 up to now."

In (108), without *maa*$_1$, sentences with *for*-adverbials and *since*-adverbials may be interpreted both as existential Perfect and universal Perfect. However, in (109), with the

presence of *maa*$_l$, the sentences can only be interpreted as universal Perfect, as only the reading of universal Perfect is available.

The difference between existential Perfect and universal Perfect concerns the location on a time line of an interval in which the predicate holds. For an existential Perfect, the right boundary of an interval is not equated with the time of utterance but for a universal Perfect, the right boundary of an interval must be equated with the time of utterance.

So, on the time line where time progresses from left to right, for an existential reading, the deictic center NOW is not the right edge of a period in which the predicate holds, but for a universal reading, the deictic center NOW is the right edge of a period in which the predicate holds.

Since with the presence of *maa*$_l$, the sentences have only a universal reading, it can be assumed that *maa*$_l$ indicates that the deictic center NOW is where the predicate holds.

This is naturally accounted for, if we assume that *maa*$_l$ adds the value of NOW on the time axis and this axis is bound with some other axis. Sentences like (104) to (106), will, therefore, be minimally represented as in (110), where *F* stands for function.

(110)

$$\left[\begin{array}{ll} [1d]^{\alpha} & \left[\begin{array}{c} 1d \\ NOW \end{array}\right]^{\alpha} \\ \| & \| \\ 0d & 0d \\ \multicolumn{2}{l}{\text{Sit } F\ (\ X,\ Y\ );\ [\ \text{Time } T\ ]} \end{array}\right]$$

In (110), the value NOW is introduced to the time axis and this axis is bound with other axes (i.e., an axis projected from a point situation), rendering the reading that there is a temporal route in which NOW is the point where the predicate holds, or, the reading of the universal Perfect.

To summarize, it seems plausible that *maa*$_1$ which is used to express the universal Perfect is parasitic to the time and it marks a value NOW on the time axis.

6.1.4.4 Why is "too" expressed by *pay*$_1$, not *maa*$_1$?

We have seen in (82) that *pay*$_1$, when co-occurring with states with scalar properties (i.e., being fat, being salty, etc.) expresses excessive degree, translated as "too." (82) is repeated here as (111).

(111) a *cɔɔn*$_1$ *ʔuuan*$_3$ ***pay***$_1$
John fat pay$_1$
"John is too tall."

b *keeŋ*$_1$ *kem*$_1$ ***pay***$_1$
soup salty pay$_1$
"The soup is too salty."

Substituting *pay*$_1$ with *maa*$_1$ in (111) would result in ungrammaticality.

(112) a **cɔɔn*$_1$ *ʔuuan*$_3$ ***maa***$_1$
John fat maa$_1$
"John is too fat."

b **keeŋ*$_1$ *kem*$_1$ ***maa***$_1$
soup salty maa$_1$
"The soup is too salty."

The question why "too" is expressed by *pay$_l$* but not by *maa$_l$* is posed here. I propose that an explanation has to do with the direction of change which *pay$_l$*/ *maa$_l$* describe.

This can best be illustrated in the spatial domain. We have seen that *pay$_l$* describes change from HERE to NOT HERE and *maa$_l$* describes change from NOT HERE to HERE. As HERE is considered to be a deictic center and NOT HERE an antideictic center, *pay$_l$* describes change from a deictic center to an antideictic center and *maa$_l$* describes change from an antideictic center to a deictic center.

Assuming that a deictic center includes NORM (i.e., a normal degree) (Gandour 1974, Thepkanjana 1986), *pay$_l$* describes the change from a point considered to be a normal degree to a point considered to be an abnormal degree (i.e., an excessive degree). *Maa$_l$*, on the other hand, would describe the change from a point considered to be an abnormal degree (i.e., an excessive degree) to a point considered to be a normal degree. This can be schematically represented as (113) and (114) respectively.

(113)

$$\left[\begin{array}{c} \text{1d} \\ \text{NOT NORMAL} \end{array}\right] \\ \Big\| \\ [_{\text{Property}}\ \text{0d}]$$

(114)

$$\left[\begin{array}{c} \text{1d} \\ \text{NORMAL} \end{array}\right] \\ \Big\| \\ [_{\text{Property}}\ \text{0d}]$$

Intuitively, "too" is a change on a property axis (i.e., a scale) from a point considered to be a normal degree to a point considered to be an abnormal degree (i.e., an excessive degree). Therefore, rather than *maa$_l$*, *pay$_l$* is used to express "too."

Another related question is then why aren't (115a) and (115b) used for expressing "John became normally fat" and "The soup became normally salty," respectively.

(115) a **cɔɔn$_1$ ʔuuan$_3$ **maa$_1$***
John fat maa$_1$
"John became normally fat."

b **keeŋ$_1$ kem$_1$ **maa$_1$***
soup salty maa$_1$
"The soup became normally salty."

The explanation for the absence of (115) has to do with the fact that predicates "fat" and "salty" without a modifier, denote a normal degree of being fat and a normal degree of being salty, respectively. (116a) and (116b) are used when describing a normal degree of being fat and a normal degree of being salty.

(116) a *cɔɔn$_1$ ʔuuan$_3$*
John fat
"John is fat."

b *keeŋ$_1$ kem$_1$*
soup salty
The soup is salty."

Since the predicate "fat" and "salty" already describe a normal degree of being fat and a normal degree of being salty, respectively, *maa$_1$*, which would redundantly mark the value of being at a normal degree, is not expected to occur here.[59]

[59] If this is true, the restriction is universal, not just peculiar properties of Thai.

6.1.5 Summary of the behavior of *maa$_1$*

We have seen that *maa$_1$* which is used to express movement toward a deictic center, or "come" adds the value of HERE to an axis projected from a point in space. The axis projected from a point in space is bound with an axis projected from a point in time, and an axis projected from a point situation. Hence, the interpretation that there is gradual change of location of an entity to HERE, or "come" is received.

By taking a closer look at *maa$_1$* which has been claimed to denote the Perfect of result in the earlier studies, it is apparent that rather than the Perfect of result, *maa$_1$* still describes movement toward a deictic center, more precisely, that an agent appears at a deictic center. It, then, can be assumed that *maa$_1$* assigns the value HERE to space.

Finally, from the examination of *maa$_1$* which co-occurs with expressions of duration, in particular, *for*-adverbials and *since*-adverbials, it is clear that *maa$_1$* adds the value NOW to a time axis and it is bound with the other axes (i.e., the axis projected from a point situation).

So, stating a generalization for the behavior of *maa$_1$*, it is that *maa$_1$* is parasitic to an axis projected from a point in space or a point in time and it adds the value of HERE or NOW to the space axis or the time axis, respectively.

6.1.6 The unified property of *pay$_l$*/*maa$_l$*

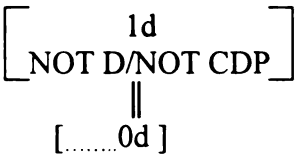
Having investigated the seemingly multiple roles of *pay$_l$* and *maa$_l$*, it is clear that the unified properties of *pay$_l$* and *maa$_l$* have to do with the properties of being parasitic to certain axes and marking those axes with certain values.

For *pay$_l$*, it seems that the role of *pay$_l$* is adding the value of NOT HERE/ NOT CDP, or NOT NOW/ NOT CDT, or NOT NORMAL to the space or time or property axis respectively. For *maa$_l$*, it seems that its role is adding the value of HERE to the space axis and NOW to the time axis.

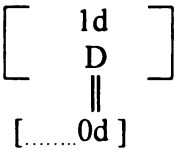
Assuming that HERE, NOW, NORM are deictic centers in spatial, temporal and property continuums, respectively, (Bouchard 1995, and Gandour 1974), *pay$_l$* adds antideictic center value or the value of not being a contextually determined point to an axis. And *maa$_l$* adds a deictic center value to an axis. While *pay$_l$* operates on a property continuum as well as on spatial and temporal continuums, *maa$_l$* only operates on spatial and temporal continuums.

So, with respect to the core representation of *pay$_l$* and *maa$_l$*, it can be assumed that schematically, the core representation of *pay$_l$* and *maa$_l$* is as in (117) and (118), respectively, where D stands for deictic center and CDP stands for a contextually determined point (i.e., either a point in time or a point in space).

(117)



(118)



In (117) and (118), an axis projected from a point may vary, as it may be an axis projected from a point in space, a point in time, or, for *pay$_1$*, a point on a scale.

Under the assumption that *pay$_1$* adds antideictic center value or value "not the contextually determined point" to an axis, and *maa$_1$* adds a deictic center value to an axis, the gradability and directionality found in the uses of *pay$_1$* and *maa$_1$* are naturally accounted for. In other words, the multiple roles of *pay$_1$/maa$_1$* which would otherwise be hard to unify, can naturally be unified.

The representations of *pay$_1$* and *maa$_1$* as in (117) and (118) is compatible Jackendoff's (1996) proposal that an event can be viewed as projecting a temporal cross-section onto sp-bound axes. As discussed in Jackendoff, the notion of projecting a cross-section onto an axes is cognitively necessary as not only that it provides an account for phenomenon, such as telicity in languages, but it also captures the way we understand objects. (Marr, 1982).

Moreover, the representation of *pay$_1$* and *maa$_1$*, in (117) and (118), respectively, is not contradictory with Bouchard's (1995) analysis for French *aller/venir*, in the sense that while (anti) deictic value is present in the lexical representation of *pay$_1$ / maa$_1$*, neither

spatial, temporal nor any other particular semantic field, is present in the lexical representation of *pay$_1$/maa$_1$*.

In conclusion, it is clear that there is a unified representation of *pay$_1$* and a unified representation of *maa$_1$*. In the following section, I will argue that, as well as the unified semantic properties, there is unified syntactic property of *pay$_1$/ maa$_1$*.

6.2 Syntax of *pay$_1$/ maa$_1$*

In this section, I investigate the syntax of *pay$_1$/maa$_1$*. I will first investigate the syntax of *pay$_1$/maa$_1$* as they play the roles of a verb for "go" and a verb for "come," respectively. Then, I will investigate the syntax of *pay$_1$/maa$_1$* as they play the roles of event modifiers. Finally, based on Pustjovsky's proposal of subeventual structure and event headedness, I will argue that *pay$_1$/maa$_1$* can be treated as having the same syntactic properties despite their different roles.

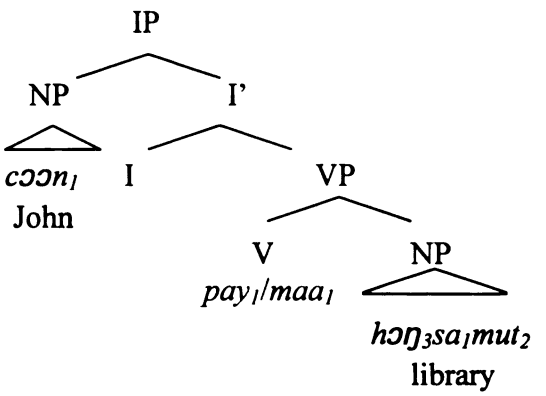
6.2.1 *pay$_1$* for "go" and *maa$_1$* for "come"

In order to determine the syntax of *pay$_1$* and *maa$_1$* I will use the extraction test discussed at length in section (4.2.1.4) of chapter 2. I will show that *pay$_1$* and *maa$_1$*, in addition to occupying the head of a main VP, may occupy the head of an adjoining VP.

As seen in (119), *pay$_1$/maa$_1$* may occur as a single verb in which case *pay$_1$/maa$_1$* is presumably the head of VP and takes an NP as its complement. The structure of (119a), is therefore, as in (119b).

(119) a *cɔɔn$_1$* ***pay$_1$/maa$_1$*** *hɔŋ$_3$sa$_1$mut$_2$*
John go/come library
"John went/come to the library."

b



Pay$_1$/maa$_1$ can also occur as one of the verbs in sequence. *Pay$_1$/maa$_1$* can either be in VP1 or VP2, as illustrated in (120a) and (120b) respectively.

(120) a *cɔɔn$_1$* ***pay$_1$/maa$_1$*** *hɔŋ$_3$sa$_1$mut$_2$ yɨɨm naŋ$_5$sɨɨ$_5$*
John go/come library borrow book
"John went/came to the library to borrow a book."

b *cɔɔn$_1$ khap$_2$ rot$_4$ khan$_1$ may$_2$* ***pay$_1$/maa$_1$*** *haaŋ$_3$*
John drive car CL new go/come mall
"John drove his new car to go/come to the mall."

Concerning extraction of adjuncts (i.e., an adverb modifying a VP), as expected, observations are as follows. First, both VP1 and VP2 can be modified by adverbials, as illustrated below.

(121) a *cɔɔn$_1$ pay$_1$/maa$_1$ hɔŋ$_3$sa$_1$mut$_2$* ***dooy$_1$ khɨn$_3$ rot$_3$meey$_1$*** *yɨɨm naŋ$_5$sɨɨ$_5$*
John go/come library by take bus borrow book
"John went/came to the library to borrow a book by taking a bus."

b *cɔɔn$_1$ pay$_1$/maa$_1$ hɔŋ$_3$sa$_1$mut$_2$ yɨɨm naŋ$_5$sɨɨ$_5$* ***dooy$_1$ chay$_4$ bat$_2$ khɔɔŋ$_5$***
John go/come library borrow book by use card of

mææ$_1$rii$_3$
Mary

"John went/came to the library to borrow a book and he borrowed it by using Mary's card."

(122) a *cɔɔn$_1$ triiam$_1$ ʔaa$_1$haan$_5$ klaaŋ$_1$wan$_1$* ***dooy$_1$ tham$_1$ sæɛɛn$_1$wit$_4$*** *pay$_1$/ maa$_1$*
John prepare lunch by making sandwich go/come

rooŋ$_1$riian$_1$
school

"John prepared his lunch by making a sandwich and then went/came to school."

b *cɔɔn$_1$ triiam$_1$ ʔaa$_1$haan$_5$ klaaŋ$_1$wan$_1$ pay$_1$/ maa$_1$ rooŋ$_1$riian$_1$* ***dooy$_1$ khɨn$_3$***
John prepare lunch go/come school by take

rot$_3$meey$_1$
bus

"John prepared his lunch and went/came to school by taking a bus."

However, while the extraction of an adverb modifying VP1 is allowed, the extraction of an adverb modifying VP2 is not. This can be illustrated by the following.

(123) Q: a *cɔɔn$_1$ pay$_1$/maa$_1$ hɔŋ$_3$sa$_1$mut$_2$ yɨɨm naŋ$_5$sɨɨ$_5$* ***yaaŋ$_2$ray$_1$***
John go/come library borrow book how
"How did John go/come to the library to borrow a book?"

A: b *dooy$_1$ khɨn$_3$ rot$_3$meey$_1$*
by take bus
"By taking a bus."

A: *c *dooy$_1$ chay$_4$ bat$_2$ khɔɔŋ$_5$ mææ$_1$rii$_3$*
by use card of Mary
"By using Mary's card."

(124) Q: a *cɔɔn$_1$ triiam$_1$ ʔaa$_1$haan$_5$ klaaŋ$_1$wan$_1$ pay$_1$/ maa$_1$ rooŋ$_1$riian$_1$ **yaaŋ$_2$ray$_1$***
John prepare lunch go/come school how
"How did John prepare his lunch before going to school?"

A: b *dooy$_1$ tham$_1$ sæænˌwit$_4$*
By make sandwich
"By making a sandwich"

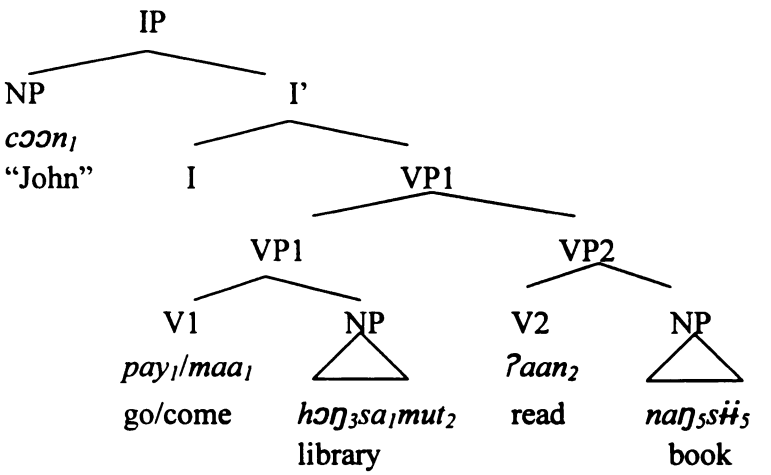
A: *c *dooy$_1$ khin$_3$ rot$_3$meey$_1$*
By take bus
"By taking a bus."

In (123) while (123b) can be an answer to the question, (123c) cannot. As (123b) is considered to be an adjunct of *pay$_1$/ maa$_1$ hɔŋ$_3$sa$_1$mut$_2$* "go library" which is VP1 and (123c) an adjunct of *yiim naŋ$_5$sii$_5$* "borrow a book" which is VP2, this suggests that *yaaŋ$_2$ray$_1$* "how" can only extract out of VP1, not VP2. Similarly in (124), while (124b) can be an answer to the question, (124c) cannot. As (124b) is considered to be an adjunct of *triiam$_1$ ʔaa$_1$haan$_5$ klaaŋ$_1$wan$_1$* "prepare lunch" which is VP1 and (124c) an adjunct of *pay$_1$/maa$_1$ rooŋ$_1$riian$_1$* "go school" which is VP2, this, again, suggests that while extraction out of VP1 is allowed extraction out of VP2 is not.

Based on these considerations, the structure of sentence (123) and (124) is that of VP1 being the head to which VP2 adjoins, as represented in (125) and (126) respectively, consistent with the other serial verbs constructions.

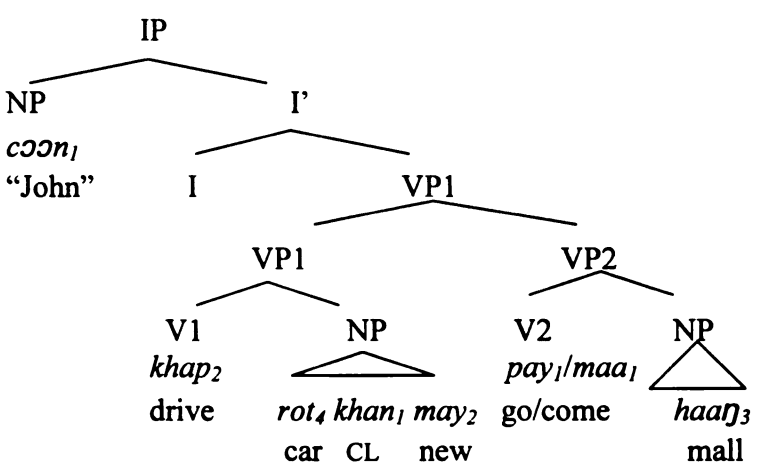
(125) a *cɔɔn$_1$ pay$_1$/maa$_1$ hɔŋ$_3$sa$_1$mut$_2$ yɨɨm naŋ$_5$sɨɨ$_5$*
John go/come library borrow book
"John went/came to the library to borrow a book."

b



(126) a *cɔɔn$_1$ khap$_2$ rot$_4$ khan$_1$ may$_2$ pay$_1$/maa$_1$ haaŋ$_3$*
John drive car CL new go/come mall
"John drove his new car to go/come to the mall."

b



Therefore, with respect to the position of *pay$_1$* "go" and *maa$_1$* "come," in addition to occurring as a single verb in a sentence in which case *pay$_1$/ maa$_1$* is the head of VP, *pay$_1$/ maa$_1$* can also occurs as one of the verbs in sequence. When *pay$_1$/ maa$_1$* occurs as VP1, *pay$_1$/ maa$_1$* is the head of the main VP. And when *pay$_1$/ maa$_1$* occurs as VP2, *pay$_1$/ maa$_1$* is the head of an adjoining VP. So *pay$_1$* "go" and *maa$_1$* "come" may either be the head of VP1 or the head of VP2.

6.2.2 *pay$_1$/maa$_1$* as an event modifier

As discussed in section (4.2.2.1) of chapter 2, an element's ability to be a predicator (i.e., a minimal answer for a yes/no question) indicates, partially, its syntactic position. An element which is able to be a predicator is argued to be an element with verbal properties (i.e., modals, aspect markers, and verbs) which is situated at the highest head.

Before examining the behavior of *pay$_1$/ maa$_1$* when behaving like an event modifier with respect to the ability to be a predicator, it is relevant to examine the behavior of *pay$_1$/ maa$_1$* when behaving like a verb for "go" and "come" respectively, with respect to the ability to be a predicator.

With respect to the ability to be a predicator, *pay$_1$* when used as the main verb"go" and *maa$_1$* when used as the main verb "come" as can be a predicator, as illustrated in (127) and (128) respectively.

(127) *pay*$_1$ for "go"

Q: *cɔɔn*$_1$ *pay*$_1$ *tha*$_1$ *naa*$_1$ *kaan*$_1$ *rii*
John pay$_1$ bank QP
"Did John go to the bank?"

A: *pay*$_1$
pay$_1$
"Yes, he did."

(128) *maa*$_1$ for "come"

a Q: *cɔɔn*$_1$ *maa*$_1$ *tha*$_1$ *naa*$_1$ *kaan*$_1$ *rii*
John maa$_1$ bank QP
"Did John come to the bank?"

A: *maa*$_1$
maa$_1$
"Yes, he did."

b Q: *cɔɔn*$_1$ *tad*$_3$ *phom*$_5$ *maa*$_1$ *rii*
You cut hair maa$_1$ QP
Did John come with the properties of having a hair cut?"

A: *maa*$_1$
maa$_1$

"Yes, he did."

**tad*$_3$ *phom*$_5$
cut hair

As seen in (127), *pay*$_1$ which is used as the main verb"go" can be a predicator. Similarly, in (128), *maa*$_1$ which is used as the main verb "come" can be a predicator. The fact that in (128b), *maa*$_1$ can be a predicator confirms that the analysis in section (6.1.4.2) (i.e., *maa*$_1$ as a main verb) is on the right track.[60]

[60] It seems that, in this case, *maa*$_1$ takes a null complement which is interpreted as HERE. This is plausible because in a discourse like (i) where there is no overt complement, HERE is assumed.

Now let's look at the behavior of *pay*$_1$/*maa*$_1$, when behaving like event modifiers with respect to their ability to act as predicators.

(129) *pay*$_1$ for the continuation

Q: *thɨŋ*$_5$ *tho*$_1$*ra*$_1$*sab*$_2$ *daŋ*$_1$ *cɔɔn*$_1$ *kɔɔ*$_3$ *ʔaan*$_2$ *naŋ*$_5$*sɨ̂*$_5$ ***pay***$_1$ *rɨ́*
although telephone ring John COMM read book pay$_1$ QP
"Did John continue to read, although the telephone rang?"

A: a *ʔaan*$_2$
read

"Yes he did."

b * *pay*$_1$
pay$_1$

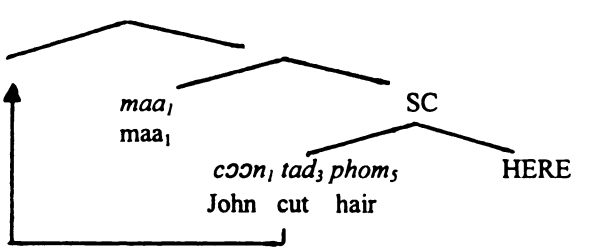
It is clear that *pay*$_1$, when it is used for expressing the continuation, cannot be a predicator, and so it is not supposed to be a head situated above VP.

(i) Q: *cɔɔn*$_1$ *maa*$_1$ *rɨ́*
John maa$_1$ QP
"Did John come here?"
A: *maa*$_1$
maa$_1$
"Yes, he did."

I hypothesize that the structure of (iia) is as in (iib).

(ii) a *cɔɔn*$_1$ *tad*$_3$ *phom*$_5$ *maa*$_1$
John cut hair maa$_1$
"John came having a hair cut."

b



As nominalization seems to be essential in analyzing this case, I will leave a more detailed analysis for future research.

(130) *pay*$_1$ for "too"

Q: *cɔɔn*$_1$ *ʔuuan*$_3$ ***pay***$_1$ *rɨɨ*$_5$
John fat pay$_1$ QP
"Is John too fat."

A: a *ʔuuan*$_3$
fat

"Yes, he is."

b **pay*$_1$
pay$_1$

Similarly, *pay*$_1$, when it is used for expressing excessive degree, cannot be a predicator either. Now let's look at the behavior of *maa*$_1$ which is used for expressing the Perfect.

(131) *maa*$_1$ for the Perfect

Q: *cɔɔn*$_1$ *chɨɨa*$_3$ *nay*$_1$ *pra*$_4$*caw*$_3$ ***maa***$_1$ *pen*$_1$ *wee*$_1$*laa*$_1$ *sɔɔŋ*$_3$ *pii*$_1$ *rɨɨ*$_5$
John believe in God maa$_1$ be time two years QP
"Has John believed in God for two years?"

A: a *chɨɨa*$_3$
believe

"Yes, he has."

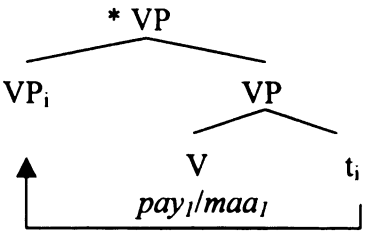
b **maa*$_1$
maa$_1$

The same goes for *maa*$_1$. *Maa*$_1$ which is used for expressing universal Perfect cannot be a predicator either. So, the position of *maa*$_1$ when it is used for expressing universal Perfect cannot be a head situated above VP.

On the basis of the predicator test, therefore, it does not seem that the position of *pay*$_1$/*maa*$_1$ when playing the role of event modifiers is a head situated above VP. More precisely, it is unlikely that *pay*$_1$/*maa*$_1$ are pre-verbally generated, and that the word order

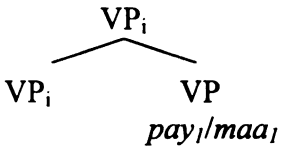
is derived by raising VP to some position higher than *pay$_1$/maa$_1$*, as demonstrated in (132), as this would allow them to be a predicator.

(132)



It is then arguable that *pay$_1$/maa$_1$*, when used as event modifiers, adjoins to the right of a phrase, possibly VP, as schematically represented in (133).

(133)



So, *pay$_1$/maa$_1$* when modifying another event, rather than being heads taking VP as their complement, *pay$_1$/maa$_1$* adjoin to a phrase, possibly a VP.

6.2.3 *Pay$_1$/ maa$_1$* relative to other aspectual markers

Concerning the co-occurrence of *pay$_1$/ maa$_1$* with other aspectual markers, neither *pay$_1$* for the continuative nor *maa$_1$* for the universal Perfect can co-occur with *yuu$_2$*. This is illustrated in (134) and (135), respectively.

(134) a **thɨŋ$_5$ tho$_1$ra$_1$sab$_2$ daŋ$_1$ cɔɔn$_1$ kɔɔ$_3$ ʔaan$_2$ naŋ$_5$sɨ$_5$ **pay$_1$ yuu$_2$***
although telephone ring John COMM read book pay$_1$ yuu$_2$
John is continuing to read, although the telephone rang.

b **thɨŋ$_5$ tho$_1$ra$_1$sab$_2$ daŋ$_1$ cɔɔn$_1$ kɔɔ$_3$ ʔaan$_2$ naŋ$_5$sɨ$_5$ **yuu$_2$ pay$_1$***
although telephone ring John COMM read book yuu$_2$ pay$_1$
John is continuing to read, although the telephone rang."

(135) a *cɔɔn$_1$ chɨɨa$_3$ nay$_1$ pra$_4$caw$_3$ **maa$_1$** **yuu$_2$** pen$_1$ wee$_1$laa$_1$ sɔɔŋ$_3$ pii$_1$
John believe in God maa$_1$ yuu$_2$ be time two years
"John has believed in God for two years."

b *cɔɔn$_1$ chɨɨa$_3$ nay$_1$ pra$_4$caw$_3$ **yuu$_2$** **maa$_1$** pen$_1$ wee$_1$laa$_1$ sɔɔŋ$_3$ pii$_1$
John believe in God yuu$_2$ maa$_1$ be time two years
"John has believed in God for two years."

The explanation has to do with the incompatibility in their meanings. We have seen that while *yuu$_2$* modifies an event as a state, more precisely, a stage-level state, in which no transitions are viewed, *pay$_1$/maa$_1$* impose continuous change with direction on an event. That *yuu$_2$* and *pay$_1$/maa$_1$* cannot co-occur is, therefore, not unpredicted.

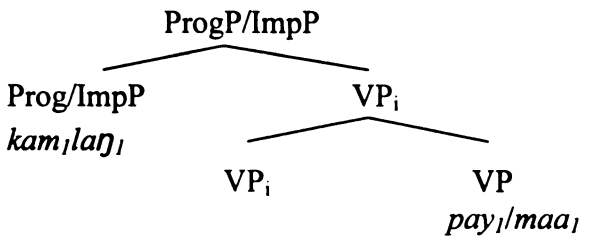
As predicted, *pay$_1$* for the continuation and *maa$_1$* for the universal Perfect can co-occur with *kam$_1$laŋ$_1$*, as illustrated in (136).

(136) a cɔɔn$_1$ **kam$_1$laŋ$_1$** ʔaan$_2$ naŋ$_5$sɨɨ$_5$ **pay$_1$** yaaŋ$_2$pləəd$_3$plɨɨan$_1$
John kam$_1$laŋ$_1$ read book pay$_1$ happily
John is happily reading (although he should have stopped reading).

b cɔɔn$_1$ **kam$_1$laŋ$_1$** ʔaan$_2$ naŋ$_5$sɨɨ$_5$ **maa$_1$** pen$_1$ wee$_1$laa$_1$ sɔɔŋ$_3$ chuua$_3$moŋ$_1$
John kam$_1$laŋ$_1$ read book maa$_1$ be time two hours
"John has been reading for two hours."

As *kam$_1$laŋ$_1$* describes an event as a process in which successive transitions are viewed, it is compatible with *pay$_1$* and *maa$_1$*. Given these interpretations, both *pay$_1$* and *maa$_1$* seem to be under the scope of *kam$_1$laŋ$_1$*. I have assumed that *kam$_1$laŋ$_1$* is the head of the ProgP/ImpP, and, therefore, *pay$_1$/ maa$_1$* in (136) have to adjoin to a phrase lower than the ProgP/ImpP, possibly a VP. (136a) and (136b), therefore, can schematically be represented as (137).

(137)



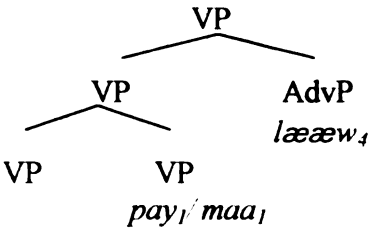
Lææw4 is another aspectual marker. Basically, *lææw4* marks the left boundary (i.e., the beginning) or the right boundary (i.e., the end) of an event and it adjoins to a VP. (I will provide an analysis of *lææw4* in chapter 4). *Pay1/ maa1* seem to be lower than *lææw4*. Consider (138).

(138) a *cɔɔn1 ʔaan2 naŋ5sɨ̌5 lem nan* ***pay1 lææw4***
John read book CL that pay1 lææw4
John has read that book (although when reading he should have stopped before finishing it.)

b *cɔɔn1 chɨ̌a3 nay1 pra4caw3* ***maa1*** *pen1 wee1laa1 sɔɔŋ3 pii1* ***lææw4***
John believe in God maa1 be time two years lææw4
John has believed in God for the last two years (Before the last two years he didn't believe in God.)"

In (138a) the end or the right boundary of the event of John "continuously" reading, is marked. And in (138b), the beginning or the left boundary of the state of John believing in God is marked. Given these interpretations, *pay1/ maa1* seems to be under the scope of *lææw4*, or they adjoin lower than *lææw4*, as schematically represented in (139).

(139)



So relative to other aspectual markers, pay_1 and maa_1 are lower than $kam_1/laŋ_1$ and $lææw_4$.

6.2.4 The unified syntax of pay_1/maa_1

From what we have seen it is reasonable to think that pay_1/ maa_1 are verbal elements occupying a position within the VP.

As discussed in section (4.2.4) of chapter 2, not totally different from the idea that verbs such as *break* should be treated as lexical items which are unspecified for headedness, pay_1/maa_1 can be considered to be lexical items which are also unspecified for headedness.

Again, for the cases of verbs like *break*, the properties of being unspecified for headedness are exhibited in the subeventual structure. If e_1 is headed, PROCESS is part of the core event description, and if e_2 is headed RESULT STATE is part of the core event description. For the case of pay_1/maa_1, however, headedness is again used with respect to whether it takes a complement or not. If pay_1/maa_1 take a complement, then it is part of the core event being described. If pay_1/maa_1 are not the head of the event being composed, it does not take a complement, and it is an adjunct used intransitively.

In conclusion, not totally different from Pustejovsky's (1995) proposal on event headedness, stating the unified syntax of *pay$_1$/maa$_1$*, *pay$_1$/maa$_1$* are not specified for headedness in the lexicon, and so it can either be the head of the main VP or an adjoining VP.

7. Conclusion of the chapter

Having investigated the semantic properties of *pay$_1$* and *maa$_1$*, it is clear that *pay$_1$* and *maa$_1$* each are associated with only one property. More specifically, *pay$_1$* adds an antideictic center value or the value of not being a contextually determined point, to axes which may range from a space axis, a time axis, and a property axis. *Maa$_1$* adds a deictic center value to axes which may range from a space axis, a time axis and a situation axis.

Regarding the syntax of *pay$_1$* and *maa$_1$*, the investigation for the syntax of *pay$_1$* and *maa$_1$* make it clear that *pay$_1$* and *maa$_1$* are lexical items which are unspecified for headedness, and so, they can be the head of a main VP or the head of an adjoining VP. When they are the head of the main VP, they take NP arguments, and when they are the head of an adjoining VP, they modify an event type.

Moreover, the analysis of *maa$_1$* shows that with respect to the Perfect, due to the inherent property of *maa$_1$*, the Perfect described by *maa$_1$* is the universal Perfect.

To conclude, I have shown that rather than postulating multiple lexical entries for multiple related senses of these words, there are unified representations of *pay$_1$* and *maa$_1$*. The analysis of *pay$_1$* and *maa$_1$* therefore, provides empirical support for the idea that logically related senses do not necessarily correspond to different lexical items.

CHAPTER 4

A unified analysis of *lææw$_4$*

1. Introduction

In this chapter I provide an analysis for *lææw$_4$*. *Lææw$_4$* seems to have multiple functions, as it may function as a particle indicating completion of an action (Uppakitsinlapasan, 1964) and also as a conjunction denoting a sequence of events (Phanthumetha, 1982). This is illustrated in (1).

(1) a *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ **lææw$_4$***
John go New York lææw$_4$
"John has gone to New York."

b *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ **lææw$_4$** pay$_1$ bɔɔs$_4$ tan$_2$*
John go New York lææw$_4$ go Boston
"John went to New York and then went to Boston."

In (1a) *lææw$_4$* indicates that the event of John going to NewYork is complete. In (1b) *lææw$_4$* indicates that the event of John going to Boston occurs after the event of John going to New York. Therefore, *lææw$_4$* behaves in (1a) like an aspectual marker and in (1b) like a conjunction.

The case of *lææw$_4$* is different from the case of *yuu$_2$*, *pay$_1$*, and *maa$_1$*. *Yuu$_2$*, *pay$_1$*, and *maa$_1$* form a natural class because they can all behave like regular verbs and have cross-linguistic counterparts. The case of *lææw$_4$* is unique because *lææw$_4$* is never a

main verb and cross-linguistically behaves more like an adverbial and preposition that can be adjunct with and without complements.[61]

Since it seems that *lææw*$_4$ can play a role as an aspectual marker and as a conjunction, the question is whether this is a case of homophony or not. If there is only one lexical *lææw*$_4$, we need to explain why it is it possible for it to have the functions of both an aspectual marker and a conjunction. In this chapter, by investigating the semantics and syntax of *lææw*$_4$, I provide an explanation for how the lexical item *lææw*$_4$ can have these two functions without the need to postulate two different lexical entries. *Lææw*$_4$, unlike *yuu*$_2$, *pay*$_1$, and *maa*$_1$, is never a main verb and, therefore, we will proceed in slightly different way from the previous chapter.

I will show that the *lææw*$_4$ that functions as an aspectual marker and the *lææw*$_4$ that functions as a conjunction have the same meaning and occupy the same structural position. Since they have both the same meaning and the same structural position, I argue that there is only one lexical entry for *lææw*$_4$. This again is different from the previous cases where *yuu*$_2$, *pay*$_1$, and *maa*$_1$ showed up either as main verbs or adjuncts to main verbs. Here it will always be an adjunct. However, like the other cases we have seen, we will have transitive and intransitive uses of this elements.

This chapter consists of 4 sections. In section (2), I summarize earlier analyses of *lææw*$_4$. In section (3) by investigating the semantics and syntax of *lææw*$_4$, I propose an

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[61] In English, "before" can be considered to be an element which behaves like an adverbial and a preposition that can be adjunct with and without complements, as illustrated in (i).

(i) a John did this **before**
b John did this **before** Bill did

explanation for *lææw*$_4$ as a lexical item with two apparently different functions. Section (4) is the conclusion of the chapter.

2. Previous analyses of *lææw*$_4$

In this section, I provide a summary of previous studies on Thai that include an analysis of *lææw*$_4$. The studies include Uppakitsinlapasan (1964), Ratchabandittayasathan (1982), Boonyapatipark (1983), Sookgasem (1990) and Visonyanggoon (2000). As we will see *lææw*$_4$ has been glossed in different ways. In this section I will use each author's own glosses.

2.1 Uppakitsinlapasarn (1964)

Uppakitsinlapasarn (1964) considered *lææw*$_4$ to be either a main verb meaning "to be finished" or an auxiliary verb denoting the completion of an action. This is illustrated in the following examples.

(2) a *ŋan*$_1$ *khooŋ*$_5$ *chan*$_5$ ***lææw***$_4$ *tæ*$_2$ *wan*$_1$
job of I finish since early morning
"My job has been finished since this morning."

(Uppakitsinlapasan, 1962 p. 86)

b *khaw*$_5$ *tham*$_1$ ***lææw***$_4$
He do AUX
"He has done it."

(Uppakitsinlapasan, 1962 p. 86)

In (2a), *lææw*$_4$ is a main verb and in (2b), *lææw*$_4$ is an auxiliary verb indicating that the action is complete.

In accounting for the *lææw*$_4$ that occurs in a position between two phrases, Uppakitsinlapasan claims that *lææw*$_4$ that occurs in a position between two phrases is an auxiliary verb that is required by conjunction *kɔɔ*$_3$ "afterwards," as in (3).

(3) *khaw*$_5$ *kin*$_1$ *khaaw*$_3$ ***lææw***$_4$ *khaw*$_5$ *kɔɔ*$_3$ *nɔɔn*$_1$
he eat rice AUX he afterwards sleep
"He ate rice and then went to bed."

Under Uppakitsinlapasan's analysis, *kɔɔ*$_3$ "afterwards" is a conjunction that requires the occurrence of *lææw*$_4$ in the first conjunct. According to him, *lææw*$_4$ indicates that the event denoted by the second conjunct temporally follows the first.

Considering *lææw*$_4$ to be a main verb for "to be finished" seems to be problematic in a certain way. *Lææw*$_4$ seems to lack an important property of verbs in Thai. That is, while verbs can undergo negation, *lææw*$_4$ cannot, as shown in (4).

(4) **ŋan*$_1$ *khooŋ*$_5$ *chan*$_5$ *may*$_3$ ***lææw***$_4$
Job of I not finish
"My job has not been finished."

Also there seems to be a problem with the claim that *lææw*$_4$ is an auxiliary verb required by a conjunction. In sentence (3), *kɔɔ*$_3$ "afterwards" is optional. Without *kɔɔ*$_3$ "afterwards," the two phrases are still conjoined, and the event denoted by the second conjunct is understood as temporally following the first, as shown in (5).

(5) *khaw$_5$ kin$_1$ khaaw$_3$* ***lææw$_4$*** *khaw$_5$ nɔɔn$_1$*
He eat rice AUX he sleep
"He ate rice and then he went to bed."

It seems that *lææw$_4$* not only plays the role of an auxiliary but also of a conjunction conjoining two phrases by indicating that the event denoted by the second phrase is temporally following the first.

2.2 Ratchabandittayasathan (1982)

Differing from Uppakitsinlapasarn (1964), Ratchabandittayasathan (1982) categorizes *lææw$_4$* as an adverb denoting that an action has ended or that at a later time another action began. This can be illustrated in the examples below.

(6) a *cɔɔn$_1$ khiian$_5$ cot$_2$may$_5$* ***lææw$_4$***
John write letter completely
"John has written a letter."

b *cɔɔn$_1$ khiian$_5$ cot$_2$may$_5$* ***lææw$_4$*** *pay$_1$ pray$_1$sa$_1$nii$_1$*
John write letter at a later time go post office
"John wrote a letter and then went to the post office."

In (6a), *lææw$_4$* modifies the VP *khiian$_5$ cot$_2$may$_5$* "write a letter" by indicating that the event denoted by the VP is complete. In (6b), *lææw$_4$* modifies the VP *pay$_1$ pray$_1$sa$_1$nii$_1$* "go to post office" by indicating that the event denoted by that VP occurs at a later time than the first VP, *khiian$_5$ cot$_2$may$_5$*, "write a letter."

Apparently Ratchabandittayasathan (1982) has realized that *lææw4* has different meanings in different environments or that *lææw4* plays two different roles. However, he does not attempt to connect the different roles.

2.3 Boonyapatipark (1983)

Later studies provide different accounts of the aspectual roles of *lææw4*. Departing from the earlier studies, Boonyapatipark (1983) suggests that *lææw4* not only indicates the completion of an action but also indicates the beginning of an action. Boonyapatipark suggests that " *lææw4* indicates that a crucial amount of some activity has been carried out, a crucial point of a situation has been reached (not necessarily the completion point), i.e., a change to or arrival at a new situation has come about, at the time of reference." (Boonyapatipark 1983 p.158-159 in Bisang 1995 p.650).

Although Boonyapatipark (1983) has realized that *lææw4* has both the property of indicating completion of an action and the property of indicating beginning of a situation, he suggests *lææw4* is "a perfective marker" which seems to be a term that excludes the latter property of *lææw4*.

2.4 Sookgasem (1990)

Sookgasem (1990) considered *lææw*$_4$ to be two separate aspectual words: a word for Perfect and a word for Perfective. Sookgasem shows that when occurring with a stative verb, *lææw*$_4$ indicates Perfect[62] as shown in (7). When it occurs with an eventive verb, it indicates perfective. The differences between the two aspects are illustrated in the examples below.

(7) a *cɔɔn*$_1$ *chop*$_3$ *mææ*$_1$*rii*$_3$ *saam*$_5$ *pii*$_1$ ***lææw***$_4$
John like Mary three year PERF
"John has liked Mary for three years."

b *cɔɔn*$_1$ *pay*$_1$ *haa*$_5$ *mɔɔ*$_5$ ***lææw***$_4$ *miia*$_3$ *wan*$_1$
John go meet doctor PRF yesterday
"John went to see a doctor yesterday."

Under his analysis, in (7a) *lææw*$_4$ occurs with the stative verb *chop*$_3$ "like," and it denotes Perfect meaning by indicating that the state of liking started three years ago and it continues to the time of utterance. In (7b), *lææw*$_4$ occurs with the eventive verb *pay*$_1$ *(haa*$_5$ *mɔɔ*$_5$*)* "go (to see a doctor)," and it denotes perfective meaning by indicating that the event of going to see a doctor has ended.

Implicitly Sookgasem (1990) realizes that *lææw*$_4$ can indicate both the beginning and the end of a situation. However, under his analysis, the *lææw*$_4$ that indicates the

[62] As the definition of perfective and perfect is not provided in Boonyapatipark (1983) or Sookgasem (1990), I again assume here the definition of perfective and perfect given by Comrie (1976). Based on Comrie (1976), perfective is to be distinguished from imperfective. While perfective refers to a situation as a single whole, imperfective refers to the internal structure of a situation. (p.52)

beginning of a situation is considered to be a Perfect marker, and the *lææw*$_4$ that indicates the end of a situation is considered to be a perfective marker.

2.5 Visonyanggoon (2000)

Visonyanggoon (2000) has pointed out that *lææw*$_4$ can convey several meanings, as illustrated in (8).

(8) *khaw*$_5$ *kin*$_1$ *ʔæp*$_4$*pəən*$_3$ ***lææw***$_4$
He eat apple *lææw*$_4$
i)"He ate the apples."
ii)"He has eaten the apples."
iii)"He has started eating the apples."

(Visonyanggoon 2000, p. 217)

The sentence (8) has three readings. In the first reading, *lææw*$_4$ indicates the termination of the event of eating the apples. In the second reading, *lææw*$_4$ indicates the result state of eating the apples; that is, the agent is now full. In the third reading, *lææw*$_4$ indicates the beginning of the event of eating the apples. So *lææw*$_4$ is used as a particle for Perfective, Perfect, and inchoative meanings.

So it seems that while the Perfect and Perfective meanings of *lææw*$_4$ have been widely discussed, the inchoative meaning of *lææw*$_4$ had not been explicitly discussed until Visonyanggoon (2000).

However, by focusing on the aspectual marker role of *lææw*$_4$, the studies by Boonyapatipark (1983), Sookgasem (1990) and Visonyanggoon (2000) seem to put aside

lææw$_4$ as a conjunction and so leave the question of whether *lææw*$_4$ that plays a role of an aspectual marker and *lææw*$_4$ that plays the role of a conjunction are the same lexical item unanswered.

3. The analysis of *lææw*$_4$

In this section I argue that there is only one lexical entry for *lææw*$_4$. In (3.1), I start the section with some phenomena that would be hard to explain under the assumption that there are two separate lexical items, in particular, the *lææw*$_4$ that plays the role of an aspectual marker and the *lææw*$_4$ that plays the role of a conjunction. Subsequently, in (3.2) and (3.3), I investigate the semantic properties and the syntactic position of *lææw*$_4$ respectively. It will be apparent that the *lææw*$_4$ that plays the role of an aspectual marker and the *lææw*$_4$ that plays the role of a conjunction have an identical meaning and occupy an identical position, suggesting that they are the same lexical item. Finally in (3.4), as evidence for this analysis, I provide an explanation for puzzles which would otherwise be hard to explain.

3.1 Evidence against *lææw*$_4$ for aspect and *lææw*$_4$ for conjunction as two separate words

Three phenomena would be hard to explain under the assumption that there are two independent lexical items: *lææw*$_4$ as an aspectual marker and *lææw*$_4$ as a conjunction.

The first problem concerns the co-occurrence of an aspectual marker and a conjunction. While aspectual markers *khəəy*$_1$, *kam*$_1$*laŋ*$_1$, and *yuu*$_2$ can naturally occur with *lææw*$_4$ as a conjunction, *lææw*$_4$ as an aspectual marker cannot, as illustrated in (9).

(9) a *cɔɔn*$_1$ ***khəəy***$_1$ *pay*$_1$ *rooŋ*$_1$ *pha*$_1$ *yaa*$_1$ *baan*$_1$ ***lææw***$_4$ *pay*$_1$ *pray*$_1$ *sa*$_1$ *nii*$_1$
John EXP go hospital lææw$_4$ go post office
"John had the experience of going to a hospital and then going to a post office."

b *cɔɔn*$_1$ ***kam***$_1$***laŋ***$_1$ *kin*$_1$ *ʔæp*$_4$ *pəən*$_3$ ***lææw***$_4$ *thoo*$_1$*ra*$_1$*sap*$_1$ *daŋ*$_1$
John PROC eat apple lææw$_4$ telephone ring
"John was eating an apple and then the telephone rang."

c *cɔɔn*$_1$ *kin*$_1$ *ʔæp*$_4$ *pəən*$_3$ ***yuu***$_2$ ***lææw***$_4$ *thoo*$_1$*ra*$_1$*sap*$_1$ *daŋ*$_1$
John eat apple STATE lææw$_4$ telephone ring
"John is eating an apple and then the telephone rang."

d * *cɔɔn*$_1$ *pay*$_1$ *rooŋ*$_1$ *pha*$_1$ *ya*$_1$ *ban*$_1$ ***lææw***$_4$ ***lææw***$_4$ *pay*$_1$ *pray*$_1$ *sa*$_1$ *nii*$_1$
John go hospital lææw$_4$ lææw$_4$ go post office
"John went to a hospital and then went to a post office."

e *cɔɔn$_1$ pay$_1$ roŋ$_1$ pha$_1$ ya$_1$ ban$_1$ **lææw$_4$** mii$_3$ wan$_1$ **lææw$_4$** pay$_1$
John go hospital lææw$_4$ yesterday lææw$_4$ go

pray$_1$ sa$_1$ nii$_1$
a post-office."

"Yesterday John went to a hospital and then went to a post-office."

In (9a) and (9b) the aspectual particles *khəəy$_1$* and *kam$_1$laŋ$_1$* which appear on the left of the VP can occur with ***lææw$_4$***. Similarly, in (9c) the aspectual particle *yuu$_2$*, which appear on the right of the VP, can occur with ***lææw$_4$***. However, in (9d) the particle ***lææw$_4$*** cannot occur with ***lææw$_4$***, as the sentence becomes ungrammatical. (9e) shows that the ungrammaticality of (9d) cannot be attributed to a simple phonetic fact, as the ungrammaticality remains even when the ***lææw$_4$*** showing aspect and the ***lææw$_4$*** showing conjunction are not adjacent. Under the assumption that ***lææw$_4$*** as an aspectual marker and ***lææw$_4$*** as a conjunction are two independent words, it is hard to explain why the two independent words which perform independent functions cannot co-occur.

The second phenomenon involves the position of aspecual ***lææw$_4$*** and a conjunction ***lææẇ$_4$*** with respect to epistemic modals, which express the speaker's degree of confidence about a proposition (Cinque 1999, p. 86). For example, *taŋ$_3$* is an epistemic modal for certainty and *ʔaat$_2$ ca$_2$* is an epistemic modal for probability. Both ***lææw$_4$*** as an aspectual marker and as a conjunction seem to be in a position hierarchically lower than epistemic modals. This is illustrated in (10) and (11).

(10) a *cɔɔn$_1$* ***toŋ$_3$*** *pay$_1$ niw$_1$ yɔɔk$_2$* ***lææw$_4$***
John must go New York *lææw$_4$*.
"John must have gone to New York"

b *cɔɔn$_1$* ***ʔaat$_2$ ca$_2$*** *pay$_1$ niw$_1$ yɔɔk$_2$* ***lææw$_4$***
John probably go New York *lææw$_4$*.
"John probably has gone to New York"

(11) a *cɔɔn$_1$* ***toŋ$_3$*** *pay$_1$ niw$_1$ yɔɔk$_2$* ***lææw$_4$*** *ha$_5$ ŋan$_1$ day$_5$*
John must go New York *lææw$_4$* get job can
"John must go to New York and then must be able to get a job."

b *cɔɔn$_1$* ***ʔaat$_2$ ca$_2$*** *pay$_1$ niw$_1$ yɔɔk$_2$* ***lææw$_4$*** *ha$_5$ ŋan$_1$ day$_5$*
John probably go New York *lææw$_4$* get job can
"John probably will go to New York and then he probably will be able to get a job."

From the data in (10) and (11), it seems clear that the epistemic modals take scope over the aspectual *lææw$_4$* and the conjunction *lææw$_4$* respectively, suggesting that both the aspectual *lææw$_4$* and the conjunction *lææw$_4$* are in a syntactic position below epistemic modals. Assuming that aspectual *lææw$_4$* and conjunction *lææw$_4$* are two independent words, why they both should have to be under epistemic modal has to be treated as a mere coincidence.

The third phenomenon concerns the meaning components of *lææw$_4$*. Both aspectual *lææw$_4$* and conjunction *lææw$_4$* seem to share a certain meaning component; both indicate the end and the beginning of situations. This is demonstrated in (12).

(12) a *cɔɔn$_1$ kin$_1$ ʔep$_4$pəən$_3$ **lææw$_4$***
John eat apple *lææw$_4$*
"John has eaten the apples."[63]

b *cɔɔn$_1$ kin$_1$ ʔep$_4$pəən$_3$ **lææw$_4$** dɨɨm$_2$ nam$_4$ som$_3$*
John eat apple *lææw$_4$* drink orange juice
"John ate the apples and then drank orange juice."

In (12a), the aspectual *lææw$_4$* tells us that the situation of "John eating the apples" has ended and at the same time implies the subsequent situation, which is that John is not eating the apples. In (12b), the conjunction *lææw$_4$* indicates that the situation of "John eating the apples" ended and that the situation of "John drinking orange juice" subsequently started. The aspectual *lææw$_4$* and the conjunction *lææw$_4$* share the property of denoting the beginning and the end of situations. Again, under the assumption that the aspectual *lææw$_4$* and the conjunction *lææw$_4$* are two independent words, this must be unfavorably attributed to a coincidence.

In conclusion these three phenomena seem to be problematic under the hypothesis that there are two separate lexical entries: aspectual *lææw$_4$* and conjunction *lææw$_4$*. In section (3.4), I will provide an account for the three puzzles above. More precisely, I will provide an explanation for the ungrammaticality of sentence (13a) which illustrates the unacceptability of *lææw$_4$* modifying the first clause and the conjunction. I will also provide an explanation for the grammaticality of sentence (13b), where a sequence reading is available, and the grammaticality of sentence (13c), where a sequence reading is not available.

[63] In addition to the reading "John has eaten the apples," this sentence has the reading "John has started eating the apples." This will be discussed when investigating the interaction of *lææw$_4$* with different types of verbs in section (3.2.1.1).

(13) a * *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ **lææw$_4$ lææw$_4$** pay$_1$ bɔɔs$_4$ tan$_2$*
John go New York lææw$_4$ lææw$_4$ go Boston
"John went to New York and then went to Boston."

b *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ **lææw$_4$** pay$_1$ bɔɔs$_4$tan$_3$*
John go New York lææw$_4$ go Boston
"John went to New York and then went to Boston."

c *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ **lææw$_4$** læ$_4$ pay$_1$ bɔɔs$_4$tan$_3$ **lææw$_4$***
John go New York lææw$_4$ and go Boston lææw$_4$
"John has been to New York and has been to Boston."

3.2 Investigating the semantic properties of *lææw$_4$*

In this section, I investigate the meaning of *lææw$_4$* when it occurs in different environments. In particular, I investigate the role of *lææw$_4$* when it appears to the right of a VP (the role of an aspectual marker) and the role of *lææw$_4$* when it appears between two VPs (the role of a conjunction). It will be apparent that *lææw$_4$* plays these two roles while keeping its meaning constant.

3.2.1 The role of an aspectual marker

I will investigate the role of the aspectual marker *lææw$_4$* by considering the interaction of *lææw$_4$* with different types of verbs including individual-level predicates, which are considered to be aspectualless.

3.2.1.1 The interaction of *lææw$_4$* with different types of verbs

Lææw$_4$ appearing to the right of a VP indicates that the event denoted by the VP has either completed or started, depending on the type of the verb. *Lææw$_4$* occurring with verbs that lack culmination points (i.e., states and activities) indicates that the event/state denoted by the VP has started, as illustrated in (14).

(14) a *cɔɔn$_1$ wiŋ$_3$ **lææw$_4$***
John run *lææw$_4$*
"John has started running."

b *cɔɔn$_1$ chɔɔp$_3$ **mææ$_1$rii$_3$ lææw$_4$***
John like Mary *lææw$_4$*
"John has started to like Mary."

In (14a), *lææw$_4$* indicates that the event of John running has started. Similarly, in (14b) *lææw$_4$* indicates that the state of John liking Mary has started.[64] Assuming that "x" stands for event/state and "⊂ " the beginning, the semantics of (14a) and (14b) can be represented as (15).

(15) **⊂ XXX**

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[64] To say that "John has just run," a lexical item *set$_2$* "finish" will be inserted at the position following the verb *wiŋ$_3$* "run". And to say that "John has stopped liking Mary," a lexical item *ləək$_3$* "stop"will be inserted at the position preceding the verb *chɔɔp$_3$* "like,"as illustrated by the following.

(i) *cɔɔn$_1$ wiŋ$_3$ set$_2$ lææw$_4$*
John run finish *lææw$_4$*
"John has just run."

(ii) *cɔɔn$_1$ ləək$_3$ chɔɔp$_3$ mææ$_1$rii$_3$ lææw$_4$*
John stop like Mary *lææw$_4$*
"John has stopped liking Mary."

However, *lææw*$_4$, in indicating the beginning of an event/state, also implies a previous event/state. In (14a), *lææw*$_4$ also implies the previous event of John not running. Similarly, in (14b), *lææw*$_4$ also implies the previous state of John not liking Mary. Assuming that "¬x" stands for the negation of "x," and "⊃" the end, the semantics of (14a) and (14b) can be represented as (16) where the bold x characters indicate the part that is asserted and the normal characters indicates the part that is implied.[65]

(16) ¬x¬x¬x ⊃⊂ **XXX**

The *lææw*$_4$ that occurs with verbs that have culmination points (accomplishments and achievements) indicates that the event denoted by a VP has either started or been completed.[66] This is illustrated in (17).

(17) a *cɔɔn*$_1$ *kin*$_1$ *ʔep*$_4$*pəən*$_3$ ***lææw***$_4$
John eat apple *lææw*$_4$
i) "John has started eating the apples."
ii) "John has eaten the apples."

[65] It is important to make clear that while the previous contrasting situation is implied, the transition between the two situations is asserted. So in (16), while ¬x¬x¬x is implied ⊃ is asserted.

[66] The behavior of *lææw*$_4$ is not peculiar. The particle *le* in Chinese behaves similarly. *Le* indicates change of state/status (Yang ,1985), as illustrated in (i).

(i) *John chi pingguo le*
John eat apple le
"John has started eating the apples."
"John has eaten the apples."

In the first reading *le* indicate the change from the earlier event of 'not eating the apple' to the present event of 'eating the apple.' In the second reading *le* indicates the change from the earlier event of 'eating the apple' to the present event of 'not eating the apple.'

b *cɔɔn$_1$ cha$_1$na$_1$* ***lææw$_4$***
John win *lææw$_4$*
i) "John has started winning the game."[67]
ii) "John has won the game."

In the first reading of (17a) and (17b), *lææw$_4$* indicates the start of the event, and in the second reading, *lææw$_4$* indicates the end of the event. Therefore, the first reading of (17a) and (17b) can be represented as (18a) and the second readings can be represented as (18b).

(18) a ⊂ **XXX**

b **XXX** ⊃

However, in describing the start of the event, *lææw$_4$* implies a previous event, and in describing the end of the event, *lææw$_4$* implies a subsequent event.

To illustrate, consider (17a). In the first reading, *lææw$_4$* describes the start of the present event and implies a previous event. In particular, *lææw$_4$* describes that the event of "eating the apples" has started and implies a previous event of "not eating the apples." In the second reading, *lææw$_4$* asserts the end of the earlier event and implies the subsequent event. So *lææw$_4$* describes that the event of "eating the apples" has ended and implies the subsequent event of "not eating the apples."

Therefore, the first and second readings of the sentences (17a) and (17b) can be represented more precisely as (19a) and (19b), respectively, where the bold x characters

[67] This reading seems to be possible in the situational context that John was playing so well that apparently he would be the winner of the game.

indicate the part that is asserted and the normal characters indicates the part that is implied.[68]

(19) a ¬x¬x¬x ⊃⊂ **XXX**

b **XXX** ⊃⊂ ¬x¬x¬x

From the representations in (16) and (19), it seems clear that *lææw₄* marks the beginning or the end of situations or the boundaries between situations. As situations are located on a time line, the assumption for the role of *lææw₄* is that *lææw₄* creates temporal boundaries. More precisely, *lææw₄* introduces a boundary that coincides with a boundary of the event described by the VP. Whether the left or the right boundary will be picked depends on the kind of eventualities denoted by the VP. [69]

3.2.1.2 The interaction of *lææw₄* with individual-level predicates

It is the interaction of *lææw₄* with individual-level predicates that supports the assumption that *lææw₄* marks a boundary. As discussed in chapter 2, Carlson (1977)

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[68] Again, it is important to make clear that in (19a), while the previous contrasting situation is implied, the transition between the two situations is asserted. And in (19b), while the subsequent situation is implied, the transition between the two situations is asserted.

[69] The role marking a boundary is similar to English "suddenly."

i) a Mary ran.
b **Suddenly** Mary ran.

ii) a Mary was in the hallway.
b **Suddenly** Mary was in the hallway.

In (ia), no boundary is marked but in (ib), the left boundary is marked. Similarly, in (iia), no boundary is marked, but in (iib) the left boundary is marked.

distinguishes between two types of predicates, state-level predicates and individual-level predicates. Stage-level predicates refer to temporal states such as "being depressed" and "sitting on the floor." Individual-level predicates refer to permanent states such as "being an American" and "having brown eyes."

Crucially while the permanent state reading is available in (20), it is not available in (21), where individual-level predicates occur with *lææw*$_4$.

(20) a *cɔɔn*$_1$ *pen*$_1$ *khon*$_1$ *ʔa*$_2$ *me*$_1$ *ri*$_4$ *khan*$_1$
John be person American
"John is an American".

b *mææ*$_1$*rii*$_3$ *mii*$_1$ *taa*$_1$ *sii*$_5$ *nam*$_4$ *tan*$_1$
Mary have eyes color brown
"Mary has brown eyes"

(21) a *cɔɔn*$_1$ *pen*$_1$ *khon*$_1$ *ʔa*$_2$ *me*$_1$ *ri*$_4$ *khan*$_1$ ***lææw***$_4$
John be person American lææw$_4$
"John has become an American (since he received American citizenship.)"

b *mææ*$_1$*rii*$_3$ *mii*$_1$ *taa*$_1$ *sii*$_5$ *nam*$_4$ *tan*$_1$ ***lææw***$_4$
Mary have eyes color brown lææw$_4$
"Mary's eyes have become brown (since she started wearing brown contact lenses)."

While the reading of permanent state is available in (20), it is not available in (21). In (21), *lææw*$_4$ forces the reading of a temporal state by indicating a change of state. In (21a), *lææw*$_4$ indicates a change from the state of not being an American to the state being an American. In (21b), *lææw*$_4$ is equated with the change from a state of not having brown eyes to a state of having brown eyes. By indicating changes, *lææw*$_4$ marks the end and the beginning of situations, confirming that *lææw*$_4$ has the property of creating temporal boundaries.

In conclusion, it seems clear that the role of *lææw*$_4$, which is consistent in all occurrences of *lææw*$_4$, is to mark the beginning or the end of a situation. Where there is none in the predicate, it coerces the event into an event with a boundary.

3.2.2 The role of a conjunction

In this section, I begin an investigation of the role of *lææw*$_4$ as a conjunction in a negative sentence. Then, I investigate the role of *lææw*$_4$ by considering its interaction with stative and activity verbs. Finally I investigate its interaction with individual-level predicates.

3.2.2.1 Negation facts

As shown in (1b), when *lææw*$_4$ occurs at a position between two phrases, it seems to play the role of a conjunction,conjoining the two phrases. A crucial piece of evidence supporting this role of *lææw*$_4$ can be seen in a negative sentence.

Generally the form for negation in Thai is [*may*$_3$ (*day*$_3$) + VP].[70] This is illustrated in (22).

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[70] With respect to the difference between *may*$_3$ and *may*$_3$ *day*$_3$, Ekniyom (1976) claims that *may*$_3$ denotes irrealis negation whereas *may*$_3$ *day*$_3$, realis, as illustrated in the examples below.

(i) a *khaw*$_5$ ***may***$_3$ *pen*$_1$ *khruu*$_1$ *nææ*$_3$ *nææ*$_3$
he not be teacher certainly
"He certainly will not be a teacher."

b *khaw*$_5$ ***may***$_3$ ***day***$_3$ *pen*$_1$ *khruu*$_1$ *nææ*$_3$ *nææ*$_3$
He not be teacher certainly
"He certainly is/was not a teacher."

(22) *cɔɔn$_1$ may$_3$ day$_3$ pay$_1$ niw$_1$ yɔɔk$_2$*
John not get go New York
"John did not go to New York."

In (22), any piece can be focused and denied, as (22) can be continued with any of the sentences in (23).

(23) a ***mææ$_1$rii$_3$*** *pay$_1$ niw$_1$ yɔɔk$_2$*
Mary go New York
"**Mary** went to New York."

b *cɔɔn$_1$ phəŋ$_3$* ***klap$_2$ chaak$_2$*** *niw$_1$ yɔɔk$_2$*
John just **back from** New York
"John just **came back from** New York"

c *cɔɔn$_1$ day$_3$ pay$_1$* ***paa$_1$riit$_3$***
Johh get go **Paris**
"John went to **Paris**."

If continued by (23a), the target of the negation in (22) must be *cɔɔn$_1$* "John." If continued by (23b), the target of the negation in (22) must be *pay$_1$* "go." And if continued by (23c), the target of the negation in (22) must be *niw$_1$ yɔɔk$_2$* "New York."

Now consider a negative version of a sentence in which *lææw$_4$* plays a role of a conjunction.

(24) *cɔɔn$_1$ may$_3$ day$_3$ riian$_1$jop$_2$ lææw$_4$ tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$*
John not get graduate lææw$_4$ work for government
"John didn't graduate and then work for the government."

Sentence (24) can be continued with any of the sentences in (25),

(25) a ***biw$_1$*** *riian$_1$jop$_2$ lææw$_4$ tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$*
Bill graduate lææw$_4$ work for government
"**Bill** graduated and then worked for the government."

b *cɔɔn$_1$* ***pit$_2$*** ***ran$_4$*** *lææw$_4$ tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$*
John **close restaurant** lææw$_4$ worked for government.
John **closed the restaurant** and then work for the government.

c *cɔɔn$_1$ riian$_1$jop$_2$ lææw$_4$* ***pɵɵd$_2$ ran$_4$ ʔaa$_1$haan$_5$***
John graduate lææw$_4$ **open restaurant**
"John graduated and then **opened a restaurant**."

If continued by (25a), what is focused and denied in (24) has to be the NP subject *cɔɔn$_1$* "John." If continued by (25b), what is focused and denied in (24) has to be the first VP *riian$_1$jop$_2$* "graduate." And if continued by (25c), what is focused and denied in (24) has to be the second VP *tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$*"work for government."

What is crucial is that in addition to the sentences in (25), (24) can be continued by any of the sentences in (26) as well.

(26) a *cɔɔn$_1$ tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$* ***nay$_1$ kha$_2$na$_2$ thii$_3$*** *khaw$_5$ kam$_1$laŋ$_1$*
John work for government **in time that** he PROCESS

riian$_1$jop$_2$
graduate

"He worked for the government **at the same time** that he was graduating."

b *cɔɔn$_1$ tham$_1$ŋan$_1$ hay$_3$ rat$_3$ tha$_1$baan$_1$* ***khɔɔn$_2$*** *khaw$_5$ riian$_1$jop$_2$*
John work for government **before** he graduate
"John worked for the government **before** he graduated."

In (26a) and (26b) what is focused and negated is the ordering of the two events. Therefore, there must be a word which orders the two events in such a way that the second event starts after the first event ends in (24). Obviously, that word is *lææw$_4$*.

3.2.2.2 The interaction of *lææw*$_4$ with states and activities

As shown in (1b), repeated as (27) below, *lææw*$_4$ conjoining two phrases indicates a sequence of the events denoted by the two phrases. More precisely, *lææw*$_4$ seems to require the event denoted by the first conjunct to be completed before the beginning of the event denoted by the second conjunct.

(27) *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ *pay*$_1$ *bɔɔs*$_4$ *tan*$_2$
John go New York lææw$_4$ go Boston
"John went to New York and then went to Boston."

The first piece of evidence supporting this is the behavior of *lææw*$_4$ when the conjoined VPs are state verbs and activity verbs. While accomplishment verbs such as *kin*$_1$ *ʔep*$_4$ *pəən*$_3$ "eat an apple," and achievement verbs such as *cha*$_1$*na*$_4$ "win" have a culmination point, state verbs such as *chɔɔp*$_3$ "like," *ruu*$_4$ "know, "etc. and activity verbs such as *dəən*$_1$ "walk," *wiŋ*$_3$ "run", etc. lack a culmination point.

Crucially, when state verbs and activity verbs are conjoined by *lææw*$_4$, the states and activities denoted by these verbs are ordered. This is illustrated in (28).

(28) a *cɔɔn*$_1$ *chɔɔp*$_3$ *mææ*$_1$*rii*$_3$ ***lææw***$_4$ *chɔɔp*$_3$ *suu*$_1$ *san*$_1$
John like Mary lææw$_4$ like Susan
"John liked Mary and then liked Susan."

b *cɔɔn*$_1$ *dəən*$_1$ ***lææw***$_4$ *wiŋ*$_3$
John walk lææw$_4$ run
"John walked and then ran."

As the two states in (28a) and the two activities in (28b) get ordered, this suggests that *lææw*$_4$ requires the end of the first state or activity before the beginning of the second

state or activity. As the state and activity verbs lack a culmination point, the completion of the first state or activity cannot be attributed to the property of the verbs themselves. So this suggests that it is *lææw*$_4$ that marks the end of the first state or activity.

Lææw$_4$ simultaneously marks the end of the first state or activity and denotes the beginning of the second state or activity, supporting the argument that the role of *lææw*$_4$ is to mark the end and the beginning of situations or to create temporal boundaries.

3.2.3 The unified property of *lææw*$_4$

Having investigated the two roles of *lææw*$_4$, the property of marking a temporal boundary between situations unifies the two roles of *lææw*$_4$. Subsequently, the boundary indicates the end of the earlier situation and the beginning of the subsequent situation, where the subsequent situation starts at the moment the earlier situation ends.

The property of creating a temporal boundary has been associated to phasal adverbials (i.e., *still*, *no longer*, *not yet*, *already*), but also is a notion which has been used and defined in Discourse Representation Theory terms (Kamp and Reyle, 1993) to deal with the Perfect and defined as a relation between times, more specifically, an abutment relation.

According to Kamp and Schiehlen (1998) an important relation between periods is that of "abutment". The definition of abutment is provided below:

"An important relation between periods is that of "abutment": p2 abuts p1 iff (i) p1 is entirely before p2, but a the same time (ii) p1 and p2 "touch", i.e. there is no p3

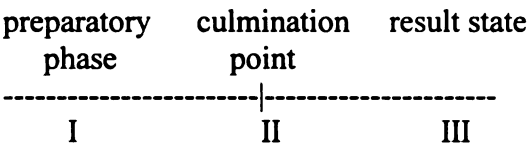
such that p1 is entirely before p3 and p3 and p3 is entirely before p2. (In this case we also say that "p2 abuts p1 on the right" and that "p1 abuts p2 on the left''.)" (p.5)

Kamp and Reyle (1993) have shown that the notion of abutment naturally accounts for temporal phenomena such as the Perfect in English. In particular, the Perfect has the property of abutment, represented as "e⊃⊂s," where "e" and "s" stand for event and state respectively.[71]

To illustrate, Kamp and Reyle (1993) assume binary features: STAT (state) and PERF (Perfect). STAT has the values +STAT and –STAT, and PERF has the values +PERF and -PERF. An expression has the value +STAT when it is used to describe a state and it has the value –STAT when it is used to describe an event.

Based on the schemata shown in (29), an expression has the value +PERF when it refers to a result state and it has the value -PERF when it refers to parts of the schemata other than the result state.

(29)



(Kamp and Reyle 1993, p. 558)

According to Kamp and Reyle, simple past tense sentences like (30a) refer to part I and II, and progressive sentences like (30b) refers to only part I, and Perfect sentences like (30c) refer to part III of the schemata.

[71] Although not all the readings of the perfect in English have been addressed in their analysis, the notion of abutment that is used to account for the Perfect in English seems to be the right way to the analysis of the particle *lææw*$_4$ in Thai, as we will see below.

(30) a John wrote a letter.

b John was writing a letter.

c John has written a letter.

As (30c) refers to result state, it has the value of +PERF. Kamp and Reyle conclude that Perfect describes the result state. In other words, the expression with the feature +PERF will always have the feature +STAT. Consequently they assume that Perfect has the property of describing the beginning of a state, represented as $\subset$s.

Because the result state starts after the termination of an event, concomitantly, Kamp and Reyle (1993) claim that by describing the result state, the Perfect denotes the termination of an event. To support this they show that verbs in the Perfect form indicate the termination of an event regardless of type of verbs. This is illustrated in (31).

(31) a John has met the president.

(Kamp and Reyle 1993, p. 570)

b Mary has lived in Amsterdam.

(Kamp and Reyle 1993, p. 567)

Although the verb "meet" and the verb "live" are considered to be different types of verbs, more precisely, "meet" is considered to be a non-stative verb which has a culmination point, but "live" is considered to be a stative verb which lack a culmination point, due to the Perfect form "has met" and "has lived," both indicate a termination point. In (31a), the termination point is the moment that the event of meeting ends, and in (31b), the termination point is the moment that the state of living in Amsterdam ends. Kamp and Reyle assume that by describing the result state, the Perfect has the property of denoting the end of an eventuality, represented as e$\supset$.

As state (s) starts at the very moment event (e) ends, the relation between e and s is that e and s abut. Kamp and Reyle (1993) have concluded that Perfect has the property of abutment represented as e⊃⊂s.

Given that the input of the Perfect is an eventuality description consisting of a verb and its arguments, the Perfect seems to be an aspectual operator (Kamp and Reyle 1993) that provides as an output an eventuality description plus the temporal point of view of the speaker.

Consistent with Kamp and Reyle (1993)'s proposal, is the property of *lææw*$_4$. More precisely, the notion of abutment, represented as ⊃⊂, accounts for the behavior of *lææw*$_4$ as well, since *lææw*$_4$ marks a temporal boundary between situations. The boundary indicates the end of an earlier situation and the beginning of the subsequent situation, where the subsequent situation starts at the moment the earlier situation ends. So *lææw*$_4$ can be considered to be a lexical item standing for the notion of abutment.

The manifestations of *lææw*$_4$'s property of abutment can be considered in terms of the subcategorization of *lææw*$_4$. To illustrate, *lææw*$_4$ can be subcategorized as both a transitive and an intransitive adverb. As a transitive adverb *lææw*$_4$ takes a VP as its complement. The consequence is that it orders two events, with the second event starting immediately after the first event ends, as in (32).

(32) *cɔɔn*$_1$ *dəən*$_1$ ***lææw***$_4$ *wiŋ*$_3$
John walk lææw$_4$ run
"John walked and then ran."

As an intransitive adverb, *lææw*$_4$ also orders two events. It either picks the beginning of an event and leaves implicit the previous event, or it picks the end of an

event and leaves implicit the subsequent event, as in the first and the second reading of (33).

(33) *cɔɔn$_1$ kin$_1$ ʔep$_4$pəən$_3$ **lææw$_4$***
John eat apple *lææw$_4$*
i) "John has started eating the apples."
ii) "John has eaten the apples."

In conclusion, the fine examination of the properties of *lææw$_4$* reveals that there is a unified semantic representation of *lææw$_4$*. Consistent with the framework proposed by Kamp and Reyle (1993), *lææw$_4$* seems to be a lexical item standing for the relation between periods of time, referred to as abutment.

3.2.4 Coercion

Investigation for the semantics of *lææw$_4$* shows that when it co-occurs with predicates which lack temporal boundaries (i.e., individual level predicates), it forces the creation of a boundary.

So far, it seems that *lææw$_4$* act on the subeventual structure adding a transition. However, in the following I will argue that *lææw$_4$* in addition to denoting an abutment function, performs a semantic operation called "type coercion" as in Pustejovsky (1995), de Swart (1998) and Schmitt (2000).

Assuming Pustejovsky (1995) type coercion is "a semantic operation that converts an argument to the type which is expected by a function, where it would otherwise result in type error." (p.59)

Lææw$_4$ turns predicates which lack temporal boundaries (i.e., individual level predicates) into predicates which have temporal boundaries (i.e., stage-level predicates). An important piece of evidence is the behavior of *lææw*$_4$ in VP conjunctions where the first VP is an individual-level predicate. Consider (34).

(34) a *mææ*$_1$*rii*$_3$ *mii*$_1$ *taa*$_1$ *sii*$_5$ *nam*$_4$ *tan*$_1$ ***læ***$_4$ *day*$_3$ *pen*$_1$ *naŋ*$_1$*bææp*$_2$
Mary have eyes color brown and get be a model
"Mary has brown eyes and she can be a model."

b *mææ*$_1$*rii*$_3$ *mii*$_1$ *taa*$_1$ *sii*$_5$ *nam*$_4$ *tan*$_1$ ***lææw***$_4$ *day*$_3$ *pen*$_1$ *naŋ*$_1$*bææp*$_2$
Mary have eyes color brown lææw$_4$ get be model
"Mary's eyes have become brown (since she started wearing brown contact lenses) and she can be a model."

In (34), if we use the coordinating conjunction *læ*$_4$ "and", when an individual-level predicate appears at the first conjunct, the individual-level reading is available. However, if we use *lææw*$_4$ and an individual-level predicate appears at the first conjunct, the individual reading is not available.

Crucially, it seems that, unlike cases where the situation denoted by the second conjunct starts after the situation denoted by the first conjunct end, in (34b) the state of "having brown eyes" continues, although the state of "being a model" starts. This can be accounted for, if we assume that *lææw*$_4$, in addition to denoting an abutment function, can trigger a semantic operation called type coercion.

That is, in (34b) *lææw*$_4$, first, coerces a situation which lacks a boundary into a situation which has a boundary. More precisely, *lææw*$_4$ coerces the individual level state

of "have brown eyes" which lacks a temporal boundary into an event of "becoming brown" which has a temporal boundary.

Once the predicate is coerced into an event of "becoming brown," the abutment function orders the two situations by marking the end of the first situation and the beginning of he second situation. Here it marks the end of "becoming brown," and the beginning of "being a model" as "being a model" starts after "becoming brown" ends.[72]

The boundary created by the coercion is, therefore, not the abutment function. More precisely, the abutment function operates on the output of the coercion. For these reasons, it can be concluded that in addition to denoting an abutment function, *lææw*$_4$ may trigger a semantic operation of type coercion.

3.2.5 The semantics of *lææw*$_4$ and of phasal adverbials

Now that it is clear that *lææw*$_4$ denotes an abutment relation, we can elucidate the differences between the semantics of *lææw*$_4$ and the semantics of phasal adverbials.

Van der Auwera (1995) points out that there are adverbials that have the property of indicating phases of continuation or the lack of continuation. In English, an adverbial that indicates that a state continues is *still*. An adverbial that indicates that a state does not continue is *no longer*. An adverbial that indicates that a state has come into existence is *already*. And an adverbial that indicates that a state has not come into existence is *not*

[72] As *lææw*$_4$ selects for events which have temporal boundaries, its behavior is similar to a particle indicating perfective in Romance languages. This may explain why previous researchers, based on the fact that *lææw*$_4$ marks the end of a situation, described *lææw*$_4$ as a perfective marker, and based on the fact that *lææw*$_4$ marks the beginning of a situation, described *lææw*$_4$ as a perfect marker (i.e., indicating the continuing present relevance of a past situation).

yet. The semantics of *already*, *no longer*, *still*, and *not yet* are given here as (35a) to (35d), respectively.

(35) a

Time	1	2
State	-	+

b

Time	1	2
State	+	-

c

Time	1	2
State	+	+

d

Time	1	2
State	-	-

In (35a), (35b), (35c) and (35d), time progression from left to right is divisible into two periods. + and – stands for positive and negative state respectively. Time 2 is the time referred to by *already*, *no longer*, *still*, and *not yet*. The state of affairs held at the periods of time before the time picked by the adverbs is, therefore, the component without which what the adverbials denote would not be conceivable. Given that these phasal adverbials assert the state of affairs at Time 2, the state at Time 1 is presupposed.

For the case of *lææw*$_4$, however, we have seen that *lææw*$_4$ denotes an abutment relation (i.e., $\supset\subset$), and as a consequence it may pick the beginning of an event and leaves the previous event implicit or it may pick the end of an event and leaves the subsequent event implicit. This is illustrated in (36).

(36) *cɔɔn$_1$ kin$_1$ ʔep$_4$pəən$_3$* ***lææw$_4$***
John eat apple ***lææw$_4$***
i) "John has started eating the apples."
ii) "John has eaten the apples."

In (36), *lææw$_4$* may pick the beginning of the event John eating the apples and leaves the previous event John not eating the apples implicit, resulting in the first reading. Or *lææw$_4$* may also pick the end of the event John eating the apples and leaves the subsequent event John not eating the apples implicit, resulting in the second reading. The first and the second readings of (36), therefore, can be represented as (37a) and (37b) where xxx stands for the event of John eating the apples and ¬x¬x¬x stands for the event of John not eating the apples.

(37) a ¬x¬x¬x ⊃⊂ **xxx**
IMPLIED **ASSERTED**

b **xxx** ⊃⊂ ¬x¬x¬x
ASSERTED IMPLIED

In the case of *lææw$_4$*, therefore, the abutment relation (i.e., ⊃⊂) between the two events is asserted, and the part that is not asserted (i.e., ¬x¬x¬x) is implied, not presupposed. In summary, *lææw$_4$* denote an abutment function that orders two eventualities.

3.3 Investigating the syntax of *lææw$_4$*

In this section, I investigate the syntactic structures of sentences containing *lææw$_4$*. I first consider the sentences in which *lææw$_4$* plays the role of an aspectual

marker and subsequently I consider the sentences in which *lææw*$_4$ plays the role of a conjunction. I show that the positions of *lææw*$_4$ that plays the role of an aspectual marker and *lææw*$_4$ that plays the role of a conjunction are the same. The facts that they have the same meaning, occupy the same position, and cannot co-occur together suggest that they are the same lexical item.

3.3.1 The position of aspectual *lææw*$_4$

Remember that an element's ability to be a predicator (i.e., a minimal answer for a yes/no question) indicates, partially, its syntactic position. An element that is able to be a predicator is argued to be an element with verbal properties (i.e., modals, aspect markers, and verbs) situated at the highest head.

Now let's look at the behavior of *lææw*$_4$ as an aspectual marker with respect to its ability to be a predicator.

(38) Q: *khaw*$_5$ *ʔaan*$_2$ *naŋ*$_5$*sɨ*$_5$ *lææw*$_4$ *yan*$_1$
he read book already yet
"Has he read yet?"

A: a **ʔaan*$_2$
read

b **lææw*$_4$
lææw$_4$

c *ʔaan*$_2$ *lææw*$_4$
read *lææw*$_4$

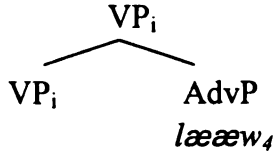
(Visonyanggoon 2000, p.220)

As seen in (38) *lææw*$_4$ cannot be a predicator. Therefore the position of *lææw*$_4$ when it behaves like an aspect marker, is not the head above VP.

Here I propose that an explanation for why *lææw*$_4$ in ( ) cannot be a predicator might have to do with the fact that it does not take a complement. We have seen in section (4.2.3) of chapter 2 that *yuu*$_2$ when taking a complement (i.e., PP) can be a predicator, but when taking no complement cannot be a predicator. I have hypothesized that for a verbal element to be a predicator, it has to take a complement. The fact that *lææw*$_4$ in (38) cannot be a predicator provide a support that the hypothesis is on the right track. As *lææw*$_4$ in (38) does not take a complement, it cannot be a predicator.

If *lææw*$_4$ does not occupy the head of a phrase above the VP, what is the position of *lææw*$_4$, then? Since adverbs have been assumed to occupy adjunct positions (Ernst 1999), I will adopt the hypothesis that the aspectual *lææw*$_4$ is an adjunct adjoining to the right of a VP, as in (39).

(39)



As that hypothesis predicts, *lææw*$_4$ and PP can be switched around, as pointed out by Visonyanggoon (2000).

(40) a *khaw$_5$ kin$_1$ khaw$_3$ thii$_3$ baan$_3$ kap$_2$ phɔɔ$_3$* ***lææw$_4$***
He eat rice at home with father already
"He ate/started to eat with his father at home."

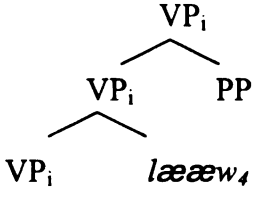
b *khaw$_5$ kin$_1$ khaw$_3$ thii$_3$ baan$_3$* ***lææw$_4$*** *kap$_2$ phɔɔ$_3$*
He eat rice at home already with father
"He ate/started to eat with his father at home."

c *khaw$_5$ kin$_1$ khaw$_3$* ***lææw$_4$*** *thii$_3$ baan$_3$ kap$_2$ phɔɔ$_3$*
He eat rice already at home with father
"He ate/started to eat with his father at home."

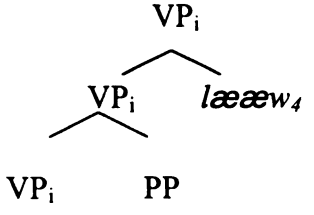
(Visonyanggoon 2000, p.221)

Thii$_3$ baan$_3$ "at home" and *kap$_2$ phɔɔ$_3$* "with father" are PPs. In (40a) to (40c) ***lææw$_4$*** can occur after, between or before these PPs, suggesting that ***lææw$_4$*** adjoins to a VP in the same fashion as a PP, as illustrated in (41).

(41) a

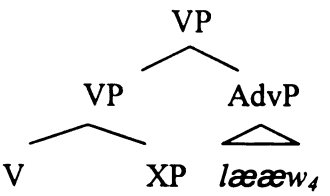


b



Accordingly, the sketchy structure of a sentence containing aspectual ***lææw$_4$*** will look like (42).

(42)



3.3.2 Visonyanggoon's (2000) proposal for the height of aspectual *lææw*$_4$ relative to other aspectual markers

With respect to the height of *lææw*$_4$ relative to other aspectual markers, Visonyanggoon (2000) suggests that the height of *lææw*$_4$ is not always the same. She argues that the scope relation between aspectual markers can indicate their positions with respect to each other. [73]

When co-occurring with *khoey* (EXP), *lææw*$_4$ can either be under the scope of *khəəy*$_1$or take *khəəy*$_1$ in its scope, as in (43a) and (43b), respectively.

(43) a *chan*$_5$ *khəəy*$_1$ *kin*$_1$ *khaw*$_3$ *lææw*$_4$ *tææ*$_2$ *toŋ*$_3$ *ʔɔɔk*$_2$ *pay*$_1$ *kin*$_1$ *khaŋ*$_3$ *nɔk*$_3$ *kap*$_2$
I EXP eat rice already but must exit go eat outside with

phɨɨan$_3$ *ʔiik*$_2$
friend again

"I have an experience of having eaten rice but having to go out eat with my friend again."

---

[73] While *lææw*$_4$ can co-occur with *khəəy*$_1$ (EXPERIENTIAL), *kam*$_1$*aŋ*$_1$ (PROGRESSIVE), and *yuu*$_2$ (IMPERFECTIVE), *lææw*$_4$ cannot co-occur with *yaŋ*$_1$ (CONTINUATIVE) as the meaning of *lææw*$_4$ and *yaŋ*$_1$ (CONTINUATIVE) are incompatible. *Lææw*$_4$ indicates a lack of continuation of a situation but *yaŋ*$_1$ (CONTINUATIVE) indicates a continuation of a situation. (Visonyanggoon, 2000)

(I have eaten rice "today" already but I have to go out with my friend again.)

(Visonyanggoon 2000, p. 218)

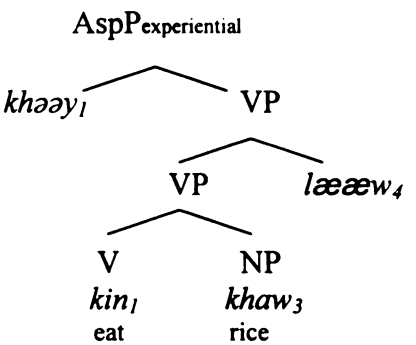
b *chan$_5$ khəəy$_1$ kin$_1$ kop$_2$ lææw$_4$*
I EXP eat frog already
"I have already had the experience of eating frog."

(I have eaten frog once already.)

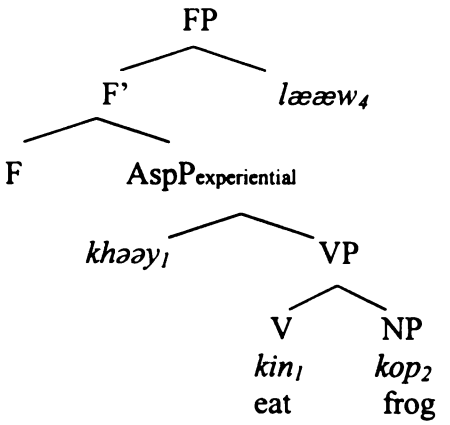
(Visonyanggoon 2000, p. 218)

In (43a), *lææw$_4$* describes the termination of the event of "eating rice". In (43b) *lææw$_4$* describes the beginning of the state of "having an experience." According to Visonyanggoon (2000), in (43a) *lææw$_4$* is under the scope *khəəy$_1$*, and in (43b) *lææw$_4$* takes scope over *khəəy$_1$*. Assuming that *khəəy$_1$* occupies the head position of AspP$_{experiential}$, *lææw$_4$* can be generated either below or above the AspP$_{experiential}$. (43a) and (43b) can be represented by (44) and (45) respectively.

(44)



(45)



According to Visonyanggoon (2000), *lææw*$_4$, when co-occurring with *kam*$_1$*laŋ*$_1$, takes scope over *kam*$_1$*laŋ*$_1$, as illustrated in (46).

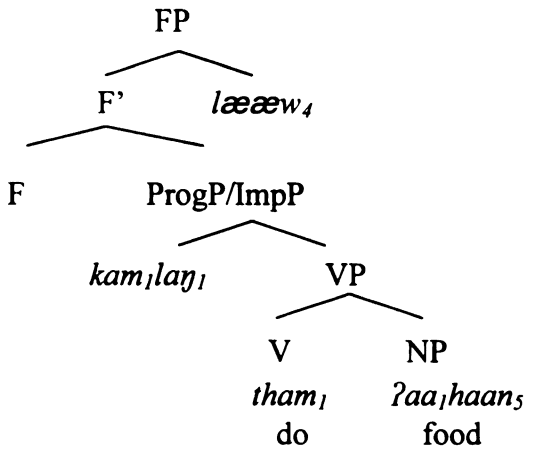
(46) *mææ*$_3$ *kam*$_1$*laŋ*$_1$ *tham*$_1$ *ʔaa*$_1$*haan*$_5$ *lææw*$_4$
Mom PROG[74] do food already
"Mom has been cooking."

(Visonyanggoon 2000, p. 216)

The sentence (46) describes that the situation of cooking has started. Assuming that *kam*$_1$*laŋ*$_1$ occupies the head position of ProgP/ImpP, Visonyanggoon proposes that *lææw*$_4$ is in a position higher than ProgP/ImpP, as shown in (47).

[74] In Visonyanggoon (2000), the gloss for *kam*$_1$*aŋ*$_1$ is PROGRESSIVE.

(47)



Relative to *yuu*$_2$, when co-occurring with *yuu*$_2$, *lææw*$_4$ takes scope over *yuu*$_2$, as illustrated in (48).

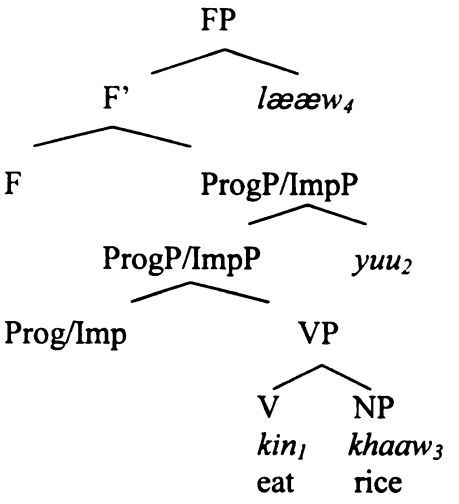
(48) *khaw*$_5$ *kin*$_1$ *khaaw*$_3$ *yuu*$_2$ *lææw*$_4$
He eat rice IMPF[75] already
"He has been eating."

(Visonyanggoon 2000, p. 216)

Sentence (48) states that the state of John eating has started (and implies that the earlier situation of John not eating has ended) . As Visonyanggoon assumes that *yuu*$_2$ occupies the adjunct position of ProgP/ImpP, for her *lææw*$_4$ must be in a position higher than ProgP/ImpP, as shown in (49).

[75] In Visonyanggoon (2000), the gloss for *yuu*$_2$ is IMPERFECTIVE.

(49)

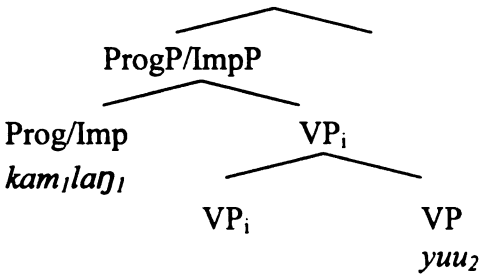


Visonyanggoon (2000) concludes that due to its adverbial nature, the position of ***lææw$_4$*** relative to other aspectual markers is flexible.

3.3.3 Argument against Visonyanggon's (2000) proposal for the height of aspectual *lææw$_4$* relative to *kam$_1$laŋ$_1$* and *yuu$_2$*

Concerning the syntactic positions of *kam$_1$laŋ$_1$* and *yuu$_2$*, I have argued in section (4.2.2.3) of chapter 2 that *kam$_1$laŋ$_1$* is the head of Prog/ImpP and that *yuu$_2$* adjoins to a phrase lower than *kam$_1$laŋ$_1$*, possibly a VP, as illustrated in (50).

(50)



Here I am going to show that *lææw*$_4$ is lower than *kam*$_1$*laŋ*$_1$ and higher than *yuu*$_2$. The argument comes from their co-occurrence with a class of VPs like *say*$_2$ *taaŋ*$_1$*huu*$_5$ "wear earrings. Consider (51).

(51) a *Mææ*$_1$*rii*$_3$ ***kam*$_1$*laŋ*$_1$** *say*$_2$ *taaŋ*$_1$*huu*$_5$
Mary kam$_1$laŋ$_1$ wear earrings
"Mary is putting earrings on."

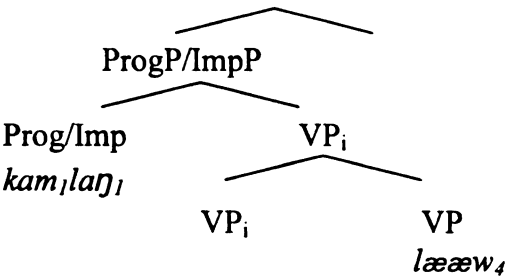
b *Mææ*$_1$*rii*$_3$ *say*$_2$ *taaŋ*$_1$*huu*$_5$ ***lææw*$_4$**
Mary wear earrings *lææw*$_4$
"Mary has started putting earrings on"
"Mary has put earrings on."

c *Mææ*$_1$*rii*$_3$ ***kam*$_1$*laŋ*$_1$** *say*$_2$ *taaŋ*$_1$*huu*$_5$ ***lææw*$_4$**
Mary kam$_1$laŋ$_1$ wear earrings lææw$_4$
"Mary is putting earrings on."

In (51a), *say*$_2$ *taaŋ*$_1$*huu*$_5$ "wear earrings" co-occurs with *kam*$_1$*laŋ*$_1$, and it is described as a process currently in progress. In (51b), *say*$_2$ *taaŋ*$_1$*huu*$_5$ "wear earrings" co-occurs with *lææw*$_4$ and it is either described as a process currently in progress, or as a process which has ended. Crucially, in (51c), where *say*$_2$ *taaŋ*$_1$*huu*$_5$ "wear earrings" co-occurs with both *kam*$_1$*laŋ*$_1$ and *lææw*$_4$, only described a process currently in progress is described. This suggests that *kam*$_1$*laŋ*$_1$ takes scope over *lææw*$_4$ or that *lææw*$_4$ has to adjoin to a phrase lower than *kam*$_1$*laŋ*$_1$, possibly a VP.

The structure of sentences where *kam*$_1$*laŋ*$_1$ and *lææw*$_4$ co-occur such as (51c) should therefore be schematically represented as (52).

(52)



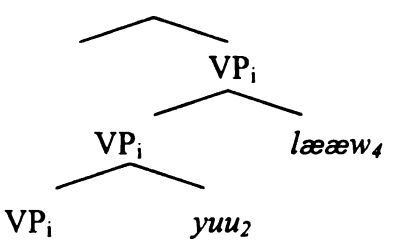
Now let's look at the position of *lææw*$_4$ relative to *yuu*$_2$. When co-occurring with *yuu*$_2$, *lææw*$_4$ seems to take scope over *yuu*$_2$, as illustrated in (53).

(53) *khaw*$_5$ *kin*$_1$ *khaaw*$_3$ *yuu*$_2$ *lææw*$_4$
He eat rice yuu$_2$ lææw$_4$
"He has started eating."

As *yuu*$_2$ asserts that an event holds at time t, in (53) *yuu*$_2$ would imply that the time before and after t the event of "eating" did not/will not hold. However, in (53), only the implication at the time before t the event of "eating" did not hold is available. This is because *lææw*$_4$ which, in this case, marks the left boundary (i.e., the beginning) of the event of eating, takes scope over *yuu*$_2$. As *lææw*$_4$ marks that left boundary of the event of "eating," it implies the previous event of "not eating."

Therefore, I propose that the structure of sentences where *yuu*$_2$ and *lææw*$_4$ co-occur such as (53),should be schematically represented as (54).

(54)



3.3.4 The position of conjunction *lææw*$_4$

I have shown in section (3.2.2.1) that *lææw*$_4$ has some of the properties of a conjunction. In this section, I will investigate the structural position of *lææw*$_4$. I will use the extraction test again as a basis for the investigation.

In the case of *lææw*$_4$, the extraction test suggests that syntactically the two conjuncts are not two main clauses. This is illustrated in (55).

(55) a *nii*$_3$ *khii*$_1$ *ran*$_{4i}$ *thii*$_3$ *cɔɔn*$_1$ *pay*$_1$ t_i ***lææw***$_4$ *mææ*$_1$*rii*$_3$ *kroot*$_2$
This is store that John go **t lææw**$_4$ Mary angry
"This was the store that John went to and then Mary was angry."

b * *nii*$_3$ *khii*$_1$ *ran*$_{4i}$ *thii*$_3$ *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ *mææ*$_1$*rii*$_3$ *pay*$_1$ t_i
This is store that John go New York **lææw**$_4$ Mary go **t**
"This was the store that John went to NewYork and then Mary went to."

In (55a), the extraction of *ran*$_4$ "store" out of the first conjunct is grammatical but in (55b), the extraction of *ran*$_4$ "store" out of the second conjunct results in ungrammaticality. This suggests that the two conjuncts are not parallel. More precisely, it seems that the second conjunct is an adjunct that adjoins to the first conjunct, and operator movement is not possible for some reason.[76]

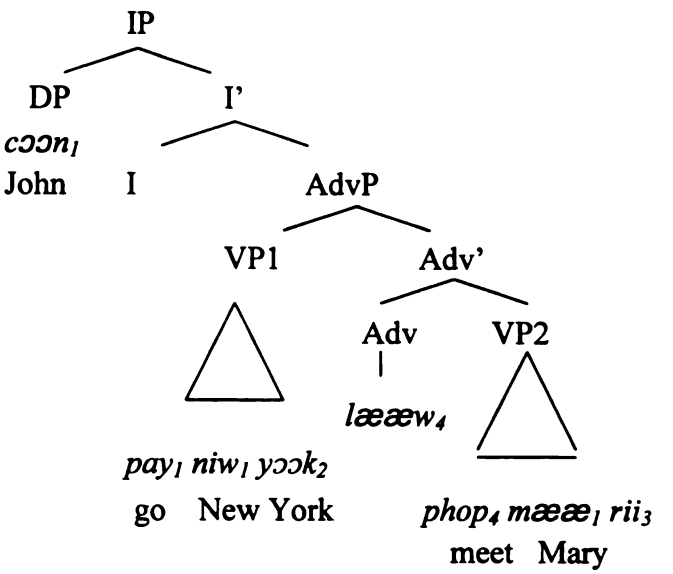
As the second conjunct (VP2) is an adjunct that adjoins to the first conjunct (VP1), the *lææw*$_4$P (AdvP) cannot be a projection that has VP1 as its specifier. Consequently, the structure of the sentence in which *lææw*$_4$ behaves like a conjunction as (56a) will not be as in (56b) but as in (56c).

---

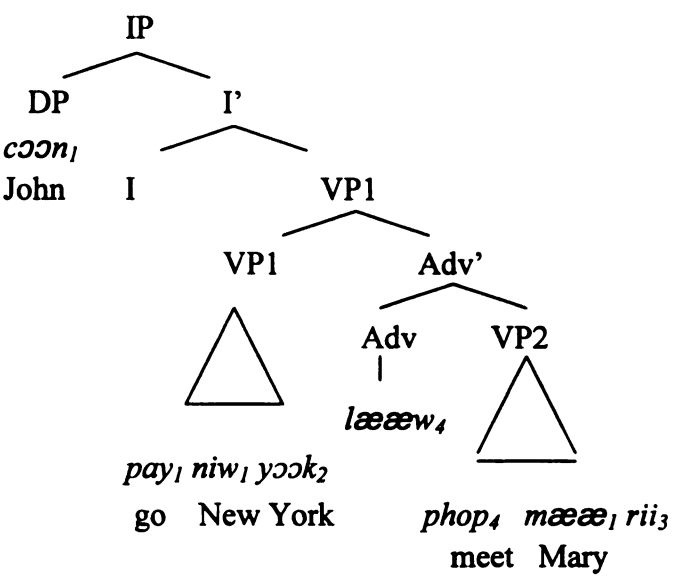
[76] It may be that *lææw*$_4$ blocks operator movement. It should be noted that in the cases of *pay*$_1$/*maa*$_1$ "go/come," when only adjunct extraction is impossible, the adjoined VP has no extra conjoining materials.

(56) a *cɔɔn$_1$ pay$_1$ niw$_1$ yɔɔk$_2$ lææw$_4$ phop$_4$ mææ$_1$ rii$_3$.*
John go New York lææw$_4$ meet Mary
"John went to New York and then met Mary."

b *



c



In summary, given the extraction facts, *lææw$_4$* used as a conjunction conjoining two phrases seems to be the head of an AdvP that adjoins to the right of VP1.

3.3.5 The identical position of aspectual *lææw$_4$* and conjunction *lææw$_4$*

We have seen that aspectual *lææw$_4$* and conjunction *lææw$_4$* are an adjunct. In this section I will show that the position of aspectual *lææw$_4$* and the position of conjunction *lææw$_4$* are the same position.

The height of *lææw$_4$* relative to modals seems to be crucial. I will first provide an introduction to modals in Thai. Then, I will show the position of aspectual *lææw$_4$* and conjunction *lææw$_4$* relative to the modals. It will be evident that they occupy the same position.

3.3.5.1 Introduction to modals in Thai

Visonyanggoon (2000), assuming Cinque (1999) and Palmer (1986), states that modals are typically categorized in terms of their meaning into two types: root modals and epistemic modals.

Root modals, which are also called " deontic modals," express volition, obligation, permission, and ability on behalf of the subject or agent of the clause. Epistemic modals, on the other hand, express the speaker's degree of confidence about the truth of the proposition based on the kind of information he/she has, his/her own judgement and the kind of warrant he/she has for what he/she says.

According to Visonyanggoon (2000), the modals in Thai can be grouped into two types as follows:

	Root	**Epistemic**
tɔŋ$_3$	strong obligation	inferred certainty
naa$_3$ (*ca*$_2$), *khuuan*$_1$ (*ca*$_2$)	week obligation	probability
ca$_2$	volition	
day$_3$	permission	
day$_3$, *pen*$_1$, *way*$_5$	ability	
ʔaat- ca$_2$, *khoŋ*$_1$*-ca*$_2$		probability

Table 1: Types of modals in Thai

(Visonyanggoon 2000, p. 124)

All the modals precede the verb except root modals expressing ability (*day*$_3$, *pen*$_1$, and *way*$_5$), which follow the verb, as illustrated in the examples below.

(57) a *cɔɔn*$_1$ ***khuuan***$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$
John should go New York
"John should go to New York."

b *cɔɔn*$_1$ ***tɔŋ***$_3$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$
John must go New York
"John must go to New York."

c *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***day***$_3$
John go New York may/can
"John may/can go to New York."

Visonyanggoon (2000) proposes that although Thai modals occur either pre-verbally or post-verbally, they are base-generated pre-verbally. More precisely, she argues that they are heads situated above VP. As discussed in section ( ) of chapter 2, for

cases of post-verbal modals (i.e., *day*$_3$, *pen*$_1$, and *way*$_5$) the word order is derived by movement of VP to some position higher than the modal.

With respect to positions of modals relative to each other, Visonyanggoon argues that the syntactic location of Thai modals basically supports the proposal made by Cinque (1999) concerning the cross-linguistic ordering of various types of modals, as demonstrated in (58).

(58) $Mod_{epistemic} > Mod_{root\ (volition > obligation > permission/ability)}$

(p.126)

For example, epistemic modals *ʔat*$_2$ *ca*$_2$, *khoŋ*$_1$ *ca*$_2$, (for probability) and *tɔŋ*$_3$ (for inferred certainty) are higher syntactically than root modals such as *ca*$_2$ (for volition), *tɔŋ*$_3$ (for strong obligation), and *day*$_3$, *pen*$_1$, *way*$_5$ (for ability). A root modal such as *ca*$_2$ (for volition) is higher than the root modal *tɔŋ*$_3$ (for strong obligation), which is higher than root modals such as *day*$_3$, *pen*$_1$, and *way*$_5$ (for ability).

3.3.5.2 The position aspectual *lææw*$_4$ relative to modals

Relative to modals, aspectual *lææw*$_4$ seems to be in a position lower than epistemic modals, given their interpretation. This is illustrated in (59).

(59) a *cɔɔn*$_1$ ***toŋ***$_3$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ *lææw*$_4$
John must go New York lææw$_4$
"John must have gone to New York"

b *cɔɔn$_1$ **khuuan$_1$** pay$_1$ niw$_1$ yɔɔk$_2$ lææw$_4$*
John should go New York lææw$_4$
"John probably has gone to New York."

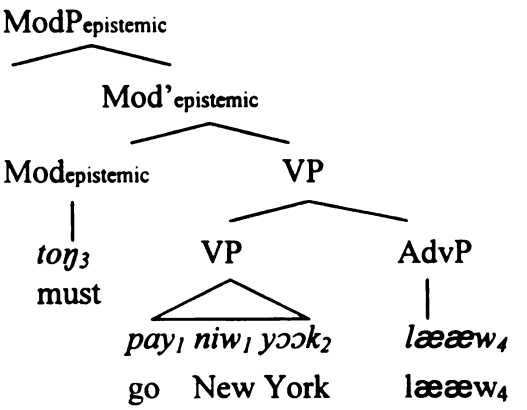
c *cɔɔn$_1$ **ʔaat$_2$-ca$_2$** pay$_1$ niw$_1$ yɔɔk$_2$ lææw$_4$*
John probably go New York lææw$_4$
"John probably has gone to New York."

Assuming that an epistemic modal occupies the head of ModPepistemic, the aspectual *lææw$_4$* seems to be in a position below ModPepistemic. More precisely, the aspectual *lææw$_4$* seems to be an adjunct that adjoins to the right of a phrase lower than ModPepistemic, possibly a VP.[77]

The sentence (60a), therefore, can be schematically represented by (60b).

(60) a *cɔɔn$_1$ **toŋ$_3$** pay$_1$ niw$_1$ yɔɔk$_2$ lææw$_4$*
John must go New York already.
"John must have gone to New York."

b



[77] It is also possible that there is a functional phrase (FP) in a position lower than a ModP and higher than a VP, and *lææw$_4$* is in this FP.

3.3.5.3 Modals in coordination

Assuming Visonyanggoon (2000) in a coordinated construction where the first conjunct contains an epistemic modal and the second conjunct contains a post-modal, the epistemic modal cannot take scope over the second conjunct. The repetition of the epistemic modal in the second conjunct is required, as shown by (61).

(61) a **cɔɔn$_1$ **tɔŋ$_3$** pay$_1$ niw$_1$ yɔɔk$_2$ **læ$_4$** haa$_5$ ŋan$_1$ **day$_3$***
John must go New York and find job can
"John must go to New York and must be able to get a job."

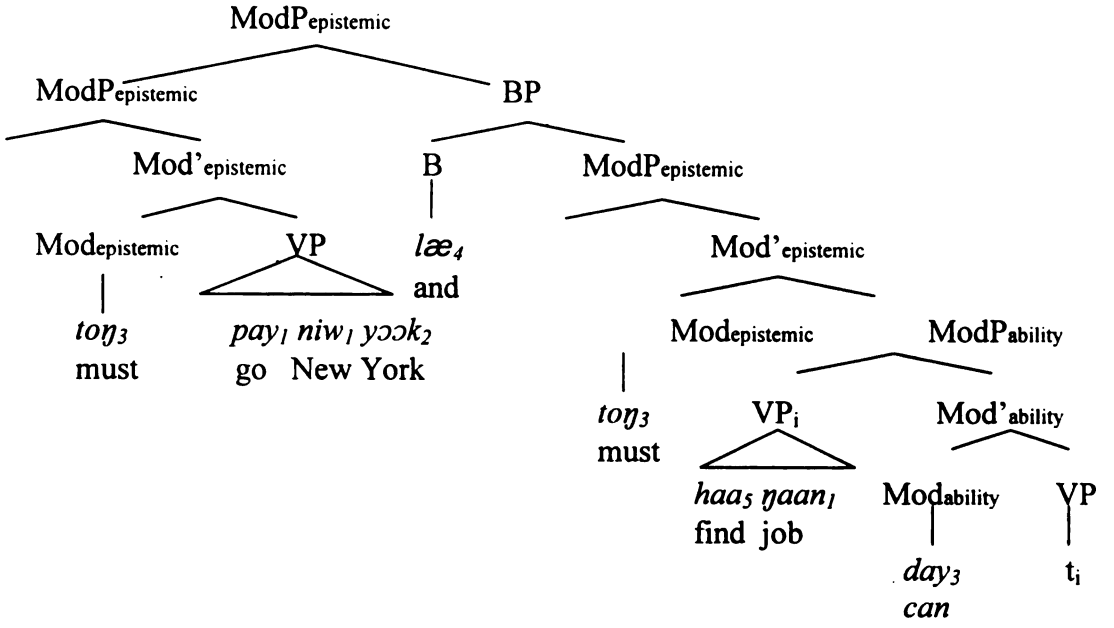
b *cɔɔn$_1$ **tɔŋ$_3$** pay$_1$ niw$_1$ yɔɔk$_2$ **læ$_4$** **tɔŋ$_3$** haa$_5$ ŋan$_1$ **day$_3$***
John must go New York and must find job can
"John must go to New York and must be able to get a job."

(Visonyanggoon 2000, p.146)

The explanation seems to be that in the coordination by *læ$_4$* "and" the epistemic modal *toŋ$_3$* "must" in the first conjunct does not c-command the second conjunct[78]. Assuming Munn (1993), the coordinate structure by *læ$_4$* "and" in (61b) can be represented as (62).

[78] I assume here the strict c-command relation, which is that "α c-commands β iff the lowest branching node that immediately dominates α also dominates β." (Cullicover, 1997, p. 26)

(62)



As the repetition of the epistemic modal *toŋ3* "must" in the second conjunct is necessary, we can conclude that the conjunction *læ4* "and" is higher than the epistemic modal *toŋ3* "must."

3.3.5.4 Summary

So, we have seen that position of aspectual *lææw4* is lower than epistemic modals such as *toŋ3* "must." Also we have seen that the position of conjunction *læ4* "and" is higher than epistemic modals such as *toŋ3* "must."

In the following section I will show that even when behaves like a conjunction, *lææw*$_4$ occupies the same position as the aspectual *lææw*$_4$ rather than occupying the same position as the conjunction *læ*$_4$ "and."

3.3.5.5 The position of conjunction *lææw*$_4$ relative to epistemic modals

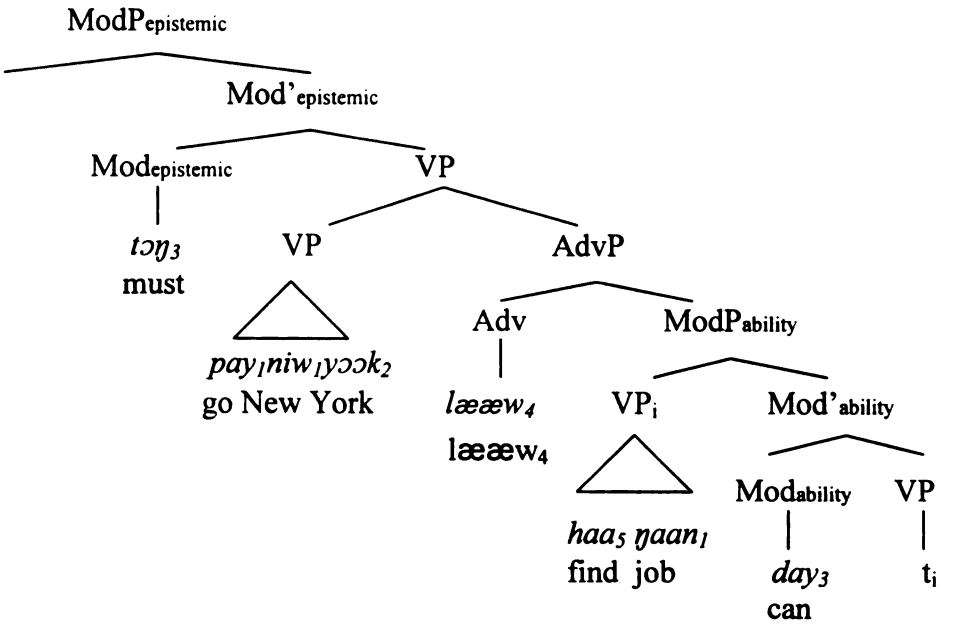
In a coordinated construction where *lææw*$_4$ is a conjunction, the epistemic modal (e.g., *toŋ*$_3$ "must") in the first conjunct can take scope over the second conjunct regardless of the post-verbal modal in the second conjunct. The repetition of the pre-verbal modal in the second conjunct results in ungrammaticality, as illustrated below.

(63) a *cɔɔn*$_1$ ***tɔŋ***$_3$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ *haa*$_5$ *ŋan*$_1$ ***day***$_3$
John must go New York *lææw*$_4$ find job can
"John must go to New York and then must be able to get a job."

b **cɔɔn*$_1$ ***tɔŋ***$_3$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ ***tɔŋ***$_3$ *haa*$_5$ *ŋan*$_1$ ***day***$_3$
John must go New York *lææw*$_4$ must find job can
"John must go to New York and then must be able to get a job."

This suggests that when conjoining two conjuncts, *lææw*$_4$ is not in a position above ModPepistemic like *læ*$_4$ in (62). Instead it is at a position below the ModPepistemic. More precisely, *lææw*$_4$ seems to adjoin to the right of the VP. The structure of (63), therefore, is (64).

(64)



By (64) the modal *tɔŋ3* in the first conjunct c-commands the second conjunct and so the repetition of the modal *tɔŋ3* in the second conjunct causes ungrammaticality.

3.3.5.6 Summary

So, it is clear that the *lææw4* that behaves like an aspectual marker and the *lææw4* that behaves like a conjunction occupy the same syntactic position. They are lower than ModPepistemic. More precisely, they uniformly adjoin to the right of the VP.

As they denote the same meaning and occupy the same position, they are the same lexical item, or there is only lexical entry for *lææw4*.

In the next section I will show how the assumption that they occupy the same position accounts for otherwise hard to account for cases.

3.4 Evidence for the analysis

By assuming that semantically *lææw*$_4$ is a lexical item standing for the relation between periods of time referred to as abutment, and that syntactically *lææw*$_4$ is an adjunct that adjoins to the right of a VP projection, the phenomena illustrated in (13) can be explained. (13) is repeated as (65).

(65) a * *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ ***lææw***$_4$ *pay*$_1$ *bɔɔs*$_4$ *tan*$_2$
John go New York lææw$_4$ lææw$_4$ go Boston
"John went to a New York and then to Boston."

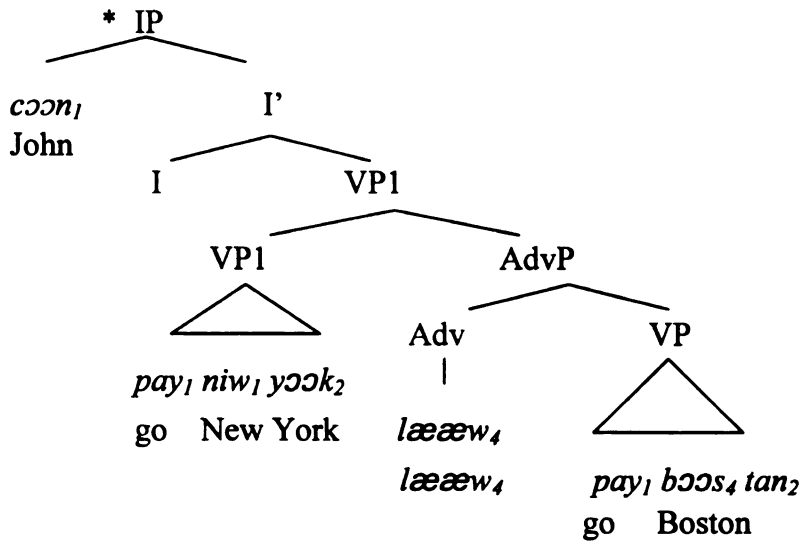
b *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ *pay*$_1$ *bɔɔs*$_4$*tan*$_3$
John go New York lææw$_4$ go Boston
"John went to New York and then went to Boston."

c *cɔɔn*$_1$ *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ ***lææw***$_4$ *læ*$_4$ *pay*$_1$ *bɔɔs*$_4$*tan*$_3$ ***lææw***$_4$
John go New York lææw$_4$ and go Boston lææw$_4$
"John has been to New York and has been to Boston."

The ungrammaticality of (65a), the grammaticality of (65b) (where the sequence reading is available) and the grammaticality of (65c) (where the sequence reading is not available) can be explained by the following.

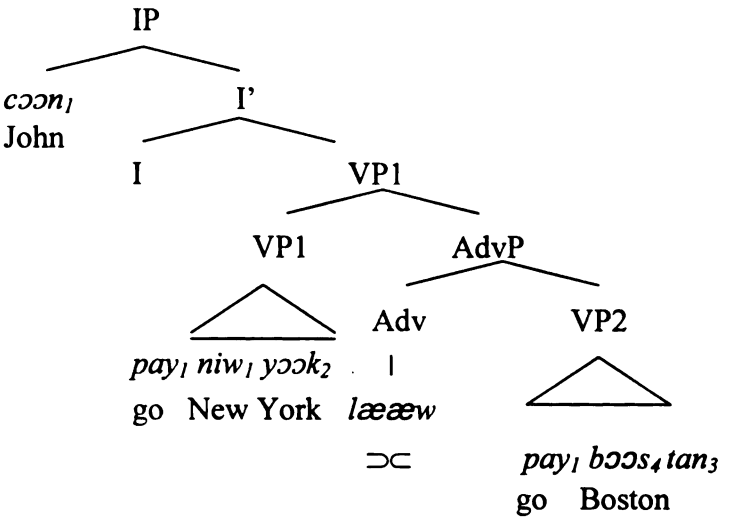
In (65a), if there is only one *lææw*$_4$, the repetition of *lææw*$_4$ causes ungrammaticality because the two *lææw*$_4$ occupy the same position as shown in (66).

(66)



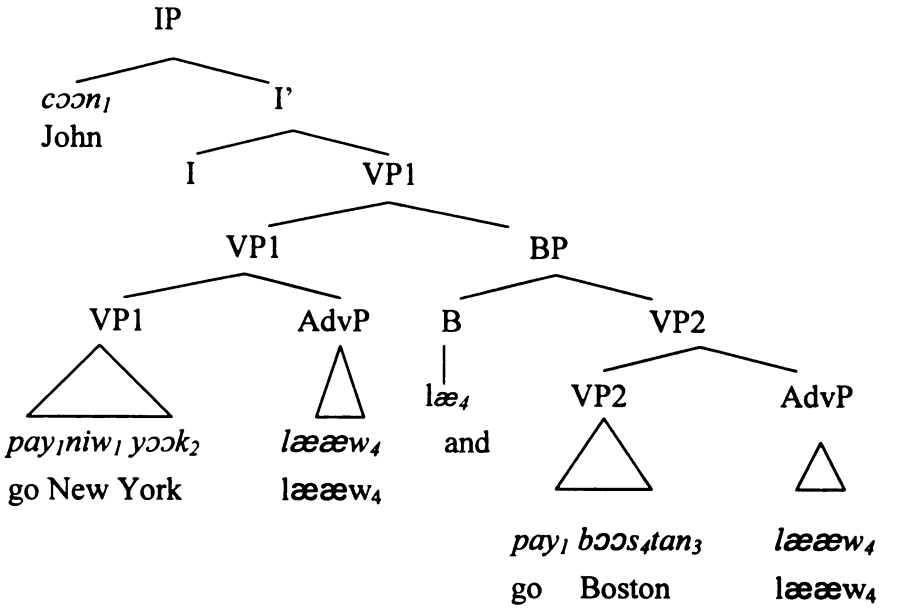
In (65b) as *lææw*$_4$ is an adverb modifying the VP *pay*$_1$ *niw*$_1$ *yɔɔk*$_2$ "went to New York," it is a head that can take another phrase as its complement. In this case, the VP *pay*$_1$ *bɔɔs*$_4$*tan*$_3$ "went to Boston" is the complement of *lææw*$_4$. Consequently, *lææw*$_4$ conjoins the two phrases. And as semantically *lææw*$_4$ has the property of creating temporal boundaries, the manifestation of this property at this position is that the events denoted by the two conjuncts get ordered. In particular, the event denoted by the second conjunct is required to begin after the event denoted by the first conjunct ends. Therefore, the sequence reading is available, as demonstrated in (67).

(67)



While *lææw*$_4$ in (65b) takes another phrase as its complement and behaves like a transitive adverb, this is not necessary. *Lææw*$_4$ can also behave like an intransitive adverb by describing the end of a situation and implying a new situation or vice versa. In (65c), *lææw*$_4$ does not take a second conjunct as its complement. Therefore, to conjoin the two conjuncts, *læ*$_4$ "and" is inserted. As the conjunction *læ*$_4$ "and" is not associated with the property of abutment, the events denoted by the two conjuncts are not ordered. In particular, the event denoted by the second conjunct is not required to be temporally following the first. Assuming the coordinate structure in Munn (1993), the structure of (65c) can be represented as (68).

(68)



Therefore, the assumption that there is only one lexical item *lææw*$_4$ with only one meaning can account for cases which would otherwise be hard to explain.

4. Conclusion

Having investigated the semantic properties of *lææw*$_4$, it is clear that *lææw*$_4$ has only one meaning. More precisely, *lææw*$_4$ denotes an abutment relation. The investigation of the structural position of *lææw*$_4$ also supports the contention that there is only one lexical entry for *lææw*$_4$. More precisely, *lææw*$_4$ is the head of an AdvP which adjoins to the right of a VP and can either behave like a transitive adverb taking another phrase as its argument or a transitive adverb that takes an implicit eventuality as its complement.

When it behaves like a transitive adverb, the consequence is that the situations denoted by the VPs preceding and following *lææw*$_4$ get temporally ordered. When *lææw*$_4$ takes a null event as its complement, the consequence is that the beginning or the end of the situation is described and the subsequent or the previous situation is implied.

More generally, the unified treatment can explain why certain meanings are available in certain contexts and can predict these specific meaning and their occurrences.

To conclude, rather than postulating two different lexical entries for two different but related senses of *lææw*$_4$, all we need to say to account for the senses of *lææw*$_4$ is that *lææw*$_4$ should be unspecified for transitivity. Basically *lææw*$_4$ is a relation just like the relations that link subevents. It is a relation similar to Pustejovksy's (1995) relation of precedence (i.e., <), but more precisely, an abutment relation (i.e., $\supset\subset$). It will combine, however, not subevents (i.e., e_1 and e_2), but complete event structures.

CHAPTER 5

CONCLUSION

Having discussed *yuu*$_2$, *pay*$_1$/*maa*$_1$ and *lææw*$_4$, I will now go back to the goals stated in the Introduction. The four goals of this dissertation are:

1. To describe a set of aspect markers in Thai, more specifically, *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$.
2. To describe and explain the related senses of each of these elements, and to provide a unified semantic and syntactic property that can account for their different uses.
3. To use Thai aspect markers as a testing ground for the basic intuitions put forth in the Generative Lexicon.
4. To test specific proposals made for the sometimes not carefully used labels of Progressive and Perfect.

By providing case studies for *yuu*$_2$, *pay*$_1$/*maa*$_1$ and *lææw*$_4$, I have achieved the four goal initially stated.

First, I described that *yuu*$_2$, *pay*$_1$/*maa*$_1$ and *lææw*$_4$, have multiple functions. *Yuu*$_2$ can function as a copular verb for locative construction and also as a marker for the progressive, habitual, and temporal state. *Pay*$_1$ can function as a verb for "go" and can function as a marker for continuative, and for excessive degree. *Maa*$_1$ can function as a

verb for "come" and as a marker for the universal perfect. *Lææw*$_4$ can function as a conjunction and as a marker for inchoative, perfective and perfect.

Second, I have provided an explanation for the related senses of each of these elements. The multiple senses of *yuu*$_2$ can be uniformly accounted for by assuming that *yuu*$_2$ denotes a state with an exclusion feature. The multiple senses of *pay*$_1$ can be uniformly accounted for by assuming that *pay*$_1$ marks the value of an antideictic center on a space or time or property axis. Similarly, assuming that *maa*$_1$ assigns the value of a deictic center to a space or time axis, the multiple senses of *maa*$_1$ can be uniformly accounted for. Finally, the multiple senses of *lææw*$_4$ can be unified by assuming that *lææw*$_4$ denotes an abutment relation.

As well as providing a unified preliminary semantics, I have provided a unified syntax for each of these elements. By making use of a modified notion of headedness, I have shown that *yuu*$_2$, *pay*$_1$ and *maa*$_1$ are elements that are unspecified for headedness with respect to whether they project to a full VP or not. For the unified syntax of *lææw*$_4$, I have shown that *lææw*$_4$ is unspecified for transitivity. The unified treatment of *yuu*$_2$, *pay*$_1$/*maa*$_1$, and *lææw*$_4$ can explain why certain meanings are available in certain contexts and can predict the specific meaning in each occurrence.

Third, as it is apparent that despite the fact that *yuu*$_2$, *pay*$_1$/*maa*$_1$, and *lææw*$_4$ have aspectual meanings as well as other meanings, the multiple meanings are associated. In other words, there is a core meaning for *yuu*$_2$, *pay*$_1$/*maa*$_1$, and *lææw*$_4$. Therefore, rather than multiplying the lexical entries by having the multiple senses correspond to different lexical entries, the multiple senses can be treated as corresponding to a single lexical

entry. This, therefore, supports the basic intuitions put forward in the Generative Lexicon (Pustejovsky, 1995), in particular, that logically related senses do not necessarily correspond to different lexical items.

Fourth, with respect to the Progressive and the Perfect, I have shown that the macrocategories of the so-called Perfect and Progressive in Thai may be a good way to make rough generalizations but are not enough to describe the properties of the progressive markers and the perfect markers in different languages.

Concerning the progressive, I have shown that two types of the progressive can be distinguished: the progressive described by *kam$_1$laŋ$_1$* and the progressive described by *yuu$_2$*. While the progressive described by *kam$_1$laŋ$_1$* is a process, the progressive described by *yuu$_2$* is a state. The progressive described by *yuu$_2$* is a state, not a process because, the denotation of *yuu$_2$* is a stage-level state. Consequently, *yuu$_2$* describes an eventuality as a state which holds at time t. The progressive, then, can be encoded.

Regarding the Perfect, although the well-known property of the perfect is to indicate the continuing relevance of a previous situation, there are specific manifestation of this property. In English the Perfect can be used to convey that a present state is the result of a past situation (Perfect of result), that a given situation has held at least once during some time in the past leading up to the present (Experiential perfect), that the present relevance of the past situation is very recent (Perfect of recent past) and that a situation starts in past but continues into the present (Perfect of persistent situation).

We have seen in Thai that the core properties of *maa$_1$* and *lææw$_4$*, allow them to express certain types of the Perfect. As one of the core properties of *lææw$_4$* is to denote an abutment relation, *lææw$_4$* may mark the end of an event and leave implicit the

subsequent event. Consequently, *lææw*$_4$ can express that a present state is the result of past situation (Perfect of result), that a given situation has held at least once during some time in the past leading up to the present (Experiential perfect), or that the present relevance of the past situation is very recent (Perfect of recent past). *Maa*$_1$, on the other hand, adds the value of deictic center (i.e., NOW) to a time axis and the time axis is bound with other axes. As a consequence, *maa*$_1$ may describe that the right boundary of the time period in which a situation holds is equated with NOW or that a situation starts in the past and continues into the present (Perfect of persistent situation) or the universal Perfect.

To conclude, besides contributing to the description of Thai aspect, in particular, *yuu*$_2$, *pay*$_1$, *maa*$_1$, and *lææw*$_4$, I have shown that the multiple senses of each of these elements are associated and that rather than corresponding to different lexical entries, each elements corresponds to a single lexical entry. The studies of *yuu*$_2$, *pay*$_1$, *maa*$_1$ and *lææw*$_4$, therefore, both provide an account for the macro-categories of the so-called Perfect and Progressive in Thai and serve to provide evidence for the Generative Lexicon approach.

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