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Aspects of Quantifier Float in Thai

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ASPECTS OF QUANTIFIER FLOAT IN THAI

by

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ABSTRACT

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Research on Thai Q(uantifier)-float attempts to manifest the problems for each of its analysis. For the adverbial analysis, the Japanese data show that the floating quantifiers can be associated with both distributive and plurality-of-events readings while Thai does not distinguish between these two readings. For the stranding analysis, the differences from English-Thai comparative data show that Thai floating quantifiers often occur in positions where their associated NPs could not have previously occupied or have been moved from, and thus cannot be analyzed as resulting from stranding. As a solution, Thai Q-float is postulated as an instance of rightward movement (extraposition) but this idea has recently been rejected and replaced with the Quantifier Raising (QR) analysis. This thesis aims to defend the extraposition approach by providing empirically supporting data to confirm the availability of extraposition in Thai, and to undercut the motivation for the recent QR analysis. I propose that this QR analysis is problematic since its data face some empirical problems. These problems result from the native speakers' judgments on the data that are used to illustrate the locality restrictions and scopal effects of the floating quantifiers in Thai. It is found that some data contrast to the native speakers' judgments while some mislead them to agree with the judgments by the author.

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1. Introduction

One of the most intriguing phenomena about Thai is that almost all quantifiers are able to separate themselves from their associated noun (a subject or an object), although these disjointed syntactic elements are still co-interpreted. This phenomenon is known as Q(uantifier)-float (Baltin 1978; Sportiche 1988). The examples of this phenomenon are provided in (1) and (2).

(1) a. Subject Q-float

(i) nak.riian **thuk-khon** [$_{VP}$ dɯɯm naam] mɯɯawaannii[1]

student   every-CLF^{person} drink   water   yesterday

(ii) nak.riian [$_{VP}$ dɯɯm naam] **thuk-khon**   mɯɯawaannii

student   drink   water   every-CLF^{person} yesterday

(both) 'Every student drank water yesterday.'

b. Object Q-float

(i) nak.riian [$_{VP}$ dɯɯm naam **thuk-kɛɛw**] mɯɯawaannii

student   drink   water every-CLF^{glass} yesterday

(ii) nak.riian [$_{VP}$ dɯɯm naam] mɯɯawaannii **thuk-kɛɛw**

student   drink   water   yesterday   every-CLF^{glass}

(both) 'The students drank every glass of water yesterday.'

---

[1] For the sake of brevity, tone markers are omitted and special phonetic symbols are kept to an absolute minimum throughout this thesis.

There are two different approaches to Q-float in the literature: the non-movement and the movement analyses. For the non-movement analysis, the floating quantifier appears in the position of an adverb, and is thus considered to be verbal adjuncts (Belletti 1982; Dowty & Brodie 1984; Bobaljik 1995). Sportiche (1988), on the other hand, proposes a movement analysis where the NP of the floating quantifier moves leftward to the subject position, leaving behind (stranding) the floating quantifier. As for Thai, a right branching language, Simpson (2004, 2011) hypothesizes that there is also movement involved: the floating quantifier moves to the clause-final position (at the right edge of the clause), stranding the NP. Nevertheless, he points out that the original stranding analysis is problematic for Thai by providing the contrastive evidence from English, and suggests that the Q-float in Thai is actually a form of extraposition. Despite the success of such an analysis, there have been attempts to reanalyze the Thai Q-float by connecting it to Quantifier Raising (QR) (Jenks 2011, 2013). Jenks (2011) also indicates the problems for the adverbial analysis and provides evidence to reject the extraposition analysis.

In this thesis, I will begin section 2 with an overview of quantifiers in Thai and the ones that can float. I will also summarize the syntactic distribution of floating quantifiers, and how they affect the scope of quantifiers relative to negation, as presented in Jenks' (2013) paper. According to him, these properties form the basis of his Q-float as QR analysis. I, however, will return to this analysis with more detail in section 4. In section 3 I will present all the previous analyses of Q-float; the adverbial analysis, the stranding analysis, and the Thai stranding (extraposition) analysis, and summarize the problems for each analysis. In the case of the extraposition analysis, I will show that there are judgment problems in Jenks' (2011) data that he uses to support his dismissal of the Q-Float as extraposition analysis proposed by Simpson

(2004, 2011). In section 4, I will explore the Q-float as QR analysis in more detail. I will also show that some data in the QR analysis, like the extraposition analysis, are problematic while some mislead the native speakers to agree with the judgments by the author. Finally, I postulate that these problems potentially affect the motivations of the movement, resulting in the disconnection between Q-float and QR, and conclude this thesis in section 5.

2. Overview of the Quantifier Float in Thai

2.1 Language background

Thai is a tonal and analytic language within the Tai-Kadai family. It has a rigid S-V-O word order without any obligatory inflectional morphology. Thai is a head initial (right-branching) language where dependents are on the right of their head; a verb precedes its compliments, an auxiliary verb precedes main verbs, a preposition precedes a noun complement, a noun precedes relative clauses, and a complementizer precedes clauses. These properties are illustrated in the following example:

(2) [NP nak.riian [CP thii   chalaat]] tɔŋ   ruu   [CP waa [NP phɔɔ.mɛɛ

       student   REL smart   must know   COMP   parents

    khɔɔŋ phuak.khaaw] [PP juu   naa   baan]]

    POSS   3PL   LOC in.front.of   house

'The student who is smart must know that their parents are in the front of the house.'

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2.2 Quantifiers in Thai

Jenks (2011) categorizes the quantifiers in Thai into two groups according to their interaction with the classifiers. Those quantifiers that do not interact with classifiers are considered as adjuncts to the noun phrase while the ones that select classifiers are part of the functional structure of the noun phrase. He also proposes a distinction among those quantifiers that select classifiers: "strong" quantifiers are heads of the DP and "weak" quantifiers occur in the specifier of ClfP. The cardinal numerals 1-9, however, must be analyzed as specifiers rather than heads because they do not project functional structure in Thai. The table in (3) below summarizes the Thai quantifiers in regards to the requirement of classifiers (whether they select a classifier) and their strengths (whether they are heads or specifiers, albeit except for numerals) (Jenks 2011, p. 112).

(3)

Quantifier	Meaning	Requires a CLF?	Strength
numerals	'1, 2, 3, …'	✓	Weak
baaŋ	'some'	✓	Weak
laaj	'several'	✓	Weak
kii	'how many?'	✓	Weak
tháŋ	'all/whole'	✓	Strong
thúk	'every'	✓	Strong
tɛ̀ɛlá?	'each'	✓	Strong
mâak	'very/much'	×	Weak
yə́?	'a lot'	×	Weak
nɔ́ɔj	'a little'	×	Weak
thâw-raj	'how much?'	×	Weak
tháŋ-mòt	'all'	×	Strong
sùan-jàj	'majority'	×	Strong
sùan-nɔ́ɔj	'minority'	×	Strong

Although Jenks (2011) further analyzes the distinctions between the structures of these quantifiers in more detail, I will not present them here since they are not necessarily related to the analysis of Q-float. The crucial question is whether or not all of these quantifiers can "float" in Thai. In the following section, I will present the example data containing the quantifiers that can float. In addition, I will summarize the positions where such quantifiers can float as well as their scopal effects. These characteristics of Q-float I have mentioned are taken exclusively from Jenks' (2011, 2013) papers.

2.3 Which quantifiers can float?

Jenks (2013) posits that almost all quantifiers in Thai can float. These include strong (e.g. *thuk* "every") and weak (e.g. *laaj* "several") quantificational determiners, numerals (e.g. *saam* "three"), and modified numeral (e.g. *kwaa-saam-khon* "more than three"). However, there are two quantifiers that are not able to float; the distributive operator *tɛɛlaʔ-CLF* 'each', and the quantifier *suuan-maak* 'majority'[2]. This claim is illustrated in (4) and (5) below:

(4) a. nak-riian **tɛɛlaʔ-khon** [kin khaw lɛɛw]

      student   each-CLF   eat rice already

      'Each student ate already.'

   b. *nak-riian [kin khaw lɛɛw]   **tɛɛlaʔ-khon**

      student   eat rice already each-CLF   (Jenks 2013, p. 5)

---

[2] Although the quantifier *suuan nɔɔj* 'minority' is presented in table 3, Jenks (2013) only mentions its antonym counterpart, *suuan-maak* 'majority', as the quantifier that cannot float. Assuming the same reason given for the quantifier *suuan-maak*, I regard the quantifier *suuan nɔɔj* as also an unfloatable quantifier.

(5) a. nak-riian **suan-maak** [kin khaaw lɛɛw]

　　　student　　part-many　　eat rice　　already

　　　'Most students ate already.'

　　b. *nak-riian [kin khaw lɛɛw]　**suan-maak**

　　　student　　　eat rice already part-many　　　　　(Jenks 2013, p. 5)

To account for this fact, Jenks claims that these two elements are not true quantifiers. As a true quantifier, *suuan-maak* 'majority' or 'most', like English, is supposed to be ambiguous between a majority reading and a relative reading. Thai *suuan-maak*, however, does not seem to have the relative reading, the reading that constitutes quantificational semantics (Bošković and Gajewski 2008). For *tɛɛlaʔ-CLF* 'each', Jenks proposes that it should be a distributive operator rather than a quantifier because its semantic components are associated with disjunction and distribution. Since the quantificational semantics of these two elements remain unclear, Jenks concludes that all the other Thai quantifiers with clearer quantificational semantics are able to float.

2.4 The distribution of Thai Q-float

The floating quantifiers in Thai have the ability to float to the right edge of the sentence, the same distribution as Thai adverbs. Such distributions are possible for both subject and object quantifiers. Jenks (2011, p. 274) states that their base position is at the vP projection, and that they are located in the Thai 'middlefield' or the projections between CP and VP:

(6) [CP [TP [vP [VP . . .] FQ] (FQ)]]

Jenks (2013, p. 4) also proposes a generalization that "Q-float can only be hosted by nominal arguments of the predicate to which the FQ attaches". The following examples show all the positions where the Thai floating quantifiers can occur[3].

(7) Subject Q-float

　　a. nak.riian **thuk-khon** [vP ʔaan naŋsɯɯ] mɯɯawaannii

　　　　student every-CLF 　　read book 　　yesterday

　　b. nak.riian [vP ʔaan naŋsɯɯ] **thuk-khon** mɯɯawaannii

　　　　student 　　read book 　every-CLF yesterday

　　(both) 'Every student read the book yesterday.' 　　　　(Jenks 2013, p. 2)

(8) Object Q-float

　　a. nak.riian [vP ʔaan naŋsɯɯ **thuk-lem**] mɯɯawaannii

　　　　student 　　read book 　every-CLF yesterday

　　b. nak.riian [vP ʔaan naŋsɯɯ] mɯɯawaannii **thuk-lem**

　　　　student 　　read book 　yesterday 　every-CLF

---

[3] The floating quantifiers in Thai can appear before (7b) or after (8b) an adverb. However, if the quantifier is rightmost, it must be preceded by a prosodic break (Jenks 2011). Such a pause is indicated by double vertical bars (‖) as in the example below:

　　nak.riian [vP ʔaan naŋsɯɯ] mɯɯawaannii ‖ **thuk-khon**
　　student 　read book 　yesterday 　every-CLF
　　'Every student read the book yesterday.'

(both) 'The students read every book yesterday.'   (Jenks 2013, p. 3)

(9) Indirect object Q-float

    a. Tat [vp hai   naŋsɯɯ kaʔ dek **thuk-khon** pai]

    Tat   give book   to child every-CLF PRF

    b. Tat [vp hai   naŋsɯɯ kaʔ dek pai] **thuk-khon**

    Tat   give book   to child PRF   every-CLF

    (both) 'Tat gave books away to every child.'   (Jenks 2013, p. 3)

These structural positions of Q-float above are the only positions proposed by Jenks. He also presents the other positions where the floating quantifiers are locally restricted. Such restrictions are supporting evidence for his Q-float as QR analysis. I will return to them in section 4.

2.5 Q-float and scope

Thai Q-float is claimed to have effects on the scope of quantifiers relative to negation (Jenks 2013): Q-float lowers the scope of subject quantifiers, but raises the scope of object quantifiers when co-occuring with negation within the same sentence. The first clear evidence for this claim comes from the indefinite quantifier *sak.* As an NPI, *sak* must be c-commanded by negation. When it occurs with an object, which is structurally below negation, the quantifier has an NPI interpretation, resulting in a grammatical sentence (10a). However, when *sak* quantifies the subject it is now above negation, making the sentence ungrammatical (10b).

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(10) a. ʔaacaan (yaŋ) **maj** [vp tii   nak.riian   **sak-khon**]

teacher still NEG   hit   student   even.one-CLF

'Teachers haven't hit even one student'.

b. *nak.riian **sak-khon**   (yaŋ) **maj** [vp kin khaaw]

student   even.one-CLF   still   NEG   eat rice

' Not even one student has eaten.' (Intended)

c. nak.riian (yaŋ) **maj** [vp kin khaaw] **sak-khon**

student   still   NEG   eat rice   even.one-CLF

' Not even one student has eaten.'   (Jenks 2013, p. 6)

Nevertheless, according to Jenks' claim, Q-float has the ability to lower the scope of a subject quantifier. Therefore, when *sak* floats to the right edge of the sentence it becomes structurally below negation (10c), confirming that his claim that Q-float can lower the scope of the subject quantifier is true.

Jenks further supports his claim by providing more examples of the scopal effects on Q-float. (11a) shows that subject quantifiers must scope above negation while in (11b), subject floating quantifiers can scope below (be c-commanded by) negation. Q-float thus lowers the scope of the subject quantifier relative to negation (p. 6):

(11) a. nak.riian **thuk-khon**   (yaŋ) **maj**   [vp kin khaaw]

student   every-CLF   still   NEG   eat rice

'Every student still hasn't eaten.' $\forall > \neg, *\neg > \forall$

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b. nak.riian (yaŋ) **maj** [vp kin khaaw] **thuk-khon**

    student   still   NEG   eat rice   every-CLF

    'Every student still hasn't eaten.' $\forall > \neg, \neg > \forall$

On the other hand, Q-float raises the scope of object quantifiers relative to negation. While quantifiers in object position must scope below negation (12a), object floating quantifiers can scope above (c-command) negation (12b):

(12) a. Joe **maj** [vp phop nak.riian **thuk-khon**] mɯɯawaannii

    Joe NEG   meet student every-CLF   yesterday

    'Joe didn't meet every student yesterday.' $*\forall > \neg, \neg > \forall$

    b. Joe **maj** [vp phop nak.riian] mɯɯawaannii **thuk-khon**

    Joe NEG   meet student   yesterday   every-CLF

    'Joe didn't meet every student yesterday' $\forall > \neg, \neg > \forall$

The effects of Q-float on scope relative to negation are summarized in (13) below (p. 7):

(13)

		$\forall > \neg$	$\neg > \forall$
Subject-Q	NP-$\forall \ldots \neg \ldots$		*
Subject-FQ	NP $\ldots \neg \ldots \forall$		
Object-Q	$\neg \ldots$ NP-$\forall \ldots$	*	
Object-FQ	$\neg \ldots$ NP $\ldots \forall$		

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3. Previous analyses and their problems

3.1 The non-movement analysis: Q-float as adverbs

One analysis of Q-float suggests that floating quantifiers can be thought of as verbal adjuncts since they appear in the adverbial positions (Belletti 1982; Dowty & Brodie 1984; Bobaljik 1995). Jenks (2011) presents an argument based on Nakanishi's (2007) adverbial analysis in which he takes to be the strongest argument for the Thai Q-float analysis. This has to do with the fact that the floating quantifiers can be associated with both distributive and plurality-of-events readings. Consider the examples in (14)-(16) below:

(14) a. **Gakusei**   **san-nin**-ga kinoo   Peter-o   tatai-ta.

   student-NOM   three-CLF   yesterday Peter-ACC   hit-PAST

   'Three students hit Peter yesterday.'

   b. **Gakusei**-ga   kinoo   **san-nin** Peter-o   tatai-ta.

   student-NOM   yesterday three-CLF   Peter-ACC   hit-PAST

   'Three students hit Peter yesterday.'

(15) a. **Gakusei**   **san-nin**-ga kinoo   Peter-o   korosi-ta.

   student-NOM   yesterday three-CLF   Peter-ACC   kill-PAST

   'Three students killed Peter yesterday.'

   b. ??**Gakusei**-ga   kinoo   **san-nin** Peter-o   korosi-ta.

   student-NOM   yesterday three-CLF   Peter-ACC   kill-PAST

   'Three students killed Peter yesterday.'

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In (14), when the verb is *tatai-ta* 'hit-PAST' only the sentence with Q-float (14b) exhibits the plurality-of-events reading: Peter was hit multiple times (within a particular day) by three students. However, this reading is not plausible with the verb *korosi-ta* 'kill-PAST': the reading in which Peter was killed multiple times by three students is unacceptable. Now, consider the Q-float structures contrasting the same two verbs in Thai (16) below:

(16) a. **nak.riian** tii Peter mɯɯawaannii **saam-khon**

　　　　student 　hit Peter 　yesterday 　　three-CLF

　　　　'Three students hit Peter yesterday.'

　　 b. **nak.riian** khaa Peter mɯɯawaannii **saam-khon**

　　　　 student 　kill 　Peter yesterday 　　three-CLF

　　　　'Three students killed Peter yesterday.' 　　　　　　(Jenks 2011, p. 278)

The fact that Thai does not show a contrast between the two Q-float structures suggests that its floating quantifiers must not quantify over events as in Japanese. Jenks also posits that the analysis of Q-float as adverbs are too weak since it does not seem logical to believe that the quantifier-classifier pairs do not take their nominal hosts as their quantificational restrictors since the hosts must agree with the classifiers semantically. This adverbial hypothesis is thus not quite acceptable in order to account for the analysis of Thai Q-float.

3.2 The movement analysis: Stranding

The stranding hypothesis is widely adopted by many researchers (Sportiche 1988; Giusti 1990; Simpson 2004, 2011). It involves the leftward movement of the NP host of the floating quantifier to the subject position: the subject originates in a lower VP-internal position and moves to a higher position, leaving this floating quantifier behind. The separation according to this analysis is schematized below:

(17) **NP .... Q NP ....**   (Simpson 2011, p. 133)

(18) **[The students]** have **[all [the students]]** arrived.   (Simpson 2011, p. 118)

In (18), the host subject 'the students', originated in a VP-internal position, moves leftward to the higher position, stranding the quantifier 'all'.

The stranding analysis seems to be the most widely adopted since it can account for a number of phenomena. One of them involves the explanation why the quantifier can appear between two auxiliaries in the passive construction as in (19). The quantifier can be optionally stranded which gives rise to the floating pattern. This is illustrated in (20) below:

(19) **The criminals** have **all** been arrested.

(20) **[The criminals]** have **[all ~~the criminals~~]** been arrested **[~~all the criminals~~]**

(Simpson 2011, p. 118)

While it is more common to analyze Q-float as being derived via movement, this analysis is apparently problematic for the Q-float in Thai. The more recent work of Q-float, such as Simpson's (2011), suggests that the stranding analysis might not be the right analysis for Thai Q-float. He provides more supporting data to show that there are clear differences between English and Thai floating quantifiers which indicate that Q-float in Thai does not have the same syntactic derivation as that in English. First, unlike English, a floating quantifier cannot occur in the position between an auxiliary and a main verb. Such a difference is exemplified in (21)-(22) below:

(21) a. **The children** will **all** have arrived by now.

b. **The children** will have **all** arrived by now.

c. *__phuak-dɛk__ aat-ca **thuk-khon** maa   lɛɛw

   children   may   every-CLF   come ASP   (Simpson 2011, p. 123)

(22) a. **The cars** were **all** stolen.

b. *__rot-Mercedes__ thuuk **siisiphaa-khan** khəmɔɔy

   car-Mercedes PASS 45-CLF   steal   (Simpson 2011, p. 123)

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The second difference is that English floating quantifiers actually never occur in the post-verbal object position (23a). That position, however, is possible for the floating quantifiers in Thai (23b).

(23) a. ***The cars** were stolen **all**.

    b. **rot-Mercedes** thuuk khəmɔɔj **siisiphaa-khan**

      car-Mercedes PASS steal   45-CLF

      '45 Mercedeses were stolen.'   (Simpson 2011, p. 123)

A third difference is that the floating quantifier does not occur in the object-of-verb position, following the verb *khəmɔɔy* 'steal', but instead occur in the sentence-final position, following the adjunct PP *naj mɯəŋ Stuttgart* 'in Stuttgart'. This thus suggests that, unlike English, the quantifier is not located in the position where the associated NP host *rot-Mercedes* might have been moved from, say after the main verb (see the schematized example (20)). This is illustrated in (24) below:

(24) **rot-Mercedes** thɯɯk khəmɔɔj … naj mɯəŋ Stuttgart **siisiphaa-khan**

      car-Mercedes PASS steal   … in city Stuttgart 45-CLF

      '45 Mercedes were stolen in Stuttgart.'   (Simpson 2011, p. 123)

Further data also indicate that floating quantifiers in Thai occur in the positions that their associated NP could not have occupied earlier. The evidence comes from the occurrence of the

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direct object quantifier in clause final position, following a PP complement that contains an indirect object. This position can never be occupied by a direct object NP. Consider the example (25):

(25) a. khaaw haj **ŋən** kap phom **sɔŋrɔj-baat**

      he give money to me 200-Baht

      'He gave me 200 Baht.'

   b. *khaaw haj … kap phom **ŋən**

      he give … to me money (Simpson 2011, p. 124)

Moreover, this position of Thai floating quantifiers which are not possible for object NPs can also clearly be seen when the object is separated from the quantifier by aspect-marking elements like *yuu, maa, paj, sɛt* and *lɛɛw*, etc. The examples (26a) and (27a) show the positions where the object NPs are originated from. (26b) and (27b), on the other hand, show that the object NP cannot occur in the position that is occupied by the associated floating quantifier.

(26) a. phom mii **kaaŋkeŋ dii-dii** yuu **khɛɛ tua-diaw**

    I have trouser good-good ASP only CLF-single

    'I only have one really good pair of trousers.' (Simpson 2011, p. 124)

   b. *phom mii … yuu **kaaŋkeŋ dii-dii**

    I have … ASP trouser good-good

(27) a. khaw sɯɯ **naŋsɯɯ** maa **sooŋ-lem**

     he   buy   book   ASP   two-CLF

     'He bought two books.'   (Simpson 2011, p. 124)

  b. *khaw sɯɯ … maa **naŋsɯɯ**

      he   buy   ASP   book

The general idea for these patterns of Thai Q-float is that "floating quantifiers in Thai very frequently occur in positions which their associated NPs could not have previously occupied or have been moved from under any standard transformational analysis incorporating the notion of syntactic movement/displacement" (Simpson 2011, p. 124). This thus comes to the conclusion that Q-float in Thai, unlike English, cannot be analyzed as resulting from stranding. Simpson also suggests that there could be other instances of 'rightward movement' which might support the analysis of Q-float in Thai. He assumes that the structure of Q-float in Thai can actually be a form that is closely related to 'extraposition' and 'Heavy NP Shift', similar to the schematized examples below:

(28) **[A review __]** appeared in the Times **[of a new book about Roosevelt].**

(29) I met [**a man __**] yesterday **[who had known your father in the 1960s].**

3.3 Against the extraposition analysis

While the extraposition analysis above seems to be a useful analysis for Q-float in Thai and widely adopted (Simpson 2004, 2011; Fox and Nissenbaum 1999), Jenks (2011) does not agree that it is accurate to think of Thai Q-float as a form of extraposition. By comparing the structure of extraposed relative clause in English with that in Thai, he concludes that Thai in fact lacks extraposition. The example below suggests that the rightward movement is blocked for the extraposed relative clause in Thai. The comparison of such an operation between English and Thai is schematized below:
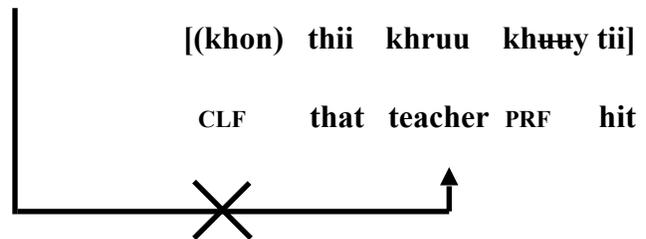
(26) a. English:

I saw the child [whom the teacher hit] yesterday **[whom the teacher hit]**

b. Thai:

chan hen dek **[(khon) thii khruu khuuy tii]** mɨɨawaannii

1SG see child CLF **that teacher** PRF **hit** yesterday

[(khon) thii khruu khuuy tii]

CLF **that teacher** PRF **hit**

The extraposed relative clause, however, is not the only disallowed structure in Thai. As presented in Jenks's (2011, p. 271) paper, the extraposition of adjectives, prepositional phrases, and demonstratives are also not allowed in Thai.

(27) Adjective extraposition

    a. chan hen [NP dek (khon) [AP **son**]] mɯɯawaannii

       1SG see   child CLF   naughty   yesterday

       'I saw the naughty child yesterday.'

    b. *chan hen [NP dek t_i] mɯɯawaannii (khon) [AP **son**]

       1SG   see   child   yesterday   CLF   naughty

(28) PP extraposition

    a. nak.riian ʔaan [NP naŋsɯɯ (lem) [PP **bon toʔ**]] mɯɯawaannii

       student   read   book   CLF   on   table   yesterday

       'The student read the book on the table yesterday,'

    b. *nak.riian ʔaan [NP naŋsɯɯ t_i] mɯɯawaannii (lem) [PP **bon toʔ**]

       student   read   book   yesterday   CLF   on   table

(29) Demonstrative extraposition

    a. [NP nak.riian [**khon-nii**]] kin khaaw lɛɛw

          student   CLF-this   eat   rice   already

       'This student already read a book.'

b. * [NP nak.riian] kin   khaaw lɛɛw   [**khon-nii**]

         student   eat   rice   already CLF-this

The generalization that no modifiers can be extraposed in Thai can possibly rule out the previous analyses of Q-float, which suggest that it is part of a more general phenomenon of rightward movement. This gives rise to the idea that Q-float must be restricted only to the properties of quantifiers themselves, and that only true quantificational determiners can drive Q-float. The following section presents the analysis by Jenks (2013) in which he analyzes Thai Q-float as Quantifier Raising.

4. The current analysis

4.1 The Q-float as QR analysis

Jenks (2013) claims that Q-float in Thai is not part of a more general phenomenon of rightward movement, namely extraposition. In addition, he proposes that Thai Q-float might actually be an overt instance of QR. Under the copy theory of movement (Chomsky 1995), QR is recently viewed to target the vP field (vP-internal position) located in the middle of the clause: the object quantifiers raise to a projection above the trace of the subject while the subject quantifiers reconstruct to a position below the object (Hornstein 1995; Johnson & Tomioka 1997, among others, as cited in Jenks 2013). This is similar to where floating quantifies have been shown to be adjoined in Thai. If we adopt the application of QR to Q-float, this position of floating quantifies where it is adjoined to vP and their rigid scope reading will follow directly.

Beside accounting for the effects on scope of Q-float, the movement to [Spec, vP], where cases are assigned (A-position) clearly explains why the locality restrictions of Q-float are restricted to the NP arguments of the verb. The examples illustrated below support this claim by presenting the two properties of Q-float in Thai.

4.2 Motivations for movement

According to the generalization for Thai Q-float, it is only limited to the argument NPs: "Q-float can only be hosted by nominal arguments of the predicate to which the floating quantifier attaches" (Jenks 2013, p. 4). No quantifiers can float from genitives (30), NP complements (31), NPs within relative clauses (32), nor NPs within an adjunct PP (33). These locality constraints on Q-float imply that it involves movement, which cannot cross multiple phrase boundaries. The examples from Jenks (2013, p.3-4) below manifest these locality restrictions on Thai Q-float:

(30) No Q-float from genitives

a. Pong ca   [vP hay [DP naŋsɨɨ khɔɔŋ [DP **dek 2-khon**]] kap Nat]

Pong will   give   book   POSS   child 2-CLF   to   Nat

'Pong will give the two children's book to Nat.'

b. *Pong ca   [vP hay [DP naŋsɨɨ khɔɔŋ [DP **dek**]] kap Nat] **2-khon**

Pong will   give   book   POSS   child   to   Nat 2-CLF

(31) No Q-float from noun complements

    a. Joo waat [DP phaap **maa saam-tua**] leew

      Joe draw   picture dog 3-CLF   already

      'Joe drew three pictures of dogs already.'

    b. *Joo waat [DP phaap **maa**] leew   **saam-tua**

      Joe draw   picture dog already 3-CLF

(32) No Q-Float out of relative clause

    a. phom khəəj cəə [DP phuu-chaaj [CP thii mii **rot kwaa-sip-khan**]] maa lɛɛw

      1SG   PRF   meet   man   that have car exceed-10-CLF ASP   already

      'I have met men who have owned more than 10 cars.'

    b. *phom khəəj cəə [DP phuu-chaaj [CP thii mii **rot**]] maa lɛɛw **kwaa-sip-khan**

      1SG   PRF   meet   man   that have car ASP already exceed-10-CLF

(33) No Q-float out of prepositional phrases

    a. Bill rop [PP naj sanaamrop **thuk-hæŋ**] yaaŋ-klaahaan

      Bill fight   in battlefield every-CLF   bravely

      'Bill fought bravely in all the battlefields.'

    b. *Bill rop [PP naj sanaamrop] yaaŋ-klaahaan **thuk-hæŋ**

       Bill fight   in battlefield bravely   every-CLF

These clear locality restrictions on Q-float implicate movement, which basically form the basis of the analysis of Q-float as QR (Jenks 2011, 2013). This is not the only property

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supporting the movement motivation, however. There are altogether three properties (see section 2) that are essential implications for movement and strongly support the QR analysis. (34) shows these properties proposed by Jenks (2013):

(34) a. Q-float is sensitive to locality restrictions.

b. Q-float is general.

c. Q-float affects the scope of quantifiers relative to negation.

As mentioned above, the locality restrictions implies that this phenomenon must involve movement. Additionally, the fact that every quantifier can float in Thai, regardless of *suuan-maak* 'majority' and *tɛɛlaʔ-CLF* 'each' which are not considered true quantifiers (see section 2.3), suggests that Q-float is general and can apply to any quantifier. In addition, the effects of Q-float on the scope of quantifier relative to negation directly imply the existence of QR. Since the Thai Q-float as QR analysis is somewhat recent, rich in supporting data (comparing to the adverbial analysis, stranding analysis, and extraposition analysis), and well supported by theoretical accounts, no one, to my knowledge, has ever pointed out any problems this analysis may have. The crucial issue one might argue has to do with the robustness of grammatical judgments in various points in this analysis. As Jenks (2013) himself states in the conclusion of his paper that the judgments from native speakers in the examples provided are "extremely murky", they thus deserve empirical data in order to determine what should be the most proper analysis for the Thai Q-float.

With my own judgment as a native speaker of Thai and 14 informants who communicate using the standard dialect of Thai natively, learn Thai as their first language, and speak standard Thai at home, I propose that the analysis of Q-float as QR by Jenks (2011, 2013) faces important empirical problems and that they undercut the motivation for this analysis. I will explain such problems with the supporting data from the native speakers in the following section.

4.3 Problems on the QR analysis

4.3.1 Resurrecting the extraposition

I have presented the motivations for movement and the QR analysis for Thai Q-float by Jenks (2011, 2013) in the previous section. The locality restrictions on Q-float seem to be the strongest property indicating the existence of movement. Yet, Jenks rejects the connection of this property of movement to the extraposition analysis, not seeing it as an instance of a more general rightward movement phenomenon. The data he provides to reject this proposal, as mentioned in section 3.2, however, do not correspond to the judgments by many native speakers of Thai. Consider the extraposed relative clause data in Thai (25), repeated here in (35):

(35) Relative clause extraposition (Jenks 2011, p. 270)

    a. chan hen [NP dek (khon) [CP **thii khruu khɯɯy tii __**]] mɯɯawaannii

       1SG see   child   CLF   that teacher PRF   hit   yesterday

       'I saw [the child whom the teacher hit] yesterday.'

    b. chan hen [NP dek   ___] mɯɯawaannii (khon) **[CP thii khruu khɯɯy tii]**

<pre>
         1SG   see   child ___   yesterday   CLF   that teacher PRF   hit
</pre>

Following the process of extraposition and Heavy NP Shift, the relative clause is able to move rightward, far way from its NP in the object position. The acceptability of this sentence suggests the property of being non-specific, parallel between extraposition and Thai rightward floating quantifiers, and in turn supports the analysis of extraposition. The extraposed relative clause can be used when the NP is introduced into the action for the first time, described in a discourse situation (Sampson 2011). I further provide another acceptable sentence with relative clause extraposition below in (36). This shows that the relative clause can also move from its NP in the subject position as well.

(36) [NP **nak.riian** ___] glab   baan   paj.lɛɛw (khon) [CP **thii phuut Thai daj**]

     student   ___   return home already CLF   REL speak Thai can

'The student who can speak Thai went back home already.'

The judgment problem in the data that Jenks provides to reject this extraposition analysis also extends to adjectives, prepositional phrases, and demonstratives. I show that these extraposed constructions are in fact available in Thai by presenting more data ((38), (40), (42)) along with the ones that are judged ungrammatical, already presented by Jenks (2011) ((37), (39), (41)):

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(37) Adjective extraposition (Jenks 2011, p. 271)

    a. chan hen [NP dek (khon) [AP **son**]] mɨɨawaannii

       1SG see child CLF naughty yesterday

       'I saw the naughty child yesterday.'

    b. chan hen [NP dek ____] mɨɨawaannii (khon) **[AP son]**

       1SG see child ____ yesterday CLF naughty

(38) **[NP nak.riian ____]** rap thun.kaansɨɨksaa mɨɨachaawnnii **[AP chalaad]**

    student ____ receive scholarship morning-this smart

    'The smart student received a scholarship this morning.'

(39) PP extraposition (Jenks 2011, p. 271)

    a. nak.riian ʔaan [NP naŋsɨɨ (lem) [PP **bon toʔ**]] mɨɨawaannii

       student read book CLF on table yesterday

       'The student read the book on the table yesterday,'

    b. nak.riian ʔaan **[NP naŋsɨɨ ____]** mɨɨawaannii (lem) **[PP bon toʔ]**

       student read book ____ yesterday CLF on table

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(40) nak.riian haj **[NP ŋən _____]** kap chan mɯɯawaannii **[PP caak krapaaw nan]**

student give money _____ to me yesterday from bag that

'The student gave the money from that bag to me yesterday.'

(41) Demonstrative extraposition (Jenks 2011, p. 271)

a. [NP **nak.riian [khon-nii]**] kin khaaw lɛɛw

student CLF-this eat rice already

'This student already read a book.'

b. **[NP nak.riian _____]** kin khaaw lɛɛw [**khon-nii**]

student _____ eat rice already CLF-this

(42) chan caʔ sɯɯ **[NP sɯɯapaa _____]** pruuŋnii iikrɔɔb **[tua-nii]**

IsG will buy clothes _____ tomorrow again CLF-these

'I will buy these clothes again tomorrow.'

4.3.2 Judgment problems for the QR analysis

According to the acceptability of the above extraposed constructions, there cannot be anymore reasons to reject the extraposition analysis. The mid-way conclusion for this could be that Thai Q-float is able to be analyzed in two possible ways in terms of movement: extraposition

and QR. Nonetheless, in order to confirm the existence of QR, I investigate the data that are used to support the motivations for QR. I find that, again, there is a judgment problem in Jenks' (2011, 2013) data.

For the claim that Q-float in Thai is sensitive to locality restrictions, only part of his data is correct, other evidence is misleading, and the other face judgment problems. I will begin this part with the most correct data, the restriction in which the quantifiers cannot float from genitives. This restriction (30) is repeated in (43) below:

(43) No Q-float from genitives

    a. Pong ca   [vp hay [DP naŋsɯɯ khɔɔŋ [DP **dek   2-khon**]] kap Nat]

    Pong will   give   book   POSS   child 2-CLF   to Nat

    'Pong will give the two children's book to Nat.'

    b. *Pong ca   [vp hay [DP naŋsɯɯ khɔɔŋ [DP **dek**]] kap Nat] **2-khon**

      Pong will   give   book   POSS   child   to Nat 2-CLF

Now consider the (31), repeated in (44) below:

(44) No Q-float from noun complements

    a. Joo waat [DP phaap   **maa   saam-tua**] lɛɛw

    Joe draw   picture dog   3-CLF   already

    'Joe drew three pictures of dogs already.'

    b. *Joo waat [DP phaap   **maa**] lɛɛw   **saam-tua**

Joe draw   picture dog   already 3-CLF

For every native speaker, nothing is wrong with (44b). The Q-float construction in the example is acceptable, same as the non-floated one. Surprisingly, the difference that the native speakers understand is about the scope difference between partitive and distributive readings relative to the appearance of aspect markers *lɛɛw*. The sentence with a floating quantifier that consists of an aspect marker (e.g. *paj*, *ma*, *lɛɛw*, etc.) co-occurring with a numeral can exhibit this partitive interpretation. The example is given in (45):

(45) a. nak.rian [vp ʔaan naŋsɯɯ **saam-lem**] **lɛɛw**

    student   read book   three-CL   already

    'The student has read the three books.'

  b. nak.rian [vp ʔaan naŋsɯɯ **lɛɛw**   **saam-lem**]

    student   read book   already three-CL

    'The student has read three of the books (so far/already).'

(45a) means that a set of three books has been read by the student. (45b), on the other hand, exhibits the "partitive" interpretation, by which three of the books have been read by the student, and also implies that there are still other books that may have not been read by this student.

This is, however, not related to the point that Jenks makes at all. The ungrammaticality should have been actually due to the restriction of the quantifier that separates itself from the

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noun complement. This is thus why I mention the partitive/distributive issue here. If the judgment relies on the interpretation differences between partitivity and distributivity issues relative to the appearance of aspect makers, then these unacceptable/ungrammatical interpretations become spontaneously correct. The Q-float data presented in Jenks' (2011, 2013) papers are somehow ambiguous and misleading, and this could also be one of the reasons why many of the data in his analysis are facing empirical problems.

Let me get back to the problematic data of the other two restrictions. It is not true that the Q-float cannot apply out of relative clauses, nor that the quantifiers cannot float from the NP complement within the adjunct PP. I manifest these example data regarding the locality restrictions in (46) and (48), and provide the supporting data to confirm that both of the constructions are not restricted in Thai in (47) and (49) below:

(46) Q-Float out of relative clause

    a. phom khəəj cəə [DP phuu-chaaj [CP thii mii **rot kwaa-sip-khan**]] maa lɛɛw

        1SG   PRF   meet   man   that have car exceed-10-CLF ASP   already

        'I have met men who have owned more than 10 cars.'

    b. phom khəəj cəə [DP phuu-chaaj [CP thii mii **rot**]] maa lɛɛw **kwaa-sip-khan**

        1SG   PRF   meet   man   that have car ASP   already exceed-10-CLF

(47) phom jɨɨm ŋən [DP phɨɨn [CP thii mii na**ŋsɨɨ**]] mɨɨawaannii **saam-lem**

    1SG borrow money friend   that have book   yesterday   three-CLF

    'I borrowed money from the friend who has three books yesterday.'

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(48) Q-float out of prepositional phrases

  a. Bill rop [PP naj sanaamrop **thuk-hæŋ**] yaaŋ-klaahaan

   Bill fight in battlefield every-CLF bravely

   'Bill fought bravely in all the battlefields.'

   b. Bill rop [PP naj sanaamrop] yaaŋ-klaahaan **thuk-hæŋ**

    Bill fight in battlefield bravely   every-CLF

(49) nak.riian haj   ŋən   [PP **caak krapaaw]]** mɨɨawaannii **saam-baj**

   student give money   from bag   yesterday   three-CLF

   'The student gave the money from three bags yesterday.'

According to the above examples, the fact that the quantifiers can float out of relative clauses and prepositional phrases is problematic at least for the generalization proposed earlier by (Jenks 2013, p. 4) that "Q-float can only be hosted by nominal arguments of the predicate to which the floating quantifier attaches". The data from (46) and (47) show that Q-float can also apply out of relative clauses and it is not necessarily hosted by the NP of the predicate that it attaches. Moreover, (48) and (49) show that the quantifier can float from the NP complement within the adjunct PP, again not from the main predicate.

The less number of locality restrictions, however, does not adequately determine which analysis is more suitable for Thai Q-float. Since both analyses involve movement and movement is implicated by the restrictions, the problems on the data for the property of Q-float regarding

the sensitivity to locality restrictions may affect both the extraposition and QR analyses. Yet, the data on such a property are not the only ones posing problems. When Jenks accounts for the effects of Q-float on scope I have found that the judgment problem arises again. Jenks (2013, p. 5) proposes the generalization about the effect of Q-float on scope, repeated in (50) below:

(50) a. Q-float lowers the scope of subject quantifiers relative to negation.

b. Q-float raises the scope of object quantifiers relative to negation.

He initially supports his claim by providing the evidence for scope lowering effects, showing that the definite quantifier *sak* 'even.one', the Thai NPI, needs to have the scope below negation in order for the sentence to be grammatical. Q-float saves this problem by lowering the scope of subject quantifier so that it can be below negation. The example (10) illustrates this fact, repeated in (51).

(51) a. *nak.riian **sak-khon** (yaŋ) **maj** [vp kin khaaw]

student even.one-CLF still NEG eat rice

' Not even one student has eaten.' (Intended)

b. nak.riian (yaŋ) **maj** [vp kin khaaw] **sak-khon**

student still NEG eat rice even.one-CLF

' Not even one student has eaten.' (Jenks 2013, p. 6)

However, I argue that, at least in this NPI construction, Q-float does not lower the scope of subject quantifier relative to negation. Both (51a) and (51b) are in fact already available in Thai. Consider further examples in (52) and (53) below:

(52) kaj   **sak-tua**   (yaŋ) **maj** [_{VP} khan]

     rooster   even.one-CLF   still   NEG   crow

     'Not even one rooster has crowed.'

(53) khaaw   **sak-med**   (yaŋ) **maj** [_{VP} tok thɯɯŋ thɔɔŋ]

     rice   even.one-CLF   still   NEG   fall at   stomach

     'Not even one grain of rice has fallen into the stomach.'

The only example that Jenks (p. 6) may be right about his claim is when Q-float can change the scope of subject universal quantifier relative to negation, as in (54):

(54) a. nak.riian   **thuk-khon**   (yaŋ) **maj**   [_{VP} kin khaaw]

     student   every-CLF   still   NEG   eat rice

     'Every student still hasn't eaten.' $\forall > \neg, *\neg > \forall$

     b. nak.riian (yaŋ) **maj**   [_{VP} kin khaaw]   **thuk-khon**

     student   still   NEG   eat rice   every-CLF

     'Every student still hasn't eaten.' $\forall > \neg, \neg > \forall$

But this is only limited to the negation *maj*. If we consider the sentence with multiple quantifiers, Q-float does not seem to do its job according to Jenks' claim. In fact, the sentence remains ambiguous even after the quantifier has floated.

(55) a. nak.riian   **thuk-khon**   [_{VP} kin khaaw caan-nɯɯŋ]

     student   every-CLF   eat rice   CLF-one

     'Every student eats a plate of rice.' $\forall > \exists, \exists > \forall$

     b. nak.riian [_{VP} kin khaaw caan-nɯɯŋ] **thuk-khon**

     student   eat rice   CLF-one   every-CLF

'Every student eats a plate of rice.'   ∀ > ∃, ∃ > ∀

If the Q-float did lower the scope of subject quantifier, we would only expect an interpretation in which there is a single plate of rice such that all the students eat it together. We will get this interpretation when flipping the order of the quantifiers, however.

(56) a. nak.riian   **khon-nɨɨŋ**   [vp kin khaaw thuk-caan]

   student   CLF-one   eat rice   every-CLF

   'A student eats every plate of rice.'   *∀ > ∃, ∃ > ∀

Moreover, Jenks only tests the scopal effects of Q-float with the universal quantifier. If we try substituting the universal quantifier with the numeral 'two-CLF', we still have the same result: the Q-float still cannot lower the scope of subject relative to negation. Consider (57) below:

(57) a. nak.riian   **2-khon**   (yaŋ)   **maj** [vp kin khaaw]

   student   2-CLF   still   NEG   eat rice

   'Two students still haven't eaten.'   2 > ¬, *¬ > 2

   b. nak.riian   (yaŋ)   **maj**   [vp kin khaaw]   **2-khon**

   student   still   NEG   eat rice   2-CLF

   'Two students still haven't eaten.'   2 > ¬, *¬ > 2

According to the data above, the statement about Q-float would be true only when there is interaction between a subject universal quantifier and negation: Q-float can (only) change the scope of subject universal quantifier relative to negation. Now, consider (58) for the claim that Q-float raises the scope of object quantifier (p. 6):

(58) a. Joe **maj**   [vp phop nak.riian **thuk-khon**]   mɨɨawaannii

	Joe	NEG	meet	student	every-CLF	yesterday	

'Joe didn't meet every student yesterday.' $\qquad$ $*\forall > \neg, \neg > \forall$

b. Joe **maj** [$_{VP}$ phop nak.riian] m~~uu~~awaannii **thuk-khon**

Joe NEG meet student yesterday every-CLF

'Joe didn't meet every student yesterday' $\qquad$ $\forall > \neg, \neg > \forall$

This example, however, confirms that the data by Jenks (2013) are not empirically collected. It is not true that negation scopes above a quantifier in the reading (58a). The non-floated pattern (58a) is supposed to be already ambiguous: the $\forall > \neg$ reading should not have been marked unavailable for this sentence. This, again, shows that Q-float does not actually raise the scope of object quantifier relative to negation.

As we can see from the examples above, the quantifier scope data are not quite uniform for the Thai Q-float. The problem on the scope judgments potentially decrease the motivations that connect Q-float to QR, a covert movement operation that is proposed to account for scopal differences of quantifiers.

5. Conclusion

In this thesis, I presents the main problems for the analyses of Q-float in Thai. These include the adverbial analysis, the stranding analysis, the extraposition analysis, and the most current one, the QR analysis. I present more supporting data to resurrect the extraposition analysis, and point out the judgment problems of the QR analysis. I show that only one locality restriction of Q-float proposed by Jenks (2011, 2013) has correct data. The others are either misleading or facing empirical problems. For the scope data, I only agree with the claim that Q-

float lowers the scope of the subject universal quantifier relative to negation, the only claim that provides the right judgment for the data.

The problems with the Q-float as QR analysis have led to the question of what analysis should be responsible for the Q-float phenomenon in Thai. While the QR analysis is well supported by theoretical accounts, the problems regarding the judgement of acceptability of the Q-float data decrease the motivations for the analysis. Because QR is an operation proposed to account for the differences of quantifier scope, if its problems are mainly related to the grammatical judgments or that the judgments by the native speakers are too murky as mentioned by Jenks (2013), it would be more logical to adopt the analysis with less shortcomings, say the extraposition analysis.

Although the judgment problems in many of Jenks' data have been pointed out in this thesis, I suggest the future research include empirical experiments that reinvestigate all the Q-float data. The author(s) should carefully select sentences and avoid using the ambiguous or misleading ones. The data that serve as a base of the analysis such as the data that are used for the locality restrictions or the scope data deserve a very careful and empirical observation.

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