

A SYSTEM OF EPISTEMIC MODALITY IN THAI¹

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Abstract

The paper explores the syntax and semantics of epistemic modality in Thai grammar. Four syntactic categories are found to express epistemic modality—preverbal auxiliaries, initial particles, adverbs and final particles. Epistemic modality can also be further classified; five categories are found to be distinctive in the system of Thai grammar—assumptive, speculative, deductive, dubitative and certainty.

Introduction

Epistemic modality is a grammatical system that has drawn a lot of interest from linguists in various areas, both diachronic and synchronic (Palmer 1986; Bybee, Perkins and Pagliuca 1994; Swan and Westvik 1997; Nuyts 2001; van der Auwera and Dendale 2001; Johanson and Utas 2000) due to its complexity and its interdisciplinary nature, taking in syntax, semantics and pragmatics. Modality means the qualification of a statement in various aspects of the speaker's

attitude. As an example, the sentence *John should go home* expresses an obligation that the speaker imposes on *John* to do the action *go home*. Traditionally, modality is the semantic category that is expressed by modal auxiliaries such as *may*, *might* and *must* in English. The term **epistemic** means 'knowledge'. Thus, **epistemic modality** can be understood in a simple way as 'modes of knowing' (Nuyts 2001). A rather comprehensive and explicit definition of epistemic modality given in Nuyts (2001: 21-22) is as follows:

Epistemic modality is defined here as (the linguistic expression of) an evaluation of the chances that a certain hypothetical state of affairs under consideration (or some aspect of it) will occur, is occurring, or has occurred in a possible world which serves as the universe of interpretation for the evaluation process, and which, in the default case, is the real world ...

In Thai grammar books, the category of modality has not been so familiar as mood, which includes both sentence types such as interrogative, imperative and declarative, and other markers that express the speaker's attitude that is added to the content of the sentence (Upkitsilpasarn 1937, 1968 and

¹ This research is funded by the Commission on Higher Education and the Thailand Research Fund. I would also like to thank Professor Dr. Pranee Kullavanijaya for her valuable comments and suggestions for this project and this paper in particular.

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Phatranawig 1972). Most previous work has focused only on the syntactic properties of modal verbs (Panupong 1962, 1970, Shimpaboon 1966, Kullavanijaya 1968, Dellinger 1975), but very little on their grammatical meaning (Bandhumedha 1982).

In his Thai reference grammar, Noss (1964) includes modals and modal verbs. Modals are defined as bound lexemes which occur between a subject and a predicate (1964: 133). Modal verbs are free lexemes but they occur in the same positions as modals and can only be differentiated from the latter by substituting for predicates. The grammatical category of modals is not identified. Rather, the meaning of each class is generalized. As an example, the meaning of *mak4* Class is 'likelihood, the imminence of action and frequency of action'. Similarly, Sindhvananda (1970), Dellinger (1975) and Sriphen (1982) propose a classification of modal auxiliaries mainly based on their syntactic properties but do not provide any semantic analysis of these modals.

We can see that most previous work focuses on modals or modal auxiliaries. In fact, as noted in Palmer (1986: 2), modality, including epistemic modality, can be expressed by devices other than verbs. Nuyts (2001: 29) has also argued that there are other linguistic forms, including modal adverbs, e.g. *probably*, predicatively used modal adjectives, e.g. *it is probable that...*, and mental state predicates, e.g. *I think that* ... Thus, this paper does not limit the scope of the study only to the modal auxiliary; rather, it explores various types of grammatical forms that express epistemic modality in Thai from the semantic aspect, using the actual corpus of data and then describes their structural properties.

The major purpose of this paper is to discover the system of marking epistemic modality in Thai. Therefore, besides their syntactic properties, the semantic classification of the epistemic markers needs to be investigated. Yet until now there has not been much agreement on how epistemic modality should be further classified. Lyons (1977) distinguishes objective and subjective epistemic modality. There are two major types in Palmer (1986) — evidentials and judgments, which can be further divided. Bybee et al (1994) use three main types in their typological study—possibility, probability, and inferred certainty. Vet (1998) proposed to go back to Wittenstein's distinction between monstration and veridiction in his analysis of modal expressions in French. An interesting approach is the proposal by Nuyts (1992) who also takes into account the interaction between epistemic and evidential marking. In Thai, as shown in the actual corpus, epistemic markers tend to co-occur. Thus, this paper does not only describe the meaning of each epistemic marker but also examines the interaction among various types of epistemic modality.

1. Syntactic properties

The first point one needs to investigate in studying Thai grammar is to identify grammatical forms in the grammatical system. We, thus, set out by proposing criteria for identifying epistemic markers in Thai sentences before syntactic properties of the identified grammatical words are described.

2.1 Identifying epistemic markers in simple sentences

This study proposes using a sentence frame for testing the epistemic meaning of the

sentence. First, we identify sentences in the corpus that have an epistemic reading. Epistemic modality as defined by Lyons 1977, Palmer 1986 and Nuyts 2001 is:

1) the assessment of the chance that something has occurred, is occurring or will occur

2) the assessment is performed by the speaker of the sentence

As an example, sentence (1a) has an epistemic reading while (1b) does not.

- (1) a. Jit khon¹ klap² baan³
 Jit may return home
 leew⁴
 already
 'Jit must have gone back home.'

- b. Jit klap² baan³ leew⁴
 Jit return home already
 'Jit went back home.'

Compare the two sentences above. We can see that in sentence (1a) the speaker asserts that it is very likely that *Jit* went back home whereas sentence (1b) does not give such a reading. Rather, the event in (1b) is presented as having actually occurred. The formal difference between the two sentences is that sentence (1a) has the word *khon¹* while (1b) does not. Thus, *khon¹* is an element that is highly likely to be epistemic marker.

Next, we confirm the epistemic interpretation by using a paraphrase. A complex sentence with the verb 'speculate' in the main clause is proposed as a frame, as given in (2). A paraphrase sentence is constructed by embedding a clause that omits the element in question in the sentence frame, as illustrated in (3).

- (2) chan⁵ khaat³ kha⁴ nee¹ waa³
 I speculate CMPL
 'I speculate that ...'

- (3) chan⁵ khaat³ kha⁴ nee¹ waa³
 I speculate CMPL
 Jit klap² baan³ leew⁴
 Jit return home already
 'I speculate that Jit has gone back home.'

Then, when sentence (3) is compared with (1), we find that the two sentences have the same meaning so the epistemic reading of sentence (1) is confirmed. Therefore we conclude that *khon¹* is an epistemic marker.

2.2 Syntactic classes of epistemic markers

Based on the corpus of actual data, this study has found 19 epistemic markers which can be grouped into four classes with respect to their lexical and distributional properties: preverbal auxiliary, initial particle, adverb, and final particle.

2.2.1 Preverbal auxiliaries

Modality is typically expressed by auxiliaries. In Thai there are three preverbal auxiliaries whose basic function is to express epistemic modality: *ʔaat²* 'may' *khon¹* 'might' and *yom³* 'must'. An important property of a Thai auxiliary is that it occurs in only one position, i.e. in front of the verb in this case, as shown in (4). Sentences (5) and (6) show that *khon¹* cannot occur in other positions, either sentence-initially or post-verbally, respectively.

- (4) Jit **khon¹** kin¹ khaaw³ yuu²
 Jit might eat rice CONT
 'Jit might be eating now.'

(5) ***khon**¹ Jit kin¹ khaaw³ yuu²
might Jit eat rice CONT

(6) *Jit kin¹ **khon**¹ khaaw³ yuu²
Jit eat might rice CONT

2.2.2 Initial particle

Epistemic modality can also be expressed by particles that occur in the initial area of a sentence so they are broadly called initial particles. They can basically occur in front of the subject, as in (7), or between the subject and the main verb, as in (8), but not postverbally, as in (9). To illustrate,

(7) **thaa**³**thaaŋ**¹ Jit yaak² yuu² baan³
gesture Jit want stay home
'It seems that Jit wants to stay home.'

(8) Jit **thaa**³**thaaŋ**¹ yaak² yuu² baan³
Jit gesture want stay home
'It seems that Jit wants to stay home.'

(9) *Jit yaak² yuu² **thaa**³**thaaŋ**¹
Jit want stay gesture
baan³
home

However, we also find that the initial epistemic particle can occur at the end of the sentence but it needs to be after a final particle as shown in (10).

(10) a. Jit yaak² yuu² baan³
Jit want stay home
naʔ⁴ **thaa**³**thaaŋ**¹
FP gesture

'Jit wants to stay home, judging from how he appears.'

b. *Jit yaak² yuu² baan³
Jit want stay home
thaa³**thaaŋ**¹
gesture

Considering their lexical properties, we find that initial particles are derived from nouns or predicates, such as *thaa*³ 'gesture' and *duu*¹ *thaa*³*thaaŋ*¹ 'see gesture'. Their syntactic behaviors raise quite a few grammatical problems in Thai. This study considers them to be grammatical particles, rather than lexical nouns or a clause because they are closed class forms. They all have the meaning of 'gesture'³. In fact, *thaa*³ indicates a very wide range of evidential meaning, gestures, other non-verbal expressions and even reasons in the inferential process. This is a characteristic of grammatical words. Other nouns of non-verbal expressions, such as voice or eyes, can occur immediately before the subject but not in any other position.

2.2.3 Adverbs

Epistemic meaning can also be expressed by using certain kinds of adverbs. Adverbs of this type are included since they are closed class forms although their morphological forms vary the most among the four classes. There are two positions in which these adverbs can occur—sentence-initial and clause-final—but each may occur only in one fixed position. Sentence-initial adverbs include *baaŋ*¹*thii*¹ 'maybe', *soŋ*⁵*say*⁵ 'maybe', and *naa*³*klua*¹ 'doubt'. Examples of clause-final adverbs are *nee*³ 'certainly' and *yaan*²*nee*³*noŋ*¹ 'certainly'.

(11) **soŋ**⁵**say**⁵ khaw⁵ may³ pho¹ tɕay¹
suspect 3sg NEG satisfied
'Maybe he is not satisfied.'

³ An extensive list of gesture nouns that are found to indicate inferential stance in a sentence of emotion or private state predicates (Rangkupan 2001).

- (12) Jit pen¹ soot² nɛɛ³-nɛɛ³
 Jit be single certain-RED
 'Jit is definitely single.'

2.2.4 Final particles

Final particles are markers that occur at the end of the sentence and cannot occur in other positions. Only one final particle is found to mark epistemic modality in the corpus, i.e. *maŋ*⁴.

- (13) Jit klap² baan³ lɛɛw⁴ **maŋ**⁴
 Jit return home already FP
 'Jit already went back home, maybe.'

- (14) ***maŋ**⁴ Jit klap² baan³ lɛɛw⁴
 FP Jit return home already

- (15) *Jit **maŋ**⁴ klap² baan³ lɛɛw⁴
 Jit **FP** return home already

In sum, epistemic modality is expressed in Thai grammar by four types of closed-class forms—preverbal auxiliaries, initial particles, adverbs and final particles. Preverbal auxiliaries and final particles can occur in only one position whereas initial particles and adverbs can occur in many positions. Furthermore, epistemic markers in the latter two classes vary a lot in terms of their morphological forms. Some are derived from nouns or verbs and the others allow a modification by some degree adverbs. This might suggest that these items are in the process of being grammaticalized.

3.Semantic analysis

Previous studies on epistemic modality, including modality in general, have proposed many ways to distinguish major subclasses of epistemic modality. Lyons (1977) has distinguished between objective

and subjective epistemic modality. Palmer (1986) has found in his typological study two main systems—evidentials and judgments. Judgments can be further divided into inference and confidence. Bybee et al (1994) consider three major subclasses of epistemic modality—possibility, probability and inferred certainty.

This study attempts to distinguish major types of epistemic meaning as shown in Thai sentences, based on the actual corpus of data. The result of the semantic classification should reveal the system of Thai epistemic marking. This section, thus, first reviews the three proposals mentioned above. Then, the semantic analysis of Thai epistemic markers is provided. Finally, the categorization of epistemic marking considered from Thai findings is proposed.

Palmer (1986) differentiates four ways of epistemic qualification:

There are at least four ways in which a speaker may indicate that he is not presenting what he is saying as a fact, but rather:

- (i) that he is speculating about it (speculative)
- (ii) that he is presenting it as a deduction (deductive)
- (iii) that he has been told about it (quotative)
- (iv) that it is a matter only of appearance, based on the evidence of (possibly fallible) senses (indirect evidence)

(Palmer 1986: 51)

According to Palmer, all four types are concerned with the speaker's "commitment to the truth of the proposition being expressed" (Palmer 1986: 51).

In their typological study on modality, Bybee et al (1994) include possibility, probability and inferred certainty as subclasses of epistemic modality. Indirect evidentials are also considered as having an epistemic value. Possibility indicates a lesser likelihood for a proposition to be true than probability, while inferred certainty shows that the speaker has good reason to believe that the proposition is true. Indirect evidential expresses the speaker's indirect knowledge regarding the truth of the proposition. (Bybee et al 1994: 180-1)

3.1 Speculative, Deductive and Assumptive

It is found that preverbal auxiliaries *?aat*² 'may', *khon*¹ 'might' and *yom*³ 'must' can be clearly distinguished. The data in (16) show the semantic differences between *?aat*² 'may' and *khon*¹ 'might'. The meaning of *yom*³ 'must' is illustrated in (17). Note that due to the length of the data, examples (16) and (17) are presented in the form of Thai orthography. The auxiliary in question is put in brackets before the predicate in each clause.

- (16) (a) ฟักเร่งเดินเร็วขึ้น (b) นึกเป็นห่วงนางที่อยู่บ้านคนเดียวในกระท้อบ (c) เวลานั้นจวนมืดแล้ว (d) นางคงหิว (e) นางอาจจะเดินตามหา (f) นางอาจจะสุ่มไฟได้ลงในกระท้อบแล้วล้มดู

'(a) Fak hurried along. (b) He felt concerned about M'am, who was alone in the hut. (c) It was getting dark, (d) she [*khon*¹] was probably hungry (e) and [*?aat*²] may even have gone out looking for him. (f) Maybe she [*?aat*²] had lit a

fire in the hut to drive away the mosquitoes and then forgotten about it.⁴

The above data clearly show the semantic difference between *khon*¹ and *?aat*². The fact that it is late in the evening, as shown in (c), has led the speaker to conclude that the participant M'am is hungry. In the next two clauses, (e) and (f), M'am's possible actions of going out in (e) and lighting a fire in (f) are speculated as likely to have happened. They are just some among many other possible actions.

The semantic distinction between *?aat*² 'may' and *khon*¹ 'might' can be viewed as the distinction between speculative and deductive, on the one hand, and possibility and probability on the other. However, it seems to be less clear to differentiate them as objective vs. subjective, as proposed by Lyons (1977) because they both have the *I-say-so* component. None of the three marked actions are objective facts. Rather, they are all based on the evaluator's beliefs about M'am's pattern of behavior.

Another preverbal auxiliary that marks epistemic modality is *yom*³ 'must'. Its meaning can be illustrated as follows:

- (17) (a) อายุและสุขภาพของผู้ใช้ยากี่สำคัญ (b) คนแก่หรือคนที่มีหลายโรคย่อมมีโอกาสเกิดผลจากปฏิกิริยาระหว่างยามากกว่าคนหนุ่มสาว หรือคนที่แข็งแรง

'(a) Age and the user's health are also significant. (b) Elders or those who have a lot of health problems customarily [*yom*³] are more vulnerable to the effects of drug interaction than youngsters or healthy people.'

⁴ The translation is cited from the novel translated into English by Phongdeit Jiangphatthana-kit and Marcel Barang.

The proposition of sentence (17b) is presented as necessarily true resulting from a commonly shared belief that elders and ill people are at higher risk of health problems. Therefore, *yom*³ marks a deduction from a set of standard beliefs, assumed by the evaluator to be commonly shared. Following Palmer (1986), this type of epistemic modality is called *assumptive*.

3.2 Evidentials

The type of evidential that is found in Thai is indirect evidential, or inferential evidential, marked by initial particles. It indicates that the proposition is believed by the evaluator to be true, based on some observable evidence, i.e. image, sound, smell, taste and feel. An example is shown below. Note that only the sentence that is epistemically marked is transcribed; its relevant context is only translated and put in square brackets.

- (18) *khruu*¹*yai*⁴ ***thaa*³*thaaŋ*¹** *tok*²*jai*¹
 principal gesture be surprised
 'The Principal looked surprised. [He yelled out as if he didn't believe what he had just heard.]'

Emotion is a private state; the only person who knows the truth of the experience is the experiencer of the emotion. In (18) the speaker talked about another person's private state. In the situation, it is observed that the Principal cried out loudly. Based on the observation of the Principal's gesture and other expressions, the speaker concluded that the subject, the Principal, was surprised. This type of marking is considered indirect evidential. This is an inferential process since the speaker does not really know the truth about the Master's emotional state but he infers from his loud cry that he is surprised.

Indirect evidentials can also be expressed by the preverbal auxiliary *khon*¹. To illustrate,

- (19) *luuk*³*mæw*¹ *kɔ*³ ***khon*¹** *dæŋ*¹ *pay*¹
 kitty then might walk go
*læw*⁴ *phlat*⁴ *tok*² *lon*¹
 then incidental fall down
*pay*¹
 go

'[They didn't close the drain.] The kitty might have walked over it and fallen in.'

In (19) considering the fact that the drain was not closed, the speaker deduces that the event of the kitty walking and falling down into the drain has occurred. The proposition is presented as a deduction.

3.3 Certainty vs. Dubitative

Certainty, also called confidence (Palmer 1986), refers to the degree of certainty the speaker has towards the truth of the proposition. It is found that Thai has two degrees of certainty—high and low, expressed by adverbs. Thai also has another similar category, the so-called dubitative⁵, which indicates that the speaker doubts the truth value of the proposition that is assessed by the other person. To illustrate,

- (20) Somjai *phom*⁵ *waa*³ *klap*²
 I think return
*pay*¹ *moo*¹
 go Univ.

*fon*⁵ *tok*² ***næ*³** *løy*¹
 rain fall certain FP

⁵ The term "dubitative" follows Nida (1949)

Chaiyaa	chuan ³ time yan ¹ not yet	nii ⁴ this man⁴ FP	rəə ⁵ Q
Somjai	I think when I get back to the campus, it will surely be raining.		
Chaiyaa	This time of the year? Not yet I don't think.		

The conversational data in (20) illustrate two types of epistemic marking. Somjai expresses her belief about the rain situation with a high degree of certainty, using the adverb *nee³* while her conversational partner, Chaiyaa, who does not agree with her, expresses his doubt in Somjai's belief, using the final particle *man⁴* and in turn, evaluates the truth of the proposition to be otherwise.

The dubitative particle has various phonetic forms, as also noted in Bhamoraput (1972), such as *kra¹man¹*, *ka¹man¹*, *la¹man¹*, *man¹* and *man⁴*. Adverbs of high certainty include *nee³* 'certainly' and those expressions that contain the word *nee³* such as *nee³nee³* 'certainly' and *nee³noon¹* 'certainly'. Adverbs of low certainty include *baan¹thii¹* 'perhaps' and *ko³pen¹dai³* 'possibly'. Dubitative is marked by the final particle *man⁴*.

To summarize, in terms of semantics, epistemic modality is divided into six subcategories—speculative, deductive, assumptive, evidential, dubitative, low certainty and high certainty.

4.Subcategorization of epistemic modality

In the previous section we have shown a semantic analysis of epistemic markers primarily based on the definitions used by Palmer (1986) and Bybee et al (1994). In fact, the analysis is merely a semantic interpretation of Thai epistemic markers. This paper argues that in order to find the system of marking epistemic modality in Thai, we need to look for the constraint that underlies the marking system. As suggested in a lot of previous work, co-occurrence plays an important role in Thai grammar (Panupong 1962, 1970; Kullavanijaya 1968). Epistemic markers, in particular, are restricted in terms of their co-occurrence with each other. Thus, this section presents patterns of co-occurrence and discusses their restrictions. Finally, the semantic categories that make up the system of epistemic modality in Thai are proposed.

4.1 Combination of epistemic meaning

In Thai epistemic markers may occur in many patterns of combination. Since the data tend to be quite long due to being drawn from the actual corpus, we will first show examples of some combinations before we present the findings of all patterns of co-occurrence.

Examples of combinations of epistemic markers are as follows:

Speculative and Low Certainty

- (21) *baan¹thii¹* *tron¹nii⁴* *?aat²*
 perhaps this part may
 tham¹hay³ *khaaw²*
 cause news
 thii³ *?ook¹* *pay¹* *sap²son⁵*
 which exit go confuse

'Perhaps this may have caused the news that came out to be confusing.'

Sentence (21) shows the combination of the speculative marker *?aat*² and an adverb of low certainty *baaŋ¹thii¹*. In the corpus *?aat*² has not been found to co-occur with any markers of high certainty. If we use the speculative modal with the adverb of high degree of certainty, the sentence is considered unacceptable, as shown in (22).

- (22) **tron¹nii⁴?aat² tham¹hai³*
 this part may cause
- khaaw² thii³ ?ook¹ pay¹*
 news which exit go
- sap²son⁵ nɛɛ³nɛɛ³*
 confuse certainly

Deductive and Dubitative or High Certainly

It is found that the deductive marker *khon¹* can co-occur with either dubitative or high degree of certainty as shown in (23) and (24) below respectively.

- (23) *Fak man¹ khon¹may³ kroot²*
 Fak 3sg might NEG angry
 maŋ⁴
 FP
 riaŋ³ kheɛ³ nii⁴ ?eŋ¹
 matter just this only
- 'Fak might not be angry; it's just a little thing.'

- (24) *man¹ khon¹may³ kiaw²kap²*
 it might NEG be about

rook³sim¹saw³ nɛɛ³
 depression certainly

'It shouldn't be relevant to the depression.'

In sentence (23) the speaker does not know whether the subject Fak is angry but he reasons that Fak is not. He also expresses his commitment to the truth of the proposition at the low level of certainty. We can say that the epistemic modal *khon¹* is neutral in terms of the epistemic degree since it is harmonic with an element of any degree of certainty.

Evidential and High Certainty

The following example illustrates the combination of the initial particle *son⁵sai⁵* indicating evidential and the adverb of high certainty *nɛɛ³*. The combined meaning results in the higher degree of certainty.

- (25) *son⁵sai⁵ khiin¹nii⁴ko³ dai³*
 suspect tonight then get
 duu¹ Saket Khaaw
 see Saket Khaaw
 nɛɛ³ ləy¹ nia³
 certainly FP FP

'I think tonight we could make it to the Saket Khaaw Show definitely.'

The above data illustrate the use of epistemic markers in combination. But not all epistemic markers can co-occur with each other. We have found that there are restrictions on co-occurrence as shown in Table 1.

	Assumptive	Speculative	Deductive	Evidential	Dubitative	Low Certainty	High Certainty
Assumptive	x	x	x	x	x	x	✓
Speculative	x	x	x	x	✓	✓	x
Deductive	x	x	x	✓	✓	x	✓
Evidential	x	x	✓	x	✓	x	✓
Dubitative	x	✓	✓	✓	x	x	x
Low Certainty	x	✓	x	x	x	✓✓	x
High Certainty	✓	x	✓	✓	x	x	x

Table 1 Co-occurrence properties of epistemic markers

From Table 1 we can see that assumptive can only combine with a marker of high certainty while speculative can only occur with dubitative and low certainty. Deductive markers co-occur with evidential, dubitative and certainty. None of the three categories marked by modal auxiliaries co-occur with each other. Evidential shares the same pattern of co-occurrence with deductive. Low certainty is the only type that can be doubled.

Several points can be made from the co-occurrence patterns of epistemic markers. First, the three types of epistemic modality marked by preverbal auxiliaries are clearly distinct from each other since they have totally different patterns of co-occurrence: assumptive with high certainty, deductive with dubitative or high certainty, and speculative with dubitative or low certainty.

Secondly, evidential has the same pattern as deductive, i.e., co-occurrence with dubitative or high certainty. It is not surprising to put evidential in the category of deductive since it involves a kind of

judgment as well, as noted in Palmer (1986: 69). The only difference is that evidential requires some reference to evidence as a basis for judgment in the context while deductive is implicit in this respect.

Third, dubitative, low certainty and high certainty all involve the speaker's strength of commitment to the truth of the proposition. One might think of lumping all three into one category of certainty. However, it is found that they are distinctly different in terms of how they interact with other epistemic markers.

Low certainty can only co-occur with a speculative marker, as shown in (21). The result of the combination is harmonic and considered simply a single modality, i.e. speculation or evaluating the possibility. This phenomenon is also found in English. According to Lyons (1977), *may* and *possibly* in a sentence such as *He may possibly have forgotten* express the same degree of modality. Thus, the combination is considered the double realization of a single modality such that the modal elements "reinforce each other" in terms of

the epistemic qualification (Lyons 1977: 807). Therefore, low certainty, whose occurrence is restricted to speculative in Thai, should be incorporated into the category of speculative.

Dubitative is a category that also indicates the speaker's commitment to the truth of the proposition. However, the reading of its degree seems to vary when it is combined with other epistemic markers. That is, when combined with the speculative, it increases somewhat the degree of certainty. But when it combines with a deductive, it tones down the speaker's certainty, as seen in (23).

High certainty can occur with assumptive or deductive markers. It is expressed by adverbs. This may lead us not to consider this category as part of the epistemic system since they might simply be a modification of certainty or confidence, rather than an assessment of the truth of the proposition. However, evidence that these adverbs express epistemic modality can be found when they co-occur with deontic modals since they serve to evoke the epistemic value that is subsided in these deontic modals. To illustrate,

- (26) kuu¹ tɔŋ³ yuu² nai¹ kroŋ¹
 1sg must be in cage
 saam⁵ dian¹
 three month
 taai¹ ... kuu¹ tɔŋ³ taay¹
 die... 1sg must die
 nɛɛ³
 certainly

'I must be in prison for three months. Die!
 I'll certainly die.'⁶

In (26), the preverbal auxiliary tɔŋ³ 'must' in the last clause is also used epistemically to

indicate a very strong degree of commitment on the part of the speaker to the probability of the event. Note that the data in (26) also show the comparison between the deontic use (in the first clause) and the epistemic use of tɔŋ³ in the nearby context.

Note that the final particle marking the dubitative maŋ⁴ has the same function as adverbs of high certainty, as shown below.

(27) Poo Khai:

naa³tɕaɽ² pra²maan¹ tɕet² khuap²
 should be around seven year
 maŋ⁴ khrap⁴
 FP PP

[Nuu Maem: Right. At the time of meeting how old were you?]

Poo Khai I must have been around seven years old, I guess.

In sentence (27) the final particle of low certainty maŋ⁴ co-occurs with the preverbal auxiliary naa³tɕaɽ² 'must', whose basic category is deontic. The sentence is interpreted as an assessment of the age of the speaker when he himself was very young. The speaker expresses the truth of the proposition as an approximation with some confidence. The preverb naa³tɕaɽ² 'must' here is epistemically used.

The ambivalent nature of the modals has been noted by many linguists such as Palmer (1986) and Sweetser (1990). Although in most cases Thai deontic modals express obligation, we find some sentences that could be ambiguous in terms of the speaker's involvement with the proposition. Combining these modals with markers of certainty can bring out the epistemic value and eliminate ambiguity.

⁶ The dotted markers follow the original text.

We may conclude that there are five categories in the marking system of epistemic modality in Thai:

1) Speculative

- a. possibility
- b. can be marked by a preverbal auxiliary *ʔaat*² or adverbs of low certainty *baaŋ¹thii¹* and *ko³pen¹dai³*
- c. low certainty can be reinforced by multiple uses of adverbs, strengthening the degree of objectivity
- d. the source or basis for the evaluation need not be present in the context

2) Assumptive

- a. concluded from presumably known facts
- b. is marked by a preverbal auxiliary *yom³* and can be combined with adverbs of high certainty *nee³*
- c. the basis for the evaluation is generalized and emphasized, showing intersubjectivity

3) Deductive

- a. two types—probability and inferential evidence
- b. is marked by a preverbal auxiliary *khon¹*
- c. evidential is marked by *khon¹* and initial particles
- d. markers of both types can be combined to reinforce deductive strength and seem to show high subjectivity
- e. the basis for the evaluation tends to be specified as

evidence indirectly observed by the evaluator, viz the speaker, yielding the subjectivity

4) Dubitative

- a. an evaluation of probability yet showing uncertainty
- b. is marked by the final particle *maŋ⁴*
- c. when combined with speculation it increases the degree of certainty, but with deductive, it lessens the speaker's certainty.
- d. has a dual function of marking both epistemic modality and pragmatic interaction, thus is a grammatical and interactional particle

5) Certainty

- a. an evaluation of probability with high certainty, varying in degree
- b. is marked by adverbs of certainty
- c. evokes the epistemic value when used with deontic modals

5. Concluding remarks

This paper attempts to determine the system of epistemic marking in Thai. It is mainly based on the actual corpus of data, both written and spoken. The epistemic markers identified in the study belong to various syntactic categories. A complicated analysis seems to be the identification of their semantic subcategories of epistemic modality. Some markers have more than one meaning. Also, these semantic

categories are closely related by nature. In Thai, in particular, markers occur in combination. Thus, the study examines the co-occurrence patterns and restrictions of these markers. The findings are used as a basis for distinguishing semantic subcategories of epistemic modality that form the system of marking epistemic modality in Thai.

However, there remain other problems concerning epistemic modality in Thai, especially in the domain of discourse and pragmatics. It is observed that some markers are used as discourse strategies, such as for politeness and closing a conversation. The following example shows the redundant use of speculative markers to show politeness in the context of talking about a sensitive topic and referring to an organization that has high social power.

- (28) sin^3 ?aat^2 $\text{pen}^1\text{pai}^1\text{dai}^3$
 DM may be possible
 waa^3 ?aat^2 t\phi hai^3
 CMPL may use
 $\text{tun}^1\text{la}^1\text{phi}^2\text{nit}^4$ waa^3 Koa
 judgment CMPL Koa
 Koa Toa t\phi hut^4 kaw^2
 Koa Toa CL old
 mii^1 $\text{khoo}^3\text{bok}^2\text{phron}^3$ maak^3
 have drawback much
 t\phi in^1 may^3 yaak^2
 thus NEG want
 hay^3 khaw^3 $\text{maa}^1\text{dam}^1\text{n\phi n}^1\text{kaan}^1$
 give enter come carry out
 too^2 $\text{k\phi pen}^1\text{dai}^3$
 continue possibly

It may be possible that they may use their authority in judging that the previous Koa Koa Toa committee (the Election

Commission of Thailand) had a lot of drawbacks such that they did not want them to continue the work, possibly.'

Sentence (28) is a complex sentence composed of four clauses. Its main clause, which is the first clause to the left, has the verb $\text{pen}^1\text{pai}^1\text{dai}^3$ 'be possible' which is an explicit means of indicating 'possibility'. The main clause is also marked with the epistemic modal ?aat^2 'may', which occurs again in the next clause. The whole sentence indicates that the speaker does not commit to the truth of the proposition that the older Committee had a lot of drawbacks. The sentence is multiply qualified with markers of possibility, two of which are the same. Note that its meaning is not qualitatively different from a sentence with only one, or even none, epistemic modal, since the main verb already explicitly denotes that the proposition in the embedded clause is not the truth but just speculation. It can be concluded that this type of multiple use of epistemic markers is for emphasis. Notice that the sentence is a journalist's comment on the judgment of the election Committee which is a highly respected social organization. It is likely that the double marking of possibility for emphasis is a politeness strategy since making a comment is a positive-face threatening act⁷ such that the writer has to emphasize the speculation part.

To sum up, there are many other aspects of epistemic modality in Thai that need to be studied—syntactic, semantic, typological, cognitive and pragmatic. This study is an attempt to provide some basic analyses of this category. It is certainly also necessary

⁷ P. Brown and S. Levinson (1987) *Politeness: Some Universals in Language Usage*. Cambridge: Cambridge University Press.

to bring the basic findings from other related categories such as deontic modality and tense into the picture so that the system of epistemic modality can be more clearly explicated.

Appendix: List of Abbreviation

CMPL	Complementizer
CONT	Continuous marker
DM	Discourse marker
FP	Final particle
NEG	Negation
POSS	Possessive marker
PP	Polite particle
PROG	Progressive marker
RED	Reduplicative
1sg	First person pronoun
3sg	Third person singular pronoun

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