

Thai “floating quantifiers” are adverbs

SEALS 35

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Introduction

- (1) **All the children** have seen this movie.
 (2) **The children** have **all** seen this movie.

Rightward movement (Kayne 1975):

- (3) t_i **The children** have **all** _{i} seen this movie.
- 

Leftward movement (Sportiche 1988):

- (4) [**The children**] _{i} have [_{VP} **all** t_i seen this movie].
- 

No movement (Dowty and Brodie 1984)

Introduction

(5) เด็กสิบคนไม่สบาย

dèk sɨp kʰon mâj sàba:j
child ten CLF NEG well

‘Ten children are not well.’

(Wongbiasaj 1980:102)

(6) เด็กไม่สบายสิบคน

dèk mâj sàba:j sɨp kʰon
child NEG well ten CLF

‘Ten children are not well.’

(Wongbiasaj 1980:102)

The quantifier phrase (QP) in (6) is often referred to as a **floating quantifier (FQ)**.

Introduction

The dominant view in the literature is that the FQ in (6) is derived via movement of the QP from (5) (Wongbiasaj 1979, 1980; Simpson 2011; Jenks 2011, 2013; Chaiphiet 2017, 2023).

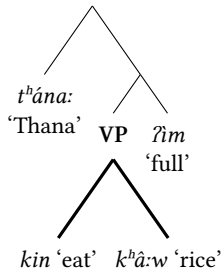
- (6) เด็กไม่สบายสิบคน
dèk t_i mâj sàba:j [sìp k^hon]_i
 child NEG well ten CLF
 ‘Ten children are not well.’

Introduction

(7) ธนากินข้าวอิ่ม

t^hána: kin k^hâ:w ðim

Thana eat rice full

‘Thana ate rice and as a result
he became full.’

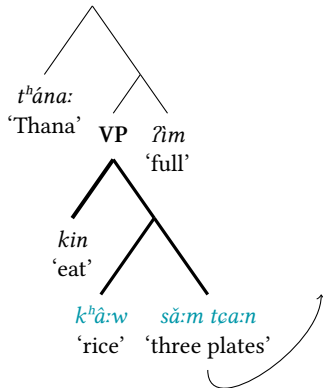
Introduction

(8) ธนากินข้าวสามจานอิ่ม

tʰána: kin kʰâ:w sǎ:m tɕa:n ʔim

Thana eat rice three plate full

‘Thana ate three plates of rice and as a result he became full.’



Proposal

Claim: The “floating quantifier” in (6) can be analysed as a base-generated adverb.

- (6) เด็กไม่สบายสิบคน
dèk mâj sàba:j sip k^hon
 child NEG well ten CLF

‘Ten children are not well.’

(Wongbiasaj 1980:102)

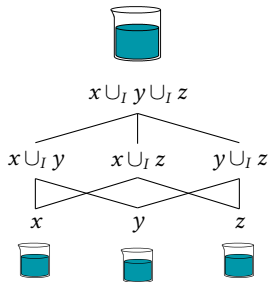
Proposal

Adopting Nakanishi's (2004; 2007) analysis, we propose that Thai FQs are measure phrases that measure out an event.

Proposal

- In general, measure phrases do not merely describe some aspect of an entity, but must reflect the part-whole structure of what they measure.

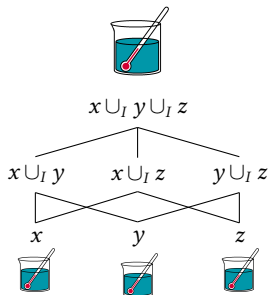
(9) **three litres of water**



Proposal

- In general, measure phrases do not merely describe some aspect of an entity, but must reflect the part-whole structure of what they measure.

(10) *three degrees (Celsius) of water



Proposal

- In general, measure phrases do not merely describe some aspect of an entity, but must reflect the part-whole structure of what they measure.

(11) three litres of water

(12) *three degrees (Celsius) of water

(Formally, measure phrases must be monotonic with respect to what they measure.)

Proposal

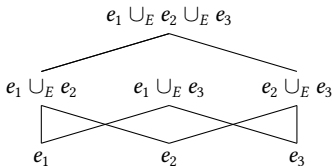
- In general, measure phrases do not merely describe some aspect of an entity, but must reflect the part-whole structure of what they measure.
- But in Thai:

(13) น้ำสามลิตร
ná:m sǎ:m lít
 water three litres
 ‘three litres of water’

(14) น้ำสามองศา
ná:m sǎ:m ?ɔŋsǎ:
 water three degrees
 ‘three-degree(-Celsius) water’
 Not: ‘three degrees (Celsius) of water’

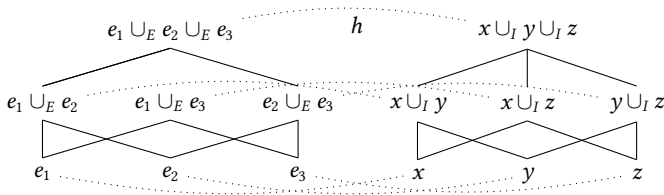
Proposal

- In addition to measuring individuals, measure phrases can measure events too, but such measure phrases must likewise reflect the part-whole structure of the events they measure.



Proposal

- FQs are licensed when they reflect the part-whole structure of both (i) the events denoted by the VP and (ii) the individuals denoted by their host NPs.



(adapted from Nakanishi 2007:253)

(Formally, FQs are licensed when there is a homomorphism from events to the individuals denoted by the host NP.)

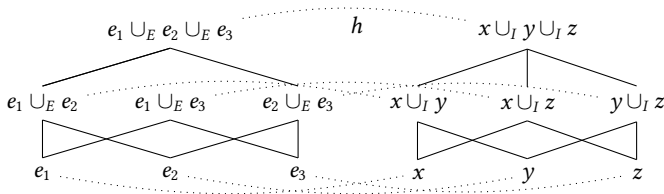
Proposal

(15) เด็กไม่สบายสามคน

dèk mâj sàba:j sǎ:m kʰon

child NEG well three CLF

‘Three children are not well.’



(adapted from Nakanishi 2007:253)

Proposal

(16) น้ำสามลิตร

ná:m sǎ:m lít

water three litres

‘three litres of water’

(17) น้ำสามองศา

ná:m sǎ:m ʔoŋsǎ:

water three degrees

‘three-degree(-Celsius) water’

Not: ‘three degrees (Celsius) of water’

Proposal

- (18) **น้ำสามลิตร**หกเลอะโต๊ะ
ná:m sǎ:m lít hòk-lý? tó?
 water three litres spill-messy table
 ‘Three litres of water spilled onto the table.’
- (19) **น้ำ**หกเลอะโต๊ะ**สามลิตร**
ná:m hòk-lý? tó? sǎ:m lít
 water spill-messy table three litres
 ‘Three litres of water spilled onto the table.’

Proposal

(20) **น้ำสามองศา**หกเลอะโต๊ะ

ná:m sǎ:m ʔoŋsǎ: hòk-lý? tó?
 water three degree spill-messy table

‘Three-degree water spilled onto the table.’

(21) ***น้ำ**หกเลอะโต๊ะ**สามองศา**

**ná:m hòk-lý? tó? sǎ:m ʔoŋsǎ:*
 water spill-messy table three degree

Intended: ‘Three-degree water spilled onto the table.’

Proposal

Adopting Nakanishi's (2004; 2007) analysis, we propose that Thai FQs are measure phrases that measure out an event.

- In general, measure phrases do not merely describe some aspect of an entity, but must reflect the part-whole structure of what they measure, cf. *three litres of water* vs **three degrees of water*.
- In addition to measuring individuals, measure phrases can measure events too, but such measure phrases must likewise reflect the part-whole structure of the events they measure.
- FQs are licensed when they reflect the part-whole structure of both (i) the individuals denoted by their host NPs and (ii) the events denoted by the VP.

(Formally, measure phrases must be monotonic with respect to what they measure. FQs are licensed when there is a homomorphism from events to the individuals denoted by the host NP.)

Predictions

FQs should be ruled out when the event denoted by the VP does not have any subparts that the measure phrase can measure out.

- 1 Single-occurrence events
- 2 Individual-level predicates
- 3 Collective readings

Prediction #1: Single-occurrence events

- FQs are incompatible with single-occurrence events.

(22) **ห้กเลงสามคนตีธนาตาย**

nákle:j sǎ:m k^hon ti: t^hana: ta:j
 gangster three CLF hit Thana die
 ‘Three gangsters hit Thana dead.’

(23) ***ห้กเลงตีธนาตายสามคน**

**nákle:j ti: t^hana: ta:j sǎ:m k^hon*
 gangster hit Thana die three CLF
 Intended: ‘Three gangsters hit Thana dead.’

Prediction #1: Single-occurrence events

- Jenks (2011) rejects the adverb account because FQs are compatible with *k^hâ:* ‘kill’.

(24) **นักเรียน**ฆ่าปีเตอร์เมื่อวานนี้**สามคน**

nákri:an *k^hâ:* *Peter* *mû:awa:nní:* *să:m* *k^hon*

student kill Peter yesterday three CLF

‘Three students killed Peter yesterday.’

(adapted from Jenks 2011:278)

Prediction #1: Single-occurrence events

- However, it could be because (some) speakers interpret $k^{h\hat{a}}$: as a non-culminating accomplishment, i.e. killing someone but the person did not die; cf. Thepkanjana and Uehara (2009).

(25) *สมชายฆ่าแมลง แต่แมลงไม่ตาย

**sǒmtɕ^ha:j k^hâ: malɛ:ŋ tɛ: malɛ:ŋ mâj ta:j*

Somchaay kill bug but bug not die/dead

‘Somchaay killed some bugs but they did not die.’

(Thepkanjana and Uehara 2009:598)

Prediction #1: Single-occurrence events

- However, it could be because (some) speakers interpret $k^{h\hat{a}}$: as a non-culminating accomplishment, i.e. killing someone but the person did not die; cf. Thepkanjana and Uehara (2009).

(26) สมชายฆ่าแมลงไม่ตาย

sǒmtɕ^ha:j k^hâ: malɛ:ŋ mâj ta:j

Somchaay kill bug not die/dead

‘Somchaay tried to kill some bugs but they did not die.’

(Thepkanjana and Uehara 2009:614)

- For these speakers, $k^{h\hat{a}}$: would not denote a single-occurrence event.
- The same problem does not arise for the resultative *ti: ta:j* ‘hit dead’, whose result cannot be cancelled and so must denote a single-occurrence event.

Prediction #1: Single-occurrence events

- Context: There was **one** event in which Thana ate **three** plates of rice and as a result he became full.

(27) ธนากินข้าวสามจานอิ่ม

t^hána: kin k^hâ:w sǎ:m tɕa:n ɽim

Thana eat rice three plate full

‘Thana ate three plates of rice and as a result he became full.’

(28) *ธนากินข้าวอิ่มสามจาน

**t^hána: kin k^hâ:w ɽim sǎ:m tɕa:n*

Thana eat rice full three plate

‘Thana ate three plates of rice and as a result he became full.’

Prediction #1: Single-occurrence events

- Context: There were **three** events in which Thana ate **one** plate of rice and as a result he became full.

(29) *ธนากินข้าวสามจานอิ่ม

**tʰána:* kin *kʰâ:w* *sǎ:m* *tɕa:n* *ɨm*

Thana eat rice three plate full

‘Thana ate three plates of rice and as a result he became full.’

(30) ธนากินข้าวอิ่มสามจาน

tʰána: kin *kʰâ:w* *ɨm* *sǎ:m* *tɕa:n*

Thana eat rice full three plate

‘Thana ate three plates of rice and as a result he became full.’

Predictions

FQs should be ruled out when the event denoted by the VP does not have any subparts that the measure phrase can measure out.

- 1 Single-occurrence events
- 2 Individual-level predicates
- 3 Collective readings

Prediction #2: Individual-level predicates

- FQs are incompatible with individual-level predicates (32), since the denotations of such predicates lack event arguments altogether.
- Context: At this international school...

(31) เด็กสิบคนเป็นคนไทย

dèk sip k^hon pen k^hon-t^haj
 child ten CLF COP person-Thai

‘Ten children are Thais.’

(32) ??เด็กเป็นคนไทยสิบคน

??*dèk pen k^hon-t^haj sip k^hon*
 child COP person-Thai ten CLF

Intended: ‘Ten children are Thais.’

(Can mean: ‘Ten children became Thais.’)

Prediction #2: Individual-level predicates

- The unacceptability of (33) cannot be due to the fact that the predicate is stative, since (34) contains both a stative predicate and a FQ.

(33) ??เด็กเป็นคนไทยสิบคน

??*dèk* *pen* *k^hon-t^haj* *sip* *k^hon*

child COP person-Thai ten CLF

Intended: ‘Ten children are Thais.’

(Can mean: ‘Ten children became Thais.’)

(34) เด็กไม่สบายสิบคน

dèk *mâj* *sàba:j* *sip* *k^hon*

child NEG well ten CLF

‘Ten children are not well.’

(Wongbiasaj 1980:102)

Predictions

FQs should be ruled out when the event denoted by the VP does not have any subparts that the measure phrase can measure out.

- 1 Single-occurrence events
- 2 Individual-level predicates
- 3 Collective readings

Prediction #3: Collective readings

- FQs are incompatible with collective readings because they do not have the relevant subparts that FQs can measure.
- Context: My friend John married my friend Mary last year.

(35) เพื่อนของฉันแต่งงาน
p^hû:an-khǎ:ŋ-tɕ^hǎn sǎ:ŋ k^hon tɛŋŋa:n
 friend-POSS-1SG two CLF marry
 ‘Two of my friends got married.’ (collective)

(36) เพื่อนของฉันแต่งงานสองคน
p^hû:an-khǎ:ŋ-tɕ^hǎn tɛŋŋa:n sǎ:ŋ k^hon
 friend-POSS-1SG marry two CLF
 ‘Two of my friends got married.’ (*collective)

Prediction #3: Collective readings

- FQs are incompatible with collective readings because they do not have the relevant subparts that FQs can measure.
- Context: My friend John married Sue, my friend Mary married Bill, and my friend Fred married Alice. (I am not friends with Sue, Bill or Alice.)

(37) เพื่อนของฉันแต่งงาน *phû:an-khǎ:ŋ-tɕʰǎn sǎ:m kʰon tɛŋŋa:n*
 friend-POSS-1SG three CLF marry
 ‘Three of my friends got married.’ (distributive)

(38) เพื่อนของฉันแต่งงานสามคน *phû:an-khǎ:ŋ-tɕʰǎn tɛŋŋa:n sǎ:m kʰon*
 friend-POSS-1SG marry three CLF
 ‘Three of my friends got married.’ (distributive)

Predictions

Our proposal correctly predicts that FQs are ruled out when the event denoted by the VP does not have any subparts that the measure phrase can measure out.

- 1 Single-occurrence events
- 2 Individual-level predicates
- 3 Collective readings

Comparison with movement account

- We are not aware of any independent reasons why the QP could not move to a sentence-final position in the preceding examples.
- It is a challenge for the movement account to explain why these sentences/readings are ruled out.

Comparison with movement account

- The movement account cannot explain sentences like (39) that could not have been derived from (40) (Simpson 2011; Singhapreecha and Sybesma 2015).

(39) เขายิงพวกนั้นตายแล้วสามศพ

k^hǎw jɨŋ p^hú:ak-nán ta:j lé:w sǎ:m sòp

3 shoot group-that die ASP three CLF

‘They shot three of them dead.’

(Simpson 2011:128)

(40) *เขายิงพวกนั้นสามศพตายแล้ว

**k^hǎw jɨŋ p^hú:ak-nán sǎ:m sòp ta:j lé:w*

3 shoot group-that three CLF die ASP

Intended: ‘They shot three of them dead.’ (Simpson 2011:128)

- Sentences like (39) are straightforwardly explained by the adverb account, which assumes that the FQ measures out both the event and the individual denoted by the host NP.

Comparison with movement account

- It has been claimed that FQs are **island-sensitive**, which suggests that FQs are derived via movement.

Comparison with movement account

- Island-sensitive:

(41) QP t ...
island

(42) QP t ...
non-island

- Example: focus fronting

Comparison with movement account

- A QP cannot undergo focus fronting out of an island like a relative clause (43)...

(43) *สี่คันต่างหากจอห์นกำลังเจอผู้ชายที่จะซื้อรถเบนซ์อยู่
 **si:* *k^han* *tà:ŋhà:k* *John* *kamlaŋ* *tɕɤ:* [*NP* *p^hù:tɕ^ha:j* [*CP*
 four CLF FOC John PROG meet man
t^hi: *tɕà?* *sú:* *rót-Benz*]] *jù:*
 REL will buy car-Mercedes IMPF

‘John is meeting a man who will buy FOUR Mercedes (not three).’

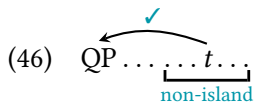
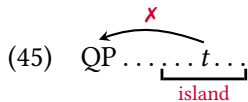
Comparison with movement account

- ...but can undergo focus fronting out of a non-island like a complement clause (44).

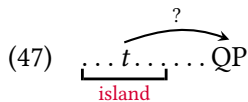
(44) **สี่คัน**ต่างหากจอห์นกำลังบอกเราว่าเขาจะซื้อ**รถเบนซ์**อยู่
sì: kʰan tà:ŋhà:k John kamləŋ bə:k raw [CP wâ:
 four CLF FOC John PROG tell 1 that
kʰăw tɕà? sù: rət-Benz] jù:
 3 will buy car-Mercedes IMPF
 ‘John is telling us that he will buy FOUR Mercedes (not three).’

Comparison with movement account

■ Focus fronting



■ Floating quantifiers



Comparison with movement account

- The movement account correctly predicts that a QP cannot “float” out of an island like a relative clause (49).

(49) *จอห์นกำลังเจอผู้ชายที่จะซื้อรถเบนซ์อยู่สามคัน

*John kamlan tɛɯ: [NP p^hû:tɕ^ha:j [CP t^hi: tɕà? sú:
 John PROG meet man REL will buy
 rôt-Benz]] jù: sǎ:m k^han
 car-Mercedes IMPF three CLF

Intended: ‘John is meeting a man who will buy three Mercedes.’
 (adapted from Singhapreecha and Sybesma 2015:74)

Comparison with movement account

- But the movement account cannot explain why a QP cannot “float” out of a non-island like a complement clause (50).

(50) *จอห์นกำลังบอกเราว่าเขาจะซื้อรถเบนซ์อยู่สามคัน

*John kamlay bò:k raw [CP wâ: k^hǎw tɕà? sú:
 John PROG tell 1 that 3 will buy
 rót-Benz] jù: sǎ:m k^han
 car-Mercedes IMPF three CLF

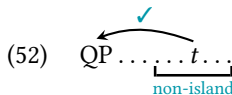
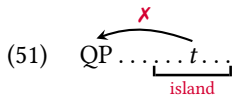
Intended: ‘John is telling us that that he will buy three Mercedes.’

(adapted from Singhapreecha and Sybesma 2015:75)

Comparison with movement account

- There is no clear evidence that FQs are island-sensitive.

- Focus fronting



- Floating quantifiers



- An alternative explanation is that FQs cannot form a long-distance dependency with a host NP.

Conclusion

- Thai FQs are adverbs base-generated in situ.
- These adverbs are event modifiers that measure out the subparts of an event.
- Our proposal correctly predicts that FQs are incompatible with VPs that denote events with no subparts.
- Our findings could have implications for the analysis of FQs cross-linguistically.

Thank you!

Special thanks to:

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