

Epistemic modality or how to express likelihood in Burmese¹

1. Introduction

Burmese, a Tibeto-Burman language spoken in Burma, can be described as a tonal, analytic² and monosyllabic verb final language. Temporal reference is not marked by grammatical morphemes in this language, and although aspect is an important grammatical category, it does not appear to be as obligatory as modality. Modality is required in main clauses with a verbal predicate as well as in subordinate clauses and in some nominalizations as well — see Vittrant (2005). For this reason, Burmese can be called a ‘modality-prominent’ language (Bhat 1999, Vittrant 2005). In this study we discuss the expression of modality types, defined according to van der Auwera & Plungian (1998) (but see also Vittrant (2004) for a study that used a wider definition of modality).

The typology of modality types proposed by van der Auwera & Plungian (1998) is shown in Table 1.

Possibility				
Situational possibility (Non-epistemic possibility)		Epistemic possibility (Uncertainty)		
Participant-internal possibility (Dynamic possibility, Ability, Capacity)	Participant-external possibility			
	Non-deontic possibility			Deontic possibility (Permission)
Participant-internal necessity (Need)	Non-deontic necessity	Deontic necessity (Obligation)	Epistemic necessity (Probability)	
	Participant-external necessity			
Situational necessity (Non-epistemic necessity)				
Necessity				

Table 1: Modality types

¹ We are grateful to two anonymous referee. Vittrant furthermore thanks her informants, particularly Khin Hnit Thit Oo, for her help and patience, and van der Auwera the Belgian Government for grant IAP P5/44 on Grammaticalization and (Inter)subjectification.

² Although scholars agree on the non-inflectional nature of Burmese (see Min Latt 1962:103), any more specific classification is controversial. Words often consist of just one morpheme, although the existence of productive compounding and its lexicalization results in the creation of words of more complicated nature. Given the great invariability of words, the high frequency of one-to-one correspondence between words and morphemes, Burmese could be analyzed as an isolating language, or more precisely an analytic language, as defined by Haspelmath (2002) or Aikhenvald (2007:5), but see Delancey (1990: 78) for the claim that Burmese is agglutinative.

Situational modality is defined by van der Auwera & Plugian (1998:80ff) as “non-epistemic modality”; it can be divided in two types: *participant-internal* modality and *participant-external* modality. “The first term refers to a kind of possibility and necessity internal to a participant engaged in the state of affairs. [...] The [second] term refers to circumstances that are external to the participant, if any, engaged in the state of affairs and that make this state of affairs either possible or necessary”. Participant-Internal modality is illustrated by example (1). Participant-external modality, which again comes in two subtypes, deontic and non-deontic, is illustrated in (2). Deontic possibility is permission, and deontic necessity is obligation, both of which may have the speaker as the source of authority.

- Situational participant-internal modality

1. a. John can do the job in one day. POSSIBILITY
b. John needs to sleep ten hours every night to recover from illness. NECESSITY

- c. ချိုချို ဖတ်တတ်တယ် ။ POSSIBILITY
Cho²-Cho² pha[?] ta[?] Tε²
Cho Cho read AUX:P-in R.ASS
*ChoCho can/knows how to read.*³

- d. လူတွေဟာ ကြီးတူးဖို့အထွက် နေ့တိုင်း ထမင်း စားဖို့လိုတယ် ။ NECESSITY
lu²-Twe² ha² ci³ thwa³ Pho¹ ʔə-thwε[?] təmiN³sa³ Pho¹ lo² Tε²
man-PLUR TOP be big AUX:PERF SUB:CAUS for rice eat SUB:PURP need R.ASS
Men, to grow up, they need to eat every day.

- Situational : participant-external modality

2. a. To get to the station, you *can* take bus 66. POSSIBILITY (non-deontic)
a'. You can take the bus to go there, but not the car. POSSIBILITY (deontic)
b. To get to the station, you *have to* take bus 66. NECESSITY (non-deontic)
b'. You *must* do your homework first. NECESSITY (deontic)
- c. ရုပ်ရှင်ရုံ သွားချင်ရင် ဒီကားနဲ့သွားလို့ရတယ် ။ POSSIBILITY (non-deontic)
yoʔjiN²youN² θwa³ chiN²yiN² di² ka³ ne¹ θwa³ lo¹ ya¹ Tε²
movies go desire if DEM bus with go SUB AUX:P-ex R.ASS
If you want to go to the movies, you can go with this bus.
- c'. ဒီညနေ နင် ရုပ်ရှင်ရုံ သွားလို့ရတယ် ။ POSSIBILITY (deontic)
di² na¹-ne² niN² yoʔjiN²youN² θwa³ lo¹ ya¹ Tε²
DEM night-day 2SG movies go SUB AUX:P-ex R.ASS
You can go to the movies tonight.

³ Our phonemic transcription roughly follows Bernot (1980)'s proposal, with minor changes for tones and diphthongs. Thus tones are indicated by superscript numbers at the end of the syllable. [1] stands for brief, high and creaky tone ; [2] stands for long, low (and breathy) tone; [3] stands for long, clear, high-falling tone. The fourth tone corresponds to a glottal stop. Atonal (and unmarked) syllables may appear in bisyllabic words with [ə] as vowel. Capital letters stands for stops that can be realized as voiced or unvoiced depending on the phonological (and syntactical) context. Most of the grammatical morphemes start with a capital letter, given that they are usually (but not always) syntactically closely related to the preceding morpheme.

- d. အားရှိရအောင် ဟင်းချို သောက်ရမယ် ။ NECESSITY (non-deontic)
 ?a³ ji ya¹ ?a³N² hiNcho θa³? ya¹ Mε²
 strength have obtain in order to soup drink AUX:P-EX IR.ASS
To get strong, you have to drink soup.

- d'. ...မင်းကို တစ်စုံတစ်ရာ မေးမြန်းခဲ့ရင် သွက်သွက်လက်လက် ဖြေရမယ် ။ NECESSITY (deontic)
 miN³ Ko² tə-SouN²-tə-ya² me³myaN³ Khe¹ yiN²
 2SG OBJ one-CLF-one-thing ask ASP:SPT if
 θwε?²-θwε?-le?²-le? phye² ya¹ Mε²
 quickly (adv) answer AUX:P-EX IR.ASS
If [the rich man] asks you something, you have to answer quickly.

Whereas *Situational* modality concerns aspects internal to the state of affairs that the proposition reflects, *Epistemic* modality concerns the speaker's degree of uncertainty about his/her assertion and it therefore has scope over the whole proposition. A proposition is judged to be uncertain or probable as in example (3).

3. a. He *may* have arrived now. POSSIBILITY
 b. He *must* have arrived now. NECESSITY
- c. မနက်ဖြန် သူ လာရင်လာမယ် POSSIBILITY
 mənε?phyaN² θu² la² yiN² la² Mε²
 tomorrow 3SG come- PTC come IR.ASS
He may come tomorrow.
- d. သူ အိမ်မှာ နေလို့မိမယ် NECESSITY
 θu² ?eiN² ma² ne² leiN¹ Mε²
 3SG house LOC be, dwell PROB IR.ASS
He must be home.

Burmese is unfortunately often absent from typological works due to the scarcity of linguistic works on this language, and the first aim of this article is to provide data and some initial and typologically relevant analyses. However, to examine Burmese modality in its entirety is beyond the scope of this article, given the pervasiveness of this notion in the language. We therefore study only one subtype. This subtype is *Epistemic* modality. The motivation for this choice is the following. First, this modal subcategory is relatively uncontroversial, and whatever theoretical frame is considered — see for instance Bybee & al (1994), Bybee & Fleischman (1995), Chung & Timberlake (1985), Frawley (1992), Kratzer (1991), Le Querler (1996), Palmer (1986), van der Auwera & Plungian (1998), etc —, *Epistemic* modality is viewed as dealing with degree of probability of the state of affairs, or concerning “an indication of estimation [...] of the chances that the states of affairs expressed in the clause applies in the world” (Nuyts, 2006:6). Second, although Burmese modality has been covered by Vittrant (2004), it is useful to extend this study on the bases of a bigger database. It could confirm, falsify or modify the analysis of the forms listed in this former study and provide an accurate analysis of the expressions of *Epistemic* modality. Third, existing studies of modality used the parallel text of Harry Potter have proved useful (e.g van der Auwera & al (2005)). Since some Harry Potter novels have been translated into Burmese as well, the challenge offered itself to exploit this source of evidence for the study of Burmese modality as well.

2. The corpus

The choice of the corpus for this study of *Epistemic* modality in Burmese has been inspired by van der Auwera & al (2005). In their article, the authors used the *Harry Potter and the Chamber of Secrets* novel and its translation in different Slavonic languages to study (and compare) the means used to express *Epistemic* possibility⁴. Like for Slavonic languages, a translation of this *Harry Potter* book is available in Burmese. We therefore decided to use it as our corpus to study how likelihood is expressed in this language. Note also that the text is full of dialogues and concerns mystery and uncertainty, that is to say, an ideal environment for *Epistemic* modality. Of course, the usual disclaimer apply: we are only dealing with one book and one translation and thus the representativeness is by means guaranteed. Furthermore this study starts from English, so we will inevitably miss those uses in which Burmese uses a modal marker, and English does not.

We first isolated all the *Epistemic* uses of the modal auxiliaries *may*, *might*, *could*, both the positive and the negative occurrences, and we excluded non-*epistemic* uses such as those presented in (4).

4. a. I never knew all the odd stuff I *could* do was magic... [ENG 96]
 b. ...he *could* barely move for laughing [ENG 192]

We also listed the sentences containing the *Epistemic* adverbs *maybe* and *perhaps* when they have scope over the sentence as in (5).

5. ‘*Maybe* he is ill’, said Ron hopefully. [ENG 77]

For the sake of simplicity, we excluded the few sentences which contain two *Epistemic* forms, for instance an auxiliary and an adverb, as in example (6).

6. “*Maybe* your friend *could* take it.” [ENG 96]

The total set of sentences selected containing the following *Epistemic* forms, i.e. *may*, *might*, *could*, *maybe* and *perhaps* amounts to 87 (and this for the entire book). The breakdown in subtypes is shown in Table 2.

Types		Number of occurrences		
Auxiliary	<i>may</i>	4	66	87
	<i>might</i>	41		
	<i>could</i>	21		
Adverb	<i>maybe</i>	16	21	
	<i>perhaps</i>	5		

Table 2. *Epistemic modality in the text source*

For each of the sentences thus isolated, we searched for the translational equivalents in Burmese, and analyzed them in order to find out whether Burmese uses an auxiliary, a verbal

⁴ On the usefulness of parallel corpora, see Wälchli 2007. On the use of *Harry Potter* novels as a literary parallel corpus, see Stolz 2007.

particle, or a complex structure. We expected not to find any adverbs, given that the adverb category is doubtful in Burmese⁵.

3. Results and analysis

3.1. Diversity of forms

The translational equivalents of the English epistemic forms are a subset of the Burmese markers listed by Vittrant (2004). The latter are listed in Table 3, and the forms in grey (verbal morphemes or special constructions) are the ones found in our data.

Burmese Form		Modal meaning	Lexical meaning/origin
<i>Verbal Morphemes</i>			
1. လော့	laɔʔ	probability (auxiliary)	'be sufficient, be enough'
2. လိမ့်	leiN ¹	likely to V (verbal particle)	—
3. ကောင်းရဲ့	V. + kaɔN ³ -ye ¹	probability (associated morphemes)	'be good' - particle ⁶
<i>Syntactic constructions / complex sentences</i>			
4. V. ရင် V. မယ်	V. + yiN ² + V. + Me ²	probability, maybe	V. + ချင် chiN ² + V. + IRREALIS
5. V. မ V. မပြောနိုင်ဘူး	V. + mə + V. + mə pya ³ naiN ² Phu ³	doubtful	verb + negated verb + 'I cannot say'
6. P. ဖို့ များတယ်	P. + Pho ¹ + mya ³ -Te ²	there is a chance that P ⁷ .	clause + SUB:'PURP' + 'be numerous'-REALIS
7. V. တာ/မှာ ဖြစ်	V. + Ta ² /Ma ² + phyiʔ	likely to V	V.-NMLZ (REALIS/IRR.) + 'to happen'
8. V. ကြည့် မှ V. မယ်	V. + Ci ¹ + mə ¹ + V. + Me ²	probably not V	V. + AUX:try + 'only' + IRREALIS
9. P. ထင်တယ်	P. + thiN ² + Te ²	probability	'I think' + P
10. P. သလို(လို)ဘဲ	P. + θə-lo ² -(lo ²)-be ³	low probability	'It seems that' P.

Table 3 : Examples of means expressing Epistemic modality in Burmese (adapted from Vittrant 2004)⁸

Six of the *Epistemic* forms listed by Vittrant (2004) don't show up in the *Harry Potter* translation. This should not surprise us, as Vittrant explained that most of them occurred in elicitation sessions (2004: 356), based on other authors (Bernot (1985), Okell & Allott (2001)) and they did not appear spontaneously in her recorded data or texts either.

⁵ On the doubtfulness of the adverb category in Burmese, see Bernot (1983). Vittrant (2004 : 287) gives a couple of examples of what could be considered modal adverbs. However, they seem rare, and all the examples were elicited.

⁶ This particle /ye¹/ is described by Okell & Allott (2001:185) as statement marker related to the REALIS marker /Te²/. It has a limited range of functions, being used in idiomatic expressions.

⁸ Linguistic means that express *certainty*, that is to say the highest probability, are not given in the table 4 but can be found in Vittrant (2004).

One line could be seen as missing in this table, as we notice the repeated use of the IRREALIS marker in translations of *Epistemic* sentences. As /Mε² ~ Ma²/ appears mainly in sentences conveying future, conditional or hypothetical meaning, and as it is opposed to the REALIS marker /Te² ~ Ta²/, Vittrant (2004:360ff) treated it as a marker of factuality, and did not associate it with the *Epistemic* forms⁹. It will be mentioned off and on and we devote § 3.2. to it.

A first remark concerns the presence or absence of modal forms in the Burmese translations. Indeed, the translator did not systematically use a modal expression to translate the English *Epistemic* forms. Sometimes, no dedicated form appears in the Burmese text, as in example (7).

7. သက်ညာစွာနဲ့ သူမကို ဒီအတိုင်းရှိပါစေ ၊ စာမေးပွဲပြီးမှ ပြော ။ [ENG 285/BIR 318]
 0ε?ηa².Swa² nε¹ θu²ma¹Ko² di² ?ətaiN³ ji¹ Pa² Se²
 have compassion.ADV with 3.FEM OBJ DEM as be POL INJ
 sa²me³pwe³ pi³ ma¹ pya³
 exam finish only tell
*It **might** be kinder to leave her here where she is [un]til they [the exams] are over.*
(lit : Let her being like this, with compassion. (We'll) talk only when exams are finished.)

The translator may also use mental state predicates ('to fear, to have doubts, to think', as in example (8)) or grammatical morphemes marked for IRREALIS modality (example 9). For instance, the use of the IRREALIS modal marker မယ် /Mε²/ (or its allomorphs) is commonly used to translate *might* — and it is restricted to this usage (see Table 4 below).

8. ငါက သူ့ကို စလေးသရင်း ရဲ့ဆက်ခံသူ လို့ သံသယရှိနေတယ်။ [ENG 268/BIR 299]
 ηa² Ka¹ θu¹ Ko² səle³θəriN³ye¹ she?khaN²-θu² lo¹ θaN²θəya¹ ji¹ ne² Te²
 1SG S. 3SG.DAT OBJ slytherin GEN to inherit-NMLZ CIT **doubt** **have**ASP:IMPFV R.ASS
*I think he **might** be Slytherin's heir. (lit: I have doubts [about] him as Slytherin heir.)*
9. လျှို့ဝှက်အခန်းရဲ့အပေါက်ဟာ သူမရဲ့သန့်စင်ခန်းထဲမှာ ရှိမယ်။ [ENG 328/BIR 368]
 jo¹mε?-?ə.khaN³ ye¹ ?ə.pa? ha² θu²ma¹ ye¹ θaN¹ZiN².khaN³ the³-ma² ji¹ Me²
 secrets-chamber GEN entrance TOP 3SG.FEM GEN be clean.room interior-LOC to be IR.ASS
*... the entrance of Chamber of secrets **might** be in her bathroom.*

Given the variety of *Epistemic* means found in Burmese, it is not surprising that no systematic grammatical relation is observed between the English forms and their Burmese translational equivalents. Thus auxiliaries are not systematically translated by auxiliaries, and, as expected, we did not find any modal adverbs. For example, of the 41 occurrences of *might* of the source text, nearly a quarter (8/41) are simply translated by the IRREALIS form မယ် /Mε²/ (or မှာ /Ma²/), and another quarter by the auxiliary နိုင် /naiN²/ (8/41). Moreover, in total, eight different *Epistemic* means are used as translational equivalents of English forms (see Table 4). In example (8) above, the lexical expression 'to have doubts about' is used to translate the English form *might*, whereas no explicit form is used in (9); the sentence appears with IRREALIS mood. In (10), however, we isolated the auxiliary နိုင် /naiN²/ to translate the English *Epistemic* form *might*, and the translational equivalent for *might* in (11) is an independent clause meaning '(I) think P'.

⁹ For Romeo (2008:67) also, these morphemes mark the status (REALIS/IRREALIS) of the event, as well as "the declarative quality of the utterance that describes the event itself".

10. တိုက်ခိုက်သူပြန်လာနိုင်သေးတယ်။ ဒီလူတွေကို သေအောင် သတ်ပစ်နိုင်တယ်။ [ENG 265 /BIR296]

taiʔ.khaiʔ-θu² pyaN² la² naiN² θe³ Tɛ²
 attack-NMLZ AUX:ITER come AUX:P-in again R.ASS

di² lu²-Twe² Ko² θe² ʔaɔN θaʔ piʔ naiN² Tɛ²
 DEM man-PLUR OBJ die in order to kill ASP:COMPLETE AUX:P-in R.ASS.

... the attacker **might** come back to finish these people off.

(lit: The attacker **might** come again. They **might** kill these people off in order [they] die.)

11. ရစ်ဒေါ် လူ မှားနေပြီ ထင်တယ်။ [ENG 250/BIR 279]

[riʔdɔ² lu² ma³ ne² Pi²] [thiN² Tɛ²]
 [riddle people be wrong ASP:PERF R.CONST] [think R.ASS]

'Riddle **might** have got the wrong person' [said Hermione]

(lit: (I) think Riddle is wrong (for) the people.)

Grammatical Type	Form in Burmese	may	might	could	maybe	perhaps	Total
1. Auxiliary	V. နိုင် V. + naiN ²	—	7	13	1	—	21
2. Auxiliary	V. (လို့)ရ V. + (lo ¹) ya ¹	—	—	5	—	—	5
3. Final verbal particle (FVP)	မယ်-မှာ Me ² ~ Ma ² IRREALIS	—	8	—	—	—	8
4. Verbal particle / marker (VM)	V. လို့ မယ် ။ V + leiN ¹ Me ² V. + VM + IRREALIS	2	3	1	—	—	6
5. Syntactic structure ¹⁰	V. ချီ V. မယ် V. + chiN ² + V. + Me ² V. SUB V. IRREALIS	2	3	1	1	1	8
6. Complex sentence	P. ထင်တယ် ။ P. + thiN ² Te ² P. + think - REALIS	—	5	—	2	2	9
7. Complex sentence	N./P. ¹¹ (လို့)ဖြစ် N./P. + (le ³) phyi? N./P. + (ANAPH.) be, happen	—	1	—	8	1	10
8. Complex sentence	N./P. နဲ့တူတယ် ။ N./P. + ne ¹ - tu ² - Te ² N./P. + with-be similar- REALIS	—	3	—	2	—	5
9. Other (lexical items, zero,, combined items...)		—	11	1	2	1	15
Total of occurrences		4	41	21	16	5	87

Table 4 : Burmese translational equivalents of English forms¹²

As shown by the Table 4, only *could* and *maybe* have a preferred corresponding form : 13 of 21 occurrences of *could* ($\pm 1/2$) are translated by the modal auxiliary နိုင် /naiN²/, and 8 of 16 occurrences of *maybe* (1/2) are translated by a complex sentence consisting of a nominalized clause plus the verb ဖြစ် /phyi?/ ‘to be, to happen’ in the IRREALIS form (see example 12). But no comparable rate can be found for the other English *Epistemic* forms¹³.

¹⁰ The syntactic structure <V. + chiN² + V. + Me²> appears in a slightly different form in Vittrant (2004), whose data are mostly speech (records or elicitation). In her examples, chiN² morpheme has been reduced to yiN² (see table 3).

¹¹ N stands for nominal phrase or nominalized clause ending with Ta² or Ma² markers conveying respectively REALIS and IRREALIS modalities. P stands for a subordinating clause which does not contain any Final Verbal Particle (FVP) conveying modality.

¹² The forms in grey have already been listed by Vittant 2004 as EPISTEMIC modal expressions (see table 3).

¹³ *perhaps* form is translated by a complex sentence in two out of five cases. As for *could* and *maybe* we could be dealing with a preferred translational equivalent, but the numbers are very low here..

12. တခြားအကောင်ဆန်းတစ်မျိုးက လူကို ဒုက္ခပေးတာလဲ ဖြစ်မယ် ...။ [ENG 250/BIR 279]
 [təCha³ ʔəkaŋ² ShaN³ tə myo³ Ka¹ lu² Ko² doʔkha² pe³ Ta²] lɛ³
 other beast be strange one CLF:kind s. peopleOBJ suffering give NMLZ.R ANAPH
phyi? Me²
be IR.ASS
Maybe it was some other monster that was attacking people...
(lit: Another kind of strange beast, it would/will be the fact that gives suffering to people)

The adverbs *maybe* and *perhaps* are almost never translated by auxiliaries¹⁴; most of the translational equivalents are complex sentences (see grey lines in Table 5), consisting of two independent clauses when the verb ‘to think’ is used, as in (13), or containing a clause used as a nominal as in (14) (see also (12) above).

Grammatical Type	Form in Burmese	maybe		perhaps	
Auxiliary	/naiN ² / နိုင်	1		—	
Syntactic structure	V. ချင် V. မယ် — chiN ² — Me ² V. SUB V. IRREALIS	1		1	
Complex sentence	P. ထင်တယ်။ ။ P. + thiN ² -Te ² P. + think – REALIS	2	12	2	3
Complex sentence	N./P. (လဲ) ဖြစ် — + (le ³) phyi? N./P. + (anaph.) - be, happen	8		1	
Complex structure	N./P. နဲ့တူတယ်။ ။ — + ne ¹ - thu ² - Te ² N./P. + with-be similar-REALIS	2			
Others (lexical, unmarked)		2		1	
Total of occurrences		16		5	

Table 5: Burmese Translational equivalents for maybe and perhaps

13. မင်း အိပ်ချင်နေပြီ ထင်တယ်။ [ENG 121/BIR 130]
 [miN³ ʔɛi? ChiN² ne² Pi²] [thiN² Te²]
 2SG sleep wish ASP:IMPFV R.CONST. think R.ASS
Perhaps you're getting a little drowsy? (lit: (I) think you wish to sleep.)
14. a. သူ မနေမကောင်းဘူးနဲ့တူတယ်။ [ENG 77/BIR 84]
 [θu² ne² mə kaŋ³ Phu³] nɛ¹ tu² Te²
 [3SG stay NEG be good NEG] with be similar R.ASS
"Maybe he's ill!" [said Ron hopefully] (lit: It is similar with he is not well.)

¹⁴ For the 21 occurrences of English adverbs, we found only one Burmese auxiliary.

- b. သူ သွားပြီ နဲ့တယ်။ [ENG 78/BIR 84]
 [θu² θwa³ pi²] ne¹ tu² Tε²
 [3SG go R.CONST] with be similar R.ASS
Maybe he's left, [said Harry] (lit: It is similar with he has gone.)

3.2. IRREALIS marking

We noticed the importance of IRREALIS marking in the *might* translational equivalents (cf. Table 4). Apart from the 8 sentences containing only the ‘Final Verbal Particle’ (*henceforth* FVP) IRREALIS မှာ-မယ် /Ma²~Me²/, other sentence structures require the use of this FVP. For instance, sentences containing the verbal particle လိမ့် /leiN¹/ (three sentences) or the syntactic structure V ချင် /chiN²/ V (three sentences) obligatorily contain the IRREALIS marker မှာ-မယ် /Ma²~Me²/ . This marker also appears in complex sentences, where it may be combined with other items to provide an epistemic meaning, as in the construction shown in § 3.5 (with the verb ဖြစ် /phyi²/) or conjointly with lexical items that already refer to a judgment of the speaker. Thus example (15) contains the IRREALIS marker combined with an expression meaning “to be good again”.

15. ...ခုတင်ခေါင်းရင်း ဘီဒိုလေးနဲ့ စကားပြောတာကမှ တော်ဦးမယ်။
 khu¹thiN² gaN³ yiN³ bi²do² pu¹ le³ nε¹ zəga³ pya³ Ta² Ka¹ ma¹
 bed -head -origin cabinet small DIM with speech talk NMLZ.R S. only
 တ² ဘာ³ Me²
 be good ASP:ITER IRR.ASS
... and that they might just as well tell her bedside cabinet not to worry for all the good it would be. (lit: The fact that (they) talk with (her) small bedside cabinet would be even better/fair)

In other words, examining the *might* translational equivalents, we notice that the majority of simple sentences containing *Epistemic* forms, also contain an IRREALIS marker (14/21), as shown in Table 6. The proportion is reversed for *could* translational equivalents (15/20) which contain REALIS marker.

As for complex sentences, it is difficult to take into account the modal value (REALIS/IRREALIS) of the FVP given that a sentence may contain one or more FVPs. Indeed, a FVP may or may not appear in both clauses of the complex sentence, depending on the type of subordinating clause. Those clauses ending by a subordinator that is semantically marked (purpose, temporal, conditional...) are unmarked for factuality, that is to say, they do not contain any of the restricted set of FVPs, neither the plain nor the nominalized form. However, subordinating clauses that end with a FVP (and often correspond to ‘our’ relative and substantival clauses) do not contain any subordinator.

Thus, when two FVPs appear, one in the main and the other in the dependent clause, they may be different, as in example (13) above. They may also have special forms as in the example (16) (see also example (12) above). In this sentence, the FVP of the dependent clause used as a nominalizer conveys the REALIS value, whereas the main clause is marked for IRREALIS by the FVP မယ် /Me²/ . In other words, the state of affairs described by the dependent clause, i.e. the capacity of making itself invisible, is presented as actual. However, the speaker is doubtful regarding its occurrence at the time of reference.

16. ငှင်းကိုယ်ငှင်း ကိုယ်ဖျောက်နိုင်တာလဲ ဖြစ်မယ်။ ...။ [ENG 184/BIR 203]
 [ləgaN³.ko².ləgaN³ ko² phya? naiN² Ta²] le³ phyi? Me²
 itself body make disappearing AUX:P-in NMLZ.R ANAPH be, happen IRR.ASS
*Maybe it can make itself invisible, [said Hermione...]
 (lit : it will happen also the fact that it can make its body itself disappearing.)*

Therefore, no details on the modal value of the FVP in complex sentences is available in Table 6.

Burmese <i>Epistemic</i> means	FVP modal value in sentences translating <i>might</i>		FVP modal value in sentences translating <i>could</i>	
	REALIS	IRREALIS	REALIS	IRREALIS
မယ်-မှာ Me ² ~ Ma ² IRREALIS	—	8	—	0
V. နိုင် V. + naiN ²	7	0	13	0
V. လိမ့် မယ် V. + leiN ¹ Me ² V. + VM + IRREALIS		3		1
V. ချင် V. မယ် V. + chiN ² + V. + Me ² V. SUB V. IRREALIS		3		1
V. (လို့)ရ V. + (lo ¹) ya ¹	—	—	2	3
Total of FVP in simple sentences	7	14	15	5
Total of simple sentences	21		20	

Table 6 : REALIS and IRREALIS in simple sentences

3.3. Complex sentences

Complex sentences are quite frequent as modal equivalents of the English *Epistemic* forms (24/87), i.e. they occur in more than a quarter of occurrences. Table 7 gives the amount of complex sentences for each of the English forms.

	<i>might</i>	<i>could</i>	<i>may</i>	<i>maybe</i>	<i>perhaps</i>	<i>TOTAL</i>
Simple sentence	21	20	4	2	1	47
Complex sentences	9	—	—	12	3	24
Other (lexical, unmarked)	11	1	0	2	1	15
Total of occurrences	41	21	4	16	5	87

Table 7 : Simple vs. complex sentences

Interestingly, complex sentences frequently appear as equivalents of English *might*, *perhaps*, *maybe*, which are specialized in *Epistemic* modality; see Table 8. *Could* and *may*, which can also be used as markers of ability (see examples 4 and 6), are never translated by complex sentences. That leads us to conclude that these modal expressions, made up of two phrasal or clausal components, have undergone a certain degree of specialization, too.

Grammatical Type	Form in Burmese	may	might	could	maybe	perhaps	Total
Complex sentence	P + /thiN ² Tε ² / ထင်တယ် P + think - REAL	—	5	—	2	2	9
Complex sentence	N/P + /(le ³) phyi?/ ဖြစ် N/P + (anaph.)- be, happen	—	1	—	8	1	10
Complex sentence	N/P + /nε ¹ tu ² Tε ² / နဲ့တူတယ် N/P + with-be similar-REAL	—	3	—	2		5

Table 8 : Complex expressions conveying Epistemic value

3.4. The modal expression <P + /thiN²-Tε²/ ထင်တယ် > ‘think-REALIS.ASS’

One could wonder about the modal value of the expression <P + / thiN² Tε²/ ထင်တယ် > ‘think-REALIS.ASS’. Clauses containing the verb ‘to think’ differ syntactically as to whether they convey *Epistemic* modality or they express someone’s thought. Compare examples (17) and (18). In (17) the clause /thiN² Tε²/ ထင်တယ် (think-REALIS.ASS) is the translational equivalent of the *Epistemic* expression *perhaps*. It appears without any grammatical information about the person who thinks, i.e. no pronoun is present (nor, of course, any person agreement; Burmese does not exhibit person agreement). (18), however, renders the expectation of the speaker and does not correspond to an English *Epistemic* meaning. It is syntactically different. The clause containing the verb ‘to think’ also contains a pronoun that refers to the person who ‘thinks’, i.e. the speaker. Moreover, the quotation particle လို့ /lo¹/ which appears after the FVP of the first clause marks it as a thought quoted, the thought of an identified person.

17. ဒါဆိုရင် ကျုပ် စာရင်းဇယားကို ဆက်ကြည့်လို့ရပြီ ထင်တယ်။ [ENG 52/BIR 57]
 [da² sho² yiN² cho? sa²yiN³.za¹ya³ Ko² shε? Ci¹ lo¹ ya¹ Pi²]
 [DEM. say if 1SG.MASC list.magic paper OBJ ASP:CONT. look SUB AUX:P-ex R.CONST]
 [ø thiN² Tε²]
 [ø think R.ASS]

‘In that case, perhaps we can return to my list’ [said Mr Malfoy shortly].

18. ပြတိုက်က ငှင်းတို့ကို ဈေးပေး ဝယ်လိမ့်မယ်လို့ ငါထင်တယ်။ [ENG 112 /BIR 120]
 [pya¹Tai? Ka¹ ləgaN³-To¹ Ko² ze³ pe³ we² leiN¹ Mε²] lo¹ [ŋa² thiN² Tε²]
 [museum S. ANAPH-PLUR OBJ price give buy PROB IRR.ASS] CIT [1SG think R.ASS]

I expect a museum would bid for them.

(lit: I think : ‘A Museum would give a [good] price and buy them.’)

3.5. The verb ဖြစ် /phyi?/ ‘to be, to happen’

Vittrant (2004) listed seven different modal uses¹⁵ of ဖြစ် /phyi?/, including the one we found in our Harry Potter data, that is to say the *Epistemic* expression < N/P + /(le³) phyi?/ (လဲ)ဖြစ် + FVP>. Notice that in our data, the expression appears mostly (8 /10 occurrences) with the IRREALIS FVP, as in examples (12) and (16) above, and it also contains the discursive and anaphoric marker လဲ /le³/ (6/10 occurrences). This marker has been variously described as a suffix meaning ‘also, in addition, as well’ — see Okell & Allott (2001: 217, 230). It is also

¹⁵ As an auxiliary, ဖြစ် /phyi?/ may indicate a participant-external modality, i.e. the possibility due to external circumstances. Of the six uses of ဖြစ် /phyi?/ in a complex sentence, four are also dedicated to Participant-external modality, and only two convey epistemic modality. See Vittrant (2004: 318ff) for details.

used as a discourse connector in parallel clauses meaning ‘both/either P₁ and P₂’. ၏ /lɛ³/ seems to have the latter function in our data, indicating a relationship between two (parts of) sentences in the narrative, rather than contributing to the *Epistemic* modal value of the expression.

The use of a verb meaning ‘to be, to happen’ in a modal expression of possibility or necessity is not so rare in the area. Matisoff (1973:555, note 63) mentions a verb /phɛ³/ for Lahu — a cognate to the Burmese ပုၤ /pʰyi³/ — which is used in a complex sentence conveying a modal notion of obligation (‘must V, there is no avoiding V’). Parallel constructions also exist in Japanese, Mon (Jenny (2005:79) and Korean (see examples 20 and **Erreur ! Source du renvoi introuvable.**). In the latter language, the verb ‘toe’ ‘to happen’ is used in a double negation structure conveying obligation.

19. ?uə hɔm ?ərè khyiəŋ kəh rao hù? təh (MON)
 1SG speak language chin TOP TOP NEG BE
 I cannot speak Chin.
 (lit : As for me speaking Chin languages, I cannot speak it.)

20. cukce-lil ha-ci anh-myen an-toe-nta¹⁶ (KOREAN)
 duty/homework -ACC do-SC NEG-SC NEG-must ‘happen’-PRS
 You (I /he/we...) must do your duty/homework .
 (lit : It does not happen that (you) don’t do your duty/homework.

3.6. The modal expression N/P + /nɛ¹ tu²-Tɛ²/ နဲ့တူတယ် ‘with + be similar-REALIS.ASS’

The modal expression containing the verb /tu²/ တူ ‘to be similar’ appears five times in our data, as a translational equivalent of an English modal form (*maybe* or *might*), specialized in *Epistemic* value (see example 21). It has not been listed as an *Epistemic* mean by Vittrant (2004). According to Creissels (2003: 229), verbs meaning ‘be similar, be equal’ are a possible source for modals conveying volition, ability or obligation. He lists some African languages (Bambara, Tswana, Nguni...) genetically not related and geographically distant. According to Creissels, we are dealing with the extension of an abstract relation to a more concrete relation between two entities, i.e. from ‘There is an affinity between person A and action B’ extended to the meaning of ‘A have the ability/ the wish/ the obligation to do B’¹⁷.

21. ... ဘီၤပြာၤတၢ်နဲ့တူတယ်။ [ENG 145 /BIR 159]
 ... bi² pya³ Ta² nɛ¹ tu² Tɛ²
 ... Bill say NMLZ:R with be similar R.ASS
 [I think someone told me a story about...] might have been Bill...
 (lit: It is similar with the fact that Bill told)

3.7. The modal auxiliaries နိုင် /naiN²/ ‘capacity’ and ရှိ /ya¹/ ‘deontic’

That auxiliaries are used for *Epistemic* modality is relatively surprising. At least, according to Vittrant (2004), *Epistemic* modality would only be expressed by verbal markers and complex syntactic sentences. In Vittrant (2004: 294, 309) the auxiliaries နိုင် /naiN²/ and ရှိ

¹⁶ Hee-Young Lee, personal communication.

¹⁷ A verb that mark an affinity between two entities A and B may develop into other extensions depending on the nature of A and B (two persons, two things, one thing and one person ...). The relevant case of affinity here is the one where A is a person and B a thing, given that it may develop a modal meaning (see Creissels 2003: 229-30).

/ya¹/ were listed as modal markers for *Situational* modality¹⁸, respectively *Internal-participant* and *External-participant* modalities. နိုင် /naiN²/, which means ‘to win’ as a main verb, is currently used to express ability, i.e. a possibility internal to the agent of the state of affairs, whereas ရ /ya¹/, the verb ‘to obtain, to get, to acquire’, has been grammaticalized as a participant-external morpheme, conveying either possibility and necessity due to external circumstances (see van der Auwera, Keyakov & Vittrant, 2009). However, in the translation of Harry Potter’s novel, နိုင် /naiN²/ appears as equivalent of Epistemic *could* in 2/3 of the occurrences (13/21), ရ /ya¹/ being less frequent (only 5 occurrences). These two usages of auxiliaries are illustrated by examples 22 and **Erreur ! Source du renvoi introuvable.**

Notice also that နိုင် /naiN²/ is clearly preferred with REALIS modality¹⁹ (see Table 6), whereas ရ /ya¹/, which occurs only 5 times, appears with both modalities.

22. မင်းတို့အဖေကို အလုပ် ပြတ်သွားစေနိုင်တယ်။ [ENG 33/BIR 37]
 miN²-To¹ ?əphe¹ Ko² ?ə.lo? pyo? θwa³ Se² naiN² Tε²
 2S-PLUR father OBJ work be detached AUX:RESULT AUX:FACTITIF AUX:POSSIB R.ASS
*You **could** have lost your father his job (sic).*

Different hypotheses may be put forwards to explain the different uses of these auxiliaries in our data compared to Vittrant (2004). First, it may be related to the kind of data used in both studies, that is to say novel *vs.* recorded data, or written language *vs.* spoken/colloquial language²⁰. Another hypothesis could be change due to English influence, as it has already been noticed for other grammatical morphemes such as the spatial-temporal verbal morpheme ခဲ /khe¹/ (see Vittrant in press). Last but not least, the English auxiliary *could* is also a *Situational* modal auxiliary, and the difference is often not that clear. In other words, the event may be seen as happening under external circumstances rather as uncertain. For instance in (23), the English sentence containing *could* may be understood as a judgment of the speaker about the probability of the state of affairs (paraphrase a), but it may also be understood as event that can be made possible by external circumstances(paraphrase b). However, according to Vittrant (2004), interpretation (b) (*Participant-External* modality) is the main meaning conveyed by auxiliary ရ /ya¹/ when used with the particle လို /lo¹/, whereas interpretation (a) was not found in her data. Example (24) illustrates this *Participant-External* modal meaning..

23. မင်းတို့က အဲဒီ ခလင်းစဝပ် အမှတ် ၅ တွေကို မဲဖောက်ရောင်းလို့ရတယ်။ [ENG 112/BIR 120]
 miN²-To¹ ka¹ ?ε³di² khəliN³.səwei? ?əmə? ɲa³ Twe² Ko²
 2S-PLUR S. anaph ‘cleansweep’ number 5 PLUR OBJ
 me³phao? yaN³ lo¹ ya¹ Tε²
 raffle sell SUB AUX:P-ex R.ass
You could raffle off those Cleansweep Fives.
 Paraphrase: a. ?? Maybe you did raffle them but it is not sure (probability).
 b. If you wanted you had the possibility to raffle them (external circumstances).

¹⁸ Using a different framework, Romeo (2008) analyzes နိုင် /naiN²/ as a marker of *dynamic modality* that conveys the meanings of ability, possibility and ‘milder’ permission. However, the examples illustrating the epistemic status of နိုင် /naiN²/ (p.57-58) are not so convincing, and could be analyzed as occurrences of ability.

¹⁹ The occurrences of နိုင် /naiN²/ with IRREALIS mood appears in interrogative sentences.

²⁰ Burmese, as a language with a written tradition of nearly eight centuries, exhibits differences between literary and spoken registers, essentially within grammatical forms (see Bernot & al (2001) for the correspondences between morphemes).

24. ဒီကနေ စားသွားလို့ရတယ်။
 di²-Ka¹-ne² sa³ θwa³ lo¹ ya¹ Te²
 DEM-S.-place eat go SUB AUX:P-EX R.ASS
From here, you can/could eat [porc meat] and go [there].
 * *Maybe you eat [porc meat] here and go [there].*

4. Conclusions and perspectives

In this paper, our aim was to give an account of the *Epistemic* possibility markers of Burmese, based on the Burmese translation of the English novel *Harry Potter and the chamber of secrets*. The translations of English *Epistemic* auxiliaries and adverbs were various. Some of these forms were already listed by Vittrant (2004) as *Epistemic* means, two of them were listed as modal but not *Epistemic* means (နဲ့ /naiN²/ and ရ /ya¹/), whereas other forms were not listed (lexical items, IRREALIS marker ...). Although we did find some auxiliaries in Burmese, their uses as equivalents for *might*, *may* and *could* auxiliaries were far from systematic. Then, as we expected, we did not find any *Epistemic* adverbs. On the other hand, we met other means, such as verbal markers (လို့ /leiN¹/), syntactic structures and complex sentences. Therefore, our study confirms the claim made by Vittrant 2005 that Burmese exhibits a great many modal markers. What this study also brings forward is the *Epistemic* use of an IRREALIS marker, as it appears quite often as an equivalent form of *might*, alone or combined. It also confirms the modal value of the verb ဖြစ် /phyi²/ ‘to be, to happen’: when it is used as the verb of a main clause of a complex sentence, generally combined with the IRREALIS marker မယ် /Me²/, it conveys an *Epistemic* meaning. Another result of this study is that it documents the specialization of complex sentences as markers of *Epistemic* modality. Indeed, they are used only as equivalents of *might*, *perhaps*, *maybe*, English forms always conveying *Epistemic* modality. They are never used to translate *may* or *could*, which are polyfunctional as modal markers (*Situational* vs. *Epistemic* modality). A last surprise was the use of နဲ့ /naiN²/ and ရ /ya¹/ auxiliaries as *Epistemic* markers, as Vittrant (2004) lists them only as means to convey situational modality. More work on these two auxiliaries needs to be done to find out whether this *Epistemic* function is new — recent change due to language contact — or common in other kinds of data (written vs. spoken language, old vs. modern style). Finally, and as we were working with a text used in parallel corpus, we would encourage other studies on *Epistemic* means based on translations of the same English novel, in languages genetically related (such as Tibetan) but also in languages that are part of the same Mainland Southeast Asia *Sprachbund* such as Thai, or Vietnamese. Indeed, given the characteristics of their TAM devices as compared to European languages, it would be of interest to document the linguistic means used by languages typologically very different to express *Epistemic* possibility.

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Abbreviations used

1(P)	first person
2(P)	second person
3(P)	third person
ASS	assertion of speaker
ANAPH	anaphora
ASP	aspect
AUX	auxiliary
BENEF	benefactive
CAPAC	capacity (modality)
CIT	quotation
CLF	classifier
CONT	continuous
CONST	constative modality
DAT	dative
DEM	demonstrative
DEM.dist	demonstrative(distant)
DIR	directional
EMPH	emphasis
EXCL	exclamation
EXPÉR	Marker of experience already done
F.P.	woman speaking
FVP	final verb particle
GEN	genitive
H.P.	man speaking
IMP	imperative
IMPFV	imperfective
INJ	injonction
IRR	IRRÉALIS modality
ITER	iterative (aspect)
LOC	locative
MASC	masculine
NEG	negation
NMLZ	nominalizer

OBJ	object
P-in	participant internal modality
P-ex	participant external modality
PERF	perfect
PLUR	plural
POL	politeness
PROB	probability
PROSP	prospective (aspect)
PRS	present
POSSIB	possibility
PTC	particle
PURP	purposive
FVP	final verbal particle
VM	verbal marker
QST	question marker
P	clause
R	REALIS modality
REL:R	relator marked for REALIS modality
RÉSULT	resultative (aspect)
S	source of the action (« ablative » or « nominative »)
SC	conjunction suffix
SG	singular
SUB	subordinator
SPT	spacio-temporal
TPS	temporal, tense
TOP	topic